PACIFIC groundwater GROUP

SURFACE AND SUBSURFACE SEDIMENT PHASE 1B DATA REPORT SWAN ISLAND LAGOON PORTLAND HARBOR SUPERFUND SITE

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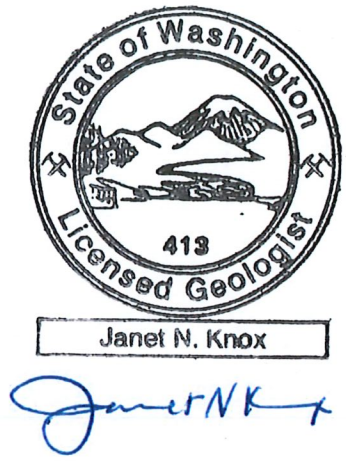
SIGNATURE

This report, and Pacific Groundwater Group's work contributing to this report, were reviewed by the undersigned and approved for release.



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ACRONYMS AND ABBREVIATIONS

°C	degrees Celsius
ALS	ALS Environmental in Kelso, Washington
ARI	Analytical Resources, Incorporated
ASAOC	Administrative Settlement Agreement and Order on Consent
ASTM	American Society for Testing and Materials
BaP	Benzo(a)Pyrene
cm	centimeter
COCs	contaminants of concern
CRD	Columbia River Datum
CSM	Conceptual Site Model
DGPS	differential global positioning system
ENR	Enhanced Natural Recovery
EPA	United States Environmental Protection Agency
FS	feasibility study
FSP	Field Sampling Plan
FSR	Field Sampling Report
FSDR	Field Sampling Data Report
ft	feet
Gravity	Gravity Marine Services
ID	identification number
IDW	investigation-derived waste
LWG	Lower Willamette Group
mm	millimeters
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NAD83	North American Datum of 1983
NAPL	Non-aqueous phase liquid
NAVD88	North American Vertical Datum of 1988
PAHs	polycyclic aromatic hydrocarbons
PCBs	polychlorinated biphenyls
PID	photoionization detector
PDI	Pre-Remedial Design Investigation
PGG	Pacific Groundwater Group
PHSS	Portland Harbor Superfund Site
Pre-RD Group	Pre-Remedial Design AOC Investigation Group
PTW	principal threat waste
PSEP	Puget Sound Estuary Program
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
RPD	redox potential discontinuity
RI	remedial investigation
RM	river mile
ROD	Record of Decision
RTK	Real-Time Kinetic
SDU	Sediment Decision Unit
SIL	Swan Island Lagoon
SMA	Sediment Management Area
SOP	Standard Operating Procedure
SOW	Statement of Work
TestAmerica	TestAmerica Laboratories
TEF	Toxicity Equivalency Factor
TOC	total organic carbon
USACE	United States Army Corps of Engineers

1.0 INTRODUCTION

This Phase 1b Data Report (Phase 1b DR) describes additional analyses of archived samples that were collected in September 2018 during focused surface and subsurface sediment sampling efforts performed in the Swan Island Lagoon (SIL) Study Area (Study Area) as reported in the April 30, 2019 Surface and Subsurface Sediment Field Sampling and Data Report (Pacific Groundwater Group [PGG] 2019). Additional Phase 1b analyses followed the procedures and guidelines specified in the Swan Island Lagoon Surface and Subsurface Sediment Field Sampling Plan (SIL Sediment FSP) (PGG 2018) unless otherwise noted.

The Record of Decision (ROD) for the Portland Harbor Superfund Site (PHSS) (Figure 1) located in Portland, Oregon, described a post-ROD sampling effort to delineate and refine the sediment management area (SMA) footprints, refine the Conceptual Site Model (CSM), determine baseline conditions, and support remedial design (United States Environmental Protection Agency [EPA] 2017a). On December 19, 2017, EPA entered into an Administrative Settlement Agreement and Order on Consent (ASAOC) with the Pre-Remedial Design Agreement and Order on Consent Investigation Group (Pre-RD Group) to conduct the Pre-Remedial Design Investigation and Baseline Sampling (PDI) studies at the PHSS (EPA 2017b). The ASAOC includes a Statement of Work (SOW) and the PDI Work Plan (Geosyntec 2017), which generally describe the agreed upon field investigation activities, data analyses, schedule, and deliverables for the PDI.

Following the submittal of the more general PDI Work Plan, the Pre-RD Group submitted to EPA Field Sampling Plans (FSPs) that specify sampling scopes for surface sediment, core, biological and bathymetry investigations. The PDI Surface Sediment FSP (AECOM and Geosyntec 2018a) and the PDI Subsurface Sediment FSP (AECOM and Geosyntec 2018b) detail PDI sampling throughout the PHSS, including the SIL. Collectively, 74 surface samples and 14 subsurface cores were identified for collection in the SIL for the PDI studies.

The SIL Sediment FSP was prepared to support sediment sampling in the SIL Study Area (Figure 2) and to complement the PDI investigation. This Phase 1b DR (1) summarizes additional analyses of archived samples, including processing of archived in-situ sediment cores and any deviations from the SIL Sediment FSP, and (2) summarizes the validated data, laboratory reports, and data validation package.

1.1 OBJECTIVES

In the SIL Study Area, the PDI data provided in the PDI Evaluation Report (AECOM and Geosyntec 2019) supplement and update the 1997-2007 Remedial Investigation/Feasibility Study (RI/FS) surface sediment data for purposes of remedial design and evaluating remedy effectiveness. The PDI data set provides fewer samples for the SIL than in the RI/FS dataset. As a result, the PDI Evaluation Report Sediment Management Area (SMA) delineation retains historical RI/FS data in the SIL where those locations are more than 100 feet away from a PDI sample and replaces historical RI/FS data within 100 feet of a sample. The December 23, 2019 EPA Remedial Design Guidelines and Considerations (RD Guidelines) (EPA 2019) recommends site-specific

data replacement strategy where "in general, older surface samples that are in close proximity to newer samples are reasonable candidates for replacement if the new sample was taken much more recently than the older surface sample." In DTNA's SIL study area, surface samples were analyzed such that newer samples are within a 100-foot radius of all older RI/FS samples.

Additionally, for core subsamples, the RD Guidelines recommends 1-foot intervals "in dredging areas within an SMA for the purpose of delineating the depth of contamination (DOC)." DTNA's SAP describes core subsampling as 1-ft intervals from 0 to 2 feet and stratigraphic breaks below 2 feet with an interval between 1 to 3 feet, generally consistent with both the Lower Willamette Group (LWG) and PDI approaches. Here, DTNA reports core data at 1-foot intervals as subsampled from archived in-situ cores.

The PDI Evaluation raised concern about uncertainty in data used to delineate SMAs (particularly dioxin and furan data), saying, "Uncertainty in a dataset, particularly values reported as estimated (or J-qualified) must be addressed when these data are used in the remedial design process." (AECOM and Geosyntec 2019, Appendix E). Here, DTNA provide dioxin and furan data for 10 split samples analyzed for D/Fs by a second laboratory, and results of a certified reference material analyzed for D/Fs by three laboratories.

For PCBs, EPA's RD Guidance states, "because the multiple sources of PCBs and varying degrees of weathering at the Site may hinder accurate quantification of PCBs and source identification when analyzing sediment using PCB Aroclor methods." (EPA 2019, Appendix B). EPA goes on to say PCB Aroclor data can be used to estimate total PCB concentrations when data quality objectives are met and the reporting limit for individual Aroclors are less than the cleanup level (9 ug/kg). Here, DTNA provides PCB Aroclor results for 10 splits analyzed by a second laboratory and Aroclor results that pair with PCB Congener results. We used these results to evaluate potential bias between laboratories and between PCB analytical methods (Appendix G).

In sum, the surface and subsurface sediment data presented in this SIL Phase 1b DR supplements DTNA's FSDR and adds to the RI/FS and PDI data to support: (1) the development of a Remedial Design sediment Sampling and Analysis Plan consistent with EPA's RD Guidance; (2) further Pre-RD refinement of the SIL SMA footprint; (3) improve subsurface delineation of the depth of contamination at 1-foot intervals; and (4) provide for data quality evaluation of focused COCs.

1.2 PHASE 1B DR DOCUMENT OVERVIEW

This SIL Phase 1b DR follows the document structure of DTNA's SIL FSDR, which was based on the Portland Harbor Remedial Investigation/Feasibility Study Round 2 Surface and Beach Sediment FSR (Integral 2005a) and Portland Harbor Remedial Investigation/Feasibility Study Round 2B Subsurface Sediment FSR (Integral 2005b).

Section 2, Archived In-Situ Core Sampling Procedures, describes how sediment cores samples were archived and subsampled following Quality Assurance (QA) and Quality Control (QC) procedures to ensure the quality of the data. Section 3, Laboratory Analyses and Data Management describes the chemical and physical analyses conducted, the data

management procedures, and the laboratory deviations from the SIL Sediment FSP. Section 4, Laboratory Analytical Results, summarizes the laboratory sample analysis results for the parameters tested and data validation results. Section 5 lists the references cited in this Phase 1b DR.

Supporting information is provided in appendices:

- Appendix A: Archived Split Cores Sample Logins
- Appendix B: Sediment Core Sampling Logs
- Appendix C: Photographs
- Appendix D: Analytical Laboratory Data Summary Reports
- Appendix E: Data Validation Reports
- Appendix F: Validated Analytical Results
- Appendix G: PCB Aroclor Bias Evaluation

2.0 FIELD SAMPLING INFORMATION

Field sampling was conducted from October 8, 2018 through October 22, 2018. Table 1 summarizes the numbers and types of samples collected and the analyses performed. Surface sediment (0-30 cm) samples were collected between October 8 and October 20 from 131 locations throughout the SIL Study Area. Subsurface sediment core samples were collected on October 21, 2018 and October 22, 2018, from seven SIL Study Area locations.

Field sampling details are provided in the 2019 FSDR (PGG 2019) and followed the procedure described in the SIL Sediment FSP (PGG 2018). The SIL Sediment FSP follows the Surface and Subsurface Sediment FSP sampling and analysis protocols produced by the Pre-RD Group (AECOM and Geosyntec 2018a and 2018b) as derived from the Lower Willamette Group (LWG) RI Rounds 2 and 3 FSPs (Integral Consulting [Integral] 2004 and 2006).

Grab samples and core subsamples were archived at ALS Kelso and TestAmerica laboratories Seattle, Sacramento, and Knoxville. In-situ split cores were archived in 2-ft intervals and processed at ALS Kelso into subsamples on August 26-28, 2019.

After grab sample acceptance, a vertically integrated sample of sediments from the top to the bottom of the hydraulic power grab was collected using a stainless-steel spoon, avoiding sediments in contact with the sides and bottom of the sampler. The sediment sample was placed in a large, stainless-steel bowl and homogenized. A minimum of 1.8 liters of sediment were required for chemical analysis. Once the sediment sample was homogenized to a uniform consistency and color, it was visually described and recorded on sediment grab sample field logs. The following information was recorded: grab recovery depth (nearest cm), degree of leakage, or sediment surface disturbance; sediment grain size, texture, and color; presence, type, and strength of odors; redox-potential discontinuity (RPD) thickness; and any obvious biological or anthropogenic material. Copies of all grab sample field logs are provided in Appendix B.

The homogenized sediment sample was distributed into the appropriate laboratory-provided sampling containers using a stainless steel-spoon, capped, and labeled. Subsamples were placed together in zip-locked bags and stored in a cooler on ice until the end of the sampling day. At the end of each sampling day, all coolers were off-loaded, and samples were logged to chain of custody forms and stored in coolers on ice in a locked box-van sealed with a custody seal. Coolers were checked daily for adequate ice and samples were shipped via courier and field staff under chain of custody with seals to the analytical laboratories for analysis. Copies of chain of custody forms are included in the laboratory reports (Appendix D).

2.1 SUBSURFACE SEDIMENTS

Subsurface sample collection and processing followed the procedures specified in the SIL Sediment FSP and described in the FSDR. Processing of the in-situ archived cores at ALS Kelso by PGG is described in this section. See Appendix A for a list of the in-situ longitudinal sections and core catcher samples archived at ALS Kelso.

Seven sediment cores were collected from seven locations throughout the SIL Study Area. Half of each core, split longitudinally, packaged, was transported on ice under chain of custody by courier to ALS Kelso where it was deep frozen. Table 2 lists each location sampled, the target and actual coordinates, depth to mudline, river stage, and mudline elevation. Table 3 and Table 4a-g lists the samples collected for both Phase 1 and Phase 1b, the date and time sampled, and the analyses conducted per core. Copies of field logs are provided in Appendix B.

2.1.1 Core Sample Handling and Processing

Core samples including in-situ archive cores were processed concurrently with core collection as described in the FSDR. Cores were offloaded immediately after collection and processed at the dock the same day collected.

The core materials were divided longitudinally. One half of the divided core was sampled according to the criteria used for the RI and the PDI as described in the FSDR and the other half was archived. The archived half of the core was sectioned into 2-ft intervals and archived whole. The archived sections were retained in the core tube liner, wrapped in aluminum foil, immobilized using a half-radius tray, wrapped again in foil, placed into a plastic sleeve sealed at both ends, then placed onto core stands in ice-filled coolers. Each layer of packaging - from core tube to outer sleeve - was redundantly labeled with the location identification number (ID), core section number, and top and bottom, and section depths. See Appendix A for a list of the in-situ longitudinal sections and core catcher samples archived at ALS Kelso.

ALS transferred the cores from frozen to refrigerated storage the day before PGG arrived for core processing. PGG then transferred the core sections to a clean lab-bench covered by a fresh sheet of aluminum foil, unwrapped, photographed, measured, and inspected cores for disturbance (Appendix C). Cores remained intact and were well-preserved retaining original structure and length. Because the cores were already described by an experienced geologist in the field, that process was not repeated for the archived sections. Sample handling procedures were consistent with those described in the FSP and FSDR.

To summarize, the sediment sample was placed in a large, stainless-steel bowl and homogenized. Once the sediment sample was homogenized to a uniform consistency and color, it was distributed into the appropriate laboratory-provided sampling containers using a stainless steel-spoon, then capped, and labeled, and logged to COCs. A deviation from the FSP is in the subsampled intervals used in Phase 1b and additional subsampling for radioisotope age-dating not reported here. For each core section, a 1-centimeter diameter "plug" of approximately 10 grams was removed at three cm intervals to 60 centimeters, and 5 centimeters thereafter for radioisotope analysis. And for each core section, subsamples were homogenized at 0.5 ft intervals, 200-250 grams weighed out for radioisotope analysis, and then the remaining sediment further homogenized to 1-foot intervals. The subsamples were placed together in zip-locked bags and stored in coolers in ALS refrigerators. At the end of the subsampling, samples were transferred to ALS custody or placed on ice and shipped overnight by ALS to other analytical laboratories. Copies of chain of custody forms are included in the laboratory reports (Appendix D). Phase 1b Sediment Core Processing Forms are provided with the original core logs in Appendix B.

2.1.2 Subsurface Sample Nomenclature

Sample nomenclature was developed as follows to relate samples to the grid node, sample type, and sample interval. All samples have a unique identifying sample ID that includes the following:

- Grid node. Alphanumeric code for each node. Letter A to T identify up/down river position, and numbers 1-7 identify cross-river positions (e.g. J5).
- Sample type. SC for Sediment Core.
- Analysis Phase. "1b" for Phase 1b.
- Sample Depth. The actual depth interval of the collected sample in feet (top ## to bottom ##). For example, if the depth interval is 0 to 1 ft, the sample ID includes "00 to 10", with the last digit indicating tenths of feet.
- Sample Date. The date of sample processing was added to the sample ID in the following month, day, year format: MMDDYY

For example, a sediment core sample from grid node J5 for the 0 to 1 ft interval processed during Phase 1b on August 27, 2019 would have the sample ID J5-SC1b-00to10-082719. Note that the sample date and time included on the label and COC reflect the date of core processing rather than the date of archive core collection. This was considered by the data validator when assessing holding times for the core samples. All core samples were analyzed within holding times as measured from the original core collection date (Table 5).

In the FSDR, field duplicate samples were not collected per the SIL Sediment FSP due to limited sample volume after archiving the in-situ longitudinally split core. Here, three field duplicates were collected. Field duplicates are assigned a prefix beginning at 411 (e.g., 411-SC1b-50to60-82619). Equipment rinseate blanks collected during core processing were labeled "711-82719" and "712-82819" combining a numerical sequence beginning at 71X- and the date. Additional data fields that describe each unique sample

feature, location, and attributes were recorded in the field forms and are included in the project database.

2.2 EQUIPMENT DECONTAMINATION PROCEDURES

Equipment decontamination procedures were performed as described in the SIL Sediment FSP. Decontamination of field sampling equipment, bowls, and spoons occurred between subsamples. The decontamination steps included an initial rinse with tap water to dislodge particles, a scrub with brush and Liquinox™ phosphate-free detergent, and then a rinse with deionized water from ALS tap. Sampling spoons and bowls were covered with aluminum foil until use (dull side down). Gloves were replaced before and after handling each sample or conducting decontamination procedures.

2.3 INVESTIGATION-DERIVED WASTE DISPOSAL

Investigation-derived waste (IDW) disposal occurred as described in the SIL Sediment FSP. No excess sediment was generated by the archived core subsampling.

Tyvek, gloves, paper towels, plastic sheeting, and other non-hazardous waste material generated during sampling was placed in heavyweight garbage bags placed in normal refuse containers at ALS for disposal at a non-hazardous solid waste landfill.

3.0 LABORATORY ANALYSES AND DATA MANAGEMENT

This section summarizes the chemical and physical analyses performed for the characterization of surface and subsurface sediment samples.

3.1 PHYSICAL AND CHEMICAL ANALYSES

For analytical consistency with the Pre-RD Group 2018 sediment sampling effort, the same laboratories, analytical and preparation methods were used to perform the physical and chemical analyses for archived grab sample analyses already in frozen archive at the laboratory:

- ALS in Kelso, Washington, analyzed samples for chlorinated pesticides, PAHs, phthalates, tributyltin, and total solids.
- TestAmerica in:
  - Fife, Washington, analyzed samples for PCB Aroclors, total petroleum hydrocarbons diesel extended range, metals and mercury, TOC, grain size, and total solids.
  - Sacramento, California, analyzed samples for dioxins/furans.
  - Knoxville, Tennessee, analyzed samples for PCB congeners and specific gravity.

The 1-foot core samples from the in-situ archived cores were analyzed at the following laboratories for contaminants of concern:

- ALS in Kelso, Washington, analyzed samples for chlorinated pesticides, PAHs, phthalates, tributyltin, and total solids.
- ARI in Seattle, Washington, for PCB Aroclors and TOC.
- TestAmerica in:
  - Fife, Washington, analyzed samples for total petroleum hydrocarbons diesel extended range, metals and mercury, and total solids.
  - Knoxville, Tennessee, analyzed samples for PCB congeners and specific gravity.
- Cape Fear Analytical in Wilmington, North Carolina, analyzed samples for dioxins/furans.

Additionally, 10 split samples were transferred from TA to SGS Axys in Sydney, British Columbia, for dioxin/furan analysis, and 10 split samples were transferred from TA to ARI in Seattle, Washington, for PCB Aroclor analyses. Three samples of a natural soil matrix certified reference material (EDF-5183) were direct shipped to TestAmerica Knoxville, SGS Axys, and Cape Fear for D/F analysis in batches with sediment samples, for a total of nine CRMs. The CRMs arrive in 10-gram samples that are completely consumed by a single use.

This CRM was selected over other CRMs because the true TCDD and PeCDD concentrations are relatively close to the cleanup levels and remedial action levels for those analytes. For example, the EDF-5183 certified value for TCDD is 0.11 ± 0.14 picograms per gram (pg/g), below the RAL of 0.6 pg/g.

ARI and SGS Axys were selected for PCB Aroclor and D/F analyses because those laboratories have a proven track record at the Lower Duwamish Waterway Superfund Site. Also, Cape Fear was selected for D/F analyses because they are a D/F-focused laboratory used at other sites in Portland Harbor.

The laboratories used in Phase 1b analyses use the same analytical methods described in the SIL Sediment QAPP and FSP (PGG 2018). For PCB Aroclors, ARI provides detection limits below the cleanup level of 9 ug/kg, comparable to TestAmerica. For D/Fs, both Cape Fear and SGS Axys provide comparably low detection limits.

These analytes include the Portland Harbor sediment focused-COCs and COCs specified in Tables 17 and 21 of the ROD (EPA 2017a). The analytes and analytical methods are provided in Table 6.

Individual analytes were also used to calculate analyte totals following the procedures described in the FSDR (PGG 2019), Appendix E 2018 PDI Surface Sediment Database in the Pre-RD Group Footprint Report (AECOM and Geosyntec 2019), Appendix A3 of the Portland Harbor Remedial Investigation (EPA 2016), and RD Guidance (EPA 2019). The calculated total analytes are listed in Table 7. A description of summation rules is provided in Section 3.5.

3.2 FIELD QUALITY ASSURANCE/QUALITY CONTROL

Field quality assurance/quality control (QA/QC) samples were collected with the surface sediment and subsurface sediment samples as specified in the SIL Sediment FSP. In Phase 1b, three additional field duplicates were collected from in-situ archived cores, and two additional rinseate blanks were collected during archived core processing. Field duplicates, temperature blanks, and rinseate blanks were collected as outlined in the SIL Sediment FSP (Table 8). Rinseate blanks were collected by pouring deionized water over the sampling bowls and spoons after decontamination.

3.2.1 Sample Storage, Transport, and Custody

As stated in above, during archived core processing, homogenized sediment samples were distributed into the appropriate laboratory-provided sampling containers using a stainless-steel spoon, capped, and labeled. Subsamples of a given sample were placed together in zip-locked bags and packed in a cooler and logged on COCs. Coolers were moved to walk-in refrigerators at ALS Kelso. Ice in sealed plastic bags was then placed in the cooler to maintain a temperature of approximately 4ºC. Coolers were stored onboard until the end of the sampling day. At the end of the archived core processing, all coolers were repacked with bubble wrap to prevent breakage and iced for shipment. Each cooler was clearly labeled with the respective analytical laboratory name, name of project, company name, and contact phone number to enable positive identification. The associated chain-of-custody forms were placed into a zip-locked bag and taped on the inside lid of each cooler. A temperature blank was added to each cooler and a custody seal was applied. Coolers were then transferred to ALS Shipping for overnight shipment to the analytical laboratories. Custody was transferred directly for samples analyzed by ALS from PGG to ALS Sample Receiving.

3.2.2 Field Duplicates

A total of three field duplicates were collected from archived core samples. Field duplicate samples were stored, transported, and logged using the same procedures as standard sediment samples.

3.2.3 Field Rinseate Blanks

Consistent with the SIL Sediment FSP, two rinseate blank were collected during archived core processing. Rinseate blanks were collected by pouring deionized water over sampling equipment (spoons and bowls) after decontamination. Water poured over the equipment was collected in a stainless bowl and transferred to bottles using a decontaminated stainless-steel funnel. Rinseate blank bottles were stored, transported, and logged using the same procedures as standard sediment samples. Deionized water was sourced directly from ALS laboratory deionized water spigot in the core processing room.

3.3 LABORATORY DEVIATIONS FROM THE SIL SEDIMENT FSP

Analytical laboratories adhered to all QA/QC procedures outlined in the SIL Sediment FSP. Laboratories provided all data in electronic format and QA/QC reports, including a

narrative of the standard QA/QC protocols. Data validation and data management was performed according to the SIL Sediment FSP by a third-party data validator, Ecochem, Inc. (Appendix E).

Laboratory deviations from the SIL Sediment FSP include:

- TestAmerica transferred sample "L3-SC-00to10-102218" instead of requested sample "L3-SC-10to20-102218" to SGS Axys.

3.4 DATA QUALITY AND USABILITY

Independent data validation was performed on all results by Ecochem. Full validation (EPA Stage 4) was performed on a minimum of 10% of the data as specified in the SIL Sediment FSP. A summary-level (EPA Stage 2) validation review was conducted on the remaining data. The data validation report (Appendix E) summarizes data validation and provides detailed information regarding all data qualifiers.

Data qualified as undetected ("U") or not qualified are usable for the intended purposes. Data qualified as estimated ("J") or tentatively identified ("N") may be less accurate or precise than unqualified data though are usable for the intended purposes. Data not meeting the data quality criteria were qualified as undetected, estimated, tentatively identified, or rejected during validation, in accordance with the SIL Sediment FSP.

3.5 DATA MANAGEMENT

Following data validation, Ecochem provided PGG with composite EQuIS-formatted EDDs of the final validated data. PGG imported the EDDs into the project's Access-based structured Relational Database Management System (RDMS).

3.5.1 Calculated Totals

Individual analytes were used to calculate analyte totals following the procedures described in Appendix C3 of the PDI Evaluation Report (AECOM and Geosyntec 2019) and Appendix E3 of the SCRA Database and Data Management in the EPA's Portland Harbor Remedial Investigation (EPA 2016), and RD Guidance (EPA 2019). See Table 7 for a summary of calculated totals and required number of analytes.

The general summation rules are as follows:

- Calculated totals are the sum of all detected results plus a single value for all the non-detects of one half of the highest reporting detection limit for that sample. When all the individual analytes for a sample are non-detect, the highest detection limit is used and the result is qualified with a "U" flag.

- Total Toxic Equivalents (TEQs) (e.g. carcinogenic PAHs) are calculated using Toxicity Equivalency Factors (TEFs) for each analyte. Total TEQs are calculated as the sum of each detected concentration multiplied by the corresponding TEF

value plus a single value as one half of the highest toxicity-weighted non-detect concentration for that sample. When all the analytes were not detected in a given sample the reported total TEQ value was the highest analyte detection limit multiplied by the TEF and the result is qualified with a "U" flag.

- For PCB Aroclors, calculated totals have been updated per the RD Guidance from the sum of detected results (non-detects treated as zeros) to the sum of all detected results plus a single value for all the non-detects of one half of the highest reporting detection limit for that sample, consistent with other analyte totals. When all the individual analytes for a sample are non-detect, the highest detection limit is used, and the result is qualified with a "U" flag.

All totals calculations qualifiers are appended with "T" descriptors to indicate the value is a calculated total. Additionally, "A" descriptors are appended when the sum is based on a limited number of analytes. These rules are provided in Tables 9 and 10.

In the Aroclor data set from TestAmerica, a single Aroclor was detected per sample, either Aroclor 1254 or Aroclor 1260. Accordingly, Total PCB Aroclors sums are the single detected result plus half the highest detection limit or the highest detection limit when all results are non-detect. In contrast, ARI consistently quantified concentrations for two or three Aroclors, and the total PCB Aroclor is the sum of detections plus half of the highest detection limit for non-detect analytes.

Calculated totals are denoted in the project database using "CALC" in the analyte name field. Additionally, the analyte names also describe the parameter group that is summed (e.g. "TPAH" for Total PAHs, "LPAH" for Low molecular weight PAHs) and the treatment of non-detect values (e.g. "ND_PDI" for the PDI method for the addition of ½ the highest non-detect detection limit, and "ND_ZERO" for non-detects treated as zeros).

3.5.2 Significant Figures

Results provided by the analytical laboratories and data validator were stored as text and double data types. The text values retain the correct number of significant figures for the analytical data and calculated totals. The double data type retains the digits present in the original result. For calculated totals, this means all significant figures were carried through the calculation. For example, the sum of results with 2 significant figures each, 11 + 0.22, is stored in text type as "11" and double type as "11.22".

4.0 LABORATORY ANALYTICAL RESULTS

This section summarizes chemistry and physical parameters and data validation of surface and subsurface sediment samples.

4.1 SURFACE SEDIMENT RESULTS

Table 9 presents a summary of focused COC results for the surface sediment locations that were analyzed in Phase 1b, including the percent of detections, the range of detected concentrations, and percent of detections exceeding Remedial Action Levels (RALs).

Analytical results for focused COCs are provided in Tables 11a-g. Data tables containing full results for each Phase 1b sample are presented in Appendix F. Figures 3 through 8 present focused COC results by location.

4.2 SUBSURFACE SEDIMENT RESULTS

Table 10 presents a summary of focused COC results for the subsurface sediment samples analyzed during Phase 1b including the percent of detections, the range of detected concentrations, and percent of detections exceeding Remedial Action Levels (RALs).

Analytical results for focused COCs are provided in Tables 11a-g. Data tables containing full results for each sample are presented in Appendix F. Profiles of focused COC results for each core are included in Figures 9 through 15.

5.0 REFERENCES

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Table 1. Summary of Sediment Sample Types, Numbers, and Analyses

		Phase 1		Phase 1b		Phase 1		Phase 1b	
		Grab and Shore Samples		Grab and Shore Samples		Core Samples		Core Samples	
Parameter Group	Method	Number of Samples Analyzed	Number of Analysis Results[1]	Number of Samples Analyzed	Number of Analysis Results[1]	Number of Samples Analyzed	Number of Analysis Results[1]	Number of Samples Analyzed	Number of Analysis Results[1]
Conventionals - Density/Specific Gravity	D854	35	70	20	40	49	98	0	0
Conventionals - Grain Size	D422	35	210	20	120	49	294	0	0
Conventionals - TOC	SW9060	35	35	20	20	49	49	46	46
Conventionals - Total Solids	E160.3/D2216/SM2540G/PSEP	50	85	21	21	49	98	116	116
Dioxins/Furans	CWA1613B/E1613	35	875	25	408[a]	49	1225	69	2101
DDx and OC Pesticides	CWA1699M	39	563	18	288	49	711	62	372
PAHs	SW8270D-SIM	39	702	18	324	49	864	62	1116
PCB Aroclors	SW8082A	0	0	20	220	49	164	76	788
PCB Congeners	E1668A	35	6330	20	4460	0	0	11	0
Total Petroleum Hydrocarbons	NWTPH-Dx	35	70	20	40	49	98	0	0
Metals	SW6020B	35	175	20	100	49	245	0	0
Mercury	SW7471A	35	35	20	20	49	49	0	0
BEHP	SW8270	38	38	18	18	48	48	0	0
TBT	ALS Butyltin SOP[2]	39	38	18	18	48	48	0	0

[1] Number of laboratory-provided results, including laboratory provided summations of analyte sets
Summations calculated after laboratory analyses are not included in the result counts.
Rejected results are not included in the result counts. Field Duplicates are not included in counts.

[2] ALS Butyltin SOP is based on Krone et al 1989 and Unger et al 1986.

[a] Count does not include laboratory-provided sums and TEQs

DDx = dichlorodiphenyltrichloroethane and its derivatives

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyls

TOC = Total Organic Carbon

BEHP = Bis 2-Ethylhexyl phthalate

TBT - tributyltin

OC - organochlorine

Table 2. Sediment Location Information

Location ID	Target Location (NAD 83) X	Target Location (NAD 83) Y	Actual Location (NAD 83) X	Actual Location (NAD 83) Y	Water Depth (feet)	River Stage (feet NAVD 88)	Mudline Elev. (feet NAVD 88)
Grab and Shore Sample Locations							
A1	7633992	701477	7633984	701473	NA	4.9	5.73[a]
A2	7633929	701400	7633927	701400	25.05'	5.44	-19.61'
A3	7633865	701323	7633863	701327	28.00'	6.43	-21.57'
A4	7633802	701245	7633800	701243	32.92'	5.49	-27.43'
A5	7633739	701168	7633737	701167	34.63'	5.72	-28.91'
A6	7633675	701091	7633676	701091	36.60'	8.09	-28.51'
A7	7633612	701013	7633613	701014	33.15'	6.2	-26.95'
B1	7634038	701376	7634039	701364	11.30'	6.43	-4.87'
B2	7634006	701336	7634003	701336	21.34'	8.85	-12.49'
B3	7633943	701259	7633943	701263	25.54'	5.88	-19.66'
B4	7633879	701182	7633881	701179	34.40'	7.3	-27.10'
B5	7633816	701105	7633816	701104	35.38'	6.33	-29.05'
B6	7633752	701027	7633752	701026	36.60'	8.9	-27.70'
B7	7633689	700950	7633689	700951	33.41'	5.96	-27.45'
C1	7634116	701313	7634112	701313	8.41'	6.17	-2.24'
C2	7634083	701273	7634084	701268	18.16'	5.91	-12.25'
C3	7634020	701196	7634019	701195	25.77'	6.35	-19.42'
C4	7633957	701118	7633957	701118	34.30'	8.44	-25.86'
C5	7633893	701041	7633894	701041	36.10'	7.59	-28.51'
C6	7633830	700964	7633829	700964	35.12'	7.49	-27.63'
C7	7633766	700887	7633768	700886	33.41'	5.96	-27.45'
D1	7634208	701265	NS	NS	NS	NS	NS
D2	7634161	701210	7634154	701206	20.62'	5.82	-14.80'
D3	7634097	701132	7634097	701133	26.26'	7.02	-19.24'
D4	7634034	701055	7634034	701055	32.43'	6.44	-25.99'
D5	7633970	700978	7633970	700978	35.38'	7.1	-28.28'
D6	7633907	700900	7633907	700900	34.89'	7.39	-27.50'
D7	7633843	700823	7633844	700823	30.69'	6.47	-24.22'
E1	7634286	701201	7634296	701170	6.41'	6.89	0.48'
E2	7634238	701146	7634228	701144	23.31'	7.17	-16.14'
E3	7634175	701069	7634178	701070	27.02'	7.22	-19.80'
E4	7634111	700991	7634111	700997	33.64'	7.38	-26.26'
E5	7634048	700914	7634041	700921	36.10'	8	-28.10'
E6	7633984	700837	7633983	700840	35.88'	7.59	-28.29'
E7	7633921	700760	7633920	700760	36.10'	8.16	-27.94'
F1	7634363	701138	7634355	701129	11.01'	7.49	-3.52'
F2	7634315	701083	7634318	701080	21.11'	7.04	-14.07'

Table 2. Sediment Location Information

Location ID	Target Location (NAD 83) X	Target Location (NAD 83) Y	Actual Location (NAD 83) X	Actual Location (NAD 83) Y	Water Depth (feet)	River Stage (feet NAVD 88)	Mudline Elev. (feet NAVD 88)
F3	7634252	701005	7634253	701005	26.26'	6.46	-19.80'
F4	7634188	700928	7634189	700928	32.92'	6.95	-25.97'
F5	7634125	700851	7634124	700852	35.12'	7.21	-27.91'
F6	7634062	700773	7634060	700776	29.71'	7.42	-22.29'
F7	7633998	700696	7634001	700696	36.37'	7.72	-28.65'
G1	7634447	701088	7634430	701081	11.63'	7.73	-3.90'
G2	7634393	701019	7634389	701010	21.60'	7.27	-14.33'
G3	7634329	700942	7634330	700937	23.38'	4.89	-18.49'
G4	7634266	700865	7634264	700865	32.66'	7.32	-25.34'
G5	7634202	700787	7634203	700787	32.66'	5.56	-27.10'
G6	7634139	700710	7634140	700711	35.12'	7.44	-27.68'
G7	7634075	700633	7634074	700640	37.35'	7.51	-29.84'
H1	7634524	701024	7634512	701005	11.76'	7.24	-4.52'
H2	7634470	700956	7634467	700952	21.60'	7.84	-13.76'
H3	7634406	700878	7634406	700879	25.05'	6.17	-18.88'
H4	7634343	700801	7634343	700800	31.94'	5.9	-26.04'
H5	7634280	700724	7634279	700722	33.41'	5.74	-27.67'
H6	7634216	700647	7634214	700661	35.12'	6.01	-29.11'
H7	7634153	700569	7634152	700569	36.60'	5.85	-30.75'
I1	7634601	700961	7634580	700947	10.09'	5.8	-4.29'
I2	7634547	700892	7634544	700894	22.10'	8.51	-13.59'
I3	7634484	700815	7634482	700818	21.77'	4.45	-17.32'
I4	7634420	700738	NS	NS	NS	NS	NS
I5	7634357	700660	7634357	700657	34.10'	7.28	-26.82'
I6	7634293	700583	7634294	700580	34.63'	6.99	-27.64'
I7	7634230	700506	7634240	700508	36.30'	8.15	-28.15'
J1	7634692	700903	7634604	700919	13.34'	5.75	-7.59'
J2A3	7634624	700829	7634615	700815	17.10'	6.71	-10.39'
J2A4	7634624	700829	7634610	700818	15.90'	6.61	-9.29'
J3	7634561	700752	7634556	700747	26.26'	8.09	-18.17'
J4	7634498	700674	7634492	700672	34.40'	8.42	-25.98'
J5	7634434	700597	7634428	700600	35.88'	8.7	-27.18'
J6	7634371	700520	7634368	700517	36.37'	8.66	-27.71'
J7	7634307	700442	7634304	700441	33.15'	5.71	-27.44'
K1	7634758	700834	7634747	700814	NA	6.22	7.39[a]
K2	7634702	700765	7634702	700754	16.29'	7.19	-9.10'
K3	7634638	700688	7634640	700685	20.42'	7.13	-13.29'
K4	7634575	700611	7634575	700610	28.43'	5.39	-23.04'

Table 2. Sediment Location Information

Location ID	Target Location (NAD 83) X	Target Location (NAD 83) Y	Actual Location (NAD 83) X	Actual Location (NAD 83) Y	Water Depth (feet)	River Stage (feet NAVD 88)	Mudline Elev. (feet NAVD 88)
K5	7634511	700533	7634511	700533	31.12'	5.15	-25.97'
K6	7634448	700456	7634448	700455	31.94'	4.98	-26.96'
K7	7634385	700379	7634409	700400	31.94'	4.81	-27.13'
L1	7634835	700770	7634830	700759	NA	6.89	6.67[a]
L2	7634779	700702	7634786	700714	15.44'	6.03	-9.41'
L3	7634716	700625	7634719	700627	21.11'	6.38	-14.73'
L4	7634652	700547	7634649	700541	29.97'	6.7	-23.27'
L5	7634589	700470	7634586	700477	0.00'	6.89	6.89'
L6	7634525	700393	7634523	700395	34.63'	7.28	-27.35'
L7	7634462	700315	7634491	700340	35.61'	7.57	-28.04'
M1	7634912	700707	7634890	700705	NA	7.21	NC
M2	7634856	700638	NS	NS	NS	NS	NS
M3	7634793	700561	7634789	700559	24.23'	6.59	-17.64'
M4	7634729	700484	7634730	700480	29.41'	6.55	-22.86'
M5	7634666	700407	7634669	700406	31.18'	5.09	-26.09'
M6	7634603	700329	7634598	700332	31.02'	4.79	-26.23'
M7	7634539	700252	7634556	700296	32.10'	4.73	-27.37'
N1	7634990	700643	7634981	700630	NA	7.31	NC
N2	7634934	700575	NS	NS	NS	NS	NS
N3	7634870	700498	7634869	700496	25.54'	5.36	-20.18'
N4	7634807	700420	7634814	700421	30.46'	5.15	-25.31'
N5	7634743	700343	7634746	700343	30.69'	5.18	-25.51'
N6	7634680	700266	7634679	700261	31.80'	5.37	-26.43'
N7	7634616	700189	7634641	700178	33.15'	5.69	-27.46'
O1	7635067	700580	7635072	700559	NA	7.16	NC
O2	7635011	700512	NS	NS	NS	NS	NS
O3	7634947	700434	7634942	700441	27.30'	5.97	-21.33'
O4	7634884	700357	7634882	700355	31.94'	7.32	-24.62'
O5	7634821	700280	7634822	700287	32.92'	7.86	-25.06'
O6	7634757	700202	7634758	700202	35.12'	8.12	-27.00'
O7	7634694	700125	7634695	700126	34.63'	8.18	-26.45'
P1	7635152	700525	7635135	700497	NA	6.45	NC
P2	7635088	700448	NS	NS	NS	NS	NS
P3	7635025	700371	7635059	700347	28.00'	6.42	-21.58'
P4	7634961	700294	7634963	700295	29.97'	5.77	-24.20'

Table 2. Sediment Location Information

Location ID	Target Location (NAD 83) X	Target Location (NAD 83) Y	Actual Location (NAD 83) X	Actual Location (NAD 83) Y	Water Depth (feet)	River Stage (feet NAVD 88)	Mudline Elev. (feet NAVD 88)
P5	7634898	700216	7634898	700215	30.10'	5.05	-25.05'
P6	7634834	700139	7634834	700141	34.40'	6.16	-28.24'
P7	7634771	700062	NS	NS	NS	NS	NS
Q1	7635229	700462	7635211	700437	NA	6.39	NC
Q2	7635166	700385	7635155	700380	5.72'	4.26	-1.46'
Q3	7635102	700307	7635115	700303	25.77'	5.34	-20.43'
Q4	7635039	700230	7635039	700229	29.28'	5.96	-23.32'
Q5	7634975	700153	7634976	700155	30.20'	5.74	-24.46'
Q6	7634912	700075	7634912	700077	31.45'	5.52	-25.93'
Q7	7634848	699998	NS	NS	NS	NS	NS
R1	7635306	700398	7635294	700378	NA	6.2	8.34[a]
R2	7635243	700321	7635226	700305	11.37'	4.48	-6.89'
R3	7635179	700244	7635176	700233	26.75'	4.33	-22.42'
R4	7635116	700167	7635116	700167	30.33'	6.94	-23.39'
R5	7635052	700089	7635053	700092	28.70'	7.11	-21.59'
R6	7634989	700012	7634992	700015	33.28'	6.83	-26.45'
R7	7634926	699935	NS	NS	NS	NS	NS
S1	7635384	700335	7635380	700323	NA	6.17	7.94[a]
S2	7635320	700258	7635321	700250	6.45'	6.23	-0.22'
S3	7635257	700180	7635265	700177	25.84'	4.64	-21.20'
S4	7635193	700103	7635190	700105	27.80'	4.96	-22.84'
S5	7635130	700026	7635130	700027	28.49'	5.13	-23.36'
S6	7635066	699949	7635067	699949	30.95'	5.34	-25.61'
S7	7635003	699871	NS	NS	NS	NS	NS
T1	7635461	700272	7635454	700257	NA	5.97	8.22[a]
T2	7635397	700194	7635385	700201	14.02'	6.67	-7.35'
T3	7635334	700117	7635333	700118	27.25'	5.82	-21.43'
T4	7635270	700040	7635270	700040	28.00'	6	-22.00'
T5	7635207	699962	7635209	699964	28.99'	6.19	-22.80'
T6	7635144	699885	7635145	699887	31.45'	6.4	-25.05'
T7	7635080	699808	7635076	699811	32.30'	6.64	-25.66'

Table 2. Sediment Location Information

Location ID	Target Location (NAD 83) X	Target Location (NAD 83) Y	Actual Location (NAD 83) X	Actual Location (NAD 83) Y	Water Depth (feet)	River Stage (feet NAVD 88)	Mudline Elev. (feet NAVD 88)
Core Sample Locations							
D6-SC	7633907	700900	7633913	700913	34.63'	6.89	-27.74'
H3-SC	7634406	700878	7634399	700882	23.10'	5.31	-17.79'
J3-SC	7634561	700752	7634552	700761	16.26'	5.14	-11.12'
J5-SC	7634434	700597	7634424	700618	32.79'	6.18	-26.61'
J6-SC	7634371	700520	7634373	700517	34.14'	8.25	-25.89'
L3-SC	7634716	700625	7634702	700623	21.28'	6.4	-14.88'
R4-SC	7635116	700167	7635121	700172	32.66'	8.29	-24.37'

[a] Shore sample elevation is from 2018 Bathymetry (AECOM & Geosyntec 2019).

Oregon State Plane Coordinate System, Oregon North Zone

Horizontal Locations (X,Y) are North American Datum 1983 (NAD83), international feet

NAVD88 - North American Vertical Datum 1988

River stage is from the Morrison Street Bridge Station (PRT03)

Elev. = Elevation

NA = depth not measured for shore samples

NC = not calculated

NS = Not Sampled, see report for explanation by location

Table 3. Sediment Sample Dates and Analyses - Phase 1b Surface Samples

Sample ID	Sample Date	Top (cm)	Bottom (cm)	Analytical Methods															
				D854 Sp. Gravity	D422 Grain Size	SW9060/ PSEP TOC	E160.3 T. Solids	D2216 T. Solids	CWA1613B/ E1613 Dioxins/Furans	SW8270D-SIM PAHs	SW8082A PCB Arcolors	E1668A PCB Congeners	CWA1699M DDx	NWTPH-Dx TPH	SW6020B Metals	SW7471A Mercury	SW8270D BEHP	ALS SOP TBT	Field Duplicate
Grab and Shore Samples																			
A1-0to30-102018	10/20/18 12:05 PM	0	30	X	X	X	Y/X	X	X	Y/X	X	X	Y/X	X	X	X	Y/X	Y/X	
A2-0to26-100818	10/8/18 2:04 PM	0	26	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
A3-0to31-100818	10/8/18 11:14 AM	0	30	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
A4-0to25-100818	10/8/18 1:26 PM	0	25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
A5-0to25-100818	10/8/18 2:38 PM	0	25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
A6-0to23-100818	10/8/18 4:08 PM	0	23	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
A7-0to26-100918	10/9/18 1:23 PM	0	26	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
B1-0to20-101418	10/14/18 12:58 PM	0	20	Y	Y	Y	Y	Y	Y/X	Y	-	Y	Y	Y	Y	Y	Y	Y	
B2-0to22-101218	10/12/18 8:22 AM	0	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
B3-0to21-100818	10/8/18 12:16 PM	0	21	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	
B4-0to26-100818	10/8/18 3:40 PM	0	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
B5-0to26-100818	10/8/18 3:07 PM	0	26	Y	Y	Y	Y	Y	Y/X	Y	-	Y	Y	Y	Y	Y	Y	Y	
B6-0to27-100818	10/8/18 4:43 PM	0	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
B7-0to30-100918	10/9/18 2:13 PM	0	30	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	
C1-0to22-101418	10/14/18 1:46 PM	0	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
C2-0to17-101018	10/10/18 2:29 PM	0	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
C3-0to26-101018	10/10/18 1:17 PM	0	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
C4-0to27-100918	10/9/18 8:28 AM	0	27	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
C5-0to28-100918	10/9/18 9:44 AM	0	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
C6-0to29-100918	10/9/18 10:16 AM	0	29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
C7-0to30-100918	10/9/18 2:55 PM	0	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
D2-0to19-101018	10/10/18 3:21 PM	0	19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
D3-0to26-101018	10/10/18 11:53 AM	0	26	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	
D4-0to27-100918	10/9/18 12:51 PM	0	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
D5-0to28-100918	10/9/18 11:37 AM	0	28	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	
D6-0to29-100918	10/9/18 10:50 AM	0	29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
D7-0to28-100918	10/9/18 3:35 PM	0	28	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	
E1-0to20-101418	10/14/18 12:04 PM	0	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
E2-0to23-101118	10/11/18 5:18 PM	0	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
E3-0to27-101018	10/10/18 11:16 AM	0	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
E4-0to27-101018	10/10/18 10:41 AM	0	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
E5-0to25-101018	10/10/18 9:25 AM	0	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
E6-0to27-101018	10/10/18 10:07 AM	0	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
E7-0to26-101118	10/11/18 9:47 AM	0	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
F1-0to23-101418	10/14/18 11:08 AM	0	23	Y	Y	Y	Y	Y	Y/X	Y	-	Y	Y	Y	Y	Y	Y	Y	
F2-0to19-101018	10/10/18 4:36 PM	0	19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
F3-0to27-101118	10/11/18 1:27 PM	0	27	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	
F4-0to27-101118	10/11/18 12:14 PM	0	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
F5-0to28-101118	10/11/18 11:27 AM	0	28	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	
F6-0to27-101118	10/11/18 10:52 AM	0	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
F7-0to27-101118	10/11/18 10:16 AM	0	27	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	
G1-0to24-101418	10/14/18 10:12 AM	0	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
G2-0to28-101218	10/12/18 11:25 AM	0	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
G3-0to32-101818	10/18/18 11:11 AM	0	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
G4-0to28-101818	10/18/18 1:43 PM	0	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
G5-0to28-101818	10/18/18 11:50 AM	0	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
G6-0to27-101818	10/18/18 2:12 PM	0	27	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
G7-0to28-101818	10/18/18 3:34 PM	0	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Table 3. Sediment Sample Dates and Analyses - Phase 1b Surface Samples

Sample ID	Sample Date	Top (cm)	Bottom (cm)	Analytical Methods															
				D854	D422	SW9060/ PSEP	E160.3	D2216	CWA1613B/ E1613	SW8270D-SIM	SW8082A	E1668A	CWA1699M	NWTPH-Dx	SW6020B	SW7471A	SW8270D	ALS SOP	Field Duplicate
				Sp. Gravity	Grain Size	TOC	T. Solids	T. Solids	Dioxins/Furans	PAHs	PCB Arcolors	PCB Congeners	DDx	TPH	Metals	Mercury	BEHP	TBT	
H1-0to24-101418	10/14/18 9:09 AM	0	24	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	
H2-0to30-101218	10/12/18 10:28 AM	0	30	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
H3-0to28-101118	10/11/18 2:06 PM	0	28	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	
H4-0to28-101118	10/11/18 2:47 PM	0	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
H5-0to29-101118	10/11/18 3:31 PM	0	29	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	
H6-0to27-101118	10/11/18 4:27 PM	0	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
H7-0to24-101218	10/12/18 3:14 PM	0	24	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	
I1-0to19-101318	10/13/18 3:59 PM	0	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
I2-0to31-101218	10/12/18 9:36 AM	0	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
I3-0to30-101818	10/18/18 10:35 AM	0	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
I5-0to32-101818	10/18/18 4:17 PM	0	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
I6-0to30-101818	10/18/18 4:48 PM	0	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
I7-0to26-101918	10/19/18 4:12 PM	0	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
J1-0to20-101318	10/13/18 5:11 PM	0	20	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	
J2A3-0to18-101218	10/12/18 12:58 PM	0	18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
J2A4-0to14-101218	10/12/18 1:20 PM	0	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
J3-0to26-101318	10/13/18 10:51 AM	0	26	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	
J4-0to29-101318	10/13/18 10:22 AM	0	29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
J5-0to29-101318	10/13/18 9:36 AM	0	29	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	
J6-0to30-101318	10/13/18 9:01 AM	0	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
J7-0to26-101218	10/12/18 3:52 PM	0	26	Y	Y	Y	Y	Y	Y/X	Y	-	Y	Y	Y	Y	Y	Y	Y	
K1-0to30-101518	10/15/18 9:30 AM	0	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
K2-0to20-101718	10/17/18 2:40 PM	0	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
K3-0to19-101718	10/17/18 1:19 PM	0	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
K4-0to28-101918	10/19/18 8:11 AM	0	28	-	-	-	Y	-	-	-	-	-	-	-	-	-	-	-	
K5-0to27-101918	10/19/18 8:50 AM	0	27	-	-	-	Y	-	-	-	-	-	-	-	-	-	-	-	
K6-0to28-101918	10/19/18 9:26 AM	0	28	-	-	-	Y	-	-	-	-	-	-	-	-	-	-	-	
K7-0to24-101918	10/19/18 10:08 AM	0	24	-	-	-	Y	-	-	-	-	-	-	-	-	-	-	-	
L1-0to30-101518	10/15/18 10:10 AM	0	30	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	
L2-0to22-101318	10/13/18 3:25 PM	0	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
L3-0to20-101318	10/13/18 2:33 PM	0	20	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	
L4-0to28-101318	10/13/18 1:47 PM	0	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
L5-0to26-101318	10/13/18 1:13 PM	0	26	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	
L6-0to28-101318	10/13/18 12:08 PM	0	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
L7-0to29-101318	10/13/18 11:36 AM	0	29	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	
M1-0to30-101518	10/15/18 10:40 AM	0	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
M3-0to27-101718	10/17/18 12:01 PM	0	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
M4-0to26-101918	10/19/18 1:11 PM	0	26	X	X	X	Y/X	X	X	X	X	X	X	X	X	X	X	X	
M5-0to25-101918	10/19/18 11:55 AM	0	25	-	-	-	Y	-	-	-	-	-	-	-	-	-	-	-	
M6-0to26-101918	10/19/18 11:18 AM	0	26	-	-	-	Y	-	-	-	-	-	-	-	-	-	-	-	
M7-0to29-101918	10/19/18 10:48 AM	0	29	-	-	-	Y	-	-	-	-	-	-	-	-	-	-	-	
N1-0to30-101518	10/15/18 11:40 AM	0	30	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	
N3-0to26-101518	10/15/18 8:46 AM	0	26	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	
N4-0to29-101418	10/14/18 5:23 PM	0	29	-	-	-	-	-	-	Y	-	-	-	-	-	-	-	-	
N5-0to28-101418	10/14/18 4:46 PM	0	28	X	X	X	Y	X	X	Y	X	X	Y	X	X	X	Y	Y	
N6-0to28-101418	10/14/18 11:04 AM	0	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
N7-0to27-101418	10/14/18 3:10 PM	0	27	X	X	X	Y	X	X	Y	X	X	Y	X	X	X	Y	Y	
O1-0to30-101518	10/15/18 12:10 PM	0	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
O3-0to27-101718	10/17/18 11:22 AM	0	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Table 3. Sediment Sample Dates and Analyses - Phase 1b Surface Samples

Sample ID	Sample Date	Top (cm)	Bottom (cm)	Analytical Methods															
				D854	D422	SW9060/ PSEP	E160.3	D2216	CWA1613B/ E1613	SW8270D-SIM	SW8082A	E1668A	CWA1699M	NWTPH-Dx	SW6020B	SW7471A	SW8270D	ALS SOP	Field Duplicate
				Sp. Gravity	Grain Size	TOC	T. Solids	T. Solids	Dioxins/Furans	PAHs	PCB Arcolors	PCB Congeners	DDx	TPH	Metals	Mercury	BEHP	TBT	
O4-0to28-101918	10/19/18 1:48 PM	0	28	-	-	-	Y	-	-	-	-	-	-	-	-	-	-	-	
O5-0to27-101918	10/19/18 2:23 PM	0	27	-	-	-	Y	-	-	-	-	-	-	-	-	-	-	-	
O6-0to27-101918	10/19/18 2:57 PM	0	27	-	-	-	Y	-	-	-	-	-	-	-	-	-	-	-	
O7-0to27-101918	10/19/18 3:36 PM	0	27	X	X	X	Y/X	X	X	X	X	X	X	X	X	X	X	X	
P1-0to30-101518	10/15/18 1:50 PM	0	30	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	
P3-0to29-101618	10/16/18 10:50 AM	0	29	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	
P4-0to29-101618	10/16/18 10:08 AM	0	29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
P5-0to26-101618	10/16/18 9:16 AM	0	26	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	
P6-0to27-101518	10/15/18 9:27 AM	0	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Q1-0to30-101518	10/15/18 2:00 PM	0	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Q2-0to13-101818	10/18/18 9:39 AM	0	13	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Q3-0to26-101718	10/17/18 10:48 AM	0	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Q4-0to27-102018	10/20/18 8:16 AM	0	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Q5-0to29-102018	10/20/18 8:45 AM	0	29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Q6-0to27-102018	10/20/18 9:19 AM	0	27	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
R1-0to30-101518	10/15/18 2:37 PM	0	30	Y	Y	Y	Y/X	Y	Y/X	Y	-	Y	Y	Y	Y	Y	Y	Y	
R2-0to10-101818	10/18/18 8:42 AM	0	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
R3-0to33-101718	10/17/18 9:28 AM	0	30	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	
R4-0to28-101618	10/16/18 1:23 PM	0	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
R5-0to25-101618	10/16/18 12:09 PM	0	25	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	
R6-0to29-101618	10/16/18 11:25 AM	0	29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
S1-0to30-101518	10/15/18 2:45 PM	0	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
S2-0to10-101718	10/17/18 4:37 PM	0	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
S3-0to30-101718	10/17/18 10:05 AM	0	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
S4-0to28-102018	10/20/18 10:59 AM	0	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
S5-0to27-102018	10/20/18 10:23 AM	0	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
S6-0to25-102018	10/20/18 9:48 AM	0	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
T1-0to30-101518	10/15/18 3:35 PM	0	30	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	
T2-0to22-101718	10/17/18 3:48 PM	0	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
T3-0to28-101618	10/16/18 4:30 PM	0	28	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	
T4-0to27-101618	10/16/18 3:49 PM	0	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
T5-0to26-101618	10/16/18 3:13 PM	0	26	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	
T6-0to29-101618	10/16/18 2:38 PM	0	29	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
T7-0to31-101618	10/16/18 2:00 PM	0	30	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	
511-0to28-100918	10/9/18 11:37 AM	0	28	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	X
512-0to28-101118	10/11/18 11:27 AM	0	28	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	X
513-0to26-101318	10/13/18 1:13 PM	0	26	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	X
514-0to29-101618	10/16/18 11:25 AM	0	29	-	-	-	Y	-	-	Y	-	-	Y	-	-	-	Y	Y	X
515-0to26-101918	10/19/18 1:11 PM	0	26	X	X	X	Y/X	X	X	X	X	X	X	X	X	X	X	X	X

"Y" indicates sample was analyzed by listed method, "-" indicates sample was not analyzed.

"X" with grey fill indicates Phase 1b analysis

Sp. Gravity = Specific Gravity/Density

T. Solids = Total Solids

DDx = dichlorodiphenyltrichloroethane and its derivatives

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyls

TOC = Total Organic Carbon

TPH = Total Petroleum Hydrocarbons

BEHP = Bis 2-Ethylhexyl phthalate

MS/MSD = matrix spike/matrix spike duplicate

TBT - tributyltin

Table 4a. Sediment Sample Dates and Analyses - Core D6

Sample ID	Sample Date	Top (cm)	Bottom (cm)	Analytical Methods														
				D854 Sp. Gravity	D422 Grain Size	SW9060 TOC	E160.3/ D2216/ SM2540G/ PSEP T. Solids	CWA1613B/ E1613 Dioxins/Furans	SW8270D-SIM PAHs	SW8082A PCB Arcolors	E1668A PCB Congeners	CWA1699M DDx	NWTPH-Dx TPH	SW6020B Metals	SW7471A Mercury	SW8270D BEHP	ALS SOP TBT	Field Duplicate
Core Samples																		
D6-SC-0to1-102118	10/21/2018 16:00	0	30	Y	Y	Y	Y	Y	Y	Y/X	-	Y	Y	Y	Y	Y	Y	
D6-SC-1to2-102118	10/21/2018 16:15	30	61	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
D6-SC-2to4-102118	10/21/2018 16:30	61	122	Y	Y	Y	Y	Y/X	Y	Y	-	Y	Y	Y	Y	Y	Y	
D6-SC-40to64-102118	10/21/2018 16:50	122	195	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
D6-SC-64to88-102118	10/21/2018 17:40	195	268	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
D6-SC-88to108-102118	10/21/2018 17:50	268	329	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
D6-SC-108to123-102118	10/21/2018 18:00	329	375	Y	Y	Y	Y	Y/X	Y	Y	-	Y	Y	Y	Y	Y	Y	
Archived Core Samples																		
d6-sc1b-10to20-82619	8/26/2019 12:10	30	61	-	-					X	-		-	-	-	-	-	
d6-sc1b-20to30-82619	8/26/2019 12:45	61	91	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
d6-sc1b-30to40-82619	8/26/2019 13:00	91	122	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
d6-sc1b-40to50-82619	8/26/2019 14:45	122	152	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
d6-sc1b-50to60-82619	8/26/2019 14:50	152	183	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
411-sc1b-50to60-82619	8/26/2019 15:00	152	183	-	-	X	X	X	X	X	-	X	-	-	-	-	-	X
d6-sc1b-60to70-82619	8/26/2019 15:30	183	213	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
d6-sc1b-70to80-82619	8/26/2019 15:40	213	244	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
d6-sc1b-80to90-82619	8/26/2019 16:55	244	274	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
d6-sc1b-90to100-82619	8/26/2019 17:00	274	305	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
d6-sc1b-100to110-82619	8/26/2019 17:40	305	335	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
d6-sc1b-110to120-82619	8/26/2019 17:50	335	366	-	-	X	X	X	X	X	-	X	-	-	-	-	-	

"Y" indicates sample was analyzed by listed method, "-" indicates sample was not analyzed.
"X" with grey fill indicates Phase 1b analysis
Sp. Gravity = Specific Gravity/Density
T. Solids = Total Solids
DDx = dichlorodiphenyltrichloroethane and its derivatives
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyls
TOC = Total Organic Carbon
TPH = Total Petroleum Hydrocarbons
BEHP = Bis 2-Ethylhexyl phthalate
MS/MSD = matrix spike/matrix spike duplicate
TBT - tributyltin

Table 4b. Sediment Sample Dates and Analyses - Core J3

Sample ID	Sample Date	Top (cm)	Bottom (cm)	Analytical Methods														
				D854 Sp. Gravity	D422 Grain Size	SW9060 TOC	E160.3/ D2216/ SM2540G/ PSEP T. Solids	CWA1613B/ E1613 Dioxins/Furans	SW8270D-SIM PAHs	SW8082A PCB Arcolors	E1668A PCB Congeners	CWA1699M DDx	NWTPH-Dx TPH	SW6020B Metals	SW7471A Mercury	SW8270D BEHP	ALS SOP TBT	Field Duplicate
Core Samples																		
J3-SC-00to10-102218	10/22/2018 12:40	0	30	Y	Y	Y	Y	Y	Y	Y/X	-	Y	Y	Y	Y	Y	Y	
J3-SC-10to20-102218	10/22/2018 12:50	30	61	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
J3-SC-20to36-102218	10/22/2018 13:00	61	110	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
J3-SC-36to45-102218	10/22/2018 14:25	110	137	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
J3-SC-45to55-102218	10/22/2018 14:35	137	168	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
J3-SC-55to76-102218	10/22/2018 14:45	168	232	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
J3-SC-76to98-102218	10/22/2018 14:55	232	299	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
Archived Core Samples																		
j3-sc1b-10to20-82719	8/27/2019 9:55	30	61	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
j3-sc1b-20to30-82719	8/27/2019 10:00	61	91	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
j3-sc1b-30to40-82719	8/27/2019 10:05	91	122	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
j3-sc1b-40to50-82719	8/27/2019 11:20	122	152	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
j3-sc1b-50to60-82719	8/27/2019 11:25	152	183	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
j3-sc1b-60to70-82719	8/27/2019 11:30	183	213	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
j3-sc1b-70to80-82719	8/27/2019 11:35	213	244	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
j3-sc1b-80to90-82719	8/27/2019 12:20	244	274	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
412-sc1b-80to90-82719	8/27/2019 12:35	244	274	-	-	X	X	X	X	X	-	X	-	-	-	-	-	X
j3-sc1b-90to100-82719	8/27/2019 12:25	274	305	-	-	X	X	X	X	X	-	X	-	-	-	-	-	

"Y" indicates sample was analyzed by listed method, "-" indicates sample was not analyzed.
"X" with grey fill indicates Phase 1b analysis
Sp. Gravity = Specific Gravity/Density
T. Solids = Total Solids
DDx = dichlorodiphenyltrichloroethane and its derivatives
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyls
TOC = Total Organic Carbon
TPH = Total Petroleum Hydrocarbons
BEHP = Bis 2-Ethylhexyl phthalate
MS/MSD = matrix spike/matrix spike duplicate
TBT - tributyltin

Table 4c. Sediment Sample Dates and Analyses - Core J5

Sample ID	Sample Date	Top (cm)	Bottom (cm)	Analytical Methods														
				D854 Sp. Gravity	D422 Grain Size	SW9060 TOC	E160.3/ D2216/ SM2540G/ PSEP T. Solids	CWA1613B/ E1613 Dioxins/Furans	SW8270D-SIM PAHs	SW8082A PCB Arcolors	E1668A PCB Congeners	CWA1699M DDx	NWTPH-Dx TPH	SW6020B Metals	SW7471A Mercury	SW8270D BEHP	ALS SOP TBT	Field Duplicate
Core Samples																		
J5-SC-00to10-102218	10/22/2018 16:00	0	30	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
J5-SC-10to20-102218	10/22/2018 16:10	30	61	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
J5-SC-20to40-102218	10/22/2018 16:30	61	122	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
J5-SC-40to60-102218	10/22/2018 16:40	122	183	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
J5-SC-60to80-102218	10/22/2018 16:50	183	244	Y	Y	Y	Y	Y/X	Y	Y	-	Y/X	Y	Y	Y	Y	Y	
J5-SC-80to95-102218	10/22/2018 17:10	244	290	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
J5-SC-95to110-102218	10/22/2018 17:20	290	335	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
Archived Core Samples																		
j5-sc1b-00to10-82719	8/27/2019 14:45	0	30	-	-	-	-	-	-	X	X	-	-	-	-	-	-	
j5-sc1b-10to20-82719	8/27/2019 14:50	30	61	-	-	-	-	-	-	X	X	-	-	-	-	-	-	
j5-sc1b-20to30-82719	8/27/2019 14:55	61	91	-	-	-	X	X	X	X	X	X	-	-	-	-	-	
j5-sc1b-30to40-82719	8/27/2019 15:00	91	122	-	-	-	X	X	X	X	X	X	-	-	-	-	-	
j5-sc1b-40to50-82719	8/27/2019 16:10	122	152	-	-	-	X	X	X	X	X	X	-	-	-	-	-	
j5-sc1b-50to60-82719	8/27/2019 16:15	152	183	-	-	-	X	X	X	X	X	X	-	-	-	-	-	
j5-sc1b-60to70-82719	8/27/2019 16:20	183	213	-	-	-	X	X	X	X	X	X	-	-	-	-	-	
j5-sc1b-70to80-82719	8/27/2019 16:25	213	244	-	-	-	X	X	X	X	X	X	-	-	-	-	-	
j5-sc1b-80to90-82719	8/27/2019 17:25	244	274	-	-	-	X	X	X	X	X	X	-	-	-	-	-	
j5-sc1b-90to100-82719	8/27/2019 17:30	274	305	-	-	-	X	X	X	X	X	X	-	-	-	-	-	
j5-sc1b-100to110-82719	8/27/2019 17:35	305	335	-	-	-	X	X	X	X	X	X	-	-	-	-	-	

"Y" indicates sample was analyzed by listed method, "-" indicates sample was not analyzed.
"X" with grey fill indicates Phase 1b analysis
Sp. Gravity = Specific Gravity/Density
T. Solids = Total Solids
DDx = dichlorodiphenyltrichloroethane and its derivatives
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyls
TOC = Total Organic Carbon
TPH = Total Petroleum Hydrocarbons
BEHP = Bis 2-Ethylhexyl phthalate
MS/MSD = matrix spike/matrix spike duplicate
TBT - tributyltin

Table 4d. Sediment Sample Dates and Analyses - Core J6

Sample ID	Sample Date	Top (cm)	Bottom (cm)	Analytical Methods														
				D854 Sp. Gravity	D422 Grain Size	SW9060 TOC	E160.3/ D2216/ SM2540G/ PSEP T. Solids	CWA1613B/ E1613 Dioxins/Furans	SW8270D-SIM PAHs	SW8082A PCB Arcolors	E1668A PCB Congeners	CWA1699M DDx	NWTPH-Dx TPH	SW6020B Metals	SW7471A Mercury	SW8270D BEHP	ALS SOP TBT	Field Duplicate
Core Samples																		
J6-SC-00to10-102218	10/22/2018 18:00	0	30	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
J6-SC-10to20-102218	10/22/2018 18:10	30	61	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
J6-SC-20to40-102218	10/22/2018 18:20	61	122	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
J6-SC-40to60-102218	10/22/2018 18:50	122	183	Y	Y	Y	Y	Y/X	Y	Y	-	Y	Y	Y	Y	Y	Y	
J6-SC-60to80-102218	10/22/2018 19:00	183	244	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
J6-SC-80to96-102218	10/22/2018 19:30	244	293	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
J6-SC-96to111-102218	10/22/2018 19:40	293	338	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
J6-SC-111to121-102218	10/22/2018 19:50	338	369	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
Archived Core Samples																		
j6-sc1b-00to10-82719	8/27/2019 19:30	0	30	-	-	-	-	-	-	X	-	-	-	-	-	-	-	
j6-sc1b-10to20-82719	8/27/2019 19:35	30	61	-	-	-	-	-	-	X	-	-	-	-	-	-	-	
j6-sc1b-20to30-82819	8/28/2019 9:20	61	91	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
j6-sc1b-30to40-82819	8/28/2019 9:25	91	122	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
j6-sc1b-40to50-82819	8/28/2019 10:25	122	152	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
413-sc1b-40to50-82819	8/28/2019 10:45	122	152	-	-	X	X	X	X	X	-	X	-	-	-	-	-	X
j6-sc1b-50to60-82819	8/28/2019 10:30	152	183	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
j6-sc1b-60to70-82819	8/28/2019 10:35	183	213	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
j6-sc1b-70to80-82819	8/28/2019 10:40	213	244	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
j6-sc1b-80to90-82819	8/28/2019 11:55	244	274	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
j6-sc1b-90to100-82819	8/28/2019 12:00	274	305	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
j6-sc1b-100to110-82819	8/28/2019 12:05	305	335	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
j6-sc1b-110to120-82819	8/28/2019 12:10	335	366	-	-	X	X	X	X	X	-	X	-	-	-	-	-	

"Y" indicates sample was analyzed by listed method, "-" indicates sample was not analyzed.
"X" with grey fill indicates Phase 1b analysis
Sp. Gravity = Specific Gravity/Density
T. Solids = Total Solids
DDx = dichlorodiphenyltrichloroethane and its derivatives
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyls
TOC = Total Organic Carbon
TPH = Total Petroleum Hydrocarbons
BEHP = Bis 2-Ethylhexyl phthalate
MS/MSD = matrix spike/matrix spike duplicate
TBT - tributyltin

Table 4e. Sediment Sample Dates and Analyses - CoreH3

Sample ID	Sample Date	Top (cm)	Bottom (cm)	Analytical Methods														
				D854 Sp. Gravity	D422 Grain Size	SW9060 TOC	E160.3/ D2216/ SM2540G/ PSEP T. Solids	CWA1613B/ E1613 Dioxins/Furans	SW8270D-SIM PAHs	SW8082A PCB Arcolors	E1668A PCB Congeners	CWA1699M DDx	NWTPH-Dx TPH	SW6020B Metals	SW7471A Mercury	SW8270D BEHP	ALS SOP TBT	Field Duplicate
Core Samples																		
H3-SC-0to1-102118	10/21/2018 11:45	0	30	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
H3-SC-1to2-102118	10/21/2018 11:55	30	61	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
H3-SC-2to29-102118	10/21/2018 12:00	61	88	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
H3-SC-29to46-102118	10/21/2018 12:40	88	140	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
H3-SC-46to63-102118	10/21/2018 12:50	140	192	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
H3-SC-63to85-102118	10/21/2018 13:50	192	259	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
H3-SC-85to99-102118	10/21/2018 14:15	259	302	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
H3-SC-99to114-102118	10/21/2018 14:30	302	335	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
Archived Core Samples																		
h3-sc1b-00to10-82919	8/28/2019 20:05	0	30	-	-	-	-	-	-	X	-	-	-	-	-	-	-	
h3-sc1b-10-20-82919	8/28/2019 20:10	30	61	-	-	-	-	-	-	X	-	-	-	-	-	-	-	
h3-sc1b-20to30-82819	8/28/2019 20:15	61	91	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
h3-sc1b-30to40-82919	8/29/2019 8:25	91	122	-	-	-	X	X	X	X	-	X	-	-	-	-	-	
h3-sc1b-40to50-82919	8/29/2019 8:30	122	152	-	-	-	X	X	X	X	-	X	-	-	-	-	-	
h3-sc1b-50to60-82919	8/29/2019 8:35	152	183	-	-	-	X	X	X	X	-	X	-	-	-	-	-	
h3-sc1b-60to70-82919	8/29/2019 9:00	183	213	-	-	-	X	X	X	X	-	X	-	-	-	-	-	
h3-sc1b-70to80-82919	8/29/2019 9:05	213	244	-	-	-	X	X	X	X	-	X	-	-	-	-	-	
h3-sc1b-80to90-82919	8/29/2019 9:30	244	274	-	-	-	X	X	X	X	-	X	-	-	-	-	-	
h3-sc1b-90to100-82919	8/29/2019 9:35	274	305	-	-	-	X	X	X	X	-	X	-	-	-	-	-	
h3-sc1b-100to110-82919	8/29/2019 9:50	305	335	-	-	-	X	X	X	X	-	X	-	-	-	-	-	
h3-sc1b-110to114-82919	8/29/2019 10:00	335	347	-	-	X	X	-	-	X	-	-	-	-	-	-	-	

"Y" indicates sample was analyzed by listed method, "-" indicates sample was not analyzed.

"X" with grey fill indicates Phase 1b analysis

Sp. Gravity = Specific Gravity/Density

T. Solids = Total Solids

DDx = dichlorodiphenyltrichloroethane and its derivatives

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyls

TOC = Total Organic Carbon

TPH = Total Petroleum Hydrocarbons

BEHP = Bis 2-Ethylhexyl phthalate

MS/MSD = matrix spike/matrix spike duplicate

TBT - tributyltin

Table 4f. Sediment Sample Dates and Analyses - Core L3

Sample ID	Sample Date	Top (cm)	Bottom (cm)	Analytical Methods														
				D854 Sp. Gravity	D422 Grain Size	SW9060 TOC	E160.3/ D2216/ SM2540G/ PSEP T. Solids	CWA1613B/ E1613 Dioxins/Furans	SW8270D-SIM PAHs	SW8082A PCB Arcolors	E1668A PCB Congeners	CWA1699M DDx	NWTPH-Dx TPH	SW6020B Metals	SW7471A Mercury	SW8270D BEHP	ALS SOP TBT	Field Duplicate
Core Samples																		
L3-SC-00to10-102218	10/22/2018 10:35	0	30	Y	Y	Y	Y	Y/X	Y	Y	-	Y	Y	Y	Y	Y	Y	
L3-SC-10to20-102218	10/22/2018 10:45	30	61	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
L3-SC-20to40-102218	10/22/2018 11:00	61	122	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
Archived Core Samples																		
l3-sc1b-00to10-82619	8/26/2019 10:06	0	30	-	-	-	-	-	-	X	-	-	-	-	-	-	-	
l3-sc1b-10to20-82619	8/26/2019 10:07	30	61	-	-	-	-	-	-	X	-	-	-	-	-	-	-	
l3-sc1b-20to30-82619	8/26/2019 10:30	61	91	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
l3-sc1b-30to40-82619	8/26/2019 10:35	91	122	-	-	X	X	X	X	X	-	X	-	-	-	-	-	

"Y" indicates sample was analyzed by listed method, "-" indicates sample was not analyzed.

"X" with grey fill indicates Phase 1b analysis

Sp. Gravity = Specific Gravity/Density

T. Solids = Total Solids

DDx = dichlorodiphenyltrichloroethane and its derivatives

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyls

TOC = Total Organic Carbon

TPH = Total Petroleum Hydrocarbons

BEHP = Bis 2-Ethylhexyl phthalate

MS/MSD = matrix spike/matrix spike duplicate

TBT - tributyltin

Table 4g. Sediment Sample Dates and Analyses - Core R4

Sample ID	Sample Date	Top (cm)	Bottom (cm)	Analytical Methods														
				D854 Sp. Gravity	D422 Grain Size	SW9060 TOC	E160.3/ D2216/ SM2540G/ PSEP T. Solids	CWA1613B/ E1613 Dioxins/Furans	SW8270D-SIM PAHs	SW8082A PCB Arcolors	E1668A PCB Congeners	CWA1699M DDx	NWTPH-Dx TPH	SW6020B Metals	SW7471A Mercury	SW8270D BEHP	ALS SOP TBT	Field Duplicate
Core Samples																		
R4-SC-0to1-102118	10/21/2018 18:40	0	30	Y	Y	Y	Y	Y	Y	Y/X	-	Y	Y	Y	Y	Y	Y	
R4-SC-1to2-102118	10/21/2018 18:50	30	61	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
R4-SC-2to4-102118	10/21/2018 19:00	61	122	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
R4-SC-4to6-102118	10/21/2018 19:10	122	183	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
R4-SC-6to8-102118	10/21/2018 19:20	183	244	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
R4-SC-8to10-102118	10/21/2018 19:40	244	305	Y	Y	Y	Y	Y/X	Y	Y	-	Y	Y	Y	Y	Y	Y	
R4-SC-10to12-102118	10/21/2018 19:50	305	366	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
R4-SC-120to138-102118	10/21/2018 20:45	366	421	Y	Y	Y	Y	Y/X	Y	Y	-	Y	Y	Y	Y	Y	Y	
R4-SC-138to147-102118	10/21/2018 20:55	421	448	Y	Y	Y	Y	Y	-	Y	-	Y	Y	Y	Y	-	-	
Archived Core Samples																		
r4-sc1b-10to20-82819	8/28/2019 13:55	30	61	-	-	-	-	-	-	X	-	-	-	-	-	-	-	
r4-sc1b-20to30-82819	8/28/2019 14:00	61	91	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
r4-sc1b-30to40-82819	8/28/2019 14:05	91	122	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
r4-sc1b-40to50-82819	8/28/2019 15:10	122	152	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
r4-sc1b-50to60-82819	8/28/2019 15:20	152	183	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
r4-sc1b-60to70-82819	8/28/2019 15:50	183	213	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
r4-sc1b-70to80-82819	8/28/2019 15:55	213	244	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
r4-sc1b-80to90-82819	8/28/2019 16:30	244	274	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
r4-sc1b-90to100-82819	8/28/2019 16:40	274	305	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
r4-sc1b-100to110-82819	8/28/2019 17:00	305	335	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
r4-sc1b-110to120-82819	8/28/2019 17:10	335	366	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
r4-sc1b-120to130-82819	8/28/2019 18:20	366	396	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
r4-sc1b-130to140-82819	8/28/2019 18:25	396	427	-	-	X	X	X	X	X	-	X	-	-	-	-	-	
r4-sc1b-140to150-82819	8/28/2019 18:30	427	457	-	-	X	X	X	X	X	-	X	-	-	-	-	-	

"Y" indicates sample was analyzed by listed method, "-" indicates sample was not analyzed.

"X" with grey fill indicates Phase 1b analysis

Sp. Gravity = Specific Gravity/Density

T. Solids = Total Solids

DDx = dichlorodiphenyltrichloroethane and its derivatives

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyls

TOC = Total Organic Carbon

TPH = Total Petroleum Hydrocarbons

BEHP = Bis 2-Ethylhexyl phthalate

MS/MSD = matrix spike/matrix spike duplicate

TBT - tributyltin

Table 5. Subsurface Sediment Core Measurements, and Collection and Processing Dates

Station ID	Core Collection Date	Processing Date	In-Situ Split Core Processing Date	Target Drive Length (ft)	Minimum Recovery Length (ft)	Actual Drive Length (ft)	Actual Recovery Length (ft)	% Recovery
D6-SC	10/21/2018	10/21/2018	8/26/2019	13.5	10.8	14.5	13.2	91%
H3-SC	10/21/2018	10/21/2018	8/29/2019	10.0	8.0	12.0	11.7	98%
J3-SC	10/22/2018	10/22/2018	8/27/2019	10.0	8.0	10.5	10.4	99%
J5-SC	10/22/2018	10/22/2018	8/27/2019	10.8	8.6	12.8	11.4	89%
J6-SC	10/22/2018	10/22/2018	8/27-28/2019	11.6	9.3	13.0	12.3	95%
L3-SC	10/22/2018	10/22/2018	8/26/2019	12.1	9.7	5.2	4.3	83%
R4-SC	10/21/2018	10/21/2018	8/28/2019	14.9	11.9	17.4	15	86%

ft = feet

Percent Recovery = Recovered Length/Drive Length * 100

Table 6. Laboratory Analytical Methods and Analytes

Parameter Group	Parameter	Units	CAS No.	Method
Butyltins	Tri-n-butyltin Cation	ug/Kg	36643-28-4	ALS Butyltin SOP[2]
Conventional	Clay	%	STL00587	D422
Conventional	Silt	%	STL00586	D422
Conventional	Fine Sand	%	STL00585	D422
Conventional	Medium Sand	%	STL00584	D422
Conventional	Coarse Sand	%	STL00583	D422
Conventional	Gravel	%	STL00581	D422
Conventional	Density	g/cm3	STL00183	D854
Conventional	Specific Gravity	unitless	--	D854
Conventional	Total Solids	%	--	E160.3/D2216/SM2540G
Conventional	Carbon, Total Organic	mg/kg	7440-44-0	SW9060/PSEP
Dioxins/Furans	1,2,3,4,5,6,7,8-Octachlorodibenzofuran	pg/g	39001-02-0	CWA1613B/E1613
Dioxins/Furans	1,2,3,4,5,6,7,8-Octachlorodibenzo-p-dioxin	pg/g	3268-87-9	CWA1613B/E1613
Dioxins/Furans	1,2,3,4,6,7,8-Heptachlorodibenzofuran	pg/g	67562-39-4	CWA1613B/E1613
Dioxins/Furans	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	pg/g	35822-46-9	CWA1613B/E1613
Dioxins/Furans	1,2,3,4,7,8,9-Heptachlorodibenzofuran	pg/g	55673-89-7	CWA1613B/E1613
Dioxins/Furans	1,2,3,4,7,8-Hexachlorodibenzofuran	pg/g	70648-26-9	CWA1613B/E1613
Dioxins/Furans	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	pg/g	39227-28-6	CWA1613B/E1613
Dioxins/Furans	1,2,3,6,7,8-Hexachlorodibenzofuran	pg/g	57117-44-9	CWA1613B/E1613
Dioxins/Furans	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	pg/g	57653-85-7	CWA1613B/E1613
Dioxins/Furans	1,2,3,7,8,9-Hexachlorodibenzofuran	pg/g	72918-21-9	CWA1613B/E1613
Dioxins/Furans	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	pg/g	19408-74-3	CWA1613B/E1613
Dioxins/Furans	1,2,3,7,8-Pentachlorodibenzofuran	pg/g	57117-41-6	CWA1613B/E1613
Dioxins/Furans	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	pg/g	40321-76-4	CWA1613B/E1613
Dioxins/Furans	2,3,4,6,7,8-Hexachlorodibenzofuran	pg/g	60851-34-5	CWA1613B/E1613
Dioxins/Furans	2,3,4,7,8-Pentachlorodibenzofuran	pg/g	57117-31-4	CWA1613B/E1613
Dioxins/Furans	2,3,7,8-Tetrachlorodibenzofuran	pg/g	51207-31-9	CWA1613B/E1613
Dioxins/Furans	2,3,7,8-Tetrachlorodibenzo-p-dioxin	pg/g	1746-01-6	CWA1613B/E1613
Dioxins/Furans	OCDD	ug/Kg	3268-87-9	CWA1613B/E1613
Dioxins/Furans	OCDF	ug/Kg	39001-02-0	CWA1613B/E1613
Dioxins/Furans	Total HpCDD	ug/Kg	37871-00-4	CWA1613B/E1613
Dioxins/Furans	Total HpCDF	ug/Kg	38998-75-3	CWA1613B/E1613
Dioxins/Furans	Total HxCDD	ug/Kg	34465-46-8	CWA1613B/E1613
Dioxins/Furans	Total HxCDF	ug/Kg	55684-94-1	CWA1613B/E1613
Dioxins/Furans	Total PeCDD	ug/Kg	36088-22-9	CWA1613B/E1613
Dioxins/Furans	Total PeCDF	ug/Kg	30402-15-4	CWA1613B/E1613
Dioxins/Furans	Total TCDD	ug/Kg	41903-57-5	CWA1613B/E1613
Dioxins/Furans	Total TCDF	ug/Kg	30402-14-3	CWA1613B/E1613
Metals	Arsenic	mg/kg	7440-38-2	EPA 6020B
Metals	Cadmium	mg/kg	7440-43-9	EPA 6020B
Metals	Copper	mg/kg	7440-50-8	EPA 6020B
Metals	Lead	mg/kg	7439-92-1	EPA 6020B
Metals	Zinc	mg/kg	7440-66-6	EPA 6020B
Metals	Mercury	mg/kg	7439-97-6	EPA 7471A
OC Pesticides	4,4'-DDD	ug/kg	72-54-8	CWA1699M
OC Pesticides	4,4'-DDE	ug/kg	72-55-9	CWA1699M
OC Pesticides	4,4'-DDT	ug/kg	50-29-3	CWA1699M
OC Pesticides	Aldrin	ug/Kg	309-00-2	CWA1699M
OC Pesticides	alpha-Chlordane	ug/Kg	5103-71-9	CWA1699M
OC Pesticides	Chlordane, gamma	ug/Kg	5566-34-7	CWA1699M
OC Pesticides	cis-Nonachlor	ug/Kg	5103-73-1	CWA1699M
OC Pesticides	Dieldrin	ug/Kg	60-57-1	CWA1699M
OC Pesticides	gamma-BHC (Lindane)	ug/Kg	58-89-9	CWA1699M

Table 6. Laboratory Analytical Methods and Analytes

Parameter Group	Parameter	Units	CAS No.	Method
OC Pesticides	Heptachlor	ug/Kg	76-44-8	CWA1699M
OC Pesticides	o,p'-DDD	ug/Kg	53-19-0	CWA1699M
OC Pesticides	o,p'-DDE	ug/Kg	3424-82-6	CWA1699M
OC Pesticides	o,p'-DDT	ug/Kg	789-02-6	CWA1699M
OC Pesticides	Oxychlordane	ug/Kg	27304-13-8	CWA1699M
OC Pesticides	trans-Nonachlor	ug/Kg	39765-80-5	CWA1699M
PAHs	2-Methylnaphthalene	ug/Kg	91-57-6	SW8270D-SIM
PAHs	Acenaphthene	ug/Kg	83-32-9	SW8270D-SIM
PAHs	Acenaphthylene	ug/Kg	208-96-8	SW8270D-SIM
PAHs	Anthracene	ug/Kg	120-12-7	SW8270D-SIM
PAHs	Benzo(a)anthracene	ug/Kg	56-55-3	SW8270D-SIM
PAHs	Benzo(a)pyrene	ug/Kg	50-32-8	SW8270D-SIM
PAHs	Benzo(b)fluoranthene	ug/Kg	205-99-2	SW8270D-SIM
PAHs	Benzo(g,h,i)perylene	ug/Kg	191-24-2	SW8270D-SIM
PAHs	Benzo(k)fluoranthene	ug/Kg	207-08-9	SW8270D-SIM
PAHs	Chrysene	ug/Kg	218-01-9	SW8270D-SIM
PAHs	Dibenzo(a,h)anthracene	ug/Kg	53-70-3	SW8270D-SIM
PAHs	Dibenzofuran	ug/Kg	132-64-9	SW8270D-SIM
PAHs	Fluoranthene	ug/Kg	206-44-0	SW8270D-SIM
PAHs	Fluorene	ug/Kg	86-73-7	SW8270D-SIM
PAHs	Indeno(1,2,3-cd)pyrene	ug/Kg	193-39-5	SW8270D-SIM
PAHs	Naphthalene	ug/Kg	91-20-3	SW8270D-SIM
PAHs	Phenanthrene	ug/Kg	85-01-8	SW8270D-SIM
PAHs	Pyrene	ug/Kg	129-00-0	SW8270D-SIM
PCB Aroclors	PCB-1016	ug/kg	12674-11-2	SW8082A
PCB Aroclors	PCB-1221	ug/kg	11104-28-2	SW8082A
PCB Aroclors	PCB-1232	ug/kg	11141-16-5	SW8082A
PCB Aroclors	PCB-1242	ug/kg	53469-21-9	SW8082A
PCB Aroclors	PCB-1248	ug/kg	12672-29-6	SW8082A
PCB Aroclors	PCB-1254	ug/kg	11097-69-1	SW8082A
PCB Aroclors	PCB-1260	ug/kg	11096-82-5	SW8082A
PCB Congeners	PCB-1	ng/g	2051-60-7	E1668A
PCB Congeners	PCB-2	ng/g	2051-61-8	E1668A
PCB Congeners	PCB-3	ng/g	2051-62-9	E1668A
PCB Congeners	PCB-4	ng/g	13029-08-8	E1668A
PCB Congeners	PCB-5	ng/g	16605-91-7	E1668A
PCB Congeners	PCB-6	ng/g	25569-80-6	E1668A
PCB Congeners	PCB-7	ng/g	33284-50-3	E1668A
PCB Congeners	PCB-8	ng/g	34883-43-7	E1668A
PCB Congeners	PCB-9	ng/g	34883-39-1	E1668A
PCB Congeners	PCB-10	ng/g	33146-45-1	E1668A
PCB Congeners	PCB-11	ng/g	2050-67-1	E1668A
PCB Congeners	PCB-12	ng/g	2974-92-7	E1668A
PCB Congeners	PCB-13	ng/g	2974-90-5	E1668A
PCB Congeners	PCB-14	ng/g	34883-41-5	E1668A
PCB Congeners	PCB-15	ng/g	2050-68-2	E1668A
PCB Congeners	PCB-16	ng/g	38444-78-9	E1668A
PCB Congeners	PCB-17	ng/g	37680-66-3	E1668A
PCB Congeners	PCB-18	ng/g	37680-65-2	E1668A
PCB Congeners	PCB-19	ng/g	38444-73-4	E1668A
PCB Congeners	PCB-20	ng/g	38444-84-7	E1668A
PCB Congeners	PCB-21	ng/g	55702-46-0	E1668A
PCB Congeners	PCB-22	ng/g	38444-85-8	E1668A
PCB Congeners	PCB-23	ng/g	55720-44-0	E1668A

Table 6. Laboratory Analytical Methods and Analytes

Parameter Group	Parameter	Units	CAS No.	Method
PCB Congeners	PCB-24	ng/g	55702-45-9	E1668A
PCB Congeners	PCB-25	ng/g	55712-37-3	E1668A
PCB Congeners	PCB-26	ng/g	38444-81-4	E1668A
PCB Congeners	PCB-27	ng/g	38444-76-7	E1668A
PCB Congeners	PCB-28	ng/g	7012-37-5	E1668A
PCB Congeners	PCB-29	ng/g	15862-07-4	E1668A
PCB Congeners	PCB-30	ng/g	35693-92-6	E1668A
PCB Congeners	PCB-31	ng/g	16606-02-3	E1668A
PCB Congeners	PCB-32	ng/g	38444-77-8	E1668A
PCB Congeners	PCB-33	ng/g	38444-86-9	E1668A
PCB Congeners	PCB-34	ng/g	37680-68-5	E1668A
PCB Congeners	PCB-35	ng/g	37680-69-6	E1668A
PCB Congeners	PCB-36	ng/g	38444-87-0	E1668A
PCB Congeners	PCB-37	ng/g	38444-90-5	E1668A
PCB Congeners	PCB-38	ng/g	53555-66-1	E1668A
PCB Congeners	PCB-39	ng/g	38444-88-1	E1668A
PCB Congeners	PCB-40	ng/g	38444-93-8	E1668A
PCB Congeners	PCB-41	ng/g	52663-59-9	E1668A
PCB Congeners	PCB-42	ng/g	36559-22-5	E1668A
PCB Congeners	PCB-43	ng/g	70362-46-8	E1668A
PCB Congeners	PCB-44	ng/g	41464-39-5	E1668A
PCB Congeners	PCB-45	ng/g	70362-45-7	E1668A
PCB Congeners	PCB-46	ng/g	41464-47-5	E1668A
PCB Congeners	PCB-47	ng/g	2437-79-8	E1668A
PCB Congeners	PCB-48	ng/g	70362-47-9	E1668A
PCB Congeners	PCB-49	ng/g	41464-40-8	E1668A
PCB Congeners	PCB-50	ng/g	62796-65-0	E1668A
PCB Congeners	PCB-51	ng/g	68194-04-7	E1668A
PCB Congeners	PCB-52	ng/g	35693-99-3	E1668A
PCB Congeners	PCB-53	ng/g	41464-41-9	E1668A
PCB Congeners	PCB-54	ng/g	15968-05-5	E1668A
PCB Congeners	PCB-55	ng/g	74338-24-2	E1668A
PCB Congeners	PCB-56	ng/g	41464-43-1	E1668A
PCB Congeners	PCB-57	ng/g	70424-67-8	E1668A
PCB Congeners	PCB-58	ng/g	41464-49-7	E1668A
PCB Congeners	PCB-59	ng/g	74472-33-6	E1668A
PCB Congeners	PCB-60	ng/g	33025-41-1	E1668A
PCB Congeners	PCB-61	ng/g	33284-53-6	E1668A
PCB Congeners	PCB-62	ng/g	54230-22-7	E1668A
PCB Congeners	PCB-63	ng/g	74472-34-7	E1668A
PCB Congeners	PCB-64	ng/g	52663-58-8	E1668A
PCB Congeners	PCB-65	ng/g	33284-54-7	E1668A
PCB Congeners	PCB-66	ng/g	32598-10-0	E1668A
PCB Congeners	PCB-67	ng/g	73575-53-8	E1668A
PCB Congeners	PCB-68	ng/g	73575-52-7	E1668A
PCB Congeners	PCB-69	ng/g	60233-24-1	E1668A
PCB Congeners	PCB-70	ng/g	32598-11-1	E1668A
PCB Congeners	PCB-71	ng/g	41464-46-4	E1668A
PCB Congeners	PCB-72	ng/g	41464-42-0	E1668A
PCB Congeners	PCB-73	ng/g	74338-23-1	E1668A
PCB Congeners	PCB-74	ng/g	32690-93-0	E1668A
PCB Congeners	PCB-75	ng/g	32598-12-2	E1668A
PCB Congeners	PCB-76	ng/g	70362-48-0	E1668A
PCB Congeners	PCB-77	ng/g	32598-13-3	E1668A

Table 6. Laboratory Analytical Methods and Analytes

Parameter Group	Parameter	Units	CAS No.	Method
PCB Congeners	PCB-78	ng/g	70362-49-1	E1668A
PCB Congeners	PCB-79	ng/g	41464-48-6	E1668A
PCB Congeners	PCB-80	ng/g	33284-52-5	E1668A
PCB Congeners	PCB-81	ng/g	70362-50-4	E1668A
PCB Congeners	PCB-82	ng/g	52663-62-4	E1668A
PCB Congeners	PCB-83	ng/g	60145-20-2	E1668A
PCB Congeners	PCB-84	ng/g	52663-60-2	E1668A
PCB Congeners	PCB-85	ng/g	65510-45-4	E1668A
PCB Congeners	PCB-86	ng/g	55312-69-1	E1668A
PCB Congeners	PCB-87	ng/g	38380-02-8	E1668A
PCB Congeners	PCB-88	ng/g	55215-17-3	E1668A
PCB Congeners	PCB-89	ng/g	73575-57-2	E1668A
PCB Congeners	PCB-90	ng/g	68194-07-0	E1668A
PCB Congeners	PCB-91	ng/g	68194-05-8	E1668A
PCB Congeners	PCB-92	ng/g	52663-61-3	E1668A
PCB Congeners	PCB-93	ng/g	73575-56-1	E1668A
PCB Congeners	PCB-94	ng/g	73575-55-0	E1668A
PCB Congeners	PCB-95	ng/g	38379-99-6	E1668A
PCB Congeners	PCB-96	ng/g	73575-54-9	E1668A
PCB Congeners	PCB-97	ng/g	41464-51-1	E1668A
PCB Congeners	PCB-98	ng/g	60233-25-2	E1668A
PCB Congeners	PCB-99	ng/g	38380-01-7	E1668A
PCB Congeners	PCB-100	ng/g	39485-83-1	E1668A
PCB Congeners	PCB-101	ng/g	37680-73-2	E1668A
PCB Congeners	PCB-102	ng/g	68194-06-9	E1668A
PCB Congeners	PCB-103	ng/g	60145-21-3	E1668A
PCB Congeners	PCB-104	ng/g	56558-16-8	E1668A
PCB Congeners	PCB-105	ng/g	32598-14-4	E1668A
PCB Congeners	PCB-106	ng/g	70424-69-0	E1668A
PCB Congeners	PCB-107	ng/g	70424-68-9	E1668A
PCB Congeners	PCB-108	ng/g	70362-41-3	E1668A
PCB Congeners	PCB-109	ng/g	74472-35-8	E1668A
PCB Congeners	PCB-110	ng/g	38380-03-9	E1668A
PCB Congeners	PCB-111	ng/g	39635-32-0	E1668A
PCB Congeners	PCB-112	ng/g	74472-36-9	E1668A
PCB Congeners	PCB-113	ng/g	68194-10-5	E1668A
PCB Congeners	PCB-114	ng/g	74472-37-0	E1668A
PCB Congeners	PCB-115	ng/g	74472-38-1	E1668A
PCB Congeners	PCB-116	ng/g	18259-05-7	E1668A
PCB Congeners	PCB-117	ng/g	68194-11-6	E1668A
PCB Congeners	PCB-118	ng/g	31508-00-6	E1668A
PCB Congeners	PCB-119	ng/g	56558-17-9	E1668A
PCB Congeners	PCB-120	ng/g	68194-12-7	E1668A
PCB Congeners	PCB-121	ng/g	56558-18-0	E1668A
PCB Congeners	PCB-122	ng/g	76842-07-4	E1668A
PCB Congeners	PCB-123	ng/g	65510-44-3	E1668A
PCB Congeners	PCB-124	ng/g	70424-70-3	E1668A
PCB Congeners	PCB-125	ng/g	74472-39-2	E1668A
PCB Congeners	PCB-126	ng/g	57465-28-8	E1668A
PCB Congeners	PCB-127	ng/g	39635-33-1	E1668A
PCB Congeners	PCB-128	ng/g	38380-07-3	E1668A

Table 6. Laboratory Analytical Methods and Analytes

Parameter Group	Parameter	Units	CAS No.	Method
PCB Congeners	PCB-129	ng/g	55215-18-4	E1668A
PCB Congeners	PCB-130	ng/g	52663-66-8	E1668A
PCB Congeners	PCB-131	ng/g	61798-70-7	E1668A
PCB Congeners	PCB-132	ng/g	38380-05-1	E1668A
PCB Congeners	PCB-133	ng/g	35694-04-3	E1668A
PCB Congeners	PCB-134	ng/g	52704-70-8	E1668A
PCB Congeners	PCB-135	ng/g	52744-13-5	E1668A
PCB Congeners	PCB-136	ng/g	38411-22-2	E1668A
PCB Congeners	PCB-137	ng/g	35694-06-5	E1668A
PCB Congeners	PCB-138	ng/g	35065-28-2	E1668A
PCB Congeners	PCB-139	ng/g	56030-56-9	E1668A
PCB Congeners	PCB-140	ng/g	59291-64-4	E1668A
PCB Congeners	PCB-141	ng/g	52712-04-6	E1668A
PCB Congeners	PCB-142	ng/g	41411-61-4	E1668A
PCB Congeners	PCB-143	ng/g	68194-15-0	E1668A
PCB Congeners	PCB-144	ng/g	68194-14-9	E1668A
PCB Congeners	PCB-145	ng/g	74472-40-5	E1668A
PCB Congeners	PCB-146	ng/g	51908-16-8	E1668A
PCB Congeners	PCB-147	ng/g	68194-13-8	E1668A
PCB Congeners	PCB-148	ng/g	74472-41-6	E1668A
PCB Congeners	PCB-149	ng/g	38380-04-0	E1668A
PCB Congeners	PCB-150	ng/g	68194-08-1	E1668A
PCB Congeners	PCB-151	ng/g	52663-63-5	E1668A
PCB Congeners	PCB-152	ng/g	68194-09-2	E1668A
PCB Congeners	PCB-153	ng/g	35065-27-1	E1668A
PCB Congeners	PCB-154	ng/g	60145-22-4	E1668A
PCB Congeners	PCB-155	ng/g	33979-03-2	E1668A
PCB Congeners	PCB-156	ng/g	38380-08-4	E1668A
PCB Congeners	PCB-157	ng/g	69782-90-7	E1668A
PCB Congeners	PCB-158	ng/g	74472-42-7	E1668A
PCB Congeners	PCB-159	ng/g	39635-35-3	E1668A
PCB Congeners	PCB-160	ng/g	41411-62-5	E1668A
PCB Congeners	PCB-161	ng/g	74472-43-8	E1668A
PCB Congeners	PCB-162	ng/g	39635-34-2	E1668A
PCB Congeners	PCB-163	ng/g	74472-44-9	E1668A
PCB Congeners	PCB-164	ng/g	74472-45-0	E1668A
PCB Congeners	PCB-165	ng/g	74472-46-1	E1668A
PCB Congeners	PCB-166	ng/g	41411-63-6	E1668A
PCB Congeners	PCB-167	ng/g	52663-72-6	E1668A
PCB Congeners	PCB-168	ng/g	59291-65-5	E1668A
PCB Congeners	PCB-169	ng/g	32774-16-6	E1668A
PCB Congeners	PCB-170	ng/g	35065-30-6	E1668A
PCB Congeners	PCB-171	ng/g	52663-71-5	E1668A
PCB Congeners	PCB-172	ng/g	52663-74-8	E1668A
PCB Congeners	PCB-173	ng/g	68194-16-1	E1668A
PCB Congeners	PCB-174	ng/g	38411-25-5	E1668A
PCB Congeners	PCB-175	ng/g	40186-70-7	E1668A
PCB Congeners	PCB-176	ng/g	52663-65-7	E1668A
PCB Congeners	PCB-177	ng/g	52663-70-4	E1668A
PCB Congeners	PCB-178	ng/g	52663-67-9	E1668A
PCB Congeners	PCB-179	ng/g	52663-64-6	E1668A
PCB Congeners	PCB-180	ng/g	35065-29-3	E1668A
PCB Congeners	PCB-181	ng/g	74472-47-2	E1668A

Table 6. Laboratory Analytical Methods and Analytes

Parameter Group	Parameter	Units	CAS No.	Method
PCB Congeners	PCB-182	ng/g	60145-23-5	E1668A
PCB Congeners	PCB-183	ng/g	52663-69-1	E1668A
PCB Congeners	PCB-184	ng/g	74472-48-3	E1668A
PCB Congeners	PCB-185	ng/g	52712-05-7	E1668A
PCB Congeners	PCB-186	ng/g	74472-49-4	E1668A
PCB Congeners	PCB-187	ng/g	52663-68-0	E1668A
PCB Congeners	PCB-188	ng/g	74487-85-7	E1668A
PCB Congeners	PCB-189	ng/g	39635-31-9	E1668A
PCB Congeners	PCB-190	ng/g	41411-64-7	E1668A
PCB Congeners	PCB-191	ng/g	74472-50-7	E1668A
PCB Congeners	PCB-192	ng/g	74472-51-8	E1668A
PCB Congeners	PCB-193	ng/g	69782-91-8	E1668A
PCB Congeners	PCB-194	ng/g	35694-08-7	E1668A
PCB Congeners	PCB-195	ng/g	52663-78-2	E1668A
PCB Congeners	PCB-196	ng/g	42740-50-1	E1668A
PCB Congeners	PCB-197	ng/g	33091-17-7	E1668A
PCB Congeners	PCB-198	ng/g	68194-17-2	E1668A
PCB Congeners	PCB-199	ng/g	52663-75-9	E1668A
PCB Congeners	PCB-200	ng/g	52663-73-7	E1668A
PCB Congeners	PCB-201	ng/g	40186-71-8	E1668A
PCB Congeners	PCB-202	ng/g	2136-99-4	E1668A
PCB Congeners	PCB-203	ng/g	52663-76-0	E1668A
PCB Congeners	PCB-204	ng/g	74472-52-9	E1668A
PCB Congeners	PCB-205	ng/g	74472-53-0	E1668A
PCB Congeners	PCB-206	ng/g	40186-72-9	E1668A
PCB Congeners	PCB-207	ng/g	52663-79-3	E1668A
PCB Congeners	PCB-208	ng/g	52663-77-1	E1668A
PCB Congeners	PCB-209	ng/g	2051-24-3	E1668A
PCB Congeners	Polychlorinated biphenyls, Total	ng/g	1336-36-3	E1668A
PCB Congeners	Total Dichlorobiphenyls	ng/g	25512-42-9	E1668A
PCB Congeners	Total Heptachlorobiphenyls	ng/g	28655-71-2	E1668A
PCB Congeners	Total Hexachlorobiphenyls	ng/g	26601-64-9	E1668A
PCB Congeners	Total Monochlorobiphenyls	ng/g	27323-18-8	E1668A
PCB Congeners	Total Nonachlorobiphenyls	ng/g	53742-07-7	E1668A
PCB Congeners	Total Octachlorobiphenyls	ng/g	55722-26-4	E1668A
PCB Congeners	Total Pentachlorobiphenyls	ng/g	25429-29-2	E1668A
PCB Congeners	Total Tetrachlorobiphenyls	ng/g	26914-33-0	E1668A
PCB Congeners	Total Trichlorobiphenyls	ng/g	25323-68-6	E1668A
Petroleum hydrocarbons	Diesel Range Organics (C10-24)	mg/kg	--	NWTPH-Dx
Petroleum hydrocarbons	Extended Range Organics (>C24-C36)	mg/kg	--	NWTPH-Dx
Phthalates	Bis(2-ethylhexyl)phthalate	ug/kg	117-81-7	EPA 8270D

Table 6. Laboratory Analytical Methods and Analytes

Parameter Group	Parameter	Units	CAS No.	Method

[1] ALS Butyltin SOP is based on Krone et al 1989 and Unger et al 1986.

ug/kg = micrograms per kilogram
ng/g = nanograms per gram
% = percent
g/cm3 = grams per cubic centimeter

DDx = dichlorodiphenyltrichloroethane and its derivatives
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyls
DDE = dichlorodiphenyldichloroethylene
DDD = dichlorodiphenyldichloroethane
DDT = dichlorodiphenyltrichloroethane
SIM = Selective Ion Monitoring
SOP = Standard Operating Procedure
NWTPH-Dx = Northwest Total Petroleum Hydrocarbon-Diesel Extended
CAS = Chemical Abstract Service
HxCDD = heptachlorodibenzo-para-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachloro dibenzo-p-furan
TBT - tributyltin
EPA = Environmental Protection Agency

Table 7. Calculated Total Analytes And Required Number of Analytes

Parameter Group	Parameter	Units	CAS No.	Method	Expected Analytes	Limited Analytes ("A" Qualify)	Do Not Sum
OC Pesticides	CALC_TOTAL_DDx_ND_PDI	ug/Kg	--	CWA1699M	6	<6	--
OC Pesticides	CALC_TOTAL_DDD_ND_PDI	ug/Kg	--	CWA1699M	2	<2	--
OC Pesticides	CALC_TOTAL_DDE_ND_PDI	ug/Kg	--	CWA1699M	2	<2	--
OC Pesticides	CALC_TOTAL_DDT_ND_PDI	ug/Kg	--	CWA1699M	2	<2	--
OC Pesticides	CALC_TOTAL_CHLORDANE_ND_PDI	ug/Kg	--	CWA1699M	5	<5	--
PAHs	CALC_TOTAL_PAH_ND_PDI	ug/Kg	--	SW8270D-SIM	17	<17	<10
PAHs	CALC_TOTAL_LPAH_ND_PDI	ug/Kg	--	SW8270D-SIM	7	<10	<3
PAHs	CALC_TOTAL_HPAH_ND_PDI	ug/Kg	--	SW8270D-SIM	10	<7	<5
PAHs	CALC_TOTAL_CPAH_ND_PDI	ug/Kg	--	SW8270D-SIM	7	<7	<5
PCB Aroclors	CALC_TOTAL_AROCLORS_ND_PDI	ug/kg	--	SW8082A	7	<7	<2[a]
PCB Congeners	CALC_TOTAL_PCB_ND_PDI	ng/g	--	E1668A	209	<150	<100

[a] One detect is acceptable in cases where 7 analytes reported and non-detects "R" qualified. See Report text Section 3.4.

ug/kg = micrograms per kilogram

ng/g = nanograms per gram

PCB = polychlorinated biphenyls

DDx = dichlorodiphenyltrichloroethane and its derivatives

DDE = dichlorodiphenyldichloroethylene

DDD = dichlorodiphenyldichloroethane

DDT = dichlorodiphenyltrichloroethane

PAH = polycyclic aromatic hydrocarbon

CPAH = carcingogenic PAHs

LPAH = low molecular weight PAHs

HPAH = high molecular weight PAHs

OC = organochlorine

PCB congeners are counted by individual congeners regardless of coelutions (e.g. a valid PCB-108/124 result counts as 2 analytes)

'A' descriptor - indicates the total value is based on limited number of analytes.

-- - Not applicable.

Total concentrations from component analytes calculated with Pre-Remedial Design Investigation summation rules for DDx, PAHs, PCB Congeners, and chlordanes (AECOM and Geosyntec 2019, Appendix E). Total Aroclors, DDD, DDE, and DDT were calculated with EPA Remedial Investigation summation rules (EPA, 2016 (Appendix A3. Table A3-3)) as the Pre-Remedial Design Investigation report did not include summation rules.

Table 8. Summary of Quality Control Samples

Analytical Methods		Phase 1			Phase 1b		
		Blind Field Duplicates	Field Equipment Rinsate Blanks	Matrix Spike/ Matrix Spike Duplicate	Blind Field Duplicates	Field Equipment Rinsate Blanks	Matrix Spike/ Matrix Spike Duplicate
D854	Sp. Gravity	3	NA	NA	0	NA	NA
D422	Grain Size	3	NA	NA	0	NA	NA
SW9060/PSEP	TOC	3	3	8	2	2	6
E160.3	T. Solids	4	NA	NA	3	NA	NA
D2216	T. Solids	3	NA	NA	0	NA	NA
SM2540G	T. Solids	0	NA	NA	3	NA	NA
CWA1613B	Dioxins/Furans	3	3	NA	3	2	NA
SW8270D-SIM	PAHs	4	3	15	3	2	1
SW8082A	PCB Arcolors	0	1	3	3	2	8
E1668A	PCB Congeners	3	3	NA	0	2	NA
CWA1699M	DDx	4	3	8	0	2	1
NWTPH-Dx	TPH	3	3	3	0	2	1
SW6020B	Metals	3	3	6	0	2	0
SW7471A	Mercury	3	3	5	0	2	1
SW8270D	BEHP	4	3	8	0	2	1
ALS SOP	TBT	4	3	10	0	2	1

Sp. Gravity = Specific Gravity/Density

T. Solids = Total Solids

DDx = dichlorodiphenyltrichloroethane and its derivatives

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyls

TOC = Total Organic Carbon

TPH = Total Petroleum Hydrocarbons

BEHP = Bis 2-Ethylhexyl phthalate

TBT - Tributyltin

MS/MSD = matrix spike/matrix spike duplicate

NA = Not applicable

Table 9. Summary of Surface Sediment Exceedances of ROD Remedial Action Levels for Focused COCs

Analyte	ROD Remedial Action Level[1]	Units	Number of Results[2]	% Detected	% Non-Detect	% Results Exceeds RAL	Minimum Detected Result	Maximum Detected Result
Total PCBs Congeners	75	ng/g	56	100	0	75	0.72 JT	9200 JT
Total PCBs Aroclors	75	ug/kg	28	96	4	32	2 JT	1500 JT
Total PAHs	30000[3]	ug/kg	65	100	0	0	0.36 JT	7100 JT
2,3,7,8-TCDD	0.0006	ug/kg	68	53	47	31	0.00011 J	0.0016
1,2,3,7,8-PeCDD	0.0008	ug/kg	68	63	37	51	0.00014 J	0.0038 J
2,3,4,7,8-PeCDF	0.2	ug/kg	68	87	13	0	0.00014 J	0.02
Total DDx	160	ug/kg	64	95	5	0	0.18 T	31 AT

Surface sediment samples are those collected from a depth of 0 up to 30 cm, and include core samples from the surface sediment.

1 Remedial Action Levels (RALs) correspond to EPA Record of Decision (ROD) Table 21

2 Exceedance summary does not include QC sample results

3 Level is from Proposed Explanation of Significant Differences (PESD), Appendix A1, Updated Record of Decision Table 21 (EPA 2018)

ug/kg = micrograms per kilogram

DDx = dichlorodiphenyltrichloroethane and its derivatives

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyls

ROD = Record of Decision

PESD = Proposed Explanation of Significant Differences

ng/g = nanograms per gram

PeCDD = pentachlorodibenzo-p-dioxin

PeCDF = pentachlorodibenzofuran

TCDD = tetrachlorodibenzo-p-dioxin

COC = Constituent of Concern

J = Reported result is an estimate

U = Analyte was not detected in sample

T = Total concentration from component analytes calculated with Pre-Remedial Design Investigation summation rules (AECOM and Geosyntec 2019, Appendix E).

A = Summed value based on limited number of analytes.

Table 10. Summary of Subsurface Sediment Exceedances of ROD Remedial Action Levels for Focused COCs

Analyte	ROD Remedial Action Level[1]	Units	Number of Results[2]	% Detected	% Non-Detect	% Results Exceeds RAL	Minimum Detected Result	Maximum Detected Result
Total PCBs Congeners	75	ng/g	10	100	0	70	1.1 JT	1100 JT
Total PCBs Aroclors	75	ug/kg	47	83	17	51	4.6 JT	1700 AT
Total PAHs	30000[3]	ug/kg	63	100	0	0	1.8 JT	3500 T
2,3,7,8-TCDD	0.0006	ug/kg	110	43	57	58	0.000051 J	0.002
1,2,3,7,8-PeCDD	0.0008	ug/kg	110	57	43	60	0.000056 J	0.0044 J
2,3,4,7,8-PeCDF	0.2	ug/kg	110	70	30	0	0.00004 J	0.011
Total DDx	160	ug/kg	64	77	23	0	0.19 T	43 AT

Subsurface sediment samples have upper depths below 0 cm and/or lower depths greater than 30 cm.

1 Remedial Action Levels (RALs) correspond to EPA Record of Decision (ROD) Table 21

2 Exceedance summary does not include QC sample results or rejected results

3 Level is from Proposed Explanation of Significant Differences (PESD), Appendix A1, Updated Record of Decision Table 21 (EPA 2018)

ug/kg = micrograms per kilogram

DDx = dichlorodiphenyltrichloroethane and its derivatives

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyls

ROD = Record of Decision

PESD = Proposed Explanation of Significant Differences

ng/g = nanograms per gram

PeCDD = pentachlorodibenzo-p-dioxin

PeCDF = pentachlorodibenzofuran

TCDD = tetrachlorodibenzo-p-dioxin

COC = Constituent of Concern

J = Reported result is an estimate

U = Analyte was not detected in sample

T = Total concentration from component analytes calculated with Pre-Remedial Design Investigation summation rules (AECOM and Geosyntec 2019, Appendix E).

A = Summed value based on limited number of analytes.

Table 11a. Analytical Results for Total PCBs as Congeners(Calculated Total)

Sample ID	Sample Date	Result	Qualifier	Units	Exceeds MCL[1] (9 ug/kg)	Exceeds RAL[2] (75 ug/kg)	RAL EF
Grab and Shore Samples							
A1-0to30-102018	10/20/2018 12:05	0.72	JT	ug/Kg	No	No	0.01
a2-0to26-100818	10/8/2018 14:04	110	JT	ug/Kg	Yes	Yes	1.47
a3-0to31-100818	10/8/2018 11:14	390	JT	ug/Kg	Yes	Yes	5.20
a4-0to25-100818	10/8/2018 13:26	1400	JT	ug/Kg	Yes	Yes	18.67
a5-0to25-100818	10/8/2018 14:38	820	JT	ug/Kg	Yes	Yes	10.93
a6-0to23-100818	10/8/2018 16:08	430	JT	ug/Kg	Yes	Yes	5.73
a7-0to26-100918	10/9/2018 13:23	1200	JT	ug/Kg	Yes	Yes	16.00
c4-0to27-100918	10/9/2018 8:28	350	JT	ug/Kg	Yes	Yes	4.67
d2-0to19-101018	10/10/2018 15:21	25	JT	ug/Kg	Yes	No	0.33
f2-0to19-101018	10/10/2018 16:36	42	JT	ug/Kg	Yes	No	0.56
g6-0to27-101818	10/18/2018 14:12	490	JT	ug/Kg	Yes	Yes	6.53
h2-0to30-101218	10/12/2018 10:28	300	JT	ug/Kg	Yes	Yes	4.00
j2a3-0to18-101218	10/12/2018 12:57	25	JT	ug/Kg	Yes	No	0.33
M4-0to26-101918	10/19/2018 13:11	470	JT	ug/Kg	Yes	Yes	6.27
N5-0to28-101418	10/14/2018 16:46	590	JT	ug/Kg	Yes	Yes	7.87
N7-0to27-101418	10/14/2018 15:10	270	JT	ug/Kg	Yes	Yes	3.60
O7-0to27-101918	10/19/2018 15:36	210	JT	ug/Kg	Yes	Yes	2.80
q2-0to13-101818	10/18/2018 9:39	4.5	JT	ug/Kg	No	No	0.06
q6-0to27-102018	10/20/2018 9:19	160	JT	ug/Kg	Yes	Yes	2.13
t6-0to29-101618	10/16/2018 14:38	150	JT	ug/Kg	Yes	Yes	2.00
515-0to26-101918	10/19/2018 13:11	710	JT	ug/Kg	Yes	Yes	9.47
Core Samples							
j5-sc1b-00to10-82719	8/27/2019 14:45	1100	JT	ug/Kg	Yes	Yes	14.67
j5-sc1b-100to110-82719	8/27/2019 17:35	1.1	JT	ug/Kg	No	No	0.01
j5-sc1b-10to20-82719	8/27/2019 14:50	900	JT	ug/Kg	Yes	Yes	12.00
j5-sc1b-20to30-82719	8/27/2019 14:55	870	JT	ug/Kg	Yes	Yes	11.60
j5-sc1b-30to40-82719	8/27/2019 15:00	210	JT	ug/Kg	Yes	Yes	2.80
j5-sc1b-40to50-82719	8/27/2019 16:10	480	JT	ug/Kg	Yes	Yes	6.40
j5-sc1b-50to60-82719	8/27/2019 16:15	1100	JT	ug/Kg	Yes	Yes	14.67

Table 11a. Analytical Results for Total PCBs as Congeners(Calculated Total)

Sample ID	Sample Date	Result	Qualifier	Units	Exceeds MCL[1] (9 ug/kg)	Exceeds RAL[2] (75 ug/kg)	RAL EF
j5-sc1b-60to70-82719	8/27/2019 16:20	410	JT	ug/Kg	Yes	Yes	5.47
j5-sc1b-70to80-82719	8/27/2019 16:25	340	JT	ug/Kg	Yes	Yes	4.53
j5-sc1b-80to90-82719	8/27/2019 17:25	2.7	JT	ug/Kg	No	No	0.04
j5-sc1b-90to100-82719	8/27/2019 17:30	17	JT	ug/Kg	No	No	0.23

[1] MCL = Minimum Cleanup Level; corresponds to EPA Record of Decision Table 17

[2] RAL = Remedial Action Level; corresponds to EPA Record of Decision Table 21

EF = Exceedance Factor (Result/RAL); Non-detects shown as less than (<) the calculated value.

NC = Not Calculated; result is non-detect with a detection limit greater than MCL or RAL, or result is "R" qualified.

NE = Not Evaluated; result is non-detect with a detection limit greater than MCL or RAL, or result is "R" qualified.

J = Reported result is an estimate.

U = Analyte was not detected in sample.

T = Total concentration from component analytes calculated with Pre-Remedial Design Investigation summation rules (AECOM and Geosyntec 2019, Appendix E)

A = Summed value based on limited number of analytes

R = Rejected

PCB = polychlorinated biphenyls

Table 11b. Analytical Results for Total PCBs Aroclors (Calculated Total)

Sample ID	Sample Date	Result	Qualifier	Units	Exceeds MCL[1] (9 ug/kg)	Exceeds RAL[2] (75 ug/kg)	RAL EF
Grab and Shore Samples							
A1-0to30-102018	10/20/2018 12:05	1.6	UT	ug/Kg	No	No	0.02
a2-0to26-100818	10/8/2018 14:04	7.4	JT	ug/Kg	No	No	0.10
a3-0to31-100818	10/8/2018 11:14	45	AT	ug/Kg	Yes	No	0.60
a4-0to25-100818	10/8/2018 13:26	86	JT	ug/Kg	Yes	Yes	1.15
a5-0to25-100818	10/8/2018 14:38	46	AT	ug/Kg	Yes	No	0.61
a6-0to23-100818	10/8/2018 16:08	53	JT	ug/Kg	Yes	No	0.71
a7-0to26-100918	10/9/2018 13:23	58	JT	ug/Kg	Yes	No	0.77
c4-0to27-100918	10/9/2018 8:28	130	JT	ug/Kg	Yes	Yes	1.73
d2-0to19-101018	10/10/2018 15:21	8.7	JT	ug/Kg	No	No	0.12
f2-0to19-101018	10/10/2018 16:36	19	JT	ug/Kg	Yes	No	0.25
g6-0to27-101818	10/18/2018 14:12	87	JT	ug/Kg	Yes	Yes	1.16
h2-0to30-101218	10/12/2018 10:28	21	JT	ug/Kg	Yes	No	0.28
j2a3-0to18-101218	10/12/2018 12:57	17	AT	ug/Kg	Yes	No	0.23
M4-0to26-101918	10/19/2018 13:11	33	JNT	ug/Kg	Yes	No	0.44
N5-0to28-101418	10/14/2018 16:46	26	AT	ug/Kg	Yes	No	0.35
N7-0to27-101418	10/14/2018 15:10	38	JNT	ug/Kg	Yes	No	0.51
O7-0to27-101918	10/19/2018 15:36	40	JT	ug/Kg	Yes	No	0.53
q2-0to13-101818	10/18/2018 9:39	2	JT	ug/Kg	No	No	0.03
q6-0to27-102018	10/20/2018 9:19	11	AT	ug/Kg	Yes	No	0.15
t6-0to29-101618	10/16/2018 14:38	18	AT	ug/Kg	Yes	No	0.24
515-0to26-101918	10/19/2018 13:11	75	AT	ug/Kg	Yes	Yes	1.00
Core Samples							
D6-SC-0to1-102118	10/21/2018 16:00	1500	JT	ug/Kg	Yes	Yes	20.00
d6-sc1b-100to110-82619	8/26/2019 17:40	1.6	UT	ug/Kg	No	No	0.02
d6-sc1b-10to20-82619	8/26/2019 12:10	1700	AT	ug/Kg	Yes	Yes	22.67
d6-sc1b-110to120-82619	8/26/2019 17:50	1.6	UT	ug/Kg	No	No	0.02
d6-sc1b-20to30-82619	8/26/2019 12:45	1000	AT	ug/Kg	Yes	Yes	13.33
d6-sc1b-30to40-82619	8/26/2019 13:00	1400	AT	ug/Kg	Yes	Yes	18.67
d6-sc1b-40to50-82619	8/26/2019 14:45	280	AT	ug/Kg	Yes	Yes	3.73

Table 11b. Analytical Results for Total PCBs Aroclors (Calculated Total)

Sample ID	Sample Date	Result	Qualifier	Units	Exceeds MCL[1] (9 ug/kg)	Exceeds RAL[2] (75 ug/kg)	RAL EF
Grab and Shore Samples							
d6-sc1b-50to60-82619	8/26/2019 14:50	410	AT	ug/Kg	Yes	Yes	5.47
d6-sc1b-60to70-82619	8/26/2019 15:30	360	AT	ug/Kg	Yes	Yes	4.80
d6-sc1b-70to80-82619	8/26/2019 15:40	51	AT	ug/Kg	Yes	No	0.68
d6-sc1b-80to90-82619	8/26/2019 16:55	20	AT	ug/Kg	Yes	No	0.27
d6-sc1b-90to100-82619	8/26/2019 17:00	7	JT	ug/Kg	No	No	0.09
h3-sc1b-00to10-82919	8/28/2019 20:05	1500	JT	ug/Kg	Yes	Yes	20.00
h3-sc1b-100to110-82919	8/29/2019 9:50	1.5	UT	ug/Kg	No	No	0.02
h3-sc1b-10-20-82919	8/28/2019 20:10	1600	T	ug/Kg	Yes	Yes	21.33
h3-sc1b-110to114-82919	8/29/2019 10:00	3.4	JT	ug/Kg	No	No	0.05
h3-sc1b-20to30-82819	8/28/2019 20:15	750	JT	ug/Kg	Yes	Yes	10.00
h3-sc1b-30to40-82919	8/29/2019 8:25	58	AT	ug/Kg	Yes	No	0.77
h3-sc1b-40to50-82919	8/29/2019 8:30	46	AT	ug/Kg	Yes	No	0.61
h3-sc1b-50to60-82919	8/29/2019 8:35	76	AT	ug/Kg	Yes	Yes	1.01
h3-sc1b-60to70-82919	8/29/2019 9:00	16	T	ug/Kg	Yes	No	0.21
h3-sc1b-70to80-82919	8/29/2019 9:05	2.7	JT	ug/Kg	No	No	0.04
h3-sc1b-80to90-82919	8/29/2019 9:30	1.5	UT	ug/Kg	No	No	0.02
h3-sc1b-90to100-82919	8/29/2019 9:35	1.5	UT	ug/Kg	No	No	0.02
J3-SC-00to10-102218	10/22/2018 12:40	56	AT	ug/Kg	Yes	No	0.75
j3-sc1b-10to20-82719	8/27/2019 9:55	12	JT	ug/Kg	Yes	No	0.16
j3-sc1b-20to30-82719	8/27/2019 10:00	230	AT	ug/Kg	Yes	Yes	3.07
j3-sc1b-30to40-82719	8/27/2019 10:05	500	JT	ug/Kg	Yes	Yes	6.67
j3-sc1b-40to50-82719	8/27/2019 11:20	140	JT	ug/Kg	Yes	Yes	1.87
j3-sc1b-50to60-82719	8/27/2019 11:25	27	T	ug/Kg	Yes	No	0.36
j3-sc1b-60to70-82719	8/27/2019 11:30	1.6	UT	ug/Kg	No	No	0.02
j3-sc1b-70to80-82719	8/27/2019 11:35	1.6	UT	ug/Kg	No	No	0.02
j3-sc1b-80to90-82719	8/27/2019 12:20	12	JT	ug/Kg	Yes	No	0.16
j3-sc1b-90to100-82719	8/27/2019 12:25	1.6	UT	ug/Kg	No	No	0.02
j5-sc1b-00to10-82719	8/27/2019 14:45	600	JT	ug/Kg	Yes	Yes	8.00
j5-sc1b-100to110-82719	8/27/2019 17:35	1.5	UT	ug/Kg	No	No	0.02

Table 11b. Analytical Results for Total PCBs Aroclors (Calculated Total)

Sample ID	Sample Date	Result	Qualifier	Units	Exceeds MCL[1] (9 ug/kg)	Exceeds RAL[2] (75 ug/kg)	RAL EF
Grab and Shore Samples							
j5-sc1b-10to20-82719	8/27/2019 14:50	1200	AT	ug/Kg	Yes	Yes	16.00
j5-sc1b-20to30-82719	8/27/2019 14:55	940	JT	ug/Kg	Yes	Yes	12.53
j5-sc1b-30to40-82719	8/27/2019 15:00	220	JT	ug/Kg	Yes	Yes	2.93
j5-sc1b-40to50-82719	8/27/2019 16:10	890	AT	ug/Kg	Yes	Yes	11.87
j5-sc1b-50to60-82719	8/27/2019 16:15	1200	AT	ug/Kg	Yes	Yes	16.00
j5-sc1b-60to70-82719	8/27/2019 16:20	330	AT	ug/Kg	Yes	Yes	4.40
j5-sc1b-70to80-82719	8/27/2019 16:25	300	T	ug/Kg	Yes	Yes	4.00
j5-sc1b-80to90-82719	8/27/2019 17:25	4.6	JT	ug/Kg	No	No	0.06
j5-sc1b-90to100-82719	8/27/2019 17:30	6.6	JT	ug/Kg	No	No	0.09
j6-sc1b-00to10-82719	8/27/2019 19:30	1200	T	ug/Kg	Yes	Yes	16.00
j6-sc1b-100to110-82819	8/28/2019 12:05	1.6	UT	ug/Kg	No	No	0.02
j6-sc1b-10to20-82719	8/27/2019 19:35	430	JT	ug/Kg	Yes	Yes	5.73
j6-sc1b-110to120-82819	8/28/2019 12:10	1.6	UT	ug/Kg	No	No	0.02
j6-sc1b-20to30-82819	8/28/2019 9:20	190	JT	ug/Kg	Yes	Yes	2.53
j6-sc1b-30to40-82819	8/28/2019 9:25	370	AT	ug/Kg	Yes	Yes	4.93
j6-sc1b-40to50-82819	8/28/2019 10:25	480	AT	ug/Kg	Yes	Yes	6.40
j6-sc1b-50to60-82819	8/28/2019 10:30	740	AT	ug/Kg	Yes	Yes	9.87
j6-sc1b-60to70-82819	8/28/2019 10:35	460	AT	ug/Kg	Yes	Yes	6.13
j6-sc1b-70to80-82819	8/28/2019 10:40	60	AT	ug/Kg	Yes	No	0.80
j6-sc1b-80to90-82819	8/28/2019 11:55	14	JT	ug/Kg	Yes	No	0.19
j6-sc1b-90to100-82819	8/28/2019 12:00	1.6	UT	ug/Kg	No	No	0.02
l3-sc1b-00to10-82619	8/26/2019 10:06	30	AT	ug/Kg	Yes	No	0.40
l3-sc1b-10to20-82619	8/26/2019 10:07	30	AT	ug/Kg	Yes	No	0.40
l3-sc1b-20to30-82619	8/26/2019 10:30	23	AT	ug/Kg	Yes	No	0.31
l3-sc1b-30to40-82619	8/26/2019 10:35	14	T	ug/Kg	Yes	No	0.19
R4-SC-0to1-102118	10/21/2018 18:40	220	AT	ug/Kg	Yes	Yes	2.93
R4-SC-0to1-102118	10/21/2018 18:40	220	AT	ug/Kg	Yes	Yes	2.93
r4-sc1b-100to110-82819	8/28/2019 17:00	160	JNT	ug/Kg	Yes	Yes	2.13
r4-sc1b-10to20-82819	8/28/2019 13:55	410	JT	ug/Kg	Yes	Yes	5.47

Table 11b. Analytical Results for Total PCBs Aroclors (Calculated Total)

Sample ID	Sample Date	Result	Qualifier	Units	Exceeds MCL[1] (9 ug/kg)	Exceeds RAL[2] (75 ug/kg)	RAL EF
Grab and Shore Samples							
r4-sc1b-110to120-82819	8/28/2019 17:10	170	JT	ug/Kg	Yes	Yes	2.27
r4-sc1b-120to130-82819	8/28/2019 18:20	200	JNT	ug/Kg	Yes	Yes	2.67
r4-sc1b-130to140-82819	8/28/2019 18:25	22	JT	ug/Kg	Yes	No	0.29
r4-sc1b-140to150-82819	8/28/2019 18:30	9.9	JT	ug/Kg	Yes	No	0.13
r4-sc1b-20to30-82819	8/28/2019 14:00	220	JNT	ug/Kg	Yes	Yes	2.93
r4-sc1b-30to40-82819	8/28/2019 14:05	410	AT	ug/Kg	Yes	Yes	5.47
r4-sc1b-40to50-82819	8/28/2019 15:10	580	AT	ug/Kg	Yes	Yes	7.73
r4-sc1b-50to60-82819	8/28/2019 15:20	190	AT	ug/Kg	Yes	Yes	2.53
r4-sc1b-60to70-82819	8/28/2019 15:50	410	AT	ug/Kg	Yes	Yes	5.47
r4-sc1b-70to80-82819	8/28/2019 15:55	320	JT	ug/Kg	Yes	Yes	4.27
r4-sc1b-80to90-82819	8/28/2019 16:30	240	JNT	ug/Kg	Yes	Yes	3.20
r4-sc1b-90to100-82819	8/28/2019 16:40	300	T	ug/Kg	Yes	Yes	4.00
411-sc1b-50to60-82619	8/26/2019 15:00	470	AT	ug/Kg	Yes	Yes	6.27
412-sc1b-80to90-82719	8/27/2019 12:35	14	T	ug/Kg	Yes	No	0.19
413-sc1b-40to50-82819	8/28/2019 10:45	820	AT	ug/Kg	Yes	Yes	10.93

[1] MCL = Minimum Cleanup Level; corresponds to EPA Record of Decision Table 17

[2] RAL = Remedial Action Level; corresponds to EPA Record of Decision Table 21

EF = Exceedance Factor (Result/RAL); Non-detects shown as less than (<) the calculated value

NC = Not Calculated; result is non-detect with a detection limit greater than MCL or RAL, or result is "R" qualified.

NE = Not Evaluated; result is non-detect with a detection limit greater than MCL or RAL, or result is "R" qualified.

J = Reported result is an estimate.

U = Analyte was not detected in sample.

T = Total concentration from component analytes calculated with EPA Remedial Investigation summation rules (EPA, 2016 (Appendix A3. Table A3-3))

A = Summed value based on limited number of analytes

R = Rejected

PCB = polychlorinated biphenyls

Table 11c. Analytical Results for Total PAHs (Calculated Total)

Sample ID	Sample Date	Result	Qualifier	Units	Exceeds MCL[1] (23000 ug/kg)	Exceeds RAL[2] (30000 ug/kg)[3]	RAL EF
Grab and Shore Samples							
A1-0to30-102018	10/20/18 12:05 PM	0.36	JT	ug/kg	No	No	<0.001
a2-0to26-100818	10/8/18 2:04 PM	2500	JT	ug/kg	No	No	0.083
a3-0to31-100818	10/8/18 11:14 AM	1000	JT	ug/kg	No	No	0.033
a4-0to25-100818	10/8/18 1:26 PM	1900	JT	ug/kg	No	No	0.063
a5-0to25-100818	10/8/18 2:38 PM	440	JT	ug/kg	No	No	0.015
a6-0to23-100818	10/8/18 4:08 PM	210	JT	ug/kg	No	No	0.007
a7-0to26-100918	10/9/18 1:23 PM	180	JT	ug/kg	No	No	0.006
c4-0to27-100918	10/9/18 8:28 AM	7100	JT	ug/kg	No	No	0.237
d2-0to19-101018	10/10/2018 15:21	1200	JT	ug/kg	No	No	0.040
f2-0to19-101018	10/10/18 4:36 PM	400	JT	ug/kg	No	No	0.013
g6-0to27-101818	10/18/18 2:12 PM	740	JT	ug/kg	No	No	0.025
h2-0to30-101218	10/12/18 10:28 AM	3000	JT	ug/kg	No	No	0.100
j2a3-0to18-101218	10/12/18 12:57 PM	1100	JT	ug/kg	No	No	0.037
M4-0to26-101918	10/19/18 1:11 PM	890	JT	ug/kg	No	No	0.030
O7-0to27-101918	10/19/18 3:36 PM	130	JT	ug/kg	No	No	0.004
q2-0to13-101818	10/18/18 9:39 AM	86	JT	ug/kg	No	No	0.003
q6-0to27-102018	10/20/18 9:19 AM	53	JT	ug/kg	No	No	0.002
t6-0to29-101618	10/16/18 2:38 PM	66	JT	ug/kg	No	No	0.002
515-0to26-101918	10/19/18 1:11 PM	4300	JT	ug/kg	No	No	0.143
Core Samples							
d6-sc1b-100to110-82619	8/26/19 5:40 PM	5.1	JT	ug/kg	No	No	<0.001
d6-sc1b-110to120-82619	8/26/19 5:50 PM	1.9	JT	ug/kg	No	No	<0.001
d6-sc1b-20to30-82619	8/26/19 12:45 PM	660	JT	ug/kg	No	No	0.022
d6-sc1b-30to40-82619	8/26/19 1:00 PM	780	JT	ug/kg	No	No	0.026
d6-sc1b-40to50-82619	8/26/19 2:45 PM	910	JT	ug/kg	No	No	0.030
d6-sc1b-50to60-82619	8/26/19 2:50 PM	1000	JT	ug/kg	No	No	0.033
d6-sc1b-60to70-82619	8/26/19 3:30 PM	580	JT	ug/kg	No	No	0.019
d6-sc1b-70to80-82619	8/26/19 3:40 PM	70	JT	ug/kg	No	No	0.002
d6-sc1b-80to90-82619	8/26/19 4:55 PM	62	JT	ug/kg	No	No	0.002

Table 11c. Analytical Results for Total PAHs (Calculated Total)

Sample ID	Sample Date	Result	Qualifier	Units	Exceeds MCL[1] (23000 ug/kg)	Exceeds RAL[2] (30000 ug/kg)[3]	RAL EF
d6-sc1b-90to100-82619	8/26/19 5:00 PM	9.4	JT	ug/kg	No	No	<0.001
h3-sc1b-100to110-82919	8/29/19 9:50 AM	21	JT	ug/kg	No	No	0.001
h3-sc1b-20to30-82819	8/28/19 8:15 PM	1600	JT	ug/kg	No	No	0.053
h3-sc1b-30to40-82919	8/29/19 8:25 AM	380	JT	ug/kg	No	No	0.013
h3-sc1b-40to50-82919	8/29/19 8:30 AM	460	JT	ug/kg	No	No	0.015
h3-sc1b-50to60-82919	8/29/19 8:35 AM	650	JT	ug/kg	No	No	0.022
h3-sc1b-60to70-82919	8/29/19 9:00 AM	1000	JT	ug/kg	No	No	0.033
h3-sc1b-70to80-82919	8/29/19 9:05 AM	490	JT	ug/kg	No	No	0.016
h3-sc1b-80to90-82919	8/29/19 9:30 AM	290	JT	ug/kg	No	No	0.010
h3-sc1b-90to100-82919	8/29/19 9:35 AM	180	JT	ug/kg	No	No	0.006
j3-sc1b-10to20-82719	8/27/19 9:55 AM	53	JT	ug/kg	No	No	0.002
j3-sc1b-20to30-82719	8/27/19 10:00 AM	840	JT	ug/kg	No	No	0.028
j3-sc1b-30to40-82719	8/27/19 10:05 AM	1800	JT	ug/kg	No	No	0.060
j3-sc1b-40to50-82719	8/27/19 11:20 AM	610	JT	ug/kg	No	No	0.020
j3-sc1b-50to60-82719	8/27/19 11:25 AM	360	JT	ug/kg	No	No	0.012
j3-sc1b-60to70-82719	8/27/19 11:30 AM	210	JT	ug/kg	No	No	0.007
j3-sc1b-70to80-82719	8/27/19 11:35 AM	42	JT	ug/kg	No	No	0.001
j3-sc1b-80to90-82719	8/27/19 12:20 PM	430	JT	ug/kg	No	No	0.014
j3-sc1b-90to100-82719	8/27/19 12:25 PM	300	JT	ug/kg	No	No	0.010
j5-sc1b-100to110-82719	8/27/19 5:35 PM	1.8	JT	ug/kg	No	No	<0.001
j5-sc1b-20to30-82719	8/27/19 2:55 PM	800	JT	ug/kg	No	No	0.027
j5-sc1b-30to40-82719	8/27/19 3:00 PM	430	JT	ug/kg	No	No	0.014
j5-sc1b-40to50-82719	8/27/19 4:10 PM	1200	JT	ug/kg	No	No	0.040
j5-sc1b-50to60-82719	8/27/19 4:15 PM	1400	JT	ug/kg	No	No	0.047
j5-sc1b-60to70-82719	8/27/19 4:20 PM	560	JT	ug/kg	No	No	0.019
j5-sc1b-70to80-82719	8/27/19 4:25 PM	620	JT	ug/kg	No	No	0.021
j5-sc1b-80to90-82719	8/27/19 5:25 PM	8.5	JT	ug/kg	No	No	<0.001
j5-sc1b-90to100-82719	8/27/19 5:30 PM	7.2	JT	ug/kg	No	No	<0.001
j6-sc1b-100to110-82819	8/28/19 12:05 PM	0.92	JT	ug/kg	No	No	<0.001
j6-sc1b-110to120-82819	8/28/19 12:10 PM	0.56	JT	ug/kg	No	No	<0.001

Table 11c. Analytical Results for Total PAHs (Calculated Total)

Sample ID	Sample Date	Result	Qualifier	Units	Exceeds MCL[1] (23000 ug/kg)	Exceeds RAL[2] (30000 ug/kg)[3]	RAL EF
j6-sc1b-20to30-82819	8/28/19 9:20 AM	340	JT	ug/kg	No	No	0.011
j6-sc1b-30to40-82819	8/28/19 9:25 AM	360	JT	ug/kg	No	No	0.012
j6-sc1b-40to50-82819	8/28/19 10:25 AM	370	JT	ug/kg	No	No	0.012
j6-sc1b-50to60-82819	8/28/19 10:30 AM	440	JT	ug/kg	No	No	0.015
j6-sc1b-60to70-82819	8/28/19 10:35 AM	420	JT	ug/kg	No	No	0.014
j6-sc1b-70to80-82819	8/28/19 10:40 AM	83	JT	ug/kg	No	No	0.003
j6-sc1b-80to90-82819	8/28/19 11:55 AM	18	JT	ug/kg	No	No	<0.001
j6-sc1b-90to100-82819	8/28/19 12:00 PM	1.3	JT	ug/kg	No	No	<0.001
l3-sc1b-20to30-82619	8/26/19 10:30 AM	140	JT	ug/kg	No	No	0.005
l3-sc1b-30to40-82619	8/26/19 10:35 AM	85	JT	ug/kg	No	No	0.003
r4-sc1b-100to110-82819	8/28/19 5:00 PM	630	JT	ug/kg	No	No	0.021
r4-sc1b-110to120-82819	8/28/19 5:10 PM	470	JT	ug/kg	No	No	0.016
r4-sc1b-120to130-82819	8/28/19 6:20 PM	350	JT	ug/kg	No	No	0.012
r4-sc1b-130to140-82819	8/28/19 6:25 PM	120	JT	ug/kg	No	No	0.004
r4-sc1b-140to150-82819	8/28/19 6:30 PM	39	JT	ug/kg	No	No	0.001
r4-sc1b-20to30-82819	8/28/19 2:00 PM	640	JT	ug/kg	No	No	0.021
r4-sc1b-30to40-82819	8/28/19 2:05 PM	340	JT	ug/kg	No	No	0.011
r4-sc1b-40to50-82819	8/28/19 3:10 PM	550	JT	ug/kg	No	No	0.018
r4-sc1b-50to60-82819	8/28/19 3:20 PM	230	JT	ug/kg	No	No	0.008
r4-sc1b-60to70-82819	8/28/19 3:50 PM	620	JT	ug/kg	No	No	0.021
r4-sc1b-70to80-82819	8/28/19 3:55 PM	540	JT	ug/kg	No	No	0.018
r4-sc1b-80to90-82819	8/28/19 4:30 PM	630	JT	ug/kg	No	No	0.021
r4-sc1b-90to100-82819	8/28/19 4:40 PM	500	JT	ug/kg	No	No	0.017
411-sc1b-50to60-82619	8/26/19 3:00 PM	1100	JT	ug/kg	No	No	0.037
412-sc1b-80to90-82719	8/27/19 12:35 PM	510	JT	ug/kg	No	No	0.017
413-sc1b-40to50-82819	8/28/19 10:45 AM	260	JT	ug/kg	No	No	0.009

[1] MCL = Minimum Cleanup Level; corresponds to Proposed Explanation of Significant Differences, Appendix A1, Updated Record of Decision Table 17 (EPA 2018)

[2] RAL = Remedial Action Level; corresponds to Proposed Explanation of Significant Differences, Appendix A1, Updated Record of Decision Table 21 (EPA 2018)

[3] EPA has not yet finalized the ESD; further adjustments to the values for PAHs may be necessary when EPA finalizes the document.

EF = Exceedance Factor (Result/RAL); Non-detects shown as less than (<) the calculated value

Table 11c. Analytical Results for Total PAHs (Calculated Total)

Sample ID	Sample Date	Result	Qualifier	Units	Exceeds MCL[1] (23000 ug/kg)	Exceeds RAL[2] (30000 ug/kg)[3]	RAL EF

NC = Not Calculated; result is non-detect with a detection limit greater than MCL or RAL, or result is "R" qualified.

NE = Not Evaluated; result is non-detect with a detection limit greater than MCL or RAL, or result is "R" qualified.

J = Reported result is an estimate.

U = Analyte was not detected in sample.

T = Total concentration from component analytes calculated with Pre-Remedial Design Investigation summation rules (AECOM and Geosyntec 2019, Appendix E)

A = Summed value based on limited number of analytes

R = Rejected

PAHs = polycyclic aromatic hydrocarbons

Table 11d. Analytical Results for 2,3,7,8-TCDD

Sample ID	Sample Date	Result	Qualifier	Units	Exceeds MCL[1] (0.0002 ug/kg)	Exceeds RAL[2] (0.0006 ug/kg)	RAL EF
Grab and Shore Samples							
A1-0to30-102018	10/20/18 12:05 PM	0.00016	U	ug/kg	No	No	0.27
a2-0to26-100818	10/8/18 2:04 PM	0.00058	U	ug/kg	Yes	No	0.97
a3-0to31-100818	10/8/18 11:14 AM	0.0008	J	ug/kg	Yes	Yes	1.33
a4-0to25-100818	10/8/18 1:26 PM	0.00086	U	ug/kg	Yes	Yes	1.43
a5-0to25-100818	10/8/18 2:38 PM	0.00082	J	ug/kg	Yes	Yes	1.37
a6-0to23-100818	10/8/18 4:08 PM	0.00045	U	ug/kg	Yes	No	0.75
a7-0to26-100918	10/9/18 1:23 PM	0.00047	U	ug/kg	Yes	No	0.78
B1-0to20-101418	10/14/18 12:58 PM	0.000078	U	ug/kg	No	No	0.13
B5-0to26-100818	10/8/18 3:07 PM	0.00077	J	ug/kg	Yes	Yes	1.28
c4-0to27-100918	10/9/18 8:28 AM	0.00047	U	ug/kg	Yes	No	0.78
d2-0to19-101018	10/10/18 3:21 PM	0.00013	U	ug/kg	No	No	0.22
F1-0to23-101418	10/14/18 11:08 AM	0.000093	U	ug/kg	No	No	0.16
f2-0to19-101018	10/10/18 4:36 PM	0.00039	J	ug/kg	Yes	No	0.65
g6-0to27-101818	10/18/18 2:12 PM	0.00053	U	ug/kg	Yes	No	0.88
h2-0to30-101218	10/12/18 10:28 AM	0.00043	U	ug/kg	Yes	No	0.72
j2a3-0to18-101218	10/12/18 12:57 PM	0.00011	U	ug/kg	No	No	0.18
J7-0to26-101218	10/12/18 3:52 PM	0.0008	J	ug/kg	Yes	Yes	1.33
M4-0to26-101918	10/19/18 1:11 PM	0.00077	U	ug/kg	Yes	Yes	1.28
N5-0to28-101418	10/14/18 4:46 PM	0.00056	J	ug/kg	Yes	No	0.93
N7-0to27-101418	10/14/18 3:10 PM	0.00062	J	ug/kg	Yes	Yes	1.03
O7-0to27-101918	10/19/18 3:36 PM	0.00066	U	ug/kg	Yes	Yes	1.10
q2-0to13-101818	10/18/18 9:39 AM	0.00015	U	ug/kg	No	No	0.25
q6-0to27-102018	10/20/18 9:19 AM	0.001	U	ug/kg	Yes	Yes	1.67
R1-0to30-101518	10/15/18 2:37 PM	0.00015	U	ug/kg	No	No	0.25
t6-0to29-101618	10/16/18 2:38 PM	0.0004	U	ug/kg	Yes	No	0.67
515-0to26-101918	10/19/18 1:11 PM	0.00054	U	ug/kg	Yes	No	0.90
Core Samples							
D6-SC-108to123-102118	10/21/18 6:00 PM	0.000052	J	ug/kg	No	No	0.09
d6-sc1b-100to110-82619	8/26/19 5:40 PM	0.00094	U	ug/kg	Yes	Yes	1.57

Table 11d. Analytical Results for 2,3,7,8-TCDD

Sample ID	Sample Date	Result	Qualifier	Units	Exceeds MCL[1] (0.0002 ug/kg)	Exceeds RAL[2] (0.0006 ug/kg)	RAL EF
d6-sc1b-110to120-82619	8/26/19 5:50 PM	0.00097	U	ug/kg	Yes	Yes	1.62
d6-sc1b-20to30-82619	8/26/19 12:45 PM	0.00045	U	ug/kg	Yes	No	0.75
d6-sc1b-30to40-82619	8/26/19 1:00 PM	0.001	U	ug/kg	Yes	Yes	1.67
d6-sc1b-40to50-82619	8/26/19 2:45 PM	0.00053	U	ug/kg	Yes	No	0.88
d6-sc1b-50to60-82619	8/26/19 2:50 PM	0.000098	J	ug/kg	No	No	0.16
d6-sc1b-60to70-82619	8/26/19 3:30 PM	0.000085	J	ug/kg	No	No	0.14
d6-sc1b-70to80-82619	8/26/19 3:40 PM	0.000096	J	ug/kg	No	No	0.16
d6-sc1b-80to90-82619	8/26/19 4:55 PM	0.00094	U	ug/kg	Yes	Yes	1.57
d6-sc1b-90to100-82619	8/26/19 5:00 PM	0.00092	U	ug/kg	Yes	Yes	1.53
D6-SC-2to4-102118	10/21/18 4:30 PM	0.0016		ug/kg	Yes	Yes	2.67
h3-sc1b-100to110-82919	8/29/19 9:50 AM	0.00094	U	ug/kg	Yes	Yes	1.57
h3-sc1b-20to30-82819	8/28/19 8:15 PM	0.00076	J	ug/kg	Yes	Yes	1.27
h3-sc1b-30to40-82919	8/29/19 8:25 AM	0.00097	U	ug/kg	Yes	Yes	1.62
h3-sc1b-40to50-82919	8/29/19 8:30 AM	0.00093	U	ug/kg	Yes	Yes	1.55
h3-sc1b-50to60-82919	8/29/19 8:35 AM	0.00093	U	ug/kg	Yes	Yes	1.55
h3-sc1b-60to70-82919	8/29/19 9:00 AM	0.00095	U	ug/kg	Yes	Yes	1.58
h3-sc1b-70to80-82919	8/29/19 9:05 AM	0.00097	U	ug/kg	Yes	Yes	1.62
h3-sc1b-80to90-82919	8/29/19 9:30 AM	0.00094	U	ug/kg	Yes	Yes	1.57
h3-sc1b-90to100-82919	8/29/19 9:35 AM	0.00093	U	ug/kg	Yes	Yes	1.55
j3-sc1b-10to20-82719	8/27/19 9:55 AM	0.00092	U	ug/kg	Yes	Yes	1.53
j3-sc1b-20to30-82719	8/27/19 10:00 AM	0.00091	U	ug/kg	Yes	Yes	1.52
j3-sc1b-30to40-82719	8/27/19 10:05 AM	0.0005	J	ug/kg	Yes	No	0.83
j3-sc1b-40to50-82719	8/27/19 11:20 AM	0.00092	U	ug/kg	Yes	Yes	1.53
j3-sc1b-50to60-82719	8/27/19 11:25 AM	0.00089	U	ug/kg	Yes	Yes	1.48
j3-sc1b-60to70-82719	8/27/19 11:30 AM	0.00097	U	ug/kg	Yes	Yes	1.62
j3-sc1b-70to80-82719	8/27/19 11:35 AM	0.00093	U	ug/kg	Yes	Yes	1.55
j3-sc1b-80to90-82719	8/27/19 12:20 PM	0.00095	U	ug/kg	Yes	Yes	1.58
j3-sc1b-90to100-82719	8/27/19 12:25 PM	0.00094	U	ug/kg	Yes	Yes	1.57
j5-sc1b-100to110-82719	8/27/19 5:35 PM	0.00099	U	ug/kg	Yes	Yes	1.65
j5-sc1b-20to30-82719	8/27/19 2:55 PM	0.00036	U	ug/kg	Yes	No	0.60

Table 11d. Analytical Results for 2,3,7,8-TCDD

Sample ID	Sample Date	Result	Qualifier	Units	Exceeds MCL[1] (0.0002 ug/kg)	Exceeds RAL[2] (0.0006 ug/kg)	RAL EF
j5-sc1b-30to40-82719	8/27/19 3:00 PM	0.00021	U	ug/kg	Yes	No	0.35
j5-sc1b-40to50-82719	8/27/19 4:10 PM	0.00022	U	ug/kg	Yes	No	0.37
j5-sc1b-50to60-82719	8/27/19 4:15 PM	0.00031	J	ug/kg	Yes	No	0.52
j5-sc1b-60to70-82719	8/27/19 4:20 PM	0.00016	J	ug/kg	No	No	0.27
j5-sc1b-70to80-82719	8/27/19 4:25 PM	0.00019	J	ug/kg	No	No	0.32
j5-sc1b-80to90-82719	8/27/19 5:25 PM	0.00099	U	ug/kg	Yes	Yes	1.65
j5-sc1b-90to100-82719	8/27/19 5:30 PM	0.000053	U	ug/kg	No	No	0.09
J5-SC-60to80-102218	10/22/18 4:50 PM	0.0019		ug/kg	Yes	Yes	3.17
j6-sc1b-100to110-82819	8/28/19 12:05 PM	0.00092	U	ug/kg	Yes	Yes	1.53
j6-sc1b-110to120-82819	8/28/19 12:10 PM	0.00089	U	ug/kg	Yes	Yes	1.48
j6-sc1b-20to30-82819	8/28/19 9:20 AM	0.00053	J	ug/kg	Yes	No	0.88
j6-sc1b-30to40-82819	8/28/19 9:25 AM	0.0003	J	ug/kg	Yes	No	0.50
j6-sc1b-40to50-82819	8/28/19 10:25 AM	0.0003	U	ug/kg	Yes	No	0.50
j6-sc1b-50to60-82819	8/28/19 10:30 AM	0.00044	U	ug/kg	Yes	No	0.73
j6-sc1b-60to70-82819	8/28/19 10:35 AM	0.00051	J	ug/kg	Yes	No	0.85
j6-sc1b-70to80-82819	8/28/19 10:40 AM	0.00094	U	ug/kg	Yes	Yes	1.57
j6-sc1b-80to90-82819	8/28/19 11:55 AM	0.00096	U	ug/kg	Yes	Yes	1.60
j6-sc1b-90to100-82819	8/28/19 12:00 PM	0.00098	U	ug/kg	Yes	Yes	1.63
J6-SC-40to60-102218	10/22/18 6:50 PM	0.002		ug/kg	Yes	Yes	3.33
L3-SC-00to10-102218	10/22/2018 10:35	0.00016	U	ug/kg	No	No	0.27
l3-sc1b-20to30-82619	8/26/19 10:30 AM	0.00098	U	ug/kg	Yes	Yes	1.63
l3-sc1b-30to40-82619	8/26/19 10:35 AM	0.00095	U	ug/kg	Yes	Yes	1.58
R4-SC-120to138-102118	10/21/18 8:45 PM	0.00039	J	ug/kg	Yes	No	0.65
r4-sc1b-100to110-82819	8/28/19 5:00 PM	0.00099	U	ug/kg	Yes	Yes	1.65
r4-sc1b-110to120-82819	8/28/19 5:10 PM	0.001	U	ug/kg	Yes	Yes	1.67
r4-sc1b-120to130-82819	8/28/19 6:20 PM	0.001	U	ug/kg	Yes	Yes	1.67
r4-sc1b-130to140-82819	8/28/19 6:25 PM	0.00098	U	ug/kg	Yes	Yes	1.63
r4-sc1b-140to150-82819	8/28/19 6:30 PM	0.00098	U	ug/kg	Yes	Yes	1.63
r4-sc1b-20to30-82819	8/28/19 2:00 PM	0.00016	U	ug/kg	No	No	0.27
r4-sc1b-30to40-82819	8/28/19 2:05 PM	0.00011	U	ug/kg	No	No	0.18

Table 11d. Analytical Results for 2,3,7,8-TCDD

Sample ID	Sample Date	Result	Qualifier	Units	Exceeds MCL[1] (0.0002 ug/kg)	Exceeds RAL[2] (0.0006 ug/kg)	RAL EF
r4-sc1b-40to50-82819	8/28/19 3:10 PM	0.0005	J	ug/kg	Yes	No	0.83
r4-sc1b-50to60-82819	8/28/19 3:20 PM	0.0002	U	ug/kg	No	No	0.33
r4-sc1b-60to70-82819	8/28/19 3:50 PM	0.00098	U	ug/kg	Yes	Yes	1.63
r4-sc1b-70to80-82819	8/28/19 3:55 PM	0.00099	U	ug/kg	Yes	Yes	1.65
r4-sc1b-80to90-82819	8/28/19 4:30 PM	0.000078	U	ug/kg	No	No	0.13
r4-sc1b-90to100-82819	8/28/2019 16:40	0.00099	U	ug/kg	Yes	Yes	1.65
R4-SC-8to10-102118	10/21/18 7:40 PM	0.0012		ug/kg	Yes	Yes	2.00
411-sc1b-50to60-82619	8/26/19 3:00 PM	0.00094	U	ug/kg	Yes	Yes	1.57
412-sc1b-80to90-82719	8/27/19 12:35 PM	0.00099	U	ug/kg	Yes	Yes	1.65
413-sc1b-40to50-82819	8/28/19 10:45 AM	0.001	U	ug/kg	Yes	Yes	1.67

Table 11d. Analytical Results for 2,3,7,8-TCDD

Sample ID	Sample Date	Result	Qualifier	Units	Exceeds MCL[1] (0.0002 ug/kg)	Exceeds RAL[2] (0.0006 ug/kg)	RAL EF

[1] MCL = Minimum Cleanup Level; corresponds to EPA Record of Decision Table 17

[2] RAL = Remedial Action Level; corresponds to EPA Record of Decision Table 21

EF = Exceedance Factor (Result/RAL); Non-detects shown as less than (<) the calculated value

NC = Not Calculated; result is non-detect with a detection limit greater than MCL or RAL, or result is "R" qualified.

NE = Not Evaluated; result is non-detect with a detection limit greater than MCL or RAL, or result is "R" qualified.

J = Reported result is an estimate.

U = Analyte was not detected in sample.

T = Total concentration from component analytes calculated with Pre-Remedial Design Investigation summation rules (AECOM and Geosyntec 2019, Appendix E)

A = Summed value based on limited number of analytes

R = Rejected

TCDD = tetrachlorodibenzo-p-dioxin

Table 11e. Analytical Results for 1,2,3,7,8-PeCDD

Sample ID	Sample Date	Result	Qualifier	Units	Exceeds MCL[1] (0.0002 ug/kg)	Exceeds RAL[2] (0.0008 ug/kg)	RAL EF
Grab and Shore Samples							
A1-0to30-102018	10/20/18 12:05 PM	0.00025	U	ug/kg	Yes	No	0.31
a2-0to26-100818	10/8/18 2:04 PM	0.0018	J	ug/kg	Yes	Yes	2.25
a3-0to31-100818	10/8/18 11:14 AM	0.0015	J	ug/kg	Yes	Yes	1.88
a4-0to25-100818	10/8/18 1:26 PM	0.0017	U	ug/kg	Yes	Yes	2.13
a5-0to25-100818	10/8/18 2:38 PM	0.00088	U	ug/kg	Yes	Yes	1.10
a6-0to23-100818	10/8/18 4:08 PM	0.00096	U	ug/kg	Yes	Yes	1.20
a7-0to26-100918	10/9/18 1:23 PM	0.00093	U	ug/kg	Yes	Yes	1.16
B1-0to20-101418	10/14/18 12:58 PM	0.00023	U	ug/kg	Yes	No	0.29
B5-0to26-100818	10/8/18 3:07 PM	0.0025	J	ug/kg	Yes	Yes	3.13
c4-0to27-100918	10/9/18 8:28 AM	0.0015	J	ug/kg	Yes	Yes	1.88
d2-0to19-101018	10/10/2018 15:21	0.0002	U	ug/kg	No	No	0.25
F1-0to23-101418	10/14/18 11:08 AM	0.00014	J	ug/kg	No	No	0.18
f2-0to19-101018	10/10/18 4:36 PM	0.00024	U	ug/kg	Yes	No	0.30
g6-0to27-101818	10/18/18 2:12 PM	0.00077	U	ug/kg	Yes	No	0.96
h2-0to30-101218	10/12/18 10:28 AM	0.00071	U	ug/kg	Yes	No	0.89
j2a3-0to18-101218	10/12/18 12:57 PM	0.00031	U	ug/kg	Yes	No	0.39
J7-0to26-101218	10/12/18 3:52 PM	0.0038	J	ug/kg	Yes	Yes	4.75
M4-0to26-101918	10/19/18 1:11 PM	0.0019	J	ug/kg	Yes	Yes	2.38
N5-0to28-101418	10/14/18 4:46 PM	0.00099	U	ug/kg	Yes	Yes	1.24
N7-0to27-101418	10/14/18 3:10 PM	0.0016	J	ug/kg	Yes	Yes	2.00
O7-0to27-101918	10/19/18 3:36 PM	0.0019	J	ug/kg	Yes	Yes	2.38
q2-0to13-101818	10/18/18 9:39 AM	0.00025	U	ug/kg	Yes	No	0.31
q6-0to27-102018	10/20/18 9:19 AM	0.0011	U	ug/kg	Yes	Yes	1.38
R1-0to30-101518	10/15/18 2:37 PM	0.00016	U	ug/kg	No	No	0.20
t6-0to29-101618	10/16/18 2:38 PM	0.0014	J	ug/kg	Yes	Yes	1.75
515-0to26-101918	10/19/18 1:11 PM	0.0013	U	ug/kg	Yes	Yes	1.63
Core Samples							
D6-SC-108to123-102118	10/21/18 6:00 PM	0.000061	J	ug/kg	No	No	0.08
d6-sc1b-100to110-82619	8/26/19 5:40 PM	0.0047	U	ug/kg	Yes	Yes	5.88

Table 11e. Analytical Results for 1,2,3,7,8-PeCDD

Sample ID	Sample Date	Result	Qualifier	Units	Exceeds MCL[1] (0.0002 ug/kg)	Exceeds RAL[2] (0.0008 ug/kg)	RAL EF
d6-sc1b-110to120-82619	8/26/19 5:50 PM	0.0048	U	ug/kg	Yes	Yes	6.00
d6-sc1b-20to30-82619	8/26/19 12:45 PM	0.0012	J	ug/kg	Yes	Yes	1.50
d6-sc1b-30to40-82619	8/26/19 1:00 PM	0.005	U	ug/kg	Yes	Yes	6.25
d6-sc1b-40to50-82619	8/26/19 2:45 PM	0.001	J	ug/kg	Yes	Yes	1.25
d6-sc1b-50to60-82619	8/26/19 2:50 PM	0.00028	J	ug/kg	Yes	No	0.35
d6-sc1b-60to70-82619	8/26/19 3:30 PM	0.00015	J	ug/kg	No	No	0.19
d6-sc1b-70to80-82619	8/26/19 3:40 PM	0.00024	J	ug/kg	Yes	No	0.30
d6-sc1b-80to90-82619	8/26/19 4:55 PM	0.0047	U	ug/kg	Yes	Yes	5.88
d6-sc1b-90to100-82619	8/26/19 5:00 PM	0.0046	U	ug/kg	Yes	Yes	5.75
D6-SC-2to4-102118	10/21/18 4:30 PM	0.0038	J	ug/kg	Yes	Yes	4.75
h3-sc1b-100to110-82919	8/29/19 9:50 AM	0.0047	U	ug/kg	Yes	Yes	5.88
h3-sc1b-20to30-82819	8/28/19 8:15 PM	0.0018	U	ug/kg	Yes	Yes	2.25
h3-sc1b-30to40-82919	8/29/19 8:25 AM	0.0048	U	ug/kg	Yes	Yes	6.00
h3-sc1b-40to50-82919	8/29/19 8:30 AM	0.00032	U	ug/kg	Yes	No	0.40
h3-sc1b-50to60-82919	8/29/19 8:35 AM	0.0046	U	ug/kg	Yes	Yes	5.75
h3-sc1b-60to70-82919	8/29/19 9:00 AM	0.00027	J	ug/kg	Yes	No	0.34
h3-sc1b-70to80-82919	8/29/19 9:05 AM	0.00023	U	ug/kg	Yes	No	0.29
h3-sc1b-80to90-82919	8/29/19 9:30 AM	0.0047	U	ug/kg	Yes	Yes	5.88
h3-sc1b-90to100-82919	8/29/19 9:35 AM	0.0047	U	ug/kg	Yes	Yes	5.88
j3-sc1b-10to20-82719	8/27/19 9:55 AM	0.0046	U	ug/kg	Yes	Yes	5.75
j3-sc1b-20to30-82719	8/27/19 10:00 AM	0.00039	J	ug/kg	Yes	No	0.49
j3-sc1b-30to40-82719	8/27/19 10:05 AM	0.0017	J	ug/kg	Yes	Yes	2.13
j3-sc1b-40to50-82719	8/27/19 11:20 AM	0.00026	J	ug/kg	Yes	No	0.33
j3-sc1b-50to60-82719	8/27/19 11:25 AM	0.00024	J	ug/kg	Yes	No	0.30
j3-sc1b-60to70-82719	8/27/19 11:30 AM	0.0048	U	ug/kg	Yes	Yes	6.00
j3-sc1b-70to80-82719	8/27/19 11:35 AM	0.0047	U	ug/kg	Yes	Yes	5.88
j3-sc1b-80to90-82719	8/27/19 12:20 PM	0.00021	U	ug/kg	Yes	No	0.26
j3-sc1b-90to100-82719	8/27/19 12:25 PM	0.0047	U	ug/kg	Yes	Yes	5.88
j5-sc1b-100to110-82719	8/27/19 5:35 PM	0.005	U	ug/kg	Yes	Yes	6.25
j5-sc1b-20to30-82719	8/27/19 2:55 PM	0.00095	J	ug/kg	Yes	Yes	1.19

Table 11e. Analytical Results for 1,2,3,7,8-PeCDD

Sample ID	Sample Date	Result	Qualifier	Units	Exceeds MCL[1] (0.0002 ug/kg)	Exceeds RAL[2] (0.0008 ug/kg)	RAL EF
j5-sc1b-30to40-82719	8/27/19 3:00 PM	0.00059	J	ug/kg	Yes	No	0.74
j5-sc1b-40to50-82719	8/27/19 4:10 PM	0.00078	J	ug/kg	Yes	No	0.98
j5-sc1b-50to60-82719	8/27/19 4:15 PM	0.00086	J	ug/kg	Yes	Yes	1.08
j5-sc1b-60to70-82719	8/27/19 4:20 PM	0.00038	U	ug/kg	Yes	No	0.48
j5-sc1b-70to80-82719	8/27/19 4:25 PM	0.00046	U	ug/kg	Yes	No	0.58
j5-sc1b-80to90-82719	8/27/19 5:25 PM	0.005	U	ug/kg	Yes	Yes	6.25
j5-sc1b-90to100-82719	8/27/19 5:30 PM	0.0049	U	ug/kg	Yes	Yes	6.13
J5-SC-60to80-102218	10/22/18 4:50 PM	0.0039	J	ug/kg	Yes	Yes	4.88
j6-sc1b-100to110-82819	8/28/19 12:05 PM	0.0046	U	ug/kg	Yes	Yes	5.75
j6-sc1b-110to120-82819	8/28/19 12:10 PM	0.0044	U	ug/kg	Yes	Yes	5.50
j6-sc1b-20to30-82819	8/28/19 9:20 AM	0.0013	J	ug/kg	Yes	Yes	1.63
j6-sc1b-30to40-82819	8/28/19 9:25 AM	0.00062	J	ug/kg	Yes	No	0.78
j6-sc1b-40to50-82819	8/28/19 10:25 AM	0.00053	J	ug/kg	Yes	No	0.66
j6-sc1b-50to60-82819	8/28/19 10:30 AM	0.00098	J	ug/kg	Yes	Yes	1.23
j6-sc1b-60to70-82819	8/28/19 10:35 AM	0.0012	J	ug/kg	Yes	Yes	1.50
j6-sc1b-70to80-82819	8/28/19 10:40 AM	0.0047	U	ug/kg	Yes	Yes	5.88
j6-sc1b-80to90-82819	8/28/19 11:55 AM	0.0048	U	ug/kg	Yes	Yes	6.00
j6-sc1b-90to100-82819	8/28/19 12:00 PM	0.0049	U	ug/kg	Yes	Yes	6.13
J6-SC-40to60-102218	10/22/18 6:50 PM	0.0036	J	ug/kg	Yes	Yes	4.50
L3-SC-00to10-102218	10/22/18 10:35 AM	0.00033	U	ug/kg	Yes	No	0.41
l3-sc1b-20to30-82619	8/26/19 10:30 AM	0.0049	U	ug/kg	Yes	Yes	6.13
l3-sc1b-30to40-82619	8/26/19 10:35 AM	0.0048	U	ug/kg	Yes	Yes	6.00
R4-SC-120to138-102118	10/21/18 8:45 PM	0.00092	J	ug/kg	Yes	Yes	1.15
r4-sc1b-100to110-82819	8/28/19 5:00 PM	0.005	U	ug/kg	Yes	Yes	6.25
r4-sc1b-110to120-82819	8/28/19 5:10 PM	0.00013	J	ug/kg	No	No	0.16
r4-sc1b-120to130-82819	8/28/19 6:20 PM	0.00017	J	ug/kg	No	No	0.21
r4-sc1b-130to140-82819	8/28/19 6:25 PM	0.0049	U	ug/kg	Yes	Yes	6.13
r4-sc1b-140to150-82819	8/28/19 6:30 PM	0.0049	U	ug/kg	Yes	Yes	6.13
r4-sc1b-20to30-82819	8/28/19 2:00 PM	0.00036	U	ug/kg	Yes	No	0.45
r4-sc1b-30to40-82819	8/28/19 2:05 PM	0.00024	J	ug/kg	Yes	No	0.30

Table 11e. Analytical Results for 1,2,3,7,8-PeCDD

Sample ID	Sample Date	Result	Qualifier	Units	Exceeds MCL[1] (0.0002 ug/kg)	Exceeds RAL[2] (0.0008 ug/kg)	RAL EF
r4-sc1b-40to50-82819	8/28/19 3:10 PM	0.0013	J	ug/kg	Yes	Yes	1.63
r4-sc1b-50to60-82819	8/28/19 3:20 PM	0.00044	J	ug/kg	Yes	No	0.55
r4-sc1b-60to70-82819	8/28/19 3:50 PM	0.00023	J	ug/kg	Yes	No	0.29
r4-sc1b-70to80-82819	8/28/19 3:55 PM	0.0049	U	ug/kg	Yes	Yes	6.13
r4-sc1b-80to90-82819	8/28/19 4:30 PM	0.005	U	ug/kg	Yes	Yes	6.25
r4-sc1b-90to100-82819	8/28/19 4:40 PM	0.005	U	ug/kg	Yes	Yes	6.25
R4-SC-8to10-102118	10/21/18 7:40 PM	0.0023	J	ug/kg	Yes	Yes	2.88
411-sc1b-50to60-82619	8/26/19 3:00 PM	0.00034	J	ug/kg	Yes	No	0.43
412-sc1b-80to90-82719	8/27/19 12:35 PM	0.00045	J	ug/kg	Yes	No	0.56
413-sc1b-40to50-82819	8/28/19 10:45 AM	0.00025	U	ug/kg	Yes	No	0.31

Table 11e. Analytical Results for 1,2,3,7,8-PeCDD

Sample ID	Sample Date	Result	Qualifier	Units	Exceeds MCL[1] (0.0002 ug/kg)	Exceeds RAL[2] (0.0008 ug/kg)	RAL EF

[1] MCL = Minimum Cleanup Level; corresponds to EPA Record of Decision Table 17

[2] RAL = Remedial Action Level; corresponds to EPA Record of Decision Table 21

EF = Exceedance Factor (Result/RAL); Non-detects shown as less than (<) the calculated value

NC = Not Calculated; result is non-detect with a detection limit greater than MCL or RAL, or result is "R" qualified.

NE = Not Evaluated; result is non-detect with a detection limit greater than MCL or RAL, or result is "R" qualified.

J = Reported result is an estimate.

U = Analyte was not detected in sample.

T = Total concentration from component analytes calculated with Pre-Remedial Design Investigation summation rules (AECOM and Geosyntec 2019, Appendix E)

A = Summed value based on limited number of analytes

R = Rejected

PeCDD = pentachlorodibenzo-p-dioxin

Table 11f. Analytical Results for 2,3,4,7,8-PeCDF

Sample ID	Sample Date	Result	Qualifier	Units	Exceeds MCL[1] (0.0003 ug/kg)	Exceeds RAL[2] (0.2 ug/kg)	RAL EF
Grab and Shore Samples							
A1-0to30-102018	10/20/18 12:05 PM	0.00015	U	ug/kg	No	No	<0.001
a2-0to26-100818	10/8/18 2:04 PM	0.0014	J	ug/kg	Yes	No	0.007
a3-0to31-100818	10/8/18 11:14 AM	0.00041	U	ug/kg	Yes	No	0.002
a4-0to25-100818	10/8/18 1:26 PM	0.0025	J	ug/kg	Yes	No	0.013
a5-0to25-100818	10/8/18 2:38 PM	0.002	J	ug/kg	Yes	No	0.010
a6-0to23-100818	10/8/18 4:08 PM	0.00098	U	ug/kg	Yes	No	0.005
a7-0to26-100918	10/9/18 1:23 PM	0.002	J	ug/kg	Yes	No	0.010
B1-0to20-101418	10/14/18 12:58 PM	0.00017	U	ug/kg	No	No	<0.001
B5-0to26-100818	10/8/18 3:07 PM	0.0013	J	ug/kg	Yes	No	0.007
c4-0to27-100918	10/9/18 8:28 AM	0.0011	J	ug/kg	Yes	No	0.006
d2-0to19-101018	10/10/2018 15:21	0.00023	J	ug/kg	No	No	0.001
F1-0to23-101418	10/14/18 11:08 AM	0.00012	U	ug/kg	No	No	<0.001
f2-0to19-101018	10/10/18 4:36 PM	0.00031	U	ug/kg	Yes	No	0.002
g6-0to27-101818	10/18/18 2:12 PM	0.0022	J	ug/kg	Yes	No	0.011
h2-0to30-101218	10/12/18 10:28 AM	0.00086	J	ug/kg	Yes	No	0.004
j2a3-0to18-101218	10/12/18 12:57 PM	0.00017	J	ug/kg	No	No	<0.001
J7-0to26-101218	10/12/18 3:52 PM	0.0048	J	ug/kg	Yes	No	0.024
M4-0to26-101918	10/19/18 1:11 PM	0.00065	U	ug/kg	Yes	No	0.003
N5-0to28-101418	10/14/18 4:46 PM	0.00058	U	ug/kg	Yes	No	0.003
N7-0to27-101418	10/14/18 3:10 PM	0.002	U	ug/kg	Yes	No	0.010
O7-0to27-101918	10/19/18 3:36 PM	0.002	J	ug/kg	Yes	No	0.010
q2-0to13-101818	10/18/18 9:39 AM	0.00014	U	ug/kg	No	No	<0.001
q6-0to27-102018	10/20/18 9:19 AM	0.0016	U	ug/kg	Yes	No	0.008
R1-0to30-101518	10/15/18 2:37 PM	0.00012	U	ug/kg	No	No	<0.001
t6-0to29-101618	10/16/18 2:38 PM	0.00073	U	ug/kg	Yes	No	0.004
515-0to26-101918	10/19/18 1:11 PM	0.0028	J	ug/kg	Yes	No	0.014
Core Samples							
D6-SC-108to123-102118	10/21/18 6:00 PM	0.00082	U	ug/kg	Yes	No	0.004
d6-sc1b-100to110-82619	8/26/19 5:40 PM	0.0047	U	ug/kg	Yes	No	0.024

Table 11f. Analytical Results for 2,3,4,7,8-PeCDF

Sample ID	Sample Date	Result	Qualifier	Units	Exceeds MCL[1] (0.0003 ug/kg)	Exceeds RAL[2] (0.2 ug/kg)	RAL EF
d6-sc1b-110to120-82619	8/26/19 5:50 PM	0.0048	U	ug/kg	Yes	No	0.024
d6-sc1b-20to30-82619	8/26/19 12:45 PM	0.0011	J	ug/kg	Yes	No	0.006
d6-sc1b-30to40-82619	8/26/19 1:00 PM	0.00071	J	ug/kg	Yes	No	0.004
d6-sc1b-40to50-82619	8/26/19 2:45 PM	0.00078	J	ug/kg	Yes	No	0.004
d6-sc1b-50to60-82619	8/26/19 2:50 PM	0.00025	U	ug/kg	No	No	0.001
d6-sc1b-60to70-82619	8/26/19 3:30 PM	0.00017	U	ug/kg	No	No	<0.001
d6-sc1b-70to80-82619	8/26/19 3:40 PM	0.00023	U	ug/kg	No	No	0.001
d6-sc1b-80to90-82619	8/26/19 4:55 PM	0.000062	U	ug/kg	No	No	<0.001
d6-sc1b-90to100-82619	8/26/19 5:00 PM	0.0046	U	ug/kg	Yes	No	0.023
D6-SC-2to4-102118	10/21/18 4:30 PM	0.005		ug/kg	Yes	No	0.025
h3-sc1b-100to110-82919	8/29/19 9:50 AM	0.000054	U	ug/kg	No	No	<0.001
h3-sc1b-20to30-82819	8/28/19 8:15 PM	0.002	J	ug/kg	Yes	No	0.010
h3-sc1b-30to40-82919	8/29/19 8:25 AM	0.0048	U	ug/kg	Yes	No	0.024
h3-sc1b-40to50-82919	8/29/19 8:30 AM	0.00056	J	ug/kg	Yes	No	0.003
h3-sc1b-50to60-82919	8/29/19 8:35 AM	0.00011	J	ug/kg	No	No	<0.001
h3-sc1b-60to70-82919	8/29/19 9:00 AM	0.00025	U	ug/kg	No	No	0.001
h3-sc1b-70to80-82919	8/29/19 9:05 AM	0.00034	U	ug/kg	Yes	No	0.002
h3-sc1b-80to90-82919	8/29/19 9:30 AM	0.00012	J	ug/kg	No	No	<0.001
h3-sc1b-90to100-82919	8/29/19 9:35 AM	0.000097	J	ug/kg	No	No	<0.001
j3-sc1b-10to20-82719	8/27/19 9:55 AM	0.00015	U	ug/kg	No	No	<0.001
j3-sc1b-20to30-82719	8/27/19 10:00 AM	0.00039	U	ug/kg	Yes	No	0.002
j3-sc1b-30to40-82719	8/27/19 10:05 AM	0.0013	U	ug/kg	Yes	No	0.007
j3-sc1b-40to50-82719	8/27/19 11:20 AM	0.00024	U	ug/kg	No	No	0.001
j3-sc1b-50to60-82719	8/27/19 11:25 AM	0.00029	U	ug/kg	No	No	0.001
j3-sc1b-60to70-82719	8/27/19 11:30 AM	0.0048	U	ug/kg	Yes	No	0.024
j3-sc1b-70to80-82719	8/27/19 11:35 AM	0.0047	U	ug/kg	Yes	No	0.024
j3-sc1b-80to90-82719	8/27/19 12:20 PM	0.00035	U	ug/kg	Yes	No	0.002
j3-sc1b-90to100-82719	8/27/19 12:25 PM	0.0047	U	ug/kg	Yes	No	0.024
j5-sc1b-100to110-82719	8/27/19 5:35 PM	0.005	U	ug/kg	Yes	No	0.025
j5-sc1b-20to30-82719	8/27/19 2:55 PM	0.00073	J	ug/kg	Yes	No	0.004

Table 11f. Analytical Results for 2,3,4,7,8-PeCDF

Sample ID	Sample Date	Result	Qualifier	Units	Exceeds MCL[1] (0.0003 ug/kg)	Exceeds RAL[2] (0.2 ug/kg)	RAL EF
j5-sc1b-30to40-82719	8/27/19 3:00 PM	0.00041	J	ug/kg	Yes	No	0.002
j5-sc1b-40to50-82719	8/27/19 4:10 PM	0.00057	J	ug/kg	Yes	No	0.003
j5-sc1b-50to60-82719	8/27/19 4:15 PM	0.00097	J	ug/kg	Yes	No	0.005
j5-sc1b-60to70-82719	8/27/19 4:20 PM	0.00031	J	ug/kg	Yes	No	0.002
j5-sc1b-70to80-82719	8/27/19 4:25 PM	0.00053	U	ug/kg	Yes	No	0.003
j5-sc1b-80to90-82719	8/27/19 5:25 PM	0.005	U	ug/kg	Yes	No	0.025
j5-sc1b-90to100-82719	8/27/19 5:30 PM	0.000079	J	ug/kg	No	No	<0.001
J5-SC-60to80-102218	10/22/18 4:50 PM	0.005		ug/kg	Yes	No	0.025
j6-sc1b-100to110-82819	8/28/19 12:05 PM	0.0046	U	ug/kg	Yes	No	0.023
j6-sc1b-110to120-82819	8/28/19 12:10 PM	0.0044	U	ug/kg	Yes	No	0.022
j6-sc1b-20to30-82819	8/28/19 9:20 AM	0.00079	J	ug/kg	Yes	No	0.004
j6-sc1b-30to40-82819	8/28/19 9:25 AM	0.00048	J	ug/kg	Yes	No	0.002
j6-sc1b-40to50-82819	8/28/19 10:25 AM	0.00048	U	ug/kg	Yes	No	0.002
j6-sc1b-50to60-82819	8/28/19 10:30 AM	0.00094	J	ug/kg	Yes	No	0.005
j6-sc1b-60to70-82819	8/28/19 10:35 AM	0.00091	J	ug/kg	Yes	No	0.005
j6-sc1b-70to80-82819	8/28/19 10:40 AM	0.0047	U	ug/kg	Yes	No	0.024
j6-sc1b-80to90-82819	8/28/19 11:55 AM	0.0048	U	ug/kg	Yes	No	0.024
j6-sc1b-90to100-82819	8/28/19 12:00 PM	0.0049	U	ug/kg	Yes	No	0.025
J6-SC-40to60-102218	10/22/18 6:50 PM	0.0041	J	ug/kg	Yes	No	0.021
L3-SC-00to10-102218	10/22/18 10:35 AM	0.00053	J	ug/kg	Yes	No	0.003
l3-sc1b-20to30-82619	8/26/19 10:30 AM	0.00039	U	ug/kg	Yes	No	0.002
l3-sc1b-30to40-82619	8/26/19 10:35 AM	0.00021	J	ug/kg	No	No	0.001
R4-SC-120to138-102118	10/21/18 8:45 PM	0.00094	J	ug/kg	Yes	No	0.005
r4-sc1b-100to110-82819	8/28/19 5:00 PM	0.00019	U	ug/kg	No	No	<0.001
r4-sc1b-110to120-82819	8/28/19 5:10 PM	0.00019	U	ug/kg	No	No	<0.001
r4-sc1b-120to130-82819	8/28/19 6:20 PM	0.00032	U	ug/kg	Yes	No	0.002
r4-sc1b-130to140-82819	8/28/19 6:25 PM	0.0049	U	ug/kg	Yes	No	0.025
r4-sc1b-140to150-82819	8/28/19 6:30 PM	0.00014	U	ug/kg	No	No	<0.001
r4-sc1b-20to30-82819	8/28/19 2:00 PM	0.00021	U	ug/kg	No	No	0.001
r4-sc1b-30to40-82819	8/28/19 2:05 PM	0.00026	U	ug/kg	No	No	0.001

Table 11f. Analytical Results for 2,3,4,7,8-PeCDF

Sample ID	Sample Date	Result	Qualifier	Units	Exceeds MCL[1] (0.0003 ug/kg)	Exceeds RAL[2] (0.2 ug/kg)	RAL EF
r4-sc1b-40to50-82819	8/28/19 3:10 PM	0.00099	J	ug/kg	Yes	No	0.005
r4-sc1b-50to60-82819	8/28/19 3:20 PM	0.00038	U	ug/kg	Yes	No	0.002
r4-sc1b-60to70-82819	8/28/19 3:50 PM	0.00028	U	ug/kg	No	No	0.001
r4-sc1b-70to80-82819	8/28/19 3:55 PM	0.00026	U	ug/kg	No	No	0.001
r4-sc1b-80to90-82819	8/28/19 4:30 PM	0.00026	U	ug/kg	No	No	0.001
r4-sc1b-90to100-82819	8/28/19 4:40 PM	0.005	U	ug/kg	Yes	No	0.025
R4-SC-8to10-102118	10/21/18 7:40 PM	0.0024	J	ug/kg	Yes	No	0.012
411-sc1b-50to60-82619	8/26/19 3:00 PM	0.00064	J	ug/kg	Yes	No	0.003
412-sc1b-80to90-82719	8/27/19 12:35 PM	0.00041	U	ug/kg	Yes	No	0.002
413-sc1b-40to50-82819	8/28/19 10:45 AM	0.00027	U	ug/kg	No	No	0.001

Table 11f. Analytical Results for 2,3,4,7,8-PeCDF

Sample ID	Sample Date	Result	Qualifier	Units	Exceeds MCL[1] (0.0003 ug/kg)	Exceeds RAL[2] (0.2 ug/kg)	RAL EF

[1] MCL = Minimum Cleanup Level; corresponds to EPA Record of Decision Table 17

[2] RAL = Remedial Action Level; corresponds to EPA Record of Decision Table 21

EF = Exceedance Factor (Result/RAL); Non-detects shown as less than (<) the calculated value

NC = Not Calculated; result is non-detect with a detection limit greater than MCL or RAL, or result is "R" qualified.

NE = Not Evaluated; result is non-detect with a detection limit greater than MCL or RAL, or result is "R" qualified.

J = Reported result is an estimate.

U = Analyte was not detected in sample.

T = Total concentration from component analytes calculated with Pre-Remedial Design Investigation summation rules (AECOM and Geosyntec 2019, Appendix E)

A = Summed value based on limited number of analytes

R = Rejected

PeCDF = pentachlorodibenzofuran

Table 11g. Analytical Results for Total DDx (Calculated Total)

Sample ID	Sample Date	Result	Qualifier	Units	Exceeds MCL[1] (6.1 ug/kg)	Exceeds RAL[2] (160 ug/kg)	RAL EF
Grab and Shore Samples							
A1-0to30-102018	10/20/18 12:05 PM	0.094	UT	ug/kg	No	No	<0.01
a2-0to26-100818	10/8/18 2:04 PM	2.4	JT	ug/kg	No	No	0.02
a3-0to31-100818	10/8/18 11:14 AM	3.2	JT	ug/kg	No	No	0.02
a4-0to25-100818	10/8/18 1:26 PM	4.7	JT	ug/kg	No	No	0.03
a5-0to25-100818	10/8/18 2:38 PM	6.2	JT	ug/kg	Yes	No	0.04
a6-0to23-100818	10/8/18 4:08 PM	4.7	JT	ug/kg	No	No	0.03
a7-0to26-100918	10/9/18 1:23 PM	4.8	JT	ug/kg	No	No	0.03
c4-0to27-100918	10/9/18 8:28 AM	4.9	JT	ug/kg	No	No	0.03
d2-0to19-101018	10/10/18 3:21 PM	3.2	JT	ug/kg	No	No	0.02
f2-0to19-101018	10/10/18 4:36 PM	5.5	JT	ug/kg	No	No	0.03
g6-0to27-101818	10/18/18 2:12 PM	2.6	JT	ug/kg	No	No	0.02
h2-0to30-101218	10/12/18 10:28 AM	2.4	JT	ug/kg	No	No	0.02
j2a3-0to18-101218	10/12/2018 12:57	1.4	JT	ug/kg	No	No	<0.01
M4-0to26-101918	10/19/18 1:11 PM	4.9	JT	ug/kg	No	No	0.03
O7-0to27-101918	10/19/18 3:36 PM	8.4	AT	ug/kg	Yes	No	0.05
q2-0to13-101818	10/18/18 9:39 AM	4.4	JT	ug/kg	No	No	0.03
q6-0to27-102018	10/20/18 9:19 AM	1.4	JT	ug/kg	No	No	<0.01
t6-0to29-101618	10/16/18 2:38 PM	1.7	JT	ug/kg	No	No	0.01
515-0to26-101918	10/19/18 1:11 PM	3.2	JT	ug/kg	No	No	0.02
Core Samples							
d6-sc1b-100to110-82619	8/26/19 5:40 PM	0.94	UT	ug/kg	No	No	<0.01
d6-sc1b-110to120-82619	8/26/19 5:50 PM	0.94	UT	ug/kg	No	No	<0.01
d6-sc1b-20to30-82619	8/26/19 12:45 PM	13	T	ug/kg	Yes	No	0.08
d6-sc1b-30to40-82619	8/26/19 1:00 PM	16	T	ug/kg	Yes	No	0.10
d6-sc1b-40to50-82619	8/26/19 2:45 PM	6.3	T	ug/kg	Yes	No	0.04
d6-sc1b-50to60-82619	8/26/19 2:50 PM	8.9	T	ug/kg	Yes	No	0.06
d6-sc1b-60to70-82619	8/26/19 3:30 PM	3.6	T	ug/kg	No	No	0.02
d6-sc1b-70to80-82619	8/26/19 3:40 PM	0.94	UT	ug/kg	No	No	<0.01
d6-sc1b-80to90-82619	8/26/19 4:55 PM	0.94	UT	ug/kg	No	No	<0.01

Table 11g. Analytical Results for Total DDx (Calculated Total)

Sample ID	Sample Date	Result	Qualifier	Units	Exceeds MCL[1] (6.1 ug/kg)	Exceeds RAL[2] (160 ug/kg)	RAL EF
d6-sc1b-90to100-82619	8/26/19 5:00 PM	0.94	UT	ug/kg	No	No	<0.01
h3-sc1b-100to110-82919	8/29/19 9:50 AM	0.94	UT	ug/kg	No	No	<0.01
h3-sc1b-20to30-82819	8/28/19 8:15 PM	15	T	ug/kg	Yes	No	0.09
h3-sc1b-30to40-82919	8/29/19 8:25 AM	3.7	T	ug/kg	No	No	0.02
h3-sc1b-40to50-82919	8/29/19 8:30 AM	1.6	T	ug/kg	No	No	0.01
h3-sc1b-50to60-82919	8/29/19 8:35 AM	1.3	T	ug/kg	No	No	<0.01
h3-sc1b-60to70-82919	8/29/19 9:00 AM	0.94	UT	ug/kg	No	No	0.01
h3-sc1b-70to80-82919	8/29/19 9:05 AM	0.94	UT	ug/kg	No	No	<0.01
h3-sc1b-80to90-82919	8/29/19 9:30 AM	0.94	UT	ug/kg	No	No	<0.01
h3-sc1b-90to100-82919	8/29/19 9:35 AM	0.94	UT	ug/kg	No	No	<0.01
j3-sc1b-10to20-82719	8/27/19 9:55 AM	0.85	JT	ug/kg	No	No	<0.01
j3-sc1b-20to30-82719	8/27/19 10:00 AM	16	T	ug/kg	Yes	No	0.10
j3-sc1b-30to40-82719	8/27/19 10:05 AM	24	T	ug/kg	Yes	No	0.15
j3-sc1b-40to50-82719	8/27/19 11:20 AM	15	T	ug/kg	Yes	No	0.09
j3-sc1b-50to60-82719	8/27/19 11:25 AM	0.94	UT	ug/kg	No	No	<0.01
j3-sc1b-60to70-82719	8/27/19 11:30 AM	0.94	UT	ug/kg	No	No	<0.01
j3-sc1b-70to80-82719	8/27/19 11:35 AM	0.94	UT	ug/kg	No	No	<0.01
j3-sc1b-80to90-82719	8/27/19 12:20 PM	0.94	UT	ug/kg	No	No	<0.01
j3-sc1b-90to100-82719	8/27/19 12:25 PM	0.94	UT	ug/kg	No	No	<0.01
j5-sc1b-100to110-82719	8/27/19 5:35 PM	0.94	UT	ug/kg	No	No	<0.01
j5-sc1b-20to30-82719	8/27/19 2:55 PM	8.6	JT	ug/kg	Yes	No	0.05
j5-sc1b-30to40-82719	8/27/19 3:00 PM	7.6	T	ug/kg	Yes	No	0.05
j5-sc1b-40to50-82719	8/27/19 4:10 PM	7.9	T	ug/kg	Yes	No	0.05
j5-sc1b-50to60-82719	8/27/19 4:15 PM	19	T	ug/kg	Yes	No	0.12
j5-sc1b-60to70-82719	8/27/19 4:20 PM	9.4	T	ug/kg	Yes	No	0.06
j5-sc1b-70to80-82719	8/27/19 4:25 PM	6.8	T	ug/kg	Yes	No	0.04
j5-sc1b-80to90-82719	8/27/19 5:25 PM	0.94	UT	ug/kg	No	No	<0.01
j5-sc1b-90to100-82719	8/27/19 5:30 PM	0.94	UT	ug/kg	No	No	<0.01
j6-sc1b-100to110-82819	8/28/19 12:05 PM	0.94	UT	ug/kg	No	No	<0.01
j6-sc1b-110to120-82819	8/28/19 12:10 PM	0.94	UT	ug/kg	No	No	<0.01

Table 11g. Analytical Results for Total DDx (Calculated Total)

Sample ID	Sample Date	Result	Qualifier	Units	Exceeds MCL[1] (6.1 ug/kg)	Exceeds RAL[2] (160 ug/kg)	RAL EF
j6-sc1b-20to30-82819	8/28/19 9:20 AM	4	T	ug/kg	No	No	0.03
j6-sc1b-30to40-82819	8/28/19 9:25 AM	5	T	ug/kg	No	No	0.03
j6-sc1b-40to50-82819	8/28/19 10:25 AM	6.5	JT	ug/kg	Yes	No	0.04
j6-sc1b-50to60-82819	8/28/19 10:30 AM	11	T	ug/kg	Yes	No	0.07
j6-sc1b-60to70-82819	8/28/19 10:35 AM	18	T	ug/kg	Yes	No	0.11
j6-sc1b-70to80-82819	8/28/19 10:40 AM	0.93	JT	ug/kg	No	No	<0.01
j6-sc1b-80to90-82819	8/28/19 11:55 AM	0.94	UT	ug/kg	No	No	<0.01
j6-sc1b-90to100-82819	8/28/19 12:00 PM	0.94	UT	ug/kg	No	No	<0.01
l3-sc1b-20to30-82619	8/26/19 10:30 AM	1.2	T	ug/kg	No	No	<0.01
l3-sc1b-30to40-82619	8/26/19 10:35 AM	1.2	T	ug/kg	No	No	<0.01
r4-sc1b-100to110-82819	8/28/19 5:00 PM	13	T	ug/kg	Yes	No	0.08
r4-sc1b-110to120-82819	8/28/19 5:10 PM	8.8	JT	ug/kg	Yes	No	0.06
r4-sc1b-120to130-82819	8/28/19 6:20 PM	15	T	ug/kg	Yes	No	0.09
r4-sc1b-130to140-82819	8/28/19 6:25 PM	1.8	JT	ug/kg	No	No	0.01
r4-sc1b-140to150-82819	8/28/19 6:30 PM	0.94	UT	ug/kg	No	No	<0.01
r4-sc1b-20to30-82819	8/28/19 2:00 PM	6.2	T	ug/kg	Yes	No	0.04
r4-sc1b-30to40-82819	8/28/19 2:05 PM	7.5	JT	ug/kg	Yes	No	0.05
r4-sc1b-40to50-82819	8/28/19 3:10 PM	13	T	ug/kg	Yes	No	0.08
r4-sc1b-50to60-82819	8/28/19 3:20 PM	5.1	T	ug/kg	No	No	0.03
r4-sc1b-60to70-82819	8/28/19 3:50 PM	11	T	ug/kg	Yes	No	0.07
r4-sc1b-70to80-82819	8/28/19 3:55 PM	7.1	JT	ug/kg	Yes	No	0.04
r4-sc1b-80to90-82819	8/28/19 4:30 PM	8.8	T	ug/kg	Yes	No	0.06
r4-sc1b-90to100-82819	8/28/19 4:40 PM	7.9	JT	ug/kg	Yes	No	0.05
411-sc1b-50to60-82619	8/26/19 3:00 PM	11	T	ug/kg	Yes	No	0.07
412-sc1b-80to90-82719	8/27/19 12:35 PM	0.94	UT	ug/kg	No	No	<0.01
413-sc1b-40to50-82819	8/28/19 10:45 AM	7	T	ug/kg	Yes	No	0.04

[1] MCL = Minimum Cleanup Level; corresponds to EPA Record of Decision Table 17

[2] RAL = Remedial Action Level; corresponds to EPA Record of Decision Table 21

EF = Exceedance Factor (Result/RAL); Non-detects shown as less than (<) the calculated value.

NC = Not Calculated; result is non-detect with a detection limit greater than MCL or RAL, or result is "R" qualified.

Table 11g. Analytical Results for Total DDx (Calculated Total)

Sample ID	Sample Date	Result	Qualifier	Units	Exceeds MCL[1] (6.1 ug/kg)	Exceeds RAL[2] (160 ug/kg)	RAL EF

NE = Not Evaluated; result is non-detect with a detection limit greater than MCL or RAL, or result is "R" qualified.

J = Reported result is an estimate.

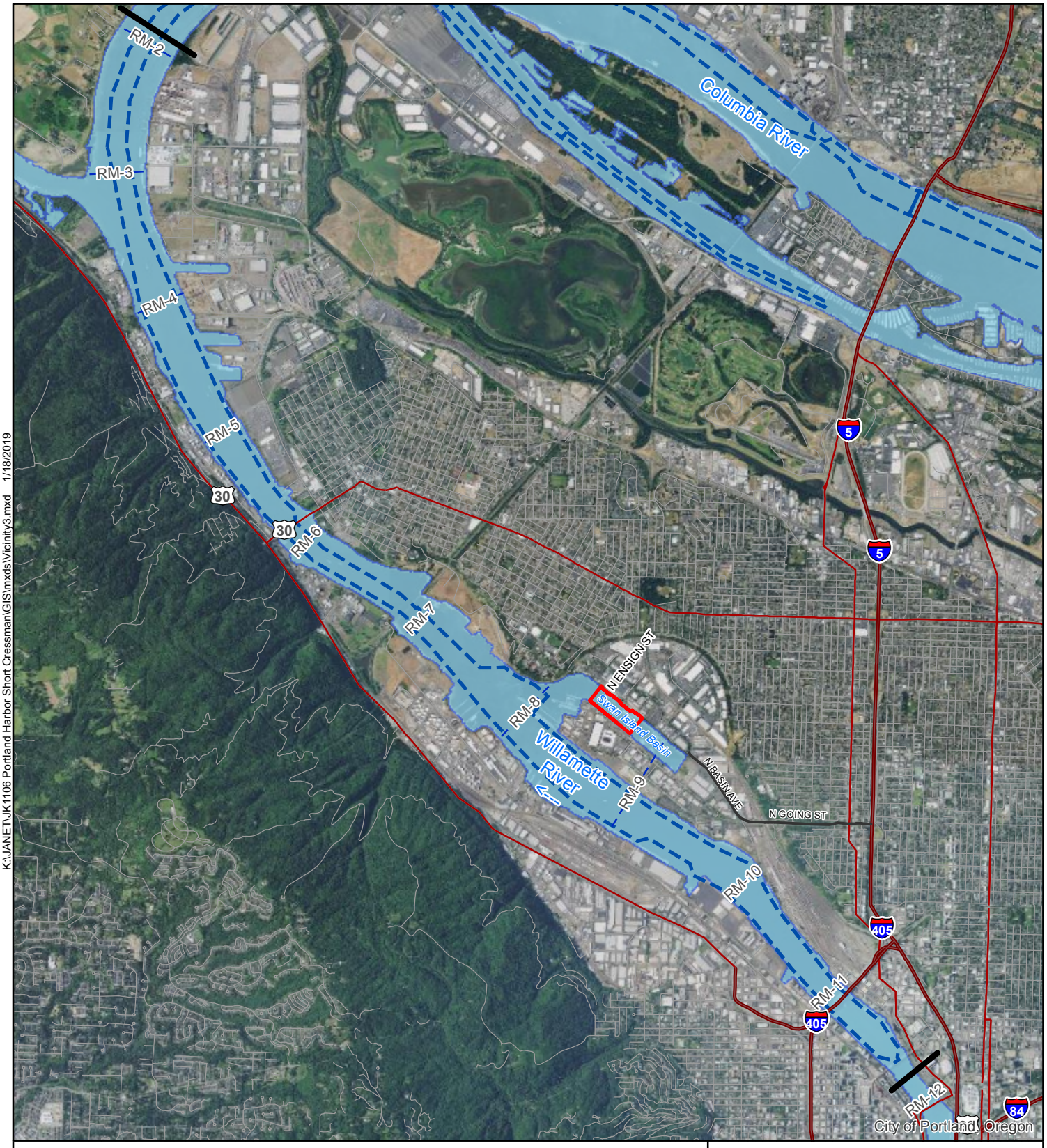
U = Analyte was not detected in sample.

T = Total concentration from component analytes calculated with Pre-Remedial Design Investigation summation rules (AECOM and Geosyntec 2019, Appendix E)

A = Summed value based on limited number of analytes

R = Rejected

DDx = dichlorodiphenyltrichloroethane and its derivatives



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Project Area

Federal Navigation Channel

Superfund Site Boundary (RM 1.9 to 11.8)

River Mile

Ordinary High Water

N

0 Miles 1

Figure 1

Portland Harbor Site Map

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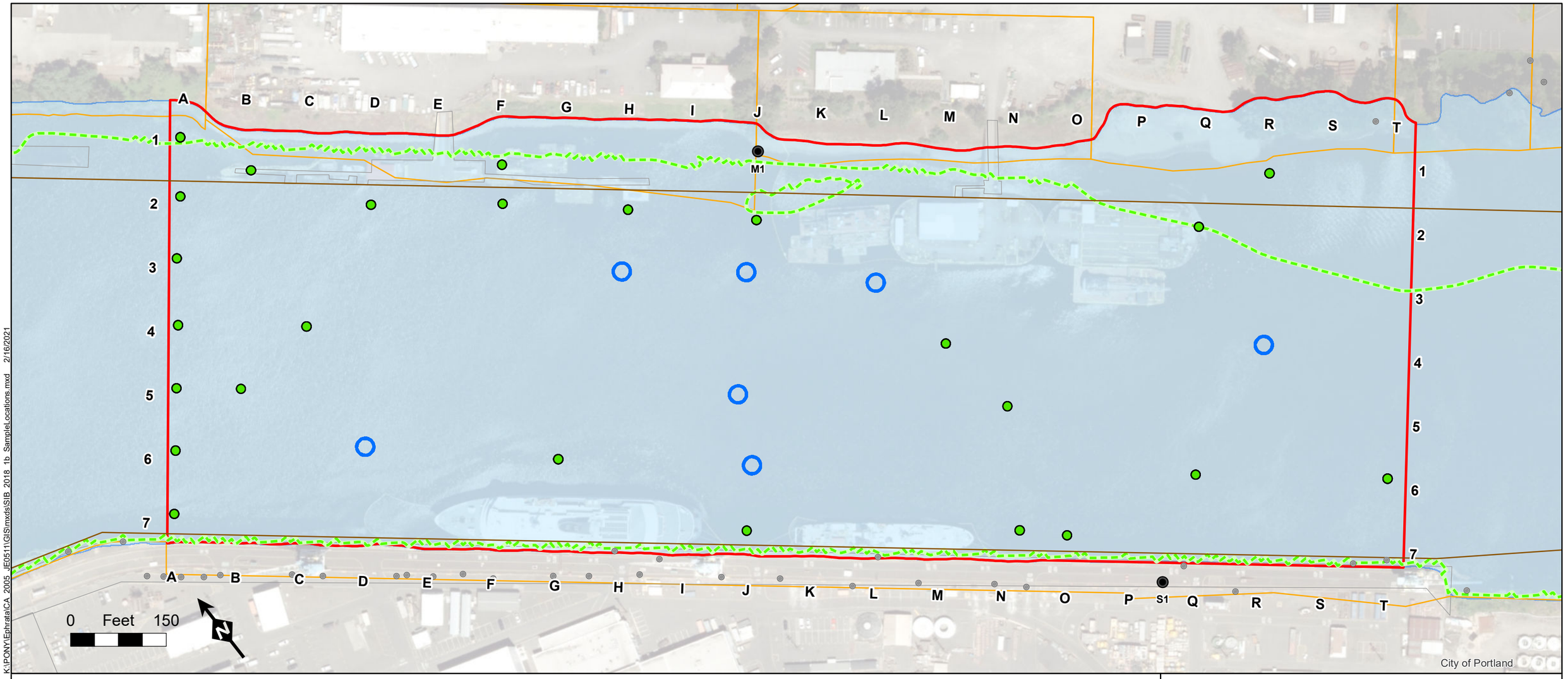

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Phase 1b Sample Locations

- Core
- Grab

- City of Portland Stormwater Outfall
- Non-City Outfall
- Harbor Line
- ROD Sediment Management Area (SMA)
- Project Area
- Docks and Structures
- Taxlot Boundary
- Ordinary High Water (City of Portland, 2013)

Figure 2

Swan Island Lagoon Phase 1b
Sediment Sampling Locations

DTNA Swan Island Lagoon
Sediment Investigation

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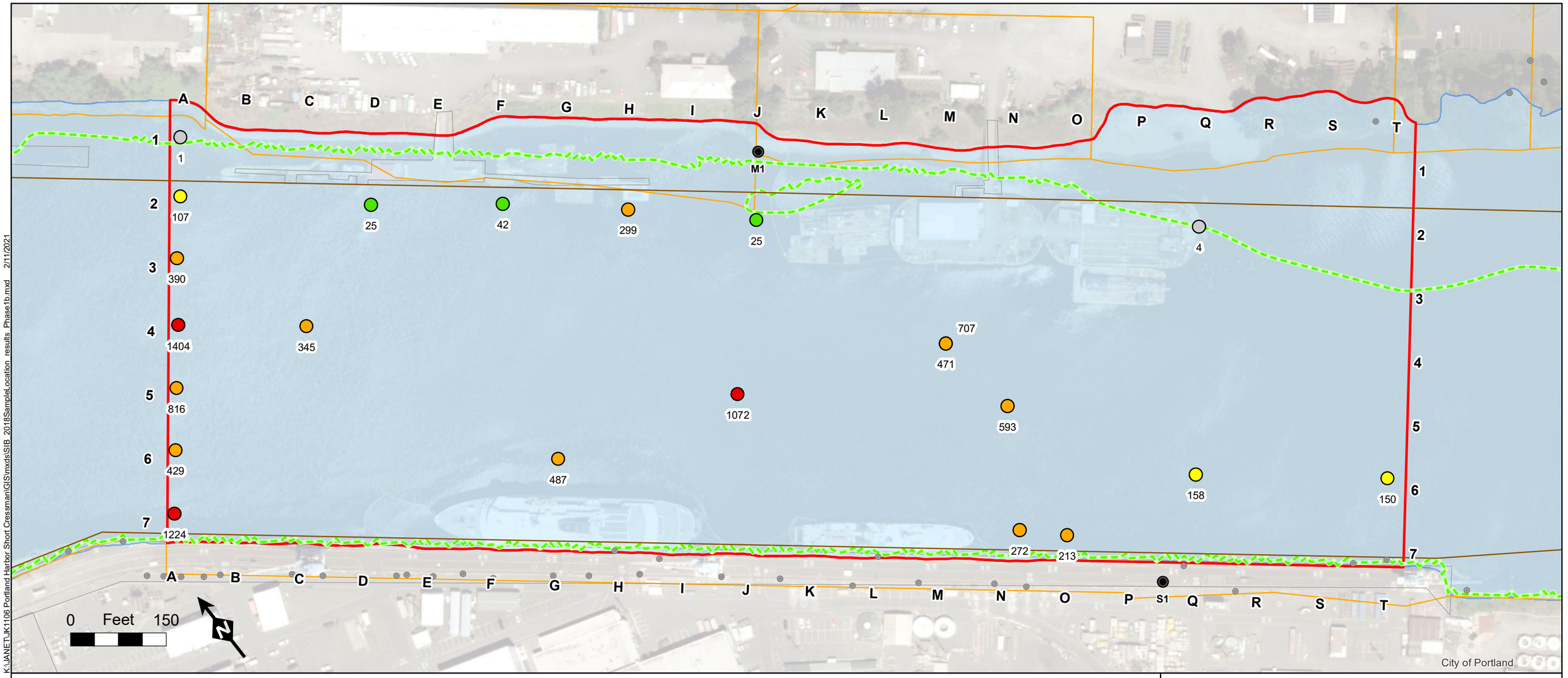

Surface Sediment Sample Total PCB Congeners Concentration

- ≤ ROD CUL (9 µg/kg)
- > ROD CUL (9 µg/kg) and ≤ ROD RAL (75 µg/kg)
- > ROD RAL (75 µg/kg) and ≤ PTW (200 µg/kg)
- > PTW (200 µg/kg) and ≤ Nav ROD RAL (1,000 µg/kg)
- > Nav ROD RAL (1,000 µg/kg)
- Detected, Detected Concentration Shown
- Not Detected, Detection Limit Shown

CUL - Cleanup Level
RAL - Remedial Action Levels
PTW - Principal Threat Waste
ROD - Record of Decision

- City of Portland Stormwater Outfall
- Non-City Outfall
- Harbor Line
- ROD Sediment Management Area (SMA)
- Project Area
- Docks and Structures
- Taxlot Boundary
- Ordinary High Water (City of Portland, 2013)

Notes:
1. Total PCBs are the sum of individual PCB congeners calculated per PDI data summation rules (Appendix E, Pre-Remedial Design Footprint Report (AECOM & Geosyntec, 2019)).
2. Data Qualifiers not shown.

Figure 3

Surface Sediment Sample Concentration - Total PCB Congeners

DTNA Swan Island Lagoon
Sediment Investigation

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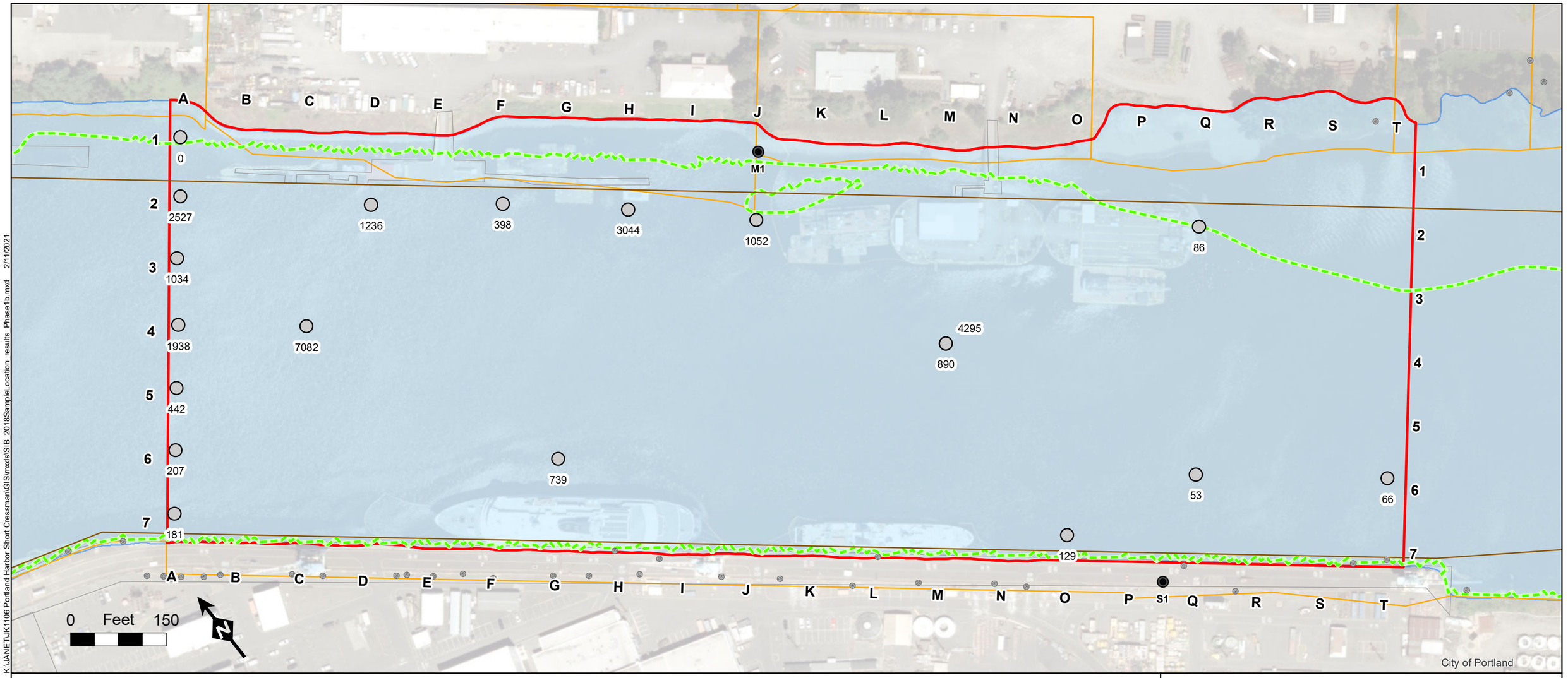

Surface Sediment Sample Total PAHs Concentration

- ≤ ESD CUL (23,000 µg/kg)
- > ESD CUL (23,000 µg/kg) and ≤ ESD RAL (30,000 µg/kg)
- > ESD RAL (30,000 µg/kg) and ≤ ESD nav RAL (170,000 µg/kg)
- > ESD nav RAL (170,000 µg/kg) and ≤ ESD PTW (774,000 µg/kg)
- > ESD PTW (774,000 µg/kg)
- Detected, Detected Concentration Shown
- Not Detected, Detection Limit Shown

CUL - Cleanup Level
RAL - Remedial Action Levels
PTW - Principal Threat Waste
ROD - Record of Decision
ESD - Explanation of Significant Differences

Notes:
1. Total PAHs are the sum of Light PAHs and Heavy PAHs calculated per PDI data summation rules (Appendix E, Pre-Remedial Design Footprint Report (AECOM & Geosyntec, 2019)).
2. Data Qualifiers not shown.
3. ESD CUL, RAL, and PTW PAH values are proposed by EPA in 2018 and not yet final.

- City of Portland Stormwater Outfall
- Non-City Outfall
- Harbor Line
- ROD Sediment Management Area (SMA)
- Project Area
- Docks and Structures
- Taxlot Boundary
- Ordinary High Water (City of Portland, 2013)

Figure 4

Surface Sediment Sample Concentration - Total PAHs

DTNA Swan Island Lagoon
Sediment Investigation

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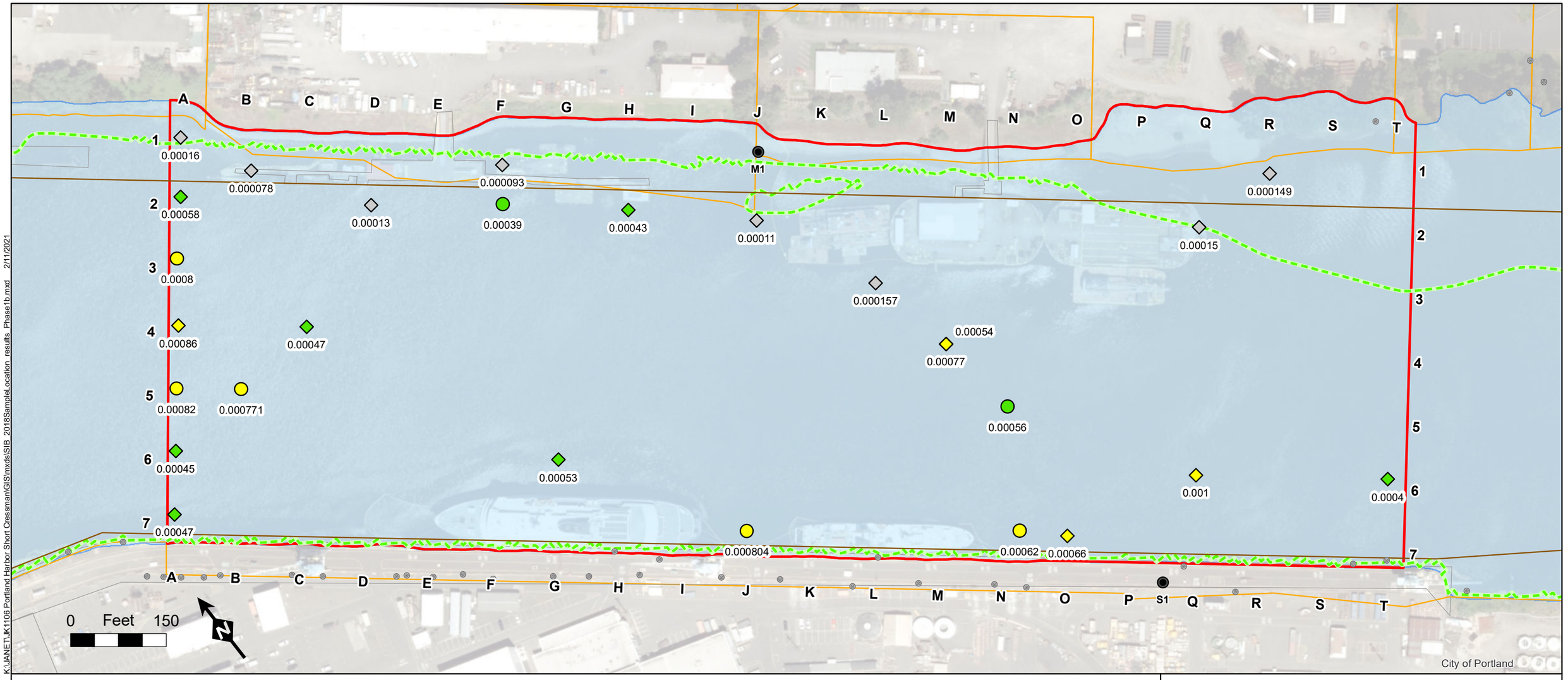


Surface Sediment Sample 2,3,7,8-TCDD Concentration

- ≤ ROD CUL (0.0002 µg/kg)
- > ROD CUL (0.0002 µg/kg) and ≤ ROD RAL (0.0006 µg/kg)
- > ROD RAL (0.0006 µg/kg) and ≤ nav ROD RAL (0.002 µg/kg)
- > nav ROD RAL (0.002 µg/kg) and ≤ PTW (0.01 µg/kg)
- > PTW (0.01 µg/kg)
- Detected, Detected Concentration Shown
- Not Detected, Detection Limit Shown

CUL - Cleanup Level
RAL - Remedial Action Levels
PTW - Principal Threat Waste
ROD - Record of Decision

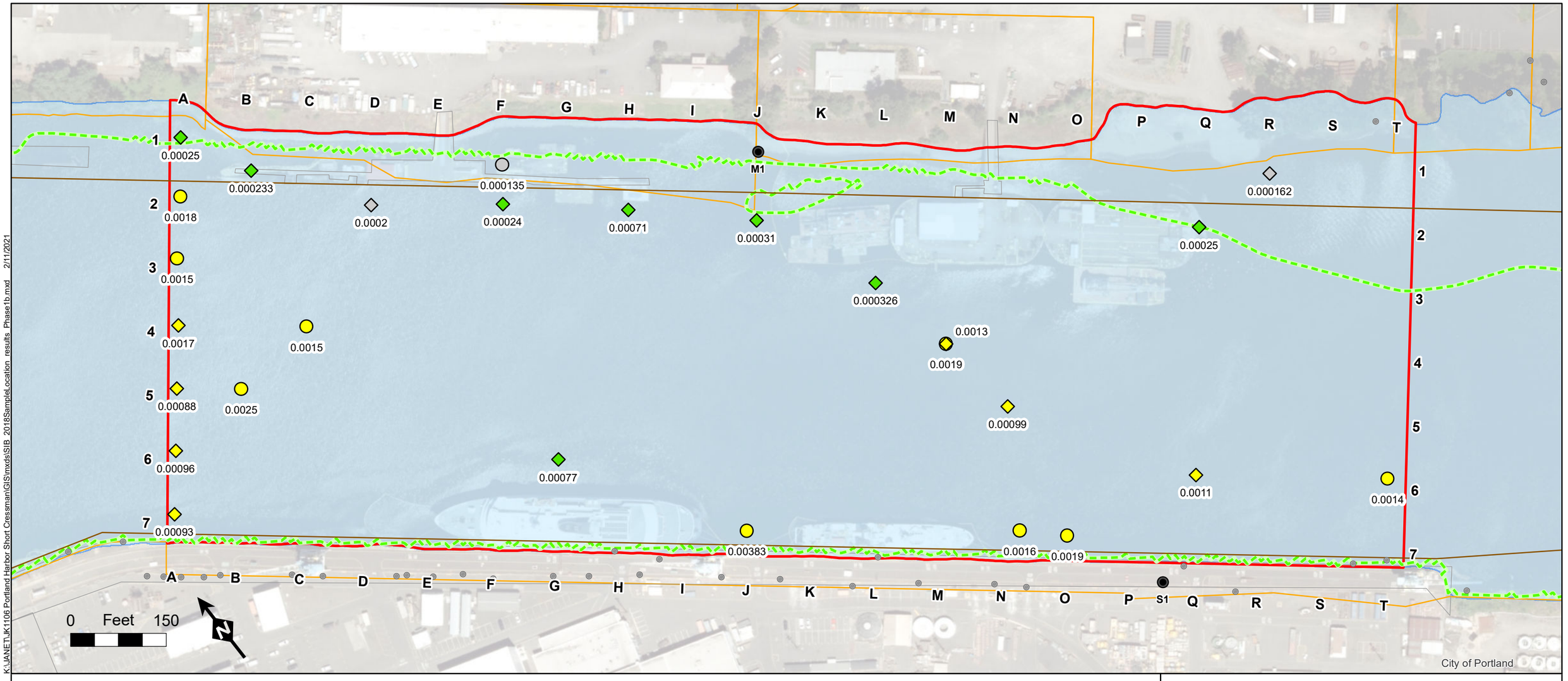
- City of Portland Stormwater Outfall
- Non-City Outfall
- Harbor Line
- ROD Sediment Management Area (SMA)
- Project Area
- Docks and Structures
- Taxlot Boundary
- Ordinary High Water (City of Portland, 2013)

Figure 5

Surface Sediment Sample Concentration - 2,3,7,8-TCDD

DTNA Swan Island Lagoon
Sediment Investigation

PgG



K:\JANET\JK1106 Portland Harbor Short Cressman\GIS\mxds\SIB_2018SampleLocation_results_Phase1b.mxd 2/11/2021

Surface Sediment Sample 1,2,3,7,8-PeCDD Concentration

- ≤ ROD CUL (0.0002 µg/kg)
- > ROD CUL (0.0002 µg/kg) and ≤ ROD RAL (0.0008 µg/kg)
- > ROD RAL (0.0008 µg/kg) and ≤ nav ROD RAL (0.003 µg/kg)
- > nav ROD RAL (0.003 µg/kg) and ≤ PTW (0.01 µg/kg)
- > PTW (0.01 µg/kg)
- Detected, Detected Concentration Shown
- Not Detected, Detection Limit Shown

CUL - Cleanup Level
RAL - Remedial Action Levels
PTW - Principal Threat Waste
ROD - Record of Decision

- City of Portland Stormwater Outfall
- Non-City Outfall
- Harbor Line
- ROD Sediment Management Area (SMA)
- Project Area
- Docks and Structures
- Taxlot Boundary
- Ordinary High Water (City of Portland, 2013)

Figure 6

Surface Sediment Sample Concentration - 1,2,3,7,8-PeCDD

DTNA Swan Island Lagoon
Sediment Investigation

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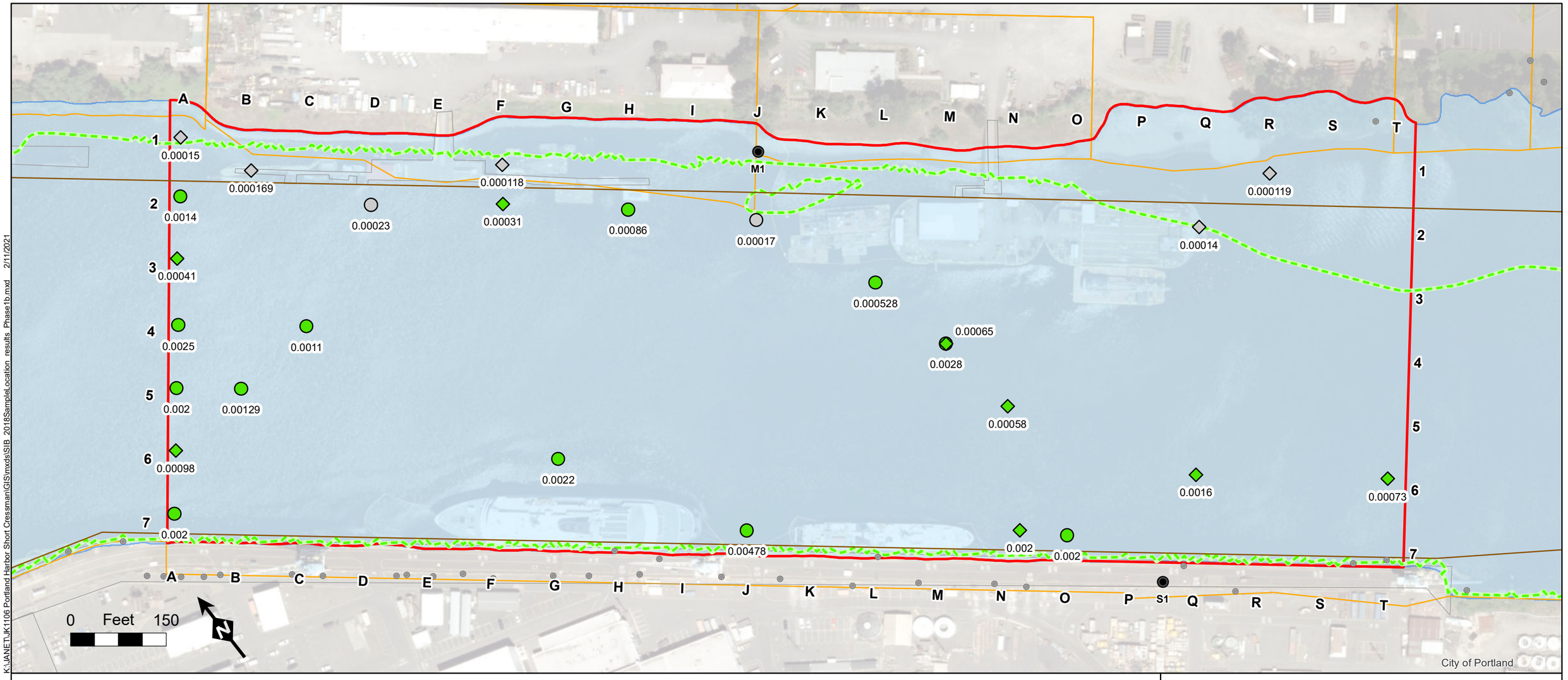

Surface Sediment Sample 2,3,4,7,8-PeCDF Concentration

- ≤ ROD CUL (0.0003 µg/kg)
- > ROD CUL (0.0003 µg/kg) and ≤ ROD RAL/PTW (0.2 µg/kg)
- > ROD RAL/PTW (0.2 µg/kg) and ≤ nav ROD RAL (1.0 µg/kg)
- > nav ROD RAL (1.0 µg/kg)

- Detected, Detected Concentration Shown
- Not Detected, Detection Limit Shown

CUL - Cleanup Level
RAL - Remedial Action Levels
PTW - Principal Threat Waste
ROD - Record of Decision

- City of Portland Stormwater Outfall
- Non-City Outfall
- Harbor Line
- ROD Sediment Management Area (SMA)
- Project Area
- Docks and Structures
- Taxlot Boundary
- Ordinary High Water (City of Portland, 2013)

Figure 7

Surface Sediment Sample Concentration - 2,3,4,7,8-PeCDF

DTNA Swan Island Lagoon
Sediment Investigation

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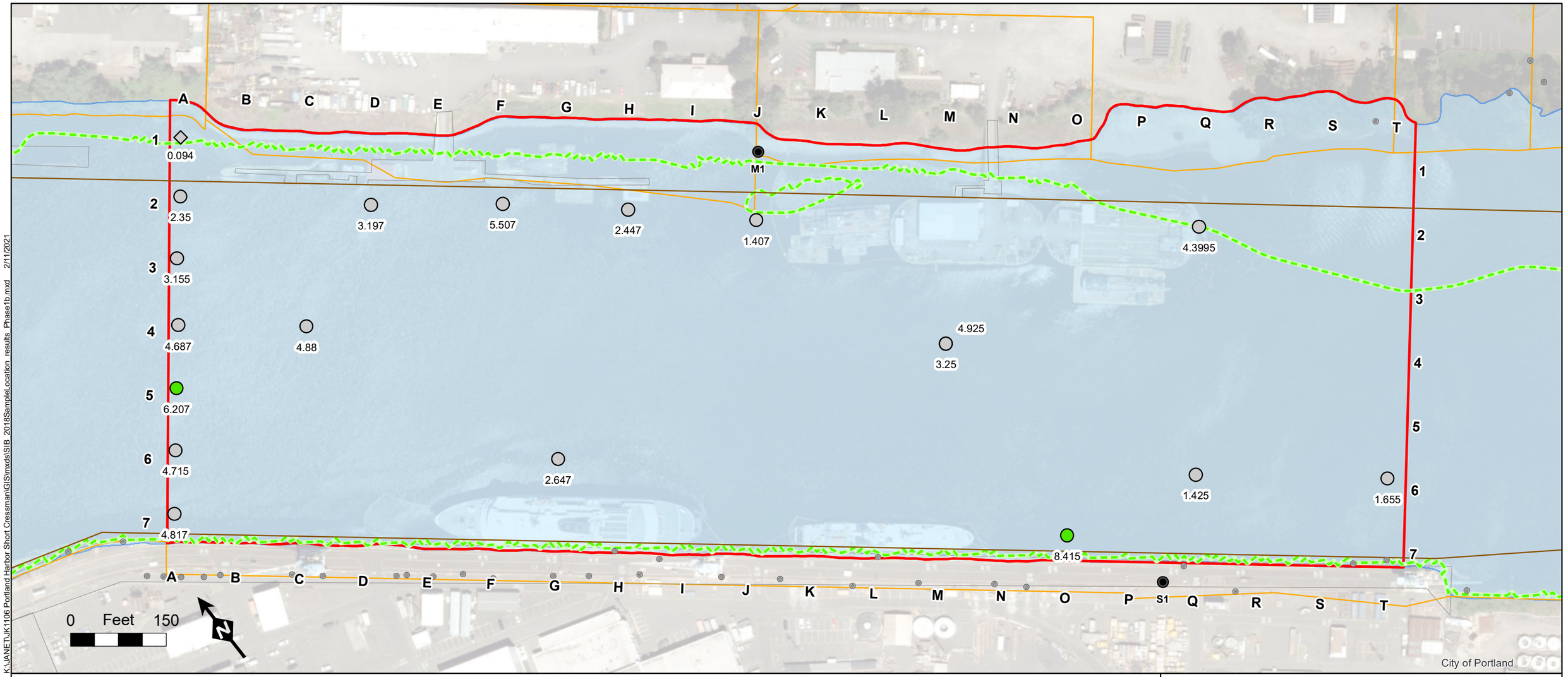

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Surface Sediment Sample DDx Concentration

- ≤ ROD CUL (6.1 µg/kg)
- > ROD CUL (6.1 µg/kg) and ≤ROD RAL (160 µg/kg)
- > ROD RAL (160 µg/kg) and ≤nav ROD RAL (650 µg/kg)
- > nav ROD RAL (650 µg/kg) and ≤PTW (7,050 µg/kg)
- > PTW (7,050 µg/kg)
- Detected, Detected Concentration Shown
- Not Detected, Detection Limit Shown

CUL - Cleanup Level
RAL - Remedial Action Levels
PTW - Principal Threat Waste
ROD - Record of Decision

Notes:
1. DDx is the sum of 6 isomers calculated per PDI data summation rules (Appendix E, Pre-Remedial Design Footprint Report (AECOM & Geosyntec, 2019)).
2. Data Qualifiers not shown.

- City of Portland Stormwater Outfall
- Non-City Outfall
- Harbor Line
- ROD Sediment Management Area (SMA)
- Project Area
- Docks and Structures
- Taxlot Boundary
- Ordinary High Water (City of Portland, 2013)

Figure 8

Surface Sediment Sample Concentration - DDx

DTNA Swan Island Lagoon
Sediment Investigation

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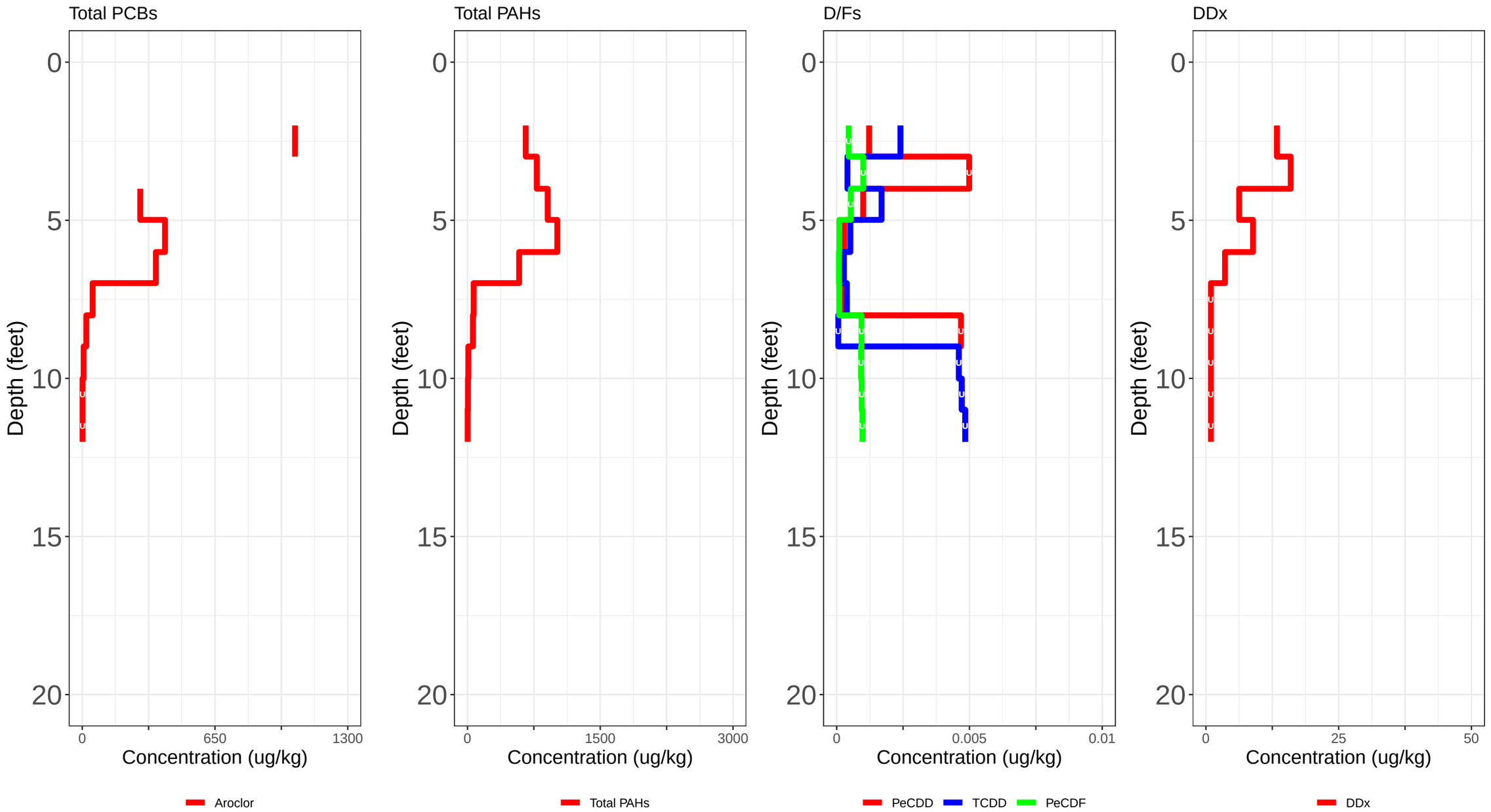

PeCDD = 1,2,3,7,8−PeCDD, TCDD = 2,3,7,8−TCDD, PeCDF = 2,3,4,7,8−PeCDF
PAHs = polycyclic aromatic hydrocarbons, PCBs = polychlorinated biphenyls, DDx = dichlorodiphenyltrichloroethane and its derivatives
ug/Kg = micrograms per kilogram
'U' indicates result was non−detect at the value shown

Prepared 02/17/2021 09:39

Figure 9. Phase 1b Subsurface Sediment Concentration Profile − Core D6−SC

DTNA Swan Island Lagoon
Sediment Investigation

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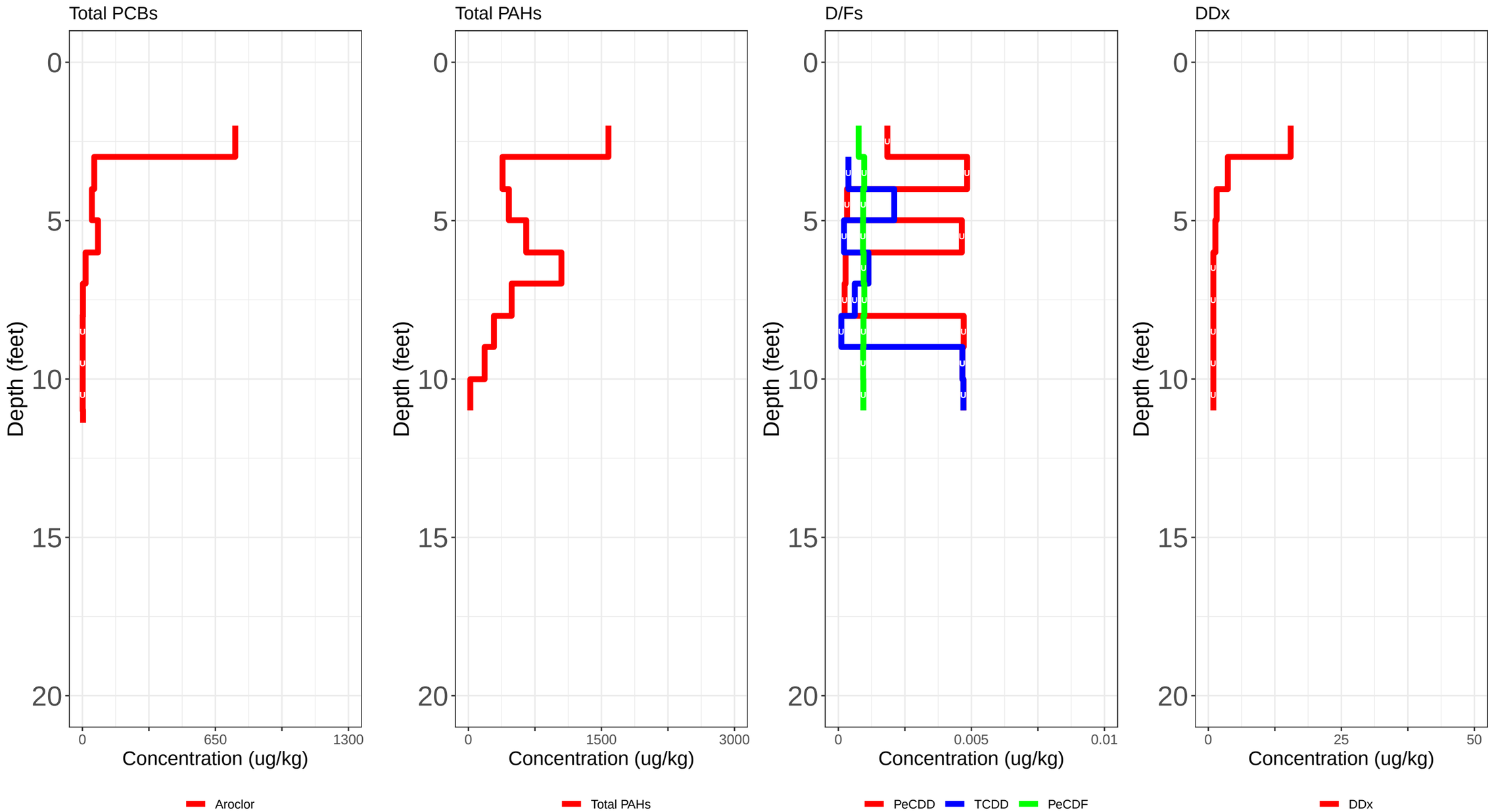

PeCDD = 1,2,3,7,8−PeCDD, TCDD = 2,3,7,8−TCDD, PeCDF = 2,3,4,7,8−PeCDF
PAHs = polycyclic aromatic hydrocarbons, PCBs = polychlorinated biphenyls, DDx = dichlorodiphenyltrichloroethane and its derivatives
ug/Kg = micrograms per kilogram
'U' indicates result was non−detect at the value shown

Prepared 02/17/2021 09:39

Figure 10. Phase 1b Subsurface Sediment Concentration Profile − Core H3−SC

DTNA Swan Island Lagoon
Sediment Investigation

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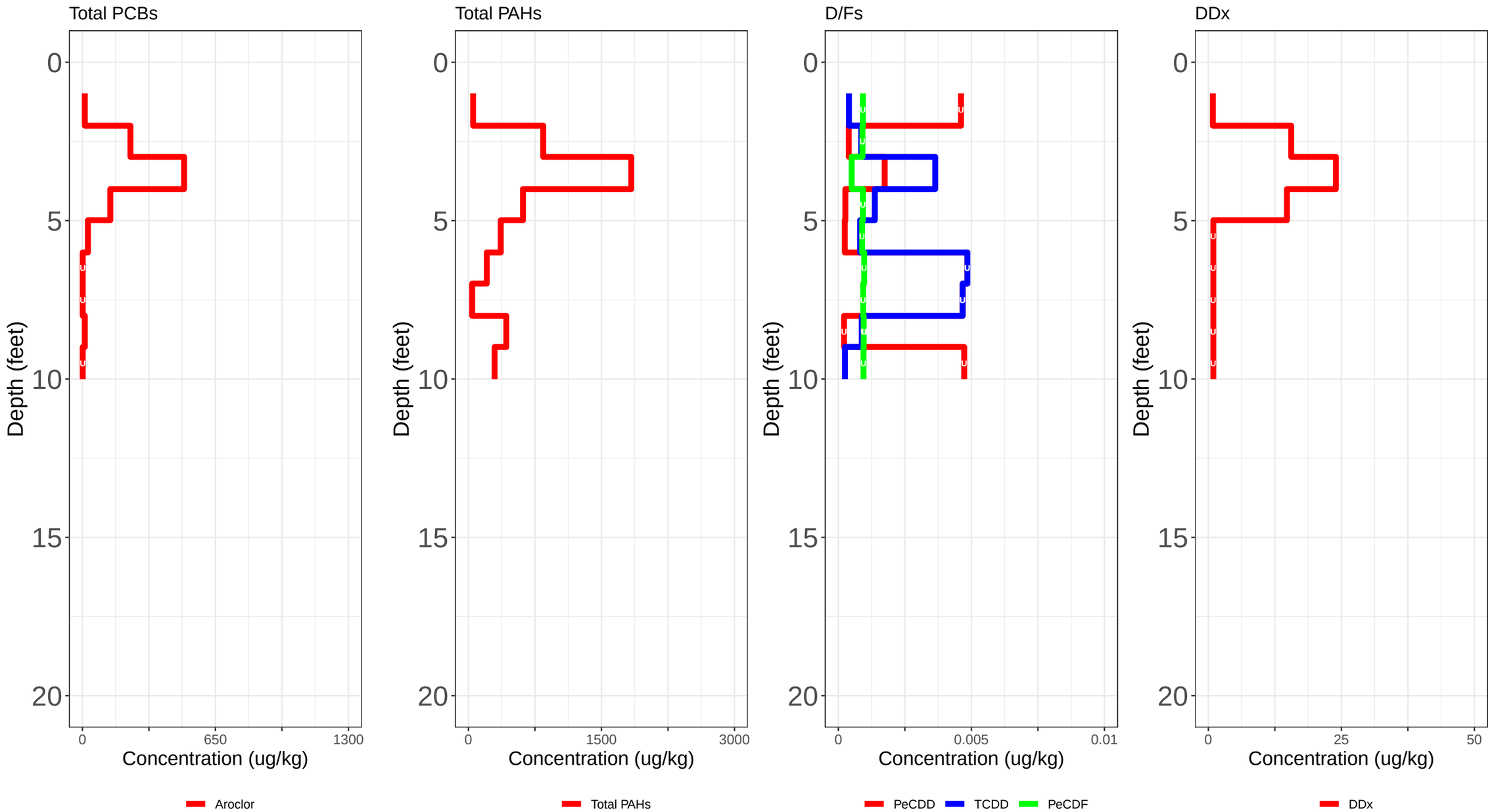

PeCDD = 1,2,3,7,8−PeCDD, TCDD = 2,3,7,8−TCDD, PeCDF = 2,3,4,7,8−PeCDF
PAHs = polycyclic aromatic hydrocarbons, PCBs = polychlorinated biphenyls, DDx = dichlorodiphenyltrichloroethane and its derivatives
ug/Kg = micrograms per kilogram
'U' indicates result was non−detect at the value shown

Prepared 02/17/2021 09:39

Figure 11. Phase 1b Subsurface Sediment Concentration Profile − Core J3−SC

DTNA Swan Island Lagoon
Sediment Investigation

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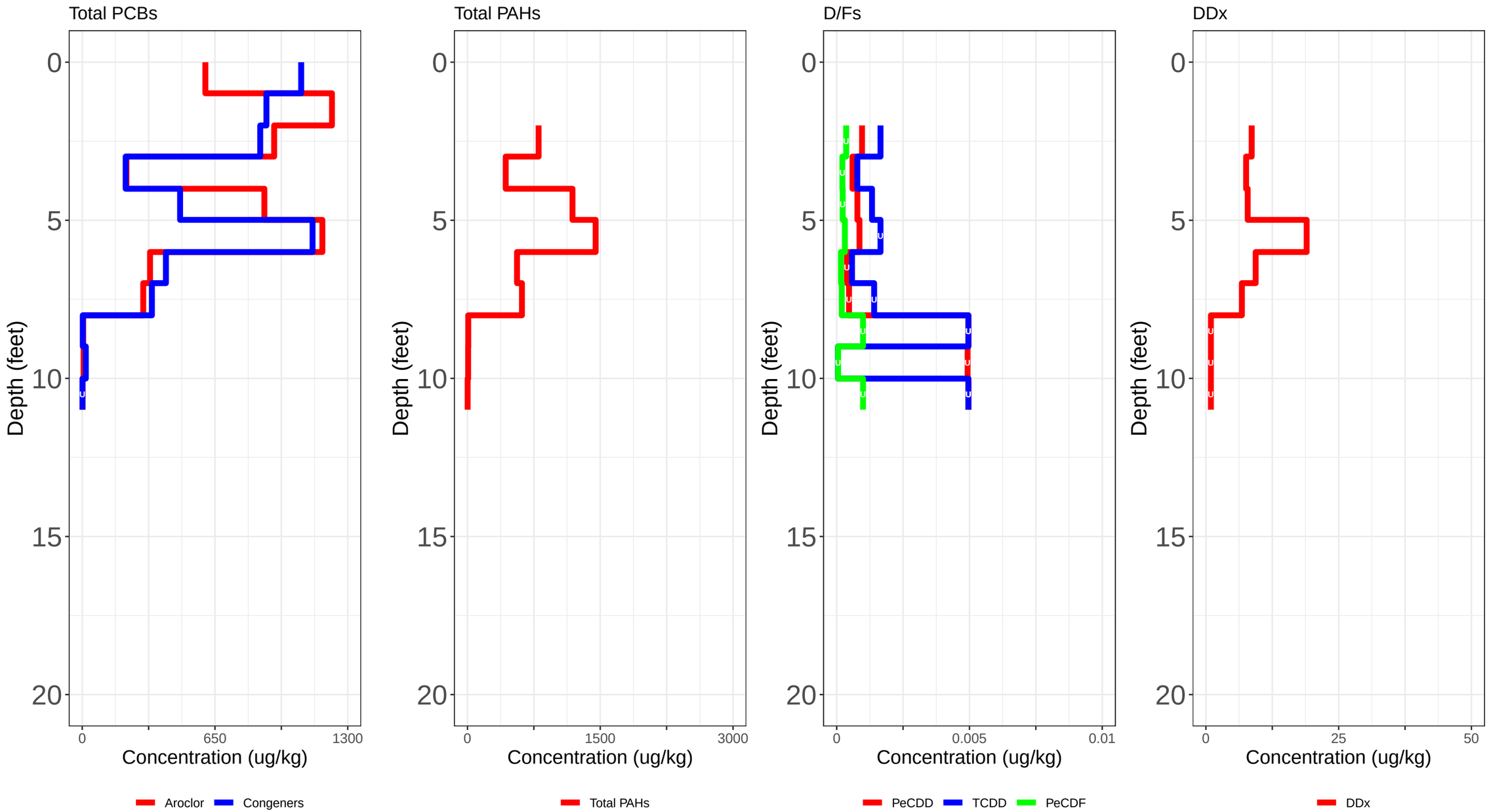

PeCDD = 1,2,3,7,8−PeCDD, TCDD = 2,3,7,8−TCDD, PeCDF = 2,3,4,7,8−PeCDF
PAHs = polycyclic aromatic hydrocarbons, PCBs = polychlorinated biphenyls, DDx = dichlorodiphenyltrichloroethane and its derivatives
ug/Kg = micrograms per kilogram
'U' indicates result was non−detect at the value shown

Prepared 02/17/2021 09:39

Figure 12. Phase 1b Subsurface Sediment Concentration Profile − Core J5−SC

DTNA Swan Island Lagoon
Sediment Investigation

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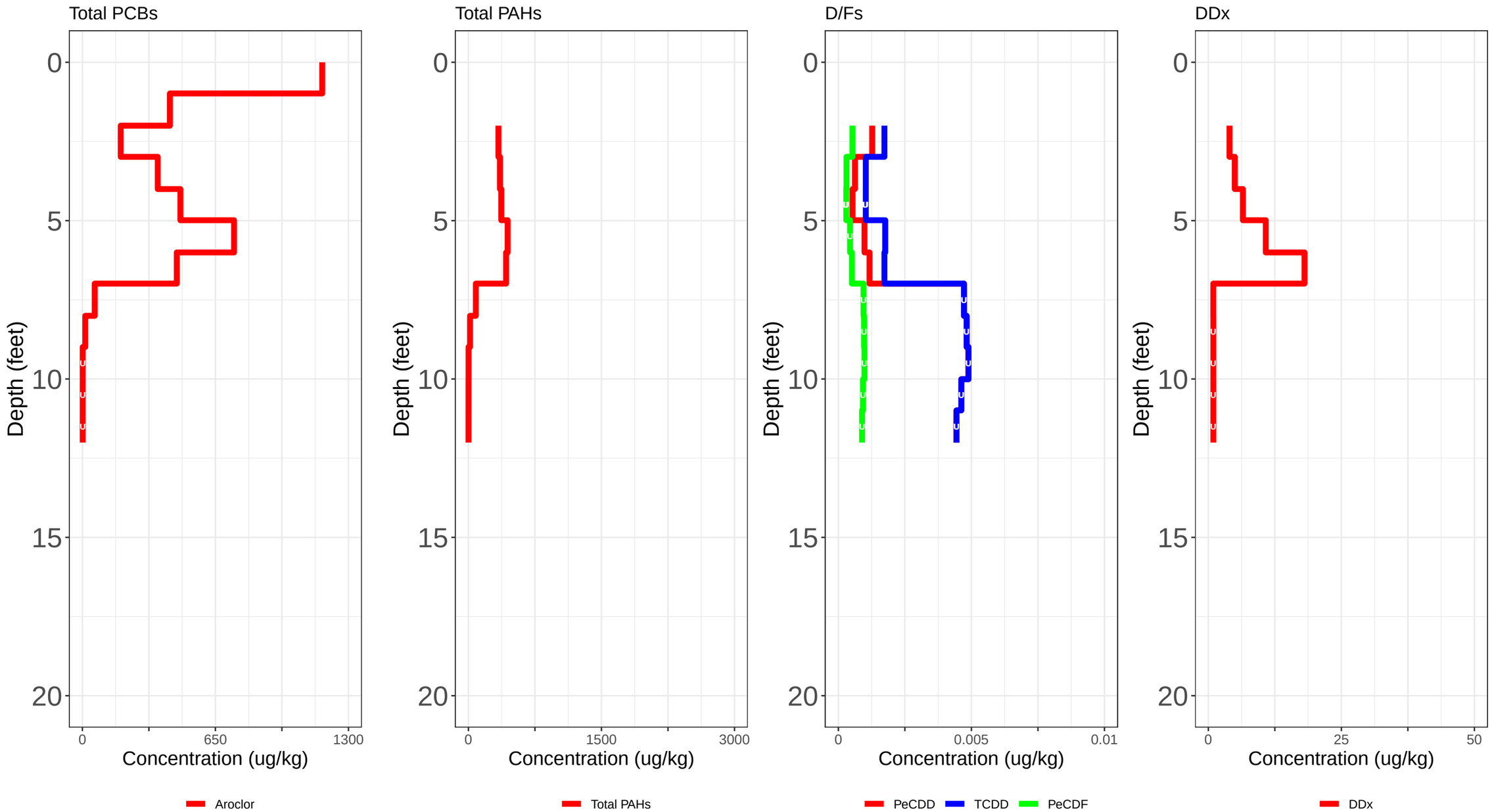

PeCDD = 1,2,3,7,8−PeCDD, TCDD = 2,3,7,8−TCDD, PeCDF = 2,3,4,7,8−PeCDF
PAHs = polycyclic aromatic hydrocarbons, PCBs = polychlorinated biphenyls, DDx = dichlorodiphenyltrichloroethane and its derivatives
ug/Kg = micrograms per kilogram
'U' indicates result was non−detect at the value shown

Prepared 02/17/2021 09:39

Figure 13. Phase 1b Subsurface Sediment Concentration Profile − Core J6−SC

DTNA Swan Island Lagoon
Sediment Investigation

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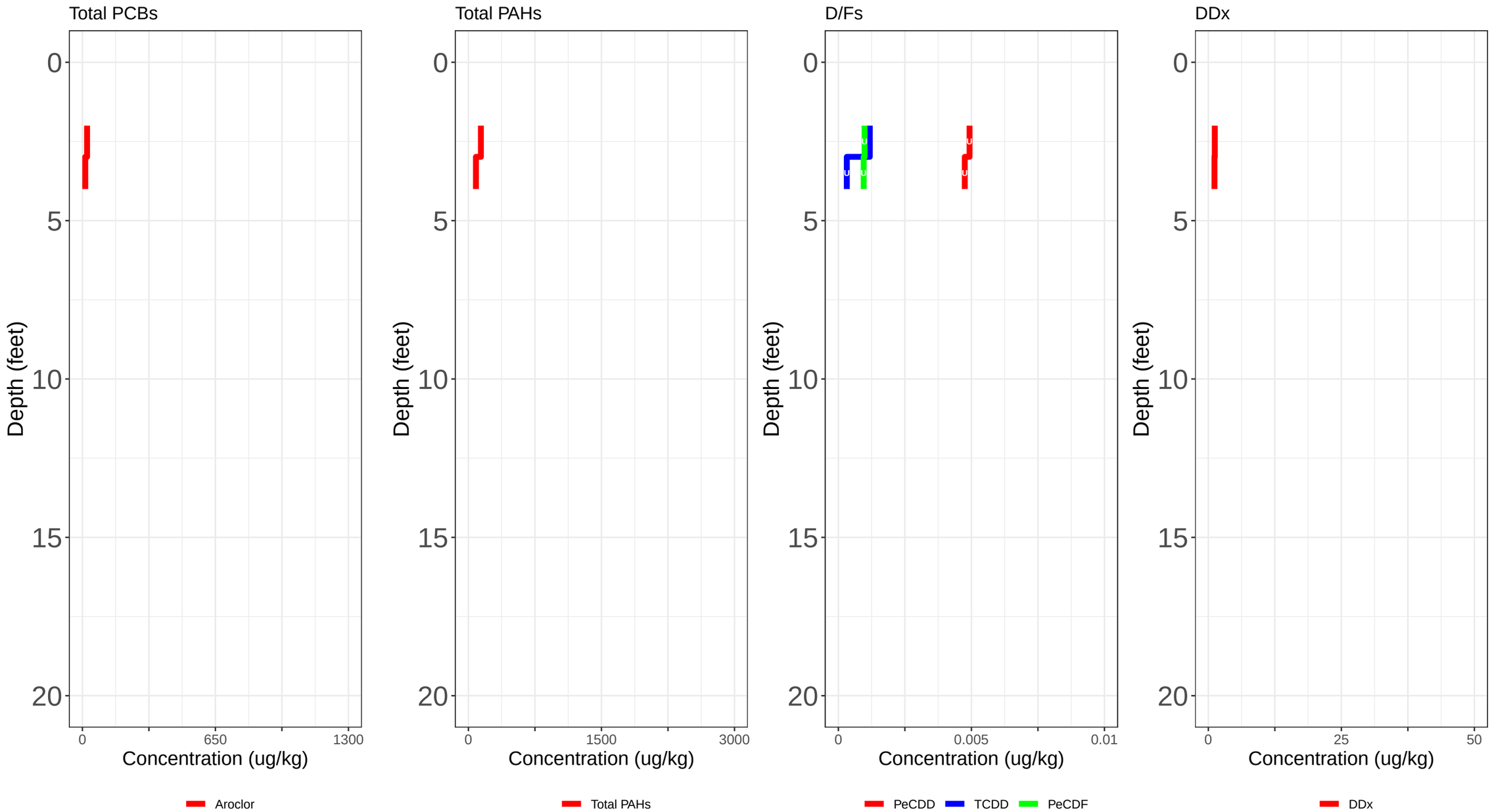


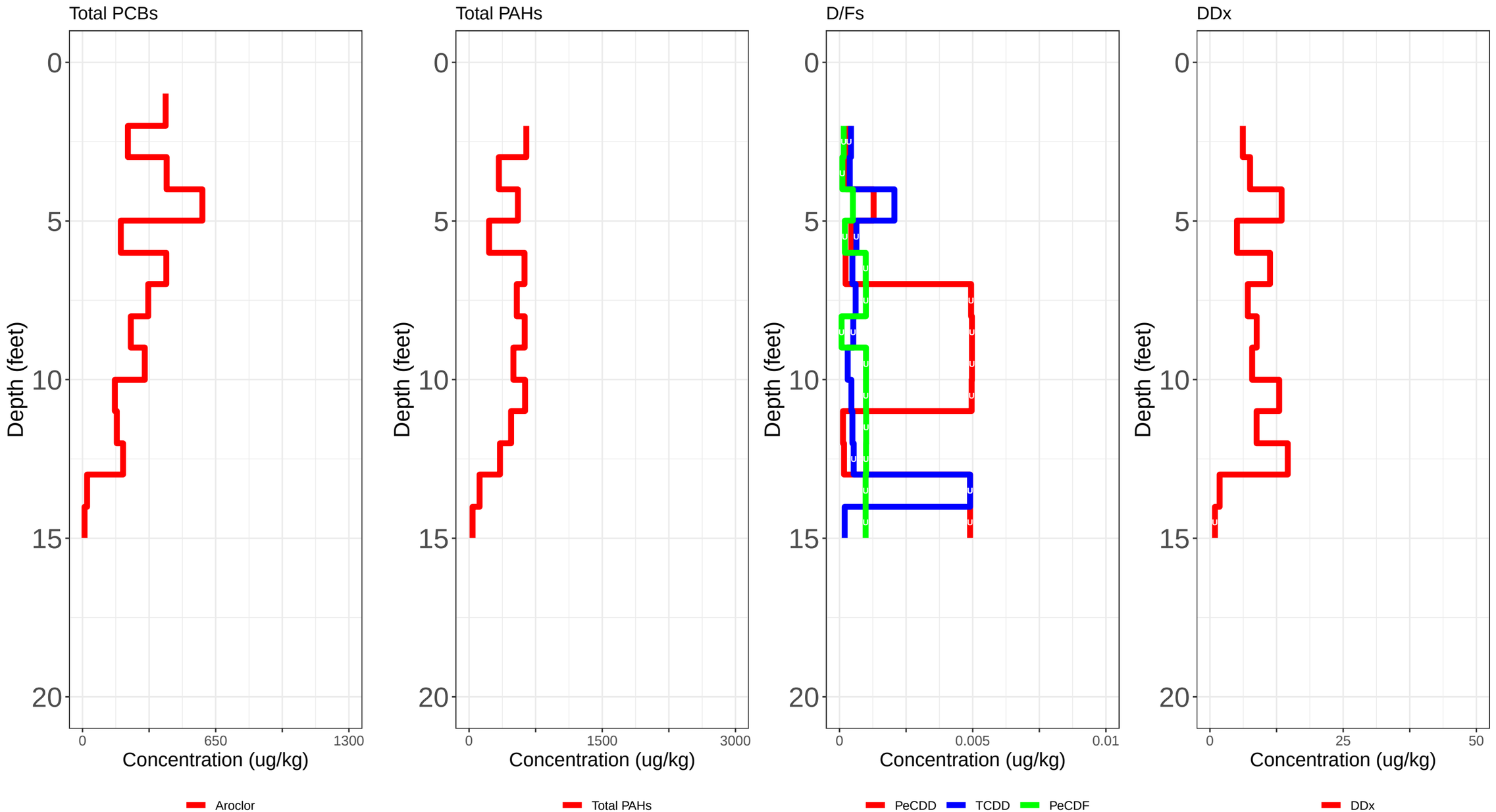
PeCDD = 1,2,3,7,8−PeCDD, TCDD = 2,3,7,8−TCDD, PeCDF = 2,3,4,7,8−PeCDF
PAHs = polycyclic aromatic hydrocarbons, PCBs = polychlorinated biphenyls, DDx = dichlorodiphenyltrichloroethane and its derivatives
ug/Kg = micrograms per kilogram
'U' indicates result was non−detect at the value shown

Prepared 02/17/2021 09:39

Figure 14. Phase 1b Subsurface Sediment Concentration Profile − Core L3−SC

DTNA Swan Island Lagoon
Sediment Investigation

PgG



PeCDD = 1,2,3,7,8−PeCDD, TCDD = 2,3,7,8−TCDD, PeCDF = 2,3,4,7,8−PeCDF
PAHs = polycyclic aromatic hydrocarbons, PCBs = polychlorinated biphenyls, DDx = dichlorodiphenyltrichloroethane and its derivatives
ug/Kg = micrograms per kilogram
'U' indicates result was non−detect at the value shown

Prepared 02/17/2021 09:39

Figure 15. Phase 1b Subsurface Sediment Concentration Profile − Core R4−SC

DTNA Swan Island Lagoon
Sediment Investigation

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APPENDIX A
ARCHIVED SPLIT CORE SAMPLE LOGINS

ALS Environmental
1317 South 13th Avenue
Kelso, WA 98626

Confirmation of Sample Receipt

To:	Janet Knox	**From:**	Howard Holmes
Email:	janet@pgwg.com	**Email:**	howard.holmes@alsglobal.com
Fax:	(206) 329-6968	**Fax:**	360-636-1068
Phone:	206-329-0141	**Phone:**	360-501-3364 x3364

Samples for analysis have been received by ALS Environmental on 10/24/18 and assigned our Service Request number **K1810418**. **Please verify the following information and notify me of any corrections as soon as possible.**

The estimated completion date for this work is: **11/28/18**

Client: Pacific Groundwater Group
Project: Head of Swan Island Lagoon/2006-00115

EDD Required: Yes

Tier: IV

Report To:
Janet Knox
Pacific Groundwater Group
2377 Eastlake Ave., East
Suite 200
Seattle, WA 98102

Billing Address:
Inger Jackson
Pacific Groundwater Group
2377 Eastlake Ave., East
Suite 200
Seattle, WA 98102

Comments:

Thank you for your business!

A - Test is Authorized H - Test is On Hold HP - Test is On Hold Pending Input P - Test is Authorized for Prep Only C - Test has been Cancelled * - Test has assigned QC

				Archive Archive -20C
K1810418-001	J6-SC-A0-4-1to2	Soil	10/22/18	A
K1810418-002	J6-SC-A0-4-2ot4	Soil	10/22/18	A
K1810418-003	J5-SC-A0-4-0to2	Soil	10/22/18	A
K1810418-004	J5-SC-B4-8-4to6	Soil	10/22/18	A
K1810418-005	J5-SC-C8-11.4-8to10	Soil	10/22/18	A
K1810418-006	J5-SC-C8-11.4-10to11.4	Soil	10/22/18	A
K1810418-007	J5-SC-B4-8-6to8	Soil	10/22/18	A
K1810418-008	J5-SC-A0-4-2to4	Soil	10/22/18	A
K1810418-009	J3-SC-B4-8-4to6	Soil	10/22/18	A
K1810418-010	J3-SC-B4-8-6to8	Soil	10/22/18	A
K1810418-011	J3-SC-C8-10.4-8to9.8	Soil	10/22/18	A
K1810418-012	J3-SC-C8-10.4-9.6to10.4	Soil	10/22/18	A
K1810418-013	J3-SC-B4-8-4to6	Soil	10/22/18	A
K1810418-014	J3-SC-B4-8-6to8	Soil	10/22/18	A

				Archive Archive -20C
K1810418-015	J6-SC-C8-12.3-8to10	Soil	10/22/18	A
K1810418-016	J6-SC-C8-12.3-8to12.3	Soil	10/22/18	A
K1810418-017	J3-SC-A0-4-1to2	Soil	10/22/18	A
K1810418-018	J3-SC-A0-4-2to4	Soil	10/22/18	A
K1810418-019	L3-SC-A0-4.3-0.4to2	Soil	10/22/18	A
K1810418-020	L3-SC-A0-4.3-2to4.3	Soil	10/22/18	A

Test Comments:

Group	Test/Method	Samples	Comments
SMO	Archive/Archive -20C	1-20	Cores-$144/6 months Jars-$48/6 months

APPENDIX B
SEDIMENT CORE SAMPLING LOGS

Sediment Core Processing Form

DTNA Swan Island Lagoon Sediment Characterization

Location ID:	D6
Processing Crew:	DO/JP

Collection Date:	/ /
Processing Date:	8 / 26 / 2019

Recovered Length (ft)	PID	Torvane/ Penetrometer	Size % - G	Size % - S	Size % - F	Description (moisture, density, color, odor, sheen, biota, structure, other debris)	Sample Depth (ft)	Subsample #	Summary Sketch
1						A_1) X A_2) 1-2: 1.1-2.0 A_3) 2-4: 2.0-4.0			
2									
3						Pb210 ~~30~~, 33, 36, ..., 60 65, 70, 75, ...			
4						Break A_2 / A_3 60cm / 65cm Break A_3 / B_1 120cm / 125cm Break B_1 / B_2 180cm / 185cm ... etc			
5						Cesium 137 + 1.1-2: divide into 2 equal intervals 2-4: divide into 4 equal intervals *			
6									
7						For 1/2 ft samples combine 1/2 ft ~~samples~~ sed to make 1 ft intervals for rest of samples			
8									
9						Blind duplicate: 411-SC1b-50to60-82619 is a duplicate of D6-SC1b-50to60-82619			
0									

Sample Information

	Subsample ID	Time	Containers			Subsample ID	Time	Containers
1	__-SC-__to__-10__18				5	__-SC-__to__-10__18		
2	__-SC-__to__-10__18				6	__-SC-__to__-10__18		
3	__-SC-__to__-10__18				7	__-SC-__to__-10__18		
4	__-SC-__to__-10__18				8	__-SC-__to__-10__18		

Additional Comments:

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Sediment Core Sampling Log

DTNA Swan Island Lagoon Sediment Characterization

Location ID:	D6
Weather Conditions:	Sunny, light breeze
Sampling Crew:	ML, TP
Boat Crew:	PJ, JS

Date:	10/21/18
Tide stage (ft)	1.91'
Water depth (ft)	34.63
Mudline Elev. (ft NAVD 88)	-27.74
Core tube length (ft)	[redacted]
GPS Elevation (ft NAVD88)	—

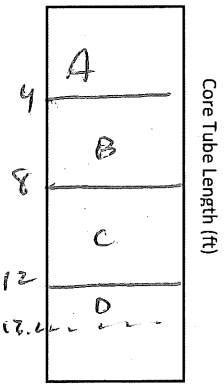
Proposed Coordinates:	N: 700900
	E: 763907

Core Location and Attempts

Attempt #	Time	Actual Coordinates		Target Depth (ft)	Penetration Depth (ft)	Recovery Length (ft)	Recovery (%)	Accept (Y/N)	Drive Description
		Northing	Easting						
1	1212	700904.53	763~~907~~ 895.72	15.5	15.4	14.5	94	N	1.5ft free fall, mud got progressively stiffer with depth
2	14:47	700900	763907	15.5	14.5	ML 20-132	91	Y	3.5 ft of free fall mud stiffer w/ depth as attempt #1

If core sectioned in the field for transport:

Section	Length (ft)	Description at Cuts of inner bag
A	0 - 4	cut at 4'
B	4 - 8	cut at 8'
C	8 - 12	cut @ 12'
D	12 - 13.2	core catcher + extruded



Additional Comments:

attempt 1 rejected due to problematic extrusion
attempt 2 extruded intact, inner sectioned

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Sediment Core Processing Form

sheet 1 of 1

DTNA Swan Island Lagoon Sediment Characterization

Location ID:	D6
Processing Crew:	DW JD

Collection Date:	10 / 21 / 18
Processing Date:	10 / 21 / 18

	Recovered Length (ft)	PID	Torvane/ Penetrometer	Size % - G	Size % - S	Size % - F	Description (moisture, density, color, odor, sheen, biota, structure, other debris)	Sample Depth (ft)	Subsample #	Summary Sketch
	1	0.1	0 S / 0.1 ft	0	<5 f	>95	wet, v. soft, brown, tr-sl. TPH, sl. sheen met-strks massive		0-1	
A	2	0.2	<0.25 S / 0.1 ft	0	<5 f	>95	wet, v. soft ~~as above~~ brown, grey, sl-mod TPH odor mod-sheen, rainbow florets, dk br. blebs massive-blocky ~1.7'	1	1-2	blebs ~~during sheen test~~
	3							2		
	4	0.1	<0.25 S / 0.1 ft	0	<5 f	>95	wet, soft, br-gr, mod-strong TPH odor mod. sheen, rainbow florets, dk br. blebs massive-blocky ~2.9'	3	2-4	blebs ~~during sheen test~~
	5							4		MUD
B	6		0.25-0.5 S / 0.25-0.5 ft	0	<5	>95	wet, soft, br-gr, mod TPH odor, slight mod sheen metallic massive-blocky, white powdery gran ~0.3	5	4-6.4	
	7	0.0	1-1.25 S / ~~0.25~~ -0.5	0	<5	>95	JD ~~wet~~ moist, m. stiff-stiff, br-gr massive-blocky sl-mod TPH scattered, v. trace white granules ~7.6-8.0	6	6.4-	
	8							7		
	9	0.0	~~2.25~~ 1.5 S / 2.25 foot					8	8.8	
	10	0.0	.5-10 S / 2.25-3.5 foot	0	30 f	70	moist-wet, m. stiff to stiff, br-gr, interbedded SILT/SAND 9.1-9.3 f. sand layer 9.7-9.8 " " tr. organic odor no sheen 10.4-10.5, 10.7-10.8	9	8.8 to 10.8	grad. contact

Sample Information

		Subsample ID	Time	Containers			Subsample ID	Time	Containers
A	1	D6-SC-0 to 10 10 21 18	1600	8 no archive 1/2 core		5	D6-SC-64 to 88-10 21 18	1740	
	2	D6-SC-1 to 2-10 21 18	1615			6	D6-SC-88 to 108 10 21 18	1750	88 to 10.8
	3	D6-SC-2 to 4-10 21 18	1630			7	D6-SC-108 to 123 10 21 18	1800	10.8 to 12.3
	4	D6-SC-40 to 64-10 21 18	1650			8	D6-SC-123 to 132 10 21 18	1815	~~[illegible]~~ 16 oz Archive

Additional Comments:

2 jars @ 8oz to TA
none to ALS

PgG

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Sediment Core Processing Form

sheet 2 of 2

DTNA Swan Island Lagoon Sediment Characterization

Location ID:	D6
Processing Crew:	DW JP

Collection Date:	10 / 21 / 18
Processing Date:	10 / 21 / 18

Recovered Length (ft)	PID	Torvane/ Penetrometer	Size % - G	Size % - S	Size % - F	Description (moisture, density, color, odor, sheen, biota, structure, other debris)	Sample Depth (ft)	Subsample #	Summary Sketch
11		0.4 -0.8 S / 3.0 -4.0 Fat	0	60 f	40	wet, m. dense-dense, grey, none no sheen bedded f. sand + silty-sl. silty f. sand 10.4-10.6 f. sand layer	11		f. sandy
12							12		
13						core catcher - same as above & extruded into bowl			
13						13.2 — TD	13		
4									
5									
6									
7									
8									
9									
0									

Sample Information

	Subsample ID	Time	Containers		Subsample ID	Time	Containers
1	__-SC-__to__-10__18			5	__-SC-__to__-10__18		
2	__-SC-__to__-10__18			6	__-SC-__to__-10__18		
3	__-SC-__to__-10__18			7	__-SC-__to__-10__18		
4	__-SC-__to__-10__18			8	__-SC-__to__-10__18		

Additional Comments:

PgG

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Sediment Core Processing Form

sheet 1 of ___

DTNA Swan Island Lagoon Sediment Characterization

Location ID:	H3
Processing Crew:	DW/JP

Collection Date:	/ /
Processing Date:	8 / 28 / 2019

Recovered Length (ft)	PID	Torvane/ Penetrometer	Size % - G	Size % - S	Size % - F	Description (moisture, density, color, odor, sheen, biota, structure, other debris)	Sample Depth (ft)	Subsample #	Summary Sketch
1						A_1) 0-2: 0.0'-1.9' A_2) 2-3.6: 2.0'-3.6' B_1) 3.6-5.6: B_2) 5.6-7.6: 5.6'-7.4' C_1) 7.6-9.6: 7.6'-9.6' C_2) 9.6-11: 9.6'-10.9'			
2									
3						Pb210 0cm, 3cm, 6m, ..., 60cm 65cm, 70cm, 75cm, ..., etc... 325cm bottom of C_2 330cm in core catcher Breaks (cm) A_1/A_2 - 57/60 A_2/B_1 - 105/110 B_1/B_2 - 170/175 B_2/C_1 - 225/230 C_1/C_2 - 285/290 C_2+ →			
4									
5						Cs137 + 0-2 ft (1.9): 4 equal intervals of ~0.475 ft 2-3 ft: 2 equal intervals of 0.5 ft 3-4: (combined across core section) 2 equal intervals of 0.5 ft			
6									
7						Other Analytes Combine 1/2 ft intervals of sediment to make 1 ft intervals for rest of samples * No TA jar filled from 0-1 interval or 1-2' interval			
8									
9									
10									

A_1 A_2 B_1 B_2 C_1 C_2 10.9

Sample Information

	Subsample ID	Time	Containers		Subsample ID	Time	Containers
1	__-SC-__to__-10__18			5	__-SC-__to__-10__18		
2	__-SC-__to__-10__18			6	__-SC-__to__-10__18		
3	__-SC-__to__-10__18			7	__-SC-__to__-10__18		
4	__-SC-__to__-10__18			8	__-SC-__to__-10__18		

Additional Comments:

PgG

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Sediment Core Sampling Log

DTNA Swan Island Lagoon Sediment Characterization

Location ID:	H3-SC
Weather Conditions:	Foggy w 300 ft visibility
Sampling Crew:	ML, TF, JP, DW
Boat Crew:	PJ, JS

Date:	10 / 21 / 16
Tide stage (ft)	0.33
Water depth (ft)	23.10
Mudline Elev. (ft NAVD 88)	-17.79
Core tube length (ft)	15
GPS Elevation (ft NAVD88)	———

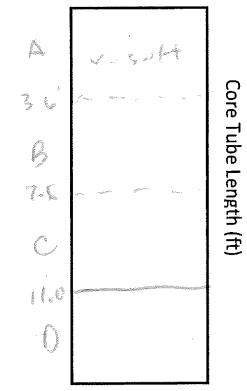
Proposed Coordinates:	N:	700578
	E:	7634406

Core Location and Attempts

Attempt #	Time	Actual Coordinates: Northing	Actual Coordinates: Easting	Target Depth (ft)	Penetration Depth (ft)	Recovery Length (ft)	Recovery (%)	Accept (Y/N)	Drive Description
1	10:20	700581.75	7634316.62	8	12	11.7	98%	Y	12' drive, 20@tape 2' free fall, 7' hung up (contact

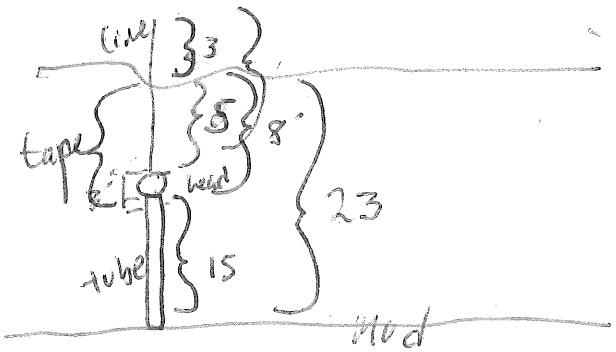
If core sectioned in the field for transport:

Section	Length (ft)	Description at Cuts of liner
A	3.6	contact v soft
B	7.6	4 foot
C	11.0 ~~10.8~~	end of core
D	11.4	core catcher



Additional Comments:

depth: 23.1
core tube 15 ft
8



w/ chuck & 75% fingers

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Sediment Core Processing Form

sheet 1 of 2

DTNA Swan Island Lagoon Sediment Characterization

Location ID:	H3
Processing Crew:	JW JP

Collection Date:	10 / 21 / 18
Processing Date:	10 / 21 / 18

Recovered Length (ft)	PID (ppm)	Torvane/ Penetrometer	Size % - G	Size % - S	Size % - F	Description (moisture, density, color, odor, sheen, biota, structure, other debris)	Sample Depth (ft)	Subsample #	Summary Sketch
1	0.0	0.25 S / 0.25 foot	0	<5 f	>95	wet, v. soft-soft, brown, tr. org odor, tr. sheen tr. wood chips, massive - blocky		0-1	
2	0.2	0.5 S / 0.6 foot	0	<5 f	>95	wet, m stiff soft, brown, slo pet. odor, tr. sheen. tr. wood chips, massive - blocky		1-2	MUD
3	0.8	0.5 S / 0.5 foot	0	<5 f	>95	wet, m stiff, brown, sl-mod TPH, tr. sheen massive - blocky, TPH at lowest 0.4'		2-2.4	
4	1.0	0 S / 0.25 foot	0	20	80	wet, ~~loose~~ v. soft-soft, brown, sl-mod TPH sandy lenses to 0.1 ft ~~[illegible]~~ gradual change to m. dense sand by ≈3.6 tr. paint chip (e.g. yellow) abrupt lower contact @ 4.6	4	2.4 to 4.6	MUD w/sand SAND
5		0.4, 0.6 S / 0.6 not							
6	0.0	0.5 S / 0.7 foot	0	90 f	10	wet, m dense w/ tr. debris & tr. paint chips grey sl-mod TPH no sheen	5	4.6	SILT
			0	<10 f	>90	wet, soft-m stiff wood chips 5.2-5.4, + debris abrupt contact @ 5.4		6.3	SAND
7	0.0	4, 1.25 S / 0.5 not	0	70	30	wet, m dense-dense, grey, tr. sl TPH odor no bedding no sheen	6		
8	0.4	0.8 S / 1.25 foot	0	<5	>95	wet, m. stiff, grey-brown, tr. org. odor massive, tr. woodchips to sl. TPH at blocky throughout (f) ≈ 8 to 8.5	7	6.3	SILT stiff
9		1.0 S / 1.25 foot				~~[illegible]~~	8	8.5	
0	0.2	0.25 S / 0.25 foot	<1	<5 f	>95	~ contact stiff to soft silt	9	8.5	coarse sand
						wet, moist. soft, grey-brown, tr. TPH odor tr. sheen, metallic massive - blocky fine gravel rounded @ contact	10	9.4	

A

B

3.6 — 5.4 — 6.3 — 8.5 — 9.9

(1) (2) (3) (4) (5) (6)

Sample Information

	Subsample ID	Time	Containers		Subsample ID	Time	Containers
1	H3-SC-0 to 1-10 21 18	1145	no Tx	5	H3-SC-4.6 to 6.3 10 21 18	1250	No Tx
2	H3-SC-1 to 2-10 21 18	1155	no Tx	6	H3-SC-6.3 to 8.5 10 21 18	1350	No Tx
3	H3-SC-2 to 2.9 10 21 18	1200	no Tx	7	H3-SC-8.5 to 9.9-10 21 18	1415	No Tx
4	H3-SC-2.9 to 4.6 10 21 18	1240	no Tx	8	H3-SC-9.9 to 11.4-10 21 18	1430	*

Additional Comments:

* interval to 11.0 core catcher plug not included in sample

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Sediment Core Processing Form

DTNA Swan Island Lagoon Sediment Characterization

Location ID:	43
Processing Crew:	

Collection Date:	10 / 21 / 18
Processing Date:	10 / 21 / 18

Recovered Length (ft)	PID	Torvane/ Penetrometer	Size % - G	Size % - S	Size % - F	Description (moisture, density, color, odor, sheen, biota, structure, other debris)	Sample Depth (ft)	Subsample #	Summary Sketch
10									
1	0.0	1.5 S / 2.5 tons	21	45 f	395	moist, stiff-m. stiff grey, no odor. no sheen, wood chunk - twig		9.4 to 11 ✱ see note pg. 1	
11									
11.4						11.4 end of core			
2									
3									
4									
5									
6									
7									
8									
9									
0									

Sample Information

	Subsample ID	Time	Containers		Subsample ID	Time	Containers
1	__-SC-__to__-10__18			5	__-SC-__to__-10__18		
2	__-SC-__to__-10__18			6	__-SC-__to__-10__18		
3	__-SC-__to__-10__18			7	__-SC-__to__-10__18		
4	__-SC-__to__-10__18			8	__-SC-__to__-10__18		

Additional Comments: See pg 1

PID background 0.0 ppm

PgG

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Sediment Core Processing Form

sheet __ of __

DTNA Swan Island Lagoon Sediment Characterization

Location ID:	I3
Processing Crew:	DW/JP

Collection Date:	/ /
Processing Date:	8 / 27 / 2019

Recovered Length (ft)	PID	Torvane/ Penetrometer	Size % - G	Size % - S	Size % - F	Description (moisture, density, color, odor, sheen, biota, structure, other debris)	Sample Depth (ft)	Subsample #	Summary Sketch
1						No core material 0' → 1' A_2) 1-2 : 1.0'-2.0' A_3) 2-4 : 2.0'-4.0', zip tie at 3.6'			
2						Pb^{210} 30, 33, 36, ..., 60 cm 65, 70, 75, ... cm Break A_2 / A_3 60cm / 65cm Break A_3 / B_1 120cm / 125cm etc			
3									
4									
5						Cesium 137 1-2 : divide into 2 equal parts 2-4 : divide into 4 equal parts etc.			
6									
7						Zip tie Crimp in bag at 3.6' for stratigraphic break Full length maintained			
8									
9						For ½ ft samples Combine ½ ft sed to make 1 ft intervals for rest of samples Interval 90to100 actually 9 ft to 9.8 ft, 100to104 Blind duplicate: 412-SC16-80to90-82719 actually 9.8 ft to 10.4 ft is a duplicate of I3-SC16-80to90-82719			
0									

Sample Information

	Subsample ID	Time	Containers			Subsample ID	Time	Containers
1	__-SC-__to__-10__18				5	__-SC-__to__-10__18		
2	__-SC-__to__-10__18				6	__-SC-__to__-10__18		
3	__-SC-__to__-10__18				7	__-SC-__to__-10__18		
4	__-SC-__to__-10__18				8	__-SC-__to__-10__18		

Additional Comments:

PgG

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Sediment Core Sampling Log

DTNA Swan Island Lagoon Sediment Characterization

Location ID:	J3
Weather Conditions:	
Sampling Crew:	M. Luxton
Boat Crew:	PJ, ES

Date:	10/22/18
Tide stage (ft)	0.16
Water depth (ft)	~~21.5~~ 16.26
Mudline Elev. (ft NAVD 88)	-11.12
Core tube length (ft)	
GPS Elevation (ft NAVD88)	———

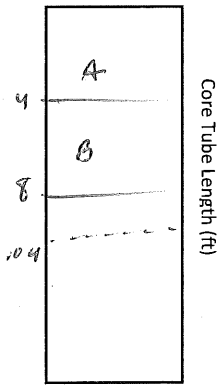
Proposed Coordinates:	N: 700752
	E: 7634561

Core Location and Attempts

Attempt #	Time	Actual Coordinates		Target Depth (ft)	Penetration Depth (ft)	Recovery Length (ft)	Recovery (%)	Accept (Y/N)	Drive Description
		Northing	Easting						
1	12:07	700760.53	7634551.73	10.0'	10.5'	10.4		Y	

If core sectioned in the field for transport:

Section	Length (ft)	Description at Cuts of liner
A	4.0	clayey silty m. stiff @ 4.0 contact @ 3.6
B	4-8	
C	8-10.4	
D		



Additional Comments:

PgG

ACME ENVIRONMENTAL

Sediment Core Processing Form

sheet 1 of 1

DTNA Swan Island Lagoon Sediment Characterization

Location ID:	J3
Processing Crew:	DW JP TF

Collection Date:	10 / 22 / 18
Processing Date:	10 / 22 / 18

Recovered Length (ft)	PID	Torvane/ Penetrometer	Size % - G	Size % - S	Size % - F	Description (moisture, density, color, odor, sheen, biota, structure, other debris)	Sample Depth (ft)	Subsample #	Summary Sketch
1	0.5	NA/NA	0	<5	>95	wet, v. soft, brown, sl. TPH, rainbow streaks/florets tr. organics/woodchips		0-10	MUD
						---- abrupt contact, est. @ 1' * ----	1		
2	0.0	0.25 (S) / 2.75 ft	<1	80 f	20	wet, loose, grey, tr. TPH nobedding red plastic @ 1.8, tr. sheen metallic floret f. gravel @ 1.9, p.c. blue @ 2.1, wood @ 2.2 tr. wood @		10-20	SAND
						abrupt contact @ 2.3'	2		
3	0.3	0.5 (S) / 0.5 ft	0	<5	>95	moist-wet, brown, soft, massive-blocky tr. TPH odor, tr. sl. sheen - metallic strks & rainbow florets	3	20 36	~~MUD~~ SILT
						~~abrupt~~ tr. wood contact @ 3.6' at large wood chunks			wood
4	0.5	0.2 (S) / 0.5 ft					4	36-45	SILT
5			<1	80	20	moist-wet, br. soft, mass-blcky tr. TPH odor, tr. sheen contact 4.5 abrupt			~~SAND~~ ~~SILT bed~~ 4.5 4.7
	0.9	0.6 (S) / 1.75 ft	0	<5	>95	moist, br-gr ~~m. stff~~ m dense f. sand contact @ 4.7. tr. TPH odor	5	45-55	silt
6						moist, grey, m-stff, tr. TPH, massive-blocky ~~no sheen~~ contact @ 5.5'	6	55-	fine SAND 5.5
7	1.8	0.6 1.8 (S) / 0.75 ft	<1	90	10	moist, grey, m dense - dense not bedded f. sand; no TPH odor no sheen	7	76	
8						as above to 8.6 then contact	8	76	
9	0.0	1.5 (S) 3f; 0.5 (S) 4.5f; 0.6 (S) 1.25 nf; 1 (S) 0.5 nf; 1 (S) 2.5 f	<1	50	50	and bedding layers m stff & m-dense 8.6-8.7 silt, 8.7-9.1 silty f. sand, 9.1-9.3 f-m sand; 9.3-9.4 wood bank 9.4-9.6 silt, 9.6-	9	98	bedded sand & silt
0									

core catcher material sandy silt ~ 0.6'

A

B

Sample Information

	Subsample ID	Time	Containers		Subsample ID	Time	Containers
1	J3-SC-00 to 10-10 22 18	1240	no Tx, Ax ¼ full	5	J3-SC-45 to 55-10 22 18	1435	ALL
2	J3-SC-10 to 20-10 22 18	1250	no Ax, no Tx	6	J3-SC-55 to 76-10 22 18	1445	
3	J3-SC-20 to 36-10 22 18	1300	no Ax, no Tx	7	J3-SC-76 to 98-10 22 18	1455	
4	J3-SC-36 to 45-10 __ 18	1425	no Ax, no Tx	8	__-SC-__ to __-10 __ 18		

Additional Comments:

* contact @ J3 grab colocated est. ~12-14 cm

no 0-1 sample archived

core catcher & end of core collected in foil & archived

PgG

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Sediment Core Processing Form

sheet __ of __

DTNA Swan Island Lagoon Sediment Characterization

Location ID:	J5
Processing Crew:	DW/JP

Collection Date:	/ /
Processing Date:	8 /27 / 2019

Recovered Length (ft)	PID	Torvane/ Penetrometer	Size % - G	Size % - S	Size % - F	Description (moisture, density, color, odor, sheen, biota, structure, other debris)	Sample Depth (ft)	Subsample #	Summary Sketch
1	A_1					0-2' core section measured at 0.0 to 1.9 ft A_1) 0-2 : 0' to 1.9' A_2) 2-4 : 2.0' to 4.0' B_1) 4-6			
2									
3	A_2					Pb210 0cm, 3cm, 6cm, ..., 60 cm 65cm, 70cm, 75cm, ..., etc. Break A_1/A_2 — 57cm/60cm Break A_2/B_1 — 120cm/125cm Break B_1/B_2 — 180cm/185 cm etc			
4									
5	B_1					Cesium 137 0-1.9 : 3 equal 0.5' intervals 1 0.4' interval 2-4 : 4 equal intervals etc			
6									
7	B_2								
8	8.0					Other Analytes Combine ½ ft intervals of sed to make 1 ft intervals for rest of sample			
9	C_1								
0	9.55 C_2					Core cut at 9.55 ft. Handled as if at 9.50 ft. Toe (11.0 to 11.4 ft) not sampled			
	To 11.0								

Sample Information

	Subsample ID	Time	Containers		Subsample ID	Time	Containers
1	__-SC-__ to __-10__ 18			5	__-SC-__ to __-10__ 18		
2	__-SC-__ to __-10__ 18			6	__-SC-__ to __-10__ 18		
3	__-SC-__ to __-10__ 18			7	__-SC-__ to __-10__ 18		
4	__-SC-__ to __-10__ 18			8	__-SC-__ to __-10__ 18		

Additional Comments:

PgG

ACME ENVIRONMENTAL

Sediment Core Sampling Log

DTNA Swan Island Lagoon Sediment Characterization

Location ID:	J5
Weather Conditions:	Sunny, Calm
Sampling Crew:	ML
Boat Crew:	PJ, ES

Date:	10/22/18
Tide stage (ft)	1.20
Water depth (ft)	~~33~~ 32.79
Mudline Elev. (ft NAVD 88)	-26.61
Core tube length (ft)	16
GPS Elevation (ft NAVD88)	—

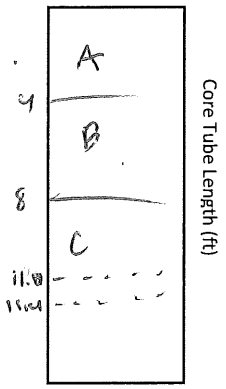
Proposed Coordinates:	N:	700597
	E:	7634434

Core Location and Attempts

Attempt #	Time	Actual Coordinates		Target Depth (ft)	Penetration Depth (ft)	Recovery Length (ft)	Recovery (%)	Accept (Y/N)	Drive Description
		Northing	Easting						
1	1420	700618.47	7634423.76	12.8	12.8	11.4	89	Y	4' free fall. Minimal resistance afterward

If core sectioned in the field for transport:

Section	Length (ft)	Description at Cuts of Liner
A	0-4	MUD
B	4-8	MUD
C	8-11.4	8-11 in sleeve, 11-11.4 in core catcher
D		



Additional Comments:

1/2 core archived

PgG

ACME ENVIRONMENTAL

Sediment Core Processing Form

sheet 1 of 1

DTNA Swan Island Lagoon Sediment Characterization

Location ID:	J5
Processing Crew:	DW TF JP

Collection Date:	10 / 22 / 18
Processing Date:	10 / 22 / 18

	Recovered Length (ft)	PID	Torvane/ Penetrometer	Size % - G	Size % - S	Size % - F	Description (moisture, density, color, odor, sheen, biota, structure, other debris)	Sample Depth (ft)	Subsample #	Summary Sketch
	1	0.0	s 0 / 0 f	0	<5 f	>95	wet vsoft br. tr. TPH tr. metallic str. massive - blocky		00 - 10	MUD
A	2	0.0	s 0 / 0.1 f; <0.2 s / 0.25 f	0	<5 f	>95	soft (becoming/grading ~~soft~~ stiffer to 4' no sheen tr. TPH odor	1	10 - 20	
	3	0.2	0.2 s / 0.5 f	0	<5 f	>95	massive - blocky	2	20 - 40	
	4		0.6 s / 0.75 f				tr. TPH odor no sheen massive - blocky	3		
	5	0.5	0.4 to 0.75 (S) / 0.5 to 0.75 ft	0	<5 f	>95		4	40 60	MUD
B	6						as above tr. TPH odor	5		
	7	0.3	0.5 to 0.75 (S) / 0.5 to 0.75 ft	0	<5 f	>95	as above tr. TPH odor grading soft to m. stiff w/ depth	6	60 80	
	8							7		
C	9	0.2	1.2 to 1.5 (S) / 2.25 to 2.5 ft	0	20 f	80	moist - wet m. stiff no odor no sheen silt / f. sand bedding - ~~laminating~~ seams	8	80 95	
	10	0.0	1.1 to 1.4 (S) / 1.2 to 1.5 / 20 to 40 ft	0	40	60	tr. white flecks btw 7.7 - 10.6 incr. f. sand content in ~~laminations~~ seams	9	95 114	

Sample Information

	Subsample ID	Time	Containers		Subsample ID	Time	Containers
1	J5-SC-00 to 10-10 22 18	1600	no Ax, Tx	5	J5-SC-60 to 80-10 22 18	1650	
2	J5-SC-10 to 20-10 22 18	1610		6	J5-SC-80 to 95-10 22 18	1710	
3	J5-SC-20 to 40-10 22 18	1630		7	J5-SC-95 to 110-10 22 18	1720	no Tx
4	J5-SC-40 to 60-10 22 18	1640		8	__-SC-__ to __-10__18		

Additional Comments:

* 11 - 11.4 in core catcher archived at A/S not TA

PgG

ACME ENVIRONMENTAL

Sediment Core Processing Form

sheet 1 of ___

DTNA Swan Island Lagoon Sediment Characterization

Location ID:	J6
Processing Crew:	DW/JP

Collection Date:	/ /
Processing Date:	8 /27-28/ 19

Recovered Length (ft)	PID	Torvane/ Penetrometer	Size % - G	Size % - S	Size % - F	Description (moisture, density, color, odor, sheen, biota, structure, other debris)	Sample Depth (ft)	Subsample #	Summary Sketch
1						A_1) 0-2 : 0.0' to 2.0' A_2)			
2						Pb210 0cm, 3cm, 6cm, ..., 60cm 65cm, 70cm, 75cm, ..., etc. Breaks (cm) A_1/A_2 – 57/60 A_2/B_1 – 120/125 etc.			
3									
4						Cs137 + 0-2 ft : 4 equal 0.5 ft intervals etc.			
5									
6						Other Analytes Combine 1/2 ft intervals of sed to make 1 ft intervals for rest of sample			
7									
8									
9									
0						Blind Duplicate: 413-SC1b-40to50-82819 is a duplicate of J6-SC1b-40to50-82819			

Sample Information

	Subsample ID	Time	Containers		Subsample ID	Time	Containers
1	__-SC-__ to __-10__ 18			5	__-SC-__ to __-10__ 18		
2	__-SC-__ to __-10__ 18			6	__-SC-__ to __-10__ 18		
3	__-SC-__ to __-10__ 18			7	__-SC-__ to __-10__ 18		
4	__-SC-__ to __-10__ 18			8	__-SC-__ to __-10__ 18		

Additional Comments:

PgG

ACME ENVIRONMENTAL

Sediment Core Sampling Log

DTNA Swan Island Lagoon Sediment Characterization

Location ID:	J6
Weather Conditions:	sunny, calm wind
Sampling Crew:	ML
Boat Crew:	PJ, ES

Date:	10/22/18
Tide stage (ft)	3.27
Water depth (ft)	~~35~~ 34.14
Mudline Elev. (ft NAVD 88)	-25.89
Core tube length (ft)	15
GPS Elevation (ft NAVD88)	—

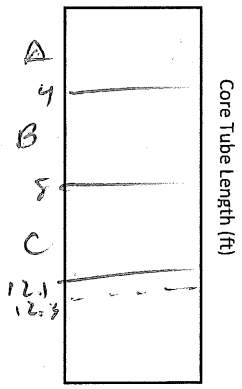
Proposed Coordinates:	N: 700520
	E: 7634371

Core Location and Attempts

Attempt #	Time	Actual Coordinates		Target Depth (ft)	Penetration Depth (ft)	Recovery Length (ft)	Recovery (%)	Accept (Y/N)	Drive Description
		Northing	Easting						
1	1545	700517.48	7634372.65	12.3 ~~14.3~~	13	12.3	95%	Y	3' free fall. Consistent easy drive w/ progressive slow down at 10' refusal @ 13'

If core sectioned in the field for transport:

Section	Length (ft)	Description at Cuts of liner
A	0-4	mud @ 4'
B	4-8	
C	8-12.1	12.1 - 12.3 core catcher
D		



Additional Comments:

PgG

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Sediment Core Processing Form

sheet 1 of 1

DTNA Swan Island Lagoon Sediment Characterization

Location ID:	J6
Processing Crew:	DW, JP

Collection Date:	10/22/18
Processing Date:	10/22/18

Recovered Length (ft)	PID	Torvane/ Penetrometer	Size % - G	Size % - S	Size % - F	Description (moisture, density, color, odor, sheen, biota, structure, other debris)	Sample Depth (ft)	Subsample #	Summary Sketch
1	0.0	0 (s) / 0 f	0	<5 f	>95	wet, v. soft, br. tr TPH odor tr. sheen		00 to 10	
2	0.5	0.1 (s) / 0.1 f / 0.25 f	0	<5 f	>95	wet, soft, br. tr TPH odor tr. sheen	1	10 to 20	MUD
3	0.0	0.25 (s) / 0.25 f / 0.5 f	0	<5 f	>95	wet, soft, br. tr TPH odor	2	20 to 40	
4						0-4 all massive-blocky	3		
5	0.5	0.25 (s) / 0.5 f / 0.5 f	0	<5 f	>95	wet soft br. tr. TPH odor massive blocky	4	40 to 60	no contacts apparent
6							5		
7	0.0	0.5 (s) / 0.5 / 0.75 f	0	<5 f	>95	wet, soft, br. tr. TPH odor massive - blocky	6	60 to 80	
						— 6.7 — contact mud / fine sandy silt —	7		— 6.7 —
8		0.25 (s) / 0.75 / 1.0 f	0	30 fine	70	massive not blocky	8	80 to 96	interbeds
9	0.0	0.5 (s) / 0.5 (s) / 0.5 (s) / 1.5 f / 2.0 f / 2.25 f	0	40 fine	60	wet, msftf - mdense, br-grey f. sandy silt & silty f. sand interbedded seams to 111 tr. TPH odor at ~ 8.0 no sheen	9		— 9.6
10	0.0	0.75 (s) / 1.0 (s) / 2.0 f / 2.5 f	0	60 fine	40	~~contact @ 9.6'~~ not apparent sl. more sandy 9.6 - 11.1 than 8 - 9.6 no sheen	10	96 to 111	

Sample Information

	Subsample ID	Time	Containers
1	J6-SC-00to10-102218	1802	
2	J6-SC-10to20-102218	1810	
3	J6-SC-20to40-102218	1820	
4	J6-SC-40to60-102218	1850	
5	J6-SC-60to80-102218	1900	
6	J6-SC-80to96-102218	1930	no Ax, Tx (duplicate)
7	J6-SC-96to111-102218	1940	no Ax Tx "
8	J6-SC-111to123-102218	1950	no Ax Tx "
9	J6-SC-121to123-102218	2000	2@802 Amber archive at ACS not TA

Additional Comments: DUP @ 6 geotech

see above

96 — to 10 —

PSG 0.0 (s) / 4.0 f / 0.75 not f- 0 70 30 moist, dense, silty f. sand to f. sandy silt, grey, no odor, no sheen, interbedded seams

12.1 — 12.3 4.5 f 0.75 sand not — TD = 12.3 clean f. sand at 11.0 0.2' in core catcher

ACME ENVIRONMENTAL

Dense SAND

Sediment Core Processing Form

DTNA Swan Island Lagoon Sediment Characterization

Location ID:	L3
Processing Crew:	DW / JP

Collection Date:	/ /
Processing Date:	8 / 26 / 19

Recovered Length (ft)	PID	Torvane/ Penetrometer	Size % - G	Size % - S	Size % - F	Description (moisture, density, color, odor, sheen, biota, structure, other debris)	Sample Depth (ft)	Subsample #	Summary Sketch
0						A) 0-2 : 0 - 1.7 ft B) 2-4.3 1.7 - 3.4 ft + gravel core catcher Pb210 2cm, 5, 10, 15 ... 95 cm break A / B 45cm / 50cm Cesium 137 + 0-2: divide into 4 equal intervals 2-4.3: divide into 4 equal intervals for ½ ft samples. combine ½ ft ~~samples~~ sed to make 1 ft intervals Archive 0-1 ft samples			
2									
4.3									

Sample Information

	Subsample ID	Time	Containers		Subsample ID	Time	Containers
1	__-SC-__to__-10__18			5	__-SC-__to__-10__18		
2	__-SC-__to__-10__18			6	__-SC-__to__-10__18		
3	__-SC-__to__-10__18			7	__-SC-__to__-10__18		
4	__-SC-__to__-10__18			8	__-SC-__to__-10__18		

Additional Comments:

Sediment Core Sampling Log

sheet 1 of 1

DTNA Swan Island Lagoon Sediment Characterization

Location ID:	L3
Weather Conditions:	
Sampling Crew:	ML
Boat Crew:	PJ, ES

Date:	10 / 22 / 18
Tide stage (ft)	1.42
Water depth (ft)	~~18.6~~ 21.28
Mudline Elev. (ft NAVD 88)	-14.88
Core tube length (ft)	
GPS Elevation (ft NAVD88)	—

Proposed Coordinates:	N: 700625
	E: 7634716

Core Location and Attempts

Attempt #	Time	Actual Coordinates: Northing	Actual Coordinates: Easting	Target Depth (ft)	Penetration Depth (ft)	Recovery Length (ft)	Recovery (%)	Accept (Y/N)	Drive Description
1	0858	~~7634701.95~~ 700623.27	7634701.95	~~20.5~~ 16	~~5.5~~ 5.02	~~4.3~~ 4.4	~~78~~ ~~89~~ 82	~~N~~ Y	Free fall to 1'. Drive hard. Refusal at 5.5 ft. gravel in core catcher
2	0924	700629.55	7634698.41	16	~~5.8~~ 5.8	~~5.2~~ 4.7	~~89~~ 81	N	Free fall to 1'. Drive hard. Refusal at 5.8 ft.
3	10:08	700612.89	7634698.31	~~15~~ 14.7	~~12.4~~ 12.2	5.2	42	N	Free fall 3.5 ft. (almost imperceptible). consistent drive - moderate vibratory speed, - pile drive? core barrel deformed

If core sectioned in the field for transport:

Section	Length (ft)	Description at Cuts of liner
A	0 - 4.3	no cuts, gravel in core to liner catcher
B		
C		
D		

Core Tube Length (ft)

Additional Comments:

tape reading

- water depth ~~22.5~~ sket, on attempt 1 - 22.5'
  water depth attempt 2 - 20.9'
  " attempt 3 - 18.6'

PGG

Attempt 1 sampled

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Sediment Core Processing Form

sheet 1 of 1

DTNA Swan Island Lagoon Sediment Characterization

Location ID:	L3
Processing Crew:	DW JP TF

Collection Date:	10 / 22 / 18
Processing Date:	10 / 22 / 18

Recovered Length (ft)	PID	Torvane/ Penetrometer	Size % - G	Size % - S	Size % - F	Description (moisture, density, color, odor, sheen, biota, structure, other debris)	Sample Depth (ft)	Subsample #	Summary Sketch
1	0.3	na / na	0	<5	>95	wet, v. soft, brown, tr. TPH sl. sheen, met. strks abrupt contact ~ 0.4'		00 - 10	GRD SAND
2	2.7	<0.5 (S) / 2.5 ft	<1	80	20	Wet-moist, loose, grey, tr. sl. TPH odor no sheen ~~moist~~,	1	10 - 20	
3		<0.5 (S) / >4.5 ft	<1	80 f	20	moist, ~~loose~~ m dense, grey, tr. TPH odor no sheen silty rip ups @ 2.8-2.9 & 2.3'	2	20 - 40	SAND
4	1.3	<0.5 (S) / 2.25 ft	85 f-c	10 f	<5	~~moist~~ m dense, grey, gravel f-c subround rounded TD 4.3'	3		[illegible]
5							5		
6							6		
7							7		
8							8		
9							9		
10							10		

Sample Information

	Subsample ID	Time	Containers		Subsample ID	Time	Containers
1	L3-SC-00 to 10-10 22 18	1035	no Archives Ag or Tx	5	__-SC-__ to __-10__18		
2	L3-SC 10 to 20-10 22 18	1045		6	__-SC-__ to __-10__18		
3	L3-SC 20 to 40-10 22 18	1100		7	__-SC-__ to __-10__18		
4	L3-SC-__ to __-10 22 18			8	__-SC-__ to __-10__18		

Additional Comments: Attempt #1

PgG

ACME ENVIRONMENTAL

Sediment Core Processing Form

sheet 1 of ___

DTNA Swan Island Lagoon Sediment Characterization

Location ID:	R4
Processing Crew:	DW/JP

Collection Date:	/ /
Processing Date:	8 / 28 / 19

Recovered Length (ft)	PID	Torvane/ Penetrometer	Size % - G	Size % - S	Size % - F	Description (moisture, density, color, odor, sheen, biota, structure, other debris)	Sample Depth (ft)	Subsample #	Summary Sketch
1	X					A1) 1-2: 1.0'-2.0' C1 8-10: 8.0'-10.0' A2) 2-4: 2.0'-4.0' C2 10-12: 10.0'-12.0' B1) 4-6: 4.0'-6.0' B2) 6-8: 6.0'-8.0'			
2									
3						Pb210 30cm, 33cm, 36cm, ..., 60cm 65cm, 70cm, 75cm, ..., etc..			
4						Breaks (cm) A1/A2 – 60/65 A2/B1 – 115/120 B1/B2 – 180/185 B2/C1 240/245			
5						Cs137 + 1-2 ft: 2 equal intervals of 0.5 ft 2-4 ft: 4 equal intervals of 0.5 ft etc 14-15 ft: 2 equal intervals of 0.5 ft			
6									
7						Other Analytes Combine ½ ft intervals of sediment to make 1 ft intervals for rest of samples			
8									
9						Sampled to 15', including core catcher material from 14.7' to 15'			
0									

Sample Information

	Subsample ID	Time	Containers		Subsample ID	Time	Containers
1	__-SC-__ to __-10__ 18			5	__-SC-__ to __-10__ 18		
2	__-SC-__ to __-10__ 18			6	__-SC-__ to __-10__ 18		
3	__-SC-__ to __-10__ 18			7	__-SC-__ to __-10__ 18		
4	__-SC-__ to __-10__ 18			8	__-SC-__ to __-10__ 18		

Additional Comments:

PgG

ACME ENVIRONMENTAL

Sediment Core Sampling Log

DTNA Swan Island Lagoon Sediment Characterization

Location ID:	R4
Weather Conditions:	Sunny, Light breeze
Sampling Crew:	ML, TF
Boat Crew:	PJ ES

Date:	10/21/18
Tide stage (ft)	3.31
Water depth (ft)	32.66
Mudline Elev. (ft NAVD 88)	-24.37
Core tube length (ft)	
GPS Elevation (ft NAVD88)	—

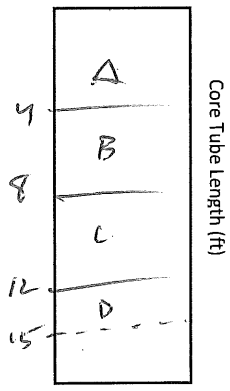
Proposed Coordinates:	N: 700167
	E: 7635116

Core Location and Attempts

Attempt #	Time	Actual Coordinates		Target Depth (ft)	Penetration Depth (ft)	Recovery Length (ft)	Recovery (%)	Accept (Y/N)	Drive Description
		Northing	Easting						
1	16:42	700171.74	7635121.15	11.9 ~~26.9~~	17.4	15	86	Y	3ft. Free fall Sediment got progressively stiffer w/ depth.

If core sectioned in the field for transport:

Section	Length (ft)	Description at Cuts of Inner
A	0-4	cut @ 4'
B	4-8	cut @ 8'
C	8-12	cut @ 12'
D	12-15	



Additional Comments:

Sediment Core Processing Form

DTNA Swan Island Lagoon Sediment Characterization

Location ID:	R4
Processing Crew:	DW JP TF MC

Collection Date:	10 / 21 / 18
Processing Date:	10 / 21 / 18

Recovered Length (ft)	PID ppm	Torvane/ Penetrometer	Size % - G	Size % - S	Size % - F	Description (moisture, density, color, odor, sheen, biota, structure, other debris)	Sample Depth (ft)	Subsample #	Summary Sketch
1	0.0	0.0 0.04 (S) 0.25 ft	0	<5	>95	wet, v soft-soft, br, tr. organic massive,	0	0-1	
2	0.1	0.1 - 0.5 (S) 0.5 ft	0	<5	>95	wet, soft, br, tr. TPH massive, blocky	1	1-2	
3	0.2	0.6 (S) 0.15 - 1 ft	0	<5	>95	wet, soft, br, tr TPH massive blocky	2	2-4	MUD
4							3		
5	0.4	0.8 (S) 0.75 - 1.0 foot	0	<5	>95	moist-wet, soft, br, tr. TPH, massive blocky	4		
6							5	4-6	
7	1.4	1.4 (S) 1.25 ft	0	<5	>95	moist-wet soft br. sl. TPH, massive, blocky, sticks wood chunk @ 7.4-7.6'	6		
8		0.8 (S) 1.5 ft					7	6-8	
9	3.4	1.0 2.0 S 1.5 - 2.0 foot	0	<5	>95	moist-wet soft-msft, sl. TPH massive, blocky, sticky	8		
10							9	8-10	
							10		

Sample Information

	Subsample ID	Time	Containers
1	R4-SC-0 to 1-102118	1840	
2	R4-SC-1 to 2-102118	1850	
3	R4-SC-2 to 4-102118	1900	
4	R4-SC-4 to 6-102118	1910	
5	R4-SC-6 to 8-102118	1920	
6	R4-SC-8 to 10-102118	1940	
7	R4-SC-10 to 12-102118	1950	
8	R4-SC-12 to 13.8 102118	2045	
a	R4-SC-13.8-14.7-102118	2055	

Additional Comments:

PgG

ACME ENVIRONMENTAL

Sediment Core Processing Form

DTNA Swan Island Lagoon Sediment Characterization

1.4

Location ID:	R4
Processing Crew:	DW JPTF ML

Collection Date:	10/21/18
Processing Date:	10/21/18

Recovered Length (ft)	PID	Torvane/ Penetrometer	Size % - G	Size % - S	Size % - F	Description (moisture, density, color, odor, sheen, biota, structure, other debris)	Sample Depth (ft)	Subsample #	Summary Sketch
10							10		
11	45	1.5 S / 2-5 foot	0	<5	>95	Moist - wet, medium-stiff, br., slight TPH, massive, blocky, sticky	11	10 - 12	MUD
12							12		
3	1.4	0.2 0.7 / 1.25 ft; 1.5 / 4.0 ft	0	<5	>95	moist, med to stiff @ 13.4 wet, massive, blocky, sticky; wood chunk @ 12.6 2x6cm	13	12 to 13.8	SHEEN MUD
4						Abrupt contact @ 13.8'			13.8
14	0.6	1.5 / 0.5 no f	0	80 fine	20	moist, dense, grey, no odor, no bedding.	14	13.8 to 14.7	abrupt contact; sand
5						TD - 15'	15		core catcher same as above not collected
6									
7									
8									
9									
0									

Sample Information

	Subsample ID	Time	Containers		Subsample ID	Time	Containers
1	R4-SC-13to14L10/21/18	2055		5	__-SC-__to__-10__18		
2	__-SC-__to__-10__18			6	__-SC-__to__-10__18		
3	__-SC-__to__-10__18			7	__-SC-__to__-10__18		
4	__-SC-__to__-10__18			8	__-SC-__to__-10__18		

Additional Comments: see pg 1

PgG

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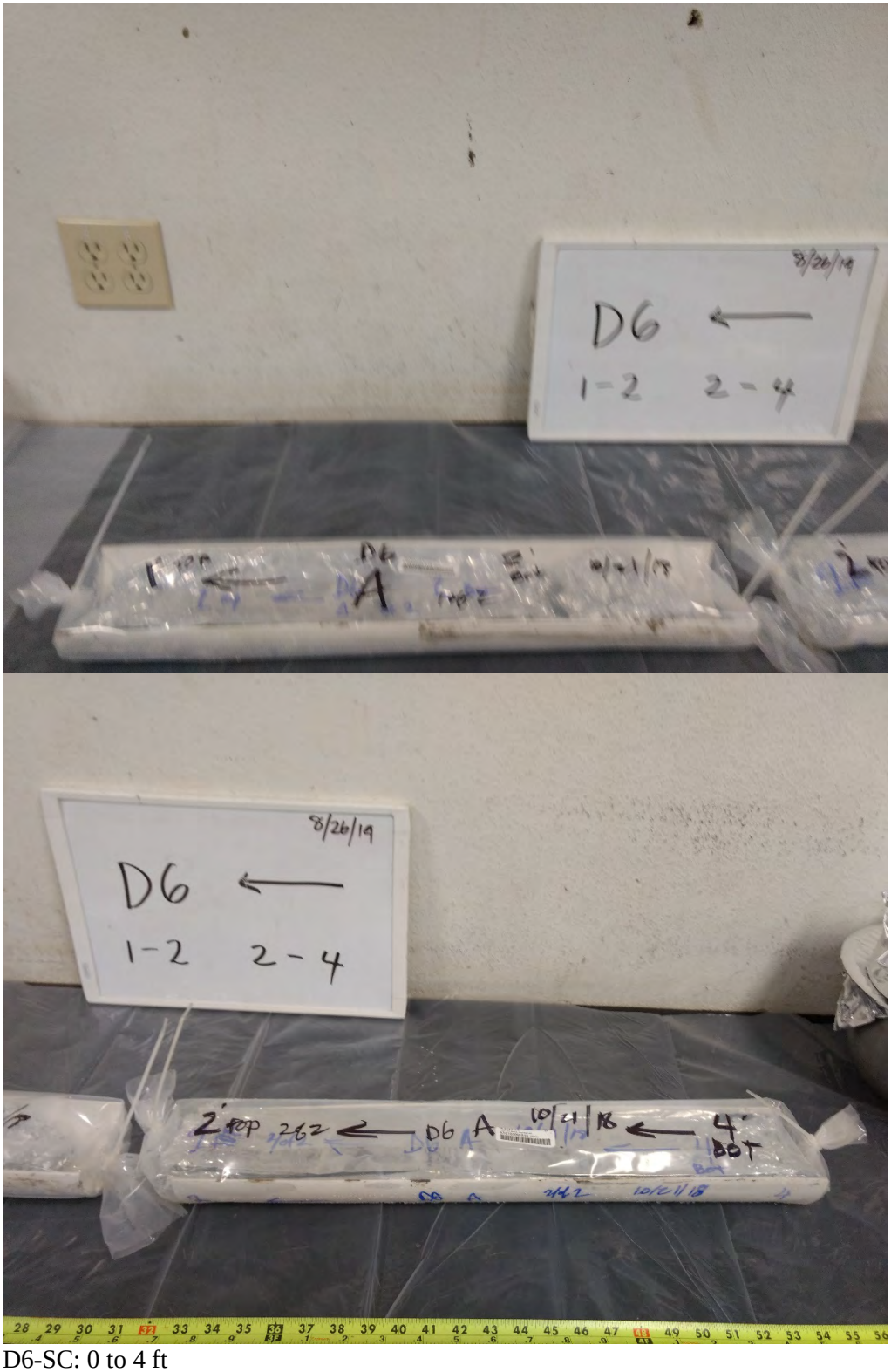
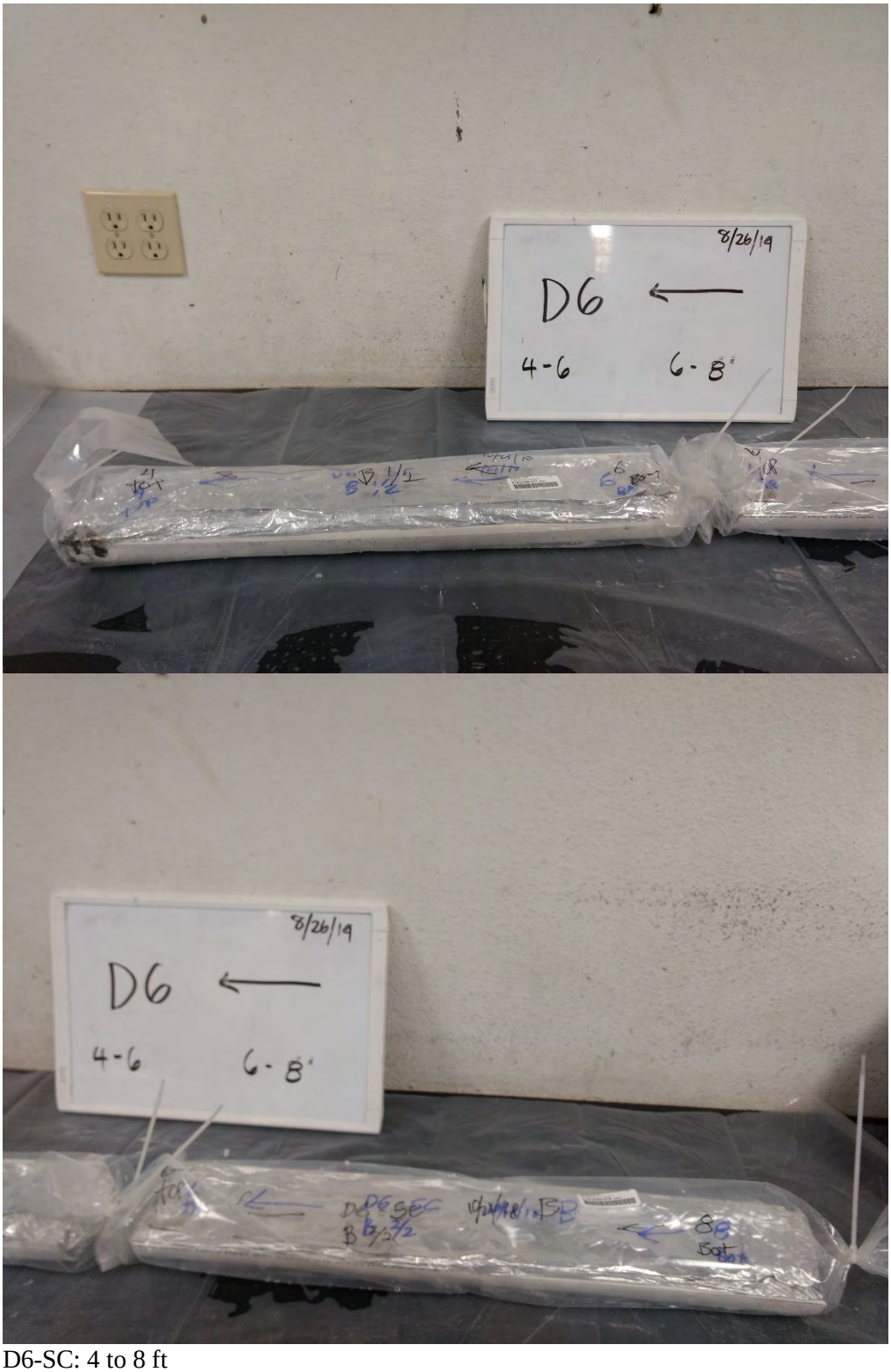
APPENDIX C
PHOTOGRAPHS

D6 Sediment Core



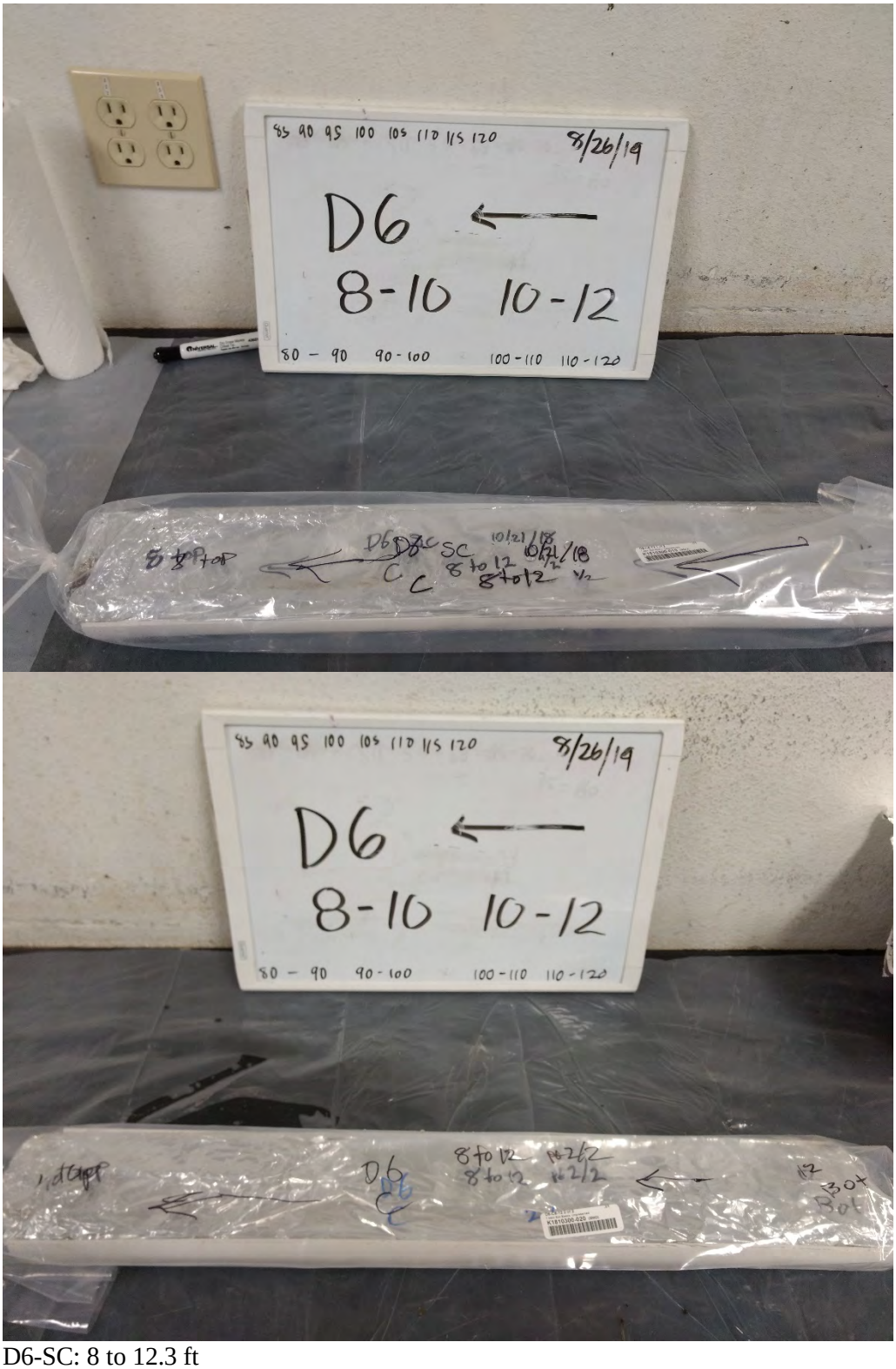
D6-SC: 0 to 4 ft

D6 Sediment Core



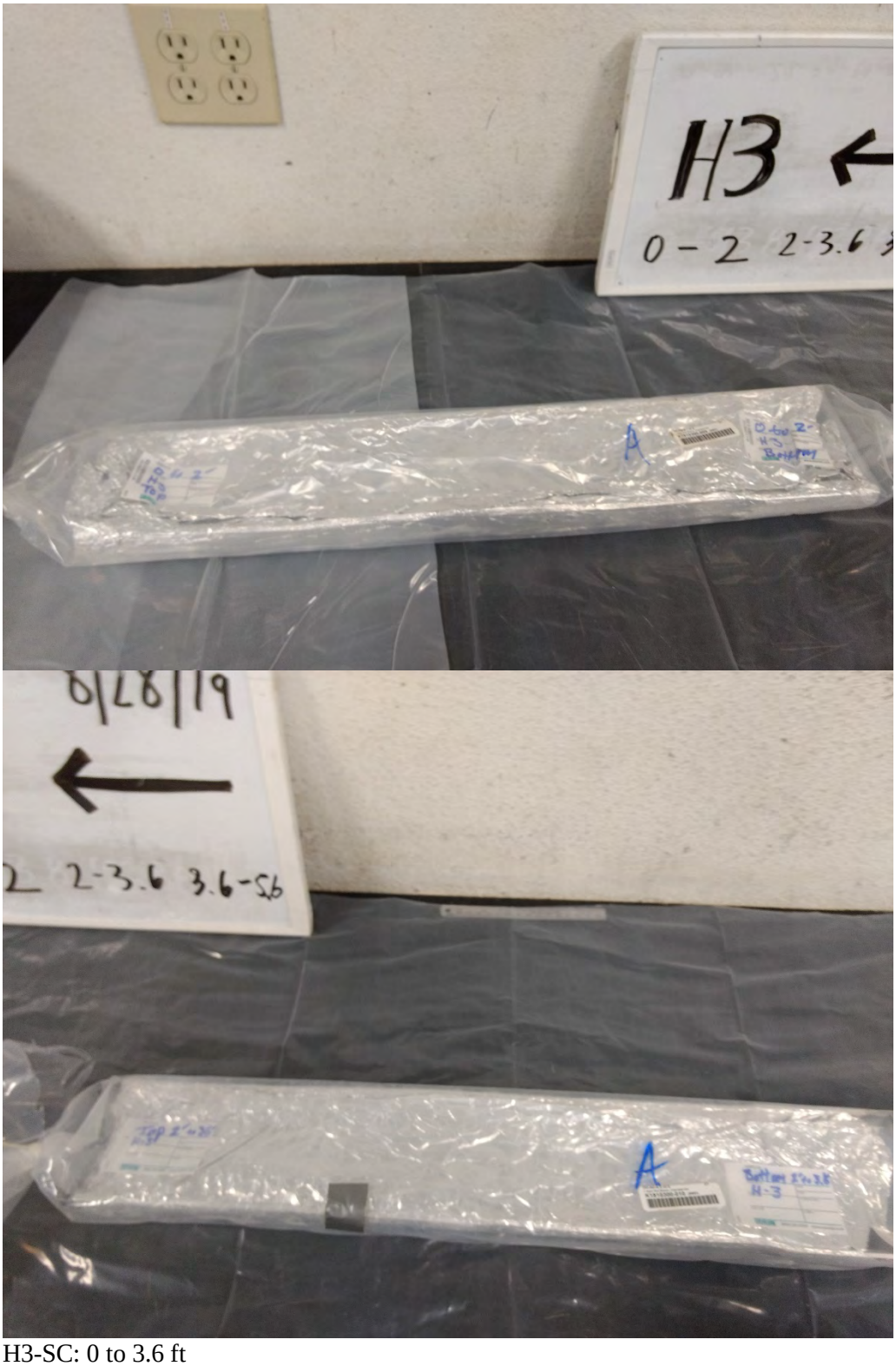
D6-SC: 4 to 8 ft

D6 Sediment Core



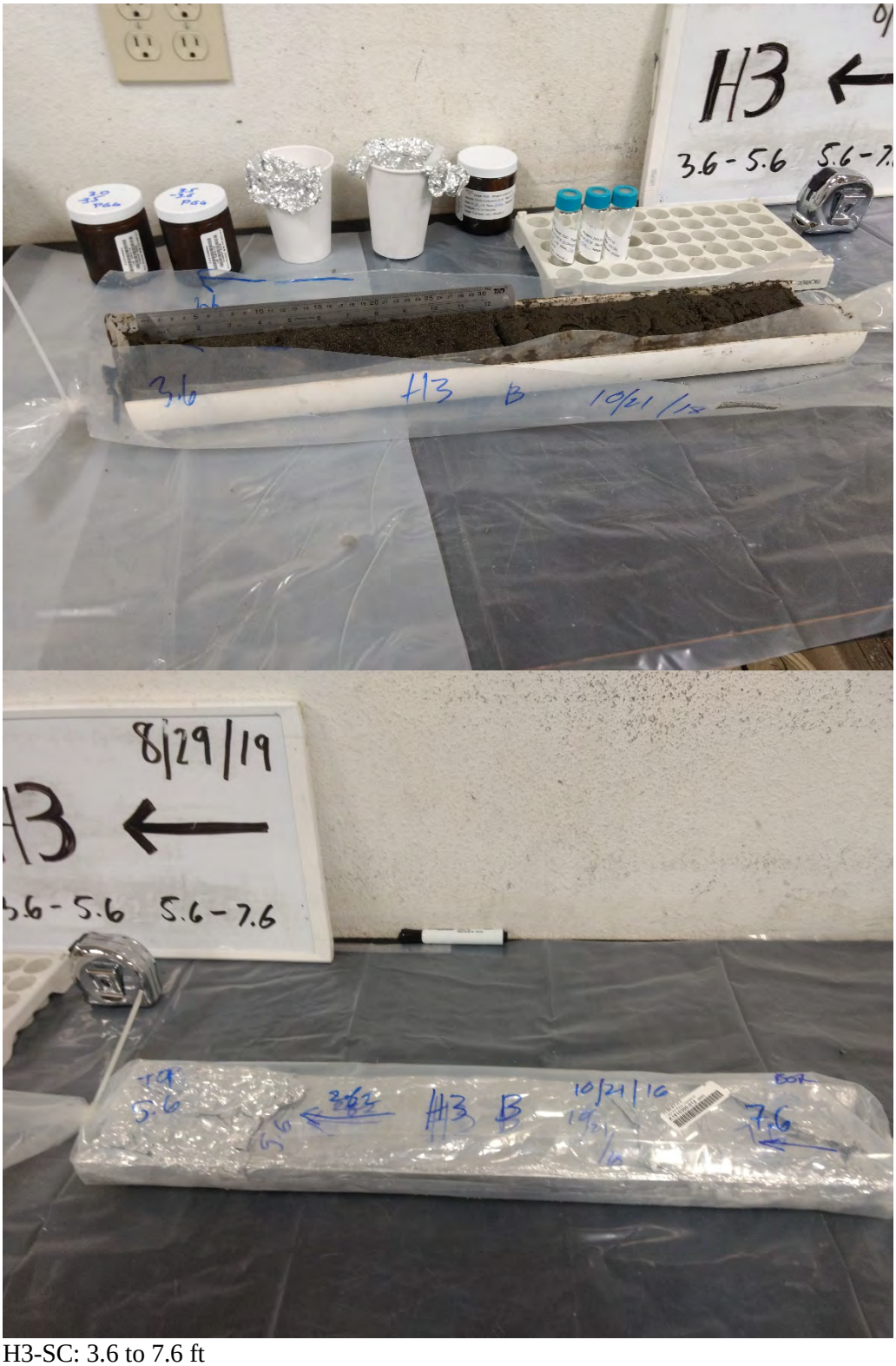
D6-SC: 8 to 12.3 ft

H3 Sediment Core



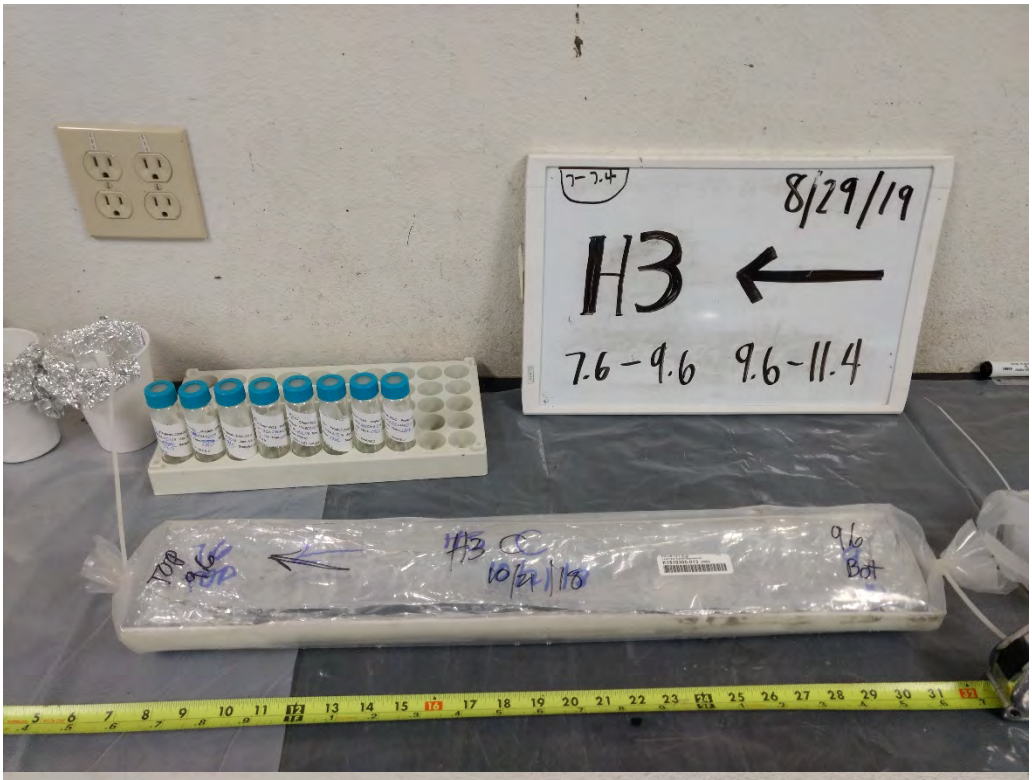
H3-SC: 0 to 3.6 ft

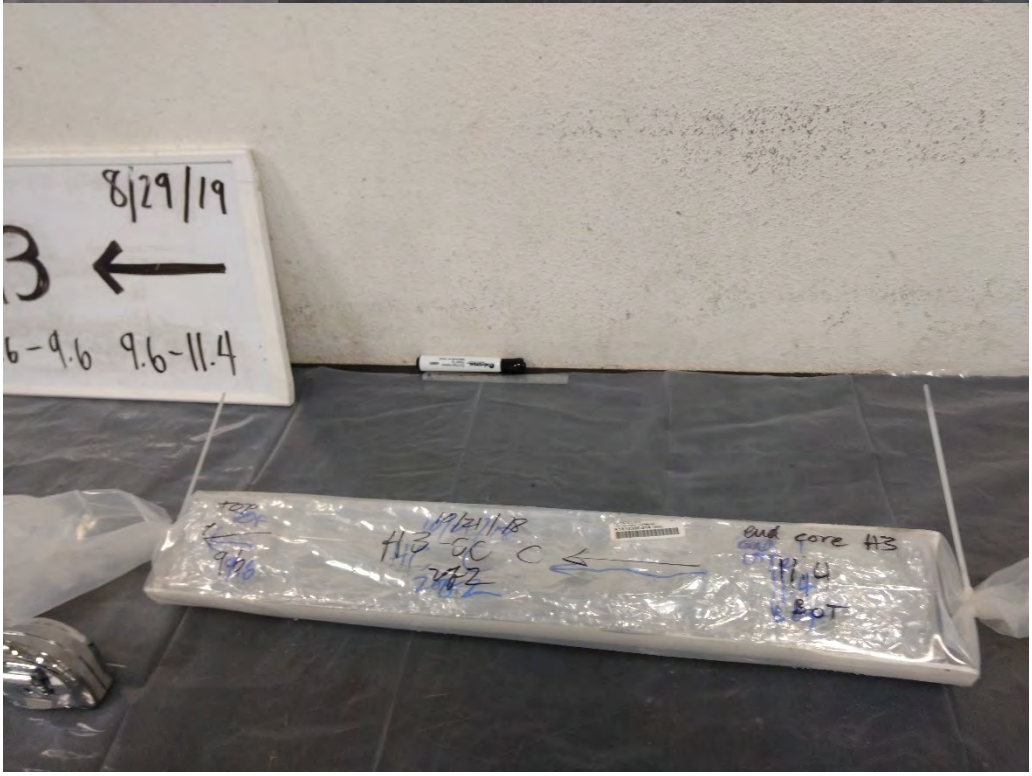
H3 Sediment Core



H3-SC: 3.6 to 7.6 ft

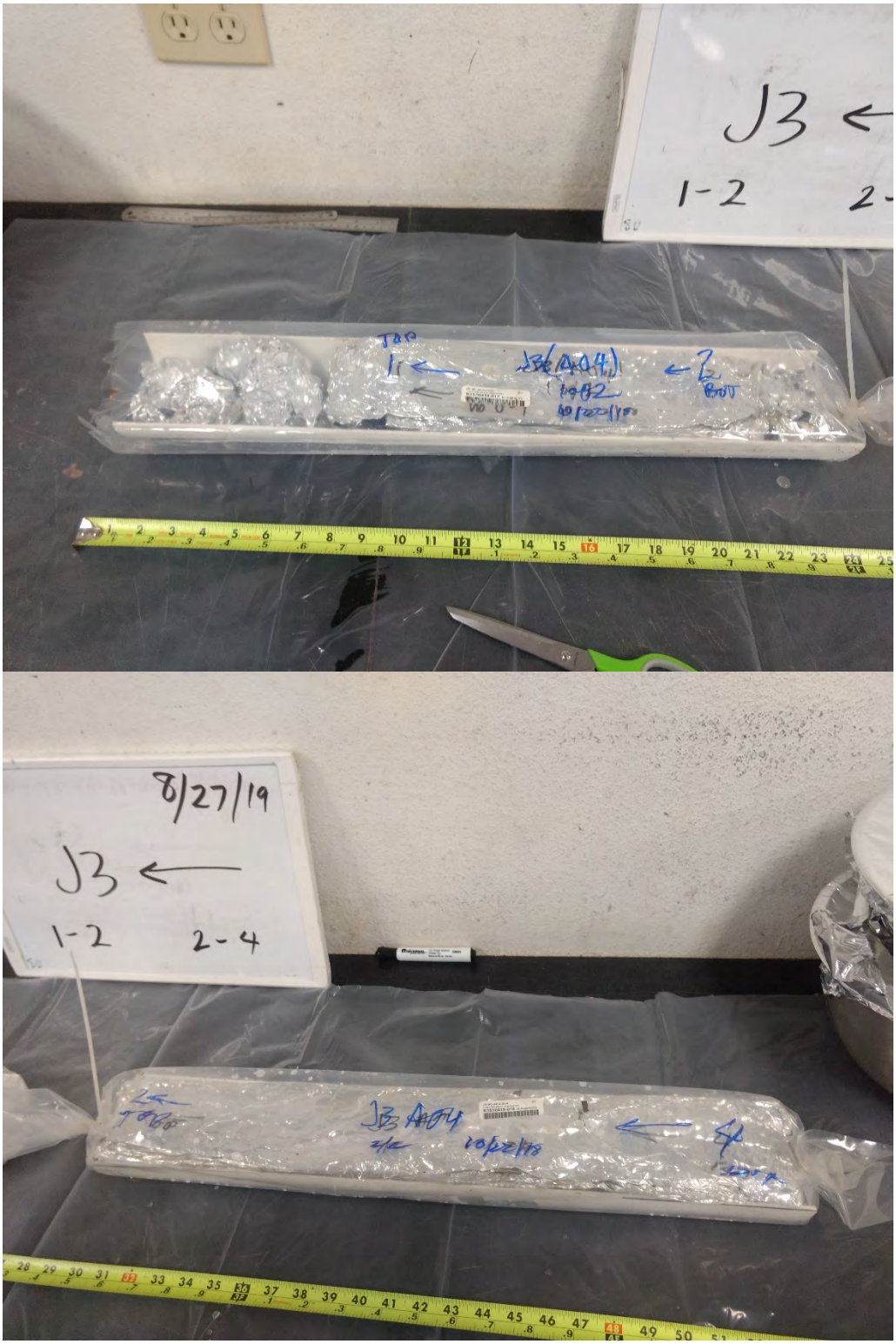
H3 Sediment Core





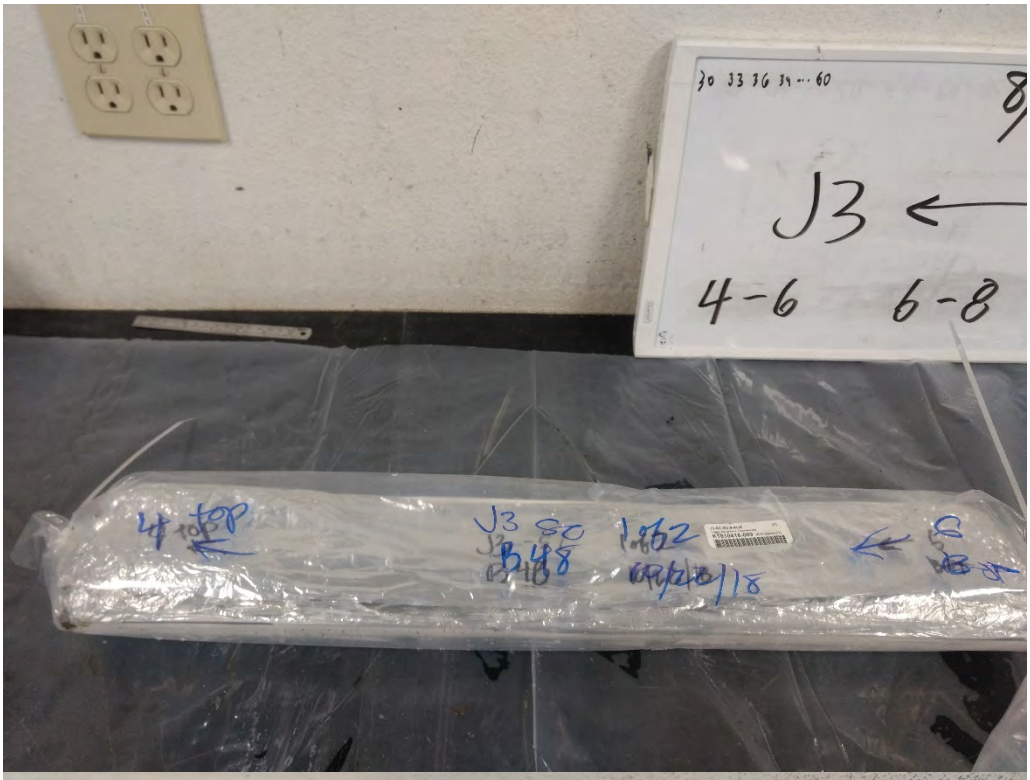
H3-SC:7.6 to 11.4 ft

J3 Sediment Core



J3-SC: 0 to 4 ft

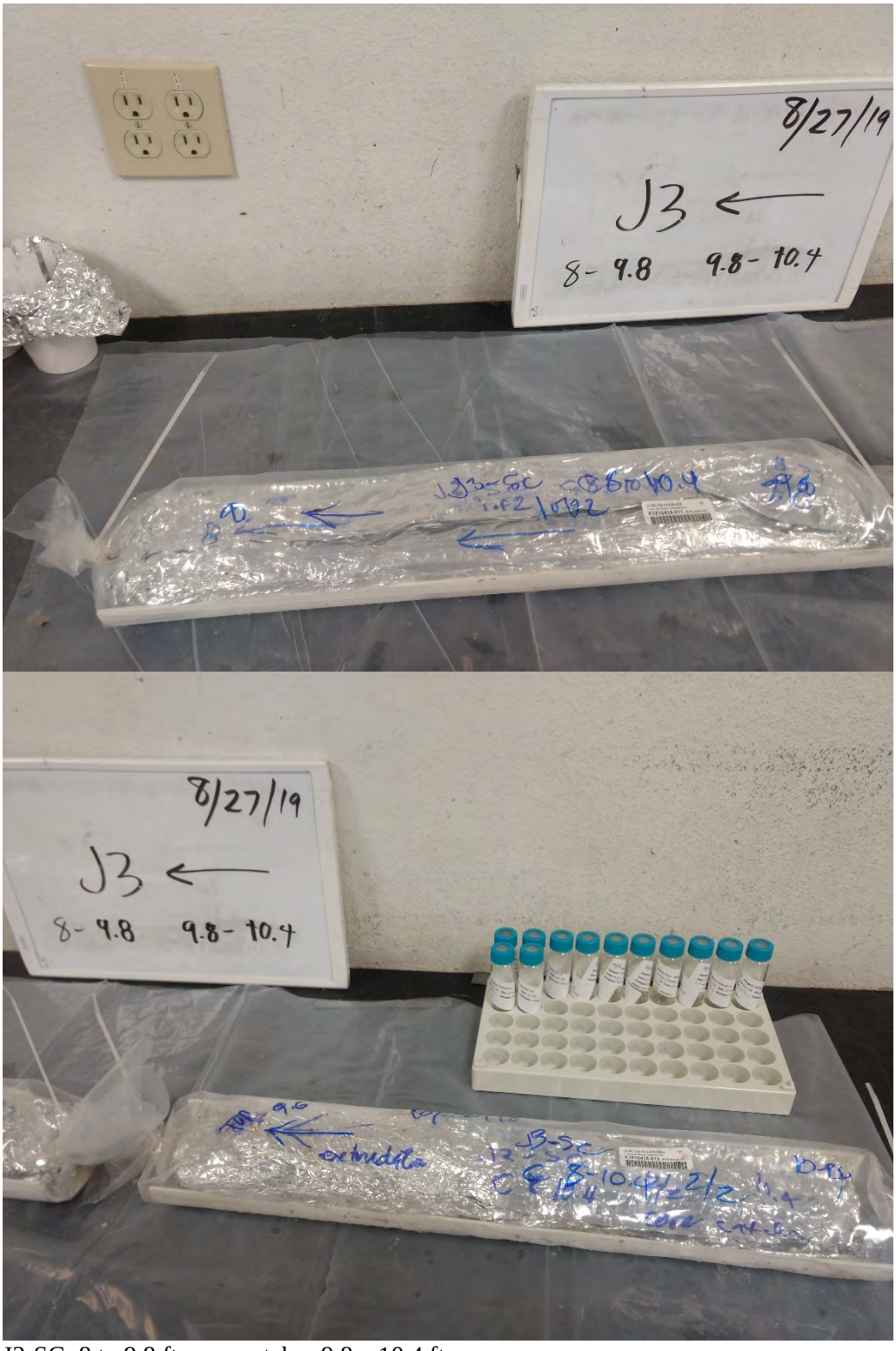
J3 Sediment Core





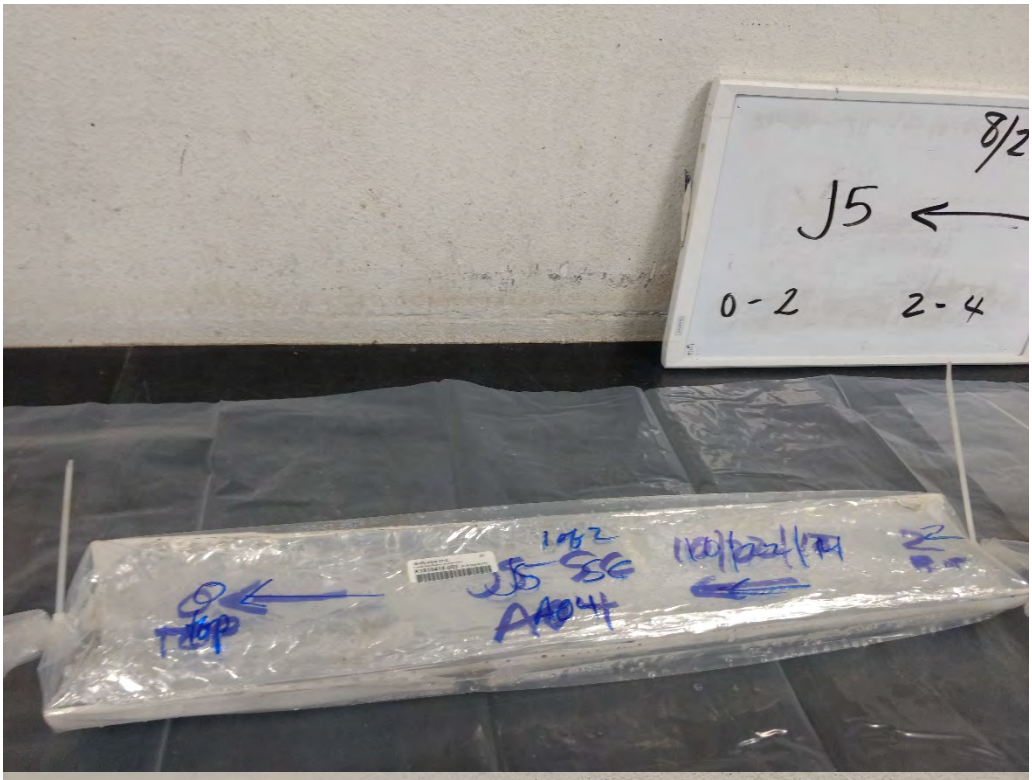
J3-SC: 4 to 8 ft

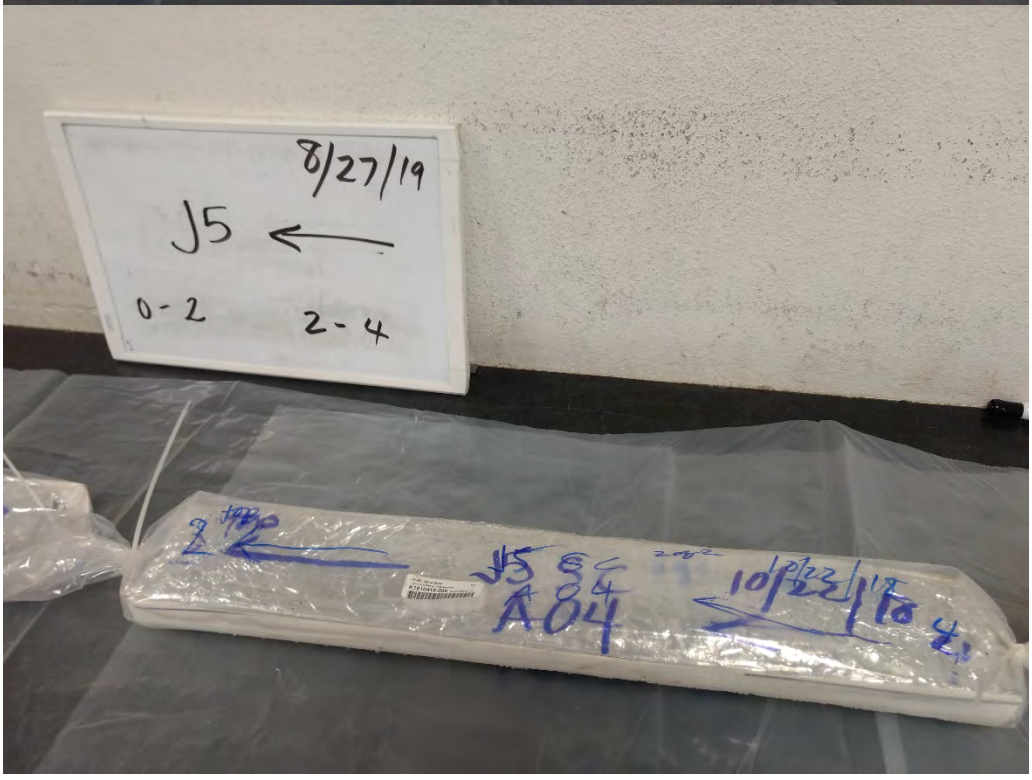
J3 Sediment Core



J3-SC: 8 to 9.8 ft, core catcher 9.8 – 10.4 ft

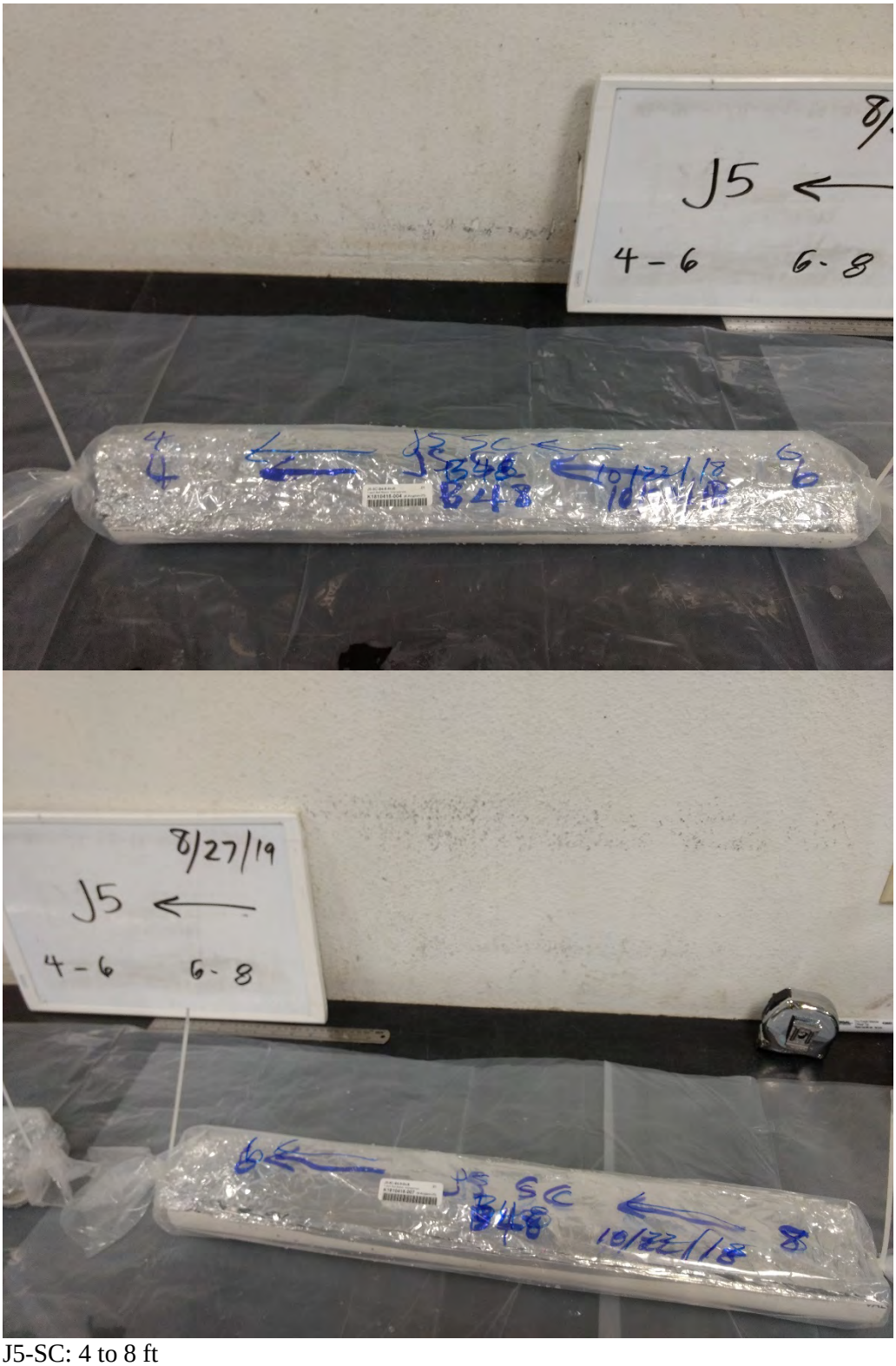
J5 Sediment Core





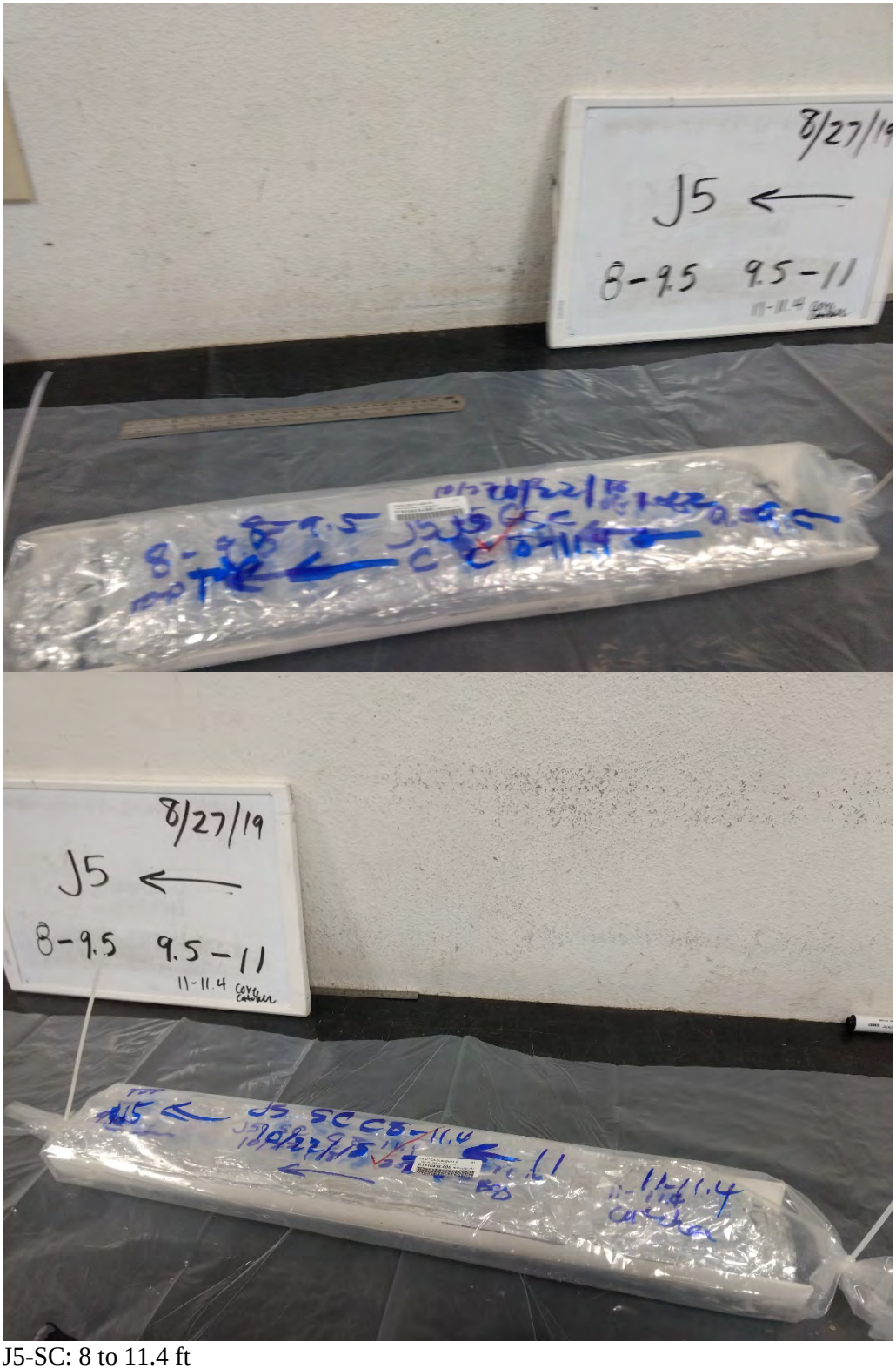
J5-SC: 0 to 4 ft

J5 Sediment Core



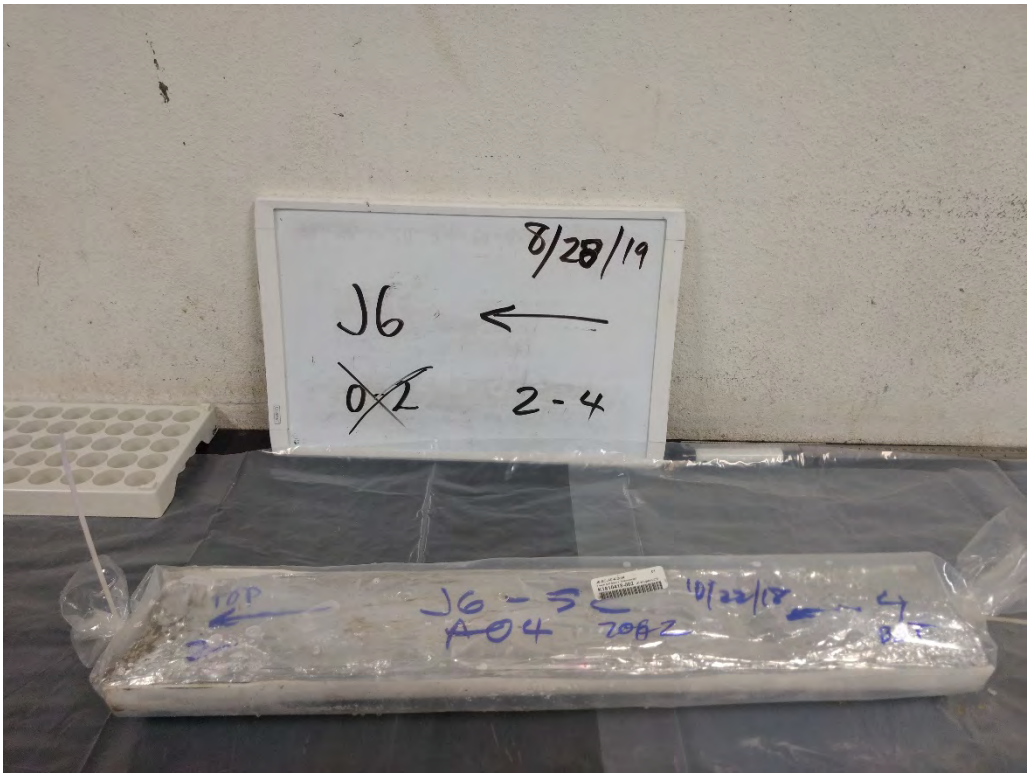
J5-SC: 4 to 8 ft

J5 Sediment Core



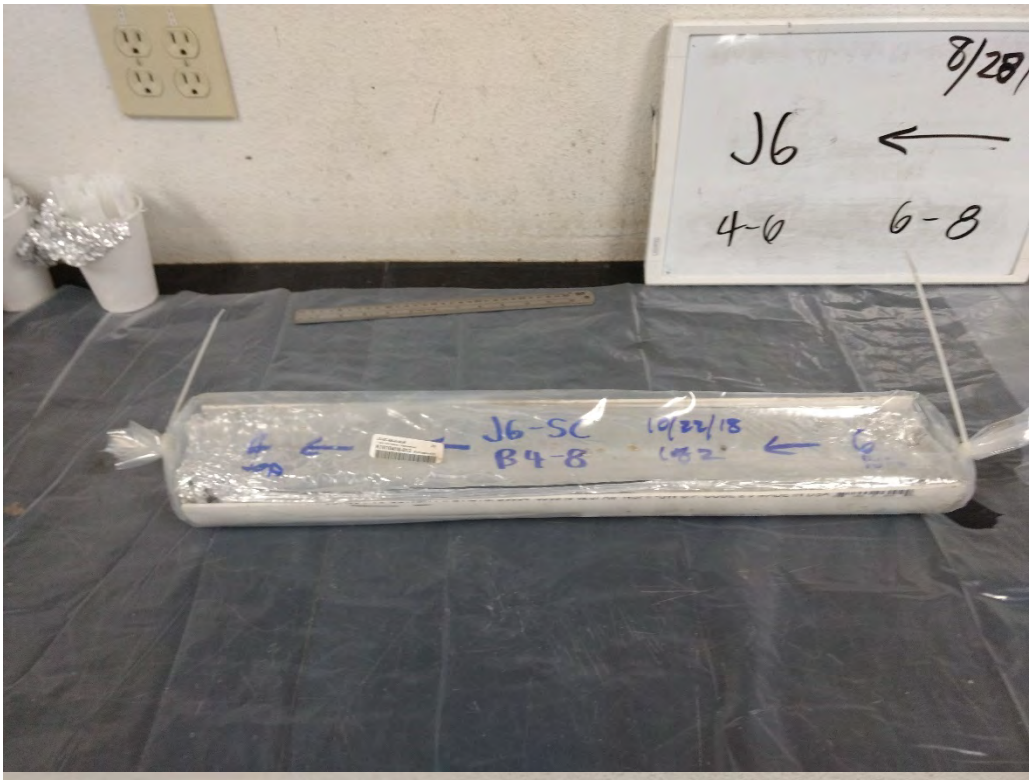
J5-SC: 8 to 11.4 ft

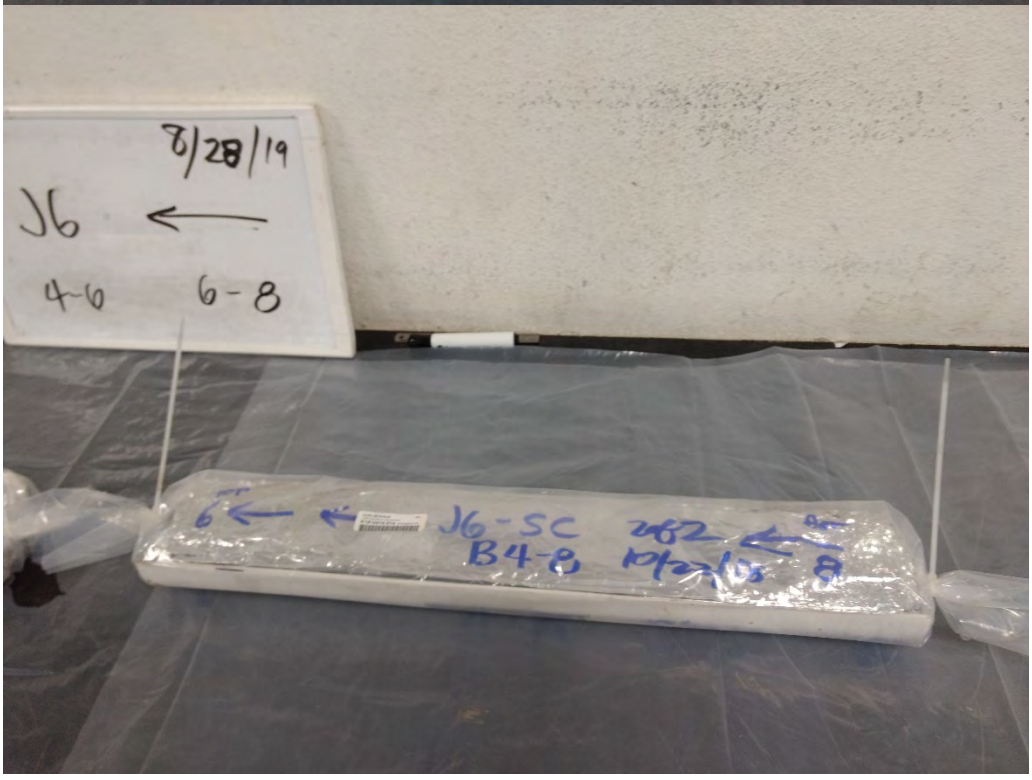
J6 Sediment Core



J6-SC: 0 to 4 ft (no 0-2ft section archived)

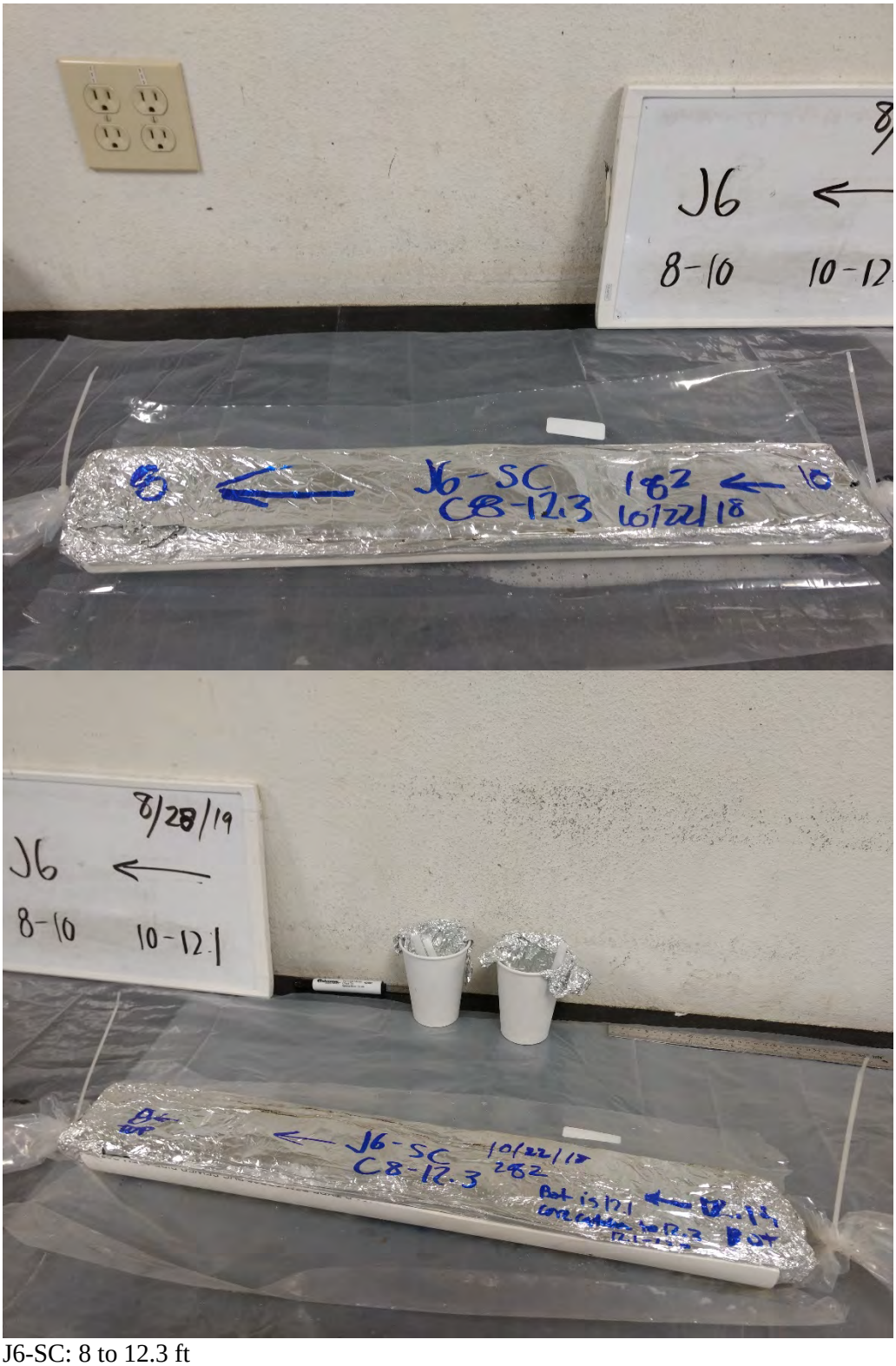
J6 Sediment Core





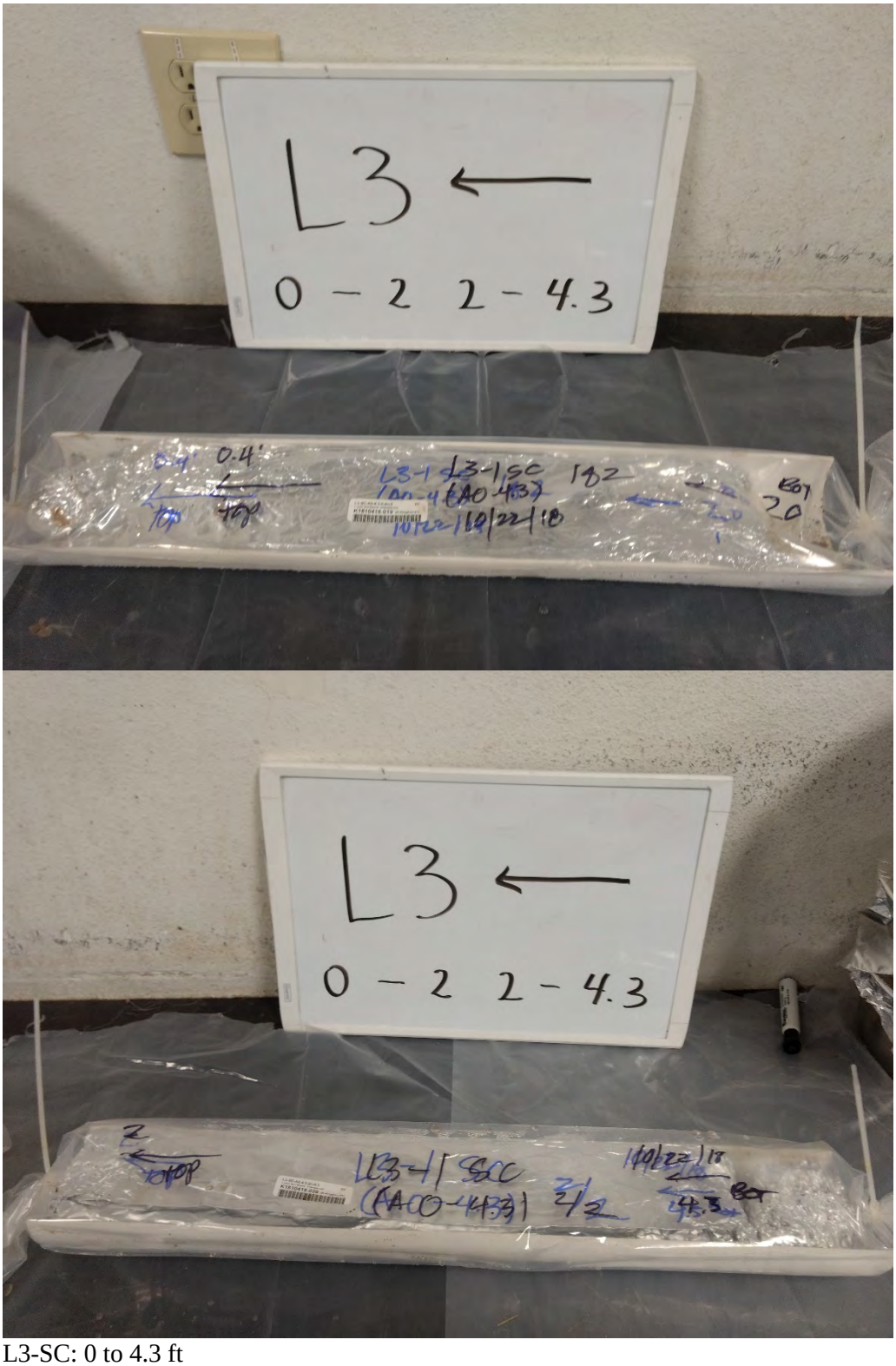
J6-SC: 4 to 8 ft

J6 Sediment Core



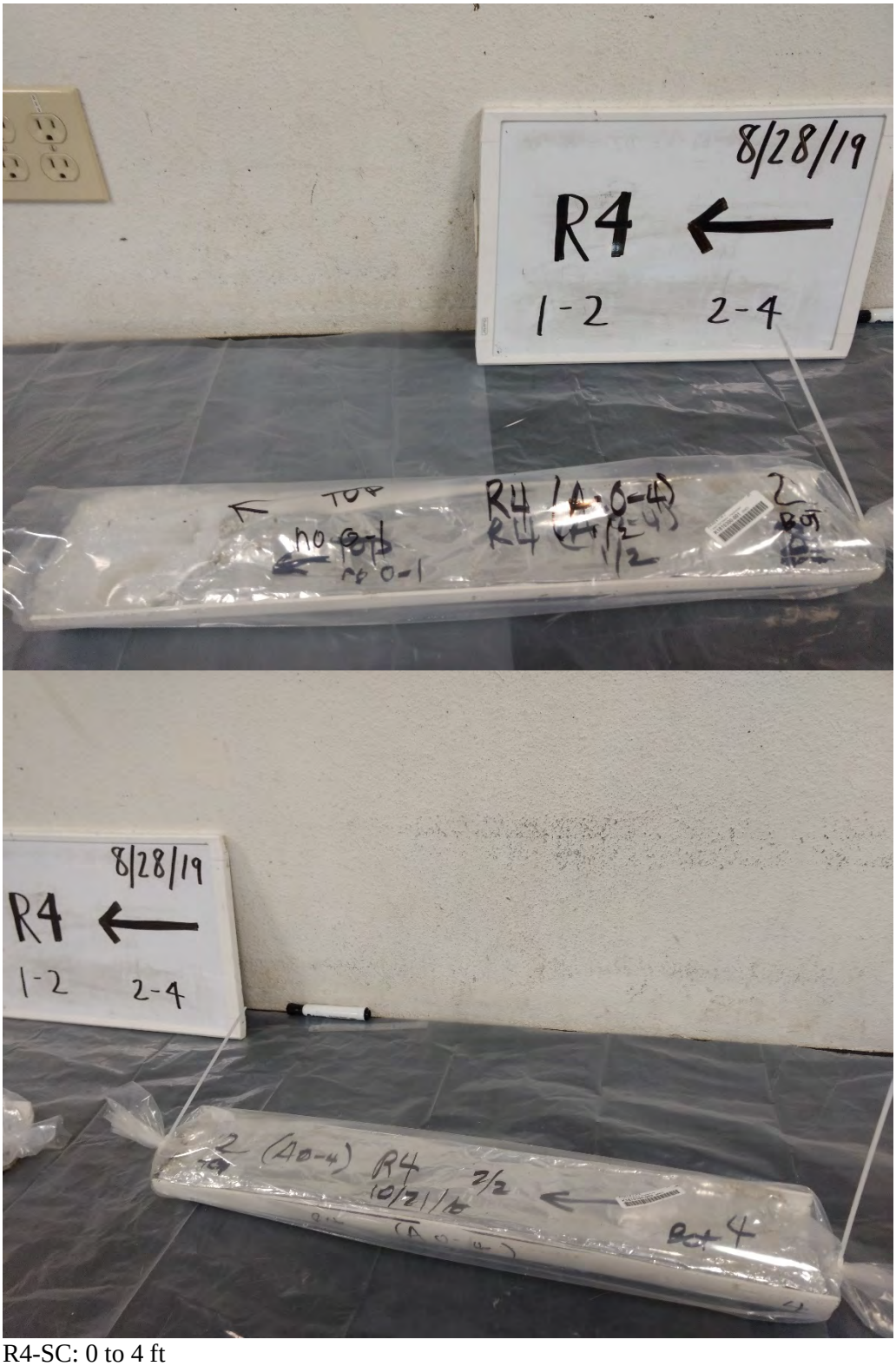
J6-SC: 8 to 12.3 ft

L3 Sediment Core



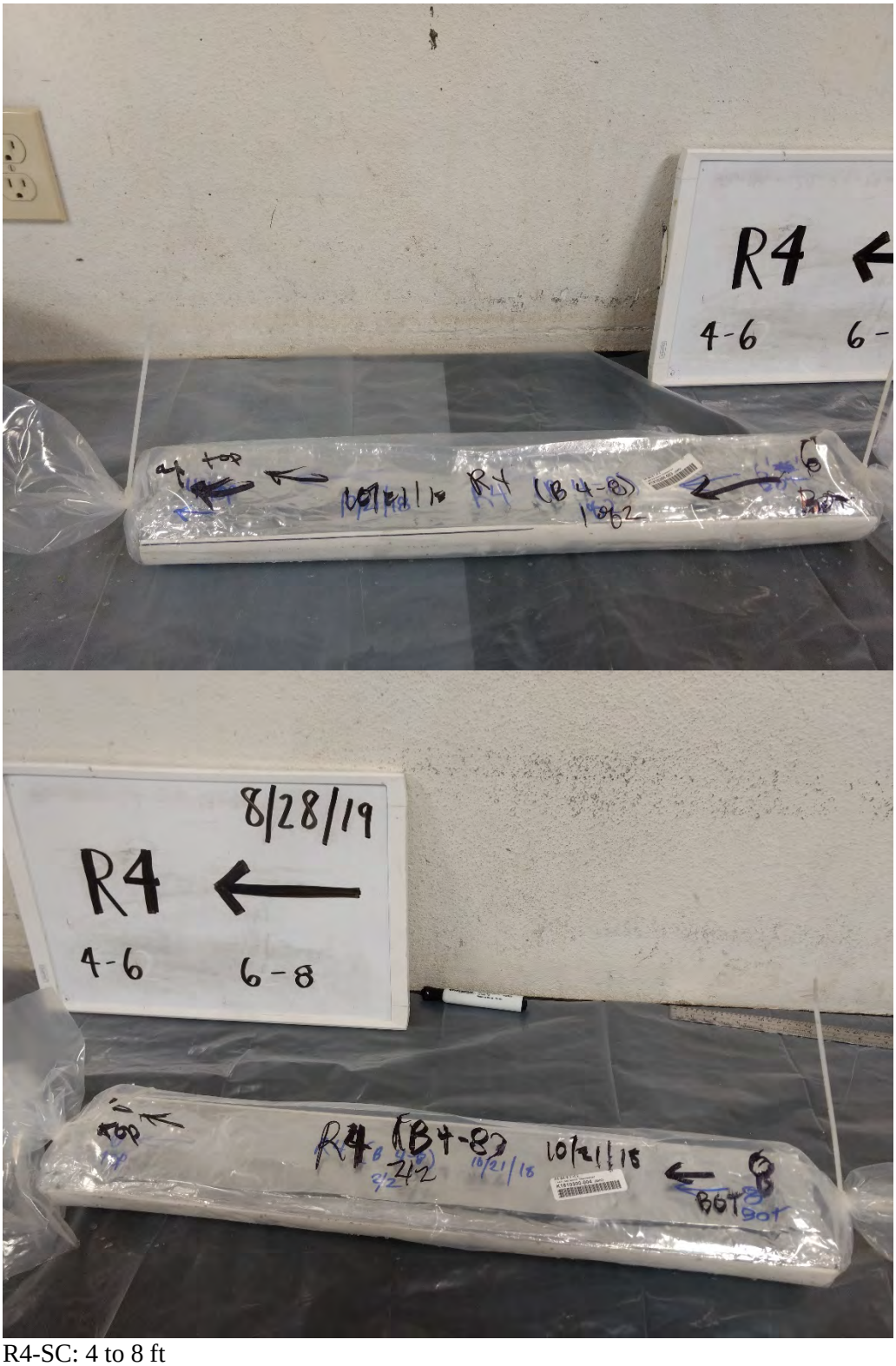
L3-SC: 0 to 4.3 ft

R4 Sediment Core



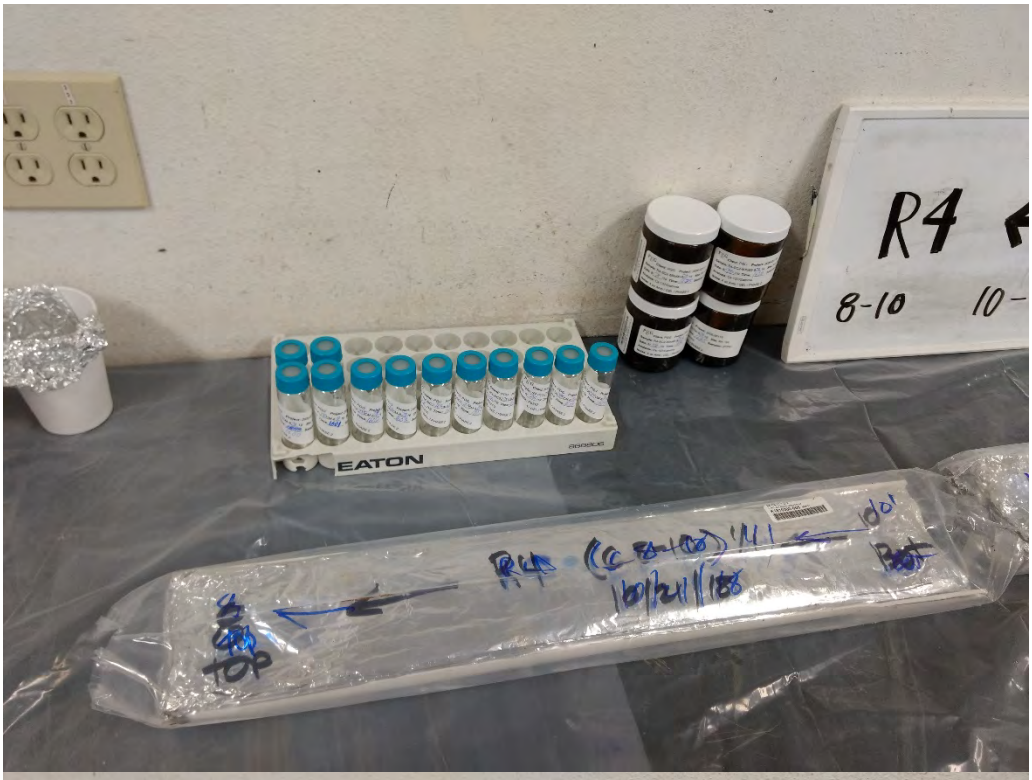
R4-SC: 0 to 4 ft

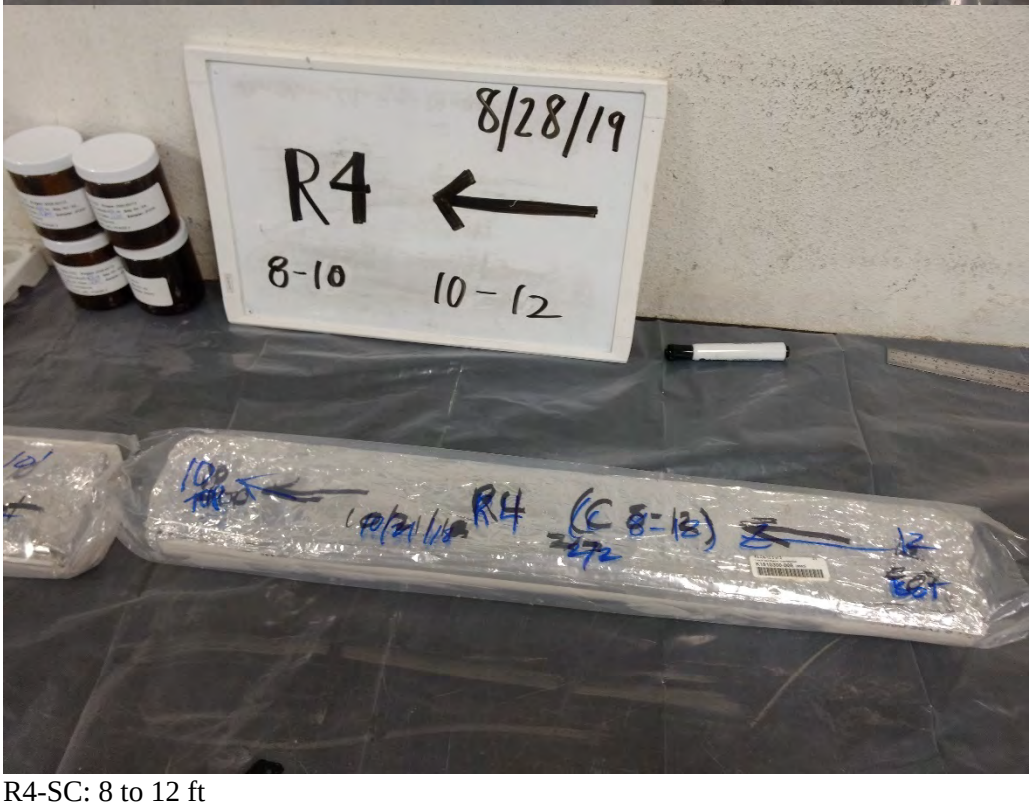
R4 Sediment Core



R4-SC: 4 to 8 ft

R4 Sediment Core

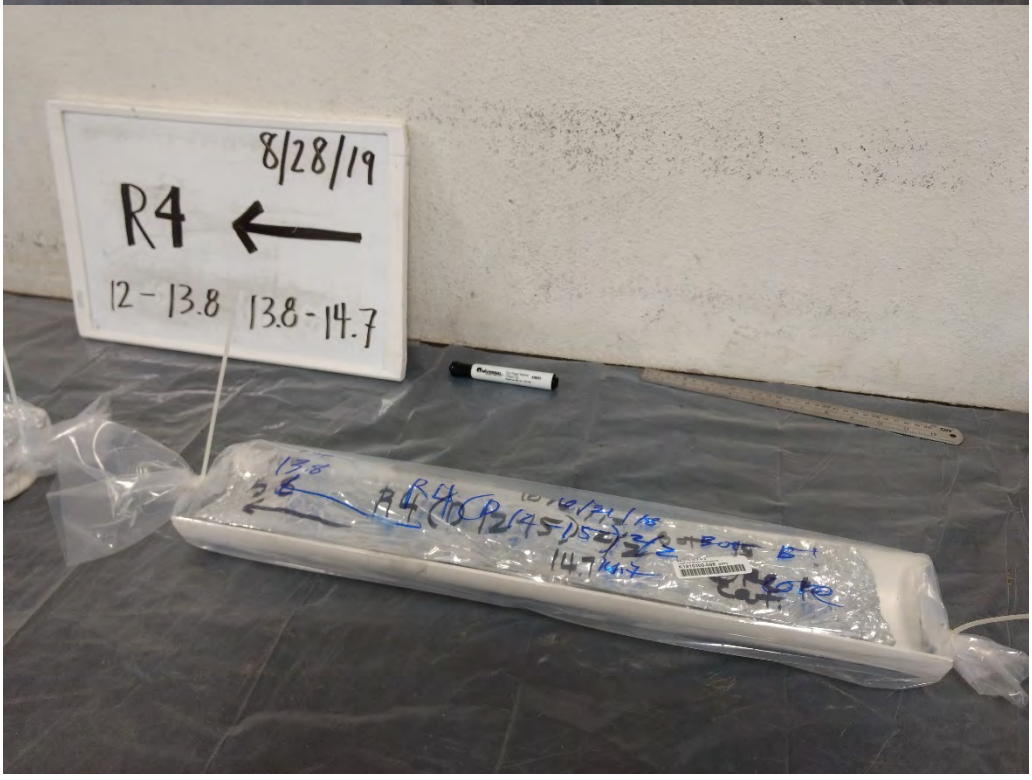




R4-SC: 8 to 12 ft

R4 Sediment Core





R4-SC: 12 to 14.7 ft

APPENDIX D
ANALYTICAL LABORATORY DATA SUMMARY REPORTS

APPENDIX D1
ANALYTICAL LABORATORY DATA SUMMARY REPORTS
ALS

ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
T : +1 360 577 7222
F : +1 360 636 1068
www.alsglobal.com

August 26, 2019

Analytical Report for Service Request No: K1906902

Janet Knox
Pacific Groundwater Group
2377 Eastlake Ave., East
Suite 200
Seattle, WA 98102

RE: DTNA Swan Island Lagoon Sediment / 2006-00115

Dear Janet,

Enclosed are the results of the sample(s) submitted to our laboratory October 22, 2018
For your reference, these analyses have been assigned our service request number **K1906902.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3364. You may also contact me via email at howard.holmes@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Howard Holmes
Project Manager

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ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
T : +1 360 577 7222
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- Total Solids
- Butyltins
- Low Level Semivolatile Organic Compounds by GCMS

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Client: Pacific Groundwater Group (PGG)
Project: DTNA Swan Island Lagoon Sediment
Sample Matrix: Sediment

Service Request: K1906902
Date Received: 10/10/2018 - 10/22/2018

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

Twenty three sediment samples were received for analysis at ALS Environmental between 10/10/2018 - 10/22/2018. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements. These samples were originally logged under K1810301, K1810086 and K1810267.

Semivolatiles by GC/MS:

Method 8270D, Low Level Semivolatile Organic Compounds by GC/MS 08/10/2019: All samples were received past holding time remaining. The analysis was performed as soon as possible after the analysis was requested. The data was flagged to indicate the holding time violation.

Method 8270D, Low Level Semivolatile Organic Compounds by GC/MS 08/10/2019: The control criteria were exceeded for p-Terphenyl-d14 in sample J2A3-0to18-101218 due to matrix interference. The presence of non-target background components prevented adequate resolution of the surrogate. Accurate quantitation was not possible. No further corrective action was appropriate.

Method 8270D, Low Level Semivolatile Organic Compounds by GC/MS 08/10/2019: The control criteria for matrix spike recovery of Bis(2-ethylhexyl) Phthalate for sample 515-0to26-101918 were not applicable. The analyte concentration in the sample was significantly higher than the added spike concentration, preventing accurate evaluation of the spike recovery.

Method 8270D, Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level 08/06/2019: The matrix spike recoveries of all analytes for Matrix Spikes (MS/DMS) KQ1910711-01/02 was outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. For a few analytes the concentration in the sample was significantly higher than the added spike concentration, preventing accurate evaluation of the spike recovery. The limits are default values temporarily in use until sufficient data points are generated to calculate statistical control limits. Based on the method and historic data, the recoveries observed were in the range expected for this procedure. No further corrective action was taken. The matrix spike outlier suggested a potential low bias in this matrix. No further corrective action was appropriate.

Method ALS SOP, Organochlorine Pesticides by GC/MS/MS0 08/07/2019: The internal standard recovery of Pyrene-d1 in all samples exceeded control criteria because of matrix interference. All samples were performed at a dilution in an attempt to minimize the matrix effect. The diluted analysis produced similar results; high internal standard recovery and comparable target analyte levels. Results from the original undiluted analysis have been reported. Matrix spike and Laboratory Control Sample recovery were all acceptable demonstrating that the analysis was in control. The results quantified using this internal standard were flagged to indicate the problem.

Semivoa GC:

Method ALS SOP, Butyltins 08/14/2019:T he upper control criterion was exceeded for tri-n-butyltin in Continuing Calibration Verification (CCV) KQ1911652-002. Samples were reanalyzed three times with similar results of a failing closing Continuing Calibration Verification (CCV). No further corrective action was required.

Method ALS SOP, Butyltins 08/14/2019: The original Laboratory Control Sample (LCS) was inadvertently spiked with a faulty standard prior to a check of the standard that showed results outside acceptance criteria. An additional lot of standard was not readily available so a Laboratory Control Sample (LCS) and Duplicate Laboratory Control Sample (DLCS) was added to the batch from the previous, expired standard when discovered. This LCS/DLCS combination resulted in acceptable recoveries showing no sign of concentration or degradation. The data from this LCS/DLCS have been reported.

Approved by  Date 08/26/2019

Method ALS SOP, Butyltins 08/21/2019: The control criteria for matrix spike recovery of Tri-n-butyltin Cation for sample A4-0to25 -100818 were not applicable. The analyte concentration in the sample was significantly higher than the added spike concentration, preventing accurate evaluation of the spike recovery.

Approved by  Date 08/26/2019

Chain of Custody

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Client: Pacific Groundwater Group

Project/Site: DTNA Swan Island Lagoon Sediment - Phase 1b / 2006-00115

K1906902

Sample_ID	Sample_Date	Lab_ID	SW8270D BEHP	SW8270D-SIM PAHs	ALS SOP TBT	ALS SOP OC Pest	E160_3 Solids
A1-0to30-102018	10/20/2018 12:05	K1810301-015	X	X	X	X	X
A2-0to26-100818	10/8/2018 14:04	K1809940-004	X	X	X	X	X
A3-0to31-100818	10/8/2018 11:14	K1809940-003	X	X	X	X	X
A4-0to25-100818	10/8/2018 13:26	K1809940-002	X	X	X	X	X
A5-0to25-100818	10/8/2018 14:38	K1809940-001	X	X	X	X	X
A6-0to23-100818	10/8/2018 16:08	K1809940-005	X	X	X	X	X
A7-0to26-100918	10/9/2018 13:23	K1809940-019	X	X	X	X	X
C4-0to27-100918	10/9/2018 08:28	K1809940-013	X	X	X	X	X
D2-0to19-101018	10/10/2018 15:21	K1810086-008	X	X	X	X	X
F2-0to19-101018	10/10/2018 16:36	K1810086-009	X	X	X	X	X
G6-0to27-101818	10/18/2018 14:12	K1810267-036	X	X	X	X	X
H2-0to30-101218	10/12/2018 10:28	K1810086-023	X	X	X	X	X
J2A3-0to18-101218	10/12/2018 12:57	K1810086-026	X	X	X	X	X
M4-0to26-101918	10/19/2018 13:11	K1810301-013	X	X	X	X	X
515-0to26-101918	10/19/2018 13:11	K1810301-011	X	X	X	X	X
O7-0to27-101918	10/19/2018 15:36	K1810301-005	X	X	X	X	X
Q2-0to13-101818	10/18/2018 09:39	K1810267-034	X	X	X	X	X
Q6-0to27-102018	10/20/2018 09:19	K1810301-016	X	X	X	X	X
T6-0to29-101618	10/16/2018 14:38	K1810267-016	X	X	X	X	X

note: sample A2-0to26-100818 may be logged in as A2-0to31-100818, with a "31" rather than a "26"

K1904902

CHAIN OF CUSTODY

SR# K1810371

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PAGE 1 OF ____ COC# ____

PROJECT NAME	DTM Smith Island Lagoon Sediment
PROJECT NUMBER	2006-00115
PROJECT MANAGER	Janet Knox
COMPANY NAME	PSE
ADDRESS	2397 East Lake Ave E
CITY/STATE/ZIP	Seattle WA 98102
E-MAIL ADDRESS	janet@pgsi.com
PHONE #	2068290147 FAX#
SAMPLER'S SIGNATURE	

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐ SIM PAH☑	Volatile Organics 624☐ 8260☐	Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCBs Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081☐ 8141☐ 8151☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	Metals, Total or Dissolved (See List below)	Cyanide☐ Hex-Chrom☐	(circle) pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS, Turb.	(circle) NH_3-N, COD, TKN, TOC, DOC, NO_2+NO_3, T-Phos	TOX 9020☐ AOX 1650☐ 506☐	Alkalinity ☐ CO_3☐ HCO_3☐	Dioxins/Furans 1613☐ 8290☐	Dissolved Gases CO_2☐ Methane☐ Ethane☐ Ethene☐ RSK 175☐	ALS SOP Turbidity/Iron	REMARKS
K6-0to28-101918	10/19/18	0926		S	1																	Archive
K4-0to28-101918		1348		S	1																	"
MS-0to25-101918		1155		S	1																	"
K4-0to28-101918		0811		S	1																	"
O7-0to27-101918		1536		S	1																	"
O5-0to27-101918		1423		S	1																	"
K7-0to24-101918		1008		S	1																	"
M6-0to26-101918		1118		S	1																	"
M7-0to29-101918		1048		S	1																	"
K5-0to27-101918	10/19/18	0850		S	1																	Archive

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

INVOICE INFORMATION

P.O. # ____

Bill To: ____

TURNAROUND REQUIREMENTS

____ 24 hr. ____ 48 hr.

____ 5 day

____ Standard (15 working days)

____ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER: ____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature	Signature	Signature	Signature
Date/Time 10/20/18 925	Date/Time 10/22/18 0925	Date/Time 10/22/18 1045	Date/Time 10/22/18 1045
Printed Name J. Parks	Printed Name	Printed Name	Printed Name Cody Graves
Firm PSE	Firm HV	Firm HV	Firm ALS

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CHAIN OF CUSTODY

K1906902

SR# K1810301

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PAGE 2 OF _____ COC# _____

PROJECT NAME: DTMA Snow Cloud Sealant
PROJECT NUMBER: 2006-00115
PROJECT MANAGER: Janet Knox
COMPANY NAME: PBS
ADDRESS: 2377 Eastlake Ave E
CITY/STATE/ZIP: Seattle WA 98102
E-MAIL ADDRESS: jknox@pbsenv.com
PHONE #: 206 329 0141 FAX #:
SAMPLER'S SIGNATURE: JK

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	REMARKS
S15-0to26-10918	10/9/18	1311		S	1	Archive
C6-0to27-10918	10/9/18	1457		S	1	Archive
M4-0to26-10918	10/9/18	1311		S	1	Archive
J7-0to26-10918	10/9/18	1612		S	1	Archive
A1-0to30 10/9/18	10/9/18	1205				
~~S6-0to25-102018~~	TF	~~0944~~				
Q6-0to27 102018		0919				
S5-0to27-102018		1023				
S4-0to28-102018		1059				
Q4-0to27-102018		0816				

Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☒ SIM PAH
Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐
Hydrocarbons Gas☐ Diesel☐ (*see below) Oil☐
Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐
PCBs Aroclors☐ Congeners☐
Pesticides/Herbicides 608☐ 8081☐ 8141☐ 8151☐
Chlorophenolics Tri☐ Tetra☐ PCP☐
Metals, Total or Dissolved (See List below)
Cyanide☐ Hex-Chrom☐
(circle) pH, Cond., Cl, SO_4, PO_4, F, NO_2; NO_3; BOD, TSS, TDS, Turb.
(circle) NH_3-N, COD, TKN, TOC, DOC, NO_2+NO_3, T-Phos
TOX 9020☐ AOX 1650☐ 506☐
Alkalinity ☐ CO_3☐ HCO_3☐
Dioxins/Furans 1613☐ 8290☐
Dissolved Gases CO_2☐ RSK 175☐ Methane☐ Ethane☐ Ethene☐
Archive (ALS SAP)

D type = diesel

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
___ V. EDD

INVOICE INFORMATION

P.O. # _____
Bill To: _____

TURNAROUND REQUIREMENTS

_____ 24 hr. _____ 48 hr.
_____ 5 day
_____ Standard (15 working days)
_____ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER: _____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: JK	Signature:	Signature:	Signature:
Date/Time: 10/20/18 925	Date/Time: 10/22/18 0925	Date/Time: 10/22/18 1041	Date/Time: 10/22/18 1045
Printed Name: J Knox	Printed Name: B Brennan	Printed Name: B Brennan	Printed Name: B Brennan
Firm: PBS	Firm: ALS	Firm: ALS	Firm: ALS

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SR# ~~K1810301~~

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PAGE 3 OF ____ COC# ____

PROJECT NAME: DTNA Swan Island Lagoon Sediment
PROJECT NUMBER: 2006-00115
PROJECT MANAGER: Janet Knox
COMPANY NAME: PGG
ADDRESS: 2377 Eastlake Ave E
CITY/STATE/ZIP: Seattle, WA 98102
E-MAIL ADDRESS: Janet@PYWG.Com
PHONE #: 206-329-0141 FAX #:
SAMPLER'S SIGNATURE: [signature]

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐ SIM PAH☐	Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐	Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCBs Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081☐ 8141☐ 8151☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	Metals, Total or Dissolved (See List below)	Cyanide☐ Hex-Chrom☐	(circle) pH, Cond., Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS, Turb.	(circle) NH3-N, COD, TKN, TOC, DOC, NO2+NO3, T-Phos	TOX 9020☐ AOX 1650☐ 506☐	Alkalinity☐ CO3☐ HCO3☐	Dioxins/Furans 1613☐ 8290☐	Dissolved Gases RSK 175☐ Methane☐ Ethane☐ Ethene☐ CO2☐	Tributyltin ALS SOP			REMARKS
Q5-0to29-102018	10/20/18	0845		S	1																				Archive
D6'-SC-08to23-102118	10-21-18	1800		S	1																				Archive
D6-SC-61to88-102118	10-21-18	1740		S	1																				
D6-SC-1to2-102118		1615		S	1																				
D6-SC-40to64-102118		1650		S	1																				
D6-SC-2to4-102118		1630		S	1																				
D6-SC-88to108-102118	10-21-18	1750		S	1																				Archive
R4-SC-1to2-102118	10-21-18	1850		S	1																				
R4-SC-4to6-102118	10-21-18	1910		S	1																				
R4-SC-0to1-102118	10-21-18	1840		S	1																				Archive

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
___ V. EDD

INVOICE INFORMATION

P.O. # ____
Bill To: ____

TURNAROUND REQUIREMENTS

___ 24 hr. ___ 48 hr.
___ 5 day
___ Standard (15 working days)
___ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER: ____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

RELINQUISHED BY:		RECEIVED BY:		RELINQUISHED BY:		RECEIVED BY:	
Signature: [signature]	Date/Time: 10/20/18 925	Signature: [signature]	Date/Time: 10/22/18 0925	Signature: [signature]	Date/Time: 10/22/18 1045	Signature: [signature]	Date/Time: 10/22/18 1045
Printed Name: J. Pabo	Firm: PGG	Printed Name: B. Zuckerman	Firm: AIR	Printed Name: B. Zuckerman	Firm: AIR	Printed Name: Cody Graves	Firm: ALS

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PC HH

Cooler Receipt and Preservation Form

K1906902

Client PGG Service Request ~~K18~~ 10301

Received: 10/22/18 Opened: 10/22/18 By: BR Unloaded: 10/22/18 By: BR

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* (*Courier*) *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other*_____ *NA*
3. Were custody seals on coolers? NA Y (N) If yes, how many and where?_____
   If present, were custody seals intact? Y (N) If present, were they signed and dated? Y (N)

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID (NA)	Tracking Number (NA) Filed
5.4	5.4	6.2	6.2	0.0	376		
4.1	4.0			-0.1	360		
3.1	3.8	1.9	2.0	+0.1	379		
5.7	5.6	1.9	21.8	X -0.1	356		

4. Packing material: *Inserts* (*Baggies*) *Bubble Wrap* *Gel Packs* (*Wet Ice*) *Dry Ice* *Sleeves*
5. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
6. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA (Y) N
   If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA (Y) N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA (Y) CCS 10/22 N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* (NA) Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
12. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:
D6-SC-108-123-102118	D6-SC-08-173-102118	Elimination

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions:_____

7/25/16 *Page*____ *of*____

K1906902

CHAIN OF CUSTODY

SR# ~~K1809940~~

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PAGE 1 OF 3 COC#

PROJECT NAME: DTNA Swan Island Lagoon Sediment
PROJECT NUMBER: 2006-00115
PROJECT MANAGER: Janet KNOX
COMPANY NAME: PG&G
ADDRESS: 2377 Eastlake Ave E
CITY/STATE/ZIP: Seattle WA 98101
E-MAIL ADDRESS: Janet@PGWG.com
PHONE #: 206-329-0141
SAMPLER'S SIGNATURE: [signature]

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☒ SIM PAH☒	Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐	Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCBs Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081☐ 8141☐ 1699M 8151☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	Metals, Total or Dissolved (See List below)	Cyanide☐ Hex-Chrom☐	(circle) pH, Cond., Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS, Turb.	(circle) NH3-N, COD, TKN, TOC, DOC, NO2+NO3, T-Phos	TOX 9020☐ AOX 1650☐ 506☐	Alkalinity☐ CO3☐ HCO3☐	Dioxins/Furans 1613☐ 8290☐	Dissolved Gases RSK 175☐ Methane☐ Ethane☐ Ethene☐ CO2☐	TRIBUTYLTIN (ALS SOP)			REMARKS
A5-0to25-100818	10-08-18	1438		S	1																				Archive
A4-0to25-100818		1326		S	1																				"
A3-0to31-100818		1114		S	1																				"
A2-0to31-100818		1404		S	1																				"
A6-0to23-100818		1608		S	1																				"
B3-0to21-100818		1216		S	1																				"
B4-0to26-100818		1540		S	1																				"
B5-0to26-100818		1507		S	1																				"
B6-0to27-100818	100818	1643		S	1																				Archive

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
___ V. EDD

INVOICE INFORMATION

P.O. # ___
Bill To: ___

TURNAROUND REQUIREMENTS

___ 24 hr. ___ 48 hr.
___ 5 day
___ Standard (15 working days)
___ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER: ___ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

RELINQUISHED BY:		RECEIVED BY:		RELINQUISHED BY:		RECEIVED BY:	
Signature: [signature]	Date/Time: 10/10/18	Signature: [signature]	Date/Time: 10/10/18 0855	Signature	Date/Time	Signature	Date/Time
Printed Name: Matt Luxon	Firm: Acme Env.	Printed Name: [signature]	Firm: AW	Printed Name	Firm	Printed Name	Firm

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CHAIN OF CUSTODY

K1906902

SR# ~~K1809440~~

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PAGE 2 OF 3 COC# _____

PROJECT NAME: DTNA Swan Island Lagoon Sediment
PROJECT NUMBER: 2006-0015
PROJECT MANAGER: Janet Knox
COMPANY NAME: PSG
ADDRESS: 2377 Eastlake Ave E
CITY/STATE/ZIP: Seattle WA 98102
E-MAIL ADDRESS: janet@pgnw.com
PHONE #: 206 329 0141 FAX #:
SAMPLER'S SIGNATURE:

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	REMARKS
DS-0to28-100918	10/9/18	1137		S	1	Archive
C6-0to29-100918	"	1016		S	1	"
C7-0to30-100918	"	1455		S	1	"
C4-0to27-100918	"	828		S	1	"
CS-0to28-100918	"	944		S	1	"
D4-0to27-100918	"	1257		S	1	"
D6-0to29-100918	"	1050		S	1	"
D7-0to28-100918	"	1535		S	1	"
B7-0to30-100918	"	1413		S	1	"
A7-0to26-100918	10/9/18	1323		S	1	Archive

Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐ SIM PAH☒
Volatile Organics 624☐ 8260☐
Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐ BTEX☐
Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐
PCBs Aroclors☐ Congeners☐
Pesticides/Herbicides 608☐ 8081☐ 8141☐ 8151☐ (4944)
Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐
Metals, Total or Dissolved (See List below)
Cyanide☐ Hex-Chrom☐
(circle) pH, Cond., Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS, Turb
(circle) NH3-N, COD, TKN, TOC, DOC, NO2+NO3, T-Phos
TOX 9020☐ AOX 1650☐ 506☐
Alkalinity ☐ CO3 ☐ HCO3 ☐
Dioxins/Furans 1613☐ 8290☐
Dissolved Gases RSK 175☐ CO2☐ Methane☐ Ethane☐ Ethene☐
Tributyltin (w/ ALS sop)

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
___ V. EDD

INVOICE INFORMATION

P.O. # _____
Bill To: _____

TURNAROUND REQUIREMENTS

____ 24 hr. ____ 48 hr.
____ 5 day
____ Standard (15 working days)
____ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER: _____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

RELINQUISHED BY:		RECEIVED BY:		RELINQUISHED BY:		RECEIVED BY:	
Signature	Date/Time 10/10/18	Signature	Date/Time 10/10/18 0855	Signature	Date/Time	Signature	Date/Time
Printed Name Matt Erikson	Firm PSG	Printed Name	Firm ALS	Printed Name	Firm	Printed Name	Firm

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K1906902

CHAIN OF CUSTODY

SR# K1809940

1317 South 13th Ave., Kelso, WA 98626 | +1 360 577 7222 | +1 800 695 7222 | +1 360 636 1068 (fax)

PAGE _____ OF _____ COC# _____

PROJECT NAME: DNA Swan Island Lagoon Sediment
PROJECT NUMBER: 2006 - 00115
PROJECT MANAGER: Janet Leroy
COMPANY NAME: PGG
ADDRESS: 2377 Eastlake Ave E
CITY/STATE/ZIP: Seattle WA 98102
E-MAIL ADDRESS: jleroy@pgwg.com
PHONE #: 206 329 0141 FAX #:
SAMPLER'S SIGNATURE: JLL

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	REMARKS
SI1-0to28-100916	9/16/10	1137		S	1	Archive

Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐ SIM PAH☐
Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐
Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐
Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐
PCBs Aroclors☐ Congeners☐
Pesticides/Herbicides 608☐ 8081☐ 8141☐ 8151☐ (644M)
Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐
Metals, Total or Dissolved (See List below)
Cyanide☐ Hex-Chrom☐
(circle) pH, Cond., Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS, Turb
(circle) NH3-N, COD, TKN, TOC, DOC, NO2+NO3, T-Phos
TOX 9020☐ AOX 1650☐ 506☐
Alkalinity ☐ CO3☐ HCO3☐
Dioxins/Furans 1613☐ 8290☐
Dissolved Gases RSK 175☐ CO2☐ Methane☐ Ethane☐ Ethene☐
TAL Metals (ALS SOP)

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
___ V. EDD

INVOICE INFORMATION

P.O. # _____
Bill To: _____

TURNAROUND REQUIREMENTS

____ 24 hr. ____ 48 hr.
____ 5 day
____ Standard (15 working days)
____ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER: _____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature]	Signature: [signature]	Signature	Signature
Date/Time: 10/10/10	Date/Time: 10/10/10 0855	Date/Time	Date/Time
Printed Name: Matt Luxa	Printed Name: [signature]	Printed Name	Printed Name
Firm: Acme Env	Firm: ATH	Firm	Firm

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ALS

PC HH

Cooler Receipt and Preservation Form

K1906902

Client PG+G Service Request ~~K18~~ 09940

Received: 10/10/18 Opened: 10/10/18 By: [illegible] Unloaded: 10/10/18 By: [illegible]

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where? 1 Each Side

   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected. Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
0.0	0.2	1.0	1.2	+0.2	381			

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA Y N

   If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: Client put AX on their lids - These Samples were rec'd in temp. range

7/25/16

Page ____ ***of*** ____

K1906902

CHAIN OF CUSTODY

SR# ~~K1810086~~

1317 South 13th Ave., Kelso, WA 98626 | +1 360 577 7222 | +1 800 695 7222 | +1 360 636 1068 (fax)

PAGE 1 OF 4 COC#

PROJECT NAME: DTNA Swan Island Sediment
PROJECT NUMBER: 2006-00115
PROJECT MANAGER: Janet Krox
COMPANY NAME: PGG
ADDRESS: 2377 Eastlake Ave E
CITY/STATE/ZIP: Seattle WA 98102
E-MAIL ADDRESS: Janet@pgwg.com
PHONE #: 206 329 0141 FAX #:
SAMPLER'S SIGNATURE: [signature]

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☒ SIM PAH☒	Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐	Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCBs Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081☐ 8141☐ 8151☐ 1699M	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	Metals, Total or Dissolved (See List below)	Cyanide☐ Hex-Chrom☐	(circle) pH, Cond., Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS, Turb.	(circle) NH3-N, COD, TKN, TOC, DOC, NO2+NO3, T-Phos	TOX 9020☐ AOX 1650☐ 506☐	Alkalinity☐ CO3☐ HCO3☐	Dioxins/Furans 1613☐ 8290☐	Dissolved Gases RSK 175☐ Methane☐ Ethane☐ Ethene☐ CO2☐	TRIBUTYLTIN (ALS SOP)			REMARKS
ES-0to25-101018	10/10/18	0925		S	1																				ARCHIVE
E6-0to27-101018	↑	1007		S	1																				"
E4-0to27-101018		1041		S	1																				"
E3-0to27-101018		1116		S	1																				"
D3-0to26-101018		1153		S	1																				"
C3-0to26-101018		1317		S	1																				"
C2-0to17-101018		1429		S	1																				"
D2-0to19-101018	↓	1521		S	1																				"
F2-0to19-101018	10/10/18	1636		S	1																				Archive

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
___ V. EDD

INVOICE INFORMATION

P.O. #
Bill To:

TURNAROUND REQUIREMENTS

___ 24 hr. ___ 48 hr.
___ 5 day
___ Standard (15 working days)
___ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

***INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER: _____ (CIRCLE ONE)**

SPECIAL INSTRUCTIONS/COMMENTS:

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

RELINQUISHED BY:		RECEIVED BY:		RELINQUISHED BY:		RECEIVED BY:	
[signature]	10/15/18 915	[signature]	10/15/18 0915	[signature]	10/15/18 1215	[signature]	10/15/18 1015
Signature	Date/Time	Signature	Date/Time	Signature	Date/Time	Signature	Date/Time
Jeff Parke	PGG	[signature]	AW	[signature]	AW	[signature]	AW
Printed Name	Firm	Printed Name	Firm	Printed Name	Firm	Printed Name	Firm

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K1906902

CHAIN OF CUSTODY

SR# ~~K1810086~~

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PAGE 2 OF 4 COC#

PROJECT NAME	DTNA Swan Island Sediment
PROJECT NUMBER	2006-00115
PROJECT MANAGER	Janet Knox
COMPANY NAME	PGG
ADDRESS	2377 Eastlake Ave
CITY/STATE/ZIP	Seattle, WA 98102
E-MAIL ADDRESS	janet@pgwg.com
PHONE #	206 329 0141 FAX #
SAMPLER'S SIGNATURE	[signature]

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☒ SIM PAH☒	Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐	Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCBs Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081☐ 8141☐ 1699M 8151☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	Metals, Total or Dissolved (See List below)	Cyanide☐ Hex-Chrom☐	(circle) pH, Cond., Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS, Turb.	(circle) NH3-N, COD, TKN, TOC, DOC, NO2+NO3, T-Phos	TOX 9020☐ AOX 1650☐ 506☐	Alkalinity☐ CO3☐ HCO3☐	Dioxins/Furans 1613☐ 8290☐	Dissolved Gases RSK 175☐ Methane☐ Ethane☐ Ethene☐ CO2☐	TRIBUTYLTIN (ALS SOP)			REMARKS
E2-0to23	10/11/18	1718		S	1																				Archive
E7-0to26		0937		S	1																				"
F3-0to27		1327		S	1																				"
F4-0to27		1215		S	1																				"
F5-0to28		1127		S	1																				"
F6-0to27		1052		S	1																				"
F7-0to26		1016		S	1																				"
H3-0to28		1406		S	1																				"
H4-0to28		1447		S	1																				"
H5-0to29	10/11/18	1531		S	1																				Archive

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

INVOICE INFORMATION

P.O. # _____

Bill To: _____

TURNAROUND REQUIREMENTS

___ 24 hr. ___ 48 hr.

___ 5 day

___ Standard (15 working days)

___ Provide FAX Results

_____ Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

***INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER: _____ (CIRCLE ONE)**

SPECIAL INSTRUCTIONS/COMMENTS:

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

RELINQUISHED BY:		RECEIVED BY:		RELINQUISHED BY:		RECEIVED BY:	
Signature: [signature]	Date/Time: 10/15/18 915	Signature: [signature]	Date/Time: 10/15/18 0915	Signature: [signature]	Date/Time: 10/15/18 1215	Signature: [signature]	Date/Time: 10/15/18 1215
Printed Name: Jeff Dake	Firm: PGG	Printed Name: Bridgeman	Firm: AW	Printed Name: Bridgeman	Firm: AW	Printed Name: Bridgeman	Firm: AW

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CHAIN OF CUSTODY

SR# K1906902

1317 South 13th Ave., Kelso, WA 98626 | +1 360 577 7222 | +1 800 695 7222 | +1 360 636 1068 (fax)

PAGE 3 OF 4 COC#

PROJECT NAME: DTNA Swan Island Sediment
PROJECT NUMBER: 2006-00115
PROJECT MANAGER: Janet Knox
COMPANY NAME: PGG
ADDRESS: 2377 Eastlake Ave E
CITY/STATE/ZIP: Seattle WA 98102
E-MAIL ADDRESS: janet@pgg.com
PHONE #: 2063290141 FAX #:
SAMPLER'S SIGNATURE:

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	REMARKS
H6-0to27-101118	10/11/18	1627		S	1	Archive
E12-0to28-101118	10/11/18	1127		S	1	Archive
F5-0to25-101118 MS/MSD	10/11/18	1127		S	1	Archive
H2-0to30	10/12/18	1028		S	1	"
I2-0to31		0936		S	1	"
B2-0to22		0822		S	1	"
J2A3-0to18		1258		S	1	"
J2A4-0to14		1320		S	1	"
G2-0to 20		1125		S	1	"
H7-0to24	10/12/18	1515		S	1	Archive

Semivolatile Organics by GC/MS 625☐ 8270☐ SIM PAH☐
Volatile Organics 624☐ 8260☐ 8270LL☐ 8021☐ BTEX☐
Hydrocarbons Gas☐ Diesel☐ (*see below) Oil☐
Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐
PCBs Aroclors☐ Congeners☐
Pesticides/Herbicides 608☐ 8081☐ 8141☐ 8151☐
Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐
Metals, Total or Dissolved (See List below)
Cyanide☐ Hex-Chrom☐
(circle) pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS, Turb.
(circle) NH_3-N, COD, TKN, TOC, DOC, NO_2+NO_3, T-Phos
TOX 9020☐ AOX 1650☐ 506☐
Alkalinity ☐ CO_3☐ HCO_3☐
Dioxins/Furans 1613☐ 8290☐
Dissolved Gases CO_2☐ RSK 175☐Methane☐Ethane☐Ethene☐

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
___ V. EDD

INVOICE INFORMATION

P.O. #
Bill To:

TURNAROUND REQUIREMENTS

___ 24 hr. ___ 48 hr.
___ 5 day
___ Standard (15 working days)
___ Provide FAX Results
Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER: _____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature	Signature	Signature	Signature
Printed Name	Printed Name	Printed Name	Printed Name
Firm PGG	Firm	Firm	Firm
Date/Time 10/15/18 9:15	Date/Time 10/17/18 0915	Date/Time	Date/Time

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CHAIN OF CUSTODY

SR# ~~K1810086~~ K1906902

1317 South 13th Ave., Kelso, WA 98626 | +1 360 577 7222 | +1 800 695 7222 | +1 360 636 1068 (fax)

PAGE 4 OF 4 COC#

PROJECT NAME: DTNA Swan Island Sediment
PROJECT NUMBER: 2006-00115
PROJECT MANAGER: Janet Knox
COMPANY NAME: PGG
ADDRESS: 2377 Eastlake Ave E
CITY/STATE/ZIP: Seattle WA 98102
E-MAIL ADDRESS: janet@pgwg.com
PHONE #: 2063290141 FAX #:
SAMPLER'S SIGNATURE: [signature]

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐ SIM PAH☐	Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐	Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCBs Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081☐ 8141☐ 8151☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	Metals, Total or Dissolved (See List below)	Cyanide☐ Hex-Chrom☐	(circle) pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS, Turb.	(circle) NH_3-N, COD, TKN, TOC, DOC, NO_2+NO_3, T-Phos	TOX 9020☐ AOX 1650☐ 506☐	Alkalinity☐ CO_3☐ HCO_3☐	Dioxins/Furans 1613☐ 8290☐	Dissolved Gases CO_2☐ RSK 175☐ Methane☐ Ethane☐ Ethene☐	Tri, Dist, Tin (ALS SIP)			REMARKS
J7-0+26-101218	10/12/18	1552		S	1																				Archive

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
___ V. EDD

INVOICE INFORMATION

P.O. #
Bill To:

TURNAROUND REQUIREMENTS

___ 24 hr. ___ 48 hr.
___ 5 day
___ Standard (15 working days)
___ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER: _____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature] Date/Time: 10/15/18 915	Signature: [signature] Date/Time: 10/15/18 0915	Signature: [signature] Date/Time: 10/15/18 1215	Signature: [signature] Date/Time: 10/15/18 1215
Printed Name: Jeff Paton Firm: PGG	Printed Name: [signature] Firm: [signature]	Printed Name: [signature] Firm: [signature]	Printed Name: [signature] Firm: [signature]

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Cooler Receipt and Preservation Form

K1906902 PC H2

Client PFG Service Request ~~K18~~ 10086

Received: 10/15/16 Opened: 10/15/16 By: BR Unloaded: 10/15/16 By: BR

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where? front
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA Filed
6.0	6.2	5.9	6.1	+0.2	298		
2.1	2.2	2.3	2.4	+0.1	349		
5.9	5.8	2.2	2.1	-0.1	356		
4.2	4.1	3.9	3.8	-0.1	394		

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA Y N
   If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

CHAIN OF CUSTODY

SR# ~~K1810267~~ K1904902

1317 South 13th Ave., Kelso, WA 98626 | +1 360 577 7222 | +1 800 695 7222 | +1 360 636 1068 (fax) PAGE 1 OF _____ COC# _____

PROJECT NAME	DNA Swan Bedard Sediment
PROJECT NUMBER	2006 - 00115
PROJECT MANAGER	Janet Knox
COMPANY NAME	PGG
ADDRESS	2377 EastLake Ave E
CITY/STATE/ZIP	Seattle WA 98102
E-MAIL ADDRESS	janet@pgwg.com
PHONE #	206 329 0141 FAX #
SAMPLER'S SIGNATURE	

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	REMARKS
N3-0to26-101518	10/15/18	0846		S	1	Archive
P6-0to27-101518	↑	0927		S	1	"
K1-0to30-101518		915		S	1	"
L1-0to30-101518		1010		S	1	"
M1-0to30-101518		1040		S	1	"
N1-0to30-101518		1140		S	1	"
O1-0to30-101518		1210		S	1	"
Q1-0to30-101518		1400		S	1	"
S1-0to30-101518	↓	1445		S	1	"
T1-0to30-101518	10/15/18	1535		S	1	Archive

Semivolatile Organics by GC/MS 625☐ 8270☐ SIM PAH☐
Volatile Organics 624☐ 8260☐ BTEX☐
Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐
Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐
PCBs Aroclors☐ Congeners☐
Pesticides/Herbicides 608☐ 8081☐ 8141☐ 8151☐
Chlorophenolics Tri☐ Tetra☐ - 8151M
Metals, Total or Dissolved (See List below) POP☐
Cyanide☐ Hex-Chrom☐
(circle) pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS, Turb.
(circle) NH_3-N, COD, TKN, TOC, DOC, NO_2+NO_3, T-Phos
TOX 9020☐ AOX 1650☐ 506☐
Alkalinity ☐ CO_3☐ HCO_3☐
Dioxins/Furans 1613☐ 8290☐
Dissolved Gases CO_2☐ RSK 175☐Methane☐Ethane☐Ethene☐

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
___ V. EDD

INVOICE INFORMATION

P.O. # _____
Bill To: _____

TURNAROUND REQUIREMENTS

_____ 24 hr. _____ 48 hr.
_____ 5 day
_____ Standard (15 working days)
_____ Provide FAX Results
_____ Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER: _____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:	Signature:	Signature:
Date/Time: 10/19/18 1000	Date/Time: 10/19/18 1000	Date/Time: 10/19/18 1230	Date/Time: 10/19/18 1230
Printed Name: Matt Lyon	Printed Name: B Bachman	Printed Name: B Bachman	Printed Name: B Bachman
Firm: PGG	Firm: HV	Firm: HV	Firm: HV

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CHAIN OF CUSTODY

K1906902

SR# ~~K1810267~~

1317 South 13th Ave., Kelso, WA 98626 | +1 360 577 7222 | +1 800 695 7222 | +1 360 636 1068 (fax)

PAGE 2 OF _____ COC# _____

PROJECT NAME: DTNA Swan Island Sediment
PROJECT NUMBER: 2006-00115
PROJECT MANAGER: Janet Knox
COMPANY NAME: PGG
ADDRESS: 2377 Eastlake Ave E
CITY/STATE/ZIP: Seattle WA 98103
E-MAIL ADDRESS: janet@pgws.com
PHONE #: 206 329 0141 FAX #:
SAMPLER'S SIGNATURE:

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS		Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐ SIM PAH☐	Volatile Organics 624☐ 8260☐ BTEX☐	Hydrocarbons Gas☐ Diesel☐ Oil☐ (*see below) Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCBs Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081☐ 8141☐ 8151☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	Metals, Total or Dissolved (See List below)	Cyanide☐ Hex-Chrom☐	(circle) pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS, Turb.	(circle) NH_3-N, COD, TKN, TOC, DOC, NO_2+NO_3, T-Phos	TOX 9020☐ AOX 1650☐ 506☐	Alkalinity ☐ CO_3☐ HCO_3☐	Dioxins/Furans 1613☐ 8290☐	Dissolved Gases RSK 175☐ CO_2☐ Methane☐ Ethane☐ Ethene☐	Tributyltin (ALS SOP)		REMARKS
R1-0to30-101518	10/15/18	1437		S	1																				Archive
P1-0to30-101518	10/15/18	1350		S	1																				Archive
✓ P3-0to29-101618	10/16/18	1058		S	1																				Archive
✓ TS-0to26-101618	↑	1513		S	1																				"
✓ R4-0to28-101618		1323		S	1																				"
✓ T6-0to29-101618		1438		S	1																				"
✓ R6-0to29-101618		1125		S	1																				"
R6-0to29-101618 (MS MSD)		1125		S	1																				"
✓ PS-0to26-101618	↓	0916		S	1																				"
✓ P4-0to29-101618	10/16/18	1008		S	1																				Archive

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
___ V. EDD

INVOICE INFORMATION

P.O. # _____
Bill To: _____

TURNAROUND REQUIREMENTS

_____ 24 hr. _____ 48 hr.
_____ 5 day
_____ Standard (15 working days)
_____ Provide FAX Results
_____ Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER: _____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:	Signature:	Signature:
Printed Name: Janet Knox	Printed Name: B Newman	Printed Name: B Newman	Printed Name: B Newman
Date/Time: 10/19/18 10:00	Date/Time: 10/19/18 1000	Date/Time: 10/19/18 1230	Date/Time: 10/19/18 1230
Firm: PGG	Firm: ALV	Firm: ALV	Firm: ALV

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CHAIN OF CUSTODY

K1906902

SR# ~~K1810267~~

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PAGE 3 OF _____ COC# _____

PROJECT NAME	OTNA swan Island Sediment
PROJECT NUMBER	2006-00115
PROJECT MANAGER	Janet Knox
COMPANY NAME	PGG
ADDRESS	2377 Eastlake Ave E
CITY/STATE/ZIP	Seattle WA 98102
E-MAIL ADDRESS	janet@pgwg.com
PHONE # 2063290141	FAX #
SAMPLER'S SIGNATURE	

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	REMARKS
✓ RS-0to25-101618	10/16/18	1209		S	1	Archive
✓ S14-0to24-101618	↑	1125		S	1	
✓ T7-0to31-101618		1400		S	1	
✓ T3-0to28-101618	↓	1620		S	1	
✓ T4-0to27-101618	10/16/18	1549		S	1	Archive
Q3-0to27-~~101618~~ 101718	10/17/18	1122		S	1	
Q3-0to26-101718	10/17/18	1048		S	1	
M3-0to27-101718	|	1201		S	1	
S3-0to30-101718	|	1005		S	1	
S2-0to10-101718	10/17/18	1637		S	1	Archive

Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☒ SIM PAH☒
Volatile Organics 624☐ 8260☐
Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐ Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐
PCBs Aroclors☐ Congeners☐
Pesticides/Herbicides 608☐ 8081☐ 8141☐ 1699 M 8151☐
Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐
Metals, Total or Dissolved (See List below)
Cyanide☐ Hex-Chrom☐
(circle) pH, Cond., Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS, Turb.
(circle) NH3-N, COD, TKN, TOC, DOC, NO2+NO3, T-Phos
TOX 9020☐ AOX 1650☐ 506☐
Alkalinity☐ CO3☐ HCO3☐
Dioxins/Furans 1613☐ 8290☐
Dissolved Gases RSK 175☐ Methane☐ Ethane☐ Ethene☐ CO2☐
TRIBUTYLTIN (ALS SOP)

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

INVOICE INFORMATION

P.O. # _____

Bill To: _____

TURNAROUND REQUIREMENTS

___ 24 hr. ___ 48 hr.

___ 5 day

___ Standard (15 working days)

___ Provide FAX Results

Requested Report Date _____

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER: _____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature	Signature	Signature	Signature
Date/Time 10/19/18 10:00	Date/Time 10/19/18 1600	Date/Time 10/19/18 1230	Date/Time 10/19/18 1830
Printed Name Matt Wixon	Printed Name Brennan	Printed Name Brennan	Printed Name Brennan
Firm Anchor ENV	Firm HV	Firm HV	Firm HV

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K1906902

SR# ~~K1810267~~

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PAGE 4 OF _____ COC# _____

PROJECT NAME: DNA Swan Island Sediment
PROJECT NUMBER: 2006-0015
PROJECT MANAGER: Jared Knox
COMPANY NAME: PGG
ADDRESS: 2377 Eastlake Ave E
CITY/STATE/ZIP: Seattle WA 98102
E-MAIL ADDRESS: Jared@Pgxy.com
PHONE #: 206-329-0141 FAX #:
SAMPLER'S SIGNATURE:

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	REMARKS
R3-06033-101718	10/17/18	0928		S	1	Archive
T2-06022-101718	"	1548		S	1	
K3-06019-101718	"	1317		S	1	
K2-06020-101718	10/17/18	1440		S	1	Archive
Q2-06013-101818	10/18/18	0939		S	1	
L3-06030-101818	10/18/18	1035		S	1	
G6-06027-101818	"	1412		S	1	
L5-06032-101818	"	1617		S	1	
G7-06028-101818	"	1534		S	1	
G5-06028-101818	10/18/18	1150		S	1	Archive

Semivolatile Organics by GC/MS 625☐ 8270☐ SIM PAH☐
Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐
Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐
Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐
PCBs Aroclors☐ Congeners☐
Pesticides/Herbicides 608☐ 8081☐ 8141☐ 8151☐
Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐
Metals, Total or Dissolved (See List below)
Cyanide☐ Hex-Chrom☐
(circle) pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS, Turb.
(circle) NH_3-N, COD, TKN, TOC, DOC, NO_2+NO_3, T-Phos
TOX 9020☐ AOX 1650☐ 506☐
Alkalinity ☐ CO_3☐ HCO_3☐
Dioxins/Furans 1613☐ 8290☐
Dissolved Gases CO_2☐ RSK 175☐Methane☐Ethane☐Ethene☐

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
___ V. EDD

INVOICE INFORMATION

P.O. # _____
Bill To: _____

TURNAROUND REQUIREMENTS

___ 24 hr. ___ 48 hr.
___ 5 day
___ Standard (15 working days)
___ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER: _____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature]	Signature: [signature]	Signature: [signature]	Signature: [signature]
Date/Time: 10/19/18 10:00	Date/Time: 10/19/18 10:00	Date/Time: 10/19/18 1230	Date/Time: 10/19/18 1230
Printed Name: Mark Wood	Printed Name: B Bowman	Printed Name: B Bowman	Printed Name: B Bowman
Firm: Anne Env.	Firm: AIX	Firm: AIX	Firm: AIX

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SR# ~~K1810267~~ K1906902

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PAGE _____ OF _____ COC# _____

PROJECT NAME	DTNA Swan Island Sed. mon't
PROJECT NUMBER	2006-0015
PROJECT MANAGER	Janet Knox
COMPANY NAME	PGG
ADDRESS	2377 Eastlake Ave E
CITY/STATE/ZIP	Seattle WA 98102
E-MAIL ADDRESS	Janet@PgWG.com
PHONE # / FAX #	206-329-0141
SAMPLER'S SIGNATURE	

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	REMARKS
G3-0to32-101818	10/18/18	1111		S	1	Archive
R2-0to10-101818	10/18/18	0842		S	1	
16-0to30-101818	10/18/18	1048		S	1	
G4-0to28-101818	10/18/18	1343		S	1	Archive

Semivolatile Organics by GC/MS 625☐ 8270☐ SIM PAH☐
Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐
Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐
Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐
PCBs Aroclors☐ Congeners☐
Pesticides/Herbicides 608☐ 8081☐ 8141☐ 8151☐
Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐
Metals, Total or Dissolved (See List below)
Cyanide☐ Hex-Chrom☐
(circle) pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS, Turb.
(circle) NH_3-N, COD, TKN, TOC, DOC, NO_2+NO_3, T-Phos
TOX 9020☐ AOX 1650☐ 506☐
Alkalinity☐ CO_3☐ HCO_3☐
Dioxins/Furans 1613☐ 8290☐
Dissolved Gases RSK 175☐ CO_2☐ Methane☐ Ethane☐ Ethene☐

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
___ V. EDD

INVOICE INFORMATION

P.O. # _____
Bill To: _____

TURNAROUND REQUIREMENTS

____ 24 hr. ____ 48 hr.
____ 5 day
____ Standard (15 working days)
____ Provide FAX Results
_____ Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER: _____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature	Signature	Signature	Signature
Date/Time 10/19/18 10:20	Date/Time 10/19/18 1000	Date/Time 10/19/18 1230	Date/Time 10/19/18 1230
Printed Name Matthew Wixon	Printed Name	Printed Name	Printed Name Cody Graves
Firm Anchor Env.	Firm STLV	Firm STLV	Firm ALS

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Cooler Receipt and Preservation Form

PC HH

K1906902

Client PGG Service Request ~~K18~~ 1267

Received: 10/19/18 Opened: 10/19/18 By: BR Unloaded: 10/19/18 By: BR

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where? _____
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
4.1	4.1	5.0	5.0	0.0	390			
5.7	5.8	6.0	6.1	+0.1	393			
5.7	5.6	5.9	5.8	+/-0.1	394			

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA Y N
   If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

Total Solids

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/08/18 - 10/20/18
Sample Matrix:	Sediment	**Date Received:**	10/10/18 - 10/22/18
Analysis Method:	160.3 Modified	**Units:**	Percent
Prep Method:	None	**Basis:**	As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
O7-0to27-101918	K1906902-001	**38.8**	-	-	1	07/30/19 17:11	
515-0to26-101918	K1906902-002	**47.2**	-	-	1	07/30/19 17:11	
M4-0to26-101918	K1906902-003	**44.7**	-	-	1	07/30/19 17:11	
A1-0to30-102018	K1906902-004	**56.0**	-	-	1	07/30/19 17:11	
Q6-0to27-102018	K1906902-005	**36.0**	-	-	1	07/30/19 17:11	
A5-0to25-100818	K1906902-006	**47.3**	-	-	1	07/30/19 17:11	
A4-0to25-100818	K1906902-007	**48.9**	-	-	1	07/30/19 17:11	
A3-0to31-100818	K1906902-008	**44.1**	-	-	1	07/30/19 17:11	
A2-0to26-100818	K1906902-009	**46.1**	-	-	1	07/30/19 17:11	
A6-0to23-100818	K1906902-010	**44.1**	-	-	1	07/30/19 17:11	
C4-0to27-100918	K1906902-011	**40.3**	-	-	1	07/30/19 17:11	
A7-0to26-100918	K1906902-012	**52.6**	-	-	1	07/30/19 17:11	
D2-0to19-101018	K1906902-013	**71.5**	-	-	1	07/30/19 17:11	
F2-0to19-101018	K1906902-014	**72.6**	-	-	1	07/30/19 17:11	
H2-0to30-101218	K1906902-015	**48.9**	-	-	1	07/30/19 17:11	
J2A3-0to18-101218	K1906902-016	**77.7**	-	-	1	07/30/19 17:11	
Q2-0to13-101818	K1906902-017	**68.6**	-	-	1	07/30/19 17:11	
G6-0to27-101818	K1906902-018	**50.7**	-	-	1	07/30/19 17:11	
T6-0to29-101618	K1906902-019	**38.1**	-	-	1	07/30/19 17:11	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/09/18 - 10/19/18
Sample Matrix:	Sediment	**Date Received:**	10/10/18 - 10/22/18
Analysis Method:	160.3 Modified	**Units:**	Percent
Prep Method:	None	**Basis:**	As Received

Replicate Sample Summary
Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
O7-0to27-101918	K1906902-001DUP	-	38.8	37.4	38.1	4	20	07/30/19
C4-0to27-100918	K1906902-011DUP	-	40.3	40.3	40.3	<1	20	07/30/19

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Butyltins

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/19/18 15:36
Sample Matrix:	Sediment	**Date Received:**	10/22/18 10:45
Sample Name:	O7-0to27-101918	**Units:**	ug/Kg
Lab Code:	K1906902-001	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	**670**	51	22	20	08/21/19 10:23	8/1/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	83	10 - 120	08/21/19 10:23	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/19/18 13:11
Sample Matrix:	Sediment	**Date Received:**	10/22/18 10:45
Sample Name:	515-0to26-101918	**Units:**	ug/Kg
Lab Code:	K1906902-002	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	**790**	42	19	20	08/21/19 10:41	8/1/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	98	10 - 120	08/21/19 10:41	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/19/18 13:11
Sample Matrix:	Sediment	**Date Received:**	10/22/18 10:45
Sample Name:	M4-0to26-101918	**Units:**	ug/Kg
Lab Code:	K1906902-003	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	**900**	44	19	20	08/21/19 11:00	8/1/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	97	10 - 120	08/21/19 11:00	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/20/18 12:05
Sample Matrix:	Sediment	**Date Received:**	10/22/18 10:45
Sample Name:	A1-0to30-102018	**Units:**	ug/Kg
Lab Code:	K1906902-004	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	1.7	0.76	1	08/14/19 19:22	8/1/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	101	10 - 120	08/14/19 19:22	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/20/18 09:19
Sample Matrix:	Sediment	**Date Received:**	10/22/18 10:45
Sample Name:	Q6-0to27-102018	**Units:**	ug/Kg
Lab Code:	K1906902-005	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	**130**	2.8	1.2	1	08/14/19 19:40	8/1/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	110	10 - 120	08/14/19 19:40	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/08/18 14:38
Sample Matrix:	Sediment	**Date Received:**	10/10/18 08:55
Sample Name:	A5-0to25-100818	**Units:**	ug/Kg
Lab Code:	K1906902-006	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	**120**	2.1	0.91	1	08/14/19 19:58	8/1/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	116	10 - 120	08/14/19 19:58	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/08/18 13:26
Sample Matrix:	Sediment	**Date Received:**	10/10/18 08:55
Sample Name:	A4-0to25-100818	**Units:**	ug/Kg
Lab Code:	K1906902-007	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	**780**	41	18	20	08/21/19 11:19	8/1/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	99	10 - 120	08/21/19 11:19	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/08/18 11:14
Sample Matrix:	Sediment	**Date Received:**	10/10/18 08:55
Sample Name:	A3-0to31-100818	**Units:**	ug/Kg
Lab Code:	K1906902-008	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	**120**	2.2	0.97	1	08/14/19 20:17	8/1/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	104	10 - 120	08/14/19 20:17	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/08/18 14:04
Sample Matrix:	Sediment	**Date Received:**	10/10/18 08:55
Sample Name:	A2-0to26-100818	**Units:**	ug/Kg
Lab Code:	K1906902-009	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	**98**	2.2	0.93	1	08/14/19 20:35	8/1/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	111	10 - 120	08/14/19 20:35	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/08/18 16:08
Sample Matrix:	Sediment	**Date Received:**	10/10/18 08:55
Sample Name:	A6-0to23-100818	**Units:**	ug/Kg
Lab Code:	K1906902-010	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	**180**	2.3	0.97	1	08/14/19 20:54	8/1/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	106	10 - 120	08/14/19 20:54	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/09/18 08:28
Sample Matrix:	Sediment	**Date Received:**	10/10/18 08:55
Sample Name:	C4-0to27-100918	**Units:**	ug/Kg
Lab Code:	K1906902-011	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	**100**	2.5	1.1	1	08/14/19 21:12	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	114	10 - 120	08/14/19 21:12	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/09/18 13:23
Sample Matrix:	Sediment	**Date Received:**	10/10/18 08:55
Sample Name:	A7-0to26-100918	**Units:**	ug/Kg
Lab Code:	K1906902-012	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	**130**	1.9	0.82	1	08/14/19 21:31	8/1/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	112	10 - 120	08/14/19 21:31	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/10/18 15:21
Sample Matrix:	Sediment	**Date Received:**	10/15/18 12:15
Sample Name:	D2-0to19-101018	**Units:**	ug/Kg
Lab Code:	K1906902-013	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	**23**	2.8	1.2	2	08/23/19 13:12	8/1/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	109	10 - 120	08/23/19 13:12	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/10/18 16:36
Sample Matrix:	Sediment	**Date Received:**	10/15/18 12:15
Sample Name:	F2-0to19-101018	**Units:**	ug/Kg
Lab Code:	K1906902-014	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	**12**	6.8	3.0	5	08/23/19 13:31	8/1/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	117	10 - 120	08/23/19 13:31	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/12/18 10:28
Sample Matrix:	Sediment	**Date Received:**	10/15/18 12:15
Sample Name:	H2-0to30-101218	**Units:**	ug/Kg
Lab Code:	K1906902-015	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	**100**	10	4.4	5	08/23/19 13:49	8/1/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	91	10 - 120	08/23/19 13:49	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/12/18 12:57
Sample Matrix:	Sediment	**Date Received:**	10/15/18 12:15
Sample Name:	J2A3-0to18-101218	**Units:**	ug/Kg
Lab Code:	K1906902-016	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	**16**	2.5	1.1	2	08/23/19 14:08	8/1/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	106	10 - 120	08/23/19 14:08	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/18/18 09:39
Sample Matrix:	Sediment	**Date Received:**	10/19/18 12:30
Sample Name:	Q2-0to13-101818	**Units:**	ug/Kg
Lab Code:	K1906902-017	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	**1.7**	1.4	0.62	1	08/23/19 14:27	8/1/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	109	10 - 120	08/23/19 14:27	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/18/18 14:12
Sample Matrix:	Sediment	**Date Received:**	10/19/18 12:30
Sample Name:	G6-0to27-101818	**Units:**	ug/Kg
Lab Code:	K1906902-018	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	**460**	39	17	20	08/21/19 12:14	8/1/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	97	10 - 120	08/21/19 12:14	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/16/18 14:38
Sample Matrix:	Sediment	**Date Received:**	10/19/18 12:30
Sample Name:	T6-0to29-101618	**Units:**	ug/Kg
Lab Code:	K1906902-019	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	**230**	13	5.7	5	08/23/19 14:45	8/1/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	114	10 - 120	08/23/19 14:45	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	KQ1910710-04	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	0.98	0.43	1	08/14/19 18:08	8/1/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	99	10 - 120	08/14/19 18:08	

Confirmation Results

Client: Pacific Groundwater Group (PGG)
Project: DTNA Swan Island Lagoon Sediment/2006-00115
SRM Matrix: Sediment

Service Request: K1906902
Date Collected: 10/19/18 15:36
Date Received: 10/22/18

Sample Name: O7-0to27-101918
Lab Code: K1906902-001

Units: ug/Kg
Basis: Dry
Percent Solids: 38.8

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	22	670	770	14		20	08/21/19 10:23

Confirmation Results

Client: Pacific Groundwater Group (PGG)
Project: DTNA Swan Island Lagoon Sediment/2006-00115
SRM Matrix: Sediment

Service Request: K1906902
Date Collected: 10/19/18 13:11
Date Received: 10/22/18

Sample Name: 515-0to26-101918
Lab Code: K1906902-002

Units: ug/Kg
Basis: Dry
Percent Solids: 47.2

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	19	790	910	14		20	08/21/19 10:41

Confirmation Results

Client: Pacific Groundwater Group (PGG)
Project: DTNA Swan Island Lagoon Sediment/2006-00115
SRM Matrix: Sediment

Service Request: K1906902
Date Collected: 10/19/18 13:11
Date Received: 10/22/18

Sample Name: M4-0to26-101918
Lab Code: K1906902-003

Units: ug/Kg
Basis: Dry
Percent Solids: 44.7

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	19	900	1000	11		20	08/21/19 11:00

Confirmation Results

Client: Pacific Groundwater Group (PGG)
Project: DTNA Swan Island Lagoon Sediment/2006-00115
SRM Matrix: Sediment

Service Request: K1906902
Date Collected: 10/20/18 09:19
Date Received: 10/22/18

Sample Name: Q6-0to27-102018
Lab Code: K1906902-005

Units: ug/Kg
Basis: Dry
Percent Solids: 36.0

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	1.2	130	150	14		1	08/14/19 19:40

Confirmation Results

Client: Pacific Groundwater Group (PGG)
Project: DTNA Swan Island Lagoon Sediment/2006-00115
SRM Matrix: Sediment

Service Request: K1906902
Date Collected: 10/08/18 14:38
Date Received: 10/10/18

Sample Name: A5-0to25-100818
Lab Code: K1906902-006

Units: ug/Kg
Basis: Dry
Percent Solids: 47.3

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	0.91	120	140	15		1	08/14/19 19:58

Confirmation Results

Client: Pacific Groundwater Group (PGG)
Project: DTNA Swan Island Lagoon Sediment/2006-00115
SRM Matrix: Sediment

Service Request: K1906902
Date Collected: 10/08/18 13:26
Date Received: 10/10/18

Sample Name: A4-0to25-100818
Lab Code: K1906902-007

Units: ug/Kg
Basis: Dry
Percent Solids: 48.9

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	18	780	890	13		20	08/21/19 11:19

Confirmation Results

Client: Pacific Groundwater Group (PGG)
Project: DTNA Swan Island Lagoon Sediment/2006-00115
SRM Matrix: Sediment

Service Request: K1906902
Date Collected: 10/08/18 11:14
Date Received: 10/10/18

Sample Name: A3-0to31-100818
Lab Code: K1906902-008

Units: ug/Kg
Basis: Dry
Percent Solids: 44.1

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	0.97	120	140	15		1	08/14/19 20:17

Confirmation Results

Client: Pacific Groundwater Group (PGG)
Project: DTNA Swan Island Lagoon Sediment/2006-00115
SRM Matrix: Sediment

Service Request: K1906902
Date Collected: 10/08/18 14:04
Date Received: 10/10/18

Sample Name: A2-0to26-100818
Lab Code: K1906902-009

Units: ug/Kg
Basis: Dry
Percent Solids: 46.1

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	0.93	98	110	12		1	08/14/19 20:35

Confirmation Results

Client: Pacific Groundwater Group (PGG)
Project: DTNA Swan Island Lagoon Sediment/2006-00115
SRM Matrix: Sediment

Service Request: K1906902
Date Collected: 10/08/18 16:08
Date Received: 10/10/18

Sample Name: A6-0to23-100818
Lab Code: K1906902-010

Units: ug/Kg
Basis: Dry
Percent Solids: 44.1

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	0.97	180	200	11		1	08/14/19 20:54

Confirmation Results

Client: Pacific Groundwater Group (PGG)
Project: DTNA Swan Island Lagoon Sediment/2006-00115
SRM Matrix: Sediment

Service Request: K1906902
Date Collected: 10/09/18 08:28
Date Received: 10/10/18

Sample Name: C4-0to27-100918
Lab Code: K1906902-011

Units: ug/Kg
Basis: Dry
Percent Solids: 40.3

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	1.1	100	150	40		1	08/14/19 21:12

Confirmation Results

Client: Pacific Groundwater Group (PGG)
Project: DTNA Swan Island Lagoon Sediment/2006-00115
SRM Matrix: Sediment

Service Request: K1906902
Date Collected: 10/09/18 13:23
Date Received: 10/10/18

Sample Name: A7-0to26-100918
Lab Code: K1906902-012

Units: ug/Kg
Basis: Dry
Percent Solids: 52.6

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	0.82	130	140	7		1	08/14/19 21:31

Confirmation Results

Client: Pacific Groundwater Group (PGG)
Project: DTNA Swan Island Lagoon Sediment/2006-00115
SRM Matrix: Sediment

Service Request: K1906902
Date Collected: 10/10/18 15:21
Date Received: 10/15/18

Sample Name: D2-0to19-101018
Lab Code: K1906902-013

Units: ug/Kg
Basis: Dry
Percent Solids: 71.5

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	1.2	23	27	16		2	08/23/19 13:12

Confirmation Results

Client: Pacific Groundwater Group (PGG)
Project: DTNA Swan Island Lagoon Sediment/2006-00115
SRM Matrix: Sediment

Service Request: K1906902
Date Collected: 10/10/18 16:36
Date Received: 10/15/18

Sample Name: F2-0to19-101018
Lab Code: K1906902-014

Units: ug/Kg
Basis: Dry
Percent Solids: 72.6

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	3.0	12	14	15		5	08/23/19 13:31

Confirmation Results

Client: Pacific Groundwater Group (PGG)
Project: DTNA Swan Island Lagoon Sediment/2006-00115
SRM Matrix: Sediment

Service Request: K1906902
Date Collected: 10/12/18 10:28
Date Received: 10/15/18

Sample Name: H2-0to30-101218
Lab Code: K1906902-015

Units: ug/Kg
Basis: Dry
Percent Solids: 48.9

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	4.4	100	110	10		5	08/23/19 13:49

Confirmation Results

Client: Pacific Groundwater Group (PGG)
Project: DTNA Swan Island Lagoon Sediment/2006-00115
SRM Matrix: Sediment

Service Request: K1906902
Date Collected: 10/12/18 12:57
Date Received: 10/15/18

Sample Name: J2A3-0to18-101218
Lab Code: K1906902-016

Units: ug/Kg
Basis: Dry
Percent Solids: 77.7

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	1.1	16	17	6		2	08/23/19 14:08

Confirmation Results

Client: Pacific Groundwater Group (PGG)
Project: DTNA Swan Island Lagoon Sediment/2006-00115
SRM Matrix: Sediment

Service Request: K1906902
Date Collected: 10/18/18 09:39
Date Received: 10/19/18

Sample Name: Q2-0to13-101818
Lab Code: K1906902-017

Units: ug/Kg
Basis: Dry
Percent Solids: 68.6

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	0.62	1.7	1.7	<1		1	08/23/19 14:27

Confirmation Results

Client: Pacific Groundwater Group (PGG)
Project: DTNA Swan Island Lagoon Sediment/2006-00115
SRM Matrix: Sediment

Service Request: K1906902
Date Collected: 10/18/18 14:12
Date Received: 10/19/18

Sample Name: G6-0to27-101818
Lab Code: K1906902-018

Units: ug/Kg
Basis: Dry
Percent Solids: 50.7

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	17	460	580	23		20	08/21/19 12:14

Confirmation Results

Client: Pacific Groundwater Group (PGG)
Project: DTNA Swan Island Lagoon Sediment/2006-00115
SRM Matrix: Sediment

Service Request: K1906902
Date Collected: 10/16/18 14:38
Date Received: 10/19/18

Sample Name: T6-0to29-101618
Lab Code: K1906902-019

Units: ug/Kg
Basis: Dry
Percent Solids: 38.1

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	5.7	230	300	26		5	08/23/19 14:45

Confirmation Results

Client: Pacific Groundwater Group (PGG)
Project: DTNA Swan Island Lagoon Sediment/2006-00115
SRM Matrix: Sediment

Service Request: K1906902
Date Collected: 10/08/18 13:26
Date Received: 10/10/18

Sample Name: A4-0to25-100818
Lab Code: KQ1910710-01

Units: ug/Kg
Basis: Dry
Percent Solids: 48.9

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	18	707	843	18		20	08/21/19 11:37

Confirmation Results

Client: Pacific Groundwater Group (PGG)
Project: DTNA Swan Island Lagoon Sediment/2006-00115
SRM Matrix: Sediment

Service Request: K1906902
Date Collected: 10/08/18 13:26
Date Received: 10/10/18

Sample Name: A4-0to25-100818
Lab Code: KQ1910710-02

Units: ug/Kg
Basis: Dry
Percent Solids: 48.9

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	18	714	836	16		20	08/21/19 11:55

Confirmation Results

Client: Pacific Groundwater Group (PGG)
Project: DTNA Swan Island Lagoon Sediment/2006-00115
SRM Matrix: Sediment

Service Request: K1906902
Date Collected: NA
Date Received:

Sample Name: Lab Control Sample
Lab Code: KQ1910710-03

Units: ug/Kg
Basis: Dry

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	0.43	3.82	4.34	13		1	08/14/19 18:27

Confirmation Results

Client: Pacific Groundwater Group (PGG)
Project: DTNA Swan Island Lagoon Sediment/2006-00115
SRM Matrix: Sediment

Service Request: K1906902
Date Collected: NA
Date Received:

Sample Name: Lab Control Sample
Lab Code: KQ1910710-05

Units: ug/Kg
Basis: Dry

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	0.43	13.9	19.5	34		1	08/14/19 18:45

Confirmation Results

Client: Pacific Groundwater Group (PGG)
Project: DTNA Swan Island Lagoon Sediment/2006-00115
SRM Matrix: Sediment

Service Request: K1906902
Date Collected: NA
Date Received:

Sample Name: Duplicate Lab Control Sample
Lab Code: KQ1910710-06

Units: ug/Kg
Basis: Dry

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	0.43	14.3	18.7	27		1	08/14/19 19:03

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment/2006-00115
Sample Matrix: Sediment

SURROGATE RECOVERY SUMMARY
Butyltins

Analysis Method: ALS SOP
Extraction Method: Method

Sample Name	Lab Code	Tri-n-propyltin 10-120
O7-0to27-101918	K1906902-001	83
515-0to26-101918	K1906902-002	98
M4-0to26-101918	K1906902-003	97
A1-0to30-102018	K1906902-004	101
Q6-0to27-102018	K1906902-005	110
A5-0to25-100818	K1906902-006	116
A4-0to25-100818	K1906902-007	99
A3-0to31-100818	K1906902-008	104
A2-0to26-100818	K1906902-009	111
A6-0to23-100818	K1906902-010	106
C4-0to27-100918	K1906902-011	114
A7-0to26-100918	K1906902-012	112
D2-0to19-101018	K1906902-013	109
F2-0to19-101018	K1906902-014	117
H2-0to30-101218	K1906902-015	91
J2A3-0to18-101218	K1906902-016	106
Q2-0to13-101818	K1906902-017	109
G6-0to27-101818	K1906902-018	97
T6-0to29-101618	K1906902-019	114
Method Blank	KQ1910710-04	99
Lab Control Sample	KQ1910710-03	92
Lab Control Sample	KQ1910710-05	103
Duplicate Lab Control Sample	KQ1910710-06	92
A4-0to25-100818	KQ1910710-01	92
A4-0to25-100818	KQ1910710-02	110

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/08/18
Sample Matrix:	Sediment	**Date Received:**	10/10/18
		Date Analyzed:	08/21/19
		Date Extracted:	08/1/19

Duplicate Matrix Spike Summary
Butyltins

Sample Name:	A4-0to25-100818	**Units:**	ug/Kg
Lab Code:	K1906902-007	**Basis:**	Dry
Analysis Method:	ALS SOP		
Prep Method:	Method		

		Matrix Spike KQ1910710-01			**Duplicate Matrix Spike** KQ1910710-02					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Tri-n-butyltin Cation	780	707	45.0	-153 #	714	45.3	-137 #	10-115	<1	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Analyzed:**	08/14/19
Sample Matrix:	Sediment	**Date Extracted:**	08/01/19

Lab Control Sample Summary
Butyltins

Analysis Method:	ALS SOP	**Units:**	ug/Kg
Prep Method:	Method	**Basis:**	Dry
		Analysis Lot:	647696

Lab Control Sample
KQ1910710-03

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Tri-n-butyltin Cation	3.82	22.3	17	10-122

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Analyzed:**	08/14/19
Sample Matrix:	Sediment	**Date Extracted:**	08/01/19

Duplicate Lab Control Sample Summary
Butyltins

Analysis Method:	ALS SOP	**Units:**	ug/Kg
Prep Method:	Method	**Basis:**	Dry
		Analysis Lot:	647696

	Lab Control Sample KQ1910710-05			Duplicate Lab Control Sample KQ1910710-06					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Tri-n-butyltin Cation	13.9	22.3	62	14.3	22.3	64	10-122	3	40

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Analyzed:**	08/14/19 18:08
Sample Matrix:	Sediment	**Date Extracted:**	08/01/19

Method Blank Summary
Butyltins

Sample Name:	Method Blank	**Instrument ID:**	K-GC-26
Lab Code:	KQ1910710-04	**File ID:**	J:\GC26\DATA\081419D\0814F005.D\
Analysis Method:	ALS SOP	**Analysis Lot:**	647696,648184,648566
Prep Method:	Method	**Extraction Lot:**	341601

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ1910710-03	J:\GC26\DATA\081419D\0814F006.D\	08/14/19 18:27
Lab Control Sample	KQ1910710-05	J:\GC26\DATA\081419D\0814F007.D\	08/14/19 18:45
Duplicate Lab Control Sample	KQ1910710-06	J:\GC26\DATA\081419D\0814F008.D\	08/14/19 19:03
A1-0to30-102018	K1906902-004	J:\GC26\DATA\081419D\0814F009.D\	08/14/19 19:22
Q6-0to27-102018	K1906902-005	J:\GC26\DATA\081419D\0814F010.D\	08/14/19 19:40
A5-0to25-100818	K1906902-006	J:\GC26\DATA\081419D\0814F011.D\	08/14/19 19:58
A3-0to31-100818	K1906902-008	J:\GC26\DATA\081419D\0814F012.D\	08/14/19 20:17
A2-0to26-100818	K1906902-009	J:\GC26\DATA\081419D\0814F013.D\	08/14/19 20:35
A6-0to23-100818	K1906902-010	J:\GC26\DATA\081419D\0814F014.D\	08/14/19 20:54
C4-0to27-100918	K1906902-011	J:\GC26\DATA\081419D\0814F015.D\	08/14/19 21:12
A7-0to26-100918	K1906902-012	J:\GC26\DATA\081419D\0814F016.D\	08/14/19 21:31
O7-0to27-101918	K1906902-001	J:\GC26\DATA\082119\0821F005.D\	08/21/19 10:23
515-0to26-101918	K1906902-002	J:\GC26\DATA\082119\0821F006.D\	08/21/19 10:41
M4-0to26-101918	K1906902-003	J:\GC26\DATA\082119\0821F007.D\	08/21/19 11:00
A4-0to25-100818	K1906902-007	J:\GC26\DATA\082119\0821F008.D\	08/21/19 11:19
A4-0to25-100818MS	KQ1910710-01	J:\GC26\DATA\082119\0821F009.D\	08/21/19 11:37
A4-0to25-100818DMS	KQ1910710-02	J:\GC26\DATA\082119\0821F010.D\	08/21/19 11:55
G6-0to27-101818	K1906902-018	J:\GC26\DATA\082119\0821F011.D\	08/21/19 12:14
D2-0to19-101018	K1906902-013	J:\GC26\DATA\082319\0823F014.D\	08/23/19 13:12
F2-0to19-101018	K1906902-014	J:\GC26\DATA\082319\0823F015.D\	08/23/19 13:31
H2-0to30-101218	K1906902-015	J:\GC26\DATA\082319\0823F016.D\	08/23/19 13:49
J2A3-0to18-101218	K1906902-016	J:\GC26\DATA\082319\0823F017.D\	08/23/19 14:08
Q2-0to13-101818	K1906902-017	J:\GC26\DATA\082319\0823F018.D\	08/23/19 14:27
T6-0to29-101618	K1906902-019	J:\GC26\DATA\082319\0823F019.D\	08/23/19 14:45

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Analyzed:**	08/14/19 18:45
Sample Matrix:	Sediment	**Date Extracted:**	08/01/19

Lab Control Sample Summary
Butyltins

Sample Name:	Lab Control Sample	**Instrument ID:**	K-GC-26
Lab Code:	KQ1910710-05	**File ID:**	J:\GC26\DATA\081419D\0814F007.D\
Analysis Method:	ALS SOP	**Analysis Lot:**	647696,648184,648566
Prep Method:	Method	**Extraction Lot:**	341601

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1910710-04	J:\GC26\DATA\081419D\0814F005.D\	08/14/19 18:08
Duplicate Lab Control Sample	KQ1910710-06	J:\GC26\DATA\081419D\0814F008.D\	08/14/19 19:03
A1-0to30-102018	K1906902-004	J:\GC26\DATA\081419D\0814F009.D\	08/14/19 19:22
Q6-0to27-102018	K1906902-005	J:\GC26\DATA\081419D\0814F010.D\	08/14/19 19:40
A5-0to25-100818	K1906902-006	J:\GC26\DATA\081419D\0814F011.D\	08/14/19 19:58
A3-0to31-100818	K1906902-008	J:\GC26\DATA\081419D\0814F012.D\	08/14/19 20:17
A2-0to26-100818	K1906902-009	J:\GC26\DATA\081419D\0814F013.D\	08/14/19 20:35
A6-0to23-100818	K1906902-010	J:\GC26\DATA\081419D\0814F014.D\	08/14/19 20:54
C4-0to27-100918	K1906902-011	J:\GC26\DATA\081419D\0814F015.D\	08/14/19 21:12
A7-0to26-100918	K1906902-012	J:\GC26\DATA\081419D\0814F016.D\	08/14/19 21:31
O7-0to27-101918	K1906902-001	J:\GC26\DATA\082119\0821F005.D\	08/21/19 10:23
515-0to26-101918	K1906902-002	J:\GC26\DATA\082119\0821F006.D\	08/21/19 10:41
M4-0to26-101918	K1906902-003	J:\GC26\DATA\082119\0821F007.D\	08/21/19 11:00
A4-0to25-100818	K1906902-007	J:\GC26\DATA\082119\0821F008.D\	08/21/19 11:19
A4-0to25-100818MS	KQ1910710-01	J:\GC26\DATA\082119\0821F009.D\	08/21/19 11:37
A4-0to25-100818DMS	KQ1910710-02	J:\GC26\DATA\082119\0821F010.D\	08/21/19 11:55
G6-0to27-101818	K1906902-018	J:\GC26\DATA\082119\0821F011.D\	08/21/19 12:14
D2-0to19-101018	K1906902-013	J:\GC26\DATA\082319\0823F014.D\	08/23/19 13:12
F2-0to19-101018	K1906902-014	J:\GC26\DATA\082319\0823F015.D\	08/23/19 13:31
H2-0to30-101218	K1906902-015	J:\GC26\DATA\082319\0823F016.D\	08/23/19 13:49
J2A3-0to18-101218	K1906902-016	J:\GC26\DATA\082319\0823F017.D\	08/23/19 14:08
Q2-0to13-101818	K1906902-017	J:\GC26\DATA\082319\0823F018.D\	08/23/19 14:27
T6-0to29-101618	K1906902-019	J:\GC26\DATA\082319\0823F019.D\	08/23/19 14:45

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Analyzed:**	08/14/19 18:45
Sample Matrix:	Sediment	**Date Extracted:**	08/01/19

Lab Control Sample Summary
Butyltins

Sample Name:	Lab Control Sample	**Instrument ID:**	K-GC-26
Lab Code:	KQ1910710-05	**File ID:**	J:\GC26\DATA\081419D\0814F007.D\
Analysis Method:	ALS SOP	**Analysis Lot:**	647696,648184,648566
Prep Method:	Method	**Extraction Lot:**	341601

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1910710-04	J:\GC26\DATA\081419D\0814F005.D\	08/14/19 18:08
Duplicate Lab Control Sample	KQ1910710-06	J:\GC26\DATA\081419D\0814F008.D\	08/14/19 19:03
A1-0to30-102018	K1906902-004	J:\GC26\DATA\081419D\0814F009.D\	08/14/19 19:22
Q6-0to27-102018	K1906902-005	J:\GC26\DATA\081419D\0814F010.D\	08/14/19 19:40
A5-0to25-100818	K1906902-006	J:\GC26\DATA\081419D\0814F011.D\	08/14/19 19:58
A3-0to31-100818	K1906902-008	J:\GC26\DATA\081419D\0814F012.D\	08/14/19 20:17
A2-0to26-100818	K1906902-009	J:\GC26\DATA\081419D\0814F013.D\	08/14/19 20:35
A6-0to23-100818	K1906902-010	J:\GC26\DATA\081419D\0814F014.D\	08/14/19 20:54
C4-0to27-100918	K1906902-011	J:\GC26\DATA\081419D\0814F015.D\	08/14/19 21:12
A7-0to26-100918	K1906902-012	J:\GC26\DATA\081419D\0814F016.D\	08/14/19 21:31
O7-0to27-101918	K1906902-001	J:\GC26\DATA\082119\0821F005.D\	08/21/19 10:23
515-0to26-101918	K1906902-002	J:\GC26\DATA\082119\0821F006.D\	08/21/19 10:41
M4-0to26-101918	K1906902-003	J:\GC26\DATA\082119\0821F007.D\	08/21/19 11:00
A4-0to25-100818	K1906902-007	J:\GC26\DATA\082119\0821F008.D\	08/21/19 11:19
A4-0to25-100818MS	KQ1910710-01	J:\GC26\DATA\082119\0821F009.D\	08/21/19 11:37
A4-0to25-100818DMS	KQ1910710-02	J:\GC26\DATA\082119\0821F010.D\	08/21/19 11:55
G6-0to27-101818	K1906902-018	J:\GC26\DATA\082119\0821F011.D\	08/21/19 12:14
D2-0to19-101018	K1906902-013	J:\GC26\DATA\082319\0823F014.D\	08/23/19 13:12
F2-0to19-101018	K1906902-014	J:\GC26\DATA\082319\0823F015.D\	08/23/19 13:31
H2-0to30-101218	K1906902-015	J:\GC26\DATA\082319\0823F016.D\	08/23/19 13:49
J2A3-0to18-101218	K1906902-016	J:\GC26\DATA\082319\0823F017.D\	08/23/19 14:08
Q2-0to13-101818	K1906902-017	J:\GC26\DATA\082319\0823F018.D\	08/23/19 14:27
T6-0to29-101618	K1906902-019	J:\GC26\DATA\082319\0823F019.D\	08/23/19 14:45

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment **Calibration Date:** 7/8/2019

Initial Calibration Summary
Butyltins

Calibration ID: KC1900267 **Signal ID:** RTX-1
Instrument ID: K-GC-26

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1900267-01	OT5-15J @ 2PPB	J:\GC26\DATA\070819B\0708F011.D	07/08/2019 14:24
02	KC1900267-02	OT5-15K @ 5PPB	J:\GC26\DATA\070819B\0708F012.D	07/08/2019 14:43
03	KC1900267-03	OT5-15L @ 10PPB	J:\GC26\DATA\070819B\0708F013.D	07/08/2019 15:01
04	KC1900267-04	OT5-15M @ 20PPB	J:\GC26\DATA\070819B\0708F014.D	07/08/2019 15:20
05	KC1900267-05	OT5-15B @ 50PPB	J:\GC26\DATA\070819B\0708F015.D	07/08/2019 15:38
06	KC1900267-06	OT5-15N @ 200PPB	J:\GC26\DATA\070819B\0708F016.D	07/08/2019 15:57
07	KC1900267-07	OT5-16A @ 500PPB	J:\GC26\DATA\070819B\0708F017.D	07/08/2019 16:15

Analyte

Tri-n-butyltin Cation

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	1.782	7.039E4	02	4.455	7.092E4	03	8.910	6.901E4	04	17.820	7.001E4
05	44.550	8.154E4	06	178.200	7.831E4	07	445.500	8.036E4			

Tri-n-propyltin

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	2.000	5.807E4	02	5.000	4.204E4	03	10.000	5.104E4	04	20.000	4.957E4
05	50.000	5.476E4	06	200.000	5.588E4	07	500.000	5.655E4			

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment **Calibration Date:** 7/8/2019

Initial Calibration Summary
Butyltins

Calibration ID: KC1900267 **Signal ID:** RTX-1
Instrument ID: K-GC-26

Analyte Name	Compound Type	Calibration Evaluation				Calibration Evaluation	
		Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
Tri-n-butyltin Cation	TRG	Average RF	% RSD	7.3	≤20	7.436E4	
Tri-n-propyltin	SURR	Average RF	% RSD	10.5	≤20	5.256E4	

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment **Calibration Date:** 7/8/2019

Initial Calibration Summary
Butyltins

Calibration ID: KC1900267 **Signal ID:** RTX-35
Instrument ID: K-GC-26

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1900267-01	OT5-15J @ 2PPB	J:\GC26\DATA\070819B\0708F011.D	07/08/2019 14:24
02	KC1900267-02	OT5-15K @ 5PPB	J:\GC26\DATA\070819B\0708F012.D	07/08/2019 14:43
03	KC1900267-03	OT5-15L @ 10PPB	J:\GC26\DATA\070819B\0708F013.D	07/08/2019 15:01
04	KC1900267-04	OT5-15M @ 20PPB	J:\GC26\DATA\070819B\0708F014.D	07/08/2019 15:20
05	KC1900267-05	OT5-15B @ 50PPB	J:\GC26\DATA\070819B\0708F015.D	07/08/2019 15:38
06	KC1900267-06	OT5-15N @ 200PPB	J:\GC26\DATA\070819B\0708F016.D	07/08/2019 15:57
07	KC1900267-07	OT5-16A @ 500PPB	J:\GC26\DATA\070819B\0708F017.D	07/08/2019 16:15

Analyte

Tri-n-butyltin Cation

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	1.782	9.188E4	02	4.455	7.672E4	03	8.910	8.63E4	04	17.820	7.339E4
05	44.550	8.588E4	06	178.200	8.378E4	07	445.500	8.629E4			

Tri-n-propyltin

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	2.000	5.261E4	02	5.000	4.203E4	03	10.000	5.048E4	04	20.000	5.085E4
05	50.000	6.211E4	06	200.000	5.815E4	07	500.000	5.773E4			

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment **Calibration Date:** 7/8/2019

Initial Calibration Summary
Butyltins

Calibration ID: KC1900267 **Signal ID:** RTX-35
Instrument ID: K-GC-26

		Calibration Evaluation				Calibration Evaluation	
Analyte Name	Compound Type	Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
Tri-n-butyltin Cation	TRG	Average RF	% RSD	7.6	≤20	8.346E4	
Tri-n-propyltin	SURR	Average RF	% RSD	12.4	≤20	5.342E4	

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment **Calibration Date:** 7/8/2019

Initial Calibration Verification Summary
Butyltins

Calibration ID: KC1900267 **Signal ID:** RTX-1
Instrument ID: K-GC-26

#	Lab Code	Sample Name	File Location	Acquisition Date
08	KC1900267-08	OT5-15I ICV @ 50 PPB	J:\GC26\DATA\070819B\0708F018.D	07/08/2019 16:34

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	37.0	7.436E4	6.18E4	-16.890	±25	Average RF

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment **Calibration Date:** 7/8/2019

Initial Calibration Verification Summary
Butyltins

Calibration ID: KC1900267 **Signal ID:** RTX-35
Instrument ID: K-GC-26

#	Lab Code	Sample Name	File Location	Acquisition Date
08	KC1900267-08	OT5-15I ICV @ 50 PPB	J:\GC26\DATA\070819B\0708F018.D	07/08/2019 16:34

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	34.1	8.346E4	6.394E4	-23.392	±25	Average RF

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Analyzed:**	08/14/19 17:31

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	7/8/2019
File ID:	J:\GC26\DATA\081419D\0814F003.D\	**Calibration ID:**	KC1900267
Signal ID:	RTX-35	**Analysis Lot:**	647696
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	44.2	8.346E4	8.275E4	-0.9	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	55.8	5.342E4	5.966E4	11.7	NA	±25	Average RF

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Analyzed:**	08/14/19 17:31

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	7/8/2019
File ID:	J:\GC26\DATA\081419D\0814F003.D\	**Calibration ID:**	KC1900267
Signal ID:	RTX-1	**Analysis Lot:**	647696
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	54.6	7.436E4	9.118E4	22.6	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	64.0	5.256E4	6.722E4	27.9*	NA	±25	Average RF

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Analyzed:**	08/14/19 21:51

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	7/8/2019
File ID:	J:\GC26\DATA\081419D\0814F017.D\	**Calibration ID:**	KC1900267
Signal ID:	RTX-35	**Analysis Lot:**	647696
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	46.2	8.346E4	8.654E4	3.7	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	57.4	5.342E4	6.133E4	14.8	NA	±25	Average RF

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Analyzed:**	08/14/19 21:51

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	7/8/2019
File ID:	J:\GC26\DATA\081419D\0814F017.D\	**Calibration ID:**	KC1900267
Signal ID:	RTX-1	**Analysis Lot:**	647696
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	55.9	7.436E4	9.334E4	25.5*	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	70.0	5.256E4	7.355E4	39.9*	NA	±25	Average RF

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Analyzed:**	08/21/19 09:45

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	7/8/2019
File ID:	J:\GC26\DATA\082119\0821F003.D\	**Calibration ID:**	KC1900267
Signal ID:	RTX-35	**Analysis Lot:**	648184
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	44.4	8.346E4	8.312E4	-0.4	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	59.5	5.342E4	6.358E4	19.0	NA	±25	Average RF

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Analyzed:**	08/21/19 09:45

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	7/8/2019
File ID:	J:\GC26\DATA\082119\0821F003.D\	**Calibration ID:**	KC1900267
Signal ID:	RTX-1	**Analysis Lot:**	648184
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	50.3	7.436E4	8.403E4	13.0	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	63.0	5.256E4	6.622E4	26.0*	NA	±25	Average RF

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Analyzed:**	08/21/19 12:32

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	7/8/2019
File ID:	J:\GC26\DATA\082119\0821F012.D\	**Calibration ID:**	KC1900267
Signal ID:	RTX-35	**Analysis Lot:**	648184
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	44.1	8.346E4	8.27E4	-0.9	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	61.3	5.342E4	6.553E4	22.7	NA	±25	Average RF

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Analyzed:**	08/21/19 12:32

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	7/8/2019
File ID:	J:\GC26\DATA\082119\0821F012.D\	**Calibration ID:**	KC1900267
Signal ID:	RTX-1	**Analysis Lot:**	648184
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	51.2	7.436E4	8.542E4	14.9	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	65.8	5.256E4	6.911E4	31.5*	NA	±25	Average RF

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Analyzed:**	08/23/19 12:36

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	7/8/2019
File ID:	J:\GC26\DATA\082319\0823F012.D\	**Calibration ID:**	KC1900267
Signal ID:	RTX-35	**Analysis Lot:**	648566
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	42.4	8.346E4	7.952E4	-4.7	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	56.3	5.342E4	6.018E4	12.6	NA	±25	Average RF

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Analyzed:**	08/23/19 12:36

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	7/8/2019
File ID:	J:\GC26\DATA\082319\0823F012.D\	**Calibration ID:**	KC1900267
Signal ID:	RTX-1	**Analysis Lot:**	648566
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	51.2	7.436E4	8.542E4	14.9	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	60.0	5.256E4	6.306E4	20.0	NA	±25	Average RF

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Analyzed:**	08/23/19 15:05

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	7/8/2019
File ID:	J:\GC26\DATA\082319\0823F020.D\	**Calibration ID:**	KC1900267
Signal ID:	RTX-35	**Analysis Lot:**	648566
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	45.9	8.346E4	8.603E4	3.1	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	57.3	5.342E4	6.122E4	14.6	NA	±25	Average RF

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Analyzed:**	08/23/19 15:05

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	7/8/2019
File ID:	J:\GC26\DATA\082319\0823F020.D\	**Calibration ID:**	KC1900267
Signal ID:	RTX-1	**Analysis Lot:**	648566
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	54.3	7.436E4	9.06E4	21.8	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	66.0	5.256E4	6.933E4	31.9*	NA	±25	Average RF

Client: Pacific Groundwater Group (PGG) **Service Request:**K1906902
Project: DTNA Swan Island Lagoon Sediment/2006-00115

Analysis Run Log
Butyltins

Analysis Method: ALS SOP **Analysis Lot:**647696
Instrument ID:K-GC-26

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\GC26\DATA\081419D\0814F003.D\	Continuing Calibration Verification	KQ1911652-01	8/14/2019	17:31:00	
J:\GC26\DATA\081419D\0814F004.D\	ZZZZZZZ	ZZZZZZZ	8/14/2019	17:50:00	
J:\GC26\DATA\081419D\0814F005.D\	Method Blank	KQ1910710-04	8/14/2019	18:08:00	
J:\GC26\DATA\081419D\0814F006.D\	Lab Control Sample	KQ1910710-03	8/14/2019	18:27:00	
J:\GC26\DATA\081419D\0814F007.D\	Lab Control Sample	KQ1910710-05	8/14/2019	18:45:00	
J:\GC26\DATA\081419D\0814F008.D\	Duplicate Lab Control Sample	KQ1910710-06	8/14/2019	19:03:00	
J:\GC26\DATA\081419D\0814F009.D\	A1-0to30-102018	K1906902-004	8/14/2019	19:22:00	
J:\GC26\DATA\081419D\0814F010.D\	Q6-0to27-102018	K1906902-005	8/14/2019	19:40:00	
J:\GC26\DATA\081419D\0814F011.D\	A5-0to25-100818	K1906902-006	8/14/2019	19:58:00	
J:\GC26\DATA\081419D\0814F012.D\	A3-0to31-100818	K1906902-008	8/14/2019	20:17:00	
J:\GC26\DATA\081419D\0814F013.D\	A2-0to26-100818	K1906902-009	8/14/2019	20:35:00	
J:\GC26\DATA\081419D\0814F014.D\	A6-0to23-100818	K1906902-010	8/14/2019	20:54:00	
J:\GC26\DATA\081419D\0814F015.D\	C4-0to27-100918	K1906902-011	8/14/2019	21:12:00	
J:\GC26\DATA\081419D\0814F016.D\	A7-0to26-100918	K1906902-012	8/14/2019	21:31:00	
J:\GC26\DATA\081419D\0814F017.D\	Continuing Calibration Verification	KQ1911652-02	8/14/2019	21:51:00	
J:\GC26\DATA\081419D\0814F018.D\	ZZZZZZZ	ZZZZZZZ	8/14/2019	22:09:00	

Client: Pacific Groundwater Group (PGG) **Service Request:**K1906902
Project: DTNA Swan Island Lagoon Sediment/2006-00115

Analysis Run Log
Butyltins

Analysis Method: ALS SOP **Analysis Lot:**648184
Instrument ID:K-GC-26

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\GC26\DATA\082119\0821F003.D\	Continuing Calibration Verification	KQ1911810-01	8/21/2019	09:45:00	
J:\GC26\DATA\082119\0821F004.D\	ZZZZZZZ	ZZZZZZZ	8/21/2019	10:03:00	
J:\GC26\DATA\082119\0821F005.D\	O7-0to27-101918	K1906902-001	8/21/2019	10:23:00	
J:\GC26\DATA\082119\0821F006.D\	515-0to26-101918	K1906902-002	8/21/2019	10:41:00	
J:\GC26\DATA\082119\0821F007.D\	M4-0to26-101918	K1906902-003	8/21/2019	11:00:00	
J:\GC26\DATA\082119\0821F008.D\	A4-0to25-100818	K1906902-007	8/21/2019	11:19:00	
J:\GC26\DATA\082119\0821F009.D\	A4-0to25-100818 MS	KQ1910710-01	8/21/2019	11:37:00	
J:\GC26\DATA\082119\0821F010.D\	A4-0to25-100818 DMS	KQ1910710-02	8/21/2019	11:55:00	
J:\GC26\DATA\082119\0821F011.D\	G6-0to27-101818	K1906902-018	8/21/2019	12:14:00	
J:\GC26\DATA\082119\0821F012.D\	Continuing Calibration Verification	KQ1911810-02	8/21/2019	12:32:00	
J:\GC26\DATA\082119\0821F013.D\	ZZZZZZZ	ZZZZZZZ	8/21/2019	12:51:00	

Client: Pacific Groundwater Group (PGG) **Service Request:**K1906902
Project: DTNA Swan Island Lagoon Sediment/2006-00115

Analysis Run Log
Butyltins

Analysis Method: ALS SOP **Analysis Lot:**648566
Instrument ID:K-GC-26

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\GC26\DATA\082319\0823F012.D\	Continuing Calibration Verification	KQ1911972-01	8/23/2019	12:36:00	
J:\GC26\DATA\082319\0823F013.D\	ZZZZZZZ	ZZZZZZZ	8/23/2019	12:54:00	
J:\GC26\DATA\082319\0823F014.D\	D2-0to19-101018	K1906902-013	8/23/2019	13:12:00	
J:\GC26\DATA\082319\0823F015.D\	F2-0to19-101018	K1906902-014	8/23/2019	13:31:00	
J:\GC26\DATA\082319\0823F016.D\	H2-0to30-101218	K1906902-015	8/23/2019	13:49:00	
J:\GC26\DATA\082319\0823F017.D\	J2A3-0to18-101218	K1906902-016	8/23/2019	14:08:00	
J:\GC26\DATA\082319\0823F018.D\	Q2-0to13-101818	K1906902-017	8/23/2019	14:27:00	
J:\GC26\DATA\082319\0823F019.D\	T6-0to29-101618	K1906902-019	8/23/2019	14:45:00	
J:\GC26\DATA\082319\0823F020.D\	Continuing Calibration Verification	KQ1911972-02	8/23/2019	15:05:00	
J:\GC26\DATA\082319\0823F021.D\	ZZZZZZZ	ZZZZZZZ	8/23/2019	15:24:00	

Prep Summary Report

Client: Pacific Groundwater Group (PGG) **Service Request:**K1906902
Project: DTNA Swan Island Lagoon Sediment/2006-00115
Sample Matrix: Sediment

Butyltins

Prep Method: Method **Extraction Lot:** 341601
Analytical Method: ALS SOP **Extraction Date:** 08/01/19 13:33

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
O7-0to27-101918	K1906902-001	10/19/18	10/22/18	20.401 g	4 mL	38.8
515-0to26-101918	K1906902-002	10/19/18	10/22/18	20.036 g	4 mL	47.2
M4-0to26-101918	K1906902-003	10/19/18	10/22/18	20.475 g	4 mL	44.7
A1-0to30-102018	K1906902-004	10/20/18	10/22/18	20.454 g	4 mL	56.0
Q6-0to27-102018	K1906902-005	10/20/18	10/22/18	20.144 g	4 mL	36.0
A5-0to25-100818	K1906902-006	10/8/18	10/10/18	20.172 g	4 mL	47.3
A4-0to25-100818	K1906902-007	10/8/18	10/10/18	20.157 g	4 mL	48.9
A3-0to31-100818	K1906902-008	10/8/18	10/10/18	20.173 g	4 mL	44.1
A2-0to26-100818	K1906902-009	10/8/18	10/10/18	20.100 g	4 mL	46.1
A6-0to23-100818	K1906902-010	10/8/18	10/10/18	20.114 g	4 mL	44.1
C4-0to27-100918	K1906902-011	10/9/18	10/10/18	20.155 g	4 mL	40.3
A7-0to26-100918	K1906902-012	10/9/18	10/10/18	20.116 g	4 mL	52.6
D2-0to19-101018	K1906902-013	10/10/18	10/15/18	20.113 g	4 mL	71.5
F2-0to19-101018	K1906902-014	10/10/18	10/15/18	20.347 g	4 mL	72.6
H2-0to30-101218	K1906902-015	10/12/18	10/15/18	20.218 g	4 mL	48.9
J2A3-0to18-101218	K1906902-016	10/12/18	10/15/18	20.351 g	4 mL	77.7
Q2-0to13-101818	K1906902-017	10/18/18	10/19/18	20.371 g	4 mL	68.6
G6-0to27-101818	K1906902-018	10/18/18	10/19/18	20.015 g	4 mL	50.7
T6-0to29-101618	K1906902-019	10/16/18	10/19/18	20.081 g	4 mL	38.1
Matrix Spike	KQ1910710-01MS	10/8/18	10/10/18	20.253 g	4 mL	48.9
Duplicate Matrix Spike	KQ1910710-02DMS	10/8/18	10/10/18	20.113 g	4 mL	48.9
Lab Control Sample	KQ1910710-03LCS	NA	NA	20.00 g	4 mL	
Method Blank	KQ1910710-04MB	NA	NA	20.4750 g	4 mL	
Lab Control Sample	KQ1910710-05LCS	NA	NA	20.00 g	4 mL	
Duplicate Lab Control Sample	KQ1910710-06DLCS	NA	NA	20.00 g	4 mL	

Organochlorine Pesticides By GC/MS/MS

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/19/18 15:36
Sample Matrix:	Sediment	**Date Received:**	10/22/18 10:45
Sample Name:	O7-0to27-101918	**Units:**	ug/Kg
Lab Code:	K1906902-001	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	**0.83**	0.13	0.081	1	08/07/19 16:34	8/1/19	*
2,4'-DDE	**0.15**	0.13	0.11	1	08/07/19 16:34	8/1/19	*
2,4'-DDT	ND U	0.13	0.13	1	08/07/19 16:34	8/1/19	*
4,4'-DDD	**3.6**	0.13	0.045	1	08/07/19 16:34	8/1/19	*
4,4'-DDE	**3.1**	0.13	0.090	1	08/07/19 16:34	8/1/19	*
4,4'-DDT	**0.67**	0.13	0.061	1	08/07/19 16:34	8/1/19	*
Aldrin	ND U	0.13	0.11	1	08/07/19 16:34	8/1/19	*
alpha-Chlordane	**0.24 J**	0.26	0.080	1	08/07/19 16:34	8/1/19	*
cis-Nonachlor	ND U	0.13	0.13	1	08/07/19 16:34	8/1/19	*
Dieldrin	ND U	0.26	0.099	1	08/07/19 16:34	8/1/19	*
gamma-BHC (Lindane)	ND U	0.13	0.040	1	08/07/19 16:34	8/1/19	*
gamma-Chlordane	**0.36**	0.26	0.082	1	08/07/19 16:34	8/1/19	*
Heptachlor	ND U	0.13	0.050	1	08/07/19 16:34	8/1/19	*
Oxychlordane	ND U	0.26	0.17	1	08/07/19 16:34	8/1/19	*
trans-Nonachlor	**0.20 J**	0.26	0.075	1	08/07/19 16:34	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	60	5 - 120	08/07/19 16:34	
S_4,4'-DDT-d4	59	13 - 200	08/07/19 16:34	
S_Aldrin-13C12	40	10 - 143	08/07/19 16:34	
S_Endrin-13C12	55	20 - 157	08/07/19 16:34	
S_GBHCD6	27	5 - 124	08/07/19 16:34	
S_Heptachlor-13C10	26	10 - 177	08/07/19 16:34	
S_Heptachlrepox13C10	34	8 - 146	08/07/19 16:34	
S_Oxychlordane-13C10	30	5 - 144	08/07/19 16:34	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/19/18 13:11
Sample Matrix:	Sediment	**Date Received:**	10/22/18 10:45
Sample Name:	515-0to26-101918	**Units:**	ug/Kg
Lab Code:	K1906902-002	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND	U	0.11	0.067	1	08/07/19 16:52	8/1/19	*
2,4'-DDE	**0.10**	**J**	0.11	0.084	1	08/07/19 16:52	8/1/19	*
2,4'-DDT	ND	U	0.11	0.10	1	08/07/19 16:52	8/1/19	*
4,4'-DDD	**1.2**		0.11	0.038	1	08/07/19 16:52	8/1/19	*
4,4'-DDE	**1.9**		0.11	0.075	1	08/07/19 16:52	8/1/19	*
4,4'-DDT	ND	U	0.11	0.050	1	08/07/19 16:52	8/1/19	*
Aldrin	ND	U	0.11	0.084	1	08/07/19 16:52	8/1/19	*
alpha-Chlordane	**0.10**	**J**	0.21	0.066	1	08/07/19 16:52	8/1/19	*
cis-Nonachlor	ND	U	0.11	0.11	1	08/07/19 16:52	8/1/19	*
Dieldrin	ND	U	0.21	0.082	1	08/07/19 16:52	8/1/19	*
gamma-BHC (Lindane)	ND	U	0.11	0.033	1	08/07/19 16:52	8/1/19	*
gamma-Chlordane	**0.17**	**J**	0.21	0.068	1	08/07/19 16:52	8/1/19	*
Heptachlor	ND	U	0.11	0.042	1	08/07/19 16:52	8/1/19	*
Oxychlordane	ND	U	0.21	0.14	1	08/07/19 16:52	8/1/19	*
trans-Nonachlor	**0.091**	**J**	0.21	0.062	1	08/07/19 16:52	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	48	5 - 120	08/07/19 16:52	
S_4,4'-DDT-d4	47	13 - 200	08/07/19 16:52	
S_Aldrin-13C12	30	10 - 143	08/07/19 16:52	
S_Endrin-13C12	54	20 - 157	08/07/19 16:52	
S_GBHCD6	22	5 - 124	08/07/19 16:52	
S_Heptachlor-13C10	22	10 - 177	08/07/19 16:52	
S_Heptachlrepox13C10	28	8 - 146	08/07/19 16:52	
S_Oxychlordane-13C10	22	5 - 144	08/07/19 16:52	

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Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/19/18 13:11
Sample Matrix:	Sediment	**Date Received:**	10/22/18 10:45
Sample Name:	M4-0to26-101918	**Units:**	ug/Kg
Lab Code:	K1906902-003	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.11	0.070	1	08/07/19 17:09	8/1/19	*
2,4'-DDE	**0.17**	0.11	0.088	1	08/07/19 17:09	8/1/19	*
2,4'-DDT	ND U	0.11	0.11	1	08/07/19 17:09	8/1/19	*
4,4'-DDD	**1.9**	0.11	0.039	1	08/07/19 17:09	8/1/19	*
4,4'-DDE	**2.8**	0.11	0.078	1	08/07/19 17:09	8/1/19	*
4,4'-DDT	ND U	0.11	0.053	1	08/07/19 17:09	8/1/19	*
Aldrin	ND U	0.11	0.088	1	08/07/19 17:09	8/1/19	*
alpha-Chlordane	**0.16 J**	0.22	0.069	1	08/07/19 17:09	8/1/19	*
cis-Nonachlor	ND U	0.11	0.11	1	08/07/19 17:09	8/1/19	*
Dieldrin	ND U	0.22	0.086	1	08/07/19 17:09	8/1/19	*
gamma-BHC (Lindane)	**0.052 J**	0.11	0.035	1	08/07/19 17:09	8/1/19	*
gamma-Chlordane	**0.26**	0.22	0.071	1	08/07/19 17:09	8/1/19	*
Heptachlor	ND U	0.11	0.044	1	08/07/19 17:09	8/1/19	*
Oxychlordane	ND U	0.22	0.15	1	08/07/19 17:09	8/1/19	*
trans-Nonachlor	**0.14 J**	0.22	0.065	1	08/07/19 17:09	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	49	5 - 120	08/07/19 17:09	
S_4,4'-DDT-d4	48	13 - 200	08/07/19 17:09	
S_Aldrin-13C12	29	10 - 143	08/07/19 17:09	
S_Endrin-13C12	58	20 - 157	08/07/19 17:09	
S_GBHCD6	19	5 - 124	08/07/19 17:09	
S_Heptachlor-13C10	19	10 - 177	08/07/19 17:09	
S_Heptachlrepox13C10	27	8 - 146	08/07/19 17:09	
S_Oxychlordane-13C10	23	5 - 144	08/07/19 17:09	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/20/18 12:05
Sample Matrix:	Sediment	**Date Received:**	10/22/18 10:45
Sample Name:	A1-0to30-102018	**Units:**	ug/Kg
Lab Code:	K1906902-004	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.089	0.063	1	08/07/19 17:27	8/1/19	*
2,4'-DDE	ND U	0.089	0.079	1	08/07/19 17:27	8/1/19	*
2,4'-DDT	ND U	0.094	0.094	1	08/07/19 17:27	8/1/19	*
4,4'-DDD	ND U	0.089	0.035	1	08/07/19 17:27	8/1/19	*
4,4'-DDE	ND U	0.089	0.070	1	08/07/19 17:27	8/1/19	*
4,4'-DDT	ND U	0.089	0.047	1	08/07/19 17:27	8/1/19	*
Aldrin	ND U	0.089	0.079	1	08/07/19 17:27	8/1/19	*
alpha-Chlordane	ND U	0.18	0.062	1	08/07/19 17:27	8/1/19	*
cis-Nonachlor	ND U	0.097	0.097	1	08/07/19 17:27	8/1/19	*
Dieldrin	ND U	0.20	0.077	1	08/07/19 17:27	8/1/19	*
gamma-BHC (Lindane)	ND U	0.089	0.031	1	08/07/19 17:27	8/1/19	*
gamma-Chlordane	ND U	0.18	0.064	1	08/07/19 17:27	8/1/19	*
Heptachlor	ND U	0.089	0.039	1	08/07/19 17:27	8/1/19	*
Oxychlordane	ND U	0.20	0.13	1	08/07/19 17:27	8/1/19	*
trans-Nonachlor	ND U	0.18	0.058	1	08/07/19 17:27	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	57	5 - 120	08/07/19 17:27	
S_4,4'-DDT-d4	51	13 - 200	08/07/19 17:27	
S_Aldrin-13C12	39	10 - 143	08/07/19 17:27	
S_Endrin-13C12	69	20 - 157	08/07/19 17:27	
S_GBHCD6	26	5 - 124	08/07/19 17:27	
S_Heptachlor-13C10	25	10 - 177	08/07/19 17:27	
S_Heptachlrepox13C10	35	8 - 146	08/07/19 17:27	
S_Oxychlordane-13C10	27	5 - 144	08/07/19 17:27	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/20/18 09:19
Sample Matrix:	Sediment	**Date Received:**	10/22/18 10:45
Sample Name:	Q6-0to27-102018	**Units:**	ug/Kg
Lab Code:	K1906902-005	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	**0.11 J**	0.14	0.086	1	08/07/19 17:45	8/1/19	*
2,4'-DDE	ND U	0.14	0.11	1	08/07/19 17:45	8/1/19	*
2,4'-DDT	ND U	0.14	0.13	1	08/07/19 17:45	8/1/19	*
4,4'-DDD	**0.43**	0.14	0.048	1	08/07/19 17:45	8/1/19	*
4,4'-DDE	**0.67**	0.14	0.096	1	08/07/19 17:45	8/1/19	*
4,4'-DDT	**0.15**	0.14	0.064	1	08/07/19 17:45	8/1/19	*
Aldrin	ND U	0.14	0.11	1	08/07/19 17:45	8/1/19	*
alpha-Chlordane	ND U	0.27	0.085	1	08/07/19 17:45	8/1/19	*
cis-Nonachlor	ND U	0.14	0.14	1	08/07/19 17:45	8/1/19	*
Dieldrin	ND U	0.27	0.11	1	08/07/19 17:45	8/1/19	*
gamma-BHC (Lindane)	ND U	0.14	0.043	1	08/07/19 17:45	8/1/19	*
gamma-Chlordane	ND U	0.27	0.088	1	08/07/19 17:45	8/1/19	*
Heptachlor	ND U	0.14	0.054	1	08/07/19 17:45	8/1/19	*
Oxychlordane	ND U	0.27	0.18	1	08/07/19 17:45	8/1/19	*
trans-Nonachlor	ND U	0.27	0.079	1	08/07/19 17:45	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	56	5 - 120	08/07/19 17:45	
S_4,4'-DDT-d4	51	13 - 200	08/07/19 17:45	
S_Aldrin-13C12	38	10 - 143	08/07/19 17:45	
S_Endrin-13C12	68	20 - 157	08/07/19 17:45	
S_GBHCD6	29	5 - 124	08/07/19 17:45	
S_Heptachlor-13C10	27	10 - 177	08/07/19 17:45	
S_Heptachlrepox13C10	33	8 - 146	08/07/19 17:45	
S_Oxychlordane-13C10	30	5 - 144	08/07/19 17:45	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/08/18 14:38
Sample Matrix:	Sediment	**Date Received:**	10/10/18 08:55
Sample Name:	A5-0to25-100818	**Units:**	ug/Kg
Lab Code:	K1906902-006	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	**0.54**	0.10	0.066	1	08/07/19 18:02	8/1/19	*
2,4'-DDE	**0.088 J**	0.10	0.082	1	08/07/19 18:02	8/1/19	*
2,4'-DDT	ND U	0.10	0.098	1	08/07/19 18:02	8/1/19	*
4,4'-DDD	**2.3**	0.10	0.037	1	08/07/19 18:02	8/1/19	*
4,4'-DDE	**2.5**	0.10	0.073	1	08/07/19 18:02	8/1/19	*
4,4'-DDT	**0.73**	0.10	0.049	1	08/07/19 18:02	8/1/19	*
Aldrin	ND U	0.10	0.082	1	08/07/19 18:02	8/1/19	*
alpha-Chlordane	**0.12 J**	0.21	0.065	1	08/07/19 18:02	8/1/19	*
cis-Nonachlor	ND U	0.11	0.11	1	08/07/19 18:02	8/1/19	*
Dieldrin	ND U	0.21	0.080	1	08/07/19 18:02	8/1/19	*
gamma-BHC (Lindane)	ND U	0.10	0.033	1	08/07/19 18:02	8/1/19	*
gamma-Chlordane	**0.17 J**	0.21	0.067	1	08/07/19 18:02	8/1/19	*
Heptachlor	ND U	0.10	0.041	1	08/07/19 18:02	8/1/19	*
Oxychlordane	ND U	0.21	0.14	1	08/07/19 18:02	8/1/19	*
trans-Nonachlor	**0.13 J**	0.21	0.060	1	08/07/19 18:02	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	51	5 - 120	08/07/19 18:02	
S_4,4'-DDT-d4	53	13 - 200	08/07/19 18:02	
S_Aldrin-13C12	31	10 - 143	08/07/19 18:02	
S_Endrin-13C12	60	20 - 157	08/07/19 18:02	
S_GBHCD6	23	5 - 124	08/07/19 18:02	
S_Heptachlor-13C10	20	10 - 177	08/07/19 18:02	
S_Heptachlrepox13C10	29	8 - 146	08/07/19 18:02	
S_Oxychlordane-13C10	23	5 - 144	08/07/19 18:02	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/08/18 13:26
Sample Matrix:	Sediment	**Date Received:**	10/10/18 08:55
Sample Name:	A4-0to25-100818	**Units:**	ug/Kg
Lab Code:	K1906902-007	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND	U	0.099	0.063	1	08/07/19 18:20	8/1/19	*
2,4'-DDE	**0.14**		0.099	0.079	1	08/07/19 18:20	8/1/19	*
2,4'-DDT	ND	U	0.099	0.094	1	08/07/19 18:20	8/1/19	*
4,4'-DDD	**1.7**		0.099	0.035	1	08/07/19 18:20	8/1/19	*
4,4'-DDE	**2.8**		0.099	0.070	1	08/07/19 18:20	8/1/19	*
4,4'-DDT	ND	U	0.099	0.047	1	08/07/19 18:20	8/1/19	*
Aldrin	ND	U	0.099	0.079	1	08/07/19 18:20	8/1/19	*
alpha-Chlordane	**0.12**	**J**	0.20	0.062	1	08/07/19 18:20	8/1/19	*
cis-Nonachlor	ND	U	0.099	0.097	1	08/07/19 18:20	8/1/19	*
Dieldrin	ND	U	0.20	0.077	1	08/07/19 18:20	8/1/19	*
gamma-BHC (Lindane)	ND	U	0.099	0.031	1	08/07/19 18:20	8/1/19	*
gamma-Chlordane	**0.21**		0.20	0.064	1	08/07/19 18:20	8/1/19	*
Heptachlor	ND	U	0.099	0.039	1	08/07/19 18:20	8/1/19	*
Oxychlordane	ND	U	0.20	0.13	1	08/07/19 18:20	8/1/19	*
trans-Nonachlor	**0.10**	**J**	0.20	0.058	1	08/07/19 18:20	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	71	5 - 120	08/07/19 18:20	
S_4,4'-DDT-d4	79	13 - 200	08/07/19 18:20	
S_Aldrin-13C12	39	10 - 143	08/07/19 18:20	
S_Endrin-13C12	84	20 - 157	08/07/19 18:20	
S_GBHCD6	28	5 - 124	08/07/19 18:20	
S_Heptachlor-13C10	30	10 - 177	08/07/19 18:20	
S_Heptachlrepox13C10	39	8 - 146	08/07/19 18:20	
S_Oxychlordane-13C10	31	5 - 144	08/07/19 18:20	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/08/18 11:14
Sample Matrix:	Sediment	**Date Received:**	10/10/18 08:55
Sample Name:	A3-0to31-100818	**Units:**	ug/Kg
Lab Code:	K1906902-008	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.11	0.070	1	08/07/19 18:37	8/1/19	*
2,4'-DDE	ND U	0.11	0.088	1	08/07/19 18:37	8/1/19	*
2,4'-DDT	ND U	0.11	0.11	1	08/07/19 18:37	8/1/19	*
4,4'-DDD	**1.3**	0.11	0.039	1	08/07/19 18:37	8/1/19	*
4,4'-DDE	**1.8**	0.11	0.078	1	08/07/19 18:37	8/1/19	*
4,4'-DDT	ND U	0.11	0.053	1	08/07/19 18:37	8/1/19	*
Aldrin	ND U	0.11	0.088	1	08/07/19 18:37	8/1/19	*
alpha-Chlordane	**0.11 J**	0.22	0.069	1	08/07/19 18:37	8/1/19	*
cis-Nonachlor	ND U	0.11	0.11	1	08/07/19 18:37	8/1/19	*
Dieldrin	ND U	0.22	0.086	1	08/07/19 18:37	8/1/19	*
gamma-BHC (Lindane)	ND U	0.11	0.035	1	08/07/19 18:37	8/1/19	*
gamma-Chlordane	**0.13 J**	0.22	0.071	1	08/07/19 18:37	8/1/19	*
Heptachlor	ND U	0.11	0.044	1	08/07/19 18:37	8/1/19	*
Oxychlordane	ND U	0.22	0.15	1	08/07/19 18:37	8/1/19	*
trans-Nonachlor	**0.11 J**	0.22	0.065	1	08/07/19 18:37	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	65	5 - 120	08/07/19 18:37	
S_4,4'-DDT-d4	61	13 - 200	08/07/19 18:37	
S_Aldrin-13C12	31	10 - 143	08/07/19 18:37	
S_Endrin-13C12	67	20 - 157	08/07/19 18:37	
S_GBHCD6	24	5 - 124	08/07/19 18:37	
S_Heptachlor-13C10	25	10 - 177	08/07/19 18:37	
S_Heptachlrepox13C10	32	8 - 146	08/07/19 18:37	
S_Oxychlordane-13C10	28	5 - 144	08/07/19 18:37	

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Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/08/18 14:04
Sample Matrix:	Sediment	**Date Received:**	10/10/18 08:55
Sample Name:	A2-0to26-100818	**Units:**	ug/Kg
Lab Code:	K1906902-009	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.11	0.067	1	08/07/19 18:55	8/1/19	*
2,4'-DDE	ND U	0.11	0.084	1	08/07/19 18:55	8/1/19	*
2,4'-DDT	ND U	0.11	0.10	1	08/07/19 18:55	8/1/19	*
4,4'-DDD	**1.0**	0.11	0.038	1	08/07/19 18:55	8/1/19	*
4,4'-DDE	**1.3**	0.11	0.075	1	08/07/19 18:55	8/1/19	*
4,4'-DDT	ND U	0.11	0.050	1	08/07/19 18:55	8/1/19	*
Aldrin	ND U	0.11	0.084	1	08/07/19 18:55	8/1/19	*
alpha-Chlordane	**0.12 J**	0.21	0.066	1	08/07/19 18:55	8/1/19	*
cis-Nonachlor	ND U	0.11	0.11	1	08/07/19 18:55	8/1/19	*
Dieldrin	ND U	0.21	0.082	1	08/07/19 18:55	8/1/19	*
gamma-BHC (Lindane)	ND U	0.11	0.033	1	08/07/19 18:55	8/1/19	*
gamma-Chlordane	**0.12 J**	0.21	0.068	1	08/07/19 18:55	8/1/19	*
Heptachlor	ND U	0.11	0.042	1	08/07/19 18:55	8/1/19	*
Oxychlordane	ND U	0.21	0.14	1	08/07/19 18:55	8/1/19	*
trans-Nonachlor	**0.14 J**	0.21	0.062	1	08/07/19 18:55	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	54	5 - 120	08/07/19 18:55	
S_4,4'-DDT-d4	49	13 - 200	08/07/19 18:55	
S_Aldrin-13C12	29	10 - 143	08/07/19 18:55	
S_Endrin-13C12	65	20 - 157	08/07/19 18:55	
S_GBHCD6	21	5 - 124	08/07/19 18:55	
S_Heptachlor-13C10	20	10 - 177	08/07/19 18:55	
S_Heptachlrepox13C10	28	8 - 146	08/07/19 18:55	
S_Oxychlordane-13C10	23	5 - 144	08/07/19 18:55	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/08/18 16:08
Sample Matrix:	Sediment	**Date Received:**	10/10/18 08:55
Sample Name:	A6-0to23-100818	**Units:**	ug/Kg
Lab Code:	K1906902-010	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	**0.69**	0.11	0.071	1	08/07/19 19:13	8/1/19	*
2,4'-DDE	ND U	0.11	0.089	1	08/07/19 19:13	8/1/19	*
2,4'-DDT	ND U	0.11	0.11	1	08/07/19 19:13	8/1/19	*
4,4'-DDD	**3.0**	0.11	0.040	1	08/07/19 19:13	8/1/19	*
4,4'-DDE	**0.97**	0.11	0.079	1	08/07/19 19:13	8/1/19	*
4,4'-DDT	ND U	0.11	0.053	1	08/07/19 19:13	8/1/19	*
Aldrin	ND U	0.11	0.089	1	08/07/19 19:13	8/1/19	*
alpha-Chlordane	ND U	0.22	0.070	1	08/07/19 19:13	8/1/19	*
cis-Nonachlor	ND U	0.11	0.11	1	08/07/19 19:13	8/1/19	*
Dieldrin	ND U	0.22	0.087	1	08/07/19 19:13	8/1/19	*
gamma-BHC (Lindane)	ND U	0.11	0.035	1	08/07/19 19:13	8/1/19	*
gamma-Chlordane	**0.088 J**	0.22	0.072	1	08/07/19 19:13	8/1/19	*
Heptachlor	ND U	0.11	0.044	1	08/07/19 19:13	8/1/19	*
Oxychlordane	ND U	0.22	0.15	1	08/07/19 19:13	8/1/19	*
trans-Nonachlor	**0.068 J**	0.22	0.066	1	08/07/19 19:13	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	58	5 - 120	08/07/19 19:13	
S_4,4'-DDT-d4	50	13 - 200	08/07/19 19:13	
S_Aldrin-13C12	28	10 - 143	08/07/19 19:13	
S_Endrin-13C12	65	20 - 157	08/07/19 19:13	
S_GBHCD6	22	5 - 124	08/07/19 19:13	
S_Heptachlor-13C10	24	10 - 177	08/07/19 19:13	
S_Heptachlrepox13C10	29	8 - 146	08/07/19 19:13	
S_Oxychlordane-13C10	24	5 - 144	08/07/19 19:13	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/09/18 08:28
Sample Matrix:	Sediment	**Date Received:**	10/10/18 08:55
Sample Name:	C4-0to27-100918	**Units:**	ug/Kg
Lab Code:	K1906902-011	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	**0.92**	0.12	0.077	1	08/07/19 19:30	8/1/19	*
2,4'-DDE	ND U	0.12	0.097	1	08/07/19 19:30	8/1/19	*
2,4'-DDT	ND U	0.12	0.12	1	08/07/19 19:30	8/1/19	*
4,4'-DDD	**2.3**	0.12	0.043	1	08/07/19 19:30	8/1/19	*
4,4'-DDE	**1.6**	0.12	0.086	1	08/07/19 19:30	8/1/19	*
4,4'-DDT	ND U	0.12	0.058	1	08/07/19 19:30	8/1/19	*
Aldrin	ND U	0.12	0.097	1	08/07/19 19:30	8/1/19	*
alpha-Chlordane	**0.094 J**	0.24	0.076	1	08/07/19 19:30	8/1/19	*
cis-Nonachlor	ND U	0.12	0.12	1	08/07/19 19:30	8/1/19	*
Dieldrin	ND U	0.24	0.094	1	08/07/19 19:30	8/1/19	*
gamma-BHC (Lindane)	ND U	0.12	0.038	1	08/07/19 19:30	8/1/19	*
gamma-Chlordane	**0.13 J**	0.24	0.078	1	08/07/19 19:30	8/1/19	*
Heptachlor	ND U	0.12	0.048	1	08/07/19 19:30	8/1/19	*
Oxychlordane	ND U	0.24	0.16	1	08/07/19 19:30	8/1/19	*
trans-Nonachlor	**0.094 J**	0.24	0.071	1	08/07/19 19:30	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	73	5 - 120	08/07/19 19:30	
S_4,4'-DDT-d4	64	13 - 200	08/07/19 19:30	
S_Aldrin-13C12	35	10 - 143	08/07/19 19:30	
S_Endrin-13C12	79	20 - 157	08/07/19 19:30	
S_GBHCD6	27	5 - 124	08/07/19 19:30	
S_Heptachlor-13C10	27	10 - 177	08/07/19 19:30	
S_Heptachlrepox13C10	38	8 - 146	08/07/19 19:30	
S_Oxychlordane-13C10	30	5 - 144	08/07/19 19:30	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/09/18 13:23
Sample Matrix:	Sediment	**Date Received:**	10/10/18 08:55
Sample Name:	A7-0to26-100918	**Units:**	ug/Kg
Lab Code:	K1906902-012	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	**0.47**	0.093	0.063	1	08/07/19 19:48	8/1/19	*
2,4'-DDE	ND U	0.093	0.079	1	08/07/19 19:48	8/1/19	*
2,4'-DDT	ND U	0.094	0.094	1	08/07/19 19:48	8/1/19	*
4,4'-DDD	**2.5**	0.093	0.035	1	08/07/19 19:48	8/1/19	*
4,4'-DDE	**1.8**	0.093	0.070	1	08/07/19 19:48	8/1/19	*
4,4'-DDT	ND U	0.093	0.047	1	08/07/19 19:48	8/1/19	*
Aldrin	ND U	0.093	0.079	1	08/07/19 19:48	8/1/19	*
alpha-Chlordane	**0.14 J**	0.19	0.062	1	08/07/19 19:48	8/1/19	*
cis-Nonachlor	ND U	0.097	0.097	1	08/07/19 19:48	8/1/19	*
Dieldrin	ND U	0.20	0.077	1	08/07/19 19:48	8/1/19	*
gamma-BHC (Lindane)	ND U	0.093	0.031	1	08/07/19 19:48	8/1/19	*
gamma-Chlordane	**0.18 J**	0.19	0.064	1	08/07/19 19:48	8/1/19	*
Heptachlor	ND U	0.093	0.039	1	08/07/19 19:48	8/1/19	*
Oxychlordane	ND U	0.20	0.13	1	08/07/19 19:48	8/1/19	*
trans-Nonachlor	**0.16 J**	0.19	0.058	1	08/07/19 19:48	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	68	5 - 120	08/07/19 19:48	
S_4,4'-DDT-d4	70	13 - 200	08/07/19 19:48	
S_Aldrin-13C12	33	10 - 143	08/07/19 19:48	
S_Endrin-13C12	74	20 - 157	08/07/19 19:48	
S_GBHCD6	25	5 - 124	08/07/19 19:48	
S_Heptachlor-13C10	26	10 - 177	08/07/19 19:48	
S_Heptachlrepox13C10	34	8 - 146	08/07/19 19:48	
S_Oxychlordane-13C10	29	5 - 144	08/07/19 19:48	

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Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/10/18 15:21
Sample Matrix:	Sediment	**Date Received:**	10/15/18 12:15
Sample Name:	D2-0to19-101018	**Units:**	ug/Kg
Lab Code:	K1906902-013	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	**0.61**	0.069	0.063	1	08/07/19 20:05	8/1/19	*
2,4'-DDE	ND U	0.079	0.079	1	08/07/19 20:05	8/1/19	*
2,4'-DDT	ND U	0.094	0.094	1	08/07/19 20:05	8/1/19	*
4,4'-DDD	**2.1**	0.069	0.035	1	08/07/19 20:05	8/1/19	*
4,4'-DDE	**0.44**	0.070	0.070	1	08/07/19 20:05	8/1/19	*
4,4'-DDT	ND U	0.069	0.047	1	08/07/19 20:05	8/1/19	*
Aldrin	ND U	0.079	0.079	1	08/07/19 20:05	8/1/19	*
alpha-Chlordane	**0.17**	0.14	0.062	1	08/07/19 20:05	8/1/19	*
cis-Nonachlor	ND U	0.097	0.097	1	08/07/19 20:05	8/1/19	*
Dieldrin	ND U	0.20	0.077	1	08/07/19 20:05	8/1/19	*
gamma-BHC (Lindane)	ND U	0.069	0.031	1	08/07/19 20:05	8/1/19	*
gamma-Chlordane	**0.25**	0.14	0.064	1	08/07/19 20:05	8/1/19	*
Heptachlor	ND U	0.069	0.039	1	08/07/19 20:05	8/1/19	*
Oxychlordane	ND U	0.20	0.13	1	08/07/19 20:05	8/1/19	*
trans-Nonachlor	**0.12 J**	0.14	0.058	1	08/07/19 20:05	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	70	5 - 120	08/07/19 20:05	
S_4,4'-DDT-d4	64	13 - 200	08/07/19 20:05	
S_Aldrin-13C12	35	10 - 143	08/07/19 20:05	
S_Endrin-13C12	79	20 - 157	08/07/19 20:05	
S_GBHCD6	26	5 - 124	08/07/19 20:05	
S_Heptachlor-13C10	27	10 - 177	08/07/19 20:05	
S_Heptachlrepox13C10	36	8 - 146	08/07/19 20:05	
S_Oxychlordane-13C10	29	5 - 144	08/07/19 20:05	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/10/18 16:36
Sample Matrix:	Sediment	**Date Received:**	10/15/18 12:15
Sample Name:	F2-0to19-101018	**Units:**	ug/Kg
Lab Code:	K1906902-014	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	**0.84**	0.069	0.063	1	08/07/19 20:23	8/1/19	*
2,4'-DDE	**0.12**	0.079	0.079	1	08/07/19 20:23	8/1/19	*
2,4'-DDT	ND U	0.094	0.094	1	08/07/19 20:23	8/1/19	*
4,4'-DDD	**3.4**	0.34	0.18	5	08/13/19 20:08	8/1/19	*
4,4'-DDE	**1.1**	0.070	0.070	1	08/07/19 20:23	8/1/19	*
4,4'-DDT	ND U	0.069	0.047	1	08/07/19 20:23	8/1/19	*
Aldrin	ND U	0.079	0.079	1	08/07/19 20:23	8/1/19	*
alpha-Chlordane	**0.083 J**	0.14	0.062	1	08/07/19 20:23	8/1/19	*
cis-Nonachlor	ND U	0.097	0.097	1	08/07/19 20:23	8/1/19	*
Dieldrin	ND U	0.20	0.077	1	08/07/19 20:23	8/1/19	*
gamma-BHC (Lindane)	ND U	0.069	0.031	1	08/07/19 20:23	8/1/19	*
gamma-Chlordane	**0.12 J**	0.14	0.064	1	08/07/19 20:23	8/1/19	*
Heptachlor	ND U	0.069	0.039	1	08/07/19 20:23	8/1/19	*
Oxychlordane	ND U	0.20	0.13	1	08/07/19 20:23	8/1/19	*
trans-Nonachlor	ND U	0.14	0.058	1	08/07/19 20:23	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	77	5 - 120	08/07/19 20:23	
S_4,4'-DDT-d4	68	13 - 200	08/07/19 20:23	
S_Aldrin-13C12	33	10 - 143	08/07/19 20:23	
S_Endrin-13C12	79	20 - 157	08/07/19 20:23	
S_GBHCD6	27	5 - 124	08/07/19 20:23	
S_Heptachlor-13C10	26	10 - 177	08/07/19 20:23	
S_Heptachlrepox13C10	35	8 - 146	08/07/19 20:23	
S_Oxychlordane-13C10	27	5 - 144	08/07/19 20:23	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/12/18 10:28
Sample Matrix:	Sediment	**Date Received:**	10/15/18 12:15
Sample Name:	H2-0to30-101218	**Units:**	ug/Kg
Lab Code:	K1906902-015	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.10	0.063	1	08/07/19 20:41	8/1/19	*
2,4'-DDE	ND U	0.10	0.079	1	08/07/19 20:41	8/1/19	*
2,4'-DDT	ND U	0.10	0.094	1	08/07/19 20:41	8/1/19	*
4,4'-DDD	**1.3**	0.10	0.035	1	08/07/19 20:41	8/1/19	*
4,4'-DDE	**1.1**	0.10	0.070	1	08/07/19 20:41	8/1/19	*
4,4'-DDT	ND U	0.10	0.047	1	08/07/19 20:41	8/1/19	*
Aldrin	ND U	0.10	0.079	1	08/07/19 20:41	8/1/19	*
alpha-Chlordane	**0.11 J**	0.20	0.062	1	08/07/19 20:41	8/1/19	*
cis-Nonachlor	ND U	0.10	0.097	1	08/07/19 20:41	8/1/19	*
Dieldrin	ND U	0.20	0.077	1	08/07/19 20:41	8/1/19	*
gamma-BHC (Lindane)	ND U	0.10	0.031	1	08/07/19 20:41	8/1/19	*
gamma-Chlordane	**0.17 J**	0.20	0.064	1	08/07/19 20:41	8/1/19	*
Heptachlor	ND U	0.10	0.039	1	08/07/19 20:41	8/1/19	*
Oxychlordane	ND U	0.20	0.13	1	08/07/19 20:41	8/1/19	*
trans-Nonachlor	**0.10 J**	0.20	0.058	1	08/07/19 20:41	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	69	5 - 120	08/07/19 20:41	
S_4,4'-DDT-d4	64	13 - 200	08/07/19 20:41	
S_Aldrin-13C12	34	10 - 143	08/07/19 20:41	
S_Endrin-13C12	77	20 - 157	08/07/19 20:41	
S_GBHCD6	23	5 - 124	08/07/19 20:41	
S_Heptachlor-13C10	27	10 - 177	08/07/19 20:41	
S_Heptachlrepox13C10	34	8 - 146	08/07/19 20:41	
S_Oxychlordane-13C10	29	5 - 144	08/07/19 20:41	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/12/18 12:57
Sample Matrix:	Sediment	**Date Received:**	10/15/18 12:15
Sample Name:	J2A3-0to18-101218	**Units:**	ug/Kg
Lab Code:	K1906902-016	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.064	0.063	1	08/07/19 20:58	8/1/19	*
2,4'-DDE	ND U	0.079	0.079	1	08/07/19 20:58	8/1/19	*
2,4'-DDT	ND U	0.094	0.094	1	08/07/19 20:58	8/1/19	*
4,4'-DDD	**0.98**	0.064	0.035	1	08/07/19 20:58	8/1/19	*
4,4'-DDE	**0.38**	0.070	0.070	1	08/07/19 20:58	8/1/19	*
4,4'-DDT	ND U	0.064	0.047	1	08/07/19 20:58	8/1/19	*
Aldrin	ND U	0.079	0.079	1	08/07/19 20:58	8/1/19	*
alpha-Chlordane	**0.22**	0.13	0.062	1	08/07/19 20:58	8/1/19	*
cis-Nonachlor	ND U	0.097	0.097	1	08/07/19 20:58	8/1/19	*
Dieldrin	ND U	0.20	0.077	1	08/07/19 20:58	8/1/19	*
gamma-BHC (Lindane)	ND U	0.064	0.031	1	08/07/19 20:58	8/1/19	*
gamma-Chlordane	**0.30**	0.13	0.064	1	08/07/19 20:58	8/1/19	*
Heptachlor	ND U	0.064	0.039	1	08/07/19 20:58	8/1/19	*
Oxychlordane	ND U	0.20	0.13	1	08/07/19 20:58	8/1/19	*
trans-Nonachlor	**0.20**	0.13	0.058	1	08/07/19 20:58	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	66	5 - 120	08/07/19 20:58	
S_4,4'-DDT-d4	68	13 - 200	08/07/19 20:58	
S_Aldrin-13C12	33	10 - 143	08/07/19 20:58	
S_Endrin-13C12	89	20 - 157	08/07/19 20:58	
S_GBHCD6	24	5 - 124	08/07/19 20:58	
S_Heptachlor-13C10	25	10 - 177	08/07/19 20:58	
S_Heptachlrepox13C10	36	8 - 146	08/07/19 20:58	
S_Oxychlordane-13C10	27	5 - 144	08/07/19 20:58	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/18/18 09:39
Sample Matrix:	Sediment	**Date Received:**	10/19/18 12:30
Sample Name:	Q2-0to13-101818	**Units:**	ug/Kg
Lab Code:	K1906902-017	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.071	0.063	1	08/07/19 21:16	8/1/19	*
2,4'-DDE	ND U	0.079	0.079	1	08/07/19 21:16	8/1/19	*
2,4'-DDT	**0.53**	0.094	0.094	1	08/07/19 21:16	8/1/19	*
4,4'-DDD	**0.61**	0.071	0.035	1	08/07/19 21:16	8/1/19	*
4,4'-DDE	**0.22**	0.071	0.070	1	08/07/19 21:16	8/1/19	*
4,4'-DDT	**3.0**	0.071	0.047	1	08/07/19 21:16	8/1/19	*
Aldrin	ND U	0.079	0.079	1	08/07/19 21:16	8/1/19	*
alpha-Chlordane	ND U	0.14	0.062	1	08/07/19 21:16	8/1/19	*
cis-Nonachlor	ND U	0.097	0.097	1	08/07/19 21:16	8/1/19	*
Dieldrin	ND U	0.20	0.077	1	08/07/19 21:16	8/1/19	*
gamma-BHC (Lindane)	ND U	0.071	0.031	1	08/07/19 21:16	8/1/19	*
gamma-Chlordane	ND U	0.14	0.064	1	08/07/19 21:16	8/1/19	*
Heptachlor	ND U	0.071	0.039	1	08/07/19 21:16	8/1/19	*
Oxychlordane	ND U	0.20	0.13	1	08/07/19 21:16	8/1/19	*
trans-Nonachlor	ND U	0.14	0.058	1	08/07/19 21:16	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	75	5 - 120	08/07/19 21:16	
S_4,4'-DDT-d4	69	13 - 200	08/07/19 21:16	
S_Aldrin-13C12	36	10 - 143	08/07/19 21:16	
S_Endrin-13C12	84	20 - 157	08/07/19 21:16	
S_GBHCD6	26	5 - 124	08/07/19 21:16	
S_Heptachlor-13C10	28	10 - 177	08/07/19 21:16	
S_Heptachlrepox13C10	38	8 - 146	08/07/19 21:16	
S_Oxychlordane-13C10	31	5 - 144	08/07/19 21:16	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/18/18 14:12
Sample Matrix:	Sediment	**Date Received:**	10/19/18 12:30
Sample Name:	G6-0to27-101818	**Units:**	ug/Kg
Lab Code:	K1906902-018	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.096	0.063	1	08/07/19 21:33	8/1/19	*
2,4'-DDE	ND U	0.096	0.079	1	08/07/19 21:33	8/1/19	*
2,4'-DDT	ND U	0.096	0.094	1	08/07/19 21:33	8/1/19	*
4,4'-DDD	**1.1**	0.096	0.035	1	08/07/19 21:33	8/1/19	*
4,4'-DDE	**1.5**	0.096	0.070	1	08/07/19 21:33	8/1/19	*
4,4'-DDT	ND U	0.096	0.047	1	08/07/19 21:33	8/1/19	*
Aldrin	ND U	0.096	0.079	1	08/07/19 21:33	8/1/19	*
alpha-Chlordane	**0.11 J**	0.19	0.062	1	08/07/19 21:33	8/1/19	*
cis-Nonachlor	ND U	0.097	0.097	1	08/07/19 21:33	8/1/19	*
Dieldrin	ND U	0.20	0.077	1	08/07/19 21:33	8/1/19	*
gamma-BHC (Lindane)	ND U	0.096	0.031	1	08/07/19 21:33	8/1/19	*
gamma-Chlordane	**0.16 J**	0.19	0.064	1	08/07/19 21:33	8/1/19	*
Heptachlor	ND U	0.096	0.039	1	08/07/19 21:33	8/1/19	*
Oxychlordane	ND U	0.20	0.13	1	08/07/19 21:33	8/1/19	*
trans-Nonachlor	**0.13 J**	0.19	0.058	1	08/07/19 21:33	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	74	5 - 120	08/07/19 21:33	
S_4,4'-DDT-d4	73	13 - 200	08/07/19 21:33	
S_Aldrin-13C12	33	10 - 143	08/07/19 21:33	
S_Endrin-13C12	80	20 - 157	08/07/19 21:33	
S_GBHCD6	27	5 - 124	08/07/19 21:33	
S_Heptachlor-13C10	28	10 - 177	08/07/19 21:33	
S_Heptachlrepox13C10	37	8 - 146	08/07/19 21:33	
S_Oxychlordane-13C10	28	5 - 144	08/07/19 21:33	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/16/18 14:38
Sample Matrix:	Sediment	**Date Received:**	10/19/18 12:30
Sample Name:	T6-0to29-101618	**Units:**	ug/Kg
Lab Code:	K1906902-019	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.13	0.082	1	08/07/19 21:51	8/1/19	*
2,4'-DDE	ND U	0.13	0.11	1	08/07/19 21:51	8/1/19	*
2,4'-DDT	ND U	0.13	0.13	1	08/07/19 21:51	8/1/19	*
4,4'-DDD	**0.60**	0.13	0.046	1	08/07/19 21:51	8/1/19	*
4,4'-DDE	**0.99**	0.13	0.091	1	08/07/19 21:51	8/1/19	*
4,4'-DDT	ND U	0.13	0.061	1	08/07/19 21:51	8/1/19	*
Aldrin	ND U	0.13	0.11	1	08/07/19 21:51	8/1/19	*
alpha-Chlordane	ND U	0.26	0.081	1	08/07/19 21:51	8/1/19	*
cis-Nonachlor	ND U	0.13	0.13	1	08/07/19 21:51	8/1/19	*
Dieldrin	ND U	0.26	0.10	1	08/07/19 21:51	8/1/19	*
gamma-BHC (Lindane)	ND U	0.13	0.041	1	08/07/19 21:51	8/1/19	*
gamma-Chlordane	ND U	0.26	0.083	1	08/07/19 21:51	8/1/19	*
Heptachlor	ND U	0.13	0.051	1	08/07/19 21:51	8/1/19	*
Oxychlordane	ND U	0.26	0.17	1	08/07/19 21:51	8/1/19	*
trans-Nonachlor	ND U	0.26	0.076	1	08/07/19 21:51	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	76	5 - 120	08/07/19 21:51	
S_4,4'-DDT-d4	70	13 - 200	08/07/19 21:51	
S_Aldrin-13C12	37	10 - 143	08/07/19 21:51	
S_Endrin-13C12	95	20 - 157	08/07/19 21:51	
S_GBHCD6	28	5 - 124	08/07/19 21:51	
S_Heptachlor-13C10	30	10 - 177	08/07/19 21:51	
S_Heptachlrepox13C10	39	8 - 146	08/07/19 21:51	
S_Oxychlordane-13C10	32	5 - 144	08/07/19 21:51	

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Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	KQ1910714-04	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.063	0.063	1	08/07/19 13:55	8/1/19	
2,4'-DDE	ND U	0.079	0.079	1	08/07/19 13:55	8/1/19	
2,4'-DDT	ND U	0.094	0.094	1	08/07/19 13:55	8/1/19	
4,4'-DDD	ND U	0.049	0.035	1	08/07/19 13:55	8/1/19	
4,4'-DDE	ND U	0.070	0.070	1	08/07/19 13:55	8/1/19	
4,4'-DDT	ND U	0.049	0.047	1	08/07/19 13:55	8/1/19	
Aldrin	ND U	0.079	0.079	1	08/07/19 13:55	8/1/19	
alpha-Chlordane	ND U	0.097	0.062	1	08/07/19 13:55	8/1/19	
cis-Nonachlor	ND U	0.097	0.097	1	08/07/19 13:55	8/1/19	
Dieldrin	ND U	0.20	0.077	1	08/07/19 13:55	8/1/19	
gamma-BHC (Lindane)	ND U	0.049	0.031	1	08/07/19 13:55	8/1/19	
gamma-Chlordane	ND U	0.097	0.064	1	08/07/19 13:55	8/1/19	
Heptachlor	ND U	0.049	0.039	1	08/07/19 13:55	8/1/19	
Oxychlordane	ND U	0.20	0.13	1	08/07/19 13:55	8/1/19	
trans-Nonachlor	ND U	0.097	0.058	1	08/07/19 13:55	8/1/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	77	5 - 120	08/07/19 13:55	
S_4,4'-DDT-d4	79	13 - 200	08/07/19 13:55	
S_Aldrin-13C12	102	10 - 143	08/07/19 13:55	
S_Endrin-13C12	77	20 - 157	08/07/19 13:55	
S_GBHCD6	60	5 - 124	08/07/19 13:55	
S_Heptachlor-13C10	51	10 - 177	08/07/19 13:55	
S_Heptachlrepox13C10	64	8 - 146	08/07/19 13:55	
S_Oxychlordane-13C10	60	5 - 144	08/07/19 13:55	

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment/2006-00115
Sample Matrix: Sediment

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Extraction Method: EPA 3541

Sample Name	Lab Code	S_4,4'DDD-d4 5-120	S_4,4'-DDT-d4 13-200	S_Aldrin-13C12 10-143
O7-0to27-101918	K1906902-001	60	59	40
515-0to26-101918	K1906902-002	48	47	30
M4-0to26-101918	K1906902-003	49	48	29
A1-0to30-102018	K1906902-004	57	51	39
Q6-0to27-102018	K1906902-005	56	51	38
A5-0to25-100818	K1906902-006	51	53	31
A4-0to25-100818	K1906902-007	71	79	39
A3-0to31-100818	K1906902-008	65	61	31
A2-0to26-100818	K1906902-009	54	49	29
A6-0to23-100818	K1906902-010	58	50	28
C4-0to27-100918	K1906902-011	73	64	35
A7-0to26-100918	K1906902-012	68	70	33
D2-0to19-101018	K1906902-013	70	64	35
F2-0to19-101018	K1906902-014	77	68	33
H2-0to30-101218	K1906902-015	69	64	34
J2A3-0to18-101218	K1906902-016	66	68	33
Q2-0to13-101818	K1906902-017	75	69	36
G6-0to27-101818	K1906902-018	74	73	33
T6-0to29-101618	K1906902-019	76	70	37
Method Blank	KQ1910714-04	77	79	102
Lab Control Sample	KQ1910714-03	70	70	89
A1-0to30-102018	KQ1910714-01	68	65	86
A1-0to30-102018	KQ1910714-02	71	67	85

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment/2006-00115
Sample Matrix: Sediment

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Extraction Method: EPA 3541

Sample Name	Lab Code	S_Endrin-13C12 20-157	S_GBHCD6 5-124	S_Heptachlor-13C10 10-177
O7-0to27-101918	K1906902-001	55	27	26
515-0to26-101918	K1906902-002	54	22	22
M4-0to26-101918	K1906902-003	58	19	19
A1-0to30-102018	K1906902-004	69	26	25
Q6-0to27-102018	K1906902-005	68	29	27
A5-0to25-100818	K1906902-006	60	23	20
A4-0to25-100818	K1906902-007	84	28	30
A3-0to31-100818	K1906902-008	67	24	25
A2-0to26-100818	K1906902-009	65	21	20
A6-0to23-100818	K1906902-010	65	22	24
C4-0to27-100918	K1906902-011	79	27	27
A7-0to26-100918	K1906902-012	74	25	26
D2-0to19-101018	K1906902-013	79	26	27
F2-0to19-101018	K1906902-014	79	27	26
H2-0to30-101218	K1906902-015	77	23	27
J2A3-0to18-101218	K1906902-016	89	24	25
Q2-0to13-101818	K1906902-017	84	26	28
G6-0to27-101818	K1906902-018	80	27	28
T6-0to29-101618	K1906902-019	95	28	30
Method Blank	KQ1910714-04	77	60	51
Lab Control Sample	KQ1910714-03	68	50	44
A1-0to30-102018	KQ1910714-01	63	57	48
A1-0to30-102018	KQ1910714-02	72	58	44

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment/2006-00115
Sample Matrix: Sediment

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Extraction Method: EPA 3541

Sample Name	Lab Code	S_Heptachlrepox13C10 8-146	S_Oxychlordane-13C10 5-144
O7-0to27-101918	K1906902-001	34	30
515-0to26-101918	K1906902-002	28	22
M4-0to26-101918	K1906902-003	27	23
A1-0to30-102018	K1906902-004	35	27
Q6-0to27-102018	K1906902-005	33	30
A5-0to25-100818	K1906902-006	29	23
A4-0to25-100818	K1906902-007	39	31
A3-0to31-100818	K1906902-008	32	28
A2-0to26-100818	K1906902-009	28	23
A6-0to23-100818	K1906902-010	29	24
C4-0to27-100918	K1906902-011	38	30
A7-0to26-100918	K1906902-012	34	29
D2-0to19-101018	K1906902-013	36	29
F2-0to19-101018	K1906902-014	35	27
H2-0to30-101218	K1906902-015	34	29
J2A3-0to18-101218	K1906902-016	36	27
Q2-0to13-101818	K1906902-017	38	31
G6-0to27-101818	K1906902-018	37	28
T6-0to29-101618	K1906902-019	39	32
Method Blank	KQ1910714-04	64	60
Lab Control Sample	KQ1910714-03	53	55
A1-0to30-102018	KQ1910714-01	52	50
A1-0to30-102018	KQ1910714-02	53	54

Client: Pacific Groundwater Group (PGG) **Service Request:**K1906902
Project: DTNA Swan Island Lagoon Sediment/2006-00115 **Date Analyzed:**08/07/19 11:45

Internal Standard Area and RT SUMMARY
Organochlorine Pesticides by GC/MS/MS

File ID: J:\MS42\Data\080719\080719F003.D **Lab Code:**KQ1911111-02
Instrument ID: K-MS-42 **Analysis Lot:**646431
Analysis Method: ALS SOP **Signal ID:**1

		Pyrene-d10	
		Area	**RT**
	Result ==>	4,848,727	8.725
	Upper Limit ==>	9,697,454	9.23
	Lower Limit ==>	2,424,364	8.23
Associated Analyses			
Method Blank	KQ1910714-04	4511326.881	8.732
Lab Control Sample	KQ1910714-03	4896911.805	8.732
A1-0to30-102018MS	KQ1910714-01	5455904.461	8.725
A1-0to30-102018DMS	KQ1910714-02	5522337.249	8.732
O7-0to27-101918	K1906902-001	12653232.81*	8.732
515-0to26-101918	K1906902-002	18869826.4*	8.732
M4-0to26-101918	K1906902-003	21694156.22*	8.725
A1-0to30-102018	K1906902-004	14748068.93*	8.725
Q6-0to27-102018	K1906902-005	13289099.99*	8.725
A5-0to25-100818	K1906902-006	20537491.15*	8.732
A4-0to25-100818	K1906902-007	21209630.94*	8.732
A3-0to31-100818	K1906902-008	22558810.89*	8.732
A2-0to26-100818	K1906902-009	21952855.96*	8.732
A6-0to23-100818	K1906902-010	18853228*	8.732
C4-0to27-100918	K1906902-011	22989189.82*	8.732
A7-0to26-100918	K1906902-012	21455239.72*	8.732
D2-0to19-101018	K1906902-013	19921556.11*	8.725
F2-0to19-101018	K1906902-014	24279653.05*	8.732
H2-0to30-101218	K1906902-015	25746479.96*	8.725
J2A3-0to18-101218	K1906902-016	25630289.12*	8.725
Q2-0to13-101818	K1906902-017	24522490.41*	8.725
G6-0to27-101818	K1906902-018	22817786.7*	8.730
T6-0to29-101618	K1906902-019	24264072.1*	8.725

Client: Pacific Groundwater Group (PGG) **Service Request:**K1906902
Project: DTNA Swan Island Lagoon Sediment/2006-00115 **Date Analyzed:**08/13/19 15:44

Internal Standard Area and RT SUMMARY
Organochlorine Pesticides by GC/MS/MS

File ID: J:\MS42\Data\081319\081319F031.D **Lab Code:**KQ1911540-01
Instrument ID: K-MS-42 **Analysis Lot:**647382
Analysis Method: ALS SOP **Signal ID:**1

		Pyrene-d10	
		Area	**RT**
	Result ==>	34,489,445	8.651
	Upper Limit ==>	68,978,890	9.15
	Lower Limit ==>	17,244,723	8.15
Associated Analyses			
F2-0to19-101018	K1906902-014	79861637.02*	8.652

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/20/18
Sample Matrix:	Sediment	**Date Received:**	10/22/18
		Date Analyzed:	08/7/19
		Date Extracted:	08/1/19

Duplicate Matrix Spike Summary
Organochlorine Pesticides by GC/MS/MS

Sample Name:	A1-0to30-102018	**Units:**	ug/Kg
Lab Code:	K1906902-004	**Basis:**	Dry
Analysis Method:	ALS SOP		
Prep Method:	EPA 3541		

		Matrix Spike KQ1910714-01			Duplicate Matrix Spike KQ1910714-02					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
2,4'-DDD	ND U	2.10	1.78	118	2.01	1.75	115	32-169	4	40
2,4'-DDE	ND U	1.82	1.78	102	1.72	1.75	98	43-155	6	40
2,4'-DDT	ND U	1.60	1.78	90	1.46	1.75	84	55-161	9	40
4,4'-DDD	ND U	1.90	1.78	107	1.85	1.75	106	10-190	3	40
4,4'-DDE	ND U	1.82	1.78	103	1.70	1.75	97	35-162	7	40
4,4'-DDT	ND U	1.92	1.78	108	1.97	1.75	113	24-183	2	40
Aldrin	ND U	1.72	1.78	97	1.68	1.75	96	52-151	2	40
alpha-Chlordane	ND U	2.12	1.78	119	2.00	1.75	115	31-156	5	40
cis-Nonachlor	ND U	1.78	1.78	100	1.58	1.75	90	27-144	12	40
Dieldrin	ND U	2.22	1.78	125	1.90	1.75	109	28-150	16	40
gamma-BHC (Lindane)	ND U	1.58	1.78	89	1.60	1.75	92	64-135	2	40
gamma-Chlordane	ND U	2.06	1.78	116	1.77	1.75	101	31-158	15	40
Heptachlor	ND U	1.76	1.78	99	1.88	1.75	107	76-117	7	40
Oxychlordane	ND U	2.24	1.78	126	1.96	1.75	112	53-144	13	40
trans-Nonachlor	ND U	1.85	1.78	104	1.73	1.75	99	35-153	7	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Analyzed:**	08/07/19
Sample Matrix:	Sediment	**Date Extracted:**	08/01/19

Lab Control Sample Summary
Organochlorine Pesticides by GC/MS/MS

Analysis Method:	ALS SOP	**Units:**	ug/Kg
Prep Method:	EPA 3541	**Basis:**	Dry
		Analysis Lot:	646431

Lab Control Sample
KQ1910714-03

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
2,4'-DDD	2.35	2.00	118	73-122
2,4'-DDE	1.84	2.00	92	54-145
2,4'-DDT	1.65	2.00	82	77-118
4,4'-DDD	2.07	2.00	103	74-117
4,4'-DDE	1.91	2.00	96	66-132
4,4'-DDT	2.02	2.00	101	78-116
Aldrin	1.72	2.00	86	74-122
alpha-Chlordane	2.22	2.00	111	74-130
cis-Nonachlor	1.91	2.00	96	69-134
Dieldrin	2.19	2.00	110	62-131
gamma-BHC (Lindane)	1.77	2.00	88	79-116
gamma-Chlordane	2.11	2.00	106	76-128
Heptachlor	1.96	2.00	98	81-114
Oxychlordane	2.11	2.00	106	59-141
trans-Nonachlor	1.97	2.00	99	76-124

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Analyzed:**	08/07/19 13:55
Sample Matrix:	Sediment	**Date Extracted:**	08/01/19

Method Blank Summary
Organochlorine Pesticides by GC/MS/MS

Sample Name:	Method Blank	**Instrument ID:**	K-MS-42
Lab Code:	KQ1910714-04	**File ID:**	J:\MS42\Data\080719\080719F005.D
Analysis Method:	ALS SOP	**Analysis Lot:**	646431,647382
Prep Method:	EPA 3541	**Extraction Lot:**	341604

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ1910714-03	J:\MS42\Data\080719\080719F009.D	08/07/19 15:06
A1-0to30-102018MS	KQ1910714-01	J:\MS42\Data\080719\080719F010.D	08/07/19 15:24
A1-0to30-102018DMS	KQ1910714-02	J:\MS42\Data\080719\080719F011.D	08/07/19 15:41
O7-0to27-101918	K1906902-001	J:\MS42\Data\080719\080719F014.D	08/07/19 16:34
515-0to26-101918	K1906902-002	J:\MS42\Data\080719\080719F015.D	08/07/19 16:52
M4-0to26-101918	K1906902-003	J:\MS42\Data\080719\080719F016.D	08/07/19 17:09
A1-0to30-102018	K1906902-004	J:\MS42\Data\080719\080719F017.D	08/07/19 17:27
Q6-0to27-102018	K1906902-005	J:\MS42\Data\080719\080719F018.D	08/07/19 17:45
A5-0to25-100818	K1906902-006	J:\MS42\Data\080719\080719F019.D	08/07/19 18:02
A4-0to25-100818	K1906902-007	J:\MS42\Data\080719\080719F020.D	08/07/19 18:20
A3-0to31-100818	K1906902-008	J:\MS42\Data\080719\080719F021.D	08/07/19 18:37
A2-0to26-100818	K1906902-009	J:\MS42\Data\080719\080719F022.D	08/07/19 18:55
A6-0to23-100818	K1906902-010	J:\MS42\Data\080719\080719F023.D	08/07/19 19:13
C4-0to27-100918	K1906902-011	J:\MS42\Data\080719\080719F024.D	08/07/19 19:30
A7-0to26-100918	K1906902-012	J:\MS42\Data\080719\080719F025.D	08/07/19 19:48
D2-0to19-101018	K1906902-013	J:\MS42\Data\080719\080719F026.D	08/07/19 20:05
F2-0to19-101018	K1906902-014	J:\MS42\Data\080719\080719F027.D	08/07/19 20:23
H2-0to30-101218	K1906902-015	J:\MS42\Data\080719\080719F028.D	08/07/19 20:41
J2A3-0to18-101218	K1906902-016	J:\MS42\Data\080719\080719F029.D	08/07/19 20:58
Q2-0to13-101818	K1906902-017	J:\MS42\Data\080719\080719F030.D	08/07/19 21:16
G6-0to27-101818	K1906902-018	J:\MS42\Data\080719\080719F031.D	08/07/19 21:33
T6-0to29-101618	K1906902-019	J:\MS42\Data\080719\080719F032.D	08/07/19 21:51
F2-0to19-101018	K1906902-014	J:\MS42\Data\081319\081319F046.D	08/13/19 20:08

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Analyzed:**	08/07/19 15:06
Sample Matrix:	Sediment	**Date Extracted:**	08/01/19

Lab Control Sample Summary
Organochlorine Pesticides by GC/MS/MS

Sample Name:	Lab Control Sample	**Instrument ID:**	K-MS-42
Lab Code:	KQ1910714-03	**File ID:**	J:\MS42\Data\080719\080719F009.D
Analysis Method:	ALS SOP	**Analysis Lot:**	646431,647382
Prep Method:	EPA 3541	**Extraction Lot:**	341604

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1910714-04	J:\MS42\Data\080719\080719F005.D	08/07/19 13:55
A1-0to30-102018MS	KQ1910714-01	J:\MS42\Data\080719\080719F010.D	08/07/19 15:24
A1-0to30-102018DMS	KQ1910714-02	J:\MS42\Data\080719\080719F011.D	08/07/19 15:41
O7-0to27-101918	K1906902-001	J:\MS42\Data\080719\080719F014.D	08/07/19 16:34
515-0to26-101918	K1906902-002	J:\MS42\Data\080719\080719F015.D	08/07/19 16:52
M4-0to26-101918	K1906902-003	J:\MS42\Data\080719\080719F016.D	08/07/19 17:09
A1-0to30-102018	K1906902-004	J:\MS42\Data\080719\080719F017.D	08/07/19 17:27
Q6-0to27-102018	K1906902-005	J:\MS42\Data\080719\080719F018.D	08/07/19 17:45
A5-0to25-100818	K1906902-006	J:\MS42\Data\080719\080719F019.D	08/07/19 18:02
A4-0to25-100818	K1906902-007	J:\MS42\Data\080719\080719F020.D	08/07/19 18:20
A3-0to31-100818	K1906902-008	J:\MS42\Data\080719\080719F021.D	08/07/19 18:37
A2-0to26-100818	K1906902-009	J:\MS42\Data\080719\080719F022.D	08/07/19 18:55
A6-0to23-100818	K1906902-010	J:\MS42\Data\080719\080719F023.D	08/07/19 19:13
C4-0to27-100918	K1906902-011	J:\MS42\Data\080719\080719F024.D	08/07/19 19:30
A7-0to26-100918	K1906902-012	J:\MS42\Data\080719\080719F025.D	08/07/19 19:48
D2-0to19-101018	K1906902-013	J:\MS42\Data\080719\080719F026.D	08/07/19 20:05
F2-0to19-101018	K1906902-014	J:\MS42\Data\080719\080719F027.D	08/07/19 20:23
H2-0to30-101218	K1906902-015	J:\MS42\Data\080719\080719F028.D	08/07/19 20:41
J2A3-0to18-101218	K1906902-016	J:\MS42\Data\080719\080719F029.D	08/07/19 20:58
Q2-0to13-101818	K1906902-017	J:\MS42\Data\080719\080719F030.D	08/07/19 21:16
G6-0to27-101818	K1906902-018	J:\MS42\Data\080719\080719F031.D	08/07/19 21:33
T6-0to29-101618	K1906902-019	J:\MS42\Data\080719\080719F032.D	08/07/19 21:51
F2-0to19-101018	K1906902-014	J:\MS42\Data\081319\081319F046.D	08/13/19 20:08

Client: Pacific Groundwater Group (PGG) **Service Request:**K1906902
Project: DTNA Swan Island Lagoon Sediment/2006-00115 **Date Analyzed:**08/07/19 11:45

Tune Summary
Organochlorine Pesticides by GC/MS/MS

File ID: J:\MS42\Data\080719\080719F003.D **Analytical Method:** ALS SOP
Instrument ID: K-MS-42 **Analysis Lot:** 646431

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1911111-02	J:\MS42\Data\080719\080719F003.D	08/07/19 11:45	
Method Blank	KQ1910714-04	J:\MS42\Data\080719\080719F005.D	08/07/19 13:55	
Lab Control Sample	KQ1910714-03	J:\MS42\Data\080719\080719F009.D	08/07/19 15:06	
A1-0to30-102018	KQ1910714-01	J:\MS42\Data\080719\080719F010.D	08/07/19 15:24	
A1-0to30-102018	KQ1910714-02	J:\MS42\Data\080719\080719F011.D	08/07/19 15:41	
O7-0to27-101918	K1906902-001	J:\MS42\Data\080719\080719F014.D	08/07/19 16:34	
515-0to26-101918	K1906902-002	J:\MS42\Data\080719\080719F015.D	08/07/19 16:52	
M4-0to26-101918	K1906902-003	J:\MS42\Data\080719\080719F016.D	08/07/19 17:09	
A1-0to30-102018	K1906902-004	J:\MS42\Data\080719\080719F017.D	08/07/19 17:27	
Q6-0to27-102018	K1906902-005	J:\MS42\Data\080719\080719F018.D	08/07/19 17:45	
A5-0to25-100818	K1906902-006	J:\MS42\Data\080719\080719F019.D	08/07/19 18:02	
A4-0to25-100818	K1906902-007	J:\MS42\Data\080719\080719F020.D	08/07/19 18:20	
A3-0to31-100818	K1906902-008	J:\MS42\Data\080719\080719F021.D	08/07/19 18:37	
A2-0to26-100818	K1906902-009	J:\MS42\Data\080719\080719F022.D	08/07/19 18:55	
A6-0to23-100818	K1906902-010	J:\MS42\Data\080719\080719F023.D	08/07/19 19:13	
C4-0to27-100918	K1906902-011	J:\MS42\Data\080719\080719F024.D	08/07/19 19:30	
A7-0to26-100918	K1906902-012	J:\MS42\Data\080719\080719F025.D	08/07/19 19:48	
D2-0to19-101018	K1906902-013	J:\MS42\Data\080719\080719F026.D	08/07/19 20:05	
F2-0to19-101018	K1906902-014	J:\MS42\Data\080719\080719F027.D	08/07/19 20:23	
H2-0to30-101218	K1906902-015	J:\MS42\Data\080719\080719F028.D	08/07/19 20:41	
J2A3-0to18-101218	K1906902-016	J:\MS42\Data\080719\080719F029.D	08/07/19 20:58	
Q2-0to13-101818	K1906902-017	J:\MS42\Data\080719\080719F030.D	08/07/19 21:16	
G6-0to27-101818	K1906902-018	J:\MS42\Data\080719\080719F031.D	08/07/19 21:33	
T6-0to29-101618	K1906902-019	J:\MS42\Data\080719\080719F032.D	08/07/19 21:51	

Client: Pacific Groundwater Group (PGG) **Service Request:**K1906902
Project: DTNA Swan Island Lagoon Sediment/2006-00115 **Date Analyzed:**08/13/19 15:44

Tune Summary
Organochlorine Pesticides by GC/MS/MS

File ID: J:\MS42\Data\081319\081319F031.D **Analytical Method:** ALS SOP
Instrument ID: K-MS-42 **Analysis Lot:** 647382

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1911540-01	J:\MS42\Data\081319\081319F031.D	08/13/19 15:44	
F2-0to19-101018	K1906902-014	J:\MS42\Data\081319\081319F046.D	08/13/19 20:08	

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment **Calibration Date:** 7/16/2019

Initial Calibration Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1900297 **Signal ID:** 1
Instrument ID: K-MS-42

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1900297-01	OC PEST ICAL 0.5PPB SVM61-44A	J:\MS42\Data\071619\071619F007.D	07/16/2019 21:21
02	KC1900297-02	OC PEST ICAL 1PPB SVM61-44B	J:\MS42\Data\071619\071619F008.D	07/16/2019 21:39
03	KC1900297-03	OC PEST ICAL 2PPB SVM61-44C	J:\MS42\Data\071619\071619F009.D	07/16/2019 21:57
04	KC1900297-04	OC PEST ICAL 5PPB SVM61-44D	J:\MS42\Data\071619\071619F010.D	07/16/2019 22:15
05	KC1900297-05	OC PEST ICAL 10PPB SVM61-44E	J:\MS42\Data\071619\071619F011.D	07/16/2019 22:33
06	KC1900297-06	OC PEST ICAL 20PPB SVM61-44F	J:\MS42\Data\071619\071619F012.D	07/16/2019 22:51
07	KC1900297-07	OC PEST ICAL 40PPB SVM61-44G	J:\MS42\Data\071619\071619F013.D	07/16/2019 23:09
08	KC1900297-08	OC PEST ICAL 60PPB SVM61-44H	J:\MS42\Data\071619\071619F014.D	07/16/2019 23:27
09	KC1900297-09	OC PEST ICAL 80PPB SVM61-44I	J:\MS42\Data\071619\071619F015.D	07/16/2019 23:45
10	KC1900297-10	OC PEST ICAL 100ppb SVM61-44J	J:\MS42\Data\071619\071619F016.D	07/17/2019 00:03

Analyte

2,4'-DDD

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	1.253	02	1	1.004	03	2	1	04	5	1.037
05	10	1.12	06	20	1.027	07	40	1.164	08	60	1.159
09	80	1.029	10	100	1.127						

2,4'-DDE

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	1.396	02	1	1.102	03	2	1.132	04	5	1.284
05	10	1.239	06	20	1.31	07	40	1.228	08	60	1.306
09	80	1.22	10	100	1.266						

2,4'-DDT

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	2.525	02	1	1.82	03	2	1.836	04	5	2.1
05	10	2.191	06	20	2.262	07	40	2.365	08	60	2.318
09	80	2.381	10	100	2.481						

4,4'-DDD

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	2.101	02	1	1.288	03	2	1.284	04	5	1.481
05	10	1.541	06	20	1.653	07	40	1.654	08	60	1.658
09	80	1.598	10	100	1.627						

4,4'-DDE

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	1.047	02	1	0.8035	03	2	0.8493	04	5	0.8487
05	10	0.8923	06	20	0.8815	07	40	0.9352	08	60	1.147
09	80	0.8748	10	100	0.924						

4,4'-DDT

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.9666	02	1	0.7612	03	2	0.7194	04	5	0.7543

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment **Calibration Date:** 7/16/2019

Initial Calibration Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1900297 **Signal ID:** 1
Instrument ID: K-MS-42

Analyte

4,4'-DDT

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
05	10	0.8045	06	20	0.7868	07	40	0.9049	08	60	0.8459
09	80	0.9099	10	100	0.9327						

Aldrin

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	3.69	02	1	2.074	03	2	1.399	04	5	0.8184
05	10	0.7536	06	20	0.6736	07	40	0.7047	08	60	0.6458
09	80	0.6819	10	100	0.6641						

Dieldrin

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
02	1	1.526	03	2	1.649	04	5	1.508	05	10	1.605
06	20	1.691	07	40	1.678	08	60	1.875	09	80	1.922
10	100	1.891									

Heptachlor

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	1.23	02	1	0.9882	03	2	1.068	04	5	1.16
05	10	1.14	06	20	1.195	07	40	1.172	08	60	1.112
09	80	1.077	10	100	1.122						

Oxychlordane

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	2.68	02	1	2.034	03	2	2.418	04	5	2.473
05	10	2.424	06	20	2.502	07	40	2.504	08	60	2.376
09	80	2.699	10	100	2.674						

S_4,4'-DDT-d4

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	5	2.03	02	5	2.009	03	5	2.078	04	5	2.162
05	5	2.165	06	5	2.211	07	5	2.124	08	5	2.219
09	5	2.152	10	5	2.206						

S_4,4'DDD-d4

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	5	2.793	02	5	2.769	03	5	2.852	04	5	2.892
05	5	3.007	06	5	2.949	07	5	2.998	08	5	3.033
09	5	3.143	10	5	3.055						

S_Aldrin-13C12

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.5691	02	20	0.5877	03	20	0.583	04	20	0.6502
05	20	0.6206	06	20	0.6299	07	20	0.6139	08	20	0.6576
09	20	0.619	10	20	0.631						

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment **Calibration Date:** 7/16/2019

Initial Calibration Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1900297 **Signal ID:** 1
Instrument ID: K-MS-42

Analyte

S_Endrin-13C12

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.1182	02	20	0.123	03	20	0.1191	04	20	0.1254
05	20	0.1264	06	20	0.12	07	20	0.1269	08	20	0.1313
09	20	0.1218	10	20	0.123						

S_GBHCD6

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	3.54	02	20	3.764	03	20	3.686	04	20	3.808
05	20	3.817	06	20	3.767	07	20	4.206	08	20	3.581
09	20	3.83	10	20	3.924						

S_Heptachlor-13C10

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.9784	02	20	1.081	03	20	1.036	04	20	1.065
05	20	1.104	06	20	1.069	07	20	1.142	08	20	1.129
09	20	1.218	10	20	1.157						

S_Heptachlrepox13C10

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.1925	02	20	0.1885	03	20	0.1935	04	20	0.2134
05	20	0.2006	06	20	0.1938	07	20	0.1988	08	20	0.2112
09	20	0.2199	10	20	0.21						

S_Oxychlordane-13C10

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.3531	02	20	0.3926	03	20	0.3658	04	20	0.3833
05	20	0.3923	06	20	0.4044	07	20	0.413	08	20	0.4393
09	20	0.4057	10	20	0.4301						

alpha-Chlordane

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	3.118	02	1	2.407	03	2	2.541	04	5	2.661
05	10	2.679	06	20	2.843	07	40	2.821	08	60	2.747
09	80	2.992	10	100	2.93						

cis-Nonachlor

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	1.044	02	1	0.8796	03	2	0.9502	04	5	1.021
05	10	1.063	06	20	1.088	07	40	1.134	08	60	1.033
09	80	1.131	10	100	1.126						

gamma-BHC (Lindane)

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	1.211	02	1	0.963	03	2	1.065	04	5	1.077
05	10	1.131	06	20	1.135	07	40	1.082	08	60	1.308
09	80	1.21	10	100	1.172						

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment **Calibration Date:** 7/16/2019

Initial Calibration Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1900297 **Signal ID:** 1
Instrument ID: K-MS-42

Analyte

gamma-Chlordane

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	1.28	02	1	0.9647	03	2	1.138	04	5	1.195
05	10	1.188	06	20	1.246	07	40	1.263	08	60	1.183
09	80	1.317	10	100	1.347						

trans-Nonachlor

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	2.576	02	1	1.647	03	2	2.016	04	5	1.999
05	10	2.164	06	20	2.178	07	40	2.113	08	60	2.07
09	80	2.34	10	100	2.292						

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment **Calibration Date:** 7/16/2019

Initial Calibration Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1900297 **Signal ID:** 1
Instrument ID: K-MS-42

		Calibration Evaluation				Calibration Evaluation	
Analyte Name	Compound Type	Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
2,4'-DDD	TRG	Average RF	% RSD	7.8	≤20	1.092	0.01
2,4'-DDE	TRG	Average RF	% RSD	6.9	≤20	1.248	0.01
2,4'-DDT	TRG	Average RF	% RSD	11.0	≤20	2.228	0.01
4,4'-DDD	TRG	Average RF	% RSD	14.5	≤20	1.588	0.01
4,4'-DDE	TRG	Average RF	% RSD	11.2	≤20	0.9203	0.01
4,4'-DDT	TRG	Average RF	% RSD	10.2	≤20	0.8386	0.01
Aldrin	TRG	Quadratic	COD	0.9987	≥	1.211	0.01
Dieldrin	TRG	Average RF	% RSD	9.2	≤20	1.705	0.01
Heptachlor	TRG	Average RF	% RSD	6.2	≤20	1.126	0.01
Oxychlordane	TRG	Average RF	% RSD	7.9	≤20	2.478	0.01
S_4,4'-DDT-d4	SURR	Average RF	% RSD	3.5	≤	2.135	0.01
S_4,4'DDD-d4	SURR	Average RF	% RSD	4.1	≤	2.949	0.01
S_Aldrin-13C12	SURR	Average RF	% RSD	4.7	≤	0.6162	0.01
S_Endrin-13C12	SURR	Average RF	% RSD	3.3	≤	0.1235	0.01
S_GBHCD6	SURR	Average RF	% RSD	4.9	≤	3.792	0.01
S_Heptachlor-13C10	SURR	Average RF	% RSD	6.2	≤	1.098	0.01
S_Heptachlrepox13C10	SURR	Average RF	% RSD	5.3	≤	0.2022	0.01
S_Oxychlordane-13C10	SURR	Average RF	% RSD	6.7	≤	0.398	0.01
alpha-Chlordane	TRG	Average RF	% RSD	7.7	≤20	2.774	0.01
cis-Nonachlor	TRG	Average RF	% RSD	7.9	≤20	1.047	0.01
gamma-BHC (Lindane)	TRG	Average RF	% RSD	8.5	≤20	1.135	0.01
gamma-Chlordane	TRG	Average RF	% RSD	9.0	≤20	1.212	0.01
trans-Nonachlor	TRG	Average RF	% RSD	11.4	≤20	2.14	0.01

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment **Calibration Date:** 8/13/2019

Initial Calibration Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1900338 **Signal ID:** 1
Instrument ID: K-MS-42

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1900338-01	OC PEST ICAL 0.5PPB SVM61-44A	J:\MS42\Data\081319\081319F004.D	08/13/2019 10:22
02	KC1900338-02	OC PEST ICAL 1PPB SVM61-44B	J:\MS42\Data\081319\081319F005.D	08/13/2019 10:40
03	KC1900338-03	OC PEST ICAL 2PPB SVM61-44C	J:\MS42\Data\081319\081319F006.D	08/13/2019 10:58
04	KC1900338-04	OC PEST ICAL 5PPB SVM61-44D	J:\MS42\Data\081319\081319F007.D	08/13/2019 11:15
05	KC1900338-05	OC PEST ICAL 10PPB SVM61-44E	J:\MS42\Data\081319\081319F008.D	08/13/2019 11:33
06	KC1900338-06	OC PEST ICAL 20PPB SVM61-44F	J:\MS42\Data\081319\081319F009.D	08/13/2019 11:51
07	KC1900338-07	OC PEST ICAL 60PPB SVM61-44H	J:\MS42\Data\081319\081319F011.D	08/13/2019 12:26
08	KC1900338-08	OC PEST ICAL 80PPB SVM61-44I	J:\MS42\Data\081319\081319F012.D	08/13/2019 12:44
09	KC1900338-09	OC PEST ICAL 100PPB SVM61-44J	J:\MS42\Data\081319\081319F013.D	08/13/2019 13:01
10	KC1900338-10	OC PEST ICAL 40PPB SVM61-44G	J:\MS42\Data\081319\081319F030.D	08/13/2019 15:26

Analyte

2,4'-DDD

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.8052	02	1	0.8256	03	2	0.9139	04	5	0.9994
05	10	0.9427	06	20	0.8994	10	40	0.8156	07	60	1.11
08	80	1.147	09	100	0.9702						

2,4'-DDE

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.8845	02	1	0.8452	03	2	0.952	04	5	1.156
05	10	0.9625	06	20	1.026	10	40	0.8278	07	60	1.056
08	80	1.336	09	100	1.106						

2,4'-DDT

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	1.91	02	1	1.637	03	2	1.753	04	5	1.913
05	10	1.98	06	20	1.986	10	40	1.812	07	60	2.058
08	80	2.183	09	100	2.206						

4,4'-DDD

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	1.394	02	1	1.317	03	2	1.367	04	5	1.628
05	10	1.546	06	20	1.59	10	40	1.494	07	60	1.678
08	80	2.079									

4,4'-DDE

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.7744	02	1	0.7405	03	2	0.8646	04	5	0.9292
05	10	0.8324	06	20	0.7818	10	40	0.7119	07	60	1.293
08	80	0.9987	09	100	0.7857						

4,4'-DDT

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.8227	02	1	0.6699	03	2	0.7348	04	5	0.815

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment **Calibration Date:** 8/13/2019

Initial Calibration Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1900338 **Signal ID:** 1
Instrument ID: K-MS-42

Analyte

4,4'-DDT

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
05	10	0.8131	06	20	0.8071	10	40	0.7864	07	60	0.8403
08	80	0.9037	09	100	0.8817						

Aldrin

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	3.799	02	1	2.046	03	2	1.325	04	5	0.9223
05	10	0.8193	06	20	0.6968	10	40	0.6544	07	60	0.6475
08	80	0.6884	09	100	0.6477						

Dieldrin

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	1.478	02	1	1.286	03	2	1.391	04	5	1.331
05	10	1.471	06	20	1.645	10	40	1.378	07	60	1.914
08	80	1.772	09	100	1.723						

Heptachlor

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	1.182	02	1	1.053	03	2	1.075	04	5	1.094
05	10	1.037	06	20	1.2	10	40	1.091	07	60	1.135
08	80	1.119	09	100	1.04						

Oxychlordane

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	2.398	02	1	2.091	03	2	2.109	04	5	2.414
05	10	2.595	06	20	2.485	10	40	2.547	07	60	2.429
08	80	2.441	09	100	2.461						

S_4,4'-DDT-d4

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	5	2.192	02	5	2.215	03	5	2.395	04	5	2.271
05	5	2.105	06	5	2.162	07	5	2.187	08	5	2.26
09	5	2.18	10	5	2.105						

S_4,4'DDD-d4

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	5	3.414	02	5	3.146	03	5	3.528	04	5	3.16
05	5	3.092	06	5	3.132	07	5	3.225	08	5	2.815
09	5	3.3	10	5	3.278						

S_Aldrin-13C12

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.5264	02	20	0.5385	03	20	0.6463	04	20	0.6075
05	20	0.5245	06	20	0.5425	07	20	0.5715	08	20	0.5554
09	20	0.5859	10	20	0.446						

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment **Calibration Date:** 8/13/2019

Initial Calibration Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1900338 **Signal ID:** 1
Instrument ID: K-MS-42

Analyte

S_Endrin-13C12

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.1431	02	20	0.1421	03	20	0.156	04	20	0.1632
05	20	0.1384	06	20	0.1342	07	20	0.1443	08	20	0.1474
09	20	0.1433	10	20	0.1633						

S_GBHCD6

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	3.109	02	20	3.16	03	20	3.222	04	20	3.282
05	20	2.794	06	20	3.158	07	20	2.917	08	20	3.333
09	20	3.051	10	20	2.42						

S_Heptachlor-13C10

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.8234	02	20	0.8367	03	20	0.8979	04	20	0.8964
05	20	0.8334	06	20	0.847	07	20	0.7621	08	20	0.909
09	20	0.9209	10	20	0.6846						

S_Heptachlrepox13C10

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.1778	02	20	0.187	03	20	0.1943	04	20	0.1875
05	20	0.1755	06	20	0.1761	07	20	0.1759	08	20	0.1975
09	20	0.1987	10	20	0.1503						

S_Oxychlordane-13C10

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.3206	02	20	0.3292	03	20	0.3567	04	20	0.3376
05	20	0.3042	06	20	0.3602	07	20	0.3333	08	20	0.3633
09	20	0.3543	10	20	0.2708						

alpha-Chlordane

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	2.808	02	1	2.436	03	2	2.524	04	5	2.832
05	10	2.903	06	20	2.772	10	40	2.743	07	60	2.957
08	80	3.015	09	100	3.003						

cis-Nonachlor

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.8294	02	1	0.7199	03	2	0.7488	04	5	0.822
05	10	0.9039	06	20	0.826	10	40	0.7817	07	60	0.9438
08	80	0.8814	09	100	0.918						

gamma-BHC (Lindane)

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.997	02	1	0.8802	03	2	1.01	04	5	1.008
05	10	1.095	06	20	1.09	10	40	0.9703	07	60	1.079
08	80	1.016	09	100	1.128						

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment **Calibration Date:** 8/13/2019

Initial Calibration Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1900338 **Signal ID:** 1
Instrument ID: K-MS-42

Analyte

gamma-Chlordane

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	1.102	02	1	0.9387	03	2	1.038	04	5	1.175
05	10	1.199	06	20	1.072	10	40	1.14	07	60	1.181
08	80	1.172	09	100	1.192						

trans-Nonachlor

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	1.849	02	1	1.716	03	2	1.754	04	5	1.895
05	10	2.054	06	20	1.964	10	40	1.859	07	60	1.969
08	80	2.17	09	100	1.995						

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment **Calibration Date:** 8/13/2019

Initial Calibration Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1900338 **Signal ID:** 1
Instrument ID: K-MS-42

		Calibration Evaluation				Calibration Evaluation	
Analyte Name	Compound Type	Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
2,4'-DDD	TRG	Average RF	% RSD	12.5	≤20	0.943	0.01
2,4'-DDE	TRG	Average RF	% RSD	15.4	≤20	1.015	0.01
2,4'-DDT	TRG	Average RF	% RSD	9.3	≤20	1.944	0.01
4,4'-DDD	TRG	Quadratic	COD	0.9931	≥	1.566	0.01
4,4'-DDE	TRG	Average RF	% RSD	19.7	≤20	0.8712	0.01
4,4'-DDT	TRG	Average RF	% RSD	8.3	≤20	0.8075	0.01
Aldrin	TRG	Quadratic	COD	0.9981	≥	1.225	0.01
Dieldrin	TRG	Average RF	% RSD	13.8	≤20	1.539	0.01
Heptachlor	TRG	Average RF	% RSD	5.1	≤20	1.103	0.01
Oxychlordane	TRG	Average RF	% RSD	7.0	≤20	2.397	0.01
S_4,4'-DDT-d4	SURR	Average RF	% RSD	3.9	≤	2.207	0.01
S_4,4'DDD-d4	SURR	Average RF	% RSD	6.0	≤	3.209	0.01
S_Aldrin-13C12	SURR	Average RF	% RSD	9.8	≤	0.5544	0.01
S_Endrin-13C12	SURR	Average RF	% RSD	6.8	≤	0.1475	0.01
S_GBHCD6	SURR	Average RF	% RSD	9.0	≤	3.045	0.01
S_Heptachlor-13C10	SURR	Average RF	% RSD	8.7	≤	0.8411	0.01
S_Heptachlrepox13C10	SURR	Average RF	% RSD	7.9	≤	0.1821	0.01
S_Oxychlordane-13C10	SURR	Average RF	% RSD	8.7	≤	0.333	0.01
alpha-Chlordane	TRG	Average RF	% RSD	6.9	≤20	2.799	0.01
cis-Nonachlor	TRG	Average RF	% RSD	8.8	≤20	0.8375	0.01
gamma-BHC (Lindane)	TRG	Average RF	% RSD	7.1	≤20	1.027	0.01
gamma-Chlordane	TRG	Average RF	% RSD	7.5	≤20	1.121	0.01
trans-Nonachlor	TRG	Average RF	% RSD	7.1	≤20	1.922	0.01

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment **Calibration Date:** 7/16/2019

Initial Calibration Verification Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1900297 **Signal ID:** 1
Instrument ID: K-MS-42

#	Lab Code	Sample Name	File Location	Acquisition Date
11	KC1900297-11	OC PEST ICV 20ppb SVM61-48E	J:\MS42\Data\071619\071619F018.D	07/17/2019 00:39

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
2,4'-DDD	20.0	19.5	1.092E0	1.064E0	-2.553	±25	Average RF
2,4'-DDE	20.0	20.7	1.248E0	1.289E0	3.29	±25	Average RF
2,4'-DDT	20.0	20.7	2.228E0	2.307E0	3.55	±25	Average RF
4,4'-DDD	20.0	19.2	1.588E0	1.526E0	-3.918	±25	Average RF
4,4'-DDE	20.0	20.4	9.203E-1	9.394E-1	2.07	±25	Average RF
4,4'-DDT	20.0	20.8	8.386E-1	8.711E-1	3.87	±25	Average RF
Aldrin	20.0	19.7	1.211E0	6.851E-1	-1.354	±25	Quadratic
alpha-Chlordane	20.0	20.9	2.774E0	2.903E0	4.65	±25	Average RF
cis-Nonachlor	20.0	18.3	1.047E0	9.602E-1	-8.284	±25	Average RF
Dieldrin	20.0	18.5	1.705E0	1.578E0	-7.467	±25	Average RF
gamma-BHC (Lindane)	20.0	22.2	1.135E0	1.262E0	11.19	±25	Average RF
gamma-Chlordane	20.0	19.6	1.212E0	1.186E0	-2.185	±25	Average RF
Heptachlor	20.0	19.9	1.126E0	1.12E0	-0.543	±25	Average RF
Oxychlordane	20.0	22.4	2.478E0	2.778E0	12.09	±25	Average RF
trans-Nonachlor	20.0	20.3	2.14E0	2.176E0	1.71	±25	Average RF

Analyte Name	Expected	Result	Average RF	SSV RF	Rec.	Criteria	Curve Fit
S_4,4'DDD-d4	5.00	5.56	2.949E0	3.277E0	111	50-200	Average RF
S_4,4'-DDT-d4	5.00	5.53	2.135E0	2.364E0	111	50-200	Average RF
S_Aldrin-13C12	20.0	23.3	6.162E-1	7.193E-1	117	50-200	Average RF
S_Endrin-13C12	20.0	21.6	1.235E-1	1.337E-1	108	50-200	Average RF
S_GBHCD6	20.0	23.1	3.792E0	4.382E0	116	50-200	Average RF
S_Heptachlor-13C10	20.0	24.1	1.098E0	1.324E0	121	50-200	Average RF
S_Heptachlrepox13C10	20.0	22.2	2.022E-1	2.247E-1	111	50-200	Average RF
S_Oxychlordane-13C10	20.0	23.2	3.98E-1	4.607E-1	116	50-200	Average RF

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment **Calibration Date:** 8/13/2019

Initial Calibration Verification Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1900338 **Signal ID:** 1
Instrument ID: K-MS-42

#	Lab Code	Sample Name	File Location	Acquisition Date
11	KC1900338-11	OC PEST ICV 20PPB SVM61-48E	J:\MS42\Data\081319\081319F031.D	08/13/2019 15:44

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
2,4'-DDD	20.0	20.1	9.43E-1	9.494E-1	0.685	±25	Average RF
2,4'-DDE	20.0	19.3	1.015E0	9.787E-1	-3.582	±25	Average RF
2,4'-DDT	20.0	19.2	1.944E0	1.869E0	-3.843	±25	Average RF
4,4'-DDD	20.0	20.0	1.566E0	1.456E0	0.240	±25	Quadratic
4,4'-DDE	20.0	18.6	8.712E-1	8.121E-1	-6.781	±25	Average RF
4,4'-DDT	20.0	20.8	8.075E-1	8.401E-1	4.04	±25	Average RF
Aldrin	20.0	19.3	1.225E0	6.795E-1	-3.445	±25	Quadratic
alpha-Chlordane	20.0	20.0	2.799E0	2.805E0	0.187	±25	Average RF
cis-Nonachlor	20.0	17.4	8.375E-1	7.29E-1	-12.951	±25	Average RF
Dieldrin	20.0	16.4	1.539E0	1.262E0	-17.996	±25	Average RF
gamma-BHC (Lindane)	20.0	18.3	1.027E0	9.375E-1	-8.744	±25	Average RF
gamma-Chlordane	20.0	19.9	1.121E0	1.114E0	-0.617	±25	Average RF
Heptachlor	20.0	20.9	1.103E0	1.152E0	4.50	±25	Average RF
Oxychlordane	20.0	19.8	2.397E0	2.371E0	-1.097	±25	Average RF
trans-Nonachlor	20.0	18.4	1.922E0	1.767E0	-8.107	±25	Average RF

Analyte Name	Expected	Result	Average RF	SSV RF	Rec.	Criteria	Curve Fit
S_4,4'DDD-d4	5.00	5.05	3.209E0	3.243E0	101	50-200	Average RF
S_4,4'-DDT-d4	5.00	4.74	2.207E0	2.093E0	94.8	50-200	Average RF
S_Aldrin-13C12	20.0	18.0	5.544E-1	5.004E-1	90.0	50-200	Average RF
S_Endrin-13C12	20.0	23.0	1.475E-1	1.694E-1	115	50-200	Average RF
S_GBHCD6	20.0	17.5	3.045E0	2.659E0	87.5	50-200	Average RF
S_Heptachlor-13C10	20.0	17.8	8.411E-1	7.484E-1	89.0	50-200	Average RF
S_Heptachlrepox13C10	20.0	18.9	1.821E-1	1.724E-1	94.5	50-200	Average RF
S_Oxychlordane-13C10	20.0	18.4	3.33E-1	3.066E-1	92.0	50-200	Average RF

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Analyzed:**	08/07/19 11:45

Continuing Calibration Verification (CCV) Summary
Organochlorine Pesticides by GC/MS/MS

Analysis Method:	ALS SOP	**Calibration Date:**	7/16/2019
File ID:	J:\MS42\Data\080719\080719F003.D	**Calibration ID:**	KC1900297
Signal ID:	1	**Analysis Lot:**	646431
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
2,4'-DDD	20.0	19.3	1.0922	1.0525	-3.6	NA	±25	Average RF
2,4'-DDE	20.0	20.5	1.2483	1.279	2.5	NA	±25	Average RF
2,4'-DDT	20.0	19.8	2.2279	2.2051	-1.0	NA	±25	Average RF
4,4'-DDD	20.0	21.3	1.5884	1.6898	6.4	NA	±25	Average RF
4,4'-DDE	20.0	19.6	0.9203	0.912	-0.9	NA	±25	Average RF
4,4'-DDT	20.0	21.4	0.8386	0.8964	6.9	NA	±25	Average RF
Aldrin	20.0	19.3	1.2105	0.673	NA	-3.3	±25	Quadratic
alpha-Chlordane	20.0	21.3	2.7739	2.9605	6.7	NA	±25	Average RF
cis-Nonachlor	20.0	19.0	1.0469	0.997	-4.8	NA	±25	Average RF
Dieldrin	20.0	20.4	1.7051	1.608	-5.7	NA	±25	Average RF
gamma-BHC (Lindane)	20.0	21.5	1.1353	1.2215	7.6	NA	±25	Average RF
gamma-Chlordane	20.0	21.3	1.2121	1.2933	6.7	NA	±25	Average RF
Heptachlor	20.0	20.5	1.1264	1.1524	2.3	NA	±25	Average RF
Oxychlordane	20.0	21.0	2.4783	2.5981	4.8	NA	±25	Average RF
trans-Nonachlor	20.0	19.8	2.1396	2.1198	-0.9	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	Rec.	% Drift	Criteria	Curve Fit
S_4,4'DDD-d4	5.00	5.31	2.9491	3.1342	106	NA	50-200	Average RF
S_4,4'-DDT-d4	5.00	5.47	2.1355	2.3362	109	NA	50-200	Average RF
S_Aldrin-13C12	20.0	20.7	0.6162	0.6378	104	NA	50-200	Average RF
S_Endrin-13C12	20.0	21.4	0.1235	0.1324	107	NA	50-200	Average RF
S_GBHCD6	20.0	20.0	3.7923	3.7875	100	NA	50-200	Average RF
S_Heptachlor-13C10	20.0	18.8	1.098	1.0335	94.1	NA	50-200	Average RF
S_Heptachlrepox13C10	20.0	20.3	0.2022	0.2049	101	NA	50-200	Average RF
S_Oxychlordane-13C10	20.0	20.2	0.398	0.4014	101	NA	50-200	Average RF

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Analyzed:**	08/13/19 15:44

Continuing Calibration Verification (CCV) Summary
Organochlorine Pesticides by GC/MS/MS

Analysis Method:	ALS SOP	**Calibration Date:**	8/13/2019
File ID:	J:\MS42\Data\081319\081319F031.D	**Calibration ID:**	KC1900338
Signal ID:	1	**Analysis Lot:**	647382
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
2,4'-DDD	20.0	20.1	0.943	0.9494	0.7	NA	±25	Average RF
2,4'-DDE	20.0	19.3	1.0151	0.9787	-3.6	NA	±25	Average RF
2,4'-DDT	20.0	19.2	1.9438	1.8691	-3.8	NA	±25	Average RF
4,4'-DDD	20.0	20.0	1.566	1.4563	NA	0.2	±25	Quadratic
4,4'-DDE	20.0	18.6	0.8712	0.8121	-6.8	NA	±25	Average RF
4,4'-DDT	20.0	20.8	0.8075	0.8401	4.0	NA	±25	Average RF
Aldrin	20.0	19.3	1.2247	0.6795	NA	-3.4	±25	Quadratic
alpha-Chlordane	20.0	20.0	2.7995	2.8047	0.2	NA	±25	Average RF
cis-Nonachlor	20.0	17.4	0.8375	0.729	-13.0	NA	±25	Average RF
Dieldrin	20.0	16.4	1.5388	1.2619	-18.0	NA	±25	Average RF
gamma-BHC (Lindane)	20.0	18.3	1.0274	0.9375	-8.7	NA	±25	Average RF
gamma-Chlordane	20.0	19.9	1.1209	1.114	-0.6	NA	±25	Average RF
Heptachlor	20.0	20.9	1.1026	1.1522	4.5	NA	±25	Average RF
Oxychlordane	20.0	19.8	2.3971	2.3708	-1.1	NA	±25	Average RF
trans-Nonachlor	20.0	18.4	1.9225	1.7666	-8.1	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	Rec.	% Drift	Criteria	Curve Fit
S_4,4'DDD-d4	5.00	5.05	3.209	3.2432	101	NA	50-200	Average RF
S_4,4'-DDT-d4	5.00	4.74	2.2071	2.0927	94.8	NA	50-200	Average RF
S_Aldrin-13C12	20.0	18.0	0.5544	0.5004	90.2	NA	50-200	Average RF
S_Endrin-13C12	20.0	23.0	0.1475	0.1694	115	NA	50-200	Average RF
S_GBHCD6	20.0	17.5	3.0446	2.6589	87.3	NA	50-200	Average RF
S_Heptachlor-13C10	20.0	17.8	0.8411	0.7484	89.0	NA	50-200	Average RF
S_Heptachlrepox13C10	20.0	18.9	0.1821	0.1724	94.7	NA	50-200	Average RF
S_Oxychlordane-13C10	20.0	18.4	0.333	0.3066	92.1	NA	50-200	Average RF

Client: Pacific Groundwater Group (PGG) **Service Request:**K1906902
Project: DTNA Swan Island Lagoon Sediment/2006-00115

Analysis Run Log
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP **Analysis Lot:**646431
Instrument ID:K-MS-42

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS42\Data\080719\080719F003.D	Continuing Calibration Verification	KQ1911111-02	8/7/2019	11:45	
J:\MS42\Data\080719\080719F003.D	ZZZZZZZ	ZZZZZZZ	8/7/2019	11:45	
J:\MS42\Data\080719\080719F005.D	Method Blank	KQ1910714-04	8/7/2019	13:55	
J:\MS42\Data\080719\080719F006.D	ZZZZZZZ	ZZZZZZZ	8/7/2019	14:13	
J:\MS42\Data\080719\080719F007.D	ZZZZZZZ	ZZZZZZZ	8/7/2019	14:31	
J:\MS42\Data\080719\080719F008.D	ZZZZZZZ	ZZZZZZZ	8/7/2019	14:48	
J:\MS42\Data\080719\080719F009.D	Lab Control Sample	KQ1910714-03	8/7/2019	15:06	
J:\MS42\Data\080719\080719F010.D	A1-0to30-102018 MS	KQ1910714-01	8/7/2019	15:24	
J:\MS42\Data\080719\080719F011.D	A1-0to30-102018 DMS	KQ1910714-02	8/7/2019	15:41	
J:\MS42\Data\080719\080719F014.D	O7-0to27-101918	K1906902-001	8/7/2019	16:34	
J:\MS42\Data\080719\080719F015.D	515-0to26-101918	K1906902-002	8/7/2019	16:52	
J:\MS42\Data\080719\080719F016.D	M4-0to26-101918	K1906902-003	8/7/2019	17:09	
J:\MS42\Data\080719\080719F017.D	A1-0to30-102018	K1906902-004	8/7/2019	17:27	
J:\MS42\Data\080719\080719F018.D	Q6-0to27-102018	K1906902-005	8/7/2019	17:45	
J:\MS42\Data\080719\080719F019.D	A5-0to25-100818	K1906902-006	8/7/2019	18:02	
J:\MS42\Data\080719\080719F020.D	A4-0to25-100818	K1906902-007	8/7/2019	18:20	
J:\MS42\Data\080719\080719F021.D	A3-0to31-100818	K1906902-008	8/7/2019	18:37	
J:\MS42\Data\080719\080719F022.D	A2-0to26-100818	K1906902-009	8/7/2019	18:55	
J:\MS42\Data\080719\080719F023.D	A6-0to23-100818	K1906902-010	8/7/2019	19:13	
J:\MS42\Data\080719\080719F024.D	C4-0to27-100918	K1906902-011	8/7/2019	19:30	
J:\MS42\Data\080719\080719F025.D	A7-0to26-100918	K1906902-012	8/7/2019	19:48	
J:\MS42\Data\080719\080719F026.D	D2-0to19-101018	K1906902-013	8/7/2019	20:05	
J:\MS42\Data\080719\080719F027.D	F2-0to19-101018	K1906902-014	8/7/2019	20:23	
J:\MS42\Data\080719\080719F028.D	H2-0to30-101218	K1906902-015	8/7/2019	20:41	
J:\MS42\Data\080719\080719F029.D	J2A3-0to18-101218	K1906902-016	8/7/2019	20:58	
J:\MS42\Data\080719\080719F030.D	Q2-0to13-101818	K1906902-017	8/7/2019	21:16	
J:\MS42\Data\080719\080719F031.D	G6-0to27-101818	K1906902-018	8/7/2019	21:33	
J:\MS42\Data\080719\080719F032.D	T6-0to29-101618	K1906902-019	8/7/2019	21:51	

Client: Pacific Groundwater Group (PGG) **Service Request:**K1906902
Project: DTNA Swan Island Lagoon Sediment/2006-00115

Analysis Run Log
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP **Analysis Lot:**647382
Instrument ID:K-MS-42

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS42\Data\081319\081319F031.D	Continuing Calibration Verification	KQ1911540-01	8/13/2019	15:44	
J:\MS42\Data\081319\081319F046.D	F2-0to19-101018	K1906902-014	8/13/2019	20:08	

Prep Summary Report

Client: Pacific Groundwater Group (PGG) **Service Request:**K1906902
Project: DTNA Swan Island Lagoon Sediment/2006-00115
Sample Matrix: Sediment

Organochlorine Pesticides by GC/MS/MS

Prep Method: EPA 3541 **Extraction Lot:** 341604
Analytical Method: ALS SOP **Extraction Date:** 08/01/19 10:08

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
O7-0to27-101918	K1906902-001	10/19/18	10/22/18	20.166 g	1 mL	38.8
515-0to26-101918	K1906902-002	10/19/18	10/22/18	20.022 g	1 mL	47.2
M4-0to26-101918	K1906902-003	10/19/18	10/22/18	20.195 g	1 mL	44.7
A1-0to30-102018	K1906902-004	10/20/18	10/22/18	20.110 g	1 mL	56.0
Q6-0to27-102018	K1906902-005	10/20/18	10/22/18	20.407 g	1 mL	36.0
A5-0to25-100818	K1906902-006	10/8/18	10/10/18	20.447 g	1 mL	47.3
A4-0to25-100818	K1906902-007	10/8/18	10/10/18	20.5680 g	1 mL	48.9
A3-0to31-100818	K1906902-008	10/8/18	10/10/18	20.480 g	1 mL	44.1
A2-0to26-100818	K1906902-009	10/8/18	10/10/18	20.481 g	1 mL	46.1
A6-0to23-100818	K1906902-010	10/8/18	10/10/18	20.173 g	1 mL	44.1
C4-0to27-100918	K1906902-011	10/9/18	10/10/18	20.376 g	1 mL	40.3
A7-0to26-100918	K1906902-012	10/9/18	10/10/18	20.368 g	1 mL	52.6
D2-0to19-101018	K1906902-013	10/10/18	10/15/18	20.278 g	1 mL	71.5
F2-0to19-101018	K1906902-014	10/10/18	10/15/18	20.067 g	1 mL	72.6
H2-0to30-101218	K1906902-015	10/12/18	10/15/18	20.453 g	1 mL	48.9
J2A3-0to18-101218	K1906902-016	10/12/18	10/15/18	20.073 g	1 mL	77.7
Q2-0to13-101818	K1906902-017	10/18/18	10/19/18	20.486 g	1 mL	68.6
G6-0to27-101818	K1906902-018	10/18/18	10/19/18	20.491 g	1 mL	50.7
T6-0to29-101618	K1906902-019	10/16/18	10/19/18	20.270 g	1 mL	38.1
Matrix Spike	KQ1910714-01MS	10/20/18	10/22/18	20.070 g	1 mL	56.0
Duplicate Matrix Spike	KQ1910714-02DMS	10/20/18	10/22/18	20.417 g	1 mL	56.0
Lab Control Sample	KQ1910714-03LCS	NA	NA	10 g	1 mL	
Method Blank	KQ1910714-04MB	NA	NA	20.5680 g	1 mL	

Low Level Semivolatile Organic Compounds by GC/MS

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/19/18 15:36
Sample Matrix:	Sediment	**Date Received:**	10/22/18 10:45
Sample Name:	O7-0to27-101918	**Units:**	ug/Kg
Lab Code:	K1906902-001	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**88 J**	130	12	1	08/09/19 21:37	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	84	30 - 102	08/09/19 21:37	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/19/18 13:11
Sample Matrix:	Sediment	**Date Received:**	10/22/18 10:45
Sample Name:	515-0to26-101918	**Units:**	ug/Kg
Lab Code:	K1906902-002	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**550**	110	9.4	1	08/09/19 22:05	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	85	30 - 102	08/09/19 22:05	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/19/18 13:11
Sample Matrix:	Sediment	**Date Received:**	10/22/18 10:45
Sample Name:	M4-0to26-101918	**Units:**	ug/Kg
Lab Code:	K1906902-003	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**1300**	220	20	2	08/13/19 23:24	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	74	30 - 102	08/09/19 22:33	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/20/18 12:05
Sample Matrix:	Sediment	**Date Received:**	10/22/18 10:45
Sample Name:	A1-0to30-102018	**Units:**	ug/Kg
Lab Code:	K1906902-004	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**110**	88	8.9	1	08/09/19 23:02	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	83	30 - 102	08/09/19 23:02	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/20/18 09:19
Sample Matrix:	Sediment	**Date Received:**	10/22/18 10:45
Sample Name:	Q6-0to27-102018	**Units:**	ug/Kg
Lab Code:	K1906902-005	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**67 J**	140	13	1	08/09/19 23:30	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	76	30 - 102	08/09/19 23:30	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/08/18 14:38
Sample Matrix:	Sediment	**Date Received:**	10/10/18 08:55
Sample Name:	A5-0to25-100818	**Units:**	ug/Kg
Lab Code:	K1906902-006	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**260**	110	9.4	1	08/09/19 23:58	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	71	30 - 102	08/09/19 23:58	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/08/18 13:26
Sample Matrix:	Sediment	**Date Received:**	10/10/18 08:55
Sample Name:	A4-0to25-100818	**Units:**	ug/Kg
Lab Code:	K1906902-007	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**2000**	510	46	5	08/13/19 23:52	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	87	30 - 102	08/10/19 00:26	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/08/18 11:14
Sample Matrix:	Sediment	**Date Received:**	10/10/18 08:55
Sample Name:	A3-0to31-100818	**Units:**	ug/Kg
Lab Code:	K1906902-008	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**240**	110	11	1	08/10/19 00:55	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	76	30 - 102	08/10/19 00:55	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/08/18 14:04
Sample Matrix:	Sediment	**Date Received:**	10/10/18 08:55
Sample Name:	A2-0to26-100818	**Units:**	ug/Kg
Lab Code:	K1906902-009	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**59 J**	110	9.7	1	08/10/19 01:23	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	78	30 - 102	08/10/19 01:23	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/08/18 16:08
Sample Matrix:	Sediment	**Date Received:**	10/10/18 08:55
Sample Name:	A6-0to23-100818	**Units:**	ug/Kg
Lab Code:	K1906902-010	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**26 J**	110	11	1	08/10/19 01:51	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	71	30 - 102	08/10/19 01:51	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/09/18 08:28
Sample Matrix:	Sediment	**Date Received:**	10/10/18 08:55
Sample Name:	C4-0to27-100918	**Units:**	ug/Kg
Lab Code:	K1906902-011	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**420**	120	11	1	08/10/19 02:19	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	72	30 - 102	08/10/19 02:19	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/09/18 13:23
Sample Matrix:	Sediment	**Date Received:**	10/10/18 08:55
Sample Name:	A7-0to26-100918	**Units:**	ug/Kg
Lab Code:	K1906902-012	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**230**	94	8.9	1	08/10/19 02:48	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	90	30 - 102	08/10/19 02:48	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/10/18 15:21
Sample Matrix:	Sediment	**Date Received:**	10/15/18 12:15
Sample Name:	D2-0to19-101018	**Units:**	ug/Kg
Lab Code:	K1906902-013	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**120 J**	350	45	5	08/10/19 03:16	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	89	30 - 102	08/10/19 03:16	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/10/18 16:36
Sample Matrix:	Sediment	**Date Received:**	10/15/18 12:15
Sample Name:	F2-0to19-101018	**Units:**	ug/Kg
Lab Code:	K1906902-014	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**70**	68	8.9	1	08/10/19 03:44	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	76	30 - 102	08/10/19 03:44	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/12/18 10:28
Sample Matrix:	Sediment	**Date Received:**	10/15/18 12:15
Sample Name:	H2-0to30-101218	**Units:**	ug/Kg
Lab Code:	K1906902-015	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**3700**	510	46	5	08/14/19 00:20	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	84	30 - 102	08/10/19 04:12	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/12/18 12:57
Sample Matrix:	Sediment	**Date Received:**	10/15/18 12:15
Sample Name:	J2A3-0to18-101218	**Units:**	ug/Kg
Lab Code:	K1906902-016	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**720**	640	89	10	08/10/19 04:41	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	107	30 - 102	08/10/19 04:41	*

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/18/18 09:39
Sample Matrix:	Sediment	**Date Received:**	10/19/18 12:30
Sample Name:	Q2-0to13-101818	**Units:**	ug/Kg
Lab Code:	K1906902-017	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**160**	73	8.9	1	08/10/19 05:09	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	87	30 - 102	08/10/19 05:09	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/18/18 14:12
Sample Matrix:	Sediment	**Date Received:**	10/19/18 12:30
Sample Name:	G6-0to27-101818	**Units:**	ug/Kg
Lab Code:	K1906902-018	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**770**	490	45	5	08/10/19 05:37	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	83	30 - 102	08/10/19 05:37	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/16/18 14:38
Sample Matrix:	Sediment	**Date Received:**	10/19/18 12:30
Sample Name:	T6-0to29-101618	**Units:**	ug/Kg
Lab Code:	K1906902-019	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**30 J**	130	12	1	08/10/19 06:05	8/1/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	76	30 - 102	08/10/19 06:05	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	KQ1910713-04	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	ND U	49	8.9	1	08/09/19 19:44	8/1/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	96	30 - 102	08/09/19 19:44	

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment/2006-00115
Sample Matrix: Sediment

SURROGATE RECOVERY SUMMARY
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Extraction Method: EPA 3541

Sample Name	Lab Code	p-Terphenyl-d14 30-102
O7-0to27-101918	K1906902-001	84
515-0to26-101918	K1906902-002	85
M4-0to26-101918	K1906902-003	74
A1-0to30-102018	K1906902-004	83
Q6-0to27-102018	K1906902-005	76
A5-0to25-100818	K1906902-006	71
A4-0to25-100818	K1906902-007	87
A3-0to31-100818	K1906902-008	76
A2-0to26-100818	K1906902-009	78
A6-0to23-100818	K1906902-010	71
C4-0to27-100918	K1906902-011	72
A7-0to26-100918	K1906902-012	90
D2-0to19-101018	K1906902-013	89
F2-0to19-101018	K1906902-014	76
H2-0to30-101218	K1906902-015	84
J2A3-0to18-101218	K1906902-016	107*
Q2-0to13-101818	K1906902-017	87
G6-0to27-101818	K1906902-018	83
T6-0to29-101618	K1906902-019	76
Method Blank	KQ1910713-04	96
Lab Control Sample	KQ1910713-03	80
515-0to26-101918	KQ1910713-01	68
515-0to26-101918	KQ1910713-02	123*

Client: Pacific Groundwater Group (PGG) **Service Request:**K1906902
Project: DTNA Swan Island Lagoon Sediment/2006-00115 **Date Analyzed:**08/09/19 19:16

Internal Standard Area and RT SUMMARY
Low Level Semivolatile Organic Compounds by GC/MS

File ID: J:\MS29\DATA\080919\0809F015.D\ **Lab Code:**KQ1911243-02
Instrument ID: K-MS-29 **Analysis Lot:**646720
Analysis Method: 8270D **Signal ID:**1

		Chrysene-d12	
		Area	**RT**
	Result ==>	288,766	15.41
	Upper Limit ==>	577,532	15.91
	Lower Limit ==>	144,383	14.91
Associated Analyses			
Method Blank	KQ1910713-04	272209	15.41
Lab Control Sample	KQ1910713-03	276837	15.40
O7-0to27-101918	K1906902-001	272359	15.41
515-0to26-101918	K1906902-002	291576	15.41
M4-0to26-101918	K1906902-003	321416	15.41
A1-0to30-102018	K1906902-004	267570	15.41
Q6-0to27-102018	K1906902-005	279281	15.40
A5-0to25-100818	K1906902-006	292599	15.41
A4-0to25-100818	K1906902-007	319422	15.42
A3-0to31-100818	K1906902-008	295092	15.41
A2-0to26-100818	K1906902-009	275460	15.41
A6-0to23-100818	K1906902-010	265941	15.41
C4-0to27-100918	K1906902-011	277597	15.41
A7-0to26-100918	K1906902-012	306724	15.41
D2-0to19-101018	K1906902-013	286181	15.41
F2-0to19-101018	K1906902-014	323288	15.42
H2-0to30-101218	K1906902-015	289244	15.41
J2A3-0to18-101218	K1906902-016	273076	15.41
Q2-0to13-101818	K1906902-017	288541	15.41
G6-0to27-101818	K1906902-018	295479	15.41
T6-0to29-101618	K1906902-019	277629	15.41

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QA/QC Report

Client: Pacific Groundwater Group (PGG) **Service Request:**K1906902
Project: DTNA Swan Island Lagoon Sediment/2006-00115 **Date Analyzed:**08/13/19 16:46

Internal Standard Area and RT SUMMARY
Low Level Semivolatile Organic Compounds by GC/MS

File ID: J:\MS29\DATA\081319\0813F002.D\ **Lab Code:**KQ1911229-04
Instrument ID: K-MS-29 **Analysis Lot:**646700
Analysis Method: 8270D **Signal ID:**1

		Chrysene-d12	
		Area	**RT**
	Result ==>	243,381	15.41
	Upper Limit ==>	486,762	15.91
	Lower Limit ==>	121,691	14.91
Associated Analyses			
M4-0to26-101918	K1906902-003	270310	15.41
A4-0to25-100818	K1906902-007	235886	15.41
H2-0to30-101218	K1906902-015	222476	15.41
515-0to26-101918MS	KQ1910713-01	262169	15.42
515-0to26-101918DMS	KQ1910713-02	258034	15.41

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/19/18
Sample Matrix:	Sediment	**Date Received:**	10/22/18
		Date Analyzed:	08/14/19
		Date Extracted:	08/1/19

Duplicate Matrix Spike Summary
Low Level Semivolatile Organic Compounds by GC/MS

Sample Name:	515-0to26-101918	**Units:**	ug/Kg
Lab Code:	K1906902-002	**Basis:**	Dry
Analysis Method:	8270D		
Prep Method:	EPA 3541		

		Matrix Spike			Duplicate Matrix Spike					
		KQ1910713-01			KQ1910713-02					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Bis(2-ethylhexyl) Phthalate	550	982	278	154 *	538	263	-6 *	23-123	58*	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Analyzed:**	08/09/19
Sample Matrix:	Sediment	**Date Extracted:**	08/01/19

Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method:	8270D	**Units:**	ug/Kg
Prep Method:	EPA 3541	**Basis:**	Dry
		Analysis Lot:	646720

Lab Control Sample
KQ1910713-03

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Bis(2-ethylhexyl) Phthalate	231	250	92	39-113

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Analyzed:**	08/09/19 19:44
Sample Matrix:	Sediment	**Date Extracted:**	08/01/19

Method Blank Summary
Low Level Semivolatile Organic Compounds by GC/MS

Sample Name:	Method Blank	**Instrument ID:**	K-MS-29
Lab Code:	KQ1910713-04	**File ID:**	J:\MS29\DATA\080919\0809F016.D\
Analysis Method:	8270D	**Analysis Lot:**	646720,646700
Prep Method:	EPA 3541	**Extraction Lot:**	341603

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ1910713-03	J:\MS29\DATA\080919\0809F017.D\	08/09/19 20:12
O7-0to27-101918	K1906902-001	J:\MS29\DATA\080919\0809F020.D\	08/09/19 21:37
515-0to26-101918	K1906902-002	J:\MS29\DATA\080919\0809F021.D\	08/09/19 22:05
M4-0to26-101918	K1906902-003	J:\MS29\DATA\080919\0809F022.D\	08/09/19 22:33
A1-0to30-102018	K1906902-004	J:\MS29\DATA\080919\0809F023.D\	08/09/19 23:02
Q6-0to27-102018	K1906902-005	J:\MS29\DATA\080919\0809F024.D\	08/09/19 23:30
A5-0to25-100818	K1906902-006	J:\MS29\DATA\080919\0809F025.D\	08/09/19 23:58
A4-0to25-100818	K1906902-007	J:\MS29\DATA\080919\0809F026.D\	08/10/19 00:26
A3-0to31-100818	K1906902-008	J:\MS29\DATA\080919\0809F027.D\	08/10/19 00:55
A2-0to26-100818	K1906902-009	J:\MS29\DATA\080919\0809F028.D\	08/10/19 01:23
A6-0to23-100818	K1906902-010	J:\MS29\DATA\080919\0809F029.D\	08/10/19 01:51
C4-0to27-100918	K1906902-011	J:\MS29\DATA\080919\0809F030.D\	08/10/19 02:19
A7-0to26-100918	K1906902-012	J:\MS29\DATA\080919\0809F031.D\	08/10/19 02:48
D2-0to19-101018	K1906902-013	J:\MS29\DATA\080919\0809F032.D\	08/10/19 03:16
F2-0to19-101018	K1906902-014	J:\MS29\DATA\080919\0809F033.D\	08/10/19 03:44
H2-0to30-101218	K1906902-015	J:\MS29\DATA\080919\0809F034.D\	08/10/19 04:12
J2A3-0to18-101218	K1906902-016	J:\MS29\DATA\080919\0809F035.D\	08/10/19 04:41
Q2-0to13-101818	K1906902-017	J:\MS29\DATA\080919\0809F036.D\	08/10/19 05:09
G6-0to27-101818	K1906902-018	J:\MS29\DATA\080919\0809F037.D\	08/10/19 05:37
T6-0to29-101618	K1906902-019	J:\MS29\DATA\080919\0809F038.D\	08/10/19 06:05
M4-0to26-101918	K1906902-003	J:\MS29\DATA\081319\0813F015.D\	08/13/19 23:24
A4-0to25-100818	K1906902-007	J:\MS29\DATA\081319\0813F016.D\	08/13/19 23:52
H2-0to30-101218	K1906902-015	J:\MS29\DATA\081319\0813F017.D\	08/14/19 00:20
515-0to26-101918MS	KQ1910713-01	J:\MS29\DATA\081319\0813F018.D\	08/14/19 00:49
515-0to26-101918DMS	KQ1910713-02	J:\MS29\DATA\081319\0813F019.D\	08/14/19 01:17

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Analyzed:**	08/09/19 20:12
Sample Matrix:	Sediment	**Date Extracted:**	08/01/19

Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Sample Name:	Lab Control Sample	**Instrument ID:**	K-MS-29
Lab Code:	KQ1910713-03	**File ID:**	J:\MS29\DATA\080919\0809F017.D\
Analysis Method:	8270D	**Analysis Lot:**	646720,646700
Prep Method:	EPA 3541	**Extraction Lot:**	341603

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1910713-04	J:\MS29\DATA\080919\0809F016.D\	08/09/19 19:44
O7-0to27-101918	K1906902-001	J:\MS29\DATA\080919\0809F020.D\	08/09/19 21:37
515-0to26-101918	K1906902-002	J:\MS29\DATA\080919\0809F021.D\	08/09/19 22:05
M4-0to26-101918	K1906902-003	J:\MS29\DATA\080919\0809F022.D\	08/09/19 22:33
A1-0to30-102018	K1906902-004	J:\MS29\DATA\080919\0809F023.D\	08/09/19 23:02
Q6-0to27-102018	K1906902-005	J:\MS29\DATA\080919\0809F024.D\	08/09/19 23:30
A5-0to25-100818	K1906902-006	J:\MS29\DATA\080919\0809F025.D\	08/09/19 23:58
A4-0to25-100818	K1906902-007	J:\MS29\DATA\080919\0809F026.D\	08/10/19 00:26
A3-0to31-100818	K1906902-008	J:\MS29\DATA\080919\0809F027.D\	08/10/19 00:55
A2-0to26-100818	K1906902-009	J:\MS29\DATA\080919\0809F028.D\	08/10/19 01:23
A6-0to23-100818	K1906902-010	J:\MS29\DATA\080919\0809F029.D\	08/10/19 01:51
C4-0to27-100918	K1906902-011	J:\MS29\DATA\080919\0809F030.D\	08/10/19 02:19
A7-0to26-100918	K1906902-012	J:\MS29\DATA\080919\0809F031.D\	08/10/19 02:48
D2-0to19-101018	K1906902-013	J:\MS29\DATA\080919\0809F032.D\	08/10/19 03:16
F2-0to19-101018	K1906902-014	J:\MS29\DATA\080919\0809F033.D\	08/10/19 03:44
H2-0to30-101218	K1906902-015	J:\MS29\DATA\080919\0809F034.D\	08/10/19 04:12
J2A3-0to18-101218	K1906902-016	J:\MS29\DATA\080919\0809F035.D\	08/10/19 04:41
Q2-0to13-101818	K1906902-017	J:\MS29\DATA\080919\0809F036.D\	08/10/19 05:09
G6-0to27-101818	K1906902-018	J:\MS29\DATA\080919\0809F037.D\	08/10/19 05:37
T6-0to29-101618	K1906902-019	J:\MS29\DATA\080919\0809F038.D\	08/10/19 06:05
M4-0to26-101918	K1906902-003	J:\MS29\DATA\081319\0813F015.D\	08/13/19 23:24
A4-0to25-100818	K1906902-007	J:\MS29\DATA\081319\0813F016.D\	08/13/19 23:52
H2-0to30-101218	K1906902-015	J:\MS29\DATA\081319\0813F017.D\	08/14/19 00:20
515-0to26-101918MS	KQ1910713-01	J:\MS29\DATA\081319\0813F018.D\	08/14/19 00:49
515-0to26-101918DMS	KQ1910713-02	J:\MS29\DATA\081319\0813F019.D\	08/14/19 01:17

Client: Pacific Groundwater Group (PGG) **Service Request:**K1906902
Project: DTNA Swan Island Lagoon Sediment/2006-00115 **Date Analyzed:**08/13/19 16:18

Tune Summary
Low Level Semivolatile Organic Compounds by GC/MS

File ID: J:\MS29\DATA\081319\0813F001.D\ **Analytical Method:** 8270D
Instrument ID: K-MS-29 **Analysis Lot:** 646700

Target Mass	Relative to Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	30	60	35.10	868778	Pass
68	69	0	2	1.46	14748	Pass
69	198	0	100	40.68	1006886	Pass
70	69	0	2	0.47	4743	Pass
127	198	40	60	50.34	1246186	Pass
197	198	0	1	0.19	4796	Pass
198	198	100	100	100.00	2475349	Pass
199	198	5	9	6.50	160848	Pass
275	198	10	30	25.50	631210	Pass
365	198	1	100	2.91	72053	Pass
441	443	0.01	100	78.58	305920	Pass
442	198	40	100	81.24	2010965	Pass
443	442	17	23	19.36	389290	Pass

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1911229-04	J:\MS29\DATA\081319\0813F002.D\	08/13/19 16:46	
M4-0to26-101918	K1906902-003	J:\MS29\DATA\081319\0813F015.D\	08/13/19 23:24	
A4-0to25-100818	K1906902-007	J:\MS29\DATA\081319\0813F016.D\	08/13/19 23:52	
H2-0to30-101218	K1906902-015	J:\MS29\DATA\081319\0813F017.D\	08/14/19 00:20	
515-0to26-101918	KQ1910713-01	J:\MS29\DATA\081319\0813F018.D\	08/14/19 00:49	
515-0to26-101918	KQ1910713-02	J:\MS29\DATA\081319\0813F019.D\	08/14/19 01:17	

Client: Pacific Groundwater Group (PGG) **Service Request:**K1906902
Project: DTNA Swan Island Lagoon Sediment/2006-00115 **Date Analyzed:**08/09/19 18:47

Tune Summary
Low Level Semivolatile Organic Compounds by GC/MS

File ID: J:\MS29\DATA\080919\0809F014.D\ **Analytical Method:** 8270D
Instrument ID: K-MS-29 **Analysis Lot:** 646720

Target Mass	Relative to Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	30	60	30.19	639296	Pass
68	69	0	2	1.42	11561	Pass
69	198	0	100	38.45	814304	Pass
70	69	0	2	0.41	3330	Pass
127	198	40	60	50.47	1068830	Pass
197	198	0	1	0.00	0	Pass
198	198	100	100	100.00	2117632	Pass
199	198	5	9	6.99	148096	Pass
275	198	10	30	24.37	516032	Pass
365	198	1	100	2.13	45016	Pass
441	443	0.01	100	76.08	242816	Pass
442	198	40	100	74.32	1573888	Pass
443	442	17	23	20.28	319168	Pass

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1911243-02	J:\MS29\DATA\080919\0809F015.D\	08/09/19 19:16	
Method Blank	KQ1910713-04	J:\MS29\DATA\080919\0809F016.D\	08/09/19 19:44	
Lab Control Sample	KQ1910713-03	J:\MS29\DATA\080919\0809F017.D\	08/09/19 20:12	
O7-0to27-101918	K1906902-001	J:\MS29\DATA\080919\0809F020.D\	08/09/19 21:37	
515-0to26-101918	K1906902-002	J:\MS29\DATA\080919\0809F021.D\	08/09/19 22:05	
M4-0to26-101918	K1906902-003	J:\MS29\DATA\080919\0809F022.D\	08/09/19 22:33	
A1-0to30-102018	K1906902-004	J:\MS29\DATA\080919\0809F023.D\	08/09/19 23:02	
Q6-0to27-102018	K1906902-005	J:\MS29\DATA\080919\0809F024.D\	08/09/19 23:30	
A5-0to25-100818	K1906902-006	J:\MS29\DATA\080919\0809F025.D\	08/09/19 23:58	
A4-0to25-100818	K1906902-007	J:\MS29\DATA\080919\0809F026.D\	08/10/19 00:26	
A3-0to31-100818	K1906902-008	J:\MS29\DATA\080919\0809F027.D\	08/10/19 00:55	
A2-0to26-100818	K1906902-009	J:\MS29\DATA\080919\0809F028.D\	08/10/19 01:23	
A6-0to23-100818	K1906902-010	J:\MS29\DATA\080919\0809F029.D\	08/10/19 01:51	
C4-0to27-100918	K1906902-011	J:\MS29\DATA\080919\0809F030.D\	08/10/19 02:19	
A7-0to26-100918	K1906902-012	J:\MS29\DATA\080919\0809F031.D\	08/10/19 02:48	
D2-0to19-101018	K1906902-013	J:\MS29\DATA\080919\0809F032.D\	08/10/19 03:16	
F2-0to19-101018	K1906902-014	J:\MS29\DATA\080919\0809F033.D\	08/10/19 03:44	
H2-0to30-101218	K1906902-015	J:\MS29\DATA\080919\0809F034.D\	08/10/19 04:12	
J2A3-0to18-101218	K1906902-016	J:\MS29\DATA\080919\0809F035.D\	08/10/19 04:41	

Q2-0to13-101818	K1906902-017	J:\MS29\DATA\080919\0809F036.D\	08/10/19 05:09
G6-0to27-101818	K1906902-018	J:\MS29\DATA\080919\0809F037.D\	08/10/19 05:37
T6-0to29-101618	K1906902-019	J:\MS29\DATA\080919\0809F038.D\	08/10/19 06:05

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment **Calibration Date:** 8/7/2019

Initial Calibration Summary
Low Level Semivolatile Organic Compounds by GC/MS

Calibration ID: KC1900326 **Signal ID:** 1
Instrument ID: K-MS-29

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1900326-01	SVO_LL ICAL @ 0.05ppm | SVM61-59A	J:\MS29\DATA\080719B\0807B003.D	08/07/2019 10:27
02	KC1900326-02	SVO_LL ICAL @ 0.10ppm | SVM61-59B	J:\MS29\DATA\080719B\0807B004.D	08/07/2019 10:56
03	KC1900326-03	SVO_LL ICAL @ 0.20ppm | SVM61-59C	J:\MS29\DATA\080719B\0807B005.D	08/07/2019 11:24
04	KC1900326-04	SVO_LL ICAL @ 0.50ppm | SVM61-59D	J:\MS29\DATA\080719B\0807B006.D	08/07/2019 11:52
05	KC1900326-05	SVO_LL ICAL @ 1.0ppm | SVM61-59E	J:\MS29\DATA\080719B\0807B007.D	08/07/2019 12:21
06	KC1900326-06	SVO_LL ICAL @ 2.0ppm | SVM61-59F	J:\MS29\DATA\080719B\0807B008.D	08/07/2019 12:49
07	KC1900326-07	SVO_LL ICAL @ 3.0ppm | SVM61-59G	J:\MS29\DATA\080719B\0807B009.D	08/07/2019 13:18
08	KC1900326-08	SVO_LL ICAL @ 5.0ppm | SVM61-59H	J:\MS29\DATA\080719B\0807B010.D	08/07/2019 13:46
09	KC1900326-09	SVO_LL ICAL @ 7.0ppm | SVM61-59I	J:\MS29\DATA\080719B\0807B011.D	08/07/2019 14:14
10	KC1900326-10	SVO_LL ICAL @ 10ppm | SVM61-59J	J:\MS29\DATA\080719B\0807B012.D	08/07/2019 14:43

Analyte

Bis(2-ethylhexyl) Phthalate

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	0.6787	02	100.000	0.754	03	200.000	0.6522	04	500.000	0.6643
05	1000.000	0.7221	06	2000.000	0.7687	07	3000.000	0.7798	08	5000.000	0.814
09	7000.000	0.8532	10	10000.000	0.8111						

p-Terphenyl-d14

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	0.8576	02	100.000	0.8716	03	200.000	0.7924	04	500.000	0.7917
05	1000.000	0.7621	06	2000.000	0.7742	07	3000.000	0.7875	08	5000.000	0.8037
09	7000.000	0.8561	10	10000.000	0.8093						

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment **Calibration Date:** 8/7/2019

Initial Calibration Summary
Low Level Semivolatile Organic Compounds by GC/MS

Calibration ID: KC1900326 **Signal ID:** 1
Instrument ID: K-MS-29

		Calibration Evaluation				Calibration Evaluation	
Analyte Name	Compound Type	Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
Bis(2-ethylhexyl) Phthalate	TRG	Average RF	% RSD	9.2	≤20	0.7498	0.010
p-Terphenyl-d14	SURR	Average RF	% RSD	4.7	≤20	0.8106	0.010

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment **Calibration Date:** 8/7/2019

Initial Calibration Summary
Low Level Semivolatile Organic Compounds by GC/MS

Calibration ID: KC1900336 **Signal ID:** 1
Instrument ID: K-MS-29

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1900336-01	SVO_LL ICAL @ 0.05ppm | SVM61-59A	J:\MS29\DATA\080719\0807F003.D	08/07/2019 10:27
02	KC1900336-02	SVO_LL ICAL @ 0.10ppm | SVM61-59B	J:\MS29\DATA\080719\0807F004.D	08/07/2019 10:56
03	KC1900336-03	SVO_LL ICAL @ 0.20ppm | SVM61-59C	J:\MS29\DATA\080719\0807F005.D	08/07/2019 11:24
04	KC1900336-04	SVO_LL ICAL @ 0.50ppm | SVM61-59D	J:\MS29\DATA\080719\0807F006.D	08/07/2019 11:52
05	KC1900336-05	SVO_LL ICAL @ 1.0ppm | SVM61-59E	J:\MS29\DATA\080719\0807F007.D	08/07/2019 12:21
06	KC1900336-06	SVO_LL ICAL @ 2.0ppm | SVM61-59F	J:\MS29\DATA\080719\0807F008.D	08/07/2019 12:49
07	KC1900336-07	SVO_LL ICAL @ 3.0ppm | SVM61-59G	J:\MS29\DATA\080719\0807F009.D	08/07/2019 13:18
08	KC1900336-08	SVO_LL ICAL @ 5.0ppm | SVM61-59H	J:\MS29\DATA\080719\0807F010.D	08/07/2019 13:46
09	KC1900336-09	SVO_LL ICAL @ 7.0ppm | SVM61-59I	J:\MS29\DATA\080719\0807F011.D	08/07/2019 14:14
10	KC1900336-10	SVO_LL ICAL @ 10ppm | SVM61-59J	J:\MS29\DATA\080719\0807F012.D	08/07/2019 14:43

Analyte

Bis(2-ethylhexyl) Phthalate

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	0.6787	02	100.000	0.754	03	200.000	0.6522	04	500.000	0.6643
05	1000.000	0.7221	06	2000.000	0.7687	07	3000.000	0.7798	08	5000.000	0.8141
09	7000.000	0.8533	10	10000.000	0.8111						

p-Terphenyl-d14

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	0.8576	02	100.000	0.8716	03	200.000	0.7924	04	500.000	0.7917
05	1000.000	0.7621	06	2000.000	0.7742	07	3000.000	0.7875	08	5000.000	0.8037
09	7000.000	0.8561	10	10000.000	0.8093						

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment **Calibration Date:** 8/7/2019

Initial Calibration Summary
Low Level Semivolatile Organic Compounds by GC/MS

Calibration ID: KC1900336 **Signal ID:** 1
Instrument ID: K-MS-29

		Calibration Evaluation				Calibration Evaluation	
Analyte Name	Compound Type	Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
Bis(2-ethylhexyl) Phthalate	TRG	Average RF	% RSD	9.2	≤20	0.7498	0.010
p-Terphenyl-d14	SURR	Average RF	% RSD	4.7	≤20	0.8106	0.010

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment **Calibration Date:** 8/7/2019

Initial Calibration Verification Summary
Low Level Semivolatile Organic Compounds by GC/MS

Calibration ID: KC1900326 **Signal ID:** 1
Instrument ID: K-MS-29

#	Lab Code	Sample Name	File Location	Acquisition Date
11	KC1900326-11	SVO_LL ICV @ 3.0ppm | SVM61-57B	J:\MS29\DATA\080719B\0807B013.D	08/07/2019 15:11

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
Bis(2-ethylhexyl) Phthalate	3000	3010	7.498E-1	7.527E-1	0.379	±30	Average RF

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
p-Terphenyl-d14	3000	2910	8.106E-1	7.86E-1	-3.038	±30	Average RF

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment **Calibration Date:** 8/7/2019

Initial Calibration Verification Summary
Low Level Semivolatile Organic Compounds by GC/MS

Calibration ID: KC1900336 **Signal ID:** 1
Instrument ID: K-MS-29

#	Lab Code	Sample Name	File Location	Acquisition Date
11	KC1900336-11	SVO_LL ICV @ 3.0ppm | SVM61-57B	J:\MS29\DATA\080719\0807F013.D	08/07/2019 15:11

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
Bis(2-ethylhexyl) Phthalate	3000	3010	7.498E-1	7.527E-1	0.377	±30	Average RF

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
p-Terphenyl-d14	3000	2910	8.106E-1	7.86E-1	-3.038	±30	Average RF

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Analyzed:**	08/13/19 16:46

Continuing Calibration Verification (CCV) Summary
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method:	8270D	**Calibration Date:**	8/7/2019
File ID:	J:\MS29\DATA\081319\0813F002.D\	**Calibration ID:**	KC1900336
Signal ID:	1	**Analysis Lot:**	646700
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Bis(2-ethylhexyl) Phthalate	3000	3220	0.7498	0.8055	7.4	NA	±20	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
p-Terphenyl-d14	3000	3280	0.8106	0.8872	9.4	NA	±20	Average RF

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Analyzed:**	08/09/19 19:16

Continuing Calibration Verification (CCV) Summary
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method:	8270D	**Calibration Date:**	8/7/2019
File ID:	J:\MS29\DATA\080919\0809F015.D\	**Calibration ID:**	KC1900326
Signal ID:	1	**Analysis Lot:**	646720
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Bis(2-ethylhexyl) Phthalate	3000	3300	0.7498	0.8248	10.0	NA	±20	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
p-Terphenyl-d14	3000	3140	0.8106	0.849	4.7	NA	±20	Average RF

Client: Pacific Groundwater Group (PGG) **Service Request:**K1906902
Project: DTNA Swan Island Lagoon Sediment/2006-00115

Analysis Run Log
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: **Analysis Lot:**646700
Instrument ID:K-MS-29

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS29\DATA\081319\0813F014.D\	ZZZZZZZ	ZZZZZZZ	3/13/2019	22:47:00	
J:\MS29\DATA\081319\0813F001.D\	ZZZZZZZ	ZZZZZZZ	8/13/2019	16:18:00	
J:\MS29\DATA\081319\0813F001.D\	ZZZZZZZ	ZZZZZZZ	8/13/2019	16:18:00	
J:\MS29\DATA\081319\0813F002.D\	ZZZZZZZ	ZZZZZZZ	8/13/2019	16:46:00	
J:\MS29\DATA\081319\0813F002.D\	Continuing Calibration Verification	KQ1911229-04	8/13/2019	16:46:00	
J:\MS29\DATA\081319\0813F005.D\	ZZZZZZZ	ZZZZZZZ	8/13/2019	18:14:00	
J:\MS29\DATA\081319\0813F006.D\	ZZZZZZZ	ZZZZZZZ	8/13/2019	18:42:00	
J:\MS29\DATA\081319\0813F007.D\	ZZZZZZZ	ZZZZZZZ	8/13/2019	19:11:00	
J:\MS29\DATA\081319\0813F008.D\	ZZZZZZZ	ZZZZZZZ	8/13/2019	19:40:00	
J:\MS29\DATA\081319\0813F009.D\	ZZZZZZZ	ZZZZZZZ	8/13/2019	20:08:00	
J:\MS29\DATA\081319\0813F010.D\	ZZZZZZZ	ZZZZZZZ	8/13/2019	20:37:00	
J:\MS29\DATA\081319\0813F011.D\	ZZZZZZZ	ZZZZZZZ	8/13/2019	21:13:00	
J:\MS29\DATA\081319\0813F012.D\	ZZZZZZZ	ZZZZZZZ	8/13/2019	21:42:00	
J:\MS29\DATA\081319\0813F013.D\	ZZZZZZZ	ZZZZZZZ	8/13/2019	22:10:00	
J:\MS29\DATA\081319\0813F014.D\	ZZZZZZZ	ZZZZZZZ	8/13/2019	22:47:00	
J:\MS29\DATA\081319\0813F015.D\	M4-0to26-101918	K1906902-003	8/13/2019	23:24:00	
J:\MS29\DATA\081319\0813F016.D\	A4-0to25-100818	K1906902-007	8/13/2019	23:52:00	
J:\MS29\DATA\081319\0813F017.D\	H2-0to30-101218	K1906902-015	8/14/2019	00:20:00	
J:\MS29\DATA\081319\0813F018.D\	515-0to26-101918 MS	KQ1910713-01	8/14/2019	00:49:00	
J:\MS29\DATA\081319\0813F019.D\	515-0to26-101918 DMS	KQ1910713-02	8/14/2019	01:17:00	

Client: Pacific Groundwater Group (PGG) **Service Request:**K1906902
Project: DTNA Swan Island Lagoon Sediment/2006-00115

Analysis Run Log
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: **Analysis Lot:**646720
Instrument ID:K-MS-29

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS29\DATA\080919\0809F014.D\	ZZZZZZZ	ZZZZZZZ	8/9/2019	18:47:00	
J:\MS29\DATA\080919\0809F015.D\	Continuing Calibration Verification	KQ1911243-02	8/9/2019	19:16:00	
J:\MS29\DATA\080919\0809F016.D\	Method Blank	KQ1910713-04	8/9/2019	19:44:00	
J:\MS29\DATA\080919\0809F017.D\	Lab Control Sample	KQ1910713-03	8/9/2019	20:12:00	
J:\MS29\DATA\080919\0809F020.D\	O7-0to27-101918	K1906902-001	8/9/2019	21:37:00	
J:\MS29\DATA\080919\0809F021.D\	515-0to26-101918	K1906902-002	8/9/2019	22:05:00	
J:\MS29\DATA\080919\0809F022.D\	M4-0to26-101918	K1906902-003	8/9/2019	22:33:00	
J:\MS29\DATA\080919\0809F023.D\	A1-0to30-102018	K1906902-004	8/9/2019	23:02:00	
J:\MS29\DATA\080919\0809F024.D\	Q6-0to27-102018	K1906902-005	8/9/2019	23:30:00	
J:\MS29\DATA\080919\0809F025.D\	A5-0to25-100818	K1906902-006	8/9/2019	23:58:00	
J:\MS29\DATA\080919\0809F026.D\	A4-0to25-100818	K1906902-007	8/10/2019	00:26:00	
J:\MS29\DATA\080919\0809F027.D\	A3-0to31-100818	K1906902-008	8/10/2019	00:55:00	
J:\MS29\DATA\080919\0809F028.D\	A2-0to26-100818	K1906902-009	8/10/2019	01:23:00	
J:\MS29\DATA\080919\0809F029.D\	A6-0to23-100818	K1906902-010	8/10/2019	01:51:00	
J:\MS29\DATA\080919\0809F030.D\	C4-0to27-100918	K1906902-011	8/10/2019	02:19:00	
J:\MS29\DATA\080919\0809F031.D\	A7-0to26-100918	K1906902-012	8/10/2019	02:48:00	
J:\MS29\DATA\080919\0809F032.D\	D2-0to19-101018	K1906902-013	8/10/2019	03:16:00	
J:\MS29\DATA\080919\0809F033.D\	F2-0to19-101018	K1906902-014	8/10/2019	03:44:00	
J:\MS29\DATA\080919\0809F034.D\	H2-0to30-101218	K1906902-015	8/10/2019	04:12:00	
J:\MS29\DATA\080919\0809F035.D\	J2A3-0to18-101218	K1906902-016	8/10/2019	04:41:00	
J:\MS29\DATA\080919\0809F036.D\	Q2-0to13-101818	K1906902-017	8/10/2019	05:09:00	
J:\MS29\DATA\080919\0809F037.D\	G6-0to27-101818	K1906902-018	8/10/2019	05:37:00	
J:\MS29\DATA\080919\0809F038.D\	T6-0to29-101618	K1906902-019	8/10/2019	06:05:00	

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Prep Summary Report

Client: Pacific Groundwater Group (PGG) **Service Request:**K1906902
Project: DTNA Swan Island Lagoon Sediment/2006-00115
Sample Matrix: Sediment

Low Level Semivolatile Organic Compounds by GC/MS

Prep Method: EPA 3541 **Extraction Lot:** 341603
Analytical Method: 8270D **Extraction Date:** 08/01/19 10:08

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
O7-0to27-101918	K1906902-001	10/19/18	10/22/18	40.480 g	2 mL	38.8
515-0to26-101918	K1906902-002	10/19/18	10/22/18	40.126 g	2 mL	47.2
M4-0to26-101918	K1906902-003	10/19/18	10/22/18	40.040 g	2 mL	44.7
A1-0to30-102018	K1906902-004	10/20/18	10/22/18	40.376 g	2 mL	56.0
Q6-0to27-102018	K1906902-005	10/20/18	10/22/18	40.366 g	2 mL	36.0
A5-0to25-100818	K1906902-006	10/8/18	10/10/18	40.161 g	2 mL	47.3
A4-0to25-100818	K1906902-007	10/8/18	10/10/18	40.122 g	2 mL	48.9
A3-0to31-100818	K1906902-008	10/8/18	10/10/18	40.250 g	2 mL	44.1
A2-0to26-100818	K1906902-009	10/8/18	10/10/18	40.103 g	2 mL	46.1
A6-0to23-100818	K1906902-010	10/8/18	10/10/18	40.246 g	2 mL	44.1
C4-0to27-100918	K1906902-011	10/9/18	10/10/18	40.423 g	2 mL	40.3
A7-0to26-100918	K1906902-012	10/9/18	10/10/18	40.341 g	2 mL	52.6
D2-0to19-101018	K1906902-013	10/10/18	10/15/18	40.086 g	2 mL	71.5
F2-0to19-101018	K1906902-014	10/10/18	10/15/18	40.440 g	2 mL	72.6
H2-0to30-101218	K1906902-015	10/12/18	10/15/18	40.326 g	2 mL	48.9
J2A3-0to18-101218	K1906902-016	10/12/18	10/15/18	40.201 g	2 mL	77.7
Q2-0to13-101818	K1906902-017	10/18/18	10/19/18	40.066 g	2 mL	68.6
G6-0to27-101818	K1906902-018	10/18/18	10/19/18	40.385 g	2 mL	50.7
T6-0to29-101618	K1906902-019	10/16/18	10/19/18	40.094 g	2 mL	38.1
Matrix Spike	KQ1910713-01MS	10/19/18	10/22/18	38.062 g	2 mL	47.2
Duplicate Matrix Spike	KQ1910713-02DMS	10/19/18	10/22/18	40.257 g	2 mL	47.2
Lab Control Sample	KQ1910713-03LCS	NA	NA	20.00 g	2 mL	
Method Blank	KQ1910713-04MB	NA	NA	40.4800 g	2 mL	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/19/18 15:36
Sample Matrix:	Sediment	**Date Received:**	10/22/18 10:45
Sample Name:	O7-0to27-101918	**Units:**	ug/Kg
Lab Code:	K1906902-001	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**0.22** J	1.3	0.16	1	08/05/19 15:32	7/31/19	
Acenaphthene	**0.77**	0.64	0.061	1	08/05/19 15:32	7/31/19	
Acenaphthylene	**0.78**	0.64	0.060	1	08/05/19 15:32	7/31/19	
Anthracene	**2.3**	0.64	0.049	1	08/05/19 15:32	7/31/19	
Benz(a)anthracene	**10**	0.64	0.049	1	08/05/19 15:32	7/31/19	
Benzo(a)pyrene	**19**	0.64	0.090	1	08/05/19 15:32	7/31/19	
Benzo(b)fluoranthene	**22**	0.64	0.085	1	08/05/19 15:32	7/31/19	
Benzo(g,h,i)perylene	**16**	0.64	0.13	1	08/05/19 15:32	7/31/19	
Benzo(k)fluoranthene	**8.4**	0.64	0.074	1	08/05/19 15:32	7/31/19	
Chrysene	**14**	0.64	0.071	1	08/05/19 15:32	7/31/19	
Dibenz(a,h)anthracene	**3.4**	0.64	0.12	1	08/05/19 15:32	7/31/19	
Dibenzofuran	**0.37** J	0.64	0.058	1	08/05/19 15:32	7/31/19	
Fluoranthene	**17**	0.64	0.063	1	08/05/19 15:32	7/31/19	
Fluorene	**0.98**	0.64	0.067	1	08/05/19 15:32	7/31/19	
Indeno(1,2,3-cd)pyrene	**16**	0.64	0.13	1	08/05/19 15:32	7/31/19	
Naphthalene	**0.44** J	1.3	0.20	1	08/05/19 15:32	7/31/19	
Phenanthrene	**6.1**	0.64	0.085	1	08/05/19 15:32	7/31/19	
Pyrene	**22**	0.64	0.065	1	08/05/19 15:32	7/31/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	61	23 - 110	08/05/19 15:32	
Fluorene-d10	70	26 - 102	08/05/19 15:32	
Terphenyl-d14	79	27 - 115	08/05/19 15:32	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/19/18 13:11
Sample Matrix:	Sediment	**Date Received:**	10/22/18 10:45
Sample Name:	515-0to26-101918	**Units:**	ug/Kg
Lab Code:	K1906902-002	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**12**	5.3	0.64	5	08/06/19 06:58	7/31/19	
Acenaphthene	**65**	2.6	0.25	5	08/06/19 06:58	7/31/19	
Acenaphthylene	**7.0**	2.6	0.25	5	08/06/19 06:58	7/31/19	
Anthracene	**190**	2.6	0.21	5	08/06/19 06:58	7/31/19	
Benz(a)anthracene	**420**	2.6	0.21	5	08/06/19 06:58	7/31/19	
Benzo(a)pyrene	**410**	2.6	0.38	5	08/06/19 06:58	7/31/19	
Benzo(b)fluoranthene	**480**	2.6	0.35	5	08/06/19 06:58	7/31/19	
Benzo(g,h,i)perylene	**220**	2.6	0.51	5	08/06/19 06:58	7/31/19	
Benzo(k)fluoranthene	**190**	2.6	0.31	5	08/06/19 06:58	7/31/19	
Chrysene	**440**	2.6	0.30	5	08/06/19 06:58	7/31/19	
Dibenz(a,h)anthracene	**67**	2.6	0.46	5	08/06/19 06:58	7/31/19	
Dibenzofuran	**30**	2.6	0.24	5	08/06/19 06:58	7/31/19	
Fluoranthene	**730**	2.6	0.26	5	08/06/19 06:58	7/31/19	
Fluorene	**78**	2.6	0.28	5	08/06/19 06:58	7/31/19	
Indeno(1,2,3-cd)pyrene	**260**	2.6	0.51	5	08/06/19 06:58	7/31/19	
Naphthalene	**16**	5.3	0.80	5	08/06/19 06:58	7/31/19	
Phenanthrene	**620**	2.6	0.35	5	08/06/19 06:58	7/31/19	
Pyrene	**760**	2.6	0.27	5	08/06/19 06:58	7/31/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	70	23 - 110	08/06/19 06:58	
Fluorene-d10	70	26 - 102	08/06/19 06:58	
Terphenyl-d14	86	27 - 115	08/06/19 06:58	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/19/18 13:11
Sample Matrix:	Sediment	**Date Received:**	10/22/18 10:45
Sample Name:	M4-0to26-101918	**Units:**	ug/Kg
Lab Code:	K1906902-003	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**3.4**	1.1	0.14	1	08/06/19 10:10	7/31/19	
Acenaphthene	**13**	0.56	0.053	1	08/06/19 10:10	7/31/19	
Acenaphthylene	**8.9**	0.56	0.052	1	08/06/19 10:10	7/31/19	
Anthracene	**19**	0.56	0.043	1	08/06/19 10:10	7/31/19	
Benz(a)anthracene	**81**	0.56	0.043	1	08/06/19 10:10	7/31/19	
Benzo(a)pyrene	**93**	0.56	0.079	1	08/06/19 10:10	7/31/19	
Benzo(b)fluoranthene	**130**	0.56	0.074	1	08/06/19 10:10	7/31/19	
Benzo(g,h,i)perylene	**68**	0.56	0.11	1	08/06/19 10:10	7/31/19	
Benzo(k)fluoranthene	**47**	0.56	0.064	1	08/06/19 10:10	7/31/19	
Chrysene	**120**	0.56	0.062	1	08/06/19 10:10	7/31/19	
Dibenz(a,h)anthracene	**16**	0.56	0.097	1	08/06/19 10:10	7/31/19	
Dibenzofuran	**3.6**	0.56	0.051	1	08/06/19 10:10	7/31/19	
Fluoranthene	**140**	0.56	0.055	1	08/06/19 10:10	7/31/19	
Fluorene	**6.6**	0.56	0.059	1	08/06/19 10:10	7/31/19	
Indeno(1,2,3-cd)pyrene	**71**	0.56	0.11	1	08/06/19 10:10	7/31/19	
Naphthalene	**6.9**	1.1	0.17	1	08/06/19 10:10	7/31/19	
Phenanthrene	**73**	0.56	0.074	1	08/06/19 10:10	7/31/19	
Pyrene	**170**	0.56	0.056	1	08/06/19 10:10	7/31/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	56	23 - 110	08/06/19 10:10	
Fluorene-d10	62	26 - 102	08/06/19 10:10	
Terphenyl-d14	71	27 - 115	08/06/19 10:10	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/20/18 12:05
Sample Matrix:	Sediment	**Date Received:**	10/22/18 10:45
Sample Name:	A1-0to30-102018	**Units:**	ug/Kg
Lab Code:	K1906902-004	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	ND	U	0.88	0.12	1	08/05/19 16:00	7/31/19	
Acenaphthene	ND	U	0.44	0.047	1	08/05/19 16:00	7/31/19	
Acenaphthylene	ND	U	0.44	0.046	1	08/05/19 16:00	7/31/19	
Anthracene	ND	U	0.44	0.038	1	08/05/19 16:00	7/31/19	
Benz(a)anthracene	**0.056**	**J**	0.44	0.038	1	08/05/19 16:00	7/31/19	
Benzo(a)pyrene	ND	Ui	0.44	0.11	1	08/05/19 16:00	7/31/19	
Benzo(b)fluoranthene	ND	U	0.44	0.066	1	08/05/19 16:00	7/31/19	
Benzo(g,h,i)perylene	ND	U	0.44	0.095	1	08/05/19 16:00	7/31/19	
Benzo(k)fluoranthene	ND	U	0.44	0.057	1	08/05/19 16:00	7/31/19	
Chrysene	ND	U	0.44	0.055	1	08/05/19 16:00	7/31/19	
Dibenz(a,h)anthracene	ND	U	0.44	0.086	1	08/05/19 16:00	7/31/19	
Dibenzofuran	ND	U	0.44	0.045	1	08/05/19 16:00	7/31/19	
Fluoranthene	**0.053**	**J**	0.44	0.049	1	08/05/19 16:00	7/31/19	
Fluorene	ND	U	0.44	0.052	1	08/05/19 16:00	7/31/19	
Indeno(1,2,3-cd)pyrene	ND	U	0.44	0.096	1	08/05/19 16:00	7/31/19	
Naphthalene	ND	U	0.88	0.15	1	08/05/19 16:00	7/31/19	
Phenanthrene	**0.11**	**J**	0.44	0.066	1	08/05/19 16:00	7/31/19	
Pyrene	**0.061**	**J**	0.44	0.050	1	08/05/19 16:00	7/31/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	54	23 - 110	08/05/19 16:00	
Fluorene-d10	63	26 - 102	08/05/19 16:00	
Terphenyl-d14	68	27 - 115	08/05/19 16:00	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/20/18 09:19
Sample Matrix:	Sediment	**Date Received:**	10/22/18 10:45
Sample Name:	Q6-0to27-102018	**Units:**	ug/Kg
Lab Code:	K1906902-005	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	ND U	1.4	0.17	1	08/05/19 16:29	7/31/19	
Acenaphthene	**0.29 J**	0.69	0.066	1	08/05/19 16:29	7/31/19	
Acenaphthylene	**0.60 J**	0.69	0.064	1	08/05/19 16:29	7/31/19	
Anthracene	**1.3**	0.69	0.053	1	08/05/19 16:29	7/31/19	
Benz(a)anthracene	**4.8**	0.69	0.053	1	08/05/19 16:29	7/31/19	
Benzo(a)pyrene	**5.4**	0.69	0.097	1	08/05/19 16:29	7/31/19	
Benzo(b)fluoranthene	**8.0**	0.69	0.092	1	08/05/19 16:29	7/31/19	
Benzo(g,h,i)perylene	**4.2**	0.69	0.14	1	08/05/19 16:29	7/31/19	
Benzo(k)fluoranthene	**3.5**	0.69	0.079	1	08/05/19 16:29	7/31/19	
Chrysene	**9.3**	0.69	0.077	1	08/05/19 16:29	7/31/19	
Dibenz(a,h)anthracene	**0.95**	0.69	0.12	1	08/05/19 16:29	7/31/19	
Dibenzofuran	**0.24 J**	0.69	0.063	1	08/05/19 16:29	7/31/19	
Fluoranthene	**8.1**	0.69	0.068	1	08/05/19 16:29	7/31/19	
Fluorene	**0.48 J**	0.69	0.073	1	08/05/19 16:29	7/31/19	
Indeno(1,2,3-cd)pyrene	**4.2**	0.69	0.14	1	08/05/19 16:29	7/31/19	
Naphthalene	**0.33 J**	1.4	0.21	1	08/05/19 16:29	7/31/19	
Phenanthrene	**3.3**	0.69	0.092	1	08/05/19 16:29	7/31/19	
Pyrene	**10**	0.69	0.070	1	08/05/19 16:29	7/31/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	54	23 - 110	08/05/19 16:29	
Fluorene-d10	60	26 - 102	08/05/19 16:29	
Terphenyl-d14	68	27 - 115	08/05/19 16:29	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/08/18 14:38
Sample Matrix:	Sediment	**Date Received:**	10/10/18 08:55
Sample Name:	A5-0to25-100818	**Units:**	ug/Kg
Lab Code:	K1906902-006	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**1.8**	1.1	0.13	1	08/05/19 16:57	7/31/19	
Acenaphthene	**3.7**	0.53	0.050	1	08/05/19 16:57	7/31/19	
Acenaphthylene	**4.1**	0.53	0.049	1	08/05/19 16:57	7/31/19	
Anthracene	**7.8**	0.53	0.040	1	08/05/19 16:57	7/31/19	
Benz(a)anthracene	**36**	0.53	0.040	1	08/05/19 16:57	7/31/19	
Benzo(a)pyrene	**43**	0.53	0.074	1	08/05/19 16:57	7/31/19	
Benzo(b)fluoranthene	**67**	0.53	0.070	1	08/05/19 16:57	7/31/19	
Benzo(g,h,i)perylene	**33**	0.53	0.10	1	08/05/19 16:57	7/31/19	
Benzo(k)fluoranthene	**24**	0.53	0.060	1	08/05/19 16:57	7/31/19	
Chrysene	**68**	0.53	0.058	1	08/05/19 16:57	7/31/19	
Dibenz(a,h)anthracene	**7.0**	0.53	0.091	1	08/05/19 16:57	7/31/19	
Dibenzofuran	**1.8**	0.53	0.048	1	08/05/19 16:57	7/31/19	
Fluoranthene	**74**	0.53	0.052	1	08/05/19 16:57	7/31/19	
Fluorene	**3.7**	0.53	0.055	1	08/05/19 16:57	7/31/19	
Indeno(1,2,3-cd)pyrene	**34**	0.53	0.11	1	08/05/19 16:57	7/31/19	
Naphthalene	**4.2**	1.1	0.16	1	08/05/19 16:57	7/31/19	
Phenanthrene	**35**	0.53	0.070	1	08/05/19 16:57	7/31/19	
Pyrene	**87**	0.53	0.053	1	08/05/19 16:57	7/31/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	49	23 - 110	08/05/19 16:57	
Fluorene-d10	58	26 - 102	08/05/19 16:57	
Terphenyl-d14	65	27 - 115	08/05/19 16:57	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/08/18 13:26
Sample Matrix:	Sediment	**Date Received:**	10/10/18 08:55
Sample Name:	A4-0to25-100818	**Units:**	ug/Kg
Lab Code:	K1906902-007	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**16**	5.1	0.61	5	08/06/19 07:25	7/31/19	
Acenaphthene	**23**	2.5	0.24	5	08/06/19 07:25	7/31/19	
Acenaphthylene	**20**	2.5	0.24	5	08/06/19 07:25	7/31/19	
Anthracene	**41**	2.5	0.20	5	08/06/19 07:25	7/31/19	
Benz(a)anthracene	**150**	2.5	0.20	5	08/06/19 07:25	7/31/19	
Benzo(a)pyrene	**190**	2.5	0.36	5	08/06/19 07:25	7/31/19	
Benzo(b)fluoranthene	**240**	2.5	0.34	5	08/06/19 07:25	7/31/19	
Benzo(g,h,i)perylene	**150**	2.5	0.49	5	08/06/19 07:25	7/31/19	
Benzo(k)fluoranthene	**89**	2.5	0.29	5	08/06/19 07:25	7/31/19	
Chrysene	**230**	2.5	0.28	5	08/06/19 07:25	7/31/19	
Dibenz(a,h)anthracene	**29**	2.5	0.44	5	08/06/19 07:25	7/31/19	
Dibenzofuran	**13**	2.5	0.23	5	08/06/19 07:25	7/31/19	
Fluoranthene	**310**	2.5	0.25	5	08/06/19 07:25	7/31/19	
Fluorene	**20**	2.5	0.27	5	08/06/19 07:25	7/31/19	
Indeno(1,2,3-cd)pyrene	**150**	2.5	0.49	5	08/06/19 07:25	7/31/19	
Naphthalene	**29**	5.1	0.76	5	08/06/19 07:25	7/31/19	
Phenanthrene	**190**	2.5	0.34	5	08/06/19 07:25	7/31/19	
Pyrene	**390**	2.5	0.26	5	08/06/19 07:25	7/31/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	89	23 - 110	08/06/19 07:25	
Fluorene-d10	90	26 - 102	08/06/19 07:25	
Terphenyl-d14	103	27 - 115	08/06/19 07:25	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/08/18 11:14
Sample Matrix:	Sediment	**Date Received:**	10/10/18 08:55
Sample Name:	A3-0to31-100818	**Units:**	ug/Kg
Lab Code:	K1906902-008	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**1.4**	1.1	0.14	1	08/05/19 17:25	7/31/19	
Acenaphthene	**1.8**	0.56	0.053	1	08/05/19 17:25	7/31/19	
Acenaphthylene	**8.0**	0.56	0.052	1	08/05/19 17:25	7/31/19	
Anthracene	**12**	0.56	0.043	1	08/05/19 17:25	7/31/19	
Benz(a)anthracene	**170**	0.56	0.043	1	08/05/19 17:25	7/31/19	
Benzo(a)pyrene	**93**	0.56	0.079	1	08/05/19 17:25	7/31/19	
Benzo(b)fluoranthene	**190**	0.56	0.075	1	08/05/19 17:25	7/31/19	
Benzo(g,h,i)perylene	**34**	0.56	0.11	1	08/05/19 17:25	7/31/19	
Benzo(k)fluoranthene	**70**	0.56	0.064	1	08/05/19 17:25	7/31/19	
Chrysene	**250**	2.8	0.31	5	08/06/19 12:01	7/31/19	
Dibenz(a,h)anthracene	**11**	0.56	0.097	1	08/05/19 17:25	7/31/19	
Dibenzofuran	**1.1**	0.56	0.051	1	08/05/19 17:25	7/31/19	
Fluoranthene	**170**	0.56	0.055	1	08/05/19 17:25	7/31/19	
Fluorene	**2.9**	0.56	0.059	1	08/05/19 17:25	7/31/19	
Indeno(1,2,3-cd)pyrene	**46**	0.56	0.11	1	08/05/19 17:25	7/31/19	
Naphthalene	**2.0**	1.1	0.17	1	08/05/19 17:25	7/31/19	
Phenanthrene	**22**	0.56	0.075	1	08/05/19 17:25	7/31/19	
Pyrene	**210**	0.56	0.057	1	08/05/19 17:25	7/31/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	60	23 - 110	08/05/19 17:25	
Fluorene-d10	69	26 - 102	08/05/19 17:25	
Terphenyl-d14	82	27 - 115	08/05/19 17:25	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/08/18 14:04
Sample Matrix:	Sediment	**Date Received:**	10/10/18 08:55
Sample Name:	A2-0to26-100818	**Units:**	ug/Kg
Lab Code:	K1906902-009	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**7.0**	5.4	0.65	5	08/06/19 07:52	7/31/19	
Acenaphthene	**13**	2.7	0.26	5	08/06/19 07:52	7/31/19	
Acenaphthylene	**23**	2.7	0.25	5	08/06/19 07:52	7/31/19	
Anthracene	**51**	2.7	0.21	5	08/06/19 07:52	7/31/19	
Benz(a)anthracene	**210**	2.7	0.21	5	08/06/19 07:52	7/31/19	
Benzo(a)pyrene	**230**	2.7	0.38	5	08/06/19 07:52	7/31/19	
Benzo(b)fluoranthene	**320**	2.7	0.36	5	08/06/19 07:52	7/31/19	
Benzo(g,h,i)perylene	**170**	2.7	0.52	5	08/06/19 07:52	7/31/19	
Benzo(k)fluoranthene	**110**	2.7	0.31	5	08/06/19 07:52	7/31/19	
Chrysene	**380**	2.7	0.30	5	08/06/19 07:52	7/31/19	
Dibenz(a,h)anthracene	**37**	2.7	0.47	5	08/06/19 07:52	7/31/19	
Dibenzofuran	**8.3**	2.7	0.25	5	08/06/19 07:52	7/31/19	
Fluoranthene	**530**	2.7	0.27	5	08/06/19 07:52	7/31/19	
Fluorene	**19**	2.7	0.29	5	08/06/19 07:52	7/31/19	
Indeno(1,2,3-cd)pyrene	**180**	2.7	0.52	5	08/06/19 07:52	7/31/19	
Naphthalene	**17**	5.4	0.82	5	08/06/19 07:52	7/31/19	
Phenanthrene	**140**	2.7	0.36	5	08/06/19 07:52	7/31/19	
Pyrene	**520**	2.7	0.28	5	08/06/19 07:52	7/31/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	66	23 - 110	08/06/19 07:52	
Fluorene-d10	64	26 - 102	08/06/19 07:52	
Terphenyl-d14	78	27 - 115	08/06/19 07:52	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/08/18 16:08
Sample Matrix:	Sediment	**Date Received:**	10/10/18 08:55
Sample Name:	A6-0to23-100818	**Units:**	ug/Kg
Lab Code:	K1906902-010	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**0.80** J	1.1	0.14	1	08/05/19 17:54	7/31/19	
Acenaphthene	**1.6**	0.57	0.054	1	08/05/19 17:54	7/31/19	
Acenaphthylene	**1.6**	0.57	0.053	1	08/05/19 17:54	7/31/19	
Anthracene	**3.3**	0.57	0.043	1	08/05/19 17:54	7/31/19	
Benz(a)anthracene	**21**	0.57	0.043	1	08/05/19 17:54	7/31/19	
Benzo(a)pyrene	**22**	0.57	0.080	1	08/05/19 17:54	7/31/19	
Benzo(b)fluoranthene	**34**	0.57	0.075	1	08/05/19 17:54	7/31/19	
Benzo(g,h,i)perylene	**15**	0.57	0.11	1	08/05/19 17:54	7/31/19	
Benzo(k)fluoranthene	**13**	0.57	0.065	1	08/05/19 17:54	7/31/19	
Chrysene	**32**	0.57	0.063	1	08/05/19 17:54	7/31/19	
Dibenz(a,h)anthracene	**3.7**	0.57	0.098	1	08/05/19 17:54	7/31/19	
Dibenzofuran	**0.80**	0.57	0.051	1	08/05/19 17:54	7/31/19	
Fluoranthene	**33**	0.57	0.056	1	08/05/19 17:54	7/31/19	
Fluorene	**1.5**	0.57	0.059	1	08/05/19 17:54	7/31/19	
Indeno(1,2,3-cd)pyrene	**17**	0.57	0.11	1	08/05/19 17:54	7/31/19	
Naphthalene	**1.8**	1.1	0.17	1	08/05/19 17:54	7/31/19	
Phenanthrene	**13**	0.57	0.075	1	08/05/19 17:54	7/31/19	
Pyrene	**40**	0.57	0.057	1	08/05/19 17:54	7/31/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	47	23 - 110	08/05/19 17:54	
Fluorene-d10	52	26 - 102	08/05/19 17:54	
Terphenyl-d14	61	27 - 115	08/05/19 17:54	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/09/18 08:28
Sample Matrix:	Sediment	**Date Received:**	10/10/18 08:55
Sample Name:	C4-0to27-100918	**Units:**	ug/Kg
Lab Code:	K1906902-011	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**2.4** J	6.2	0.75	5	08/06/19 08:19	7/31/19	
Acenaphthene	**9.8**	3.1	0.30	5	08/06/19 08:19	7/31/19	
Acenaphthylene	**8.2**	3.1	0.29	5	08/06/19 08:19	7/31/19	
Anthracene	**170**	3.1	0.24	5	08/06/19 08:19	7/31/19	
Benz(a)anthracene	**1100**	3.1	0.24	5	08/06/19 08:19	7/31/19	
Benzo(a)pyrene	**800**	3.1	0.44	5	08/06/19 08:19	7/31/19	
Benzo(b)fluoranthene	**1100**	3.1	0.41	5	08/06/19 08:19	7/31/19	
Benzo(g,h,i)perylene	**400**	3.1	0.59	5	08/06/19 08:19	7/31/19	
Benzo(k)fluoranthene	**370**	3.1	0.36	5	08/06/19 08:19	7/31/19	
Chrysene	**1500**	12	1.4	20	08/06/19 12:30	7/31/19	
Dibenz(a,h)anthracene	**150**	3.1	0.54	5	08/06/19 08:19	7/31/19	
Dibenzofuran	**2.9** J	3.1	0.28	5	08/06/19 08:19	7/31/19	
Fluoranthene	**1100**	3.1	0.31	5	08/06/19 08:19	7/31/19	
Fluorene	**27**	3.1	0.33	5	08/06/19 08:19	7/31/19	
Indeno(1,2,3-cd)pyrene	**470**	3.1	0.60	5	08/06/19 08:19	7/31/19	
Naphthalene	**4.3** J	6.2	0.93	5	08/06/19 08:19	7/31/19	
Phenanthrene	**240**	3.1	0.41	5	08/06/19 08:19	7/31/19	
Pyrene	**1100**	3.1	0.31	5	08/06/19 08:19	7/31/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	66	23 - 110	08/06/19 08:19	
Fluorene-d10	66	26 - 102	08/06/19 08:19	
Terphenyl-d14	84	27 - 115	08/06/19 08:19	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/09/18 13:23
Sample Matrix:	Sediment	**Date Received:**	10/10/18 08:55
Sample Name:	A7-0to26-100918	**Units:**	ug/Kg
Lab Code:	K1906902-012	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**0.83** J	0.95	0.12	1	08/05/19 18:22	7/31/19	
Acenaphthene	**1.4**	0.47	0.047	1	08/05/19 18:22	7/31/19	
Acenaphthylene	**1.7**	0.47	0.046	1	08/05/19 18:22	7/31/19	
Anthracene	**3.5**	0.47	0.038	1	08/05/19 18:22	7/31/19	
Benz(a)anthracene	**15**	0.47	0.038	1	08/05/19 18:22	7/31/19	
Benzo(a)pyrene	**18**	0.47	0.070	1	08/05/19 18:22	7/31/19	
Benzo(b)fluoranthene	**30**	0.47	0.066	1	08/05/19 18:22	7/31/19	
Benzo(g,h,i)perylene	**15**	0.47	0.095	1	08/05/19 18:22	7/31/19	
Benzo(k)fluoranthene	**11**	0.47	0.057	1	08/05/19 18:22	7/31/19	
Chrysene	**33**	0.47	0.055	1	08/05/19 18:22	7/31/19	
Dibenz(a,h)anthracene	**3.4**	0.47	0.086	1	08/05/19 18:22	7/31/19	
Dibenzofuran	**0.90**	0.47	0.045	1	08/05/19 18:22	7/31/19	
Fluoranthene	**26**	0.47	0.049	1	08/05/19 18:22	7/31/19	
Fluorene	**1.6**	0.47	0.052	1	08/05/19 18:22	7/31/19	
Indeno(1,2,3-cd)pyrene	**15**	0.47	0.096	1	08/05/19 18:22	7/31/19	
Naphthalene	**2.2**	0.95	0.15	1	08/05/19 18:22	7/31/19	
Phenanthrene	**12**	0.47	0.066	1	08/05/19 18:22	7/31/19	
Pyrene	**32**	0.47	0.050	1	08/05/19 18:22	7/31/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	55	23 - 110	08/05/19 18:22	
Fluorene-d10	62	26 - 102	08/05/19 18:22	
Terphenyl-d14	73	27 - 115	08/05/19 18:22	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/10/18 15:21
Sample Matrix:	Sediment	**Date Received:**	10/15/18 12:15
Sample Name:	D2-0to19-101018	**Units:**	ug/Kg
Lab Code:	K1906902-013	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**4.2**	3.5	0.60	5	08/06/19 08:47	7/31/19	
Acenaphthene	**9.8**	1.7	0.24	5	08/06/19 08:47	7/31/19	
Acenaphthylene	**11**	1.7	0.23	5	08/06/19 08:47	7/31/19	
Anthracene	**20**	1.7	0.19	5	08/06/19 08:47	7/31/19	
Benz(a)anthracene	**110**	1.7	0.19	5	08/06/19 08:47	7/31/19	
Benzo(a)pyrene	**90**	1.7	0.35	5	08/06/19 08:47	7/31/19	
Benzo(b)fluoranthene	**140**	1.7	0.33	5	08/06/19 08:47	7/31/19	
Benzo(g,h,i)perylene	**55**	1.7	0.48	5	08/06/19 08:47	7/31/19	
Benzo(k)fluoranthene	**55**	1.7	0.29	5	08/06/19 08:47	7/31/19	
Chrysene	**170**	1.7	0.28	5	08/06/19 08:47	7/31/19	
Dibenz(a,h)anthracene	**12**	1.7	0.43	5	08/06/19 08:47	7/31/19	
Dibenzofuran	**4.0**	1.7	0.23	5	08/06/19 08:47	7/31/19	
Fluoranthene	**320**	1.7	0.25	5	08/06/19 08:47	7/31/19	
Fluorene	**12**	1.7	0.26	5	08/06/19 08:47	7/31/19	
Indeno(1,2,3-cd)pyrene	**61**	1.7	0.48	5	08/06/19 08:47	7/31/19	
Naphthalene	**5.4**	3.5	0.75	5	08/06/19 08:47	7/31/19	
Phenanthrene	**76**	1.7	0.33	5	08/06/19 08:47	7/31/19	
Pyrene	**280**	1.7	0.25	5	08/06/19 08:47	7/31/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	51	23 - 110	08/06/19 08:47	
Fluorene-d10	50	26 - 102	08/06/19 08:47	
Terphenyl-d14	60	27 - 115	08/06/19 08:47	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/10/18 16:36
Sample Matrix:	Sediment	**Date Received:**	10/15/18 12:15
Sample Name:	F2-0to19-101018	**Units:**	ug/Kg
Lab Code:	K1906902-014	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**5.6**	0.68	0.12	1	08/05/19 18:50	7/31/19	
Acenaphthene	**9.7**	0.34	0.047	1	08/05/19 18:50	7/31/19	
Acenaphthylene	**6.2**	0.34	0.046	1	08/05/19 18:50	7/31/19	
Anthracene	**7.4**	0.34	0.038	1	08/05/19 18:50	7/31/19	
Benz(a)anthracene	**27**	0.34	0.038	1	08/05/19 18:50	7/31/19	
Benzo(a)pyrene	**38**	0.34	0.070	1	08/05/19 18:50	7/31/19	
Benzo(b)fluoranthene	**54**	0.34	0.066	1	08/05/19 18:50	7/31/19	
Benzo(g,h,i)perylene	**23**	0.34	0.095	1	08/05/19 18:50	7/31/19	
Benzo(k)fluoranthene	**21**	0.34	0.057	1	08/05/19 18:50	7/31/19	
Chrysene	**46**	0.34	0.055	1	08/05/19 18:50	7/31/19	
Dibenz(a,h)anthracene	**5.3**	0.34	0.086	1	08/05/19 18:50	7/31/19	
Dibenzofuran	**5.3**	0.34	0.045	1	08/05/19 18:50	7/31/19	
Fluoranthene	**72**	0.34	0.049	1	08/05/19 18:50	7/31/19	
Fluorene	**9.4**	0.34	0.052	1	08/05/19 18:50	7/31/19	
Indeno(1,2,3-cd)pyrene	**27**	0.34	0.096	1	08/05/19 18:50	7/31/19	
Naphthalene	**6.8**	0.68	0.15	1	08/05/19 18:50	7/31/19	
Phenanthrene	**33**	0.34	0.066	1	08/05/19 18:50	7/31/19	
Pyrene	**82**	0.34	0.050	1	08/05/19 18:50	7/31/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	50	23 - 110	08/05/19 18:50	
Fluorene-d10	58	26 - 102	08/05/19 18:50	
Terphenyl-d14	69	27 - 115	08/05/19 18:50	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/12/18 10:28
Sample Matrix:	Sediment	**Date Received:**	10/15/18 12:15
Sample Name:	H2-0to30-101218	**Units:**	ug/Kg
Lab Code:	K1906902-015	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**10**	5.1	0.62	5	08/06/19 10:38	7/31/19	
Acenaphthene	**35**	2.6	0.24	5	08/06/19 10:38	7/31/19	
Acenaphthylene	**37**	2.6	0.24	5	08/06/19 10:38	7/31/19	
Anthracene	**84**	2.6	0.20	5	08/06/19 10:38	7/31/19	
Benz(a)anthracene	**250**	2.6	0.20	5	08/06/19 10:38	7/31/19	
Benzo(a)pyrene	**270**	2.6	0.36	5	08/06/19 10:38	7/31/19	
Benzo(b)fluoranthene	**350**	2.6	0.34	5	08/06/19 10:38	7/31/19	
Benzo(g,h,i)perylene	**190**	2.6	0.49	5	08/06/19 10:38	7/31/19	
Benzo(k)fluoranthene	**140**	2.6	0.30	5	08/06/19 10:38	7/31/19	
Chrysene	**360**	2.6	0.29	5	08/06/19 10:38	7/31/19	
Dibenz(a,h)anthracene	**42**	2.6	0.44	5	08/06/19 10:38	7/31/19	
Dibenzofuran	**11**	2.6	0.23	5	08/06/19 10:38	7/31/19	
Fluoranthene	**570**	2.6	0.25	5	08/06/19 10:38	7/31/19	
Fluorene	**38**	2.6	0.27	5	08/06/19 10:38	7/31/19	
Indeno(1,2,3-cd)pyrene	**200**	2.6	0.49	5	08/06/19 10:38	7/31/19	
Naphthalene	**28**	5.1	0.77	5	08/06/19 10:38	7/31/19	
Phenanthrene	**300**	2.6	0.34	5	08/06/19 10:38	7/31/19	
Pyrene	**630**	2.6	0.26	5	08/06/19 10:38	7/31/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	66	23 - 110	08/06/19 10:38	
Fluorene-d10	70	26 - 102	08/06/19 10:38	
Terphenyl-d14	80	27 - 115	08/06/19 10:38	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/12/18 12:57
Sample Matrix:	Sediment	**Date Received:**	10/15/18 12:15
Sample Name:	J2A3-0to18-101218	**Units:**	ug/Kg
Lab Code:	K1906902-016	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**3.1**	J	3.2	0.60	5	08/06/19 12:57	7/31/19	
Acenaphthene	**5.9**		1.6	0.24	5	08/06/19 12:57	7/31/19	
Acenaphthylene	**4.1**		1.6	0.23	5	08/06/19 12:57	7/31/19	
Anthracene	**22**		1.6	0.19	5	08/06/19 12:57	7/31/19	
Benz(a)anthracene	**93**		1.6	0.19	5	08/06/19 12:57	7/31/19	
Benzo(a)pyrene	**110**		1.6	0.35	5	08/06/19 12:57	7/31/19	
Benzo(b)fluoranthene	**150**		1.6	0.33	5	08/06/19 12:57	7/31/19	
Benzo(g,h,i)perylene	**89**		1.6	0.48	5	08/06/19 12:57	7/31/19	
Benzo(k)fluoranthene	**62**		1.6	0.29	5	08/06/19 12:57	7/31/19	
Chrysene	**120**		1.6	0.28	5	08/06/19 12:57	7/31/19	
Dibenz(a,h)anthracene	**20**		1.6	0.43	5	08/06/19 12:57	7/31/19	
Dibenzofuran	**5.4**		1.6	0.23	5	08/06/19 12:57	7/31/19	
Fluoranthene	**190**		1.6	0.25	5	08/06/19 12:57	7/31/19	
Fluorene	**12**		1.6	0.26	5	08/06/19 12:57	7/31/19	
Indeno(1,2,3-cd)pyrene	**91**		1.6	0.48	5	08/06/19 12:57	7/31/19	
Naphthalene	**4.3**		3.2	0.75	5	08/06/19 12:57	7/31/19	
Phenanthrene	**98**		1.6	0.33	5	08/06/19 12:57	7/31/19	
Pyrene	**190**		1.6	0.25	5	08/06/19 12:57	7/31/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	58	23 - 110	08/06/19 12:57	
Fluorene-d10	65	26 - 102	08/06/19 12:57	
Terphenyl-d14	72	27 - 115	08/06/19 12:57	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/18/18 09:39
Sample Matrix:	Sediment	**Date Received:**	10/19/18 12:30
Sample Name:	Q2-0to13-101818	**Units:**	ug/Kg
Lab Code:	K1906902-017	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	ND U	0.72	0.12	1	08/05/19 19:17	7/31/19	
Acenaphthene	**0.30 J**	0.36	0.047	1	08/05/19 19:17	7/31/19	
Acenaphthylene	**0.97**	0.36	0.046	1	08/05/19 19:17	7/31/19	
Anthracene	**1.2**	0.36	0.038	1	08/05/19 19:17	7/31/19	
Benz(a)anthracene	**5.4**	0.36	0.038	1	08/05/19 19:17	7/31/19	
Benzo(a)pyrene	**8.3**	0.36	0.070	1	08/05/19 19:17	7/31/19	
Benzo(b)fluoranthene	**11**	0.36	0.066	1	08/05/19 19:17	7/31/19	
Benzo(g,h,i)perylene	**9.0**	0.36	0.095	1	08/05/19 19:17	7/31/19	
Benzo(k)fluoranthene	**4.0**	0.36	0.057	1	08/05/19 19:17	7/31/19	
Chrysene	**8.7**	0.36	0.055	1	08/05/19 19:17	7/31/19	
Dibenz(a,h)anthracene	**1.4**	0.36	0.086	1	08/05/19 19:17	7/31/19	
Dibenzofuran	**0.25 J**	0.36	0.045	1	08/05/19 19:17	7/31/19	
Fluoranthene	**15**	0.36	0.049	1	08/05/19 19:17	7/31/19	
Fluorene	**0.27 J**	0.36	0.052	1	08/05/19 19:17	7/31/19	
Indeno(1,2,3-cd)pyrene	**8.8**	0.36	0.096	1	08/05/19 19:17	7/31/19	
Naphthalene	**0.23 J**	0.72	0.15	1	08/05/19 19:17	7/31/19	
Phenanthrene	**8.7**	0.36	0.066	1	08/05/19 19:17	7/31/19	
Pyrene	**18**	0.36	0.050	1	08/05/19 19:17	7/31/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	56	23 - 110	08/05/19 19:17	
Fluorene-d10	62	26 - 102	08/05/19 19:17	
Terphenyl-d14	71	27 - 115	08/05/19 19:17	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/18/18 14:12
Sample Matrix:	Sediment	**Date Received:**	10/19/18 12:30
Sample Name:	G6-0to27-101818	**Units:**	ug/Kg
Lab Code:	K1906902-018	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**3.7**	2.0	0.24	2	08/06/19 13:25	7/31/19	
Acenaphthene	**6.5**	0.99	0.094	2	08/06/19 13:25	7/31/19	
Acenaphthylene	**7.3**	0.99	0.092	2	08/06/19 13:25	7/31/19	
Anthracene	**15**	0.99	0.076	2	08/06/19 13:25	7/31/19	
Benz(a)anthracene	**60**	0.99	0.076	2	08/06/19 13:25	7/31/19	
Benzo(a)pyrene	**65**	0.99	0.14	2	08/06/19 13:25	7/31/19	
Benzo(b)fluoranthene	**100**	0.99	0.14	2	08/06/19 13:25	7/31/19	
Benzo(g,h,i)perylene	**51**	0.99	0.19	2	08/06/19 13:25	7/31/19	
Benzo(k)fluoranthene	**32**	0.99	0.12	2	08/06/19 13:25	7/31/19	
Chrysene	**100**	0.99	0.11	2	08/06/19 13:25	7/31/19	
Dibenz(a,h)anthracene	**11**	0.99	0.18	2	08/06/19 13:25	7/31/19	
Dibenzofuran	**3.7**	0.99	0.090	2	08/06/19 13:25	7/31/19	
Fluoranthene	**140**	0.99	0.098	2	08/06/19 13:25	7/31/19	
Fluorene	**6.6**	0.99	0.11	2	08/06/19 13:25	7/31/19	
Indeno(1,2,3-cd)pyrene	**51**	0.99	0.20	2	08/06/19 13:25	7/31/19	
Naphthalene	**5.9**	2.0	0.30	2	08/06/19 13:25	7/31/19	
Phenanthrene	**56**	0.99	0.14	2	08/06/19 13:25	7/31/19	
Pyrene	**160**	0.99	0.10	2	08/06/19 13:25	7/31/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	54	23 - 110	08/06/19 13:25	
Fluorene-d10	57	26 - 102	08/06/19 13:25	
Terphenyl-d14	66	27 - 115	08/06/19 13:25	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/16/18 14:38
Sample Matrix:	Sediment	**Date Received:**	10/19/18 12:30
Sample Name:	T6-0to29-101618	**Units:**	ug/Kg
Lab Code:	K1906902-019	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**0.16** J	1.3	0.16	1	08/05/19 19:44	7/31/19	
Acenaphthene	**0.60** J	0.65	0.062	1	08/05/19 19:44	7/31/19	
Acenaphthylene	**0.68**	0.65	0.060	1	08/05/19 19:44	7/31/19	
Anthracene	**0.85**	0.65	0.050	1	08/05/19 19:44	7/31/19	
Benz(a)anthracene	**4.3**	0.65	0.050	1	08/05/19 19:44	7/31/19	
Benzo(a)pyrene	**6.4**	0.65	0.092	1	08/05/19 19:44	7/31/19	
Benzo(b)fluoranthene	**8.1**	0.65	0.087	1	08/05/19 19:44	7/31/19	
Benzo(g,h,i)perylene	**6.2**	0.65	0.13	1	08/05/19 19:44	7/31/19	
Benzo(k)fluoranthene	**3.0**	0.65	0.075	1	08/05/19 19:44	7/31/19	
Chrysene	**6.5**	0.65	0.072	1	08/05/19 19:44	7/31/19	
Dibenz(a,h)anthracene	**0.94**	0.65	0.12	1	08/05/19 19:44	7/31/19	
Dibenzofuran	**0.19** J	0.65	0.059	1	08/05/19 19:44	7/31/19	
Fluoranthene	**12**	0.65	0.064	1	08/05/19 19:44	7/31/19	
Fluorene	**0.44** J	0.65	0.068	1	08/05/19 19:44	7/31/19	
Indeno(1,2,3-cd)pyrene	**5.7**	0.65	0.13	1	08/05/19 19:44	7/31/19	
Naphthalene	**0.30** J	1.3	0.20	1	08/05/19 19:44	7/31/19	
Phenanthrene	**5.0**	0.65	0.087	1	08/05/19 19:44	7/31/19	
Pyrene	**16**	0.65	0.066	1	08/05/19 19:44	7/31/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	35	23 - 110	08/05/19 19:44	
Fluorene-d10	39	26 - 102	08/05/19 19:44	
Terphenyl-d14	42	27 - 115	08/05/19 19:44	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	KQ1910711-04	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	ND	U	1.0	0.12	1	08/06/19 06:02	7/31/19	
Acenaphthene	ND	U	0.50	0.047	1	08/06/19 06:02	7/31/19	
Acenaphthylene	ND	U	0.50	0.046	1	08/06/19 06:02	7/31/19	
Anthracene	**0.063**	**J**	0.50	0.038	1	08/06/19 06:02	7/31/19	
Benz(a)anthracene	**0.094**	**J**	0.50	0.038	1	08/06/19 06:02	7/31/19	
Benzo(a)pyrene	ND	U	0.50	0.070	1	08/06/19 06:02	7/31/19	
Benzo(b)fluoranthene	ND	U	0.50	0.066	1	08/06/19 06:02	7/31/19	
Benzo(g,h,i)perylene	ND	U	0.50	0.095	1	08/06/19 06:02	7/31/19	
Benzo(k)fluoranthene	ND	U	0.50	0.057	1	08/06/19 06:02	7/31/19	
Chrysene	**0.089**	**J**	0.50	0.055	1	08/06/19 06:02	7/31/19	
Dibenz(a,h)anthracene	ND	U	0.50	0.086	1	08/06/19 06:02	7/31/19	
Dibenzofuran	**0.068**	**J**	0.50	0.045	1	08/06/19 06:02	7/31/19	
Fluoranthene	**0.14**	**J**	0.50	0.049	1	08/06/19 06:02	7/31/19	
Fluorene	ND	U	0.50	0.052	1	08/06/19 06:02	7/31/19	
Indeno(1,2,3-cd)pyrene	ND	U	0.50	0.096	1	08/06/19 06:02	7/31/19	
Naphthalene	ND	U	1.0	0.15	1	08/06/19 06:02	7/31/19	
Phenanthrene	**0.11**	**J**	0.50	0.066	1	08/06/19 06:02	7/31/19	
Pyrene	**0.16**	**J**	0.50	0.050	1	08/06/19 06:02	7/31/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	71	23 - 110	08/06/19 06:02	
Fluorene-d10	78	26 - 102	08/06/19 06:02	
Terphenyl-d14	93	27 - 115	08/06/19 06:02	

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment/2006-00115
Sample Matrix: Sediment

SURROGATE RECOVERY SUMMARY

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Extraction Method: EPA 3541

Sample Name	Lab Code	Fluoranthene-d10 23-110	Fluorene-d10 26-102	Terphenyl-d14 27-115
O7-0to27-101918	K1906902-001	61	70	79
515-0to26-101918	K1906902-002	70	70	86
M4-0to26-101918	K1906902-003	56	62	71
A1-0to30-102018	K1906902-004	54	63	68
Q6-0to27-102018	K1906902-005	54	60	68
A5-0to25-100818	K1906902-006	49	58	65
A4-0to25-100818	K1906902-007	89	90	103
A3-0to31-100818	K1906902-008	60	69	82
A2-0to26-100818	K1906902-009	66	64	78
A6-0to23-100818	K1906902-010	47	52	61
C4-0to27-100918	K1906902-011	66	66	84
A7-0to26-100918	K1906902-012	55	62	73
D2-0to19-101018	K1906902-013	51	50	60
F2-0to19-101018	K1906902-014	50	58	69
H2-0to30-101218	K1906902-015	66	70	80
J2A3-0to18-101218	K1906902-016	58	65	72
Q2-0to13-101818	K1906902-017	56	62	71
G6-0to27-101818	K1906902-018	54	57	66
T6-0to29-101618	K1906902-019	35	39	42
Method Blank	KQ1910711-04	71	78	93
Lab Control Sample	KQ1910711-03	41	45	52
M4-0to26-101918	KQ1910711-01	57	66	76
M4-0to26-101918	KQ1910711-02	57	63	76

Client: Pacific Groundwater Group (PGG) **Service Request:**K1906902
Project: DTNA Swan Island Lagoon Sediment/2006-00115 **Date Analyzed:**08/05/19 08:39

Internal Standard Area and RT SUMMARY

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

File ID: J:\MS14\DATA\080519A\0805F002.D\ **Lab Code:**KQ1910937-01
Instrument ID: K-MS-14 **Analysis Lot:**645972
Analysis Method: 8270D **Signal ID:**1

		Acenaphthene-d10		Chrysene-d12		Naphthalene-d8	
		Area	**RT**	**Area**	**RT**	**Area**	**RT**
	Result ==>	26,327	6.26	65,958	9.98	54,712	4.70
	Upper Limit ==>	52,654	6.76	131,916	10.48	109,424	5.20
	Lower Limit ==>	13,164	5.76	32,979	9.48	27,356	4.20
Associated Analyses							
O7-0to27-101918	K1906902-001	35274	6.26	79398	9.99	70435	4.70
A1-0to30-102018	K1906902-004	34901	6.26	82066	9.99	70574	4.70
Q6-0to27-102018	K1906902-005	34258	6.26	79083	9.99	69102	4.70
A5-0to25-100818	K1906902-006	34671	6.26	76237	10.00	67421	4.70
A3-0to31-100818	K1906902-008	33282	6.26	71879	10.00	67260	4.70
A6-0to23-100818	K1906902-010	34657	6.26	77919	9.99	68146	4.70
A7-0to26-100918	K1906902-012	34636	6.26	76816	9.99	68960	4.70
F2-0to19-101018	K1906902-014	33974	6.26	70832	10.02	67494	4.70
Q2-0to13-101818	K1906902-017	32678	6.26	74700	9.99	63799	4.70
T6-0to29-101618	K1906902-019	34140	6.26	78076	10.00	66671	4.70

Client: Pacific Groundwater Group (PGG) **Service Request:**K1906902
Project: DTNA Swan Island Lagoon Sediment/2006-00115 **Date Analyzed:**08/05/19 08:39

Internal Standard Area and RT SUMMARY

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

File ID: J:\MS14\DATA\080519A\0805F002.D\ **Lab Code:**KQ1910937-01
Instrument ID: K-MS-14 **Analysis Lot:**645972
Analysis Method: 8270D **Signal ID:**1

		Perylene-d12		Phenanthrene-d10	
		Area	**RT**	**Area**	**RT**
	Result ==>	73,987	12.98	48,070	7.49
	Upper Limit ==>	147,974	13.48	96,140	7.99
	Lower Limit ==>	36,994	12.48	24,035	6.99
Associated Analyses					
O7-0to27-101918	K1906902-001	94727	13.00	69358	7.49
A1-0to30-102018	K1906902-004	93229	12.99	66801	7.49
Q6-0to27-102018	K1906902-005	93469	13.00	65540	7.49
A5-0to25-100818	K1906902-006	90984	13.03	63526	7.49
A3-0to31-100818	K1906902-008	89799	13.02	65374	7.49
A6-0to23-100818	K1906902-010	93125	13.02	65868	7.49
A7-0to26-100918	K1906902-012	91347	13.02	66252	7.50
F2-0to19-101018	K1906902-014	84355	13.06	64776	7.50
Q2-0to13-101818	K1906902-017	89380	13.02	63333	7.50
T6-0to29-101618	K1906902-019	91997	13.02	65912	7.50

Client: Pacific Groundwater Group (PGG) **Service Request:**K1906902
Project: DTNA Swan Island Lagoon Sediment/2006-00115 **Date Analyzed:**08/06/19 05:30

Internal Standard Area and RT SUMMARY

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

File ID: J:\MS14\DATA\080619\0806F002.D\ **Lab Code:**KQ1911012-01
Instrument ID: K-MS-14 **Analysis Lot:**646168
Analysis Method: 8270D **Signal ID:**1

		Acenaphthene-d10		Chrysene-d12		Naphthalene-d8	
		Area	**RT**	**Area**	**RT**	**Area**	**RT**
	Result ==>	29,880	6.26	73,888	9.99	60,984	4.70
	Upper Limit ==>	59,760	6.76	147,776	10.49	121,968	5.20
	Lower Limit ==>	14,940	5.76	36,944	9.49	30,492	4.20
Associated Analyses							
Method Blank	KQ1910711-04	37251	6.26	74776	10.00	77379	4.70
Lab Control Sample	KQ1910711-03	38798	6.26	85529	9.99	83838	4.70
515-0to26-101918	K1906902-002	30586	6.26	75524	9.99	53690	4.69
A4-0to25-100818	K1906902-007	31761	6.26	84445	10.00	58078	4.69
A2-0to26-100818	K1906902-009	31154	6.26	81613	9.99	59450	4.69
C4-0to27-100918	K1906902-011	32567	6.26	77958	10.00	57855	4.69
D2-0to19-101018	K1906902-013	32055	6.26	81518	9.99	60387	4.69
M4-0to26-101918MS	KQ1910711-01	38955	6.26	87069	10.00	78848	4.70
M4-0to26-101918DMS	KQ1910711-02	36866	6.26	81075	10.00	74023	4.70
M4-0to26-101918	K1906902-003	39887	6.26	85079	10.02	75839	4.70
H2-0to30-101218	K1906902-015	30310	6.27	78216	10.01	53993	4.70
A3-0to31-100818	K1906902-008	32191	6.26	80941	10.00	60007	4.69
C4-0to27-100918	K1906902-011	30740	6.26	76352	10.00	50235	4.70
J2A3-0to18-101218	K1906902-016	32128	6.26	82452	10.01	55490	4.69
G6-0to27-101818	K1906902-018	36273	6.27	84709	10.02	66426	4.69

Client: Pacific Groundwater Group (PGG) **Service Request:**K1906902
Project: DTNA Swan Island Lagoon Sediment/2006-00115 **Date Analyzed:**08/06/19 05:30

Internal Standard Area and RT SUMMARY

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

File ID: J:\MS14\DATA\080619\0806F002.D\ **Lab Code:**KQ1911012-01
Instrument ID: K-MS-14 **Analysis Lot:**646168
Analysis Method: 8270D **Signal ID:**1

		Perylene-d12		Phenanthrene-d10	
		Area	**RT**	**Area**	**RT**
	Result ==>	85,279	13.01	55,210	7.50
	Upper Limit ==>	170,558	13.51	110,420	8.00
	Lower Limit ==>	42,640	12.51	27,605	7.00
Associated Analyses					
Method Blank	KQ1910711-04	82721	13.01	69122	7.50
Lab Control Sample	KQ1910711-03	99316	13.00	73985	7.49
515-0to26-101918	K1906902-002	96845	13.02	60900	7.49
A4-0to25-100818	K1906902-007	99942	13.05	65558	7.50
A2-0to26-100818	K1906902-009	101656	13.02	62045	7.50
C4-0to27-100918	K1906902-011	102294	13.02	62823	7.50
D2-0to19-101018	K1906902-013	101089	13.01	63346	7.50
M4-0to26-101918MS	KQ1910711-01	107456	13.02	77579	7.49
M4-0to26-101918DMS	KQ1910711-02	99783	13.05	70861	7.50
M4-0to26-101918	K1906902-003	99666	13.10	72527	7.50
H2-0to30-101218	K1906902-015	96142	13.06	63227	7.50
A3-0to31-100818	K1906902-008	98445	13.03	61202	7.51
C4-0to27-100918	K1906902-011	93752	13.03	60109	7.50
J2A3-0to18-101218	K1906902-016	94979	13.09	65960	7.50
G6-0to27-101818	K1906902-018	100617	13.10	68510	7.51

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Collected:**	10/19/18
Sample Matrix:	Sediment	**Date Received:**	10/22/18
		Date Analyzed:	08/6/19
		Date Extracted:	07/31/19

Duplicate Matrix Spike Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Sample Name:	M4-0to26-101918	**Units:**	ug/Kg
Lab Code:	K1906902-003	**Basis:**	Dry
Analysis Method:	8270D		
Prep Method:	EPA 3541		

		Matrix Spike KQ1910711-01			**Duplicate Matrix Spike** KQ1910711-02					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
2-Methylnaphthalene	3.4	59.3	111	50 *	55.0	111	47 *	70-130	8	40
Acenaphthene	13	71.9	111	53 *	66.0	111	48 *	70-130	9	40
Acenaphthylene	8.9	66.1	111	51 *	65.8	111	51 *	70-130	<1	40
Anthracene	19	79.4	111	55 *	91.9	111	66 *	70-130	15	40
Benz(a)anthracene	81	90.6	111	8 *	144	111	57 *	70-130	46*	40
Benzo(a)pyrene	93	89.9	111	-3 *	132	111	35 *	70-130	38	40
Benzo(b)fluoranthene	130	90.4	111	-32 *	145	111	18 *	70-130	47*	40
Benzo(g,h,i)perylene	68	77.8	111	8 *	104	111	32 *	70-130	29	40
Benzo(k)fluoranthene	47	80.0	111	29 *	104	111	51 *	70-130	26	40
Chrysene	120	95.3	111	-23 *	218	111	88	70-130	78*	40
Dibenz(a,h)anthracene	16	72.8	111	51 *	74.8	111	53 *	70-130	3	40
Dibenzofuran	3.6	69.7	111	60 *	64.0	111	54 *	70-130	9	40
Fluoranthene	140	89.7	111	-43 *	132	111	-5 *	70-130	38	40
Fluorene	6.6	75.6	111	62 *	70.6	111	58 *	70-130	7	40
Indeno(1,2,3-cd)pyrene	71	81.5	111	9 *	111	111	36 *	70-130	31	40
Naphthalene	6.9	59.4	111	47 *	55.1	111	43 *	70-130	8	40
Phenanthrene	73	88.5	111	14 *	105	111	28 *	70-130	17	40
Pyrene	170	119	111	-50 *	165	111	-9 *	70-130	32	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Analyzed:**	08/06/19
Sample Matrix:	Sediment	**Date Extracted:**	07/31/19

Lab Control Sample Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method:	8270D	**Units:**	ug/Kg
Prep Method:	EPA 3541	**Basis:**	Dry
		Analysis Lot:	646168

Lab Control Sample
KQ1910711-03

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
2-Methylnaphthalene	56.1	100	56	52-85
Acenaphthene	61.3	100	61	51-82
Acenaphthylene	63.3	100	63	51-80
Anthracene	68.7	100	69	56-87
Benz(a)anthracene	66.7	100	67	65-97
Benzo(a)pyrene	68.7	100	69	64-103
Benzo(b)fluoranthene	69.6	100	70	63-99
Benzo(g,h,i)perylene	65.3	100	65	56-101
Benzo(k)fluoranthene	67.9	100	68	62-99
Chrysene	66.0	100	66	63-100
Dibenz(a,h)anthracene	64.9	100	65	56-104
Dibenzofuran	66.1	100	66	14-125
Fluoranthene	54.7	100	55	45-96
Fluorene	65.4	100	65	52-83
Indeno(1,2,3-cd)pyrene	66.0	100	66	61-105
Naphthalene	57.1	100	57	48-77
Phenanthrene	58.7	100	59	48-85
Pyrene	70.4	100	70	59-98

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Analyzed:**	08/06/19 06:02
Sample Matrix:	Sediment	**Date Extracted:**	07/31/19

Method Blank Summary

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Sample Name:	Method Blank	**Instrument ID:**	K-MS-14
Lab Code:	KQ1910711-04	**File ID:**	J:\MS14\DATA\080619\0806F003.D\
Analysis Method:	8270D	**Analysis Lot:**	645972,646168
Prep Method:	EPA 3541	**Extraction Lot:**	341602

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
O7-0to27-101918	K1906902-001	J:\MS14\DATA\080519A\0805F015.D\	08/05/19 15:32
A1-0to30-102018	K1906902-004	J:\MS14\DATA\080519A\0805F016.D\	08/05/19 16:00
Q6-0to27-102018	K1906902-005	J:\MS14\DATA\080519A\0805F017.D\	08/05/19 16:29
A5-0to25-100818	K1906902-006	J:\MS14\DATA\080519A\0805F018.D\	08/05/19 16:57
A3-0to31-100818	K1906902-008	J:\MS14\DATA\080519A\0805F019.D\	08/05/19 17:25
A6-0to23-100818	K1906902-010	J:\MS14\DATA\080519A\0805F020.D\	08/05/19 17:54
A7-0to26-100918	K1906902-012	J:\MS14\DATA\080519A\0805F021.D\	08/05/19 18:22
F2-0to19-101018	K1906902-014	J:\MS14\DATA\080519A\0805F022.D\	08/05/19 18:50
Q2-0to13-101818	K1906902-017	J:\MS14\DATA\080519A\0805F023.D\	08/05/19 19:17
T6-0to29-101618	K1906902-019	J:\MS14\DATA\080519A\0805F024.D\	08/05/19 19:44
Lab Control Sample	KQ1910711-03	J:\MS14\DATA\080619\0806F004.D\	08/06/19 06:29
515-0to26-101918	K1906902-002	J:\MS14\DATA\080619\0806F005.D\	08/06/19 06:58
A4-0to25-100818	K1906902-007	J:\MS14\DATA\080619\0806F006.D\	08/06/19 07:25
A2-0to26-100818	K1906902-009	J:\MS14\DATA\080619\0806F007.D\	08/06/19 07:52
C4-0to27-100918	K1906902-011	J:\MS14\DATA\080619\0806F008.D\	08/06/19 08:19
D2-0to19-101018	K1906902-013	J:\MS14\DATA\080619\0806F009.D\	08/06/19 08:47
M4-0to26-101918MS	KQ1910711-01	J:\MS14\DATA\080619\0806F010.D\	08/06/19 09:15
M4-0to26-101918DMS	KQ1910711-02	J:\MS14\DATA\080619\0806F011.D\	08/06/19 09:42
M4-0to26-101918	K1906902-003	J:\MS14\DATA\080619\0806F012.D\	08/06/19 10:10
H2-0to30-101218	K1906902-015	J:\MS14\DATA\080619\0806F013.D\	08/06/19 10:38
A3-0to31-100818	K1906902-008	J:\MS14\DATA\080619\0806F016.D\	08/06/19 12:01
C4-0to27-100918	K1906902-011	J:\MS14\DATA\080619\0806F017.D\	08/06/19 12:30
J2A3-0to18-101218	K1906902-016	J:\MS14\DATA\080619\0806F018.D\	08/06/19 12:57
G6-0to27-101818	K1906902-018	J:\MS14\DATA\080619\0806F019.D\	08/06/19 13:25

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Analyzed:**	08/06/19 06:29
Sample Matrix:	Sediment	**Date Extracted:**	07/31/19

Lab Control Sample Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Sample Name:	Lab Control Sample	**Instrument ID:**	K-MS-14
Lab Code:	KQ1910711-03	**File ID:**	J:\MS14\DATA\080619\0806F004.D\
Analysis Method:	8270D	**Analysis Lot:**	645972,646168
Prep Method:	EPA 3541	**Extraction Lot:**	341602

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
O7-0to27-101918	K1906902-001	J:\MS14\DATA\080519A\0805F015.D\	08/05/19 15:32
A1-0to30-102018	K1906902-004	J:\MS14\DATA\080519A\0805F016.D\	08/05/19 16:00
Q6-0to27-102018	K1906902-005	J:\MS14\DATA\080519A\0805F017.D\	08/05/19 16:29
A5-0to25-100818	K1906902-006	J:\MS14\DATA\080519A\0805F018.D\	08/05/19 16:57
A3-0to31-100818	K1906902-008	J:\MS14\DATA\080519A\0805F019.D\	08/05/19 17:25
A6-0to23-100818	K1906902-010	J:\MS14\DATA\080519A\0805F020.D\	08/05/19 17:54
A7-0to26-100918	K1906902-012	J:\MS14\DATA\080519A\0805F021.D\	08/05/19 18:22
F2-0to19-101018	K1906902-014	J:\MS14\DATA\080519A\0805F022.D\	08/05/19 18:50
Q2-0to13-101818	K1906902-017	J:\MS14\DATA\080519A\0805F023.D\	08/05/19 19:17
T6-0to29-101618	K1906902-019	J:\MS14\DATA\080519A\0805F024.D\	08/05/19 19:44
Method Blank	KQ1910711-04	J:\MS14\DATA\080619\0806F003.D\	08/06/19 06:02
515-0to26-101918	K1906902-002	J:\MS14\DATA\080619\0806F005.D\	08/06/19 06:58
A4-0to25-100818	K1906902-007	J:\MS14\DATA\080619\0806F006.D\	08/06/19 07:25
A2-0to26-100818	K1906902-009	J:\MS14\DATA\080619\0806F007.D\	08/06/19 07:52
C4-0to27-100918	K1906902-011	J:\MS14\DATA\080619\0806F008.D\	08/06/19 08:19
D2-0to19-101018	K1906902-013	J:\MS14\DATA\080619\0806F009.D\	08/06/19 08:47
M4-0to26-101918MS	KQ1910711-01	J:\MS14\DATA\080619\0806F010.D\	08/06/19 09:15
M4-0to26-101918DMS	KQ1910711-02	J:\MS14\DATA\080619\0806F011.D\	08/06/19 09:42
M4-0to26-101918	K1906902-003	J:\MS14\DATA\080619\0806F012.D\	08/06/19 10:10
H2-0to30-101218	K1906902-015	J:\MS14\DATA\080619\0806F013.D\	08/06/19 10:38
A3-0to31-100818	K1906902-008	J:\MS14\DATA\080619\0806F016.D\	08/06/19 12:01
C4-0to27-100918	K1906902-011	J:\MS14\DATA\080619\0806F017.D\	08/06/19 12:30
J2A3-0to18-101218	K1906902-016	J:\MS14\DATA\080619\0806F018.D\	08/06/19 12:57
G6-0to27-101818	K1906902-018	J:\MS14\DATA\080619\0806F019.D\	08/06/19 13:25

Client: Pacific Groundwater Group (PGG) **Service Request:**K1906902
Project: DTNA Swan Island Lagoon Sediment/2006-00115 **Date Analyzed:**08/05/19 08:12

Tune Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

File ID: J:\MS14\DATA\080519A\0805F001.D\ **Analytical Method:** 8270D
Instrument ID: K-MS-14 **Analysis Lot:** 645972

Target Mass	Relative to Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	23.71	110860	Pass
68	69	0	2	0.00	0	Pass
69	198	0	100	27.54	128772	Pass
70	69	0	2	0.55	713	Pass
127	198	10	80	38.09	178133	Pass
197	198	0	2	0.00	0	Pass
198	442	30	100	38.91	467616	Pass
199	198	5	9	6.54	30585	Pass
275	198	10	60	38.47	179909	Pass
365	442	1	50	2.08	24994	Pass
441	443	0.01	100	75.54	177472	Pass
442	442	30	100	100.00	1201664	Pass
443	442	15	24	19.55	234944	Pass

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1910937-01	J:\MS14\DATA\080519A\0805F002.D\	08/05/19 08:39	
O7-0to27-101918	K1906902-001	J:\MS14\DATA\080519A\0805F015.D\	08/05/19 15:32	
A1-0to30-102018	K1906902-004	J:\MS14\DATA\080519A\0805F016.D\	08/05/19 16:00	
Q6-0to27-102018	K1906902-005	J:\MS14\DATA\080519A\0805F017.D\	08/05/19 16:29	
A5-0to25-100818	K1906902-006	J:\MS14\DATA\080519A\0805F018.D\	08/05/19 16:57	
A3-0to31-100818	K1906902-008	J:\MS14\DATA\080519A\0805F019.D\	08/05/19 17:25	
A6-0to23-100818	K1906902-010	J:\MS14\DATA\080519A\0805F020.D\	08/05/19 17:54	
A7-0to26-100918	K1906902-012	J:\MS14\DATA\080519A\0805F021.D\	08/05/19 18:22	
F2-0to19-101018	K1906902-014	J:\MS14\DATA\080519A\0805F022.D\	08/05/19 18:50	
Q2-0to13-101818	K1906902-017	J:\MS14\DATA\080519A\0805F023.D\	08/05/19 19:17	
T6-0to29-101618	K1906902-019	J:\MS14\DATA\080519A\0805F024.D\	08/05/19 19:44	

Client: Pacific Groundwater Group (PGG) **Service Request:**K1906902
Project: DTNA Swan Island Lagoon Sediment/2006-00115 **Date Analyzed:**08/06/19 05:03

Tune Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

File ID: J:\MS14\DATA\080619\0806F001.D\ **Analytical Method:** 8270D
Instrument ID: K-MS-14 **Analysis Lot:** 646168

Target Mass	Relative to Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	26.47	166122	Pass
68	69	0	2	0.00	0	Pass
69	198	0	100	30.49	191317	Pass
70	69	0	2	0.54	1039	Pass
127	198	10	80	40.37	253333	Pass
197	198	0	2	0.00	0	Pass
198	442	30	100	45.70	627498	Pass
199	198	5	9	6.89	43210	Pass
275	198	10	60	36.93	231752	Pass
365	442	1	50	2.33	31985	Pass
441	443	0.01	100	73.95	202264	Pass
442	442	30	100	100.00	1373034	Pass
443	442	15	24	19.92	273520	Pass

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1911012-01	J:\MS14\DATA\080619\0806F002.D\	08/06/19 05:30	
Method Blank	KQ1910711-04	J:\MS14\DATA\080619\0806F003.D\	08/06/19 06:02	
Lab Control Sample	KQ1910711-03	J:\MS14\DATA\080619\0806F004.D\	08/06/19 06:29	
515-0to26-101918	K1906902-002	J:\MS14\DATA\080619\0806F005.D\	08/06/19 06:58	
A4-0to25-100818	K1906902-007	J:\MS14\DATA\080619\0806F006.D\	08/06/19 07:25	
A2-0to26-100818	K1906902-009	J:\MS14\DATA\080619\0806F007.D\	08/06/19 07:52	
C4-0to27-100918	K1906902-011	J:\MS14\DATA\080619\0806F008.D\	08/06/19 08:19	
D2-0to19-101018	K1906902-013	J:\MS14\DATA\080619\0806F009.D\	08/06/19 08:47	
M4-0to26-101918	KQ1910711-01	J:\MS14\DATA\080619\0806F010.D\	08/06/19 09:15	
M4-0to26-101918	KQ1910711-02	J:\MS14\DATA\080619\0806F011.D\	08/06/19 09:42	
M4-0to26-101918	K1906902-003	J:\MS14\DATA\080619\0806F012.D\	08/06/19 10:10	
H2-0to30-101218	K1906902-015	J:\MS14\DATA\080619\0806F013.D\	08/06/19 10:38	
A3-0to31-100818	K1906902-008	J:\MS14\DATA\080619\0806F016.D\	08/06/19 12:01	
C4-0to27-100918	K1906902-011	J:\MS14\DATA\080619\0806F017.D\	08/06/19 12:30	
J2A3-0to18-101218	K1906902-016	J:\MS14\DATA\080619\0806F018.D\	08/06/19 12:57	
G6-0to27-101818	K1906902-018	J:\MS14\DATA\080619\0806F019.D\	08/06/19 13:25	

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment **Calibration Date:** 6/17/2019

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Calibration ID: KC1900232 **Signal ID:** 1
Instrument ID: K-MS-14

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1900232-01	SIM-PAH @ 0.004ug/mL SVM61-6B	J:\MS14\DATA\061719\0617F008.D	06/17/2019 09:58
02	KC1900232-02	SIM-PAH @ 0.008ug/mL SVM61-6C	J:\MS14\DATA\061719\0617F009.D	06/17/2019 10:26
03	KC1900232-03	SIM-PAH @ 0.02ug/mL SVM61-6D	J:\MS14\DATA\061719\0617F010.D	06/17/2019 10:54
04	KC1900232-04	SIM-PAH @ 0.1ug/mL SVM61-6E	J:\MS14\DATA\061719\0617F011.D	06/17/2019 11:22
05	KC1900232-05	SIM-PAH @ 0.2ug/mL SVM61-6F	J:\MS14\DATA\061719\0617F012.D	06/17/2019 11:50
06	KC1900232-06	SIM-PAH @ 0.4ug/mL SVM61-6G	J:\MS14\DATA\061719\0617F013.D	06/17/2019 12:17
07	KC1900232-07	SIM-PAH @ 1.0ug/mL SVM61-6H	J:\MS14\DATA\061719\0617F014.D	06/17/2019 12:46
08	KC1900232-08	SIM-PAH @ 1.6ug/mL SVM61-6I	J:\MS14\DATA\061719\0617F015.D	06/17/2019 13:14
09	KC1900232-09	SIM-PAH @ 2.0ug/mL SVM61-6J	J:\MS14\DATA\061719\0617F016.D	06/17/2019 13:42

Analyte

2-Methylnaphthalene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	0.7645	02	8.000	0.7452	03	20.000	0.7555	04	100.000	0.7403
05	200.000	0.7129	06	400.000	0.6966	07	1000.000	0.6553	08	1600.000	0.6586
09	2000.000	0.6418									

Acenaphthene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.327	02	8.000	1.266	03	20.000	1.29	04	100.000	1.304
05	200.000	1.272	06	400.000	1.298	07	1000.000	1.248	08	1600.000	1.264
09	2000.000	1.226									

Acenaphthylene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	2.357	02	8.000	2.196	03	20.000	2.105	04	100.000	2.122
05	200.000	2.096	06	400.000	2.136	07	1000.000	2.085	08	1600.000	2.107
09	2000.000	2.039									

Anthracene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.161	02	8.000	1.163	03	20.000	1.17	04	100.000	1.195
05	200.000	1.148	06	400.000	1.175	07	1000.000	1.15	08	1600.000	1.161
09	2000.000	1.126									

Benz(a)anthracene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.287	02	8.000	1.246	03	20.000	1.201	04	100.000	1.208
05	200.000	1.206	06	400.000	1.258	07	1000.000	1.285	08	1600.000	1.304
09	2000.000	1.278									

Benzo(a)pyrene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.126	02	8.000	1.082	03	20.000	1.069	04	100.000	1.057
05	200.000	1.042	06	400.000	1.068	07	1000.000	1.04	08	1600.000	1.056

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment **Calibration Date:** 6/17/2019

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Calibration ID: KC1900232 **Signal ID:** 1
Instrument ID: K-MS-14

Analyte

Benzo(a)pyrene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
09	2000.000	1.023									

Benzo(b)fluoranthene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.14	02	8.000	1.129	03	20.000	1.146	04	100.000	1.189
05	200.000	1.202	06	400.000	1.242	07	1000.000	1.183	08	1600.000	1.202
09	2000.000	1.161									

Benzo(g,h,i)perylene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.344	02	8.000	1.337	03	20.000	1.354	04	100.000	1.343
05	200.000	1.303	06	400.000	1.262	07	1000.000	1.078	08	1600.000	1.02
09	2000.000	0.95									

Benzo(k)fluoranthene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.118	02	8.000	1.14	03	20.000	1.136	04	100.000	1.183
05	200.000	1.186	06	400.000	1.184	07	1000.000	1.126	08	1600.000	1.132
09	2000.000	1.095									

Chrysene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.184	02	8.000	1.176	03	20.000	1.197	04	100.000	1.203
05	200.000	1.192	06	400.000	1.21	07	1000.000	1.195	08	1600.000	1.222
09	2000.000	1.199									

Dibenz(a,h)anthracene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.136	02	8.000	1.172	03	20.000	1.236	04	100.000	1.296
05	200.000	1.279	06	400.000	1.245	07	1000.000	1.117	08	1600.000	1.095
09	2000.000	1.02									

Dibenzofuran

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.972	02	8.000	1.966	03	20.000	2.013	04	100.000	2.041
05	200.000	1.979	06	400.000	1.993	07	1000.000	1.982	08	1600.000	1.919
09	2000.000	1.855									

Fluoranthene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.636	02	8.000	1.669	03	20.000	1.678	04	100.000	1.66
05	200.000	1.553	06	400.000	1.557	07	1000.000	1.686	08	1600.000	1.736
09	2000.000	1.686									

Fluoranthene-d10

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.323	02	8.000	1.38	03	20.000	1.339	04	100.000	1.303

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment **Calibration Date:** 6/17/2019

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Calibration ID: KC1900232 **Signal ID:** 1
Instrument ID: K-MS-14

Analyte

Fluoranthene-d10

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
05	200.000	1.24	06	400.000	1.292	07	1000.000	1.45	08	1600.000	1.512
09	2000.000	1.466									

Fluorene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.548	02	8.000	1.54	03	20.000	1.468	04	100.000	1.472
05	200.000	1.437	06	400.000	1.461	07	1000.000	1.399	08	1600.000	1.412
09	2000.000	1.376									

Fluorene-d10

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.179	02	8.000	1.134	03	20.000	1.097	04	100.000	1.094
05	200.000	1.066	06	400.000	1.099	07	1000.000	1.064	08	1600.000	1.079
09	2000.000	1.053									

Indeno(1,2,3-cd)pyrene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.068	02	8.000	1.031	03	20.000	1.083	04	100.000	1.116
05	200.000	1.112	06	400.000	1.104	07	1000.000	0.9799	08	1600.000	0.9629
09	2000.000	0.9022									

Naphthalene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.079	02	8.000	1.191	03	20.000	1.168	04	100.000	1.138
05	200.000	1.112	06	400.000	1.122	07	1000.000	1.089	08	1600.000	1.097
09	2000.000	1.07									

Phenanthrene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.286	02	8.000	1.272	03	20.000	1.228	04	100.000	1.233
05	200.000	1.195	06	400.000	1.231	07	1000.000	1.196	08	1600.000	1.199
09	2000.000	1.168									

Pyrene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.269	02	8.000	1.256	03	20.000	1.213	04	100.000	1.118
05	200.000	1.053	06	400.000	1.051	07	1000.000	1.187	08	1600.000	1.275
09	2000.000	1.275									

Terphenyl-d14

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	0.9105	02	8.000	0.9217	03	20.000	0.9015	04	100.000	0.8587
05	200.000	0.8214	06	400.000	0.8367	07	1000.000	0.8537	08	1600.000	0.8754
09	2000.000	0.8483									

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment **Calibration Date:** 6/17/2019

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Calibration ID: KC1900232 **Signal ID:** 1
Instrument ID: K-MS-14

		Calibration Evaluation				Calibration Evaluation	
Analyte Name	Compound Type	Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
2-Methylnaphthalene	TRG	Average RF	% RSD	6.6	≤20	0.7079	0.40
Acenaphthene	TRG	Average RF	% RSD	2.4	≤20	1.277	0.90
Acenaphthylene	TRG	Average RF	% RSD	4.3	≤20	2.138	0.90
Anthracene	TRG	Average RF	% RSD	1.7	≤20	1.161	0.70
Benz(a)anthracene	TRG	Average RF	% RSD	3.2	≤20	1.253	0.80
Benzo(a)pyrene	TRG	Average RF	% RSD	2.8	≤20	1.062	0.70
Benzo(b)fluoranthene	TRG	Average RF	% RSD	3.1	≤20	1.177	0.70
Benzo(g,h,i)perylene	TRG	Average RF	% RSD	13.1	≤20	1.221	0.50
Benzo(k)fluoranthene	TRG	Average RF	% RSD	2.8	≤20	1.145	0.70
Chrysene	TRG	Average RF	% RSD	1.2	≤20	1.198	0.70
Dibenz(a,h)anthracene	TRG	Average RF	% RSD	7.9	≤20	1.177	0.40
Dibenzofuran	TRG	Average RF	% RSD	2.7	≤20	1.969	0.80
Fluoranthene	TRG	Average RF	% RSD	3.7	≤20	1.651	0.60
Fluoranthene-d10	SURR	Average RF	% RSD	6.7	≤20	1.367	0.01
Fluorene	TRG	Average RF	% RSD	4.1	≤20	1.457	0.90
Fluorene-d10	SURR	Average RF	% RSD	3.6	≤20	1.096	0.01
Indeno(1,2,3-cd)pyrene	TRG	Average RF	% RSD	7.3	≤20	1.04	0.50
Naphthalene	TRG	Average RF	% RSD	3.7	≤20	1.118	0.70
Phenanthrene	TRG	Average RF	% RSD	3.1	≤20	1.223	0.70
Pyrene	TRG	Average RF	% RSD	7.8	≤20	1.188	0.60
Terphenyl-d14	SURR	Average RF	% RSD	4.0	≤20	0.8698	0.01

Client: Pacific Groundwater Group (PGG) **Service Request:** K1906902
Project: DTNA Swan Island Lagoon Sediment **Calibration Date:** 6/17/2019

Initial Calibration Verification Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Calibration ID: KC1900232 **Signal ID:** 1
Instrument ID: K-MS-14

#	Lab Code	Sample Name	File Location	Acquisition Date
10	KC1900232-10	SIM-PAH ICV @ 0.4ug/mL SVM61-6K	J:\MS14\DATA\061719\0617F017.D	06/17/2019 14:10

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
2-Methylnaphthalene	400	363	7.079E-1	6.42E-1	-9.303	±30	Average RF
Acenaphthene	400	365	1.277E0	1.166E0	-8.708	±30	Average RF
Acenaphthylene	400	387	2.138E0	2.066E0	-3.368	±30	Average RF
Anthracene	400	388	1.161E0	1.125E0	-3.102	±30	Average RF
Benz(a)anthracene	400	374	1.253E0	1.171E0	-6.559	±30	Average RF
Benzo(a)pyrene	400	387	1.062E0	1.028E0	-3.271	±30	Average RF
Benzo(b)fluoranthene	400	403	1.177E0	1.187E0	0.823	±30	Average RF
Benzo(g,h,i)perylene	400	328	1.221E0	1.002E0	-17.973	±30	Average RF
Benzo(k)fluoranthene	400	399	1.145E0	1.142E0	-0.249	±30	Average RF
Chrysene	400	363	1.198E0	1.087E0	-9.267	±30	Average RF
Dibenz(a,h)anthracene	400	345	1.177E0	1.014E0	-13.853	±30	Average RF
Dibenzofuran	400	344	1.969E0	1.694E0	-13.954	±30	Average RF
Fluoranthene	400	377	1.651E0	1.555E0	-5.809	±30	Average RF
Fluorene	400	377	1.457E0	1.372E0	-5.862	±30	Average RF
Indeno(1,2,3-cd)pyrene	400	384	1.04E0	9.972E-1	-4.083	±30	Average RF
Naphthalene	400	380	1.118E0	1.062E0	-5.062	±30	Average RF
Phenanthrene	400	365	1.223E0	1.116E0	-8.735	±30	Average RF
Pyrene	400	334	1.188E0	9.925E-1	-16.483	±30	Average RF

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
Fluoranthene-d10	400	391	1.367E0	1.336E0	-2.264	±30	Average RF
Fluorene-d10	400	410	1.096E0	1.124E0	2.49	±30	Average RF
Terphenyl-d14	400	403	8.698E-1	8.765E-1	0.774	±30	Average RF

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Analyzed:**	08/05/19 08:39

Continuing Calibration Verification (CCV) Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method:	8270D	**Calibration Date:**	6/17/2019
File ID:	J:\MS14\DATA\080519A\0805F002.D\	**Calibration ID:**	KC1900232
Signal ID:	1	**Analysis Lot:**	645972
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
2-Methylnaphthalene	400	370	0.7079	0.6549	-7.5	NA	±20	Average RF
Acenaphthene	400	381	1.2771	1.2178	-4.6	NA	±20	Average RF
Acenaphthylene	400	385	2.1381	2.0557	-3.9	NA	±20	Average RF
Anthracene	400	405	1.161	1.1769	1.4	NA	±20	Average RF
Benz(a)anthracene	400	374	1.2528	1.1704	-6.6	NA	±20	Average RF
Benzo(a)pyrene	400	401	1.0625	1.0649	0.2	NA	±20	Average RF
Benzo(b)fluoranthene	400	404	1.1771	1.1879	0.9	NA	±20	Average RF
Benzo(g,h,i)perylene	400	402	1.2212	1.2281	0.6	NA	±20	Average RF
Benzo(k)fluoranthene	400	419	1.1445	1.1982	4.7	NA	±20	Average RF
Chrysene	400	387	1.1975	1.1582	-3.3	NA	±20	Average RF
Dibenz(a,h)anthracene	400	399	1.1773	1.1746	-0.2	NA	±20	Average RF
Dibenzofuran	400	401	1.9689	1.9722	0.2	NA	±20	Average RF
Fluoranthene	400	356	1.6512	1.4692	-11.0	NA	±20	Average RF
Fluorene	400	390	1.457	1.42	-2.5	NA	±20	Average RF
Indeno(1,2,3-cd)pyrene	400	385	1.0397	0.9996	-3.9	NA	±20	Average RF
Naphthalene	400	374	1.1184	1.0461	-6.5	NA	±20	Average RF
Phenanthrene	400	356	1.2231	1.0892	-11.0	NA	±20	Average RF
Pyrene	400	384	1.1884	1.1416	-3.9	NA	±20	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Fluoranthene-d10	400	386	1.3672	1.3209	-3.4	NA	±20	Average RF
Fluorene-d10	400	421	1.0963	1.1526	5.1	NA	±20	Average RF
Terphenyl-d14	400	396	0.8698	0.8603	-1.1	NA	±20	Average RF

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1906902
Project:	DTNA Swan Island Lagoon Sediment/2006-00115	**Date Analyzed:**	08/06/19 05:30

Continuing Calibration Verification (CCV) Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method:	8270D	**Calibration Date:**	6/17/2019
File ID:	J:\MS14\DATA\080619\0806F002.D\	**Calibration ID:**	KC1900232
Signal ID:	1	**Analysis Lot:**	646168
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
2-Methylnaphthalene	400	365	0.7079	0.6461	-8.7	NA	±20	Average RF
Acenaphthene	400	381	1.2771	1.215	-4.9	NA	±20	Average RF
Acenaphthylene	400	377	2.1381	2.0142	-5.8	NA	±20	Average RF
Anthracene	400	417	1.161	1.2104	4.2	NA	±20	Average RF
Benz(a)anthracene	400	368	1.2528	1.1535	-7.9	NA	±20	Average RF
Benzo(a)pyrene	400	401	1.0625	1.0652	0.3	NA	±20	Average RF
Benzo(b)fluoranthene	400	393	1.1771	1.1564	-1.8	NA	±20	Average RF
Benzo(g,h,i)perylene	400	413	1.2212	1.2614	3.3	NA	±20	Average RF
Benzo(k)fluoranthene	400	405	1.1445	1.16	1.3	NA	±20	Average RF
Chrysene	400	383	1.1975	1.1453	-4.4	NA	±20	Average RF
Dibenz(a,h)anthracene	400	410	1.1773	1.2079	2.6	NA	±20	Average RF
Dibenzofuran	400	391	1.9689	1.9249	-2.2	NA	±20	Average RF
Fluoranthene	400	360	1.6512	1.4878	-9.9	NA	±20	Average RF
Fluorene	400	385	1.457	1.4026	-3.7	NA	±20	Average RF
Indeno(1,2,3-cd)pyrene	400	424	1.0397	1.1016	6.0	NA	±20	Average RF
Naphthalene	400	370	1.1184	1.0351	-7.4	NA	±20	Average RF
Phenanthrene	400	345	1.2231	1.0545	-13.8	NA	±20	Average RF
Pyrene	400	396	1.1884	1.1771	-1.0	NA	±20	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Fluoranthene-d10	400	391	1.3672	1.3362	-2.3	NA	±20	Average RF
Fluorene-d10	400	421	1.0963	1.1546	5.3	NA	±20	Average RF
Terphenyl-d14	400	408	0.8698	0.8865	1.9	NA	±20	Average RF

Client: Pacific Groundwater Group (PGG) **Service Request:**K1906902
Project: DTNA Swan Island Lagoon Sediment/2006-00115

Analysis Run Log
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: **Analysis Lot:**645972
Instrument ID:K-MS-14

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS14\DATA\080519A\0805F001.D\	ZZZZZZZ	ZZZZZZZ	8/5/2019	08:12:00	
J:\MS14\DATA\080519A\0805F002.D\	Continuing Calibration Verification	KQ1910937-01	8/5/2019	08:39:00	
J:\MS14\DATA\080519A\0805F015.D\	O7-0to27-101918	K1906902-001	8/5/2019	15:32:00	
J:\MS14\DATA\080519A\0805F016.D\	A1-0to30-102018	K1906902-004	8/5/2019	16:00:00	
J:\MS14\DATA\080519A\0805F017.D\	Q6-0to27-102018	K1906902-005	8/5/2019	16:29:00	
J:\MS14\DATA\080519A\0805F018.D\	A5-0to25-100818	K1906902-006	8/5/2019	16:57:00	
J:\MS14\DATA\080519A\0805F019.D\	A3-0to31-100818	K1906902-008	8/5/2019	17:25:00	
J:\MS14\DATA\080519A\0805F020.D\	A6-0to23-100818	K1906902-010	8/5/2019	17:54:00	
J:\MS14\DATA\080519A\0805F021.D\	A7-0to26-100918	K1906902-012	8/5/2019	18:22:00	
J:\MS14\DATA\080519A\0805F022.D\	F2-0to19-101018	K1906902-014	8/5/2019	18:50:00	
J:\MS14\DATA\080519A\0805F023.D\	Q2-0to13-101818	K1906902-017	8/5/2019	19:17:00	
J:\MS14\DATA\080519A\0805F024.D\	T6-0to29-101618	K1906902-019	8/5/2019	19:44:00	

Client: Pacific Groundwater Group (PGG) **Service Request:**K1906902
Project: DTNA Swan Island Lagoon Sediment/2006-00115

Analysis Run Log
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: **Analysis Lot:**646168
Instrument ID:K-MS-14

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS14\DATA\080619\0806F001.D\	ZZZZZZZ	ZZZZZZZ	8/6/2019	05:03:00	
J:\MS14\DATA\080619\0806F002.D\	Continuing Calibration Verification	KQ1911012-01	8/6/2019	05:30:00	
J:\MS14\DATA\080619\0806F003.D\	Method Blank	KQ1910711-04	8/6/2019	06:02:00	
J:\MS14\DATA\080619\0806F004.D\	Lab Control Sample	KQ1910711-03	8/6/2019	06:29:00	
J:\MS14\DATA\080619\0806F005.D\	515-0to26-101918	K1906902-002	8/6/2019	06:58:00	
J:\MS14\DATA\080619\0806F006.D\	A4-0to25-100818	K1906902-007	8/6/2019	07:25:00	
J:\MS14\DATA\080619\0806F007.D\	A2-0to26-100818	K1906902-009	8/6/2019	07:52:00	
J:\MS14\DATA\080619\0806F008.D\	C4-0to27-100918	K1906902-011	8/6/2019	08:19:00	
J:\MS14\DATA\080619\0806F009.D\	D2-0to19-101018	K1906902-013	8/6/2019	08:47:00	
J:\MS14\DATA\080619\0806F010.D\	M4-0to26-101918 MS	KQ1910711-01	8/6/2019	09:15:00	
J:\MS14\DATA\080619\0806F011.D\	M4-0to26-101918 DMS	KQ1910711-02	8/6/2019	09:42:00	
J:\MS14\DATA\080619\0806F012.D\	M4-0to26-101918	K1906902-003	8/6/2019	10:10:00	
J:\MS14\DATA\080619\0806F013.D\	H2-0to30-101218	K1906902-015	8/6/2019	10:38:00	
J:\MS14\DATA\080619\0806F016.D\	A3-0to31-100818	K1906902-008	8/6/2019	12:01:00	
J:\MS14\DATA\080619\0806F017.D\	C4-0to27-100918	K1906902-011	8/6/2019	12:30:00	
J:\MS14\DATA\080619\0806F018.D\	J2A3-0to18-101218	K1906902-016	8/6/2019	12:57:00	
J:\MS14\DATA\080619\0806F019.D\	G6-0to27-101818	K1906902-018	8/6/2019	13:25:00	

Prep Summary Report

Client: Pacific Groundwater Group (PGG) **Service Request:**K1906902
Project: DTNA Swan Island Lagoon Sediment/2006-00115
Sample Matrix: Sediment

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Prep Method: EPA 3541 **Extraction Lot:** 341602
Analytical Method: 8270D **Extraction Date:** 07/31/19 13:01

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
O7-0to27-101918	K1906902-001	10/19/18	10/22/18	40.094 g	2 mL	38.8
515-0to26-101918	K1906902-002	10/19/18	10/22/18	40.071 g	2 mL	47.2
M4-0to26-101918	K1906902-003	10/19/18	10/22/18	40.057 g	2 mL	44.7
A1-0to30-102018	K1906902-004	10/20/18	10/22/18	40.448 g	2 mL	56.0
Q6-0to27-102018	K1906902-005	10/20/18	10/22/18	40.115 g	2 mL	36.0
A5-0to25-100818	K1906902-006	10/8/18	10/10/18	40.206 g	2 mL	47.3
A4-0to25-100818	K1906902-007	10/8/18	10/10/18	40.417 g	2 mL	48.9
A3-0to31-100818	K1906902-008	10/8/18	10/10/18	40.431 g	2 mL	44.1
A2-0to26-100818	K1906902-009	10/8/18	10/10/18	40.160 g	2 mL	46.1
A6-0to23-100818	K1906902-010	10/8/18	10/10/18	40.112 g	2 mL	44.1
C4-0to27-100918	K1906902-011	10/9/18	10/10/18	40.127 g	2 mL	40.3
A7-0to26-100918	K1906902-012	10/9/18	10/10/18	40.072 g	2 mL	52.6
D2-0to19-101018	K1906902-013	10/10/18	10/15/18	40.060 g	2 mL	71.5
F2-0to19-101018	K1906902-014	10/10/18	10/15/18	40.434 g	2 mL	72.6
H2-0to30-101218	K1906902-015	10/12/18	10/15/18	40.087 g	2 mL	48.9
J2A3-0to18-101218	K1906902-016	10/12/18	10/15/18	40.087 g	2 mL	77.7
Q2-0to13-101818	K1906902-017	10/18/18	10/19/18	40.415 g	2 mL	68.6
G6-0to27-101818	K1906902-018	10/18/18	10/19/18	40.007 g	2 mL	50.7
T6-0to29-101618	K1906902-019	10/16/18	10/19/18	40.257 g	2 mL	38.1
Matrix Spike	KQ1910711-01MS	10/19/18	10/22/18	40.301 g	2 mL	44.7
Duplicate Matrix Spike	KQ1910711-02DMS	10/19/18	10/22/18	40.310 g	2 mL	44.7
Lab Control Sample	KQ1910711-03LCS	NA	NA	20.00 g	2 mL	
Method Blank	KQ1910711-04MB	NA	NA	20.00 g	2 mL	

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October 15, 2019

Analytical Report for Service Request No: K1907934
Revised Service Request No: K1907934.01

Janet Knox
Pacific Groundwater Group
2377 Eastlake Ave., East
Suite 200
Seattle, WA 98102

RE: Swan Island Lagoon Sediment Investigation / 2006-00115

Dear Janet,

Enclosed is the revised report for the sample(s) submitted to our laboratory August 29, 2019
For your reference, these analyses have been assigned our service request number **K1907934.**

The PAH data was corrected.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

We apologize for any inconvenience this may have created.

Please contact me if you have any questions. My extension is 3364. You may also contact me via email at howard.holmes@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Howard Holmes
Project Manager

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Polycyclic Aromatic Hydrocarbons

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

REVISED
2:22 pm, Oct 15, 2019

Client: Pacific Groundwater Group (PGG)
Project: Swan Island Lagoon Sediment Investigation
Sample Matrix: Soil, Water

Service Request: K1907934
Date Received: 08/29/2019

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

Seventy five soil and two water samples were received for analysis at ALS Environmental on 08/29/2019. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Semivolatiles by GC/MS:

Method 8270D PAH SIM ULL, 09/10/2019: Insufficient sample mass was received to perform a Matrix Spike/Matrix Spike Duplicate (MS/MSD) with these sample batches. A Laboratory Control Sample/Duplicate Laboratory Control Sample (LCS/DLCS) as analyzed and reported in lieu of the MS/MSD for these samples.

Method 8270D PAH SIM ULL, 09/10/2019: The spike recovery of 2-Methylphenol, Benz(a)anthracene, Benzo(k)fluoranthene, and Chrysene for Duplicate Laboratory Control Sample (DLCS) KQ1912549-02 was outside the lower control criterion by 1-2%. One or more of the analytes in question were detected in the associated field samples. The error associated with reduced recovery indicated a potential low bias. Additional analysis of the associated field samples was not performed because insufficient sample remained for testing. The data was flagged to indicate the problem.

Method 8270D PAH SIM ULL, 09/10/2019: The detection limit was elevated for all analytes in many samples. The sample extract was diluted prior to instrumental analysis due to relatively high levels of non-target background components. The extract was highly colored and viscous, which indicated the need to perform a dilution prior to injection into the instrument. Clean-up of the extract was performed within the scope of the method, but did not eliminate enough of the background components to prevent dilution. The reporting limits were elevated to reflect the dilution.
Method 8270D PAH SIM, 09/03/2019: Insufficient sample mass was received to perform a Matrix Spike/Matrix Spike Duplicate (MS/MSD) with this sample batch. A Laboratory Control Sample/Duplicate Laboratory Control Sample (LCS/DLCS) as analyzed and reported in lieu of the MS/MSD for these samples.

Method ALS SOP, Organochlorine Pesticides by GC/MS/MS 09/10/2019: The upper control criterion was exceeded for 4,4'-DDD in Laboratory Control Sample (LCS) KQ1912412-01: 119, 78-114. The analyte in question was not detected in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.

Method ALS SOP, Organochlorine Pesticides by GC/MS/MS 09/10-18/2019: The internal standard recovery of Pyrene-d10 in several samples was outside control criteria because of matrix interference. The results of the internal standards are flagged on the Internal Standard Area and RT SUMMARY report and noted on the raw data Validation Reports. Corrections based on the Internal Standard resulted in acceptable recovery for all surrogate results. Additional corrective action was not possible.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by  Date 10/15/2019

Chain of Custody

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

ALS Environmental

CHAIN OF CUSTODY

Sediment and Tissue Chemistry

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • FAX (360) 636-1068

SR#: K1907934

PAGE ____ OF ____ COC# ____

PROJECT NAME
PROJECT NUMBER
PROJECT MANAGER
COMPANY NAME
ADDRESS
CITY/STATE/ZIP
E-MAIL ADDRESS
PHONE # FAX #
SAMPLER'S SIGNATURE

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	☐ Total Volatile Solids ☒ Total Solids	TOC ☐ (ASTM D4129M) ☐ PSEP	Grain Size ☐ PSEP ☐ ASTMD422	Sulfide ☐ Total (9030M) ☐ PSEP ☐ Water Soluble	☐ AVS ☐ SEM (metals list below)	Ammonia ☐ Total (350.1M) ☐ Plumb ☐ Pore Water	Metals (list below)	Pesticides ~~MPAH~~ DDx	PCBs (8082) ☐ Aroclors ☐ Congeners	Semivolatiles ☒ GC/MS SIM (PAH) ☐ 8270-L	Organotins ☐ Bulk ☐ Pore Water ☐ TBT only	Volatiles (8260)	Dioxins ☐ 1613 ☐ 8290	TPH ☐ GRO ☐ DRO ☐ RRO	☐ Lipids	Tissue Sample Preparations (Instructions below)				REMARKS
711-82719	8/27/19	0840		A	5	X							X		X										
712-82819	8/27/19	0820		A	5	X							X		X										

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

INVOICE INFORMATION

P.O. # ____

Bill To: ____

TURNAROUND REQUIREMENTS

___ 24 hr. ___ 48 hr.

___ 5 day

___ Standard (15 working days)

Requested Report Date

Circle which metals are to be analyzed:

SMS Metals: As Cd Cr Cu Pb Hg Ag Zn
CA Metals: Ag As Cd Cr Cu Hg Ni Pb Se Zn
SEM Metals: Cd Cu Pb Hg Ni Zn
Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

SPECIAL INSTRUCTIONS/COMMENTS:

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

RELINQUISHED BY:		RECEIVED BY:		RELINQUISHED BY:		RECEIVED BY:	
Signature	Date/Time 08/29/19 1135	Signature	Date/Time 8/29/19 1135	Signature	Date/Time	Signature	Date/Time
Printed Name David Wampler	Firm PGG	Printed Name Krishi Morrow	Firm ALS	Printed Name	Firm	Printed Name	Firm

~~[illegible]~~ Other ALS

Chain of Custody Record

K1907934

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 8/28/2019	COC No:
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	1 of ____ COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	*standard*			
206 329 0141 Phone	TAT if different from Below ____			
206 329 6968 FAX	[X] standard			SDG No.
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	DOX (ALS SOP 1339)	AAS (8270D-SM)	T. Sol-ds (E160.3M)	Archive	Sample Specific Notes:
R4-SC1b-20to30-8 28 19	8/28/19	1400		S	1	X	X	X		
R4-SC1b-30to40-8 28 19	8/28/19	1405		S	1	X	X	X		
R4-SC1b-40to50-8 28 19	8/28/19	1510		S	1	X	X	X		
R4-SC1b-50to60-8 28 19	8/28/19	1520		S	1	X	X	X		
R4-SC1b-60to70-8 28 19	8/28/19	1550		S	1	X	X	X		
R4-SC1b-70to80-8 28 19	8/28/19	1555		S	1	X	X	X		
R4-SC1b-80to90-8 28 19	8/28/19	1630		S	1	X	X	X		
R4-SC1b-90to100-8 28 19	8/28/19	1640		S	1	X	X	X		
~~R4-SC1b-[illegible]~~	~~[illegible]~~			~~S~~	~~1~~					
R4-SC1b-10to20-8 28 19	8/28/19	1355		S	1				X	
	8/ /19			S	1					
	8/ /19			S	1					

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
[ ] *Non-Hazard* [ ] *Flammable* [ ] *Skin Irritant* *Poison B* [ ] *Unknown* [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] *Return To Client* [ ] *Disposal By Lab* [X] *Archive For* _____ *Months*

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	PGG	8/29/19 1135	[signature]	ALS	8/29/19 1135
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Other ALS

Chain of Custody Record

K1907934

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date:8/__/2019	COC No:
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	2 of ____ COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	*standard*			
206 329 0141 Phone	TAT if different from Below ____			SDG No.
206 329 6968 FAX	[X] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	DOC (ALS SOP 1336)	PAHs (8270D-SIM)	T. Solids (EPA 160.3M)	Archive	Sample Specific Notes:
R4-SC1b-100to110-8[28]19	8/28/19	1700		S	1	X	X	X		
R4-SC1b-110to120-8[28]19	8/28/19	1710		S	1	X	X	X		
R4-SC1b-120to130-8[28]19	8/28/19	1820		S	1	X	X	X		
[illegible]	[illegible]	[illegible]		[illegible]	1					
[illegible]	[illegible]	[illegible]		[illegible]	1					
R4-SC1b-40to50-82819	8/28/19	1045		S	1	X	X	X		
[illegible]	[illegible]	[illegible]		[illegible]	1					
[illegible]	[illegible]	[illegible]		[illegible]	1					
R4-SC1b-130to140-82819	8/28/19	1825		S	1	X	X	X		
R4-SC1b-140to150-82819	8/28/19	1830		S	1	X	X	X		
	8/ /19			S	1					
	8/ /19			S	1					

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification
[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] Return To Client [ ] Disposal By Lab [X] Archive For ____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	PGG	08/29/19 1135	[signature]	ALS	8/29/19 1135
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Other ALS

Chain of Custody Record

K1907934

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 8/27/2019 - 8/28/2019	COC No:
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	1 of ____ COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	*standard*			
206 329 0141 Phone	TAT if different from Below ____			SDG No.
206 329 6968 FAX	[X] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	TPHDx (ALS Sep 1334)	PAHs (8270D-SIM)	T. Sol. Cr (6160.3A)	Archive	Sample Specific Notes:
J6-SC1b-20to30-8[28]19	8/28/19	0920		S	1	X	X	X		
J6-SC1b-30to40-8[28]19	8/28/19	0925		S	1	X	X	X		
J6-SC1b-40to50-8[28]19	8/28/19	1025		S	1	X	X	X		
J6-SC1b-50to60-8[28]19	8/28/19	1030		S	1	X	X	X		
J6-SC1b-60to70-8[28]19	8/28/19	1035		S	1	X	X	X		
J6-SC1b-70to80-8[28]19	8/28/19	1040		S	1	X	X	X		
J6-SC1b-80to90-8[28]19	8/28/19	1155		S	1	X	X	X		
J6-SC1b-90to100-8[28]19	8/28/19	1200		S	1	X	X	X		
J6-SC1b-100to110-8[28]19	8/28/19	1205		S	1	X	X	X		
J6-SC1b-110to120-8[28]19	8/28/19	1210		S	1	X	X	X		
J6-SC1b-00to10-82719	8/27/19	1930		S	1				X	
J6-SC1b-10to20-82719	8/27/19	1935		S	1				X	

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other ____

Possible Hazard Identification

[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

[ ] Return To Client [ ] Disposal By Lab [X] Archive For ____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PGG	8/29/19 1135		ALS	8/29/19 1135
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Other ALS

Chain of Custody Record

K1907934

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 8/28/2019	COC No:
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	1 of ____ COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	*standard*			
206 329 0141 Phone	TAT if different from Below ____			SDG No.
206 329 6968 FAX	[x] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	DDx (ALS SOP 1339)	PAHs (8270D-SIM)	T. Solids (E160.3M)	Archive	Sample Specific Notes:
H3-SC1b-20to30-828 19	8/28/19	2015		S	1	X	X	X		
H3-SC1b-30to40-828 19	8/28/19	[redacted]	0825	S	1	X	X	X		
H3-SC1b-40to50-829 19	8/29/19	0830		S	1	X	X	X		
H3-SC1b-50to60-829 19	8/29/19	0835		S	1	X	X	X		
H3-SC1b-60to70-829 19	8/29/19	0900		S	1	X	X	X		
H3-SC1b-70to80-829 19	8/29/19	0905		S	1	X	X	X		
H3-SC1b-80to90-829 19	8/29/19	0930		S	1	X	X	X		
H3-SC1b-90to100-829 19	8/29/19	0935		S	1	X	X	X		
H3-SC1b-100to110-829 19	8/29/19	0950		S	1	X	X	X		
H3-SC1b-00to10-828 19	8/28/19	2005		S	1				X	
H3-SC1b-10-20-828 19	8/28/19	2010		S	1				X	
	8/ /19			S	1					

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification

[ ] *Non-Hazard* [ ] *Flammable* [ ] *Skin Irritant* *Poison B* [ ] *Unknown* [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

[ ] *Return To Client* [ ] *Disposal By Lab* [x] *Archive For* _____ *Months*

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PGG	8/29/19 1135		ALS	8/29/19 1135
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

other ALS

Chain of Custody Record

K1907934

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 8/26/2019	COC No:
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	1 of ____ COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	*standard*			
206 329 0141 Phone	TAT if different from Below ____			SDG No.
206 329 6968 FAX	[x] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	PDX Aroclors 1332	BATS 8270-SIM	TSolids SM2540G	ARCHIVE	Sample Specific Notes:
D6-SC1b-20to30-826 19	8/26/19	1245		S	1	X	X	X		
D6-SC1b-30to40-826 19	8/26/19	1300		S	1	X	X	X		
D6-SC1b-40to50-826 19	8/26/19	1445		S	1	X	X	X		
D6-SC1b-50to60-826 19	8/26/19	1450		S	1	X	X	X		
D6-SC1b-60to70-826 19	8/26/19	1530		S	1	X	X	X		
D6-SC1b-70to80-826 19	8/26/19	1540		S	1	X	X	X		
D6-SC1b-80to90-826 19	8/26/19	1655		S	1	X	X	X		
D6-SC1b-90to100-826 19	8/26/19	1700		S	1	X	X	X		
D6-SC1b-100to110-826 19	8/26/19	1740		S	1	X	X	X		
D6-SC1b-110to120-826 19	8/26/19	1750		S	1	X	X	X		
D6-SC1b-10to20-82619	8/26/19	1210		S	1				X	
411-SC1b-50to60-82619	8/26/19	1500		S	1	X	X	X		

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification

[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

[ ] Return To Client [ ] Disposal By Lab [x] Archive For ____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PGG	08/29/19 1135		ALS	8/29/19 1135
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Other
ALS

Chain of Custody Record

K1907934

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 8/27/2019	COC No:
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	1 of ____ COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	standard			
206 329 0141 Phone	TAT if different from Below ____			
206 329 6968 FAX	[X] standard			SDG No.
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	DDx (ALS Sop 1339)	PAHs (8270D-SM)	T. Solids (E160.3M)	ARCHIVE	Sample Specific Notes:
J5-SC1b-20to30-8 27 19	8/27/19	1455		S	1	X	X	X		
J5-SC1b-30to40-8 27 19	8/27/19	1500		S	1	X	X	X		
J5-SC1b-40to50-8 27 19	8/27/19	1610		S	1	X	X	X		
J5-SC1b-50to60-8 27 19	8/27/19	1615		S	1	X	X	X		
J5-SC1b-60to70-8 27 19	8/27/19	1620		S	1	X	X	X		
J5-SC1b-70to80-8 27 19	8/27/19	1625		S	1	X	X	X		
J5-SC1b-80to90-8 27 19	8/27/19	1725		S	1	X	X	X		
J5-SC1b-90to100-8 27 19	8/27/19	1730		S	1	X	X	X		
J5-SC1b-100to110-8 27 19	8/27/19	1735		S	1	X	X	X		
[redacted]										
J5-SC1b-00to10-82719	8/27/19	1445		S	1	X			X	
J5-SC1b-10 to 20-82719	8/27/19	1450		S	1				X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification
[ ] *Non-Hazard* [ ] *Flammable* [ ] *Skin Irritant* *Poison B* [ ] *Unknown* [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] *Return To Client* [ ] *Disposal By Lab* [X] *Archive For* ____ *Months*

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	PGG	08/29/19 1135	[signature]	ALS	8/29/19 1135

Other ALS

Chain of Custody Record

K1907934

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date:8/__/2019	COC No:
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	1 of ____ COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	standard			
206 329 0141 Phone	TAT if different from Below ____			
206 329 6968 FAX	[X] standard			SDG No.
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	DDx CALS 8081 1339	PAHs (8270D-SIM)	T. Solids (E160.3M)	Sample Specific Notes:
J3-SC1b-20to30-8 27 19	8/27/19	1000		S	1	X	X	X	
J3-SC1b-30to40-8 27 19	8/27/19	1005		S	1	X	X	X	
J3-SC1b-40to50-8 27 19	8/27/19	1120		S	1	X	X	X	
J3-SC1b-50to60-8 27 19	8/27/19	1125		S	1	X	X	X	
J3-SC1b-60to70-8 27 19	8/27/19	1130		S	1	X	X	X	
J3-SC1b-70to80-8 27 19	8/27/19	1135		S	1	X	X	X	
J3-SC1b-80to90-8 27 19	8/27/19	1220		S	1	X	X	X	
J3-SC1b-90to100-8 27 19	8/27/19	1225		S	1	X	X	X	
J3-SC1b-10to20-8 27 19	8/27/19	0955		S	1	X	X	X	
[illegible]	8/ /19			S	1				
412-SC1b-80to90-82719	8/27/19	1235		S	1	X	X	X	
	8/ /19			S	1				

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification
[ ] *Non-Hazard* [ ] *Flammable* [ ] *Skin Irritant* *Poison B* [ ] *Unknown* [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] *Return To Client* [ ] *Disposal By Lab* [X] *Archive For* ____ *Months*

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	PGG	08/29/19 1135	[signature]	ALS	8/29/19 1135
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Other ALS

Chain of Custody Record

K1907934

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date:8/__/2019	COC No:
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	1 of ____ COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	standard			
206 329 0141 Phone	TAT if different from Below ____			
206 329 6968 FAX	[X] standard			SDG No.
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	DDx (ALS SOP 1339)	PAHs 8270D-SIM	T. Solids E160.3M	ARCHIVE	Sample Specific Notes:
L3-SC1b-20to30-8 26 19	8/26/19	1030		S	1	X	X	X		
L3-SC1b-30to40-8 26 19	8/26/19	1035		S	1	X	X	X		
L3-SC1b-00to10-82619	8/26/19	1006		S	1				✓	
L3-SC1b-10to20-82619	8/26/19	1007		S	1				✓	
	8/ /19			S	1					
	8/ /19			S	1					
	8/ /19			S	1					
	8/ /19			S	1					
	8/ /19			S	1					
	8/ /19			S	1					
	8/ /19			S	1					
	8/ /19			S	1					

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
[ ] *Non-Hazard* [ ] *Flammable* [ ] *Skin Irritant* *Poison B* [ ] *Unknown* [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] *Return To Client* [ ] *Disposal By Lab* [X] *Archive For _____ Months*

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	PGG	08/29/19 1135	[signature]	ALS	8/29/19 1135
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

PC HH

Cooler Receipt and Preservation Form

Client Pacific Groundwater Group Service Request K1907934

Received: 8/29/19 Opened: 8/29/19 By: [illegible] Unloaded: 8/29/19 By: [illegible]

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other*_____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where?_____
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
7.9	7.8	5.0	4.9	-0.1	385			
1.7	1.7	2.9	2.9	0	376			
5.6	5.2	3.6	3.2	-0.4	393			

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA Y N
   If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: Sample labels & sample ID suggest sample date for "712-82819" is 8/28/19. COC lists 8/27/19. The same is true for H3-SC16-30to40-82919. Labels & ID have 8/29/19, COC lists date as 8/28/19

Total Solids

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Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/26/19 - 08/29/19
Sample Matrix:	Soil	**Date Received:**	08/29/19
Analysis Method:	160.3 Modified	**Units:**	Percent
Prep Method:	None	**Basis:**	As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
R4-SC1b-20to30-82819	K1907934-003	**54.3**	-	-	1	08/30/19 14:21	
R4-SC1b-30to40-82819	K1907934-004	**56.7**	-	-	1	08/30/19 14:21	
R4-SC1b-40to50-82819	K1907934-005	**53.8**	-	-	1	08/30/19 14:21	
R4-SC1b-50to60-82819	K1907934-006	**55.4**	-	-	1	08/30/19 14:21	
R4-SC1b-60to70-82819	K1907934-007	**55.6**	-	-	1	08/30/19 14:21	
R4-SC1b-70to80-82819	K1907934-008	**57.1**	-	-	1	08/30/19 14:21	
R4-SC1b-80to90-82819	K1907934-009	**54.6**	-	-	1	08/30/19 14:21	
R4-SC1b-90to100-82819	K1907934-010	**56.2**	-	-	1	08/30/19 14:21	
R4-SC1b-100to110-82819	K1907934-012	**54.1**	-	-	1	08/30/19 14:21	
R4-SC1b-110to120-82819	K1907934-013	**54.8**	-	-	1	08/30/19 14:21	
R4-SC1b-120to130-82819	K1907934-014	**56.6**	-	-	1	08/30/19 14:21	
413-SC1b-40to50-82819	K1907934-015	**56.6**	-	-	1	08/30/19 14:21	
R4-SC1b-130to140-82819	K1907934-016	**65.2**	-	-	1	08/30/19 14:21	
R4-SC1b-140to150-82819	K1907934-017	**76.6**	-	-	1	08/30/19 14:21	
J6-SC1b-20to30-82819	K1907934-018	**54.3**	-	-	1	08/30/19 14:21	
J6-SC1b-30to40-82819	K1907934-019	**55.4**	-	-	1	08/30/19 14:21	
J6-SC1b-40to50-82819	K1907934-020	**56.3**	-	-	1	08/30/19 14:21	
J6-SC1b-50to60-82819	K1907934-021	**59.0**	-	-	1	08/30/19 14:21	
J6-SC1b-60to70-82819	K1907934-022	**62.2**	-	-	1	08/30/19 14:21	
J6-SC1b-70to80-82819	K1907934-023	**69.5**	-	-	1	08/30/19 14:21	
J6-SC1b-80to90-82819	K1907934-024	**71.3**	-	-	1	08/30/19 14:18	
J6-SC1b-90to100-82819	K1907934-025	**69.2**	-	-	1	08/30/19 14:18	
J6-SC1b-100to110-82819	K1907934-026	**71.6**	-	-	1	08/30/19 14:18	
J6-SC1b-110to120-82819	K1907934-027	**73.1**	-	-	1	08/30/19 14:18	
H3-SC1b-20to30-82819	K1907934-030	**59.6**	-	-	1	08/30/19 14:18	
H3-SC1b-30to40-82919	K1907934-031	**73.6**	-	-	1	08/30/19 14:18	
H3-SC1b-40to50-82919	K1907934-032	**73.8**	-	-	1	08/30/19 14:18	
H3-SC1b-50to60-82919	K1907934-033	**70.2**	-	-	1	08/30/19 14:18	
H3-SC1b-60to70-82919	K1907934-034	**63.8**	-	-	1	08/30/19 14:18	
H3-SC1b-70to80-82919	K1907934-035	**51.5**	-	-	1	08/30/19 14:18	
H3-SC1b-80to90-82919	K1907934-036	**57.7**	-	-	1	08/30/19 14:18	
H3-SC1b-90to100-82919	K1907934-037	**64.6**	-	-	1	08/30/19 14:18	
H3-SC1b-100to110-82919	K1907934-038	**65.1**	-	-	1	08/30/19 14:18	
D6-SC1b-20to30-82619	K1907934-041	**53.2**	-	-	1	08/30/19 14:18	
D6-SC1b-30to40-82619	K1907934-042	**54.1**	-	-	1	08/30/19 14:18	
D6-SC1b-40to50-82619	K1907934-043	**56.9**	-	-	1	08/30/19 14:18	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/26/19 - 08/29/19
Sample Matrix:	Soil	**Date Received:**	08/29/19
Analysis Method:	160.3 Modified	**Units:**	Percent
Prep Method:	None	**Basis:**	As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
D6-SC1b-50to60-82619	K1907934-044	**60.5**	-	-	1	08/30/19 14:18	
D6-SC1b-60to70-82619	K1907934-045	**62.3**	-	-	1	08/30/19 14:18	
D6-SC1b-70to80-82619	K1907934-046	**66.0**	-	-	1	08/30/19 14:18	
D6-SC1b-80to90-82619	K1907934-047	**67.8**	-	-	1	08/30/19 14:18	
D6-SC1b-90to100-82619	K1907934-048	**72.4**	-	-	1	08/30/19 17:26	
D6-SC1b-100to110-82619	K1907934-049	**71.2**	-	-	1	08/30/19 17:26	
D6-SC1b-110to120-82619	K1907934-050	**71.6**	-	-	1	08/30/19 17:26	
411-SC1b-50to60-82619	K1907934-052	**60.5**	-	-	1	08/30/19 17:26	
J5-SC1b-20to30-82719	K1907934-053	**51.4**	-	-	1	08/30/19 17:26	
J5-SC1b-30to40-82719	K1907934-054	**52.1**	-	-	1	08/30/19 17:26	
J5-SC1b-40to50-82719	K1907934-055	**55.2**	-	-	1	08/30/19 17:26	
J5-SC1b-50to60-82719	K1907934-056	**56.1**	-	-	1	08/30/19 17:26	
J5-SC1b-60to70-82719	K1907934-057	**56.8**	-	-	1	08/30/19 17:26	
J5-SC1b-70to80-82719	K1907934-058	**65.7**	-	-	1	08/30/19 17:26	
J5-SC1b-80to90-82719	K1907934-059	**70.7**	-	-	1	08/30/19 17:26	
J5-SC1b-90to100-82719	K1907934-060	**71.7**	-	-	1	08/30/19 17:26	
J5-SC1b-100to110-82719	K1907934-061	**71.0**	-	-	1	08/30/19 17:26	
J3-SC1b-20to30-82719	K1907934-064	**66.9**	-	-	1	08/30/19 17:26	
J3-SC1b-30to40-82719	K1907934-065	**59.9**	-	-	1	08/30/19 17:26	
J3-SC1b-40to50-82719	K1907934-066	**66.6**	-	-	1	08/30/19 17:26	
J3-SC1b-50to60-82719	K1907934-067	**74.5**	-	-	1	08/30/19 17:26	
J3-SC1b-60to70-82719	K1907934-068	**83.5**	-	-	1	08/30/19 17:26	
J3-SC1b-70to80-82719	K1907934-069	**81.8**	-	-	1	08/30/19 17:26	
J3-SC1b-80to90-82719	K1907934-070	**80.2**	-	-	1	08/30/19 17:26	
J3-SC1b-90to100-82719	K1907934-071	**77.5**	-	-	1	08/30/19 14:48	
J3-SC1b-10to20-82719	K1907934-072	**82.4**	-	-	1	08/30/19 14:48	
412-SC1b-80to90-82719	K1907934-073	**80.5**	-	-	1	08/30/19 14:48	
L3-SC1b-20to30-82619	K1907934-074	**79.5**	-	-	1	08/30/19 14:48	
L3-SC1b-30to40-82619	K1907934-075	**80.5**	-	-	1	08/30/19 14:48	

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/26/19 - 08/28/19
Sample Matrix:	Soil	**Date Received:**	08/29/19
Analysis Method:	160.3 Modified	**Units:**	Percent
Prep Method:	None	**Basis:**	As Received

Replicate Sample Summary
Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
R4-SC1b-20to30-82819	K1907934-003DUP	-	54.3	53.9	54.1	<1	20	08/30/19
R4-SC1b-110to120-82819	K1907934-013DUP	-	54.8	54.8	54.8	<1	20	08/30/19
J6-SC1b-80to90-82819	K1907934-024DUP	-	71.3	71.7	71.5	<1	20	08/30/19
J6-SC1b-90to100-82819	K1907934-025DUP	-	69.2	69.5	69.4	<1	20	08/30/19
D6-SC1b-90to100-82619	K1907934-048DUP	-	72.4	72.1	72.3	<1	20	08/30/19
D6-SC1b-100to110-82619	K1907934-049DUP	-	71.2	71.3	71.3	<1	20	08/30/19
J3-SC1b-90to100-82719	K1907934-071DUP	-	77.5	77.8	77.7	<1	20	08/30/19

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

General Chemistry

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Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 - 08/28/19
Sample Matrix:	Water	**Date Received:**	08/29/19
Analysis Method:	160.3	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Solids, Total

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
711-82719	K1907934-001	ND U	13	1	09/03/19 08:20	
712-82819	K1907934-002	ND U	13	1	09/03/19 08:20	
Method Blank	K1907934-MB	ND U	13	1	09/03/19 08:20	

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19
Sample Matrix:	Water	**Date Received:**	08/29/19
		Date Analyzed:	09/03/19

Replicate Sample Summary

Inorganic Parameters

Sample Name:	711-82719	**Units:**	mg/L
Lab Code:	K1907934-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1907934-001DUP Result	Average	RPD	RPD Limit
Solids, Total	160.3	13	ND U	ND U	NC	NC	10

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Organochlorine Pesticides By GC/MS/MS

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Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 08:40
Sample Matrix:	Water	**Date Received:**	08/29/19 11:35
Sample Name:	711-82719	**Units:**	ng/L
Lab Code:	K1907934-001	**Basis:**	NA

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3535A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.50	0.11	1	09/06/19 13:23	9/3/19	
2,4'-DDE	ND U	0.50	0.11	1	09/06/19 13:23	9/3/19	
2,4'-DDT	ND U	0.50	0.087	1	09/06/19 13:23	9/3/19	
4,4'-DDD	ND U	0.50	0.10	1	09/06/19 13:23	9/3/19	*
4,4'-DDE	ND U	0.50	0.075	1	09/06/19 13:23	9/3/19	
4,4'-DDT	ND U	0.50	0.088	1	09/06/19 13:23	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	61	5 - 120	09/06/19 13:23	
S_4,4'-DDT-d4	61	13 - 200	09/06/19 13:23	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 08:20
Sample Matrix:	Water	**Date Received:**	08/29/19 11:35
Sample Name:	712-82819	**Units:**	ng/L
Lab Code:	K1907934-002	**Basis:**	NA

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3535A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.50	0.11	1	09/06/19 13:40	9/3/19	
2,4'-DDE	ND U	0.50	0.11	1	09/06/19 13:40	9/3/19	
2,4'-DDT	ND U	0.50	0.087	1	09/06/19 13:40	9/3/19	
4,4'-DDD	ND U	0.50	0.10	1	09/06/19 13:40	9/3/19	*
4,4'-DDE	ND U	0.50	0.075	1	09/06/19 13:40	9/3/19	
4,4'-DDT	ND U	0.50	0.088	1	09/06/19 13:40	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	76	5 - 120	09/06/19 13:40	
S_4,4'-DDT-d4	78	13 - 200	09/06/19 13:40	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 14:00
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	R4-SC1b-20to30-82819	**Units:**	ug/Kg
Lab Code:	K1907934-003	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.88	0.63	10	09/10/19 16:47	9/3/19	
2,4'-DDE	ND U	0.88	0.79	10	09/10/19 16:47	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/10/19 16:47	9/3/19	
4,4'-DDD	**2.1**	0.88	0.35	10	09/10/19 16:47	9/3/19	
4,4'-DDE	**3.6**	0.88	0.70	10	09/10/19 16:47	9/3/19	
4,4'-DDT	ND U	0.88	0.47	10	09/10/19 16:47	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	37	5 - 120	09/10/19 16:47	
S_4,4'-DDT-d4	38	13 - 200	09/10/19 16:47	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 14:05
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	R4-SC1b-30to40-82819	**Units:**	ug/Kg
Lab Code:	K1907934-004	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.86	0.63	10	09/10/19 17:04	9/3/19	
2,4'-DDE	ND U	0.86	0.79	10	09/10/19 17:04	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/10/19 17:04	9/3/19	
4,4'-DDD	**2.3**	0.86	0.35	10	09/10/19 17:04	9/3/19	
4,4'-DDE	**4.2**	0.86	0.70	10	09/10/19 17:04	9/3/19	
4,4'-DDT	**0.56 J**	0.86	0.47	10	09/10/19 17:04	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	23	5 - 120	09/10/19 17:04	
S_4,4'-DDT-d4	22	13 - 200	09/10/19 17:04	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 15:10
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	R4-SC1b-40to50-82819	**Units:**	ug/Kg
Lab Code:	K1907934-005	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.89	0.63	10	09/10/19 17:22	9/3/19	
2,4'-DDE	**0.98**	0.89	0.79	10	09/10/19 17:22	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/10/19 17:22	9/3/19	
4,4'-DDD	**2.1**	0.89	0.35	10	09/10/19 17:22	9/3/19	
4,4'-DDE	**8.2**	0.89	0.70	10	09/10/19 17:22	9/3/19	
4,4'-DDT	**1.7**	0.89	0.47	10	09/10/19 17:22	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	28	5 - 120	09/10/19 17:22	
S_4,4'-DDT-d4	30	13 - 200	09/10/19 17:22	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 15:20
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	R4-SC1b-50to60-82819	**Units:**	ug/Kg
Lab Code:	K1907934-006	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.90	0.63	10	09/10/19 17:40	9/3/19	
2,4'-DDE	ND U	0.90	0.79	10	09/10/19 17:40	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/10/19 17:40	9/3/19	
4,4'-DDD	**1.3**	0.90	0.35	10	09/10/19 17:40	9/3/19	
4,4'-DDE	**3.3**	0.90	0.70	10	09/10/19 17:40	9/3/19	
4,4'-DDT	ND U	0.90	0.47	10	09/10/19 17:40	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	30	5 - 120	09/10/19 17:40	
S_4,4'-DDT-d4	30	13 - 200	09/10/19 17:40	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 15:50
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	R4-SC1b-60to70-82819	**Units:**	ug/Kg
Lab Code:	K1907934-007	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.88	0.63	10	09/10/19 17:57	9/3/19	
2,4'-DDE	ND U	0.88	0.79	10	09/10/19 17:57	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/10/19 17:57	9/3/19	
4,4'-DDD	**3.9**	0.88	0.35	10	09/10/19 17:57	9/3/19	
4,4'-DDE	**6.9**	0.88	0.70	10	09/10/19 17:57	9/3/19	
4,4'-DDT	ND U	0.88	0.47	10	09/10/19 17:57	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	42	5 - 120	09/10/19 17:57	
S_4,4'-DDT-d4	45	13 - 200	09/10/19 17:57	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 15:55
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	R4-SC1b-70to80-82819	**Units:**	ug/Kg
Lab Code:	K1907934-008	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	**0.74**	**J**	0.85	0.63	10	09/10/19 18:15	9/3/19	
2,4'-DDE	ND	U	0.85	0.79	10	09/10/19 18:15	9/3/19	
2,4'-DDT	ND	U	0.94	0.94	10	09/10/19 18:15	9/3/19	
4,4'-DDD	**2.8**		0.85	0.35	10	09/10/19 18:15	9/3/19	
4,4'-DDE	**3.1**		0.85	0.70	10	09/10/19 18:15	9/3/19	
4,4'-DDT	ND	U	0.85	0.47	10	09/10/19 18:15	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	54	5 - 120	09/10/19 18:15	
S_4,4'-DDT-d4	50	13 - 200	09/10/19 18:15	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 16:30
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	R4-SC1b-80to90-82819	**Units:**	ug/Kg
Lab Code:	K1907934-009	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	**1.2**	0.90	0.63	10	09/10/19 18:33	9/3/19	
2,4'-DDE	ND U	0.90	0.79	10	09/10/19 18:33	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/10/19 18:33	9/3/19	
4,4'-DDD	**3.0**	0.90	0.35	10	09/10/19 18:33	9/3/19	
4,4'-DDE	**4.1**	0.90	0.70	10	09/10/19 18:33	9/3/19	
4,4'-DDT	ND U	0.90	0.47	10	09/10/19 18:33	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	48	5 - 120	09/10/19 18:33	
S_4,4'-DDT-d4	45	13 - 200	09/10/19 18:33	

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Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 16:40
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	R4-SC1b-90to100-82819	**Units:**	ug/Kg
Lab Code:	K1907934-010	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	**0.85**	**J**	0.86	0.63	10	09/10/19 18:51	9/3/19	
2,4'-DDE	ND	U	0.86	0.79	10	09/10/19 18:51	9/3/19	
2,4'-DDT	ND	U	0.94	0.94	10	09/10/19 18:51	9/3/19	
4,4'-DDD	**3.1**		0.86	0.35	10	09/10/19 18:51	9/3/19	
4,4'-DDE	**3.5**		0.86	0.70	10	09/10/19 18:51	9/3/19	
4,4'-DDT	ND	U	0.86	0.47	10	09/10/19 18:51	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	41	5 - 120	09/10/19 18:51	
S_4,4'-DDT-d4	38	13 - 200	09/10/19 18:51	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 17:00
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	R4-SC1b-100to110-82819	**Units:**	ug/Kg
Lab Code:	K1907934-012	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	**1.2**	0.91	0.63	10	09/10/19 19:09	9/3/19	
2,4'-DDE	ND U	0.91	0.79	10	09/10/19 19:09	9/3/19	
2,4'-DDT	**5.1**	0.94	0.94	10	09/10/19 19:09	9/3/19	
4,4'-DDD	**4.0**	0.91	0.35	10	09/10/19 19:09	9/3/19	
4,4'-DDE	**2.3**	0.91	0.70	10	09/10/19 19:09	9/3/19	
4,4'-DDT	ND U	0.91	0.47	10	09/10/19 19:09	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	36	5 - 120	09/10/19 19:09	
S_4,4'-DDT-d4	36	13 - 200	09/10/19 19:09	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 17:10
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	R4-SC1b-110to120-82819	**Units:**	ug/Kg
Lab Code:	K1907934-013	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	**0.76** **J**	0.82	0.63	10	09/10/19 19:28	9/3/19	
2,4'-DDE	ND U	0.82	0.79	10	09/10/19 19:28	9/3/19	
2,4'-DDT	**3.1**	0.94	0.94	10	09/10/19 19:28	9/3/19	
4,4'-DDD	**2.6**	0.82	0.35	10	09/10/19 19:28	9/3/19	
4,4'-DDE	**1.9**	0.82	0.70	10	09/10/19 19:28	9/3/19	
4,4'-DDT	ND U	0.82	0.47	10	09/10/19 19:28	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	38	5 - 120	09/10/19 19:28	
S_4,4'-DDT-d4	38	13 - 200	09/10/19 19:28	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 18:20
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	R4-SC1b-120to130-82819	**Units:**	ug/Kg
Lab Code:	K1907934-014	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	**1.2**	0.84	0.63	10	09/10/19 19:46	9/3/19	
2,4'-DDE	ND U	0.84	0.79	10	09/10/19 19:46	9/3/19	
2,4'-DDT	**4.8**	0.94	0.94	10	09/10/19 19:46	9/3/19	
4,4'-DDD	**4.2**	0.84	0.35	10	09/10/19 19:46	9/3/19	
4,4'-DDE	**4.0**	0.84	0.70	10	09/10/19 19:46	9/3/19	
4,4'-DDT	ND U	0.84	0.47	10	09/10/19 19:46	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	33	5 - 120	09/10/19 19:46	
S_4,4'-DDT-d4	37	13 - 200	09/10/19 19:46	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 10:45
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	413-SC1b-40to50-82819	**Units:**	ug/Kg
Lab Code:	K1907934-015	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.86	0.63	10	09/10/19 20:04	9/3/19	
2,4'-DDE	ND U	0.86	0.79	10	09/10/19 20:04	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/10/19 20:04	9/3/19	
4,4'-DDD	**1.6**	0.86	0.35	10	09/10/19 20:04	9/3/19	
4,4'-DDE	**3.4**	0.86	0.70	10	09/10/19 20:04	9/3/19	
4,4'-DDT	**1.5**	0.86	0.47	10	09/10/19 20:04	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	55	5 - 120	09/10/19 20:04	
S_4,4'-DDT-d4	55	13 - 200	09/10/19 20:04	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 18:25
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	R4-SC1b-130to140-82819	**Units:**	ug/Kg
Lab Code:	K1907934-016	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.76	0.63	10	09/10/19 20:22	9/3/19	
2,4'-DDE	ND U	0.79	0.79	10	09/10/19 20:22	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/10/19 20:22	9/3/19	
4,4'-DDD	**0.55 J**	0.76	0.35	10	09/10/19 20:22	9/3/19	
4,4'-DDE	**0.79**	0.76	0.70	10	09/10/19 20:22	9/3/19	
4,4'-DDT	ND U	0.76	0.47	10	09/10/19 20:22	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	49	5 - 120	09/10/19 20:22	
S_4,4'-DDT-d4	42	13 - 200	09/10/19 20:22	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 18:30
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	R4-SC1b-140to150-82819	**Units:**	ug/Kg
Lab Code:	K1907934-017	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.63	0.63	10	09/10/19 20:40	9/3/19	
2,4'-DDE	ND U	0.79	0.79	10	09/10/19 20:40	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/10/19 20:40	9/3/19	
4,4'-DDD	ND U	0.60	0.35	10	09/10/19 20:40	9/3/19	
4,4'-DDE	ND U	0.70	0.70	10	09/10/19 20:40	9/3/19	
4,4'-DDT	ND U	0.60	0.47	10	09/10/19 20:40	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	47	5 - 120	09/10/19 20:40	
S_4,4'-DDT-d4	46	13 - 200	09/10/19 20:40	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 09:20
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J6-SC1b-20to30-82819	**Units:**	ug/Kg
Lab Code:	K1907934-018	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.83	0.63	10	09/10/19 20:58	9/3/19	
2,4'-DDE	ND U	0.83	0.79	10	09/10/19 20:58	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/10/19 20:58	9/3/19	
4,4'-DDD	**1.3**	0.83	0.35	10	09/10/19 20:58	9/3/19	
4,4'-DDE	**2.2**	0.83	0.70	10	09/10/19 20:58	9/3/19	
4,4'-DDT	ND U	0.83	0.47	10	09/10/19 20:58	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	45	5 - 120	09/10/19 20:58	
S_4,4'-DDT-d4	44	13 - 200	09/10/19 20:58	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 09:25
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J6-SC1b-30to40-82819	**Units:**	ug/Kg
Lab Code:	K1907934-019	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.80	0.63	10	09/10/19 21:15	9/3/19	
2,4'-DDE	ND U	0.80	0.79	10	09/10/19 21:15	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/10/19 21:15	9/3/19	
4,4'-DDD	**1.6**	0.80	0.35	10	09/10/19 21:15	9/3/19	
4,4'-DDE	**2.9**	0.80	0.70	10	09/10/19 21:15	9/3/19	
4,4'-DDT	ND U	0.80	0.47	10	09/10/19 21:15	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	53	5 - 120	09/10/19 21:15	
S_4,4'-DDT-d4	52	13 - 200	09/10/19 21:15	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 10:25
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J6-SC1b-40to50-82819	**Units:**	ug/Kg
Lab Code:	K1907934-020	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.86	0.63	10	09/10/19 21:33	9/3/19	
2,4'-DDE	ND U	0.86	0.79	10	09/10/19 21:33	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/10/19 21:33	9/3/19	
4,4'-DDD	**1.8**	0.86	0.35	10	09/10/19 21:33	9/3/19	
4,4'-DDE	**3.6**	0.86	0.70	10	09/10/19 21:33	9/3/19	
4,4'-DDT	**0.62 J**	0.86	0.47	10	09/10/19 21:33	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	37	5 - 120	09/10/19 21:33	
S_4,4'-DDT-d4	37	13 - 200	09/10/19 21:33	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 10:30
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J6-SC1b-50to60-82819	**Units:**	ug/Kg
Lab Code:	K1907934-021	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.78	0.63	10	09/10/19 21:51	9/3/19	
2,4'-DDE	**0.92**	0.79	0.79	10	09/10/19 21:51	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/10/19 21:51	9/3/19	
4,4'-DDD	**1.6**	0.78	0.35	10	09/10/19 21:51	9/3/19	
4,4'-DDE	**7.8**	0.78	0.70	10	09/10/19 21:51	9/3/19	
4,4'-DDT	ND U	0.78	0.47	10	09/10/19 21:51	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	34	5 - 120	09/10/19 21:51	
S_4,4'-DDT-d4	38	13 - 200	09/10/19 21:51	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 10:35
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J6-SC1b-60to70-82819	**Units:**	ug/Kg
Lab Code:	K1907934-022	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.79	0.63	10	09/10/19 22:08	9/3/19	
2,4'-DDE	**2.0**	0.79	0.79	10	09/10/19 22:08	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/10/19 22:08	9/3/19	
4,4'-DDD	**2.6**	0.79	0.35	10	09/10/19 22:08	9/3/19	
4,4'-DDE	**13**	0.79	0.70	10	09/10/19 22:08	9/3/19	
4,4'-DDT	ND U	0.79	0.47	10	09/10/19 22:08	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	53	5 - 120	09/10/19 22:08	
S_4,4'-DDT-d4	53	13 - 200	09/10/19 22:08	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 10:40
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J6-SC1b-70to80-82819	**Units:**	ug/Kg
Lab Code:	K1907934-023	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.66	0.63	10	09/10/19 22:26	9/3/19	
2,4'-DDE	ND U	0.79	0.79	10	09/10/19 22:26	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/10/19 22:26	9/3/19	
4,4'-DDD	**0.46 J**	0.66	0.35	10	09/10/19 22:26	9/3/19	
4,4'-DDE	ND U	0.70	0.70	10	09/10/19 22:26	9/3/19	
4,4'-DDT	ND U	0.66	0.47	10	09/10/19 22:26	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	39	5 - 120	09/10/19 22:26	
S_4,4'-DDT-d4	39	13 - 200	09/10/19 22:26	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 11:55
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J6-SC1b-80to90-82819	**Units:**	ug/Kg
Lab Code:	K1907934-024	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.66	0.63	10	09/11/19 16:41	9/3/19	
2,4'-DDE	ND U	0.79	0.79	10	09/11/19 16:41	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/11/19 16:41	9/3/19	
4,4'-DDD	ND U	0.66	0.35	10	09/11/19 16:41	9/3/19	
4,4'-DDE	ND U	0.70	0.70	10	09/11/19 16:41	9/3/19	
4,4'-DDT	ND U	0.66	0.47	10	09/11/19 16:41	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	60	5 - 120	09/11/19 16:41	
S_4,4'-DDT-d4	58	13 - 200	09/11/19 16:41	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 12:00
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J6-SC1b-90to100-82819	**Units:**	ug/Kg
Lab Code:	K1907934-025	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.69	0.63	10	09/11/19 16:59	9/3/19	
2,4'-DDE	ND U	0.79	0.79	10	09/11/19 16:59	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/11/19 16:59	9/3/19	
4,4'-DDD	ND U	0.69	0.35	10	09/11/19 16:59	9/3/19	
4,4'-DDE	ND U	0.70	0.70	10	09/11/19 16:59	9/3/19	
4,4'-DDT	ND U	0.69	0.47	10	09/11/19 16:59	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	45	5 - 120	09/11/19 16:59	
S_4,4'-DDT-d4	47	13 - 200	09/11/19 16:59	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 12:05
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J6-SC1b-100to110-82819	**Units:**	ug/Kg
Lab Code:	K1907934-026	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.68	0.63	10	09/11/19 17:16	9/3/19	
2,4'-DDE	ND U	0.79	0.79	10	09/11/19 17:16	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/11/19 17:16	9/3/19	
4,4'-DDD	ND U	0.68	0.35	10	09/11/19 17:16	9/3/19	
4,4'-DDE	ND U	0.70	0.70	10	09/11/19 17:16	9/3/19	
4,4'-DDT	ND U	0.68	0.47	10	09/11/19 17:16	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	55	5 - 120	09/11/19 17:16	
S_4,4'-DDT-d4	54	13 - 200	09/11/19 17:16	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 12:10
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J6-SC1b-110to120-82819	**Units:**	ug/Kg
Lab Code:	K1907934-027	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.65	0.63	10	09/11/19 17:34	9/3/19	
2,4'-DDE	ND U	0.79	0.79	10	09/11/19 17:34	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/11/19 17:34	9/3/19	
4,4'-DDD	ND U	0.65	0.35	10	09/11/19 17:34	9/3/19	
4,4'-DDE	ND U	0.70	0.70	10	09/11/19 17:34	9/3/19	
4,4'-DDT	ND U	0.65	0.47	10	09/11/19 17:34	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	59	5 - 120	09/11/19 17:34	
S_4,4'-DDT-d4	58	13 - 200	09/11/19 17:34	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 20:15
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	H3-SC1b-20to30-82819	**Units:**	ug/Kg
Lab Code:	K1907934-030	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.81	0.63	10	09/11/19 17:52	9/3/19	
2,4'-DDE	**1.3**	0.81	0.79	10	09/11/19 17:52	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/11/19 17:52	9/3/19	
4,4'-DDD	**3.7**	0.81	0.35	10	09/11/19 17:52	9/3/19	
4,4'-DDE	**10**	0.81	0.70	10	09/11/19 17:52	9/3/19	
4,4'-DDT	ND U	0.81	0.47	10	09/11/19 17:52	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	58	5 - 120	09/11/19 17:52	
S_4,4'-DDT-d4	44	13 - 200	09/11/19 17:52	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/29/19 08:25
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	H3-SC1b-30to40-82919	**Units:**	ug/Kg
Lab Code:	K1907934-031	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.67	0.63	10	09/11/19 18:09	9/3/19	
2,4'-DDE	ND U	0.79	0.79	10	09/11/19 18:09	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/11/19 18:09	9/3/19	
4,4'-DDD	**2.4**	0.67	0.35	10	09/11/19 18:09	9/3/19	
4,4'-DDE	**0.80**	0.70	0.70	10	09/11/19 18:09	9/3/19	
4,4'-DDT	ND U	0.67	0.47	10	09/11/19 18:09	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	45	5 - 120	09/11/19 18:09	
S_4,4'-DDT-d4	61	13 - 200	09/11/19 18:09	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/29/19 08:30
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	H3-SC1b-40to50-82919	**Units:**	ug/Kg
Lab Code:	K1907934-032	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.68	0.63	10	09/11/19 18:27	9/3/19	
2,4'-DDE	ND U	0.79	0.79	10	09/11/19 18:27	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/11/19 18:27	9/3/19	
4,4'-DDD	**1.1**	0.68	0.35	10	09/11/19 18:27	9/3/19	
4,4'-DDE	ND U	0.70	0.70	10	09/11/19 18:27	9/3/19	
4,4'-DDT	ND U	0.68	0.47	10	09/11/19 18:27	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	47	5 - 120	09/11/19 18:27	
S_4,4'-DDT-d4	55	13 - 200	09/11/19 18:27	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/29/19 08:35
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	H3-SC1b-50to60-82919	**Units:**	ug/Kg
Lab Code:	K1907934-033	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.71	0.63	10	09/11/19 18:44	9/3/19	
2,4'-DDE	ND U	0.79	0.79	10	09/11/19 18:44	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/11/19 18:44	9/3/19	
4,4'-DDD	**0.85**	0.71	0.35	10	09/11/19 18:44	9/3/19	
4,4'-DDE	ND U	0.71	0.70	10	09/11/19 18:44	9/3/19	
4,4'-DDT	ND U	0.71	0.47	10	09/11/19 18:44	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	55	5 - 120	09/11/19 18:44	
S_4,4'-DDT-d4	53	13 - 200	09/11/19 18:44	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/29/19 09:00
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	H3-SC1b-60to70-82919	**Units:**	ug/Kg
Lab Code:	K1907934-034	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.77	0.63	10	09/11/19 19:02	9/3/19	
2,4'-DDE	ND U	0.79	0.79	10	09/11/19 19:02	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/11/19 19:02	9/3/19	
4,4'-DDD	ND U	0.77	0.35	10	09/11/19 19:02	9/3/19	
4,4'-DDE	ND U	0.77	0.70	10	09/11/19 19:02	9/3/19	
4,4'-DDT	ND U	0.77	0.47	10	09/11/19 19:02	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	34	5 - 120	09/11/19 19:02	
S_4,4'-DDT-d4	32	13 - 200	09/11/19 19:02	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/29/19 09:05
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	H3-SC1b-70to80-82919	**Units:**	ug/Kg
Lab Code:	K1907934-035	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.95	0.63	10	09/11/19 19:20	9/3/19	
2,4'-DDE	ND U	0.95	0.79	10	09/11/19 19:20	9/3/19	
2,4'-DDT	ND U	0.95	0.94	10	09/11/19 19:20	9/3/19	
4,4'-DDD	ND U	0.95	0.35	10	09/11/19 19:20	9/3/19	
4,4'-DDE	ND U	0.95	0.70	10	09/11/19 19:20	9/3/19	
4,4'-DDT	ND U	0.95	0.47	10	09/11/19 19:20	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	61	5 - 120	09/11/19 19:20	
S_4,4'-DDT-d4	54	13 - 200	09/11/19 19:20	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/29/19 09:30
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	H3-SC1b-80to90-82919	**Units:**	ug/Kg
Lab Code:	K1907934-036	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.80	0.63	10	09/11/19 19:37	9/3/19	
2,4'-DDE	ND U	0.80	0.79	10	09/11/19 19:37	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/11/19 19:37	9/3/19	
4,4'-DDD	ND U	0.80	0.35	10	09/11/19 19:37	9/3/19	
4,4'-DDE	ND U	0.80	0.70	10	09/11/19 19:37	9/3/19	
4,4'-DDT	ND U	0.80	0.47	10	09/11/19 19:37	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	34	5 - 120	09/11/19 19:37	
S_4,4'-DDT-d4	29	13 - 200	09/11/19 19:37	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/29/19 09:35
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	H3-SC1b-90to100-82919	**Units:**	ug/Kg
Lab Code:	K1907934-037	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.74	0.63	10	09/11/19 19:55	9/3/19	
2,4'-DDE	ND U	0.79	0.79	10	09/11/19 19:55	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/11/19 19:55	9/3/19	
4,4'-DDD	ND U	0.74	0.35	10	09/11/19 19:55	9/3/19	
4,4'-DDE	ND U	0.74	0.70	10	09/11/19 19:55	9/3/19	
4,4'-DDT	ND U	0.74	0.47	10	09/11/19 19:55	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	37	5 - 120	09/11/19 19:55	
S_4,4'-DDT-d4	31	13 - 200	09/11/19 19:55	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/29/19 09:50
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	H3-SC1b-100to110-82919	**Units:**	ug/Kg
Lab Code:	K1907934-038	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.73	0.63	10	09/11/19 20:13	9/3/19	
2,4'-DDE	ND U	0.79	0.79	10	09/11/19 20:13	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/11/19 20:13	9/3/19	
4,4'-DDD	ND U	0.73	0.35	10	09/11/19 20:13	9/3/19	
4,4'-DDE	ND U	0.73	0.70	10	09/11/19 20:13	9/3/19	
4,4'-DDT	ND U	0.73	0.47	10	09/11/19 20:13	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	43	5 - 120	09/11/19 20:13	
S_4,4'-DDT-d4	38	13 - 200	09/11/19 20:13	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/26/19 12:45
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	D6-SC1b-20to30-82619	**Units:**	ug/Kg
Lab Code:	K1907934-041	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.88	0.63	10	09/11/19 20:30	9/3/19	
2,4'-DDE	ND U	0.88	0.79	10	09/11/19 20:30	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/11/19 20:30	9/3/19	
4,4'-DDD	**2.6**	0.88	0.35	10	09/11/19 20:30	9/3/19	
4,4'-DDE	**5.5**	0.88	0.70	10	09/11/19 20:30	9/3/19	
4,4'-DDT	**4.8**	0.88	0.47	10	09/11/19 20:30	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	43	5 - 120	09/11/19 20:30	
S_4,4'-DDT-d4	42	13 - 200	09/11/19 20:30	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/26/19 13:00
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	D6-SC1b-30to40-82619	**Units:**	ug/Kg
Lab Code:	K1907934-042	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.90	0.63	10	09/11/19 20:48	9/3/19	
2,4'-DDE	ND U	0.90	0.79	10	09/11/19 20:48	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/11/19 20:48	9/3/19	
4,4'-DDD	**4.3**	0.90	0.35	10	09/11/19 20:48	9/3/19	
4,4'-DDE	**7.4**	0.90	0.70	10	09/11/19 20:48	9/3/19	
4,4'-DDT	**3.8**	0.90	0.47	10	09/11/19 20:48	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	56	5 - 120	09/11/19 20:48	
S_4,4'-DDT-d4	63	13 - 200	09/11/19 20:48	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/26/19 14:45
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	D6-SC1b-40to50-82619	**Units:**	ug/Kg
Lab Code:	K1907934-043	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.82	0.63	10	09/11/19 21:05	9/3/19	
2,4'-DDE	ND U	0.82	0.79	10	09/11/19 21:05	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/11/19 21:05	9/3/19	
4,4'-DDD	**1.3**	0.82	0.35	10	09/11/19 21:05	9/3/19	
4,4'-DDE	**4.5**	0.82	0.70	10	09/11/19 21:05	9/3/19	
4,4'-DDT	ND U	0.82	0.47	10	09/11/19 21:05	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	39	5 - 120	09/11/19 21:05	
S_4,4'-DDT-d4	32	13 - 200	09/11/19 21:05	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/26/19 14:50
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	D6-SC1b-50to60-82619	**Units:**	ug/Kg
Lab Code:	K1907934-044	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.81	0.63	10	09/11/19 21:23	9/3/19	
2,4'-DDE	ND U	0.81	0.79	10	09/11/19 21:23	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/11/19 21:23	9/3/19	
4,4'-DDD	**3.1**	0.81	0.35	10	09/11/19 21:23	9/3/19	
4,4'-DDE	**5.3**	0.81	0.70	10	09/11/19 21:23	9/3/19	
4,4'-DDT	ND U	0.81	0.47	10	09/11/19 21:23	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	30	5 - 120	09/11/19 21:23	
S_4,4'-DDT-d4	28	13 - 200	09/11/19 21:23	

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Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/26/19 15:30
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	D6-SC1b-60to70-82619	**Units:**	ug/Kg
Lab Code:	K1907934-045	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.77	0.63	10	09/11/19 21:41	9/3/19	
2,4'-DDE	ND U	0.79	0.79	10	09/11/19 21:41	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/11/19 21:41	9/3/19	
4,4'-DDD	ND Ui	1.8	1.8	10	09/11/19 21:41	9/3/19	
4,4'-DDE	**2.7**	0.77	0.70	10	09/11/19 21:41	9/3/19	
4,4'-DDT	ND U	0.77	0.47	10	09/11/19 21:41	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	35	5 - 120	09/11/19 21:41	
S_4,4'-DDT-d4	38	13 - 200	09/11/19 21:41	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/26/19 15:40
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	D6-SC1b-70to80-82619	**Units:**	ug/Kg
Lab Code:	K1907934-046	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.71	0.63	10	09/11/19 21:58	9/3/19	
2,4'-DDE	ND U	0.79	0.79	10	09/11/19 21:58	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/11/19 21:58	9/3/19	
4,4'-DDD	ND U	0.71	0.35	10	09/11/19 21:58	9/3/19	
4,4'-DDE	ND U	0.71	0.70	10	09/11/19 21:58	9/3/19	
4,4'-DDT	ND U	0.71	0.47	10	09/11/19 21:58	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	46	5 - 120	09/11/19 21:58	
S_4,4'-DDT-d4	43	13 - 200	09/11/19 21:58	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/26/19 16:55
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	D6-SC1b-80to90-82619	**Units:**	ug/Kg
Lab Code:	K1907934-047	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.73	0.63	10	09/11/19 22:16	9/3/19	
2,4'-DDE	ND U	0.79	0.79	10	09/11/19 22:16	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/11/19 22:16	9/3/19	
4,4'-DDD	ND U	0.73	0.35	10	09/11/19 22:16	9/3/19	
4,4'-DDE	ND U	0.73	0.70	10	09/11/19 22:16	9/3/19	
4,4'-DDT	ND U	0.73	0.47	10	09/11/19 22:16	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	42	5 - 120	09/11/19 22:16	
S_4,4'-DDT-d4	38	13 - 200	09/11/19 22:16	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/26/19 17:00
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	D6-SC1b-90to100-82619	**Units:**	ug/Kg
Lab Code:	K1907934-048	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.65	0.63	10	09/12/19 00:02	9/3/19	
2,4'-DDE	ND U	0.79	0.79	10	09/12/19 00:02	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/12/19 00:02	9/3/19	
4,4'-DDD	ND U	0.65	0.35	10	09/12/19 00:02	9/3/19	
4,4'-DDE	ND U	0.70	0.70	10	09/12/19 00:02	9/3/19	
4,4'-DDT	ND U	0.65	0.47	10	09/12/19 00:02	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	60	5 - 120	09/12/19 00:02	
S_4,4'-DDT-d4	51	13 - 200	09/12/19 00:02	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/26/19 17:40
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	D6-SC1b-100to110-82619	**Units:**	ug/Kg
Lab Code:	K1907934-049	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.66	0.63	10	09/12/19 00:19	9/3/19	
2,4'-DDE	ND U	0.79	0.79	10	09/12/19 00:19	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/12/19 00:19	9/3/19	
4,4'-DDD	ND U	0.66	0.35	10	09/12/19 00:19	9/3/19	
4,4'-DDE	ND U	0.70	0.70	10	09/12/19 00:19	9/3/19	
4,4'-DDT	ND U	0.66	0.47	10	09/12/19 00:19	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	74	5 - 120	09/12/19 00:19	
S_4,4'-DDT-d4	68	13 - 200	09/12/19 00:19	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/26/19 17:50
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	D6-SC1b-110to120-82619	**Units:**	ug/Kg
Lab Code:	K1907934-050	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.69	0.63	10	09/12/19 00:37	9/3/19	
2,4'-DDE	ND U	0.79	0.79	10	09/12/19 00:37	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/12/19 00:37	9/3/19	
4,4'-DDD	ND U	0.69	0.35	10	09/12/19 00:37	9/3/19	
4,4'-DDE	ND U	0.70	0.70	10	09/12/19 00:37	9/3/19	
4,4'-DDT	ND U	0.69	0.47	10	09/12/19 00:37	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	59	5 - 120	09/12/19 00:37	
S_4,4'-DDT-d4	52	13 - 200	09/12/19 00:37	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/26/19 15:00
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	411-SC1b-50to60-82619	**Units:**	ug/Kg
Lab Code:	K1907934-052	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	**0.88**	0.79	0.63	10	09/12/19 00:55	9/3/19	
2,4'-DDE	ND U	0.79	0.79	10	09/12/19 00:55	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/12/19 00:55	9/3/19	
4,4'-DDD	**3.4**	0.79	0.35	10	09/12/19 00:55	9/3/19	
4,4'-DDE	**5.9**	0.79	0.70	10	09/12/19 00:55	9/3/19	
4,4'-DDT	ND U	0.79	0.47	10	09/12/19 00:55	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	59	5 - 120	09/12/19 00:55	
S_4,4'-DDT-d4	100	13 - 200	09/12/19 00:55	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 14:55
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J5-SC1b-20to30-82719	**Units:**	ug/Kg
Lab Code:	K1907934-053	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	**0.75**	**J**	0.91	0.63	10	09/12/19 01:12	9/3/19	
2,4'-DDE	ND	U	0.91	0.79	10	09/12/19 01:12	9/3/19	
2,4'-DDT	ND	U	0.94	0.94	10	09/12/19 01:12	9/3/19	
4,4'-DDD	**2.9**		0.91	0.35	10	09/12/19 01:12	9/3/19	
4,4'-DDE	**4.5**		0.91	0.70	10	09/12/19 01:12	9/3/19	
4,4'-DDT	ND	U	0.91	0.47	10	09/12/19 01:12	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	51	5 - 120	09/12/19 01:12	
S_4,4'-DDT-d4	49	13 - 200	09/12/19 01:12	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 15:00
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J5-SC1b-30to40-82719	**Units:**	ug/Kg
Lab Code:	K1907934-054	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.88	0.63	10	09/12/19 01:30	9/3/19	
2,4'-DDE	ND U	0.88	0.79	10	09/12/19 01:30	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/12/19 01:30	9/3/19	
4,4'-DDD	**2.6**	0.88	0.35	10	09/12/19 01:30	9/3/19	
4,4'-DDE	**4.5**	0.88	0.70	10	09/12/19 01:30	9/3/19	
4,4'-DDT	ND U	0.88	0.47	10	09/12/19 01:30	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	58	5 - 120	09/12/19 01:30	
S_4,4'-DDT-d4	61	13 - 200	09/12/19 01:30	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 16:10
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J5-SC1b-40to50-82719	**Units:**	ug/Kg
Lab Code:	K1907934-055	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.80	0.63	10	09/12/19 01:48	9/3/19	
2,4'-DDE	ND U	0.80	0.79	10	09/12/19 01:48	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/12/19 01:48	9/3/19	
4,4'-DDD	**2.0**	0.80	0.35	10	09/12/19 01:48	9/3/19	
4,4'-DDE	**3.7**	0.80	0.70	10	09/12/19 01:48	9/3/19	
4,4'-DDT	**1.7**	0.80	0.47	10	09/12/19 01:48	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	66	5 - 120	09/12/19 01:48	
S_4,4'-DDT-d4	59	13 - 200	09/12/19 01:48	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 16:15
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J5-SC1b-50to60-82719	**Units:**	ug/Kg
Lab Code:	K1907934-056	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.81	0.63	10	09/12/19 02:05	9/3/19	
2,4'-DDE	**1.6**	0.81	0.79	10	09/12/19 02:05	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/12/19 02:05	9/3/19	
4,4'-DDD	**1.9**	0.81	0.35	10	09/12/19 02:05	9/3/19	
4,4'-DDE	**12**	0.81	0.70	10	09/12/19 02:05	9/3/19	
4,4'-DDT	**3.0**	0.81	0.47	10	09/12/19 02:05	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	44	5 - 120	09/12/19 02:05	
S_4,4'-DDT-d4	37	13 - 200	09/12/19 02:05	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 16:20
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J5-SC1b-60to70-82719	**Units:**	ug/Kg
Lab Code:	K1907934-057	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.85	0.63	10	09/12/19 02:23	9/3/19	
2,4'-DDE	ND U	0.85	0.79	10	09/12/19 02:23	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/12/19 02:23	9/3/19	
4,4'-DDD	**2.3**	0.85	0.35	10	09/12/19 02:23	9/3/19	
4,4'-DDE	**6.6**	0.85	0.70	10	09/12/19 02:23	9/3/19	
4,4'-DDT	ND U	0.85	0.47	10	09/12/19 02:23	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	50	5 - 120	09/12/19 02:23	
S_4,4'-DDT-d4	45	13 - 200	09/12/19 02:23	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 16:25
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J5-SC1b-70to80-82719	**Units:**	ug/Kg
Lab Code:	K1907934-058	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.75	0.63	10	09/12/19 02:40	9/3/19	
2,4'-DDE	ND U	0.79	0.79	10	09/12/19 02:40	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/12/19 02:40	9/3/19	
4,4'-DDD	**2.4**	0.75	0.35	10	09/12/19 02:40	9/3/19	
4,4'-DDE	**3.9**	0.75	0.70	10	09/12/19 02:40	9/3/19	
4,4'-DDT	ND U	0.75	0.47	10	09/12/19 02:40	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	62	5 - 120	09/12/19 02:40	
S_4,4'-DDT-d4	50	13 - 200	09/12/19 02:40	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 17:25
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J5-SC1b-80to90-82719	**Units:**	ug/Kg
Lab Code:	K1907934-059	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.66	0.63	10	09/12/19 02:58	9/3/19	
2,4'-DDE	ND U	0.79	0.79	10	09/12/19 02:58	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/12/19 02:58	9/3/19	
4,4'-DDD	ND U	0.66	0.35	10	09/12/19 02:58	9/3/19	
4,4'-DDE	ND U	0.70	0.70	10	09/12/19 02:58	9/3/19	
4,4'-DDT	ND U	0.66	0.47	10	09/12/19 02:58	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	65	5 - 120	09/12/19 02:58	
S_4,4'-DDT-d4	60	13 - 200	09/12/19 02:58	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 17:30
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J5-SC1b-90to100-82719	**Units:**	ug/Kg
Lab Code:	K1907934-060	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.68	0.63	10	09/18/19 14:46	9/3/19	
2,4'-DDE	ND U	0.79	0.79	10	09/18/19 14:46	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/18/19 14:46	9/3/19	
4,4'-DDD	ND U	0.68	0.35	10	09/18/19 14:46	9/3/19	
4,4'-DDE	ND U	0.70	0.70	10	09/18/19 14:46	9/3/19	
4,4'-DDT	ND U	0.68	0.47	10	09/18/19 14:46	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	60	5 - 120	09/18/19 14:46	
S_4,4'-DDT-d4	59	13 - 200	09/18/19 14:46	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 17:35
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J5-SC1b-100to110-82719	**Units:**	ug/Kg
Lab Code:	K1907934-061	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.67	0.63	10	09/18/19 15:04	9/3/19	
2,4'-DDE	ND U	0.79	0.79	10	09/18/19 15:04	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/18/19 15:04	9/3/19	
4,4'-DDD	ND U	0.67	0.35	10	09/18/19 15:04	9/3/19	
4,4'-DDE	ND U	0.70	0.70	10	09/18/19 15:04	9/3/19	
4,4'-DDT	ND U	0.67	0.47	10	09/18/19 15:04	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	60	5 - 120	09/18/19 15:04	
S_4,4'-DDT-d4	59	13 - 200	09/18/19 15:04	

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Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 10:00
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J3-SC1b-20to30-82719	**Units:**	ug/Kg
Lab Code:	K1907934-064	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.75	0.63	10	09/18/19 17:25	9/3/19	
2,4'-DDE	**1.2**	0.79	0.79	10	09/18/19 17:25	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/18/19 17:25	9/3/19	
4,4'-DDD	**4.3**	0.75	0.35	10	09/18/19 17:25	9/3/19	
4,4'-DDE	**9.6**	0.75	0.70	10	09/18/19 17:25	9/3/19	
4,4'-DDT	ND U	0.75	0.47	10	09/18/19 17:25	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	46	5 - 120	09/18/19 17:25	
S_4,4'-DDT-d4	57	13 - 200	09/18/19 17:25	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 10:05
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J3-SC1b-30to40-82719	**Units:**	ug/Kg
Lab Code:	K1907934-065	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.78	0.63	10	09/18/19 15:39	9/3/19	
2,4'-DDE	**1.9**	0.79	0.79	10	09/18/19 15:39	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/18/19 15:39	9/3/19	
4,4'-DDD	**5.6**	0.78	0.35	10	09/18/19 15:39	9/3/19	
4,4'-DDE	**16**	0.78	0.70	10	09/18/19 15:39	9/3/19	
4,4'-DDT	ND U	0.78	0.47	10	09/18/19 15:39	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	56	5 - 120	09/18/19 15:39	
S_4,4'-DDT-d4	74	13 - 200	09/18/19 15:39	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 11:20
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J3-SC1b-40to50-82719	**Units:**	ug/Kg
Lab Code:	K1907934-066	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND	U	0.72	0.63	10	09/18/19 15:56	9/3/19	
2,4'-DDE	**1.3**		0.79	0.79	10	09/18/19 15:56	9/3/19	
2,4'-DDT	ND	U	0.94	0.94	10	09/18/19 15:56	9/3/19	
4,4'-DDD	**3.0**		0.72	0.35	10	09/18/19 15:56	9/3/19	
4,4'-DDE	**10**		0.72	0.70	10	09/18/19 15:56	9/3/19	
4,4'-DDT	ND	U	0.72	0.47	10	09/18/19 15:56	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	52	5 - 120	09/18/19 15:56	
S_4,4'-DDT-d4	45	13 - 200	09/18/19 15:56	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 11:25
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J3-SC1b-50to60-82719	**Units:**	ug/Kg
Lab Code:	K1907934-067	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.64	0.63	10	09/18/19 16:14	9/3/19	
2,4'-DDE	ND U	0.79	0.79	10	09/18/19 16:14	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/18/19 16:14	9/3/19	
4,4'-DDD	ND U	0.64	0.35	10	09/18/19 16:14	9/3/19	
4,4'-DDE	ND U	0.70	0.70	10	09/18/19 16:14	9/3/19	
4,4'-DDT	ND U	0.64	0.47	10	09/18/19 16:14	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	58	5 - 120	09/18/19 16:14	
S_4,4'-DDT-d4	55	13 - 200	09/18/19 16:14	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 11:30
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J3-SC1b-60to70-82719	**Units:**	ug/Kg
Lab Code:	K1907934-068	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.63	0.63	10	09/18/19 16:32	9/3/19	
2,4'-DDE	ND U	0.79	0.79	10	09/18/19 16:32	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/18/19 16:32	9/3/19	
4,4'-DDD	ND U	0.59	0.35	10	09/18/19 16:32	9/3/19	
4,4'-DDE	ND U	0.70	0.70	10	09/18/19 16:32	9/3/19	
4,4'-DDT	ND U	0.59	0.47	10	09/18/19 16:32	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	54	5 - 120	09/18/19 16:32	
S_4,4'-DDT-d4	51	13 - 200	09/18/19 16:32	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 11:35
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J3-SC1b-70to80-82719	**Units:**	ug/Kg
Lab Code:	K1907934-069	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.63	0.63	10	09/18/19 16:49	9/3/19	
2,4'-DDE	ND U	0.79	0.79	10	09/18/19 16:49	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/18/19 16:49	9/3/19	
4,4'-DDD	ND U	0.57	0.35	10	09/18/19 16:49	9/3/19	
4,4'-DDE	ND U	0.70	0.70	10	09/18/19 16:49	9/3/19	
4,4'-DDT	ND U	0.57	0.47	10	09/18/19 16:49	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	58	5 - 120	09/18/19 16:49	
S_4,4'-DDT-d4	55	13 - 200	09/18/19 16:49	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 12:20
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J3-SC1b-80to90-82719	**Units:**	ug/Kg
Lab Code:	K1907934-070	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.63	0.63	10	09/18/19 17:07	9/3/19	
2,4'-DDE	ND U	0.79	0.79	10	09/18/19 17:07	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/18/19 17:07	9/3/19	
4,4'-DDD	ND U	0.60	0.35	10	09/18/19 17:07	9/3/19	
4,4'-DDE	ND U	0.70	0.70	10	09/18/19 17:07	9/3/19	
4,4'-DDT	ND U	0.60	0.47	10	09/18/19 17:07	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	55	5 - 120	09/18/19 17:07	
S_4,4'-DDT-d4	50	13 - 200	09/18/19 17:07	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 12:25
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J3-SC1b-90to100-82719	**Units:**	ug/Kg
Lab Code:	K1907934-071	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.63	0.63	10	09/10/19 13:15	9/3/19	
2,4'-DDE	ND U	0.79	0.79	10	09/10/19 13:15	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/10/19 13:15	9/3/19	
4,4'-DDD	ND U	0.63	0.35	10	09/10/19 13:15	9/3/19	
4,4'-DDE	ND U	0.70	0.70	10	09/10/19 13:15	9/3/19	
4,4'-DDT	ND U	0.63	0.47	10	09/10/19 13:15	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	53	5 - 120	09/10/19 13:15	
S_4,4'-DDT-d4	44	13 - 200	09/10/19 13:15	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 09:55
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J3-SC1b-10to20-82719	**Units:**	ug/Kg
Lab Code:	K1907934-072	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.63	0.63	10	09/10/19 13:33	9/3/19	
2,4'-DDE	ND U	0.79	0.79	10	09/10/19 13:33	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/10/19 13:33	9/3/19	
4,4'-DDD	**0.38 J**	0.59	0.35	10	09/10/19 13:33	9/3/19	
4,4'-DDE	ND U	0.70	0.70	10	09/10/19 13:33	9/3/19	
4,4'-DDT	ND U	0.59	0.47	10	09/10/19 13:33	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	50	5 - 120	09/10/19 13:33	
S_4,4'-DDT-d4	47	13 - 200	09/10/19 13:33	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 12:35
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	412-SC1b-80to90-82719	**Units:**	ug/Kg
Lab Code:	K1907934-073	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.63	0.63	10	09/10/19 13:51	9/3/19	
2,4'-DDE	ND U	0.79	0.79	10	09/10/19 13:51	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/10/19 13:51	9/3/19	
4,4'-DDD	ND U	0.58	0.35	10	09/10/19 13:51	9/3/19	
4,4'-DDE	ND U	0.70	0.70	10	09/10/19 13:51	9/3/19	
4,4'-DDT	ND U	0.58	0.47	10	09/10/19 13:51	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	44	5 - 120	09/10/19 13:51	
S_4,4'-DDT-d4	40	13 - 200	09/10/19 13:51	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/26/19 10:30
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	L3-SC1b-20to30-82619	**Units:**	ug/Kg
Lab Code:	K1907934-074	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.63	0.63	10	09/10/19 14:08	9/3/19	
2,4'-DDE	ND U	0.79	0.79	10	09/10/19 14:08	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/10/19 14:08	9/3/19	
4,4'-DDD	**0.74**	0.62	0.35	10	09/10/19 14:08	9/3/19	
4,4'-DDE	ND U	0.70	0.70	10	09/10/19 14:08	9/3/19	
4,4'-DDT	ND U	0.62	0.47	10	09/10/19 14:08	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	49	5 - 120	09/10/19 14:08	
S_4,4'-DDT-d4	48	13 - 200	09/10/19 14:08	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/26/19 10:35
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	L3-SC1b-30to40-82619	**Units:**	ug/Kg
Lab Code:	K1907934-075	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.63	0.63	10	09/10/19 14:26	9/3/19	
2,4'-DDE	ND U	0.79	0.79	10	09/10/19 14:26	9/3/19	
2,4'-DDT	ND U	0.94	0.94	10	09/10/19 14:26	9/3/19	
4,4'-DDD	**0.68**	0.58	0.35	10	09/10/19 14:26	9/3/19	
4,4'-DDE	ND U	0.70	0.70	10	09/10/19 14:26	9/3/19	
4,4'-DDT	ND U	0.58	0.47	10	09/10/19 14:26	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	50	5 - 120	09/10/19 14:26	
S_4,4'-DDT-d4	46	13 - 200	09/10/19 14:26	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/L
Lab Code:	KQ1912412-03	**Basis:**	NA

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3535A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.50	0.11	1	09/06/19 12:30	9/3/19	
2,4'-DDE	ND U	0.50	0.11	1	09/06/19 12:30	9/3/19	
2,4'-DDT	ND U	0.50	0.087	1	09/06/19 12:30	9/3/19	
4,4'-DDD	ND U	0.50	0.10	1	09/06/19 12:30	9/3/19	
4,4'-DDE	ND U	0.50	0.075	1	09/06/19 12:30	9/3/19	
4,4'-DDT	ND U	0.50	0.088	1	09/06/19 12:30	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	55	5 - 120	09/06/19 12:30	
S_4,4'-DDT-d4	55	13 - 200	09/06/19 12:30	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	KQ1912420-03	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.063	0.063	1	09/10/19 15:54	9/3/19	
2,4'-DDE	ND U	0.079	0.079	1	09/10/19 15:54	9/3/19	
2,4'-DDT	ND U	0.094	0.094	1	09/10/19 15:54	9/3/19	
4,4'-DDD	ND U	0.045	0.035	1	09/10/19 15:54	9/3/19	
4,4'-DDE	ND U	0.070	0.070	1	09/10/19 15:54	9/3/19	
4,4'-DDT	ND U	0.047	0.047	1	09/10/19 15:54	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	70	5 - 120	09/10/19 15:54	
S_4,4'-DDT-d4	67	13 - 200	09/10/19 15:54	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	KQ1912421-03	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.063	0.063	1	09/11/19 15:48	9/3/19	
2,4'-DDE	ND U	0.079	0.079	1	09/11/19 15:48	9/3/19	
2,4'-DDT	ND U	0.094	0.094	1	09/11/19 15:48	9/3/19	
4,4'-DDD	ND U	0.046	0.035	1	09/11/19 15:48	9/3/19	
4,4'-DDE	ND U	0.070	0.070	1	09/11/19 15:48	9/3/19	
4,4'-DDT	ND U	0.047	0.047	1	09/11/19 15:48	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	71	5 - 120	09/11/19 15:48	
S_4,4'-DDT-d4	68	13 - 200	09/11/19 15:48	

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Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	KQ1912447-03	**Basis:**	Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.063	0.063	1	09/11/19 23:09	9/3/19	
2,4'-DDE	ND U	0.079	0.079	1	09/11/19 23:09	9/3/19	
2,4'-DDT	ND U	0.094	0.094	1	09/11/19 23:09	9/3/19	
4,4'-DDD	ND U	0.044	0.035	1	09/11/19 23:09	9/3/19	
4,4'-DDE	ND U	0.070	0.070	1	09/11/19 23:09	9/3/19	
4,4'-DDT	ND U	0.047	0.047	1	09/11/19 23:09	9/3/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	68	5 - 120	09/11/19 23:09	
S_4,4'-DDT-d4	63	13 - 200	09/11/19 23:09	

Client: Pacific Groundwater Group (PGG) **Service Request:** K1907934

Project: Swan Island Lagoon Sediment Investigation/2006-00115

Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP

Extraction Method: EPA 3535A

Sample Name	Lab Code	S_4,4'DDD-d4 5-120	S_4,4'-DDT-d4 13-200
711-82719	K1907934-001	61	61
712-82819	K1907934-002	76	78
Method Blank	KQ1912412-03	55	55
Lab Control Sample	KQ1912412-01	56	66
Duplicate Lab Control Sample	KQ1912412-02	53	56

Client: Pacific Groundwater Group (PGG) **Service Request:** K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Extraction Method: EPA 3535A

Sample Name	Lab Code	S_4,4'DDD-d4 5-120	S_4,4'-DDT-d4 13-200
R4-SC1b-20to30-82819	K1907934-003	37	38
R4-SC1b-30to40-82819	K1907934-004	23	22
R4-SC1b-40to50-82819	K1907934-005	28	30
R4-SC1b-50to60-82819	K1907934-006	30	30
R4-SC1b-60to70-82819	K1907934-007	42	45
R4-SC1b-70to80-82819	K1907934-008	54	50
R4-SC1b-80to90-82819	K1907934-009	48	45
R4-SC1b-90to100-82819	K1907934-010	41	38
R4-SC1b-100to110-82819	K1907934-012	36	36
R4-SC1b-110to120-82819	K1907934-013	38	38
R4-SC1b-120to130-82819	K1907934-014	33	37
413-SC1b-40to50-82819	K1907934-015	55	55
R4-SC1b-130to140-82819	K1907934-016	49	42
R4-SC1b-140to150-82819	K1907934-017	47	46
J6-SC1b-20to30-82819	K1907934-018	45	44
J6-SC1b-30to40-82819	K1907934-019	53	52
J6-SC1b-40to50-82819	K1907934-020	37	37
J6-SC1b-50to60-82819	K1907934-021	34	38
J6-SC1b-60to70-82819	K1907934-022	53	53
J6-SC1b-70to80-82819	K1907934-023	39	39
J6-SC1b-80to90-82819	K1907934-024	60	58
J6-SC1b-90to100-82819	K1907934-025	45	47
J6-SC1b-100to110-82819	K1907934-026	55	54
J6-SC1b-110to120-82819	K1907934-027	59	58
H3-SC1b-20to30-82819	K1907934-030	58	44
H3-SC1b-30to40-82919	K1907934-031	45	61
H3-SC1b-40to50-82919	K1907934-032	47	55
H3-SC1b-50to60-82919	K1907934-033	55	53
H3-SC1b-60to70-82919	K1907934-034	34	32
H3-SC1b-70to80-82919	K1907934-035	61	54
H3-SC1b-80to90-82919	K1907934-036	34	29
H3-SC1b-90to100-82919	K1907934-037	37	31
H3-SC1b-100to110-82919	K1907934-038	43	38
D6-SC1b-20to30-82619	K1907934-041	43	42
D6-SC1b-30to40-82619	K1907934-042	56	63
D6-SC1b-40to50-82619	K1907934-043	39	32
D6-SC1b-50to60-82619	K1907934-044	30	28

Client: Pacific Groundwater Group (PGG) **Service Request:** K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Extraction Method: EPA 3535A

Sample Name	Lab Code	S_4,4'DDD-d4 5-120	S_4,4'-DDT-d4 13-200
D6-SC1b-60to70-82619	K1907934-045	35	38
D6-SC1b-70to80-82619	K1907934-046	46	43
D6-SC1b-80to90-82619	K1907934-047	42	38
D6-SC1b-90to100-82619	K1907934-048	60	51
D6-SC1b-100to110-82619	K1907934-049	74	68
D6-SC1b-110to120-82619	K1907934-050	59	52
411-SC1b-50to60-82619	K1907934-052	59	100
J5-SC1b-20to30-82719	K1907934-053	51	49
J5-SC1b-30to40-82719	K1907934-054	58	61
J5-SC1b-40to50-82719	K1907934-055	66	59
J5-SC1b-50to60-82719	K1907934-056	44	37
J5-SC1b-60to70-82719	K1907934-057	50	45
J5-SC1b-70to80-82719	K1907934-058	62	50
J5-SC1b-80to90-82719	K1907934-059	65	60
J5-SC1b-90to100-82719	K1907934-060	60	59
J5-SC1b-100to110-82719	K1907934-061	60	59
J3-SC1b-20to30-82719	K1907934-064	46	57
J3-SC1b-30to40-82719	K1907934-065	56	74
J3-SC1b-40to50-82719	K1907934-066	52	45
J3-SC1b-50to60-82719	K1907934-067	58	55
J3-SC1b-60to70-82719	K1907934-068	54	51
J3-SC1b-70to80-82719	K1907934-069	58	55
J3-SC1b-80to90-82719	K1907934-070	55	50
J3-SC1b-90to100-82719	K1907934-071	53	44
J3-SC1b-10to20-82719	K1907934-072	50	47
412-SC1b-80to90-82719	K1907934-073	44	40
L3-SC1b-20to30-82619	K1907934-074	49	48
L3-SC1b-30to40-82619	K1907934-075	50	46
Method Blank	KQ1912420-03	70	67
Method Blank	KQ1912421-03	71	68
Method Blank	KQ1912447-03	68	63
Lab Control Sample	KQ1912420-01	61	61
Duplicate Lab Control Sample	KQ1912420-02	71	65
Lab Control Sample	KQ1912421-01	66	64
Duplicate Lab Control Sample	KQ1912421-02	67	63
Lab Control Sample	KQ1912444-01	78	77
Duplicate Lab Control Sample	KQ1912444-02	75	68

Client: Pacific Groundwater Group (PGG) **Service Request:** K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Extraction Method: EPA 3535A

Sample Name	Lab Code	S_4,4'DDD-d4 5-120	S_4,4'-DDT-d4 13-200
Lab Control Sample	KQ1912447-01	76	65
Duplicate Lab Control Sample	KQ1912447-02	68	64

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QA/QC Report

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/06/19 11:55

Internal Standard Area and RT SUMMARY
Organochlorine Pesticides by GC/MS/MS

File ID: J:\MS42\Data\090619\090619F004.D **Lab Code:**KQ1912636-01
Instrument ID: K-MS-42 **Analysis Lot:**650252
Analysis Method: ALS SOP **Signal ID:**1

		Pyrene-d10	
		Area	**RT**
	Result ==>	26,144,940	8.651
	Upper Limit ==>	52,289,880	9.15
	Lower Limit ==>	13,072,470	8.15
Associated Analyses			
Method Blank	KQ1912412-03	29105916.77	8.651
Lab Control Sample	KQ1912412-01	25958353.31	8.645
Duplicate Lab Control Sample	KQ1912412-02	27172556.13	8.645
711-82719	K1907934-001	30205288.55	8.645
712-82819	K1907934-002	27669165.24	8.651

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/10/19 11:47

Internal Standard Area and RT SUMMARY
Organochlorine Pesticides by GC/MS/MS

File ID: J:\MS42\Data\091019\091019F001.D **Lab Code:**KQ1912928-01
Instrument ID: K-MS-42 **Analysis Lot:**650956
Analysis Method: ALS SOP **Signal ID:**1

		Pyrene-d10	
		Area	**RT**
	Result ==>	27,600,901	8.665
	Upper Limit ==>	55,201,802	9.17
	Lower Limit ==>	13,800,451	8.17
Associated Analyses			
Lab Control Sample	KQ1912444-01	40717473.47	8.652
Duplicate Lab Control Sample	KQ1912444-02	41898210.63	8.658
J3-SC1b-90to100-82719	K1907934-071	46428080.22	8.652
J3-SC1b-10to20-82719	K1907934-072	42046822.46	8.651
412-SC1b-80to90-82719	K1907934-073	48782406.32	8.652
L3-SC1b-20to30-82619	K1907934-074	38657653.76	8.652
L3-SC1b-30to40-82619	K1907934-075	42319118.08	8.653
Method Blank	KQ1912420-03	46262619.75	8.651
Lab Control Sample	KQ1912420-01	39917646.6	8.652
Duplicate Lab Control Sample	KQ1912420-02	38490087.95	8.651
R4-SC1b-20to30-82819	K1907934-003	64611990.52*	8.652
R4-SC1b-30to40-82819	K1907934-004	61448487.87*	8.651
R4-SC1b-40to50-82819	K1907934-005	58215564.65*	8.652
R4-SC1b-50to60-82819	K1907934-006	52073146.65	8.651
R4-SC1b-60to70-82819	K1907934-007	69724781.14*	8.652
R4-SC1b-70to80-82819	K1907934-008	55835293.56*	8.651
R4-SC1b-80to90-82819	K1907934-009	68243512.58*	8.652
R4-SC1b-90to100-82819	K1907934-010	72485869.38*	8.657
R4-SC1b-100to110-82819	K1907934-012	75627923.15*	8.652
R4-SC1b-110to120-82819	K1907934-013	61471371.28*	8.651
R4-SC1b-120to130-82819	K1907934-014	56205620.76*	8.652
413-SC1b-40to50-82819	K1907934-015	56020155.43*	8.651
R4-SC1b-130to140-82819	K1907934-016	69457013.36*	8.658
R4-SC1b-140to150-82819	K1907934-017	58015335.93*	8.655
J6-SC1b-20to30-82819	K1907934-018	48945077.66	8.658
J6-SC1b-30to40-82819	K1907934-019	58448348.4*	8.651
J6-SC1b-40to50-82819	K1907934-020	56436408.31*	8.652
J6-SC1b-50to60-82819	K1907934-021	59845438.33*	8.644
J6-SC1b-60to70-82819	K1907934-022	68673528.22*	8.652
J6-SC1b-70to80-82819	K1907934-023	59552959.48*	8.651

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/11/19 15:13

Internal Standard Area and RT SUMMARY
Organochlorine Pesticides by GC/MS/MS

File ID: J:\MS42\Data\091119\091119F001.D **Lab Code:**KQ1912934-01
Instrument ID: K-MS-42 **Analysis Lot:**650963
Analysis Method: ALS SOP **Signal ID:**1

		Pyrene-d10	
		Area	**RT**
	Result ==>	31,845,235	8.665
	Upper Limit ==>	63,690,471	9.17
	Lower Limit ==>	15,922,618	8.17
Associated Analyses			
Method Blank	KQ1912421-03	43430758.21	8.651
Lab Control Sample	KQ1912421-01	31878826.86	8.645
Duplicate Lab Control Sample	KQ1912421-02	38252342.94	8.651
J6-SC1b-80to90-82819	K1907934-024	43011610.75	8.645
J6-SC1b-90to100-82819	K1907934-025	32890796.76	8.651
J6-SC1b-100to110-82819	K1907934-026	36911483.99	8.652
J6-SC1b-110to120-82819	K1907934-027	30592675.1	8.651
H3-SC1b-20to30-82819	K1907934-030	75080135.76*	8.652
H3-SC1b-30to40-82919	K1907934-031	87055711.07*	8.651
H3-SC1b-40to50-82919	K1907934-032	70103981.72*	8.652
H3-SC1b-50to60-82919	K1907934-033	69681478.3*	8.651
H3-SC1b-60to70-82919	K1907934-034	62121445.6	8.652
H3-SC1b-70to80-82919	K1907934-035	56614649.81	8.651
H3-SC1b-80to90-82919	K1907934-036	52435284.83	8.652
H3-SC1b-90to100-82919	K1907934-037	52894706.01	8.651
H3-SC1b-100to110-82919	K1907934-038	42467124.49	8.652
D6-SC1b-20to30-82619	K1907934-041	56312896.31	8.652
D6-SC1b-30to40-82619	K1907934-042	62829702.97	8.652
D6-SC1b-40to50-82619	K1907934-043	68859734.8*	8.652
D6-SC1b-50to60-82619	K1907934-044	68062344.52*	8.645
D6-SC1b-60to70-82619	K1907934-045	73996004.41*	8.651
D6-SC1b-70to80-82619	K1907934-046	62909793.41	8.652
D6-SC1b-80to90-82619	K1907934-047	50758186.22	8.651
Method Blank	KQ1912447-03	44977669.04	8.652
Lab Control Sample	KQ1912447-01	46648591.68	8.653
Duplicate Lab Control Sample	KQ1912447-02	50540301.53	8.645
D6-SC1b-90to100-82619	K1907934-048	44617311.3	8.645
D6-SC1b-100to110-82619	K1907934-049	36507597.94	8.652
D6-SC1b-110to120-82619	K1907934-050	35767130.78	8.652
411-SC1b-50to60-82619	K1907934-052	72396694.7*	8.652
J5-SC1b-20to30-82719	K1907934-053	69314024.65*	8.651
J5-SC1b-30to40-82719	K1907934-054	62096687.27	8.652
J5-SC1b-40to50-82719	K1907934-055	69270139.35*	8.651

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/11/19 15:13

Internal Standard Area and RT SUMMARY
Organochlorine Pesticides by GC/MS/MS

File ID: J:\MS42\Data\091119\091119F001.D **Lab Code:**KQ1912934-01
Instrument ID: K-MS-42 **Analysis Lot:**650963
Analysis Method: ALS SOP **Signal ID:**1

J5-SC1b-50to60-82719	K1907934-056	79777570.65*	8.652
J5-SC1b-60to70-82719	K1907934-057	76148272.9*	8.651
J5-SC1b-70to80-82719	K1907934-058	74818281.34*	8.658
J5-SC1b-80to90-82719	K1907934-059	61317330.6	8.644

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/18/19 13:53

Internal Standard Area and RT SUMMARY
Organochlorine Pesticides by GC/MS/MS

File ID: J:\MS42\Data\091819\091819F002.D **Lab Code:**KQ1913321-01
Instrument ID: K-MS-42 **Analysis Lot:**651916
Analysis Method: ALS SOP **Signal ID:**1

		Pyrene-d10	
		Area	**RT**
	Result ==>	18,836,984	8.654
	Upper Limit ==>	37,673,968	9.15
	Lower Limit ==>	9,418,492	8.15
Associated Analyses			
J5-SC1b-90to100-82719	K1907934-060	26448739.73	8.651
J5-SC1b-100to110-82719	K1907934-061	25223926.81	8.652
J3-SC1b-30to40-82719	K1907934-065	61194006.55*	8.652
J3-SC1b-40to50-82719	K1907934-066	73841958.36*	8.651
J3-SC1b-50to60-82719	K1907934-067	74036897.83*	8.652
J3-SC1b-60to70-82719	K1907934-068	49605970.7*	8.645
J3-SC1b-70to80-82719	K1907934-069	47240253.83*	8.652
J3-SC1b-80to90-82719	K1907934-070	56428849.46*	8.651
J3-SC1b-20to30-82719	K1907934-064	73415085.64*	8.652

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/06/19
Sample Matrix:	Water	**Date Extracted:**	09/03/19

Duplicate Lab Control Sample Summary
Organochlorine Pesticides by GC/MS/MS

Analysis Method:	ALS SOP	**Units:**	ng/L
Prep Method:	EPA 3535A	**Basis:**	NA
		Analysis Lot:	650252

	Lab Control Sample KQ1912412-01			Duplicate Lab Control Sample KQ1912412-02					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
2,4'-DDD	20.5	20.0	102	19.8	20.0	99	79-113	4	30
2,4'-DDE	20.3	20.0	102	20.2	20.0	101	75-117	<1	30
2,4'-DDT	16.9	20.0	85	17.8	20.0	89	77-114	5	30
4,4'-DDD	23.8	20.0	119 *	22.7	20.0	113	78-114	5	30
4,4'-DDE	18.6	20.0	93	18.8	20.0	94	76-115	1	30
4,4'-DDT	18.9	20.0	94	20.0	20.0	100	85-113	6	30

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/10/19
Sample Matrix:	Soil	**Date Extracted:**	09/03/19

Duplicate Lab Control Sample Summary
Organochlorine Pesticides by GC/MS/MS

Analysis Method:	ALS SOP	**Units:**	ug/Kg
Prep Method:	EPA 3541	**Basis:**	Dry
		Analysis Lot:	650956

	Lab Control Sample KQ1912420-01			Duplicate Lab Control Sample KQ1912420-02					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
2,4'-DDD	1.10	1.00	110	1.03	1.00	103	73-122	7	40
2,4'-DDE	0.924	1.00	92	0.869	1.00	87	54-145	6	40
2,4'-DDT	0.868	1.00	87	0.865	1.00	87	77-118	<1	40
4,4'-DDD	1.08	1.00	108	1.04	1.00	104	74-117	4	40
4,4'-DDE	0.880	1.00	88	0.839	1.00	84	66-132	5	40
4,4'-DDT	1.02	1.00	102	1.07	1.00	107	78-116	5	40

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/11/19
Sample Matrix:	Soil	**Date Extracted:**	09/03/19

Duplicate Lab Control Sample Summary
Organochlorine Pesticides by GC/MS/MS

Analysis Method:	ALS SOP	**Units:**	ug/Kg
Prep Method:	EPA 3541	**Basis:**	Dry
		Analysis Lot:	650963

	Lab Control Sample KQ1912421-01			Duplicate Lab Control Sample KQ1912421-02					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
2,4'-DDD	2.24	2.00	112	2.13	2.00	106	73-122	5	40
2,4'-DDE	1.95	2.00	98	1.81	2.00	91	54-145	7	40
2,4'-DDT	1.77	2.00	89	1.79	2.00	90	77-118	<1	40
4,4'-DDD	2.22	2.00	111	2.16	2.00	108	74-117	3	40
4,4'-DDE	1.80	2.00	90	1.73	2.00	87	66-132	4	40
4,4'-DDT	2.06	2.00	103	2.07	2.00	103	78-116	<1	40

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/10/19
Sample Matrix:	Soil	**Date Extracted:**	09/03/19

Duplicate Lab Control Sample Summary
Organochlorine Pesticides by GC/MS/MS

Analysis Method:	ALS SOP	**Units:**	ug/Kg
Prep Method:	EPA 3541	**Basis:**	Dry
		Analysis Lot:	650956

	Lab Control Sample KQ1912444-01			Duplicate Lab Control Sample KQ1912444-02					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
2,4'-DDD	2.24	2.00	112	2.04	2.00	102	73-122	10	40
2,4'-DDE	1.85	2.00	92	1.79	2.00	89	54-145	3	40
2,4'-DDT	1.72	2.00	86	1.76	2.00	88	77-118	2	40
4,4'-DDD	2.26	2.00	113	2.06	2.00	103	74-117	10	40
4,4'-DDE	1.95	2.00	97	2.07	2.00	103	66-132	6	40
4,4'-DDT	1.96	2.00	98	2.06	2.00	103	78-116	5	40

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/11/19
Sample Matrix:	Soil	**Date Extracted:**	09/03/19

Duplicate Lab Control Sample Summary
Organochlorine Pesticides by GC/MS/MS

Analysis Method:	ALS SOP	**Units:**	ug/Kg
Prep Method:	EPA 3541	**Basis:**	Dry
		Analysis Lot:	650963

	Lab Control Sample KQ1912447-01			Duplicate Lab Control Sample KQ1912447-02					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
2,4'-DDD	1.08	1.00	108	1.04	1.00	104	73-122	4	40
2,4'-DDE	0.853	1.00	85	0.840	1.00	84	54-145	2	40
2,4'-DDT	0.958	1.00	96	0.884	1.00	88	77-118	8	40
4,4'-DDD	0.974	1.00	97	0.990	1.00	99	74-117	2	40
4,4'-DDE	0.746	1.00	75	0.789	1.00	79	66-132	6	40
4,4'-DDT	1.08	1.00	108	0.943	1.00	94	78-116	13	40

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/06/19 12:30
Sample Matrix:	Water	**Date Extracted:**	09/03/19

Method Blank Summary
Organochlorine Pesticides by GC/MS/MS

Sample Name:	Method Blank	**Instrument ID:**	K-MS-42
Lab Code:	KQ1912412-03	**File ID:**	J:\MS42\Data\090619\090619F006.D
Analysis Method:	ALS SOP	**Analysis Lot:**	650252
Prep Method:	EPA 3535A	**Extraction Lot:**	343719

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ1912412-01	J:\MS42\Data\090619\090619F007.D	09/06/19 12:48
Duplicate Lab Control Sample	KQ1912412-02	J:\MS42\Data\090619\090619F008.D	09/06/19 13:05
711-82719	K1907934-001	J:\MS42\Data\090619\090619F009.D	09/06/19 13:23
712-82819	K1907934-002	J:\MS42\Data\090619\090619F010.D	09/06/19 13:40

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	NA
Sample Matrix:	Soil	**Date Extracted:**	09/03/19

Method Blank Summary
Organochlorine Pesticides by GC/MS/MS

Sample Name:		**Instrument ID:**	
Lab Code:		**File ID:**	
Analysis Method:	ALS SOP	**Analysis Lot:**	650956
Prep Method:	EPA 3541	**Extraction Lot:**	343647

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ1912444-01	J:\MS42\Data\091019\091019F004.D	09/10/19 12:40
Duplicate Lab Control Sample	KQ1912444-02	J:\MS42\Data\091019\091019F005.D	09/10/19 12:58
J3-SC1b-90to100-82719	K1907934-071	J:\MS42\Data\091019\091019F006.D	09/10/19 13:15
J3-SC1b-10to20-82719	K1907934-072	J:\MS42\Data\091019\091019F007.D	09/10/19 13:33
412-SC1b-80to90-82719	K1907934-073	J:\MS42\Data\091019\091019F008.D	09/10/19 13:51
L3-SC1b-20to30-82619	K1907934-074	J:\MS42\Data\091019\091019F009.D	09/10/19 14:08
L3-SC1b-30to40-82619	K1907934-075	J:\MS42\Data\091019\091019F010.D	09/10/19 14:26

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/10/19 15:54
Sample Matrix:	Soil	**Date Extracted:**	09/03/19

Method Blank Summary
Organochlorine Pesticides by GC/MS/MS

Sample Name:	Method Blank	**Instrument ID:**	K-MS-42
Lab Code:	KQ1912420-03	**File ID:**	J:\MS42\Data\091019\091019F015.D
Analysis Method:	ALS SOP	**Analysis Lot:**	650956
Prep Method:	EPA 3541	**Extraction Lot:**	343643

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ1912420-01	J:\MS42\Data\091019\091019F016.D	09/10/19 16:11
Duplicate Lab Control Sample	KQ1912420-02	J:\MS42\Data\091019\091019F017.D	09/10/19 16:29
R4-SC1b-20to30-82819	K1907934-003	J:\MS42\Data\091019\091019F018.D	09/10/19 16:47
R4-SC1b-30to40-82819	K1907934-004	J:\MS42\Data\091019\091019F019.D	09/10/19 17:04
R4-SC1b-40to50-82819	K1907934-005	J:\MS42\Data\091019\091019F020.D	09/10/19 17:22
R4-SC1b-50to60-82819	K1907934-006	J:\MS42\Data\091019\091019F021.D	09/10/19 17:40
R4-SC1b-60to70-82819	K1907934-007	J:\MS42\Data\091019\091019F022.D	09/10/19 17:57
R4-SC1b-70to80-82819	K1907934-008	J:\MS42\Data\091019\091019F023.D	09/10/19 18:15
R4-SC1b-80to90-82819	K1907934-009	J:\MS42\Data\091019\091019F024.D	09/10/19 18:33
R4-SC1b-90to100-82819	K1907934-010	J:\MS42\Data\091019\091019F025.D	09/10/19 18:51
R4-SC1b-100to110-82819	K1907934-012	J:\MS42\Data\091019\091019F026.D	09/10/19 19:09
R4-SC1b-110to120-82819	K1907934-013	J:\MS42\Data\091019\091019F027.D	09/10/19 19:28
R4-SC1b-120to130-82819	K1907934-014	J:\MS42\Data\091019\091019F028.D	09/10/19 19:46
413-SC1b-40to50-82819	K1907934-015	J:\MS42\Data\091019\091019F029.D	09/10/19 20:04
R4-SC1b-130to140-82819	K1907934-016	J:\MS42\Data\091019\091019F030.D	09/10/19 20:22
R4-SC1b-140to150-82819	K1907934-017	J:\MS42\Data\091019\091019F031.D	09/10/19 20:40
J6-SC1b-20to30-82819	K1907934-018	J:\MS42\Data\091019\091019F032.D	09/10/19 20:58
J6-SC1b-30to40-82819	K1907934-019	J:\MS42\Data\091019\091019F033.D	09/10/19 21:15
J6-SC1b-40to50-82819	K1907934-020	J:\MS42\Data\091019\091019F034.D	09/10/19 21:33
J6-SC1b-50to60-82819	K1907934-021	J:\MS42\Data\091019\091019F035.D	09/10/19 21:51
J6-SC1b-60to70-82819	K1907934-022	J:\MS42\Data\091019\091019F036.D	09/10/19 22:08
J6-SC1b-70to80-82819	K1907934-023	J:\MS42\Data\091019\091019F037.D	09/10/19 22:26

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/11/19 15:48
Sample Matrix:	Soil	**Date Extracted:**	09/03/19

Method Blank Summary
Organochlorine Pesticides by GC/MS/MS

Sample Name:	Method Blank	**Instrument ID:**	K-MS-42
Lab Code:	KQ1912421-03	**File ID:**	J:\MS42\Data\091119\091119F003.D
Analysis Method:	ALS SOP	**Analysis Lot:**	650963
Prep Method:	EPA 3541	**Extraction Lot:**	343644

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ1912421-01	J:\MS42\Data\091119\091119F004.D	09/11/19 16:06
Duplicate Lab Control Sample	KQ1912421-02	J:\MS42\Data\091119\091119F005.D	09/11/19 16:23
J6-SC1b-80to90-82819	K1907934-024	J:\MS42\Data\091119\091119F006.D	09/11/19 16:41
J6-SC1b-90to100-82819	K1907934-025	J:\MS42\Data\091119\091119F007.D	09/11/19 16:59
J6-SC1b-100to110-82819	K1907934-026	J:\MS42\Data\091119\091119F008.D	09/11/19 17:16
J6-SC1b-110to120-82819	K1907934-027	J:\MS42\Data\091119\091119F009.D	09/11/19 17:34
H3-SC1b-20to30-82819	K1907934-030	J:\MS42\Data\091119\091119F010.D	09/11/19 17:52
H3-SC1b-30to40-82919	K1907934-031	J:\MS42\Data\091119\091119F011.D	09/11/19 18:09
H3-SC1b-40to50-82919	K1907934-032	J:\MS42\Data\091119\091119F012.D	09/11/19 18:27
H3-SC1b-50to60-82919	K1907934-033	J:\MS42\Data\091119\091119F013.D	09/11/19 18:44
H3-SC1b-60to70-82919	K1907934-034	J:\MS42\Data\091119\091119F014.D	09/11/19 19:02
H3-SC1b-70to80-82919	K1907934-035	J:\MS42\Data\091119\091119F015.D	09/11/19 19:20
H3-SC1b-80to90-82919	K1907934-036	J:\MS42\Data\091119\091119F016.D	09/11/19 19:37
H3-SC1b-90to100-82919	K1907934-037	J:\MS42\Data\091119\091119F017.D	09/11/19 19:55
H3-SC1b-100to110-82919	K1907934-038	J:\MS42\Data\091119\091119F018.D	09/11/19 20:13
D6-SC1b-20to30-82619	K1907934-041	J:\MS42\Data\091119\091119F019.D	09/11/19 20:30
D6-SC1b-30to40-82619	K1907934-042	J:\MS42\Data\091119\091119F020.D	09/11/19 20:48
D6-SC1b-40to50-82619	K1907934-043	J:\MS42\Data\091119\091119F021.D	09/11/19 21:05
D6-SC1b-50to60-82619	K1907934-044	J:\MS42\Data\091119\091119F022.D	09/11/19 21:23
D6-SC1b-60to70-82619	K1907934-045	J:\MS42\Data\091119\091119F023.D	09/11/19 21:41
D6-SC1b-70to80-82619	K1907934-046	J:\MS42\Data\091119\091119F024.D	09/11/19 21:58
D6-SC1b-80to90-82619	K1907934-047	J:\MS42\Data\091119\091119F025.D	09/11/19 22:16

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/11/19 23:09
Sample Matrix:	Soil	**Date Extracted:**	09/03/19

Method Blank Summary
Organochlorine Pesticides by GC/MS/MS

Sample Name:	Method Blank	**Instrument ID:**	K-MS-42
Lab Code:	KQ1912447-03	**File ID:**	J:\MS42\Data\091119\091119F028.D
Analysis Method:	ALS SOP	**Analysis Lot:**	650963
Prep Method:	EPA 3541	**Extraction Lot:**	343645

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ1912447-01	J:\MS42\Data\091119\091119F029.D	09/11/19 23:26
Duplicate Lab Control Sample	KQ1912447-02	J:\MS42\Data\091119\091119F030.D	09/11/19 23:44
D6-SC1b-90to100-82619	K1907934-048	J:\MS42\Data\091119\091119F031.D	09/12/19 00:02
D6-SC1b-100to110-82619	K1907934-049	J:\MS42\Data\091119\091119F032.D	09/12/19 00:19
D6-SC1b-110to120-82619	K1907934-050	J:\MS42\Data\091119\091119F033.D	09/12/19 00:37
411-SC1b-50to60-82619	K1907934-052	J:\MS42\Data\091119\091119F034.D	09/12/19 00:55
J5-SC1b-20to30-82719	K1907934-053	J:\MS42\Data\091119\091119F035.D	09/12/19 01:12
J5-SC1b-30to40-82719	K1907934-054	J:\MS42\Data\091119\091119F036.D	09/12/19 01:30
J5-SC1b-40to50-82719	K1907934-055	J:\MS42\Data\091119\091119F037.D	09/12/19 01:48
J5-SC1b-50to60-82719	K1907934-056	J:\MS42\Data\091119\091119F038.D	09/12/19 02:05
J5-SC1b-60to70-82719	K1907934-057	J:\MS42\Data\091119\091119F039.D	09/12/19 02:23
J5-SC1b-70to80-82719	K1907934-058	J:\MS42\Data\091119\091119F040.D	09/12/19 02:40
J5-SC1b-80to90-82719	K1907934-059	J:\MS42\Data\091119\091119F041.D	09/12/19 02:58

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/11/19 15:48
Sample Matrix:	Soil	**Date Extracted:**	09/03/19

Method Blank Summary
Organochlorine Pesticides by GC/MS/MS

Sample Name:	Method Blank	**Instrument ID:**	K-MS-42
Lab Code:	KQ1912421-03	**File ID:**	J:\MS42\Data\091119\091119F003.D
Analysis Method:	ALS SOP	**Analysis Lot:**	650963,651916
Prep Method:	EPA 3541	**Extraction Lot:**	343644

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ1912421-01	J:\MS42\Data\091119\091119F004.D	09/11/19 16:06
Duplicate Lab Control Sample	KQ1912421-02	J:\MS42\Data\091119\091119F005.D	09/11/19 16:23
J6-SC1b-80to90-82819	K1907934-024	J:\MS42\Data\091119\091119F006.D	09/11/19 16:41
J6-SC1b-90to100-82819	K1907934-025	J:\MS42\Data\091119\091119F007.D	09/11/19 16:59
J6-SC1b-100to110-82819	K1907934-026	J:\MS42\Data\091119\091119F008.D	09/11/19 17:16
J6-SC1b-110to120-82819	K1907934-027	J:\MS42\Data\091119\091119F009.D	09/11/19 17:34
H3-SC1b-20to30-82819	K1907934-030	J:\MS42\Data\091119\091119F010.D	09/11/19 17:52
H3-SC1b-30to40-82919	K1907934-031	J:\MS42\Data\091119\091119F011.D	09/11/19 18:09
H3-SC1b-40to50-82919	K1907934-032	J:\MS42\Data\091119\091119F012.D	09/11/19 18:27
H3-SC1b-50to60-82919	K1907934-033	J:\MS42\Data\091119\091119F013.D	09/11/19 18:44
H3-SC1b-60to70-82919	K1907934-034	J:\MS42\Data\091119\091119F014.D	09/11/19 19:02
H3-SC1b-70to80-82919	K1907934-035	J:\MS42\Data\091119\091119F015.D	09/11/19 19:20
H3-SC1b-80to90-82919	K1907934-036	J:\MS42\Data\091119\091119F016.D	09/11/19 19:37
H3-SC1b-90to100-82919	K1907934-037	J:\MS42\Data\091119\091119F017.D	09/11/19 19:55
H3-SC1b-100to110-82919	K1907934-038	J:\MS42\Data\091119\091119F018.D	09/11/19 20:13
D6-SC1b-20to30-82619	K1907934-041	J:\MS42\Data\091119\091119F019.D	09/11/19 20:30
D6-SC1b-30to40-82619	K1907934-042	J:\MS42\Data\091119\091119F020.D	09/11/19 20:48
D6-SC1b-40to50-82619	K1907934-043	J:\MS42\Data\091119\091119F021.D	09/11/19 21:05
D6-SC1b-50to60-82619	K1907934-044	J:\MS42\Data\091119\091119F022.D	09/11/19 21:23
D6-SC1b-60to70-82619	K1907934-045	J:\MS42\Data\091119\091119F023.D	09/11/19 21:41
D6-SC1b-70to80-82619	K1907934-046	J:\MS42\Data\091119\091119F024.D	09/11/19 21:58
D6-SC1b-80to90-82619	K1907934-047	J:\MS42\Data\091119\091119F025.D	09/11/19 22:16

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/11/19 23:09
Sample Matrix:	Soil	**Date Extracted:**	09/03/19

Method Blank Summary
Organochlorine Pesticides by GC/MS/MS

Sample Name:	Method Blank	**Instrument ID:**	K-MS-42
Lab Code:	KQ1912447-03	**File ID:**	J:\MS42\Data\091119\091119F028.D
Analysis Method:	ALS SOP	**Analysis Lot:**	650963,651916
Prep Method:	EPA 3541	**Extraction Lot:**	343645

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ1912447-01	J:\MS42\Data\091119\091119F029.D	09/11/19 23:26
Duplicate Lab Control Sample	KQ1912447-02	J:\MS42\Data\091119\091119F030.D	09/11/19 23:44
D6-SC1b-90to100-82619	K1907934-048	J:\MS42\Data\091119\091119F031.D	09/12/19 00:02
D6-SC1b-100to110-82619	K1907934-049	J:\MS42\Data\091119\091119F032.D	09/12/19 00:19
D6-SC1b-110to120-82619	K1907934-050	J:\MS42\Data\091119\091119F033.D	09/12/19 00:37
411-SC1b-50to60-82619	K1907934-052	J:\MS42\Data\091119\091119F034.D	09/12/19 00:55
J5-SC1b-20to30-82719	K1907934-053	J:\MS42\Data\091119\091119F035.D	09/12/19 01:12
J5-SC1b-30to40-82719	K1907934-054	J:\MS42\Data\091119\091119F036.D	09/12/19 01:30
J5-SC1b-40to50-82719	K1907934-055	J:\MS42\Data\091119\091119F037.D	09/12/19 01:48
J5-SC1b-50to60-82719	K1907934-056	J:\MS42\Data\091119\091119F038.D	09/12/19 02:05
J5-SC1b-60to70-82719	K1907934-057	J:\MS42\Data\091119\091119F039.D	09/12/19 02:23
J5-SC1b-70to80-82719	K1907934-058	J:\MS42\Data\091119\091119F040.D	09/12/19 02:40
J5-SC1b-80to90-82719	K1907934-059	J:\MS42\Data\091119\091119F041.D	09/12/19 02:58
J5-SC1b-90to100-82719	K1907934-060	J:\MS42\Data\091819\091819F005.D	09/18/19 14:46
J5-SC1b-100to110-82719	K1907934-061	J:\MS42\Data\091819\091819F006.D	09/18/19 15:04
J3-SC1b-30to40-82719	K1907934-065	J:\MS42\Data\091819\091819F008.D	09/18/19 15:39
J3-SC1b-40to50-82719	K1907934-066	J:\MS42\Data\091819\091819F009.D	09/18/19 15:56
J3-SC1b-50to60-82719	K1907934-067	J:\MS42\Data\091819\091819F010.D	09/18/19 16:14
J3-SC1b-60to70-82719	K1907934-068	J:\MS42\Data\091819\091819F011.D	09/18/19 16:32
J3-SC1b-70to80-82719	K1907934-069	J:\MS42\Data\091819\091819F012.D	09/18/19 16:49
J3-SC1b-80to90-82719	K1907934-070	J:\MS42\Data\091819\091819F013.D	09/18/19 17:07
J3-SC1b-20to30-82719	K1907934-064	J:\MS42\Data\091819\091819F014.D	09/18/19 17:25

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/06/19 12:48
Sample Matrix:	Water	**Date Extracted:**	09/03/19

Lab Control Sample Summary
Organochlorine Pesticides by GC/MS/MS

Sample Name:	Lab Control Sample	**Instrument ID:**	K-MS-42
Lab Code:	KQ1912412-01	**File ID:**	J:\MS42\Data\090619\090619F007.D
Analysis Method:	ALS SOP	**Analysis Lot:**	650252
Prep Method:	EPA 3535A	**Extraction Lot:**	343719

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1912412-03	J:\MS42\Data\090619\090619F006.D	09/06/19 12:30
Duplicate Lab Control Sample	KQ1912412-02	J:\MS42\Data\090619\090619F008.D	09/06/19 13:05
711-82719	K1907934-001	J:\MS42\Data\090619\090619F009.D	09/06/19 13:23
712-82819	K1907934-002	J:\MS42\Data\090619\090619F010.D	09/06/19 13:40

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/10/19 12:40
Sample Matrix:	Soil	**Date Extracted:**	09/03/19

Lab Control Sample Summary
Organochlorine Pesticides by GC/MS/MS

Sample Name:	Lab Control Sample	**Instrument ID:**	K-MS-42
Lab Code:	KQ1912444-01	**File ID:**	J:\MS42\Data\091019\091019F004.D
Analysis Method:	ALS SOP	**Analysis Lot:**	650956
Prep Method:	EPA 3541	**Extraction Lot:**	343647

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Duplicate Lab Control Sample	KQ1912444-02	J:\MS42\Data\091019\091019F005.D	09/10/19 12:58
J3-SC1b-90to100-82719	K1907934-071	J:\MS42\Data\091019\091019F006.D	09/10/19 13:15
J3-SC1b-10to20-82719	K1907934-072	J:\MS42\Data\091019\091019F007.D	09/10/19 13:33
412-SC1b-80to90-82719	K1907934-073	J:\MS42\Data\091019\091019F008.D	09/10/19 13:51
L3-SC1b-20to30-82619	K1907934-074	J:\MS42\Data\091019\091019F009.D	09/10/19 14:08
L3-SC1b-30to40-82619	K1907934-075	J:\MS42\Data\091019\091019F010.D	09/10/19 14:26

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/10/19 16:11
Sample Matrix:	Soil	**Date Extracted:**	09/03/19

Lab Control Sample Summary
Organochlorine Pesticides by GC/MS/MS

Sample Name:	Lab Control Sample	**Instrument ID:**	K-MS-42
Lab Code:	KQ1912420-01	**File ID:**	J:\MS42\Data\091019\091019F016.D
Analysis Method:	ALS SOP	**Analysis Lot:**	650956
Prep Method:	EPA 3541	**Extraction Lot:**	343643

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1912420-03	J:\MS42\Data\091019\091019F015.D	09/10/19 15:54
Duplicate Lab Control Sample	KQ1912420-02	J:\MS42\Data\091019\091019F017.D	09/10/19 16:29
R4-SC1b-20to30-82819	K1907934-003	J:\MS42\Data\091019\091019F018.D	09/10/19 16:47
R4-SC1b-30to40-82819	K1907934-004	J:\MS42\Data\091019\091019F019.D	09/10/19 17:04
R4-SC1b-40to50-82819	K1907934-005	J:\MS42\Data\091019\091019F020.D	09/10/19 17:22
R4-SC1b-50to60-82819	K1907934-006	J:\MS42\Data\091019\091019F021.D	09/10/19 17:40
R4-SC1b-60to70-82819	K1907934-007	J:\MS42\Data\091019\091019F022.D	09/10/19 17:57
R4-SC1b-70to80-82819	K1907934-008	J:\MS42\Data\091019\091019F023.D	09/10/19 18:15
R4-SC1b-80to90-82819	K1907934-009	J:\MS42\Data\091019\091019F024.D	09/10/19 18:33
R4-SC1b-90to100-82819	K1907934-010	J:\MS42\Data\091019\091019F025.D	09/10/19 18:51
R4-SC1b-100to110-82819	K1907934-012	J:\MS42\Data\091019\091019F026.D	09/10/19 19:09
R4-SC1b-110to120-82819	K1907934-013	J:\MS42\Data\091019\091019F027.D	09/10/19 19:28
R4-SC1b-120to130-82819	K1907934-014	J:\MS42\Data\091019\091019F028.D	09/10/19 19:46
413-SC1b-40to50-82819	K1907934-015	J:\MS42\Data\091019\091019F029.D	09/10/19 20:04
R4-SC1b-130to140-82819	K1907934-016	J:\MS42\Data\091019\091019F030.D	09/10/19 20:22
R4-SC1b-140to150-82819	K1907934-017	J:\MS42\Data\091019\091019F031.D	09/10/19 20:40
J6-SC1b-20to30-82819	K1907934-018	J:\MS42\Data\091019\091019F032.D	09/10/19 20:58
J6-SC1b-30to40-82819	K1907934-019	J:\MS42\Data\091019\091019F033.D	09/10/19 21:15
J6-SC1b-40to50-82819	K1907934-020	J:\MS42\Data\091019\091019F034.D	09/10/19 21:33
J6-SC1b-50to60-82819	K1907934-021	J:\MS42\Data\091019\091019F035.D	09/10/19 21:51
J6-SC1b-60to70-82819	K1907934-022	J:\MS42\Data\091019\091019F036.D	09/10/19 22:08
J6-SC1b-70to80-82819	K1907934-023	J:\MS42\Data\091019\091019F037.D	09/10/19 22:26

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/11/19 16:06
Sample Matrix:	Soil	**Date Extracted:**	09/03/19

Lab Control Sample Summary
Organochlorine Pesticides by GC/MS/MS

Sample Name:	Lab Control Sample	**Instrument ID:**	K-MS-42
Lab Code:	KQ1912421-01	**File ID:**	J:\MS42\Data\091119\091119F004.D
Analysis Method:	ALS SOP	**Analysis Lot:**	650963
Prep Method:	EPA 3541	**Extraction Lot:**	343644

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1912421-03	J:\MS42\Data\091119\091119F003.D	09/11/19 15:48
Duplicate Lab Control Sample	KQ1912421-02	J:\MS42\Data\091119\091119F005.D	09/11/19 16:23
J6-SC1b-80to90-82819	K1907934-024	J:\MS42\Data\091119\091119F006.D	09/11/19 16:41
J6-SC1b-90to100-82819	K1907934-025	J:\MS42\Data\091119\091119F007.D	09/11/19 16:59
J6-SC1b-100to110-82819	K1907934-026	J:\MS42\Data\091119\091119F008.D	09/11/19 17:16
J6-SC1b-110to120-82819	K1907934-027	J:\MS42\Data\091119\091119F009.D	09/11/19 17:34
H3-SC1b-20to30-82819	K1907934-030	J:\MS42\Data\091119\091119F010.D	09/11/19 17:52
H3-SC1b-30to40-82919	K1907934-031	J:\MS42\Data\091119\091119F011.D	09/11/19 18:09
H3-SC1b-40to50-82919	K1907934-032	J:\MS42\Data\091119\091119F012.D	09/11/19 18:27
H3-SC1b-50to60-82919	K1907934-033	J:\MS42\Data\091119\091119F013.D	09/11/19 18:44
H3-SC1b-60to70-82919	K1907934-034	J:\MS42\Data\091119\091119F014.D	09/11/19 19:02
H3-SC1b-70to80-82919	K1907934-035	J:\MS42\Data\091119\091119F015.D	09/11/19 19:20
H3-SC1b-80to90-82919	K1907934-036	J:\MS42\Data\091119\091119F016.D	09/11/19 19:37
H3-SC1b-90to100-82919	K1907934-037	J:\MS42\Data\091119\091119F017.D	09/11/19 19:55
H3-SC1b-100to110-82919	K1907934-038	J:\MS42\Data\091119\091119F018.D	09/11/19 20:13
D6-SC1b-20to30-82619	K1907934-041	J:\MS42\Data\091119\091119F019.D	09/11/19 20:30
D6-SC1b-30to40-82619	K1907934-042	J:\MS42\Data\091119\091119F020.D	09/11/19 20:48
D6-SC1b-40to50-82619	K1907934-043	J:\MS42\Data\091119\091119F021.D	09/11/19 21:05
D6-SC1b-50to60-82619	K1907934-044	J:\MS42\Data\091119\091119F022.D	09/11/19 21:23
D6-SC1b-60to70-82619	K1907934-045	J:\MS42\Data\091119\091119F023.D	09/11/19 21:41
D6-SC1b-70to80-82619	K1907934-046	J:\MS42\Data\091119\091119F024.D	09/11/19 21:58
D6-SC1b-80to90-82619	K1907934-047	J:\MS42\Data\091119\091119F025.D	09/11/19 22:16

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/11/19 23:26
Sample Matrix:	Soil	**Date Extracted:**	09/03/19

Lab Control Sample Summary
Organochlorine Pesticides by GC/MS/MS

Sample Name:	Lab Control Sample	**Instrument ID:**	K-MS-42
Lab Code:	KQ1912447-01	**File ID:**	J:\MS42\Data\091119\091119F029.D
Analysis Method:	ALS SOP	**Analysis Lot:**	650963
Prep Method:	EPA 3541	**Extraction Lot:**	343645

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1912447-03	J:\MS42\Data\091119\091119F028.D	09/11/19 23:09
Duplicate Lab Control Sample	KQ1912447-02	J:\MS42\Data\091119\091119F030.D	09/11/19 23:44
D6-SC1b-90to100-82619	K1907934-048	J:\MS42\Data\091119\091119F031.D	09/12/19 00:02
D6-SC1b-100to110-82619	K1907934-049	J:\MS42\Data\091119\091119F032.D	09/12/19 00:19
D6-SC1b-110to120-82619	K1907934-050	J:\MS42\Data\091119\091119F033.D	09/12/19 00:37
411-SC1b-50to60-82619	K1907934-052	J:\MS42\Data\091119\091119F034.D	09/12/19 00:55
J5-SC1b-20to30-82719	K1907934-053	J:\MS42\Data\091119\091119F035.D	09/12/19 01:12
J5-SC1b-30to40-82719	K1907934-054	J:\MS42\Data\091119\091119F036.D	09/12/19 01:30
J5-SC1b-40to50-82719	K1907934-055	J:\MS42\Data\091119\091119F037.D	09/12/19 01:48
J5-SC1b-50to60-82719	K1907934-056	J:\MS42\Data\091119\091119F038.D	09/12/19 02:05
J5-SC1b-60to70-82719	K1907934-057	J:\MS42\Data\091119\091119F039.D	09/12/19 02:23
J5-SC1b-70to80-82719	K1907934-058	J:\MS42\Data\091119\091119F040.D	09/12/19 02:40
J5-SC1b-80to90-82719	K1907934-059	J:\MS42\Data\091119\091119F041.D	09/12/19 02:58

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/10/19 12:40
Sample Matrix:	Soil	**Date Extracted:**	09/03/19

Lab Control Sample Summary
Organochlorine Pesticides by GC/MS/MS

Sample Name:	Lab Control Sample	**Instrument ID:**	K-MS-42
Lab Code:	KQ1912444-01	**File ID:**	J:\MS42\Data\091019\091019F004.D
Analysis Method:	ALS SOP	**Analysis Lot:**	650956
Prep Method:	EPA 3541	**Extraction Lot:**	343647

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Duplicate Lab Control Sample	KQ1912444-02	J:\MS42\Data\091019\091019F005.D	09/10/19 12:58
J3-SC1b-90to100-82719	K1907934-071	J:\MS42\Data\091019\091019F006.D	09/10/19 13:15
J3-SC1b-10to20-82719	K1907934-072	J:\MS42\Data\091019\091019F007.D	09/10/19 13:33
412-SC1b-80to90-82719	K1907934-073	J:\MS42\Data\091019\091019F008.D	09/10/19 13:51
L3-SC1b-20to30-82619	K1907934-074	J:\MS42\Data\091019\091019F009.D	09/10/19 14:08
L3-SC1b-30to40-82619	K1907934-075	J:\MS42\Data\091019\091019F010.D	09/10/19 14:26

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/10/19 16:11
Sample Matrix:	Soil	**Date Extracted:**	09/03/19

Lab Control Sample Summary
Organochlorine Pesticides by GC/MS/MS

Sample Name:	Lab Control Sample	**Instrument ID:**	K-MS-42
Lab Code:	KQ1912420-01	**File ID:**	J:\MS42\Data\091019\091019F016.D
Analysis Method:	ALS SOP	**Analysis Lot:**	650956
Prep Method:	EPA 3541	**Extraction Lot:**	343643

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1912420-03	J:\MS42\Data\091019\091019F015.D	09/10/19 15:54
Duplicate Lab Control Sample	KQ1912420-02	J:\MS42\Data\091019\091019F017.D	09/10/19 16:29
R4-SC1b-20to30-82819	K1907934-003	J:\MS42\Data\091019\091019F018.D	09/10/19 16:47
R4-SC1b-30to40-82819	K1907934-004	J:\MS42\Data\091019\091019F019.D	09/10/19 17:04
R4-SC1b-40to50-82819	K1907934-005	J:\MS42\Data\091019\091019F020.D	09/10/19 17:22
R4-SC1b-50to60-82819	K1907934-006	J:\MS42\Data\091019\091019F021.D	09/10/19 17:40
R4-SC1b-60to70-82819	K1907934-007	J:\MS42\Data\091019\091019F022.D	09/10/19 17:57
R4-SC1b-70to80-82819	K1907934-008	J:\MS42\Data\091019\091019F023.D	09/10/19 18:15
R4-SC1b-80to90-82819	K1907934-009	J:\MS42\Data\091019\091019F024.D	09/10/19 18:33
R4-SC1b-90to100-82819	K1907934-010	J:\MS42\Data\091019\091019F025.D	09/10/19 18:51
R4-SC1b-100to110-82819	K1907934-012	J:\MS42\Data\091019\091019F026.D	09/10/19 19:09
R4-SC1b-110to120-82819	K1907934-013	J:\MS42\Data\091019\091019F027.D	09/10/19 19:28
R4-SC1b-120to130-82819	K1907934-014	J:\MS42\Data\091019\091019F028.D	09/10/19 19:46
413-SC1b-40to50-82819	K1907934-015	J:\MS42\Data\091019\091019F029.D	09/10/19 20:04
R4-SC1b-130to140-82819	K1907934-016	J:\MS42\Data\091019\091019F030.D	09/10/19 20:22
R4-SC1b-140to150-82819	K1907934-017	J:\MS42\Data\091019\091019F031.D	09/10/19 20:40
J6-SC1b-20to30-82819	K1907934-018	J:\MS42\Data\091019\091019F032.D	09/10/19 20:58
J6-SC1b-30to40-82819	K1907934-019	J:\MS42\Data\091019\091019F033.D	09/10/19 21:15
J6-SC1b-40to50-82819	K1907934-020	J:\MS42\Data\091019\091019F034.D	09/10/19 21:33
J6-SC1b-50to60-82819	K1907934-021	J:\MS42\Data\091019\091019F035.D	09/10/19 21:51
J6-SC1b-60to70-82819	K1907934-022	J:\MS42\Data\091019\091019F036.D	09/10/19 22:08
J6-SC1b-70to80-82819	K1907934-023	J:\MS42\Data\091019\091019F037.D	09/10/19 22:26

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/11/19 16:06
Sample Matrix:	Soil	**Date Extracted:**	09/03/19

Lab Control Sample Summary
Organochlorine Pesticides by GC/MS/MS

Sample Name:	Lab Control Sample	**Instrument ID:**	K-MS-42
Lab Code:	KQ1912421-01	**File ID:**	J:\MS42\Data\091119\091119F004.D
Analysis Method:	ALS SOP	**Analysis Lot:**	650963,651916
Prep Method:	EPA 3541	**Extraction Lot:**	343644

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1912421-03	J:\MS42\Data\091119\091119F003.D	09/11/19 15:48
Duplicate Lab Control Sample	KQ1912421-02	J:\MS42\Data\091119\091119F005.D	09/11/19 16:23
J6-SC1b-80to90-82819	K1907934-024	J:\MS42\Data\091119\091119F006.D	09/11/19 16:41
J6-SC1b-90to100-82819	K1907934-025	J:\MS42\Data\091119\091119F007.D	09/11/19 16:59
J6-SC1b-100to110-82819	K1907934-026	J:\MS42\Data\091119\091119F008.D	09/11/19 17:16
J6-SC1b-110to120-82819	K1907934-027	J:\MS42\Data\091119\091119F009.D	09/11/19 17:34
H3-SC1b-20to30-82819	K1907934-030	J:\MS42\Data\091119\091119F010.D	09/11/19 17:52
H3-SC1b-30to40-82919	K1907934-031	J:\MS42\Data\091119\091119F011.D	09/11/19 18:09
H3-SC1b-40to50-82919	K1907934-032	J:\MS42\Data\091119\091119F012.D	09/11/19 18:27
H3-SC1b-50to60-82919	K1907934-033	J:\MS42\Data\091119\091119F013.D	09/11/19 18:44
H3-SC1b-60to70-82919	K1907934-034	J:\MS42\Data\091119\091119F014.D	09/11/19 19:02
H3-SC1b-70to80-82919	K1907934-035	J:\MS42\Data\091119\091119F015.D	09/11/19 19:20
H3-SC1b-80to90-82919	K1907934-036	J:\MS42\Data\091119\091119F016.D	09/11/19 19:37
H3-SC1b-90to100-82919	K1907934-037	J:\MS42\Data\091119\091119F017.D	09/11/19 19:55
H3-SC1b-100to110-82919	K1907934-038	J:\MS42\Data\091119\091119F018.D	09/11/19 20:13
D6-SC1b-20to30-82619	K1907934-041	J:\MS42\Data\091119\091119F019.D	09/11/19 20:30
D6-SC1b-30to40-82619	K1907934-042	J:\MS42\Data\091119\091119F020.D	09/11/19 20:48
D6-SC1b-40to50-82619	K1907934-043	J:\MS42\Data\091119\091119F021.D	09/11/19 21:05
D6-SC1b-50to60-82619	K1907934-044	J:\MS42\Data\091119\091119F022.D	09/11/19 21:23
D6-SC1b-60to70-82619	K1907934-045	J:\MS42\Data\091119\091119F023.D	09/11/19 21:41
D6-SC1b-70to80-82619	K1907934-046	J:\MS42\Data\091119\091119F024.D	09/11/19 21:58
D6-SC1b-80to90-82619	K1907934-047	J:\MS42\Data\091119\091119F025.D	09/11/19 22:16

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/11/19 23:26
Sample Matrix:	Soil	**Date Extracted:**	09/03/19

Lab Control Sample Summary
Organochlorine Pesticides by GC/MS/MS

Sample Name:	Lab Control Sample	**Instrument ID:**	K-MS-42
Lab Code:	KQ1912447-01	**File ID:**	J:\MS42\Data\091119\091119F029.D
Analysis Method:	ALS SOP	**Analysis Lot:**	650963,651916
Prep Method:	EPA 3541	**Extraction Lot:**	343645

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1912447-03	J:\MS42\Data\091119\091119F028.D	09/11/19 23:09
Duplicate Lab Control Sample	KQ1912447-02	J:\MS42\Data\091119\091119F030.D	09/11/19 23:44
D6-SC1b-90to100-82619	K1907934-048	J:\MS42\Data\091119\091119F031.D	09/12/19 00:02
D6-SC1b-100to110-82619	K1907934-049	J:\MS42\Data\091119\091119F032.D	09/12/19 00:19
D6-SC1b-110to120-82619	K1907934-050	J:\MS42\Data\091119\091119F033.D	09/12/19 00:37
411-SC1b-50to60-82619	K1907934-052	J:\MS42\Data\091119\091119F034.D	09/12/19 00:55
J5-SC1b-20to30-82719	K1907934-053	J:\MS42\Data\091119\091119F035.D	09/12/19 01:12
J5-SC1b-30to40-82719	K1907934-054	J:\MS42\Data\091119\091119F036.D	09/12/19 01:30
J5-SC1b-40to50-82719	K1907934-055	J:\MS42\Data\091119\091119F037.D	09/12/19 01:48
J5-SC1b-50to60-82719	K1907934-056	J:\MS42\Data\091119\091119F038.D	09/12/19 02:05
J5-SC1b-60to70-82719	K1907934-057	J:\MS42\Data\091119\091119F039.D	09/12/19 02:23
J5-SC1b-70to80-82719	K1907934-058	J:\MS42\Data\091119\091119F040.D	09/12/19 02:40
J5-SC1b-80to90-82719	K1907934-059	J:\MS42\Data\091119\091119F041.D	09/12/19 02:58
J5-SC1b-90to100-82719	K1907934-060	J:\MS42\Data\091819\091819F005.D	09/18/19 14:46
J5-SC1b-100to110-82719	K1907934-061	J:\MS42\Data\091819\091819F006.D	09/18/19 15:04
J3-SC1b-30to40-82719	K1907934-065	J:\MS42\Data\091819\091819F008.D	09/18/19 15:39
J3-SC1b-40to50-82719	K1907934-066	J:\MS42\Data\091819\091819F009.D	09/18/19 15:56
J3-SC1b-50to60-82719	K1907934-067	J:\MS42\Data\091819\091819F010.D	09/18/19 16:14
J3-SC1b-60to70-82719	K1907934-068	J:\MS42\Data\091819\091819F011.D	09/18/19 16:32
J3-SC1b-70to80-82719	K1907934-069	J:\MS42\Data\091819\091819F012.D	09/18/19 16:49
J3-SC1b-80to90-82719	K1907934-070	J:\MS42\Data\091819\091819F013.D	09/18/19 17:07
J3-SC1b-20to30-82719	K1907934-064	J:\MS42\Data\091819\091819F014.D	09/18/19 17:25

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/06/19 11:55

Tune Summary
Organochlorine Pesticides by GC/MS/MS

File ID: J:\MS42\Data\090619\090619F004.D **Analytical Method:** ALS SOP
Instrument ID: K-MS-42 **Analysis Lot:** 650252

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1912636-01	J:\MS42\Data\090619\090619F004.D	09/06/19 11:55	
Method Blank	KQ1912412-03	J:\MS42\Data\090619\090619F006.D	09/06/19 12:30	
Lab Control Sample	KQ1912412-01	J:\MS42\Data\090619\090619F007.D	09/06/19 12:48	
Duplicate Lab Control Sample	KQ1912412-02	J:\MS42\Data\090619\090619F008.D	09/06/19 13:05	
711-82719	K1907934-001	J:\MS42\Data\090619\090619F009.D	09/06/19 13:23	
712-82819	K1907934-002	J:\MS42\Data\090619\090619F010.D	09/06/19 13:40	

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/10/19 11:47

Tune Summary
Organochlorine Pesticides by GC/MS/MS

File ID: J:\MS42\Data\091019\091019F001.D **Analytical Method:** ALS SOP
Instrument ID: K-MS-42 **Analysis Lot:** 650956

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1912928-01	J:\MS42\Data\091019\091019F001.D	09/10/19 11:47	
Lab Control Sample	KQ1912444-01	J:\MS42\Data\091019\091019F004.D	09/10/19 12:40	
Duplicate Lab Control Sample	KQ1912444-02	J:\MS42\Data\091019\091019F005.D	09/10/19 12:58	
J3-SC1b-90to100-82719	K1907934-071	J:\MS42\Data\091019\091019F006.D	09/10/19 13:15	
J3-SC1b-10to20-82719	K1907934-072	J:\MS42\Data\091019\091019F007.D	09/10/19 13:33	
412-SC1b-80to90-82719	K1907934-073	J:\MS42\Data\091019\091019F008.D	09/10/19 13:51	
L3-SC1b-20to30-82619	K1907934-074	J:\MS42\Data\091019\091019F009.D	09/10/19 14:08	
L3-SC1b-30to40-82619	K1907934-075	J:\MS42\Data\091019\091019F010.D	09/10/19 14:26	
Method Blank	KQ1912420-03	J:\MS42\Data\091019\091019F015.D	09/10/19 15:54	
Lab Control Sample	KQ1912420-01	J:\MS42\Data\091019\091019F016.D	09/10/19 16:11	
Duplicate Lab Control Sample	KQ1912420-02	J:\MS42\Data\091019\091019F017.D	09/10/19 16:29	
R4-SC1b-20to30-82819	K1907934-003	J:\MS42\Data\091019\091019F018.D	09/10/19 16:47	
R4-SC1b-30to40-82819	K1907934-004	J:\MS42\Data\091019\091019F019.D	09/10/19 17:04	
R4-SC1b-40to50-82819	K1907934-005	J:\MS42\Data\091019\091019F020.D	09/10/19 17:22	
R4-SC1b-50to60-82819	K1907934-006	J:\MS42\Data\091019\091019F021.D	09/10/19 17:40	
R4-SC1b-60to70-82819	K1907934-007	J:\MS42\Data\091019\091019F022.D	09/10/19 17:57	
R4-SC1b-70to80-82819	K1907934-008	J:\MS42\Data\091019\091019F023.D	09/10/19 18:15	
R4-SC1b-80to90-82819	K1907934-009	J:\MS42\Data\091019\091019F024.D	09/10/19 18:33	
R4-SC1b-90to100-82819	K1907934-010	J:\MS42\Data\091019\091019F025.D	09/10/19 18:51	
R4-SC1b-100to110-82819	K1907934-012	J:\MS42\Data\091019\091019F026.D	09/10/19 19:09	
R4-SC1b-110to120-82819	K1907934-013	J:\MS42\Data\091019\091019F027.D	09/10/19 19:28	
R4-SC1b-120to130-82819	K1907934-014	J:\MS42\Data\091019\091019F028.D	09/10/19 19:46	
413-SC1b-40to50-82819	K1907934-015	J:\MS42\Data\091019\091019F029.D	09/10/19 20:04	
R4-SC1b-130to140-82819	K1907934-016	J:\MS42\Data\091019\091019F030.D	09/10/19 20:22	
R4-SC1b-140to150-82819	K1907934-017	J:\MS42\Data\091019\091019F031.D	09/10/19 20:40	
J6-SC1b-20to30-82819	K1907934-018	J:\MS42\Data\091019\091019F032.D	09/10/19 20:58	
J6-SC1b-30to40-82819	K1907934-019	J:\MS42\Data\091019\091019F033.D	09/10/19 21:15	
J6-SC1b-40to50-82819	K1907934-020	J:\MS42\Data\091019\091019F034.D	09/10/19 21:33	
J6-SC1b-50to60-82819	K1907934-021	J:\MS42\Data\091019\091019F035.D	09/10/19 21:51	
J6-SC1b-60to70-82819	K1907934-022	J:\MS42\Data\091019\091019F036.D	09/10/19 22:08	
J6-SC1b-70to80-82819	K1907934-023	J:\MS42\Data\091019\091019F037.D	09/10/19 22:26	

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/11/19 15:13

Tune Summary
Organochlorine Pesticides by GC/MS/MS

File ID: J:\MS42\Data\091119\091119F001.D **Analytical Method:** ALS SOP
Instrument ID: K-MS-42 **Analysis Lot:** 650963

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1912934-01	J:\MS42\Data\091119\091119F001.D	09/11/19 15:13	
Method Blank	KQ1912421-03	J:\MS42\Data\091119\091119F003.D	09/11/19 15:48	
Lab Control Sample	KQ1912421-01	J:\MS42\Data\091119\091119F004.D	09/11/19 16:06	
Duplicate Lab Control Sample	KQ1912421-02	J:\MS42\Data\091119\091119F005.D	09/11/19 16:23	
J6-SC1b-80to90-82819	K1907934-024	J:\MS42\Data\091119\091119F006.D	09/11/19 16:41	
J6-SC1b-90to100-82819	K1907934-025	J:\MS42\Data\091119\091119F007.D	09/11/19 16:59	
J6-SC1b-100to110-82819	K1907934-026	J:\MS42\Data\091119\091119F008.D	09/11/19 17:16	
J6-SC1b-110to120-82819	K1907934-027	J:\MS42\Data\091119\091119F009.D	09/11/19 17:34	
H3-SC1b-20to30-82819	K1907934-030	J:\MS42\Data\091119\091119F010.D	09/11/19 17:52	
H3-SC1b-30to40-82919	K1907934-031	J:\MS42\Data\091119\091119F011.D	09/11/19 18:09	
H3-SC1b-40to50-82919	K1907934-032	J:\MS42\Data\091119\091119F012.D	09/11/19 18:27	
H3-SC1b-50to60-82919	K1907934-033	J:\MS42\Data\091119\091119F013.D	09/11/19 18:44	
H3-SC1b-60to70-82919	K1907934-034	J:\MS42\Data\091119\091119F014.D	09/11/19 19:02	
H3-SC1b-70to80-82919	K1907934-035	J:\MS42\Data\091119\091119F015.D	09/11/19 19:20	
H3-SC1b-80to90-82919	K1907934-036	J:\MS42\Data\091119\091119F016.D	09/11/19 19:37	
H3-SC1b-90to100-82919	K1907934-037	J:\MS42\Data\091119\091119F017.D	09/11/19 19:55	
H3-SC1b-100to110-82919	K1907934-038	J:\MS42\Data\091119\091119F018.D	09/11/19 20:13	
D6-SC1b-20to30-82619	K1907934-041	J:\MS42\Data\091119\091119F019.D	09/11/19 20:30	
D6-SC1b-30to40-82619	K1907934-042	J:\MS42\Data\091119\091119F020.D	09/11/19 20:48	
D6-SC1b-40to50-82619	K1907934-043	J:\MS42\Data\091119\091119F021.D	09/11/19 21:05	
D6-SC1b-50to60-82619	K1907934-044	J:\MS42\Data\091119\091119F022.D	09/11/19 21:23	
D6-SC1b-60to70-82619	K1907934-045	J:\MS42\Data\091119\091119F023.D	09/11/19 21:41	
D6-SC1b-70to80-82619	K1907934-046	J:\MS42\Data\091119\091119F024.D	09/11/19 21:58	
D6-SC1b-80to90-82619	K1907934-047	J:\MS42\Data\091119\091119F025.D	09/11/19 22:16	
Method Blank	KQ1912447-03	J:\MS42\Data\091119\091119F028.D	09/11/19 23:09	
Lab Control Sample	KQ1912447-01	J:\MS42\Data\091119\091119F029.D	09/11/19 23:26	
Duplicate Lab Control Sample	KQ1912447-02	J:\MS42\Data\091119\091119F030.D	09/11/19 23:44	
D6-SC1b-90to100-82619	K1907934-048	J:\MS42\Data\091119\091119F031.D	09/12/19 00:02	
D6-SC1b-100to110-82619	K1907934-049	J:\MS42\Data\091119\091119F032.D	09/12/19 00:19	
D6-SC1b-110to120-82619	K1907934-050	J:\MS42\Data\091119\091119F033.D	09/12/19 00:37	
411-SC1b-50to60-82619	K1907934-052	J:\MS42\Data\091119\091119F034.D	09/12/19 00:55	
J5-SC1b-20to30-82719	K1907934-053	J:\MS42\Data\091119\091119F035.D	09/12/19 01:12	
J5-SC1b-30to40-82719	K1907934-054	J:\MS42\Data\091119\091119F036.D	09/12/19 01:30	
J5-SC1b-40to50-82719	K1907934-055	J:\MS42\Data\091119\091119F037.D	09/12/19 01:48	

J5-SC1b-50to60-82719	K1907934-056	J:\MS42\Data\091119\091119F038.D	09/12/19 02:05
J5-SC1b-60to70-82719	K1907934-057	J:\MS42\Data\091119\091119F039.D	09/12/19 02:23
J5-SC1b-70to80-82719	K1907934-058	J:\MS42\Data\091119\091119F040.D	09/12/19 02:40
J5-SC1b-80to90-82719	K1907934-059	J:\MS42\Data\091119\091119F041.D	09/12/19 02:58

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/18/19 13:53

Tune Summary
Organochlorine Pesticides by GC/MS/MS

File ID: J:\MS42\Data\091819\091819F002.D **Analytical Method:** ALS SOP
Instrument ID: K-MS-42 **Analysis Lot:** 651916

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1913321-01	J:\MS42\Data\091819\091819F002.D	09/18/19 13:53	
J5-SC1b-90to100-82719	K1907934-060	J:\MS42\Data\091819\091819F005.D	09/18/19 14:46	
J5-SC1b-100to110-82719	K1907934-061	J:\MS42\Data\091819\091819F006.D	09/18/19 15:04	
J3-SC1b-30to40-82719	K1907934-065	J:\MS42\Data\091819\091819F008.D	09/18/19 15:39	
J3-SC1b-40to50-82719	K1907934-066	J:\MS42\Data\091819\091819F009.D	09/18/19 15:56	
J3-SC1b-50to60-82719	K1907934-067	J:\MS42\Data\091819\091819F010.D	09/18/19 16:14	
J3-SC1b-60to70-82719	K1907934-068	J:\MS42\Data\091819\091819F011.D	09/18/19 16:32	
J3-SC1b-70to80-82719	K1907934-069	J:\MS42\Data\091819\091819F012.D	09/18/19 16:49	
J3-SC1b-80to90-82719	K1907934-070	J:\MS42\Data\091819\091819F013.D	09/18/19 17:07	
J3-SC1b-20to30-82719	K1907934-064	J:\MS42\Data\091819\091819F014.D	09/18/19 17:25	

Client: Pacific Groundwater Group (PGG) **Service Request:** K1907934
Project: Swan Island Lagoon Sediment Investigation **Calibration Date:** 8/13/2019

Initial Calibration Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1900338 **Signal ID:** 1
Instrument ID: K-MS-42

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1900338-01	OC PEST ICAL 0.5PPB SVM61-44A	J:\MS42\Data\081319\081319F004.D	08/13/2019 10:22
02	KC1900338-02	OC PEST ICAL 1PPB SVM61-44B	J:\MS42\Data\081319\081319F005.D	08/13/2019 10:40
03	KC1900338-03	OC PEST ICAL 2PPB SVM61-44C	J:\MS42\Data\081319\081319F006.D	08/13/2019 10:58
04	KC1900338-04	OC PEST ICAL 5PPB SVM61-44D	J:\MS42\Data\081319\081319F007.D	08/13/2019 11:15
05	KC1900338-05	OC PEST ICAL 10PPB SVM61-44E	J:\MS42\Data\081319\081319F008.D	08/13/2019 11:33
06	KC1900338-06	OC PEST ICAL 20PPB SVM61-44F	J:\MS42\Data\081319\081319F009.D	08/13/2019 11:51
07	KC1900338-07	OC PEST ICAL 60PPB SVM61-44H	J:\MS42\Data\081319\081319F011.D	08/13/2019 12:26
08	KC1900338-08	OC PEST ICAL 80PPB SVM61-44I	J:\MS42\Data\081319\081319F012.D	08/13/2019 12:44
09	KC1900338-09	OC PEST ICAL 100PPB SVM61-44J	J:\MS42\Data\081319\081319F013.D	08/13/2019 13:01
10	KC1900338-10	OC PEST ICAL 40PPB SVM61-44G	J:\MS42\Data\081319\081319F030.D	08/13/2019 15:26

Analyte

2,4'-DDD

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.8052	02	1	0.8256	03	2	0.9139	04	5	0.9994
05	10	0.9427	06	20	0.8994	10	40	0.8156	07	60	1.11
08	80	1.147	09	100	0.9702						

2,4'-DDE

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.8845	02	1	0.8452	03	2	0.952	04	5	1.156
05	10	0.9625	06	20	1.026	10	40	0.8278	07	60	1.056
08	80	1.336	09	100	1.106						

2,4'-DDT

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	1.91	02	1	1.637	03	2	1.753	04	5	1.913
05	10	1.98	06	20	1.986	10	40	1.812	07	60	2.058
08	80	2.183	09	100	2.206						

4,4'-DDD

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	1.394	02	1	1.317	03	2	1.367	04	5	1.628
05	10	1.546	06	20	1.59	10	40	1.494	07	60	1.678
08	80	2.079									

4,4'-DDE

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.7744	02	1	0.7405	03	2	0.8646	04	5	0.9292
05	10	0.8324	06	20	0.7818	10	40	0.7119	07	60	1.293
08	80	0.9987	09	100	0.7857						

4,4'-DDT

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.8227	02	1	0.6699	03	2	0.7348	04	5	0.815

Client: Pacific Groundwater Group (PGG) **Service Request:** K1907934
Project: Swan Island Lagoon Sediment Investigation **Calibration Date:** 8/13/2019

Initial Calibration Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1900338 **Signal ID:** 1
Instrument ID: K-MS-42

Analyte

4,4'-DDT

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
05	10	0.8131	06	20	0.8071	10	40	0.7864	07	60	0.8403
08	80	0.9037	09	100	0.8817						

S_4,4'-DDT-d4

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	5	2.192	02	5	2.215	03	5	2.395	04	5	2.271
05	5	2.105	06	5	2.162	07	5	2.187	08	5	2.26
09	5	2.18	10	5	2.105						

S_4,4'DDD-d4

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	5	3.414	02	5	3.146	03	5	3.528	04	5	3.16
05	5	3.092	06	5	3.132	07	5	3.225	08	5	2.815
09	5	3.3	10	5	3.278						

Client: Pacific Groundwater Group (PGG) **Service Request:** K1907934
Project: Swan Island Lagoon Sediment Investigation **Calibration Date:** 8/13/2019

Initial Calibration Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1900338 **Signal ID:** 1
Instrument ID: K-MS-42

		Calibration Evaluation				Calibration Evaluation	
Analyte Name	Compound Type	Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
2,4'-DDD	TRG	Average RF	% RSD	12.5	≤20	0.943	0.01
2,4'-DDE	TRG	Average RF	% RSD	15.4	≤20	1.015	0.01
2,4'-DDT	TRG	Average RF	% RSD	9.3	≤20	1.944	0.01
4,4'-DDD	TRG	Quadratic	COD	0.9931	≥	1.566	0.01
4,4'-DDE	TRG	Average RF	% RSD	19.7	≤20	0.8712	0.01
4,4'-DDT	TRG	Average RF	% RSD	8.3	≤20	0.8075	0.01
S_4,4'-DDT-d4	SURR	Average RF	% RSD	3.9	≤	2.207	0.01
S_4,4'DDD-d4	SURR	Average RF	% RSD	6.0	≤	3.209	0.01

Client: Pacific Groundwater Group (PGG) **Service Request:** K1907934
Project: Swan Island Lagoon Sediment Investigation **Calibration Date:** 8/13/2019

Initial Calibration Verification Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1900338 **Signal ID:** 1
Instrument ID: K-MS-42

#	Lab Code	Sample Name	File Location	Acquisition Date
11	KC1900338-11	OC PEST ICV 20PPB SVM61-48E	J:\MS42\Data\081319\081319F031.D	08/13/2019 15:44

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
2,4'-DDD	20.0	20.1	9.43E-1	9.494E-1	0.685	±25	Average RF
2,4'-DDE	20.0	19.3	1.015E0	9.787E-1	-3.582	±25	Average RF
2,4'-DDT	20.0	19.2	1.944E0	1.869E0	-3.843	±25	Average RF
4,4'-DDD	20.0	20.0	1.566E0	1.456E0	0.240	±25	Quadratic
4,4'-DDE	20.0	18.6	8.712E-1	8.121E-1	-6.781	±25	Average RF
4,4'-DDT	20.0	20.8	8.075E-1	8.401E-1	4.04	±25	Average RF

Analyte Name	Expected	Result	Average RF	SSV RF	Rec.	Criteria	Curve Fit
S_4,4'DDD-d4	5.00	5.05	3.209E0	3.243E0	101	50-200	Average RF
S_4,4'-DDT-d4	5.00	4.74	2.207E0	2.093E0	94.8	50-200	Average RF

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/06/19 11:55

Continuing Calibration Verification (CCV) Summary
Organochlorine Pesticides by GC/MS/MS

Analysis Method:	ALS SOP	**Calibration Date:**	8/13/2019
File ID:	J:\MS42\Data\090619\090619F004.D	**Calibration ID:**	KC1900338
Signal ID:	1	**Analysis Lot:**	650252
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
2,4'-DDD	20.0	18.8	0.943	0.8865	-6.0	NA	±25	Average RF
2,4'-DDE	20.0	21.2	1.0151	1.0767	6.1	NA	±25	Average RF
2,4'-DDT	20.0	21.0	1.9438	2.0433	5.1	NA	±25	Average RF
4,4'-DDD	20.0	20.1	1.566	1.4645	NA	0.7	±25	Quadratic
4,4'-DDE	20.0	17.1	0.8712	0.7451	-14.5	NA	±25	Average RF
4,4'-DDT	20.0	20.6	0.8075	0.8335	3.2	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	Rec.	% Drift	Criteria	Curve Fit
S_4,4'DDD-d4	5.00	5.10	3.209	3.2754	102	NA	50-200	Average RF
S_4,4'-DDT-d4	5.00	4.80	2.2071	2.1175	95.9	NA	50-200	Average RF

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/10/19 11:47

Continuing Calibration Verification (CCV) Summary
Organochlorine Pesticides by GC/MS/MS

Analysis Method:	ALS SOP	**Calibration Date:**	8/13/2019
File ID:	J:\MS42\Data\091019\091019F001.D	**Calibration ID:**	KC1900338
Signal ID:	1	**Analysis Lot:**	650956
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
2,4'-DDD	20.0	19.1	0.943	0.8989	-4.7	NA	±25	Average RF
2,4'-DDE	20.0	20.6	1.0151	1.0457	3.0	NA	±25	Average RF
2,4'-DDT	20.0	20.5	1.9438	1.992	2.5	NA	±25	Average RF
4,4'-DDD	20.0	21.7	1.566	1.5952	NA	8.7	±25	Quadratic
4,4'-DDE	20.0	17.7	0.8712	0.77	-11.6	NA	±25	Average RF
4,4'-DDT	20.0	20.9	0.8075	0.8429	4.4	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	Rec.	% Drift	Criteria	Curve Fit
S_4,4'DDD-d4	5.00	4.70	3.209	3.0163	94.0	NA	50-200	Average RF
S_4,4'-DDT-d4	5.00	4.67	2.2071	2.0633	93.5	NA	50-200	Average RF

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/11/19 15:13

Continuing Calibration Verification (CCV) Summary
Organochlorine Pesticides by GC/MS/MS

Analysis Method:	ALS SOP	**Calibration Date:**	8/13/2019
File ID:	J:\MS42\Data\091119\091119F001.D	**Calibration ID:**	KC1900338
Signal ID:	1	**Analysis Lot:**	650963
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
2,4'-DDD	20.0	17.7	0.943	0.8341	-11.5	NA	±25	Average RF
2,4'-DDE	20.0	17.7	1.0151	0.8969	-11.6	NA	±25	Average RF
2,4'-DDT	20.0	18.5	1.9438	1.797	-7.6	NA	±25	Average RF
4,4'-DDD	20.0	19.5	1.566	1.4116	NA	-2.5	±25	Quadratic
4,4'-DDE	20.0	16.5	0.8712	0.7198	-17.4	NA	±25	Average RF
4,4'-DDT	20.0	20.8	0.8075	0.8412	4.2	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	Rec.	% Drift	Criteria	Curve Fit
S_4,4'DDD-d4	5.00	5.22	3.209	3.3475	104	NA	50-200	Average RF
S_4,4'-DDT-d4	5.00	5.29	2.2071	2.3351	106	NA	50-200	Average RF

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/18/19 13:53

Continuing Calibration Verification (CCV) Summary
Organochlorine Pesticides by GC/MS/MS

Analysis Method:	ALS SOP	**Calibration Date:**	8/13/2019
File ID:	J:\MS42\Data\091819\091819F002.D	**Calibration ID:**	KC1900338
Signal ID:	1	**Analysis Lot:**	651916
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
2,4'-DDD	20.0	18.7	0.943	0.8794	-6.7	NA	±25	Average RF
2,4'-DDE	20.0	20.5	1.0151	1.0429	2.7	NA	±25	Average RF
2,4'-DDT	20.0	20.6	1.9438	1.999	2.8	NA	±25	Average RF
4,4'-DDD	20.0	20.7	1.566	1.512	NA	3.7	±25	Quadratic
4,4'-DDE	20.0	17.3	0.8712	0.7518	-13.7	NA	±25	Average RF
4,4'-DDT	20.0	19.7	0.8075	0.7972	-1.3	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	Rec.	% Drift	Criteria	Curve Fit
S_4,4'DDD-d4	5.00	4.73	3.209	3.0346	94.6	NA	50-200	Average RF
S_4,4'-DDT-d4	5.00	4.68	2.2071	2.0658	93.6	NA	50-200	Average RF

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115

Analysis Run Log
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP **Analysis Lot:**650252
Instrument ID:K-MS-42

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS42\Data\090619\090619F004.D	Continuing Calibration Verification	KQ1912636-01	9/6/2019	11:55	
J:\MS42\Data\090619\090619F004.D	ZZZZZZZ	ZZZZZZZ	9/6/2019	11:55	
J:\MS42\Data\090619\090619F006.D	Method Blank	KQ1912412-03	9/6/2019	12:30	
J:\MS42\Data\090619\090619F007.D	Lab Control Sample	KQ1912412-01	9/6/2019	12:48	
J:\MS42\Data\090619\090619F008.D	Duplicate Lab Control Sample	KQ1912412-02	9/6/2019	13:05	
J:\MS42\Data\090619\090619F009.D	711-82719	K1907934-001	9/6/2019	13:23	
J:\MS42\Data\090619\090619F010.D	712-82819	K1907934-002	9/6/2019	13:40	
J:\MS42\Data\090619\090619F015.D	ZZZZZZZ	ZZZZZZZ	9/6/2019	15:09	
J:\MS42\Data\090619\090619F016.D	ZZZZZZZ	ZZZZZZZ	9/6/2019	15:26	
J:\MS42\Data\090619\090619F017.D	ZZZZZZZ	ZZZZZZZ	9/6/2019	15:44	
J:\MS42\Data\090619\090619F018.D	ZZZZZZZ	ZZZZZZZ	9/6/2019	16:01	
J:\MS42\Data\090619\090619F019.D	ZZZZZZZ	ZZZZZZZ	9/6/2019	16:19	

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115

Analysis Run Log
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP **Analysis Lot:**650956
Instrument ID:K-MS-42

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS42\Data\091019\091019F001.D	Continuing Calibration Verification	KQ1912928-01	9/10/2019	11:47	
J:\MS42\Data\091019\091019F004.D	Lab Control Sample	KQ1912444-01	9/10/2019	12:40	
J:\MS42\Data\091019\091019F005.D	Duplicate Lab Control Sample	KQ1912444-02	9/10/2019	12:58	
J:\MS42\Data\091019\091019F006.D	J3-SC1b-90to100-82719	K1907934-071	9/10/2019	13:15	
J:\MS42\Data\091019\091019F007.D	J3-SC1b-10to20-82719	K1907934-072	9/10/2019	13:33	
J:\MS42\Data\091019\091019F008.D	412-SC1b-80to90-82719	K1907934-073	9/10/2019	13:51	
J:\MS42\Data\091019\091019F009.D	L3-SC1b-20to30-82619	K1907934-074	9/10/2019	14:08	
J:\MS42\Data\091019\091019F010.D	L3-SC1b-30to40-82619	K1907934-075	9/10/2019	14:26	
J:\MS42\Data\091019\091019F015.D	Method Blank	KQ1912420-03	9/10/2019	15:54	
J:\MS42\Data\091019\091019F016.D	Lab Control Sample	KQ1912420-01	9/10/2019	16:11	
J:\MS42\Data\091019\091019F017.D	Duplicate Lab Control Sample	KQ1912420-02	9/10/2019	16:29	
J:\MS42\Data\091019\091019F018.D	R4-SC1b-20to30-82819	K1907934-003	9/10/2019	16:47	
J:\MS42\Data\091019\091019F019.D	R4-SC1b-30to40-82819	K1907934-004	9/10/2019	17:04	
J:\MS42\Data\091019\091019F020.D	R4-SC1b-40to50-82819	K1907934-005	9/10/2019	17:22	
J:\MS42\Data\091019\091019F021.D	R4-SC1b-50to60-82819	K1907934-006	9/10/2019	17:40	
J:\MS42\Data\091019\091019F022.D	R4-SC1b-60to70-82819	K1907934-007	9/10/2019	17:57	
J:\MS42\Data\091019\091019F023.D	R4-SC1b-70to80-82819	K1907934-008	9/10/2019	18:15	
J:\MS42\Data\091019\091019F024.D	R4-SC1b-80to90-82819	K1907934-009	9/10/2019	18:33	
J:\MS42\Data\091019\091019F025.D	R4-SC1b-90to100-82819	K1907934-010	9/10/2019	18:51	
J:\MS42\Data\091019\091019F026.D	R4-SC1b-100to110-82819	K1907934-012	9/10/2019	19:09	
J:\MS42\Data\091019\091019F027.D	R4-SC1b-110to120-82819	K1907934-013	9/10/2019	19:28	
J:\MS42\Data\091019\091019F028.D	R4-SC1b-120to130-82819	K1907934-014	9/10/2019	19:46	
J:\MS42\Data\091019\091019F029.D	413-SC1b-40to50-82819	K1907934-015	9/10/2019	20:04	
J:\MS42\Data\091019\091019F030.D	R4-SC1b-130to140-82819	K1907934-016	9/10/2019	20:22	
J:\MS42\Data\091019\091019F031.D	R4-SC1b-140to150-82819	K1907934-017	9/10/2019	20:40	
J:\MS42\Data\091019\091019F032.D	J6-SC1b-20to30-82819	K1907934-018	9/10/2019	20:58	
J:\MS42\Data\091019\091019F033.D	J6-SC1b-30to40-82819	K1907934-019	9/10/2019	21:15	
J:\MS42\Data\091019\091019F034.D	J6-SC1b-40to50-82819	K1907934-020	9/10/2019	21:33	
J:\MS42\Data\091019\091019F035.D	J6-SC1b-50to60-82819	K1907934-021	9/10/2019	21:51	
J:\MS42\Data\091019\091019F036.D	J6-SC1b-60to70-82819	K1907934-022	9/10/2019	22:08	
J:\MS42\Data\091019\091019F037.D	J6-SC1b-70to80-82819	K1907934-023	9/10/2019	22:26	

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115

Analysis Run Log
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP **Analysis Lot:**650963
Instrument ID:K-MS-42

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS42\Data\091119\091119F001.D	Continuing Calibration Verification	KQ1912934-01	9/11/2019	15:13	
J:\MS42\Data\091119\091119F003.D	Method Blank	KQ1912421-03	9/11/2019	15:48	
J:\MS42\Data\091119\091119F004.D	Lab Control Sample	KQ1912421-01	9/11/2019	16:06	
J:\MS42\Data\091119\091119F005.D	Duplicate Lab Control Sample	KQ1912421-02	9/11/2019	16:23	
J:\MS42\Data\091119\091119F006.D	J6-SC1b-80to90-82819	K1907934-024	9/11/2019	16:41	
J:\MS42\Data\091119\091119F007.D	J6-SC1b-90to100-82819	K1907934-025	9/11/2019	16:59	
J:\MS42\Data\091119\091119F008.D	J6-SC1b-100to110-82819	K1907934-026	9/11/2019	17:16	
J:\MS42\Data\091119\091119F009.D	J6-SC1b-110to120-82819	K1907934-027	9/11/2019	17:34	
J:\MS42\Data\091119\091119F010.D	H3-SC1b-20to30-82819	K1907934-030	9/11/2019	17:52	
J:\MS42\Data\091119\091119F011.D	H3-SC1b-30to40-82919	K1907934-031	9/11/2019	18:09	
J:\MS42\Data\091119\091119F012.D	H3-SC1b-40to50-82919	K1907934-032	9/11/2019	18:27	
J:\MS42\Data\091119\091119F013.D	H3-SC1b-50to60-82919	K1907934-033	9/11/2019	18:44	
J:\MS42\Data\091119\091119F014.D	H3-SC1b-60to70-82919	K1907934-034	9/11/2019	19:02	
J:\MS42\Data\091119\091119F015.D	H3-SC1b-70to80-82919	K1907934-035	9/11/2019	19:20	
J:\MS42\Data\091119\091119F016.D	H3-SC1b-80to90-82919	K1907934-036	9/11/2019	19:37	
J:\MS42\Data\091119\091119F017.D	H3-SC1b-90to100-82919	K1907934-037	9/11/2019	19:55	
J:\MS42\Data\091119\091119F018.D	H3-SC1b-100to110-82919	K1907934-038	9/11/2019	20:13	
J:\MS42\Data\091119\091119F019.D	D6-SC1b-20to30-82619	K1907934-041	9/11/2019	20:30	
J:\MS42\Data\091119\091119F020.D	D6-SC1b-30to40-82619	K1907934-042	9/11/2019	20:48	
J:\MS42\Data\091119\091119F021.D	D6-SC1b-40to50-82619	K1907934-043	9/11/2019	21:05	
J:\MS42\Data\091119\091119F022.D	D6-SC1b-50to60-82619	K1907934-044	9/11/2019	21:23	
J:\MS42\Data\091119\091119F023.D	D6-SC1b-60to70-82619	K1907934-045	9/11/2019	21:41	
J:\MS42\Data\091119\091119F024.D	D6-SC1b-70to80-82619	K1907934-046	9/11/2019	21:58	
J:\MS42\Data\091119\091119F025.D	D6-SC1b-80to90-82619	K1907934-047	9/11/2019	22:16	
J:\MS42\Data\091119\091119F028.D	Method Blank	KQ1912447-03	9/11/2019	23:09	
J:\MS42\Data\091119\091119F029.D	Lab Control Sample	KQ1912447-01	9/11/2019	23:26	
J:\MS42\Data\091119\091119F030.D	Duplicate Lab Control Sample	KQ1912447-02	9/11/2019	23:44	
J:\MS42\Data\091119\091119F031.D	D6-SC1b-90to100-82619	K1907934-048	9/12/2019	00:02	
J:\MS42\Data\091119\091119F032.D	D6-SC1b-100to110-82619	K1907934-049	9/12/2019	00:19	
J:\MS42\Data\091119\091119F033.D	D6-SC1b-110to120-82619	K1907934-050	9/12/2019	00:37	
J:\MS42\Data\091119\091119F034.D	411-SC1b-50to60-82619	K1907934-052	9/12/2019	00:55	
J:\MS42\Data\091119\091119F035.D	J5-SC1b-20to30-82719	K1907934-053	9/12/2019	01:12	
J:\MS42\Data\091119\091119F036.D	J5-SC1b-30to40-82719	K1907934-054	9/12/2019	01:30	
J:\MS42\Data\091119\091119F037.D	J5-SC1b-40to50-82719	K1907934-055	9/12/2019	01:48	
J:\MS42\Data\091119\091119F038.D	J5-SC1b-50to60-82719	K1907934-056	9/12/2019	02:05	
J:\MS42\Data\091119\091119F039.D	J5-SC1b-60to70-82719	K1907934-057	9/12/2019	02:23	
J:\MS42\Data\091119\091119F040.D	J5-SC1b-70to80-82719	K1907934-058	9/12/2019	02:40	
J:\MS42\Data\091119\091119F041.D	J5-SC1b-80to90-82719	K1907934-059	9/12/2019	02:58	

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115

Analysis Run Log
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP **Analysis Lot:**651916
Instrument ID:K-MS-42

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS42\Data\091819\091819F002.D	Continuing Calibration Verification	KQ1913321-01	9/18/2019	13:53	
J:\MS42\Data\091819\091819F005.D	J5-SC1b-90to100-82719	K1907934-060	9/18/2019	14:46	
J:\MS42\Data\091819\091819F006.D	J5-SC1b-100to110-82719	K1907934-061	9/18/2019	15:04	
J:\MS42\Data\091819\091819F008.D	J3-SC1b-30to40-82719	K1907934-065	9/18/2019	15:39	
J:\MS42\Data\091819\091819F009.D	J3-SC1b-40to50-82719	K1907934-066	9/18/2019	15:56	
J:\MS42\Data\091819\091819F010.D	J3-SC1b-50to60-82719	K1907934-067	9/18/2019	16:14	
J:\MS42\Data\091819\091819F011.D	J3-SC1b-60to70-82719	K1907934-068	9/18/2019	16:32	
J:\MS42\Data\091819\091819F012.D	J3-SC1b-70to80-82719	K1907934-069	9/18/2019	16:49	
J:\MS42\Data\091819\091819F013.D	J3-SC1b-80to90-82719	K1907934-070	9/18/2019	17:07	
J:\MS42\Data\091819\091819F014.D	J3-SC1b-20to30-82719	K1907934-064	9/18/2019	17:25	

Prep Summary Report

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115
Sample Matrix: Water

Organochlorine Pesticides by GC/MS/MS

Prep Method: EPA 3535A **Extraction Lot:** 343719
Analytical Method: ALS SOP **Extraction Date:** 09/03/19 12:51

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
711-82719	K1907934-001	8/27/19	8/29/19	1000 mL	1 mL	
712-82819	K1907934-002	8/28/19	8/29/19	1000 mL	1 mL	
Lab Control Sample	KQ1912412-01LCS	NA	NA	1000 mL	1 mL	
Duplicate Lab Control Sample	KQ1912412-02DLCS	NA	NA	1000 mL	1 mL	
Method Blank	KQ1912412-03MB	NA	NA	1000 mL	1 mL	

Prep Summary Report

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115
Sample Matrix: Soil

Organochlorine Pesticides by GC/MS/MS

Prep Method: EPA 3541 **Extraction Lot:** 343643
Analytical Method: ALS SOP **Extraction Date:** 09/03/19 11:13

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
R4-SC1b-20to30-82819	K1907934-003	8/28/19	8/29/19	20.824 g	1 mL	54.3
R4-SC1b-30to40-82819	K1907934-004	8/28/19	8/29/19	20.606 g	1 mL	56.7
R4-SC1b-40to50-82819	K1907934-005	8/28/19	8/29/19	20.854 g	1 mL	53.8
R4-SC1b-50to60-82819	K1907934-006	8/28/19	8/29/19	20.071 g	1 mL	55.4
R4-SC1b-60to70-82819	K1907934-007	8/28/19	8/29/19	20.509 g	1 mL	55.6
R4-SC1b-70to80-82819	K1907934-008	8/28/19	8/29/19	20.655 g	1 mL	57.1
R4-SC1b-80to90-82819	K1907934-009	8/28/19	8/29/19	20.240 g	1 mL	54.6
R4-SC1b-90to100-82819	K1907934-010	8/28/19	8/29/19	20.771 g	1 mL	56.2
R4-SC1b-100to110-82819	K1907934-012	8/28/19	8/29/19	20.240 g	1 mL	54.1
R4-SC1b-110to120-82819	K1907934-013	8/28/19	8/29/19	22.373 g	1 mL	54.8
R4-SC1b-120to130-82819	K1907934-014	8/28/19	8/29/19	20.938 g	1 mL	56.6
413-SC1b-40to50-82819	K1907934-015	8/28/19	8/29/19	20.565 g	1 mL	56.6
R4-SC1b-130to140-82819	K1907934-016	8/28/19	8/29/19	20.176 g	1 mL	65.2
R4-SC1b-140to150-82819	K1907934-017	8/28/19	8/29/19	21.936 g	1 mL	76.6
J6-SC1b-20to30-82819	K1907934-018	8/28/19	8/29/19	22.297 g	1 mL	54.3
J6-SC1b-30to40-82819	K1907934-019	8/28/19	8/29/19	22.431 g	1 mL	55.4
J6-SC1b-40to50-82819	K1907934-020	8/28/19	8/29/19	20.539 g	1 mL	56.3
J6-SC1b-50to60-82819	K1907934-021	8/28/19	8/29/19	21.618 g	1 mL	59.0
J6-SC1b-60to70-82819	K1907934-022	8/28/19	8/29/19	20.223 g	1 mL	62.2
J6-SC1b-70to80-82819	K1907934-023	8/28/19	8/29/19	21.766 g	1 mL	69.5
Lab Control Sample	KQ1912420-01LCS	NA	NA	20.0000 g	1 mL	
Duplicate Lab Control Sample	KQ1912420-02DLCS	NA	NA	20.0000 g	1 mL	
Method Blank	KQ1912420-03MB	NA	NA	22.4310 g	1 mL	

Prep Summary Report

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115
Sample Matrix: Soil

Organochlorine Pesticides by GC/MS/MS

Prep Method: EPA 3541 **Extraction Lot:** 343644
Analytical Method: ALS SOP **Extraction Date:** 09/03/19 11:13

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
J6-SC1b-80to90-82819	K1907934-024	8/28/19	8/29/19	21.274 g	1 mL	71.3
J6-SC1b-90to100-82819	K1907934-025	8/28/19	8/29/19	20.974 g	1 mL	69.2
J6-SC1b-100to110-82819	K1907934-026	8/28/19	8/29/19	20.548 g	1 mL	71.6
J6-SC1b-110to120-82819	K1907934-027	8/28/19	8/29/19	21.026 g	1 mL	73.1
H3-SC1b-20to30-82819	K1907934-030	8/28/19	8/29/19	20.601 g	1 mL	59.6
H3-SC1b-30to40-82919	K1907934-031	8/29/19	8/29/19	20.138 g	1 mL	73.6
H3-SC1b-40to50-82919	K1907934-032	8/29/19	8/29/19	20.072 g	1 mL	73.8
H3-SC1b-50to60-82919	K1907934-033	8/29/19	8/29/19	20.102 g	1 mL	70.2
H3-SC1b-60to70-82919	K1907934-034	8/29/19	8/29/19	20.238 g	1 mL	63.8
H3-SC1b-70to80-82919	K1907934-035	8/29/19	8/29/19	20.493 g	1 mL	51.5
H3-SC1b-80to90-82919	K1907934-036	8/29/19	8/29/19	21.535 g	1 mL	57.7
H3-SC1b-90to100-82919	K1907934-037	8/29/19	8/29/19	20.794 g	1 mL	64.6
H3-SC1b-100to110-82919	K1907934-038	8/29/19	8/29/19	21.077 g	1 mL	65.1
D6-SC1b-20to30-82619	K1907934-041	8/26/19	8/29/19	21.316 g	1 mL	53.2
D6-SC1b-30to40-82619	K1907934-042	8/26/19	8/29/19	20.530 g	1 mL	54.1
D6-SC1b-40to50-82619	K1907934-043	8/26/19	8/29/19	21.436 g	1 mL	56.9
D6-SC1b-50to60-82619	K1907934-044	8/26/19	8/29/19	20.474 g	1 mL	60.5
D6-SC1b-60to70-82619	K1907934-045	8/26/19	8/29/19	20.952 g	1 mL	62.3
D6-SC1b-70to80-82619	K1907934-046	8/26/19	8/29/19	21.317 g	1 mL	66.0
D6-SC1b-80to90-82619	K1907934-047	8/26/19	8/29/19	20.204 g	1 mL	67.8
Lab Control Sample	KQ1912421-01LCS	NA	NA	10 g	1 mL	
Duplicate Lab Control Sample	KQ1912421-02DLCS	NA	NA	10 g	1 mL	
Method Blank	KQ1912421-03MB	NA	NA	21.5350 g	1 mL	

Prep Summary Report

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115
Sample Matrix: Soil

Organochlorine Pesticides by GC/MS/MS

Prep Method: EPA 3541 **Extraction Lot:** 343645
Analytical Method: ALS SOP **Extraction Date:** 09/03/19 15:36

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
D6-SC1b-90to100-82619	K1907934-048	8/26/19	8/29/19	21.330 g	1 mL	72.4
D6-SC1b-100to110-82619	K1907934-049	8/26/19	8/29/19	21.248 g	1 mL	71.2
D6-SC1b-110to120-82619	K1907934-050	8/26/19	8/29/19	20.155 g	1 mL	71.6
411-SC1b-50to60-82619	K1907934-052	8/26/19	8/29/19	20.852 g	1 mL	60.5
J5-SC1b-20to30-82719	K1907934-053	8/27/19	8/29/19	21.305 g	1 mL	51.4
J5-SC1b-30to40-82719	K1907934-054	8/27/19	8/29/19	21.816 g	1 mL	52.1
J5-SC1b-40to50-82719	K1907934-055	8/27/19	8/29/19	22.729 g	1 mL	55.2
J5-SC1b-50to60-82719	K1907934-056	8/27/19	8/29/19	22.032 g	1 mL	56.1
J5-SC1b-60to70-82719	K1907934-057	8/27/19	8/29/19	20.631 g	1 mL	56.8
J5-SC1b-70to80-82719	K1907934-058	8/27/19	8/29/19	20.422 g	1 mL	65.7
J5-SC1b-80to90-82719	K1907934-059	8/27/19	8/29/19	21.556 g	1 mL	70.7
J5-SC1b-90to100-82719	K1907934-060	8/27/19	8/29/19	20.563 g	1 mL	71.7
J5-SC1b-100to110-82719	K1907934-061	8/27/19	8/29/19	21.142 g	1 mL	71.0
J3-SC1b-20to30-82719	K1907934-064	8/27/19	8/29/19	20.061 g	1 mL	66.9
J3-SC1b-30to40-82719	K1907934-065	8/27/19	8/29/19	21.300 g	1 mL	59.9
J3-SC1b-40to50-82719	K1907934-066	8/27/19	8/29/19	20.763 g	1 mL	66.6
J3-SC1b-50to60-82719	K1907934-067	8/27/19	8/29/19	21.110 g	1 mL	74.5
J3-SC1b-60to70-82719	K1907934-068	8/27/19	8/29/19	20.239 g	1 mL	83.5
J3-SC1b-70to80-82719	K1907934-069	8/27/19	8/29/19	21.425 g	1 mL	81.8
J3-SC1b-80to90-82719	K1907934-070	8/27/19	8/29/19	20.812 g	1 mL	80.2
Lab Control Sample	KQ1912447-01LCS	NA	NA	20.0000 g	1 mL	
Duplicate Lab Control Sample	KQ1912447-02DLCS	NA	NA	20.0000 g	1 mL	
Method Blank	KQ1912447-03MB	NA	NA	22.7290 g	1 mL	

Prep Summary Report

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115
Sample Matrix: Soil

Organochlorine Pesticides by GC/MS/MS

Prep Method: EPA 3541 **Extraction Lot:** 343647
Analytical Method: ALS SOP **Extraction Date:** 09/03/19 15:36

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
J3-SC1b-90to100-82719	K1907934-071	8/27/19	8/29/19	20.630 g	1 mL	77.5
J3-SC1b-10to20-82719	K1907934-072	8/27/19	8/29/19	20.470 g	1 mL	82.4
412-SC1b-80to90-82719	K1907934-073	8/27/19	8/29/19	21.547 g	1 mL	80.5
L3-SC1b-20to30-82619	K1907934-074	8/26/19	8/29/19	20.306 g	1 mL	79.5
L3-SC1b-30to40-82619	K1907934-075	8/26/19	8/29/19	21.560 g	1 mL	80.5
Lab Control Sample	KQ1912444-01LCS	NA	NA	10 g	1 mL	
Duplicate Lab Control Sample	KQ1912444-02DLCS	NA	NA	10 g	1 mL	

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
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REVISED
2:23 pm, Oct 15, 2019

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 14:00
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	R4-SC1b-20to30-82819	**Units:**	ug/Kg
Lab Code:	K1907934-003	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**11**	0.90	0.12	1	09/10/19 10:04	9/4/19	
Acenaphthene	**7.4**	0.45	0.047	1	09/10/19 10:04	9/4/19	
Acenaphthylene	**9.3**	0.45	0.046	1	09/10/19 10:04	9/4/19	
Anthracene	**12**	0.45	0.038	1	09/10/19 10:04	9/4/19	
Benz(a)anthracene	**52**	0.45	0.038	1	09/10/19 10:04	9/4/19	
Benzo(a)pyrene	**86**	0.45	0.070	1	09/10/19 10:04	9/4/19	
Benzo(b)fluoranthene	**89**	0.45	0.066	1	09/10/19 10:04	9/4/19	
Benzo(g,h,i)perylene	**68**	0.45	0.095	1	09/10/19 10:04	9/4/19	
Benzo(k)fluoranthene	**30**	0.45	0.057	1	09/10/19 10:04	9/4/19	
Chrysene	**68**	0.45	0.055	1	09/10/19 10:04	9/4/19	
Dibenz(a,h)anthracene	**12**	0.45	0.086	1	09/10/19 10:04	9/4/19	
Dibenzofuran	**3.6**	0.45	0.045	1	09/10/19 10:04	9/4/19	
Fluoranthene	**83**	0.45	0.049	1	09/10/19 10:04	9/4/19	
Fluorene	**8.0**	0.45	0.052	1	09/10/19 10:04	9/4/19	
Indeno(1,2,3-cd)pyrene	**68**	0.45	0.096	1	09/10/19 10:04	9/4/19	
Naphthalene	**14**	0.90	0.15	1	09/10/19 10:04	9/4/19	
Phenanthrene	**51**	0.45	0.066	1	09/10/19 10:04	9/4/19	
Pyrene	**95**	0.45	0.050	1	09/10/19 10:04	9/4/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	66	23 - 110	09/10/19 10:04	
Fluorene-d10	56	26 - 102	09/10/19 10:04	
Terphenyl-d14	74	27 - 115	09/10/19 10:04	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 14:05
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	R4-SC1b-30to40-82819	**Units:**	ug/Kg
Lab Code:	K1907934-004	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**4.4**	0.87	0.12	1	09/10/19 10:43	9/4/19	
Acenaphthene	**6.0**	0.43	0.047	1	09/10/19 10:43	9/4/19	
Acenaphthylene	**3.6**	0.43	0.046	1	09/10/19 10:43	9/4/19	
Anthracene	**7.0**	0.43	0.038	1	09/10/19 10:43	9/4/19	
Benz(a)anthracene	**25**	0.43	0.038	1	09/10/19 10:43	9/4/19	
Benzo(a)pyrene	**35**	0.43	0.070	1	09/10/19 10:43	9/4/19	
Benzo(b)fluoranthene	**39**	0.43	0.066	1	09/10/19 10:43	9/4/19	
Benzo(g,h,i)perylene	**28**	0.43	0.095	1	09/10/19 10:43	9/4/19	
Benzo(k)fluoranthene	**14**	0.43	0.057	1	09/10/19 10:43	9/4/19	
Chrysene	**32**	0.43	0.055	1	09/10/19 10:43	9/4/19	
Dibenz(a,h)anthracene	**6.0**	0.43	0.086	1	09/10/19 10:43	9/4/19	
Dibenzofuran	**2.4**	0.43	0.045	1	09/10/19 10:43	9/4/19	
Fluoranthene	**53**	0.43	0.049	1	09/10/19 10:43	9/4/19	
Fluorene	**5.2**	0.43	0.052	1	09/10/19 10:43	9/4/19	
Indeno(1,2,3-cd)pyrene	**28**	0.43	0.096	1	09/10/19 10:43	9/4/19	
Naphthalene	**8.5**	0.87	0.15	1	09/10/19 10:43	9/4/19	
Phenanthrene	**35**	0.43	0.066	1	09/10/19 10:43	9/4/19	
Pyrene	**59**	0.43	0.050	1	09/10/19 10:43	9/4/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	66	23 - 110	09/10/19 10:43	
Fluorene-d10	58	26 - 102	09/10/19 10:43	
Terphenyl-d14	71	27 - 115	09/10/19 10:43	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 15:10
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	R4-SC1b-40to50-82819	**Units:**	ug/Kg
Lab Code:	K1907934-005	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**5.1**	0.92	0.12	1	09/10/19 11:23	9/4/19	
Acenaphthene	**13**	0.46	0.047	1	09/10/19 11:23	9/4/19	
Acenaphthylene	**5.5**	0.46	0.046	1	09/10/19 11:23	9/4/19	
Anthracene	**14**	0.46	0.038	1	09/10/19 11:23	9/4/19	
Benz(a)anthracene	**46**	0.46	0.038	1	09/10/19 11:23	9/4/19	
Benzo(a)pyrene	**53**	0.46	0.070	1	09/10/19 11:23	9/4/19	
Benzo(b)fluoranthene	**66**	0.46	0.066	1	09/10/19 11:23	9/4/19	
Benzo(g,h,i)perylene	**38**	0.46	0.095	1	09/10/19 11:23	9/4/19	
Benzo(k)fluoranthene	**22**	0.46	0.057	1	09/10/19 11:23	9/4/19	
Chrysene	**59**	0.46	0.055	1	09/10/19 11:23	9/4/19	
Dibenz(a,h)anthracene	**9.1**	0.46	0.086	1	09/10/19 11:23	9/4/19	
Dibenzofuran	**3.9**	0.46	0.045	1	09/10/19 11:23	9/4/19	
Fluoranthene	**91**	0.46	0.049	1	09/10/19 11:23	9/4/19	
Fluorene	**11**	0.46	0.052	1	09/10/19 11:23	9/4/19	
Indeno(1,2,3-cd)pyrene	**39**	0.46	0.096	1	09/10/19 11:23	9/4/19	
Naphthalene	**8.3**	0.92	0.15	1	09/10/19 11:23	9/4/19	
Phenanthrene	**59**	0.46	0.066	1	09/10/19 11:23	9/4/19	
Pyrene	**99**	0.46	0.050	1	09/10/19 11:23	9/4/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	72	23 - 110	09/10/19 11:23	
Fluorene-d10	66	26 - 102	09/10/19 11:23	
Terphenyl-d14	77	27 - 115	09/10/19 11:23	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 15:20
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	R4-SC1b-50to60-82819	**Units:**	ug/Kg
Lab Code:	K1907934-006	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**2.8**	0.89	0.12	1	09/10/19 12:03	9/4/19	
Acenaphthene	**3.8**	0.45	0.047	1	09/10/19 12:03	9/4/19	
Acenaphthylene	**3.3**	0.45	0.046	1	09/10/19 12:03	9/4/19	
Anthracene	**5.1**	0.45	0.038	1	09/10/19 12:03	9/4/19	
Benz(a)anthracene	**16**	0.45	0.038	1	09/10/19 12:03	9/4/19	
Benzo(a)pyrene	**23**	0.45	0.070	1	09/10/19 12:03	9/4/19	
Benzo(b)fluoranthene	**26**	0.45	0.066	1	09/10/19 12:03	9/4/19	
Benzo(g,h,i)perylene	**19**	0.45	0.095	1	09/10/19 12:03	9/4/19	
Benzo(k)fluoranthene	**8.4**	0.45	0.057	1	09/10/19 12:03	9/4/19	
Chrysene	**22**	0.45	0.055	1	09/10/19 12:03	9/4/19	
Dibenz(a,h)anthracene	**3.8**	0.45	0.086	1	09/10/19 12:03	9/4/19	
Dibenzofuran	**1.5**	0.45	0.045	1	09/10/19 12:03	9/4/19	
Fluoranthene	**35**	0.45	0.049	1	09/10/19 12:03	9/4/19	
Fluorene	**3.3**	0.45	0.052	1	09/10/19 12:03	9/4/19	
Indeno(1,2,3-cd)pyrene	**18**	0.45	0.096	1	09/10/19 12:03	9/4/19	
Naphthalene	**5.9**	0.89	0.15	1	09/10/19 12:03	9/4/19	
Phenanthrene	**22**	0.45	0.066	1	09/10/19 12:03	9/4/19	
Pyrene	**43**	0.45	0.050	1	09/10/19 12:03	9/4/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	88	23 - 110	09/10/19 12:03	
Fluorene-d10	77	26 - 102	09/10/19 12:03	
Terphenyl-d14	96	27 - 115	09/10/19 12:03	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 15:50
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	R4-SC1b-60to70-82819	**Units:**	ug/Kg
Lab Code:	K1907934-007	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**6.8**	1.8	0.24	2	09/10/19 12:42	9/4/19	
Acenaphthene	**9.4**	0.88	0.094	2	09/10/19 12:42	9/4/19	
Acenaphthylene	**7.9**	0.88	0.092	2	09/10/19 12:42	9/4/19	
Anthracene	**17**	0.88	0.076	2	09/10/19 12:42	9/4/19	
Benz(a)anthracene	**45**	0.88	0.076	2	09/10/19 12:42	9/4/19	
Benzo(a)pyrene	**55**	0.88	0.14	2	09/10/19 12:42	9/4/19	
Benzo(b)fluoranthene	**67**	0.88	0.14	2	09/10/19 12:42	9/4/19	
Benzo(g,h,i)perylene	**46**	0.88	0.19	2	09/10/19 12:42	9/4/19	
Benzo(k)fluoranthene	**22**	0.88	0.12	2	09/10/19 12:42	9/4/19	
Chrysene	**58**	0.88	0.11	2	09/10/19 12:42	9/4/19	
Dibenz(a,h)anthracene	**9.4**	0.88	0.18	2	09/10/19 12:42	9/4/19	
Dibenzofuran	**4.5**	0.88	0.090	2	09/10/19 12:42	9/4/19	
Fluoranthene	**110**	0.88	0.098	2	09/10/19 12:42	9/4/19	
Fluorene	**9.8**	0.88	0.11	2	09/10/19 12:42	9/4/19	
Indeno(1,2,3-cd)pyrene	**45**	0.88	0.20	2	09/10/19 12:42	9/4/19	
Naphthalene	**14**	1.8	0.30	2	09/10/19 12:42	9/4/19	
Phenanthrene	**71**	0.88	0.14	2	09/10/19 12:42	9/4/19	
Pyrene	**120**	0.88	0.10	2	09/10/19 12:42	9/4/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	83	23 - 110	09/10/19 12:42	
Fluorene-d10	71	26 - 102	09/10/19 12:42	
Terphenyl-d14	86	27 - 115	09/10/19 12:42	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 15:55
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	R4-SC1b-70to80-82819	**Units:**	ug/Kg
Lab Code:	K1907934-008	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**9.3**	1.7	0.24	2	09/10/19 13:22	9/4/19	
Acenaphthene	**7.7**	0.85	0.094	2	09/10/19 13:22	9/4/19	
Acenaphthylene	**8.7**	0.85	0.092	2	09/10/19 13:22	9/4/19	
Anthracene	**14**	0.85	0.076	2	09/10/19 13:22	9/4/19	
Benz(a)anthracene	**40**	0.85	0.076	2	09/10/19 13:22	9/4/19	
Benzo(a)pyrene	**49**	0.85	0.14	2	09/10/19 13:22	9/4/19	
Benzo(b)fluoranthene	**56**	0.85	0.14	2	09/10/19 13:22	9/4/19	
Benzo(g,h,i)perylene	**40**	0.85	0.19	2	09/10/19 13:22	9/4/19	
Benzo(k)fluoranthene	**20**	0.85	0.12	2	09/10/19 13:22	9/4/19	
Chrysene	**52**	0.85	0.11	2	09/10/19 13:22	9/4/19	
Dibenz(a,h)anthracene	**8.3**	0.85	0.18	2	09/10/19 13:22	9/4/19	
Dibenzofuran	**4.0**	0.85	0.090	2	09/10/19 13:22	9/4/19	
Fluoranthene	**87**	0.85	0.098	2	09/10/19 13:22	9/4/19	
Fluorene	**8.6**	0.85	0.11	2	09/10/19 13:22	9/4/19	
Indeno(1,2,3-cd)pyrene	**38**	0.85	0.20	2	09/10/19 13:22	9/4/19	
Naphthalene	**17**	1.7	0.30	2	09/10/19 13:22	9/4/19	
Phenanthrene	**59**	0.85	0.14	2	09/10/19 13:22	9/4/19	
Pyrene	**99**	0.85	0.10	2	09/10/19 13:22	9/4/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	66	23 - 110	09/10/19 13:22	
Fluorene-d10	60	26 - 102	09/10/19 13:22	
Terphenyl-d14	71	27 - 115	09/10/19 13:22	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 16:30
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	R4-SC1b-80to90-82819	**Units:**	ug/Kg
Lab Code:	K1907934-009	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**14**	1.8	0.24	2	09/10/19 09:24	9/4/19	
Acenaphthene	**10**	0.90	0.094	2	09/10/19 09:24	9/4/19	
Acenaphthylene	**15**	0.90	0.092	2	09/10/19 09:24	9/4/19	
Anthracene	**20**	0.90	0.076	2	09/10/19 09:24	9/4/19	
Benz(a)anthracene	**34**	0.90	0.076	2	09/10/19 09:24	9/4/19	
Benzo(a)pyrene	**51**	0.90	0.14	2	09/10/19 09:24	9/4/19	
Benzo(b)fluoranthene	**54**	0.90	0.14	2	09/10/19 09:24	9/4/19	
Benzo(g,h,i)perylene	**52**	0.90	0.19	2	09/10/19 09:24	9/4/19	
Benzo(k)fluoranthene	**18**	0.90	0.12	2	09/10/19 09:24	9/4/19	
Chrysene	**46**	0.90	0.11	2	09/10/19 09:24	9/4/19	
Dibenz(a,h)anthracene	**7.4**	0.90	0.18	2	09/10/19 09:24	9/4/19	
Dibenzofuran	**5.7**	0.90	0.090	2	09/10/19 09:24	9/4/19	
Fluoranthene	**96**	0.90	0.098	2	09/10/19 09:24	9/4/19	
Fluorene	**11**	0.90	0.11	2	09/10/19 09:24	9/4/19	
Indeno(1,2,3-cd)pyrene	**45**	0.90	0.20	2	09/10/19 09:24	9/4/19	
Naphthalene	**30**	1.8	0.30	2	09/10/19 09:24	9/4/19	
Phenanthrene	**75**	0.90	0.14	2	09/10/19 09:24	9/4/19	
Pyrene	**120**	0.90	0.10	2	09/10/19 09:24	9/4/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	85	23 - 110	09/10/19 09:24	
Fluorene-d10	77	26 - 102	09/10/19 09:24	
Terphenyl-d14	91	27 - 115	09/10/19 09:24	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 16:40
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	R4-SC1b-90to100-82819	**Units:**	ug/Kg
Lab Code:	K1907934-010	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**15**	1.7	0.24	2	09/10/19 14:01	9/4/19	
Acenaphthene	**9.6**	0.87	0.094	2	09/10/19 14:01	9/4/19	
Acenaphthylene	**13**	0.87	0.092	2	09/10/19 14:01	9/4/19	
Anthracene	**17**	0.87	0.076	2	09/10/19 14:01	9/4/19	
Benz(a)anthracene	**25**	0.87	0.076	2	09/10/19 14:01	9/4/19	
Benzo(a)pyrene	**35**	0.87	0.14	2	09/10/19 14:01	9/4/19	
Benzo(b)fluoranthene	**36**	0.87	0.14	2	09/10/19 14:01	9/4/19	
Benzo(g,h,i)perylene	**33**	0.87	0.19	2	09/10/19 14:01	9/4/19	
Benzo(k)fluoranthene	**12**	0.87	0.12	2	09/10/19 14:01	9/4/19	
Chrysene	**34**	0.87	0.11	2	09/10/19 14:01	9/4/19	
Dibenz(a,h)anthracene	**4.8**	0.87	0.18	2	09/10/19 14:01	9/4/19	
Dibenzofuran	**5.5**	0.87	0.090	2	09/10/19 14:01	9/4/19	
Fluoranthene	**80**	0.87	0.098	2	09/10/19 14:01	9/4/19	
Fluorene	**11**	0.87	0.11	2	09/10/19 14:01	9/4/19	
Indeno(1,2,3-cd)pyrene	**30**	0.87	0.20	2	09/10/19 14:01	9/4/19	
Naphthalene	**25**	1.7	0.30	2	09/10/19 14:01	9/4/19	
Phenanthrene	**72**	0.87	0.14	2	09/10/19 14:01	9/4/19	
Pyrene	**95**	0.87	0.10	2	09/10/19 14:01	9/4/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	73	23 - 110	09/10/19 14:01	
Fluorene-d10	64	26 - 102	09/10/19 14:01	
Terphenyl-d14	78	27 - 115	09/10/19 14:01	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 17:00
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	R4-SC1b-100to110-82819	**Units:**	ug/Kg
Lab Code:	K1907934-012	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**18**	1.8	0.24	2	09/10/19 14:41	9/4/19	
Acenaphthene	**11**	0.91	0.094	2	09/10/19 14:41	9/4/19	
Acenaphthylene	**18**	0.91	0.092	2	09/10/19 14:41	9/4/19	
Anthracene	**22**	0.91	0.076	2	09/10/19 14:41	9/4/19	
Benz(a)anthracene	**30**	0.91	0.076	2	09/10/19 14:41	9/4/19	
Benzo(a)pyrene	**47**	0.91	0.14	2	09/10/19 14:41	9/4/19	
Benzo(b)fluoranthene	**48**	0.91	0.14	2	09/10/19 14:41	9/4/19	
Benzo(g,h,i)perylene	**47**	0.91	0.19	2	09/10/19 14:41	9/4/19	
Benzo(k)fluoranthene	**15**	0.91	0.12	2	09/10/19 14:41	9/4/19	
Chrysene	**41**	0.91	0.11	2	09/10/19 14:41	9/4/19	
Dibenz(a,h)anthracene	**6.4**	0.91	0.18	2	09/10/19 14:41	9/4/19	
Dibenzofuran	**6.4**	0.91	0.090	2	09/10/19 14:41	9/4/19	
Fluoranthene	**100**	0.91	0.098	2	09/10/19 14:41	9/4/19	
Fluorene	**13**	0.91	0.11	2	09/10/19 14:41	9/4/19	
Indeno(1,2,3-cd)pyrene	**40**	0.91	0.20	2	09/10/19 14:41	9/4/19	
Naphthalene	**34**	1.8	0.30	2	09/10/19 14:41	9/4/19	
Phenanthrene	**83**	0.91	0.14	2	09/10/19 14:41	9/4/19	
Pyrene	**120**	0.91	0.10	2	09/10/19 14:41	9/4/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	70	23 - 110	09/10/19 14:41	
Fluorene-d10	63	26 - 102	09/10/19 14:41	
Terphenyl-d14	75	27 - 115	09/10/19 14:41	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 17:10
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	R4-SC1b-110to120-82819	**Units:**	ug/Kg
Lab Code:	K1907934-013	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**15**	0.89	0.12	1	09/10/19 15:20	9/4/19	
Acenaphthene	**9.3**	0.45	0.047	1	09/10/19 15:20	9/4/19	
Acenaphthylene	**15**	0.45	0.046	1	09/10/19 15:20	9/4/19	
Anthracene	**16**	0.45	0.038	1	09/10/19 15:20	9/4/19	
Benz(a)anthracene	**20**	0.45	0.038	1	09/10/19 15:20	9/4/19	
Benzo(a)pyrene	**30**	0.45	0.070	1	09/10/19 15:20	9/4/19	
Benzo(b)fluoranthene	**31**	0.45	0.066	1	09/10/19 15:20	9/4/19	
Benzo(g,h,i)perylene	**30**	0.45	0.095	1	09/10/19 15:20	9/4/19	
Benzo(k)fluoranthene	**10**	0.45	0.057	1	09/10/19 15:20	9/4/19	
Chrysene	**27**	0.45	0.055	1	09/10/19 15:20	9/4/19	
Dibenz(a,h)anthracene	**3.8**	0.45	0.086	1	09/10/19 15:20	9/4/19	
Dibenzofuran	**5.6**	0.45	0.045	1	09/10/19 15:20	9/4/19	
Fluoranthene	**77**	0.45	0.049	1	09/10/19 15:20	9/4/19	
Fluorene	**11**	0.45	0.052	1	09/10/19 15:20	9/4/19	
Indeno(1,2,3-cd)pyrene	**26**	0.45	0.096	1	09/10/19 15:20	9/4/19	
Naphthalene	**38**	0.89	0.15	1	09/10/19 15:20	9/4/19	
Phenanthrene	**67**	0.45	0.066	1	09/10/19 15:20	9/4/19	
Pyrene	**88**	0.45	0.050	1	09/10/19 15:20	9/4/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	64	23 - 110	09/10/19 15:20	
Fluorene-d10	55	26 - 102	09/10/19 15:20	
Terphenyl-d14	69	27 - 115	09/10/19 15:20	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 18:20
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	R4-SC1b-120to130-82819	**Units:**	ug/Kg
Lab Code:	K1907934-014	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**6.8**	0.87	0.12	1	09/10/19 16:00	9/4/19	
Acenaphthene	**4.8**	0.44	0.047	1	09/10/19 16:00	9/4/19	
Acenaphthylene	**8.8**	0.44	0.046	1	09/10/19 16:00	9/4/19	
Anthracene	**11**	0.44	0.038	1	09/10/19 16:00	9/4/19	
Benz(a)anthracene	**17**	0.44	0.038	1	09/10/19 16:00	9/4/19	
Benzo(a)pyrene	**28**	0.44	0.070	1	09/10/19 16:00	9/4/19	
Benzo(b)fluoranthene	**30**	0.44	0.066	1	09/10/19 16:00	9/4/19	
Benzo(g,h,i)perylene	**30**	0.44	0.095	1	09/10/19 16:00	9/4/19	
Benzo(k)fluoranthene	**9.2**	0.44	0.057	1	09/10/19 16:00	9/4/19	
Chrysene	**25**	0.44	0.055	1	09/10/19 16:00	9/4/19	
Dibenz(a,h)anthracene	**3.9**	0.44	0.086	1	09/10/19 16:00	9/4/19	
Dibenzofuran	**3.3**	0.44	0.045	1	09/10/19 16:00	9/4/19	
Fluoranthene	**55**	0.44	0.049	1	09/10/19 16:00	9/4/19	
Fluorene	**5.7**	0.44	0.052	1	09/10/19 16:00	9/4/19	
Indeno(1,2,3-cd)pyrene	**26**	0.44	0.096	1	09/10/19 16:00	9/4/19	
Naphthalene	**17**	0.87	0.15	1	09/10/19 16:00	9/4/19	
Phenanthrene	**42**	0.44	0.066	1	09/10/19 16:00	9/4/19	
Pyrene	**67**	0.44	0.050	1	09/10/19 16:00	9/4/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	77	23 - 110	09/10/19 16:00	
Fluorene-d10	69	26 - 102	09/10/19 16:00	
Terphenyl-d14	84	27 - 115	09/10/19 16:00	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 10:45
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	413-SC1b-40to50-82819	**Units:**	ug/Kg
Lab Code:	K1907934-015	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**2.8**	0.88	0.12	1	09/10/19 16:40	9/4/19	
Acenaphthene	**3.9**	0.44	0.047	1	09/10/19 16:40	9/4/19	
Acenaphthylene	**2.5**	0.44	0.046	1	09/10/19 16:40	9/4/19	
Anthracene	**5.0**	0.44	0.038	1	09/10/19 16:40	9/4/19	
Benz(a)anthracene	**23**	0.44	0.038	1	09/10/19 16:40	9/4/19	
Benzo(a)pyrene	**32**	0.44	0.070	1	09/10/19 16:40	9/4/19	
Benzo(b)fluoranthene	**39**	0.44	0.066	1	09/10/19 16:40	9/4/19	
Benzo(g,h,i)perylene	**22**	0.44	0.095	1	09/10/19 16:40	9/4/19	
Benzo(k)fluoranthene	**14**	0.44	0.057	1	09/10/19 16:40	9/4/19	
Chrysene	**28**	0.44	0.055	1	09/10/19 16:40	9/4/19	
Dibenz(a,h)anthracene	**5.8**	0.44	0.086	1	09/10/19 16:40	9/4/19	
Dibenzofuran	**1.5**	0.44	0.045	1	09/10/19 16:40	9/4/19	
Fluoranthene	**41**	0.44	0.049	1	09/10/19 16:40	9/4/19	
Fluorene	**3.5**	0.44	0.052	1	09/10/19 16:40	9/4/19	
Indeno(1,2,3-cd)pyrene	**24**	0.44	0.096	1	09/10/19 16:40	9/4/19	
Naphthalene	**4.1**	0.88	0.15	1	09/10/19 16:40	9/4/19	
Phenanthrene	**21**	0.44	0.066	1	09/10/19 16:40	9/4/19	
Pyrene	**43**	0.44	0.050	1	09/10/19 16:40	9/4/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	67	23 - 110	09/10/19 16:40	
Fluorene-d10	56	26 - 102	09/10/19 16:40	
Terphenyl-d14	71	27 - 115	09/10/19 16:40	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 18:25
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	R4-SC1b-130to140-82819	**Units:**	ug/Kg
Lab Code:	K1907934-016	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**1.6**	0.76	0.12	1	09/10/19 17:19	9/4/19	
Acenaphthene	**0.70**	0.38	0.047	1	09/10/19 17:19	9/4/19	
Acenaphthylene	**3.0**	0.38	0.046	1	09/10/19 17:19	9/4/19	
Anthracene	**2.6**	0.38	0.038	1	09/10/19 17:19	9/4/19	
Benz(a)anthracene	**7.3**	0.38	0.038	1	09/10/19 17:19	9/4/19	
Benzo(a)pyrene	**13**	0.38	0.070	1	09/10/19 17:19	9/4/19	
Benzo(b)fluoranthene	**14**	0.38	0.066	1	09/10/19 17:19	9/4/19	
Benzo(g,h,i)perylene	**14**	0.38	0.095	1	09/10/19 17:19	9/4/19	
Benzo(k)fluoranthene	**4.2**	0.38	0.057	1	09/10/19 17:19	9/4/19	
Chrysene	**10**	0.38	0.055	1	09/10/19 17:19	9/4/19	
Dibenz(a,h)anthracene	**1.7**	0.38	0.086	1	09/10/19 17:19	9/4/19	
Dibenzofuran	**0.57**	0.38	0.045	1	09/10/19 17:19	9/4/19	
Fluoranthene	**15**	0.38	0.049	1	09/10/19 17:19	9/4/19	
Fluorene	**0.89**	0.38	0.052	1	09/10/19 17:19	9/4/19	
Indeno(1,2,3-cd)pyrene	**13**	0.38	0.096	1	09/10/19 17:19	9/4/19	
Naphthalene	**3.3**	0.76	0.15	1	09/10/19 17:19	9/4/19	
Phenanthrene	**8.3**	0.38	0.066	1	09/10/19 17:19	9/4/19	
Pyrene	**24**	0.38	0.050	1	09/10/19 17:19	9/4/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	75	23 - 110	09/10/19 17:19	
Fluorene-d10	64	26 - 102	09/10/19 17:19	
Terphenyl-d14	82	27 - 115	09/10/19 17:19	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 18:30
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	R4-SC1b-140to150-82819	**Units:**	ug/Kg
Lab Code:	K1907934-017	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**0.73**	0.63	0.12	1	09/10/19 17:59	9/4/19	
Acenaphthene	**0.56**	0.31	0.047	1	09/10/19 17:59	9/4/19	
Acenaphthylene	**0.94**	0.31	0.046	1	09/10/19 17:59	9/4/19	
Anthracene	**1.1**	0.31	0.038	1	09/10/19 17:59	9/4/19	
Benz(a)anthracene	**2.1**	0.31	0.038	1	09/10/19 17:59	9/4/19	
Benzo(a)pyrene	**3.5**	0.31	0.070	1	09/10/19 17:59	9/4/19	
Benzo(b)fluoranthene	**3.9**	0.31	0.066	1	09/10/19 17:59	9/4/19	
Benzo(g,h,i)perylene	**4.2**	0.31	0.095	1	09/10/19 17:59	9/4/19	
Benzo(k)fluoranthene	**1.3**	0.31	0.057	1	09/10/19 17:59	9/4/19	
Chrysene	**3.1**	0.31	0.055	1	09/10/19 17:59	9/4/19	
Dibenz(a,h)anthracene	**0.54**	0.31	0.086	1	09/10/19 17:59	9/4/19	
Dibenzofuran	**0.33**	0.31	0.045	1	09/10/19 17:59	9/4/19	
Fluoranthene	**4.8**	0.31	0.049	1	09/10/19 17:59	9/4/19	
Fluorene	**0.53**	0.31	0.052	1	09/10/19 17:59	9/4/19	
Indeno(1,2,3-cd)pyrene	**3.6**	0.31	0.096	1	09/10/19 17:59	9/4/19	
Naphthalene	**1.6**	0.63	0.15	1	09/10/19 17:59	9/4/19	
Phenanthrene	**3.7**	0.31	0.066	1	09/10/19 17:59	9/4/19	
Pyrene	**8.2**	0.31	0.050	1	09/10/19 17:59	9/4/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	75	23 - 110	09/10/19 17:59	
Fluorene-d10	62	26 - 102	09/10/19 17:59	
Terphenyl-d14	80	27 - 115	09/10/19 17:59	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 09:20
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J6-SC1b-20to30-82819	**Units:**	ug/Kg
Lab Code:	K1907934-018	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**7.1**	0.92	0.12	1	09/10/19 23:54	9/4/19	
Acenaphthene	**7.8**	0.46	0.047	1	09/10/19 23:54	9/4/19	
Acenaphthylene	**6.2**	0.46	0.046	1	09/10/19 23:54	9/4/19	
Anthracene	**7.6**	0.46	0.038	1	09/10/19 23:54	9/4/19	
Benz(a)anthracene	**24**	0.46	0.038	1	09/10/19 23:54	9/4/19	
Benzo(a)pyrene	**34**	0.46	0.070	1	09/10/19 23:54	9/4/19	
Benzo(b)fluoranthene	**37**	0.46	0.066	1	09/10/19 23:54	9/4/19	
Benzo(g,h,i)perylene	**27**	0.46	0.095	1	09/10/19 23:54	9/4/19	
Benzo(k)fluoranthene	**13**	0.46	0.057	1	09/10/19 23:54	9/4/19	
Chrysene	**29**	0.46	0.055	1	09/10/19 23:54	9/4/19	
Dibenz(a,h)anthracene	**5.1**	0.46	0.086	1	09/10/19 23:54	9/4/19	
Dibenzofuran	**3.2**	0.46	0.045	1	09/10/19 23:54	9/4/19	
Fluoranthene	**52**	0.46	0.049	1	09/10/19 23:54	9/4/19	
Fluorene	**6.1**	0.46	0.052	1	09/10/19 23:54	9/4/19	
Indeno(1,2,3-cd)pyrene	**27**	0.46	0.096	1	09/10/19 23:54	9/4/19	
Naphthalene	**14**	0.92	0.15	1	09/10/19 23:54	9/4/19	
Phenanthrene	**33**	0.46	0.066	1	09/10/19 23:54	9/4/19	
Pyrene	**58**	0.46	0.050	1	09/10/19 23:54	9/4/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	82	23 - 110	09/10/19 23:54	
Fluorene-d10	69	26 - 102	09/10/19 23:54	
Terphenyl-d14	90	27 - 115	09/10/19 23:54	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 09:25
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J6-SC1b-30to40-82819	**Units:**	ug/Kg
Lab Code:	K1907934-019	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**4.5**	0.87	0.12	1	09/11/19 00:34	9/4/19	
Acenaphthene	**5.5**	0.43	0.047	1	09/11/19 00:34	9/4/19	
Acenaphthylene	**3.6**	0.43	0.046	1	09/11/19 00:34	9/4/19	
Anthracene	**7.6**	0.43	0.038	1	09/11/19 00:34	9/4/19	
Benz(a)anthracene	**29**	0.43	0.038	1	09/11/19 00:34	9/4/19	
Benzo(a)pyrene	**38**	0.43	0.070	1	09/11/19 00:34	9/4/19	
Benzo(b)fluoranthene	**47**	0.43	0.066	1	09/11/19 00:34	9/4/19	
Benzo(g,h,i)perylene	**28**	0.43	0.095	1	09/11/19 00:34	9/4/19	
Benzo(k)fluoranthene	**16**	0.43	0.057	1	09/11/19 00:34	9/4/19	
Chrysene	**36**	0.43	0.055	1	09/11/19 00:34	9/4/19	
Dibenz(a,h)anthracene	**6.6**	0.43	0.086	1	09/11/19 00:34	9/4/19	
Dibenzofuran	**2.4**	0.43	0.045	1	09/11/19 00:34	9/4/19	
Fluoranthene	**60**	0.43	0.049	1	09/11/19 00:34	9/4/19	
Fluorene	**5.1**	0.43	0.052	1	09/11/19 00:34	9/4/19	
Indeno(1,2,3-cd)pyrene	**30**	0.43	0.096	1	09/11/19 00:34	9/4/19	
Naphthalene	**8.3**	0.87	0.15	1	09/11/19 00:34	9/4/19	
Phenanthrene	**33**	0.43	0.066	1	09/11/19 00:34	9/4/19	
Pyrene	**60**	0.43	0.050	1	09/11/19 00:34	9/4/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	76	23 - 110	09/11/19 00:34	
Fluorene-d10	64	26 - 102	09/11/19 00:34	
Terphenyl-d14	84	27 - 115	09/11/19 00:34	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 10:25
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J6-SC1b-40to50-82819	**Units:**	ug/Kg
Lab Code:	K1907934-020	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**4.2**	0.88	0.12	1	09/11/19 01:13	9/4/19	
Acenaphthene	**5.5**	0.44	0.047	1	09/11/19 01:13	9/4/19	
Acenaphthylene	**3.1**	0.44	0.046	1	09/11/19 01:13	9/4/19	
Anthracene	**7.5**	0.44	0.038	1	09/11/19 01:13	9/4/19	
Benz(a)anthracene	**32**	0.44	0.038	1	09/11/19 01:13	9/4/19	
Benzo(a)pyrene	**41**	0.44	0.070	1	09/11/19 01:13	9/4/19	
Benzo(b)fluoranthene	**47**	0.44	0.066	1	09/11/19 01:13	9/4/19	
Benzo(g,h,i)perylene	**28**	0.44	0.095	1	09/11/19 01:13	9/4/19	
Benzo(k)fluoranthene	**18**	0.44	0.057	1	09/11/19 01:13	9/4/19	
Chrysene	**40**	0.44	0.055	1	09/11/19 01:13	9/4/19	
Dibenz(a,h)anthracene	**6.8**	0.44	0.086	1	09/11/19 01:13	9/4/19	
Dibenzofuran	**2.2**	0.44	0.045	1	09/11/19 01:13	9/4/19	
Fluoranthene	**63**	0.44	0.049	1	09/11/19 01:13	9/4/19	
Fluorene	**4.9**	0.44	0.052	1	09/11/19 01:13	9/4/19	
Indeno(1,2,3-cd)pyrene	**30**	0.44	0.096	1	09/11/19 01:13	9/4/19	
Naphthalene	**6.2**	0.88	0.15	1	09/11/19 01:13	9/4/19	
Phenanthrene	**32**	0.44	0.066	1	09/11/19 01:13	9/4/19	
Pyrene	**66**	0.44	0.050	1	09/11/19 01:13	9/4/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	81	23 - 110	09/11/19 01:13	
Fluorene-d10	67	26 - 102	09/11/19 01:13	
Terphenyl-d14	87	27 - 115	09/11/19 01:13	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 10:30
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J6-SC1b-50to60-82819	**Units:**	ug/Kg
Lab Code:	K1907934-021	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**3.9**	0.83	0.12	1	09/10/19 21:56	9/4/19	
Acenaphthene	**6.9**	0.41	0.047	1	09/10/19 21:56	9/4/19	
Acenaphthylene	**4.6**	0.41	0.046	1	09/10/19 21:56	9/4/19	
Anthracene	**9.9**	0.41	0.038	1	09/10/19 21:56	9/4/19	
Benz(a)anthracene	**35**	0.41	0.038	1	09/10/19 21:56	9/4/19	
Benzo(a)pyrene	**43**	0.41	0.070	1	09/10/19 21:56	9/4/19	
Benzo(b)fluoranthene	**56**	0.41	0.066	1	09/10/19 21:56	9/4/19	
Benzo(g,h,i)perylene	**32**	0.41	0.095	1	09/10/19 21:56	9/4/19	
Benzo(k)fluoranthene	**19**	0.41	0.057	1	09/10/19 21:56	9/4/19	
Chrysene	**48**	0.41	0.055	1	09/10/19 21:56	9/4/19	
Dibenz(a,h)anthracene	**8.3**	0.41	0.086	1	09/10/19 21:56	9/4/19	
Dibenzofuran	**2.1**	0.41	0.045	1	09/10/19 21:56	9/4/19	
Fluoranthene	**73**	0.41	0.049	1	09/10/19 21:56	9/4/19	
Fluorene	**4.3**	0.41	0.052	1	09/10/19 21:56	9/4/19	
Indeno(1,2,3-cd)pyrene	**35**	0.41	0.096	1	09/10/19 21:56	9/4/19	
Naphthalene	**5.1**	0.83	0.15	1	09/10/19 21:56	9/4/19	
Phenanthrene	**48**	0.41	0.066	1	09/10/19 21:56	9/4/19	
Pyrene	**85**	0.41	0.050	1	09/10/19 21:56	9/4/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	72	23 - 110	09/10/19 21:56	
Fluorene-d10	64	26 - 102	09/10/19 21:56	
Terphenyl-d14	82	27 - 115	09/10/19 21:56	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 10:35
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J6-SC1b-60to70-82819	**Units:**	ug/Kg
Lab Code:	K1907934-022	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**5.5**	0.76	0.12	1	09/10/19 22:35	9/4/19	
Acenaphthene	**7.3**	0.38	0.047	1	09/10/19 22:35	9/4/19	
Acenaphthylene	**4.1**	0.38	0.046	1	09/10/19 22:35	9/4/19	
Anthracene	**10**	0.38	0.038	1	09/10/19 22:35	9/4/19	
Benz(a)anthracene	**33**	0.38	0.038	1	09/10/19 22:35	9/4/19	
Benzo(a)pyrene	**39**	0.38	0.070	1	09/10/19 22:35	9/4/19	
Benzo(b)fluoranthene	**48**	0.38	0.066	1	09/10/19 22:35	9/4/19	
Benzo(g,h,i)perylene	**31**	0.38	0.095	1	09/10/19 22:35	9/4/19	
Benzo(k)fluoranthene	**17**	0.38	0.057	1	09/10/19 22:35	9/4/19	
Chrysene	**43**	0.38	0.055	1	09/10/19 22:35	9/4/19	
Dibenz(a,h)anthracene	**6.9**	0.38	0.086	1	09/10/19 22:35	9/4/19	
Dibenzofuran	**2.4**	0.38	0.045	1	09/10/19 22:35	9/4/19	
Fluoranthene	**67**	0.38	0.049	1	09/10/19 22:35	9/4/19	
Fluorene	**4.0**	0.38	0.052	1	09/10/19 22:35	9/4/19	
Indeno(1,2,3-cd)pyrene	**31**	0.38	0.096	1	09/10/19 22:35	9/4/19	
Naphthalene	**9.0**	0.76	0.15	1	09/10/19 22:35	9/4/19	
Phenanthrene	**53**	0.38	0.066	1	09/10/19 22:35	9/4/19	
Pyrene	**81**	0.38	0.050	1	09/10/19 22:35	9/4/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	78	23 - 110	09/10/19 22:35	
Fluorene-d10	70	26 - 102	09/10/19 22:35	
Terphenyl-d14	87	27 - 115	09/10/19 22:35	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 10:40
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J6-SC1b-70to80-82819	**Units:**	ug/Kg
Lab Code:	K1907934-023	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**1.1**	0.69	0.12	1	09/10/19 23:15	9/4/19	
Acenaphthene	**1.1**	0.35	0.047	1	09/10/19 23:15	9/4/19	
Acenaphthylene	**0.87**	0.35	0.046	1	09/10/19 23:15	9/4/19	
Anthracene	**1.7**	0.35	0.038	1	09/10/19 23:15	9/4/19	
Benz(a)anthracene	**7.1**	0.35	0.038	1	09/10/19 23:15	9/4/19	
Benzo(a)pyrene	**8.5**	0.35	0.070	1	09/10/19 23:15	9/4/19	
Benzo(b)fluoranthene	**9.2**	0.35	0.066	1	09/10/19 23:15	9/4/19	
Benzo(g,h,i)perylene	**6.5**	0.35	0.095	1	09/10/19 23:15	9/4/19	
Benzo(k)fluoranthene	**3.1**	0.35	0.057	1	09/10/19 23:15	9/4/19	
Chrysene	**9.2**	0.35	0.055	1	09/10/19 23:15	9/4/19	
Dibenz(a,h)anthracene	**1.5**	0.35	0.086	1	09/10/19 23:15	9/4/19	
Dibenzofuran	**0.51**	0.35	0.045	1	09/10/19 23:15	9/4/19	
Fluoranthene	**9.5**	0.35	0.049	1	09/10/19 23:15	9/4/19	
Fluorene	**0.83**	0.35	0.052	1	09/10/19 23:15	9/4/19	
Indeno(1,2,3-cd)pyrene	**6.6**	0.35	0.096	1	09/10/19 23:15	9/4/19	
Naphthalene	**2.1**	0.69	0.15	1	09/10/19 23:15	9/4/19	
Phenanthrene	**9.7**	0.35	0.066	1	09/10/19 23:15	9/4/19	
Pyrene	**17**	0.35	0.050	1	09/10/19 23:15	9/4/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	92	23 - 110	09/10/19 23:15	
Fluorene-d10	77	26 - 102	09/10/19 23:15	
Terphenyl-d14	100	27 - 115	09/10/19 23:15	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 11:55
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J6-SC1b-80to90-82819	**Units:**	ug/Kg
Lab Code:	K1907934-024	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**0.23 J**	0.67	0.12	1	09/11/19 01:53	9/5/19	*
Acenaphthene	**0.18 J**	0.34	0.047	1	09/11/19 01:53	9/5/19	
Acenaphthylene	**0.12 J**	0.34	0.046	1	09/11/19 01:53	9/5/19	
Anthracene	**0.35**	0.34	0.038	1	09/11/19 01:53	9/5/19	
Benz(a)anthracene	**1.5**	0.34	0.038	1	09/11/19 01:53	9/5/19	*
Benzo(a)pyrene	**1.8**	0.34	0.070	1	09/11/19 01:53	9/5/19	
Benzo(b)fluoranthene	**1.9**	0.34	0.066	1	09/11/19 01:53	9/5/19	
Benzo(g,h,i)perylene	**1.4**	0.34	0.095	1	09/11/19 01:53	9/5/19	
Benzo(k)fluoranthene	**0.67**	0.34	0.057	1	09/11/19 01:53	9/5/19	*
Chrysene	**2.1**	0.34	0.055	1	09/11/19 01:53	9/5/19	*
Dibenz(a,h)anthracene	**0.35**	0.34	0.086	1	09/11/19 01:53	9/5/19	
Dibenzofuran	**0.11 J**	0.34	0.045	1	09/11/19 01:53	9/5/19	
Fluoranthene	**2.2**	0.34	0.049	1	09/11/19 01:53	9/5/19	
Fluorene	**0.19 J**	0.34	0.052	1	09/11/19 01:53	9/5/19	
Indeno(1,2,3-cd)pyrene	**1.3**	0.34	0.096	1	09/11/19 01:53	9/5/19	
Naphthalene	**0.39 J**	0.67	0.15	1	09/11/19 01:53	9/5/19	
Phenanthrene	**2.2**	0.34	0.066	1	09/11/19 01:53	9/5/19	
Pyrene	**3.7**	0.34	0.050	1	09/11/19 01:53	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	72	23 - 110	09/11/19 01:53	
Fluorene-d10	62	26 - 102	09/11/19 01:53	
Terphenyl-d14	80	27 - 115	09/11/19 01:53	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 12:00
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J6-SC1b-90to100-82819	**Units:**	ug/Kg
Lab Code:	K1907934-025	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	ND	U	0.71	0.12	1	09/11/19 02:32	9/5/19	*
Acenaphthene	ND	U	0.36	0.047	1	09/11/19 02:32	9/5/19	
Acenaphthylene	ND	U	0.36	0.046	1	09/11/19 02:32	9/5/19	
Anthracene	ND	U	0.36	0.038	1	09/11/19 02:32	9/5/19	
Benz(a)anthracene	**0.12**	**J**	0.36	0.038	1	09/11/19 02:32	9/5/19	*
Benzo(a)pyrene	**0.10**	**J**	0.36	0.070	1	09/11/19 02:32	9/5/19	
Benzo(b)fluoranthene	**0.22**	**J**	0.36	0.066	1	09/11/19 02:32	9/5/19	
Benzo(g,h,i)perylene	**0.12**	**J**	0.36	0.095	1	09/11/19 02:32	9/5/19	
Benzo(k)fluoranthene	ND	U	0.36	0.057	1	09/11/19 02:32	9/5/19	*
Chrysene	**0.11**	**J**	0.36	0.055	1	09/11/19 02:32	9/5/19	*
Dibenz(a,h)anthracene	ND	U	0.36	0.086	1	09/11/19 02:32	9/5/19	
Dibenzofuran	**0.056**	**J**	0.36	0.045	1	09/11/19 02:32	9/5/19	
Fluoranthene	**0.13**	**J**	0.36	0.049	1	09/11/19 02:32	9/5/19	
Fluorene	**0.058**	**J**	0.36	0.052	1	09/11/19 02:32	9/5/19	
Indeno(1,2,3-cd)pyrene	**0.14**	**J**	0.36	0.096	1	09/11/19 02:32	9/5/19	
Naphthalene	ND	U	0.71	0.15	1	09/11/19 02:32	9/5/19	
Phenanthrene	**0.22**	**J**	0.36	0.066	1	09/11/19 02:32	9/5/19	
Pyrene	**0.24**	**J**	0.36	0.050	1	09/11/19 02:32	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	78	23 - 110	09/11/19 02:32	
Fluorene-d10	68	26 - 102	09/11/19 02:32	
Terphenyl-d14	86	27 - 115	09/11/19 02:32	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 12:05
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J6-SC1b-100to110-82819	**Units:**	ug/Kg
Lab Code:	K1907934-026	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	ND U	0.69	0.12	1	09/11/19 03:12	9/5/19	*
Acenaphthene	ND U	0.35	0.047	1	09/11/19 03:12	9/5/19	
Acenaphthylene	ND U	0.35	0.046	1	09/11/19 03:12	9/5/19	
Anthracene	ND U	0.35	0.038	1	09/11/19 03:12	9/5/19	
Benz(a)anthracene	**0.091 J**	0.35	0.038	1	09/11/19 03:12	9/5/19	*
Benzo(a)pyrene	**0.085 J**	0.35	0.070	1	09/11/19 03:12	9/5/19	
Benzo(b)fluoranthene	**0.20 J**	0.35	0.066	1	09/11/19 03:12	9/5/19	
Benzo(g,h,i)perylene	**0.10 J**	0.35	0.095	1	09/11/19 03:12	9/5/19	
Benzo(k)fluoranthene	**0.073 J**	0.35	0.057	1	09/11/19 03:12	9/5/19	*
Chrysene	**0.068 J**	0.35	0.055	1	09/11/19 03:12	9/5/19	*
Dibenz(a,h)anthracene	ND U	0.35	0.086	1	09/11/19 03:12	9/5/19	
Dibenzofuran	ND U	0.35	0.045	1	09/11/19 03:12	9/5/19	
Fluoranthene	**0.095 J**	0.35	0.049	1	09/11/19 03:12	9/5/19	
Fluorene	ND U	0.35	0.052	1	09/11/19 03:12	9/5/19	
Indeno(1,2,3-cd)pyrene	**0.11 J**	0.35	0.096	1	09/11/19 03:12	9/5/19	
Naphthalene	ND U	0.69	0.15	1	09/11/19 03:12	9/5/19	
Phenanthrene	**0.16 J**	0.35	0.066	1	09/11/19 03:12	9/5/19	
Pyrene	**0.14 J**	0.35	0.050	1	09/11/19 03:12	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	77	23 - 110	09/11/19 03:12	
Fluorene-d10	66	26 - 102	09/11/19 03:12	
Terphenyl-d14	83	27 - 115	09/11/19 03:12	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 12:10
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J6-SC1b-110to120-82819	**Units:**	ug/Kg
Lab Code:	K1907934-027	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	ND	U	0.68	0.12	1	09/11/19 03:51	9/5/19	*
Acenaphthene	ND	U	0.34	0.047	1	09/11/19 03:51	9/5/19	
Acenaphthylene	ND	U	0.34	0.046	1	09/11/19 03:51	9/5/19	
Anthracene	ND	U	0.34	0.038	1	09/11/19 03:51	9/5/19	
Benz(a)anthracene	**0.070**	**J**	0.34	0.038	1	09/11/19 03:51	9/5/19	*
Benzo(a)pyrene	ND	U	0.34	0.070	1	09/11/19 03:51	9/5/19	
Benzo(b)fluoranthene	**0.14**	**J**	0.34	0.066	1	09/11/19 03:51	9/5/19	
Benzo(g,h,i)perylene	ND	U	0.34	0.095	1	09/11/19 03:51	9/5/19	
Benzo(k)fluoranthene	ND	U	0.34	0.057	1	09/11/19 03:51	9/5/19	*
Chrysene	**0.062**	**J**	0.34	0.055	1	09/11/19 03:51	9/5/19	*
Dibenz(a,h)anthracene	ND	U	0.34	0.086	1	09/11/19 03:51	9/5/19	
Dibenzofuran	ND	U	0.34	0.045	1	09/11/19 03:51	9/5/19	
Fluoranthene	**0.094**	**J**	0.34	0.049	1	09/11/19 03:51	9/5/19	
Fluorene	ND	U	0.34	0.052	1	09/11/19 03:51	9/5/19	
Indeno(1,2,3-cd)pyrene	ND	U	0.34	0.096	1	09/11/19 03:51	9/5/19	
Naphthalene	ND	U	0.68	0.15	1	09/11/19 03:51	9/5/19	
Phenanthrene	**0.14**	**J**	0.34	0.066	1	09/11/19 03:51	9/5/19	
Pyrene	**0.12**	**J**	0.34	0.050	1	09/11/19 03:51	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	71	23 - 110	09/11/19 03:51	
Fluorene-d10	58	26 - 102	09/11/19 03:51	
Terphenyl-d14	76	27 - 115	09/11/19 03:51	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 20:15
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	H3-SC1b-20to30-82819	**Units:**	ug/Kg
Lab Code:	K1907934-030	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**36**	1.7	0.20	1	09/11/19 04:31	9/5/19	*
Acenaphthene	**39**	0.83	0.078	1	09/11/19 04:31	9/5/19	
Acenaphthylene	**26**	0.83	0.077	1	09/11/19 04:31	9/5/19	
Anthracene	**42**	0.83	0.063	1	09/11/19 04:31	9/5/19	
Benz(a)anthracene	**97**	0.83	0.063	1	09/11/19 04:31	9/5/19	*
Benzo(a)pyrene	**110**	0.83	0.12	1	09/11/19 04:31	9/5/19	
Benzo(b)fluoranthene	**140**	0.83	0.11	1	09/11/19 04:31	9/5/19	
Benzo(g,h,i)perylene	**110**	0.83	0.16	1	09/11/19 04:31	9/5/19	
Benzo(k)fluoranthene	**45**	0.83	0.095	1	09/11/19 04:31	9/5/19	*
Chrysene	**140**	0.83	0.092	1	09/11/19 04:31	9/5/19	*
Dibenz(a,h)anthracene	**18**	0.83	0.15	1	09/11/19 04:31	9/5/19	
Dibenzofuran	**18**	0.83	0.075	1	09/11/19 04:31	9/5/19	
Fluoranthene	**220**	0.83	0.082	1	09/11/19 04:31	9/5/19	
Fluorene	**43**	0.83	0.087	1	09/11/19 04:31	9/5/19	
Indeno(1,2,3-cd)pyrene	**100**	0.83	0.16	1	09/11/19 04:31	9/5/19	
Naphthalene	**38**	1.7	0.25	1	09/11/19 04:31	9/5/19	
Phenanthrene	**250**	0.83	0.11	1	09/11/19 04:31	9/5/19	
Pyrene	**310**	0.83	0.083	1	09/11/19 04:31	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	62	23 - 110	09/11/19 04:31	
Fluorene-d10	64	26 - 102	09/11/19 04:31	
Terphenyl-d14	69	27 - 115	09/11/19 04:31	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/29/19 08:25
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	H3-SC1b-30to40-82919	**Units:**	ug/Kg
Lab Code:	K1907934-031	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**11**	0.67	0.12	1	09/11/19 05:10	9/5/19	*
Acenaphthene	**7.4**	0.33	0.047	1	09/11/19 05:10	9/5/19	
Acenaphthylene	**8.4**	0.33	0.046	1	09/11/19 05:10	9/5/19	
Anthracene	**11**	0.33	0.038	1	09/11/19 05:10	9/5/19	
Benz(a)anthracene	**20**	0.33	0.038	1	09/11/19 05:10	9/5/19	*
Benzo(a)pyrene	**28**	0.33	0.070	1	09/11/19 05:10	9/5/19	
Benzo(b)fluoranthene	**30**	0.33	0.066	1	09/11/19 05:10	9/5/19	
Benzo(g,h,i)perylene	**28**	0.33	0.095	1	09/11/19 05:10	9/5/19	
Benzo(k)fluoranthene	**9.3**	0.33	0.057	1	09/11/19 05:10	9/5/19	*
Chrysene	**28**	0.33	0.055	1	09/11/19 05:10	9/5/19	*
Dibenz(a,h)anthracene	**3.7**	0.33	0.086	1	09/11/19 05:10	9/5/19	
Dibenzofuran	**4.0**	0.33	0.045	1	09/11/19 05:10	9/5/19	
Fluoranthene	**55**	0.33	0.049	1	09/11/19 05:10	9/5/19	
Fluorene	**10**	0.33	0.052	1	09/11/19 05:10	9/5/19	
Indeno(1,2,3-cd)pyrene	**25**	0.33	0.096	1	09/11/19 05:10	9/5/19	
Naphthalene	**15**	0.67	0.15	1	09/11/19 05:10	9/5/19	
Phenanthrene	**55**	0.33	0.066	1	09/11/19 05:10	9/5/19	
Pyrene	**79**	0.33	0.050	1	09/11/19 05:10	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	71	23 - 110	09/11/19 05:10	
Fluorene-d10	67	26 - 102	09/11/19 05:10	
Terphenyl-d14	77	27 - 115	09/11/19 05:10	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/29/19 08:30
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	H3-SC1b-40to50-82919	**Units:**	ug/Kg
Lab Code:	K1907934-032	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**7.6**	0.67	0.12	1	09/11/19 05:50	9/5/19	*
Acenaphthene	**7.2**	0.34	0.047	1	09/11/19 05:50	9/5/19	
Acenaphthylene	**9.8**	0.34	0.046	1	09/11/19 05:50	9/5/19	
Anthracene	**13**	0.34	0.038	1	09/11/19 05:50	9/5/19	
Benz(a)anthracene	**23**	0.34	0.038	1	09/11/19 05:50	9/5/19	*
Benzo(a)pyrene	**35**	0.34	0.070	1	09/11/19 05:50	9/5/19	
Benzo(b)fluoranthene	**37**	0.34	0.066	1	09/11/19 05:50	9/5/19	
Benzo(g,h,i)perylene	**37**	0.34	0.095	1	09/11/19 05:50	9/5/19	
Benzo(k)fluoranthene	**11**	0.34	0.057	1	09/11/19 05:50	9/5/19	*
Chrysene	**35**	0.34	0.055	1	09/11/19 05:50	9/5/19	*
Dibenz(a,h)anthracene	**4.2**	0.34	0.086	1	09/11/19 05:50	9/5/19	
Dibenzofuran	**3.1**	0.34	0.045	1	09/11/19 05:50	9/5/19	
Fluoranthene	**65**	0.34	0.049	1	09/11/19 05:50	9/5/19	
Fluorene	**11**	0.34	0.052	1	09/11/19 05:50	9/5/19	
Indeno(1,2,3-cd)pyrene	**33**	0.34	0.096	1	09/11/19 05:50	9/5/19	
Naphthalene	**16**	0.67	0.15	1	09/11/19 05:50	9/5/19	
Phenanthrene	**64**	0.34	0.066	1	09/11/19 05:50	9/5/19	
Pyrene	**95**	0.34	0.050	1	09/11/19 05:50	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	69	23 - 110	09/11/19 05:50	
Fluorene-d10	64	26 - 102	09/11/19 05:50	
Terphenyl-d14	75	27 - 115	09/11/19 05:50	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/29/19 08:35
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	H3-SC1b-50to60-82919	**Units:**	ug/Kg
Lab Code:	K1907934-033	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**8.3**	0.71	0.12	1	09/11/19 21:41	9/5/19	*
Acenaphthene	**4.9**	0.35	0.047	1	09/11/19 21:41	9/5/19	
Acenaphthylene	**12**	0.35	0.046	1	09/11/19 21:41	9/5/19	
Anthracene	**13**	0.35	0.038	1	09/11/19 21:41	9/5/19	
Benz(a)anthracene	**42**	0.35	0.038	1	09/11/19 21:41	9/5/19	*
Benzo(a)pyrene	**73**	0.35	0.070	1	09/11/19 21:41	9/5/19	
Benzo(b)fluoranthene	**70**	0.35	0.066	1	09/11/19 21:41	9/5/19	
Benzo(g,h,i)perylene	**69**	0.35	0.095	1	09/11/19 21:41	9/5/19	
Benzo(k)fluoranthene	**22**	0.35	0.057	1	09/11/19 21:41	9/5/19	*
Chrysene	**55**	0.35	0.055	1	09/11/19 21:41	9/5/19	*
Dibenz(a,h)anthracene	**7.6**	0.35	0.086	1	09/11/19 21:41	9/5/19	
Dibenzofuran	**2.5**	0.35	0.045	1	09/11/19 21:41	9/5/19	
Fluoranthene	**100**	0.35	0.049	1	09/11/19 21:41	9/5/19	
Fluorene	**6.0**	0.35	0.052	1	09/11/19 21:41	9/5/19	
Indeno(1,2,3-cd)pyrene	**65**	0.35	0.096	1	09/11/19 21:41	9/5/19	
Naphthalene	**13**	0.71	0.15	1	09/11/19 21:41	9/5/19	
Phenanthrene	**53**	0.35	0.066	1	09/11/19 21:41	9/5/19	
Pyrene	**130**	0.35	0.050	1	09/11/19 21:41	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	82	23 - 110	09/11/19 21:41	
Fluorene-d10	70	26 - 102	09/11/19 21:41	
Terphenyl-d14	86	27 - 115	09/11/19 21:41	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/29/19 09:00
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	H3-SC1b-60to70-82919	**Units:**	ug/Kg
Lab Code:	K1907934-034	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**11**	1.6	0.24	2	09/11/19 23:39	9/5/19	*
Acenaphthene	**14**	0.78	0.094	2	09/11/19 23:39	9/5/19	
Acenaphthylene	**18**	0.78	0.092	2	09/11/19 23:39	9/5/19	
Anthracene	**27**	0.78	0.076	2	09/11/19 23:39	9/5/19	
Benz(a)anthracene	**51**	0.78	0.076	2	09/11/19 23:39	9/5/19	*
Benzo(a)pyrene	**92**	0.78	0.14	2	09/11/19 23:39	9/5/19	
Benzo(b)fluoranthene	**86**	0.78	0.14	2	09/11/19 23:39	9/5/19	
Benzo(g,h,i)perylene	**100**	0.78	0.19	2	09/11/19 23:39	9/5/19	
Benzo(k)fluoranthene	**28**	0.78	0.12	2	09/11/19 23:39	9/5/19	*
Chrysene	**69**	0.78	0.11	2	09/11/19 23:39	9/5/19	*
Dibenz(a,h)anthracene	**8.5**	0.78	0.18	2	09/11/19 23:39	9/5/19	
Dibenzofuran	**4.9**	0.78	0.090	2	09/11/19 23:39	9/5/19	
Fluoranthene	**180**	0.78	0.098	2	09/11/19 23:39	9/5/19	
Fluorene	**11**	0.78	0.11	2	09/11/19 23:39	9/5/19	
Indeno(1,2,3-cd)pyrene	**85**	0.78	0.20	2	09/11/19 23:39	9/5/19	
Naphthalene	**32**	1.6	0.30	2	09/11/19 23:39	9/5/19	
Phenanthrene	**120**	0.78	0.14	2	09/11/19 23:39	9/5/19	
Pyrene	**230**	0.78	0.10	2	09/11/19 23:39	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	67	23 - 110	09/11/19 23:39	
Fluorene-d10	59	26 - 102	09/11/19 23:39	
Terphenyl-d14	71	27 - 115	09/11/19 23:39	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/29/19 09:05
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	H3-SC1b-70to80-82919	**Units:**	ug/Kg
Lab Code:	K1907934-035	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**4.9**	0.95	0.12	1	09/11/19 22:20	9/5/19	*
Acenaphthene	**3.0**	0.47	0.047	1	09/11/19 22:20	9/5/19	
Acenaphthylene	**5.3**	0.47	0.046	1	09/11/19 22:20	9/5/19	
Anthracene	**5.6**	0.47	0.038	1	09/11/19 22:20	9/5/19	
Benz(a)anthracene	**48**	0.47	0.038	1	09/11/19 22:20	9/5/19	*
Benzo(a)pyrene	**72**	0.47	0.070	1	09/11/19 22:20	9/5/19	
Benzo(b)fluoranthene	**66**	0.47	0.066	1	09/11/19 22:20	9/5/19	
Benzo(g,h,i)perylene	**46**	0.47	0.095	1	09/11/19 22:20	9/5/19	
Benzo(k)fluoranthene	**24**	0.47	0.057	1	09/11/19 22:20	9/5/19	*
Chrysene	**58**	0.47	0.055	1	09/11/19 22:20	9/5/19	*
Dibenz(a,h)anthracene	**9.3**	0.47	0.086	1	09/11/19 22:20	9/5/19	
Dibenzofuran	**1.5**	0.47	0.045	1	09/11/19 22:20	9/5/19	
Fluoranthene	**60**	0.47	0.049	1	09/11/19 22:20	9/5/19	
Fluorene	**3.3**	0.47	0.052	1	09/11/19 22:20	9/5/19	
Indeno(1,2,3-cd)pyrene	**47**	0.47	0.096	1	09/11/19 22:20	9/5/19	
Naphthalene	**10**	0.95	0.15	1	09/11/19 22:20	9/5/19	
Phenanthrene	**27**	0.47	0.066	1	09/11/19 22:20	9/5/19	
Pyrene	**88**	0.47	0.050	1	09/11/19 22:20	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	69	23 - 110	09/11/19 22:20	
Fluorene-d10	61	26 - 102	09/11/19 22:20	
Terphenyl-d14	76	27 - 115	09/11/19 22:20	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/29/19 09:30
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	H3-SC1b-80to90-82919	**Units:**	ug/Kg
Lab Code:	K1907934-036	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**2.5**	0.87	0.12	1	09/11/19 23:00	9/5/19	*
Acenaphthene	**2.9**	0.43	0.047	1	09/11/19 23:00	9/5/19	
Acenaphthylene	**7.0**	0.43	0.046	1	09/11/19 23:00	9/5/19	
Anthracene	**5.5**	0.43	0.038	1	09/11/19 23:00	9/5/19	
Benz(a)anthracene	**16**	0.43	0.038	1	09/11/19 23:00	9/5/19	*
Benzo(a)pyrene	**28**	0.43	0.070	1	09/11/19 23:00	9/5/19	
Benzo(b)fluoranthene	**27**	0.43	0.066	1	09/11/19 23:00	9/5/19	
Benzo(g,h,i)perylene	**28**	0.43	0.095	1	09/11/19 23:00	9/5/19	
Benzo(k)fluoranthene	**8.7**	0.43	0.057	1	09/11/19 23:00	9/5/19	*
Chrysene	**21**	0.43	0.055	1	09/11/19 23:00	9/5/19	*
Dibenz(a,h)anthracene	**3.2**	0.43	0.086	1	09/11/19 23:00	9/5/19	
Dibenzofuran	**1.5**	0.43	0.045	1	09/11/19 23:00	9/5/19	
Fluoranthene	**47**	0.43	0.049	1	09/11/19 23:00	9/5/19	
Fluorene	**2.9**	0.43	0.052	1	09/11/19 23:00	9/5/19	
Indeno(1,2,3-cd)pyrene	**25**	0.43	0.096	1	09/11/19 23:00	9/5/19	
Naphthalene	**9.6**	0.87	0.15	1	09/11/19 23:00	9/5/19	
Phenanthrene	**24**	0.43	0.066	1	09/11/19 23:00	9/5/19	
Pyrene	**65**	0.43	0.050	1	09/11/19 23:00	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	77	23 - 110	09/11/19 23:00	
Fluorene-d10	69	26 - 102	09/11/19 23:00	
Terphenyl-d14	84	27 - 115	09/11/19 23:00	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/29/19 09:35
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	H3-SC1b-90to100-82919	**Units:**	ug/Kg
Lab Code:	K1907934-037	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**2.3**	0.76	0.12	1	09/11/19 06:30	9/5/19	*
Acenaphthene	**1.6**	0.38	0.047	1	09/11/19 06:30	9/5/19	
Acenaphthylene	**4.9**	0.38	0.046	1	09/11/19 06:30	9/5/19	
Anthracene	**5.0**	0.38	0.038	1	09/11/19 06:30	9/5/19	
Benz(a)anthracene	**13**	0.38	0.038	1	09/11/19 06:30	9/5/19	*
Benzo(a)pyrene	**17**	0.38	0.070	1	09/11/19 06:30	9/5/19	
Benzo(b)fluoranthene	**17**	0.38	0.066	1	09/11/19 06:30	9/5/19	
Benzo(g,h,i)perylene	**16**	0.38	0.095	1	09/11/19 06:30	9/5/19	
Benzo(k)fluoranthene	**6.2**	0.38	0.057	1	09/11/19 06:30	9/5/19	*
Chrysene	**15**	0.38	0.055	1	09/11/19 06:30	9/5/19	*
Dibenz(a,h)anthracene	**2.3**	0.38	0.086	1	09/11/19 06:30	9/5/19	
Dibenzofuran	**1.0**	0.38	0.045	1	09/11/19 06:30	9/5/19	
Fluoranthene	**30**	0.38	0.049	1	09/11/19 06:30	9/5/19	
Fluorene	**1.8**	0.38	0.052	1	09/11/19 06:30	9/5/19	
Indeno(1,2,3-cd)pyrene	**14**	0.38	0.096	1	09/11/19 06:30	9/5/19	
Naphthalene	**8.4**	0.76	0.15	1	09/11/19 06:30	9/5/19	
Phenanthrene	**16**	0.38	0.066	1	09/11/19 06:30	9/5/19	
Pyrene	**35**	0.38	0.050	1	09/11/19 06:30	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	67	23 - 110	09/11/19 06:30	
Fluorene-d10	58	26 - 102	09/11/19 06:30	
Terphenyl-d14	70	27 - 115	09/11/19 06:30	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/29/19 09:50
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	H3-SC1b-100to110-82919	**Units:**	ug/Kg
Lab Code:	K1907934-038	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**0.62 J**	1.4	0.18	1	09/11/19 17:44	9/5/19	*
Acenaphthene	**0.26 J**	0.71	0.067	1	09/11/19 17:44	9/5/19	
Acenaphthylene	**0.55 J**	0.71	0.066	1	09/11/19 17:44	9/5/19	
Anthracene	**0.46 J**	0.71	0.055	1	09/11/19 17:44	9/5/19	
Benz(a)anthracene	**0.97**	0.71	0.055	1	09/11/19 17:44	9/5/19	*
Benzo(a)pyrene	**1.5**	0.71	0.10	1	09/11/19 17:44	9/5/19	
Benzo(b)fluoranthene	**2.3**	0.71	0.094	1	09/11/19 17:44	9/5/19	
Benzo(g,h,i)perylene	**1.7**	0.71	0.14	1	09/11/19 17:44	9/5/19	
Benzo(k)fluoranthene	**0.51 J**	0.71	0.082	1	09/11/19 17:44	9/5/19	*
Chrysene	**1.5**	0.71	0.079	1	09/11/19 17:44	9/5/19	*
Dibenz(a,h)anthracene	**0.25 J**	0.71	0.13	1	09/11/19 17:44	9/5/19	
Dibenzofuran	**0.19 J**	0.71	0.065	1	09/11/19 17:44	9/5/19	
Fluoranthene	**3.5**	0.71	0.070	1	09/11/19 17:44	9/5/19	
Fluorene	**0.39 J**	0.71	0.074	1	09/11/19 17:44	9/5/19	
Indeno(1,2,3-cd)pyrene	**1.4**	0.71	0.14	1	09/11/19 17:44	9/5/19	
Naphthalene	**1.0 J**	1.4	0.22	1	09/11/19 17:44	9/5/19	
Phenanthrene	**2.6**	0.71	0.094	1	09/11/19 17:44	9/5/19	
Pyrene	**4.6**	0.71	0.072	1	09/11/19 17:44	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	71	23 - 110	09/11/19 17:44	
Fluorene-d10	60	26 - 102	09/11/19 17:44	
Terphenyl-d14	78	27 - 115	09/11/19 17:44	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/26/19 12:45
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	D6-SC1b-20to30-82619	**Units:**	ug/Kg
Lab Code:	K1907934-041	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**5.9**	1.9	0.24	2	09/12/19 00:19	9/5/19	*
Acenaphthene	**9.2**	0.93	0.094	2	09/12/19 00:19	9/5/19	
Acenaphthylene	**5.4**	0.93	0.092	2	09/12/19 00:19	9/5/19	
Anthracene	**14**	0.93	0.076	2	09/12/19 00:19	9/5/19	
Benz(a)anthracene	**53**	0.93	0.076	2	09/12/19 00:19	9/5/19	*
Benzo(a)pyrene	**70**	0.93	0.14	2	09/12/19 00:19	9/5/19	
Benzo(b)fluoranthene	**83**	0.93	0.14	2	09/12/19 00:19	9/5/19	
Benzo(g,h,i)perylene	**49**	0.93	0.19	2	09/12/19 00:19	9/5/19	
Benzo(k)fluoranthene	**31**	0.93	0.12	2	09/12/19 00:19	9/5/19	*
Chrysene	**70**	0.93	0.11	2	09/12/19 00:19	9/5/19	*
Dibenz(a,h)anthracene	**12**	0.93	0.18	2	09/12/19 00:19	9/5/19	
Dibenzofuran	**3.0**	0.93	0.090	2	09/12/19 00:19	9/5/19	
Fluoranthene	**120**	0.93	0.098	2	09/12/19 00:19	9/5/19	
Fluorene	**6.4**	0.93	0.11	2	09/12/19 00:19	9/5/19	
Indeno(1,2,3-cd)pyrene	**54**	0.93	0.20	2	09/12/19 00:19	9/5/19	
Naphthalene	**7.3**	1.9	0.30	2	09/12/19 00:19	9/5/19	
Phenanthrene	**62**	0.93	0.14	2	09/12/19 00:19	9/5/19	
Pyrene	**120**	0.93	0.10	2	09/12/19 00:19	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	75	23 - 110	09/12/19 00:19	
Fluorene-d10	63	26 - 102	09/12/19 00:19	
Terphenyl-d14	83	27 - 115	09/12/19 00:19	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/26/19 13:00
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	D6-SC1b-30to40-82619	**Units:**	ug/Kg
Lab Code:	K1907934-042	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**5.0**	1.8	0.24	2	09/12/19 00:58	9/5/19	*
Acenaphthene	**9.8**	0.91	0.094	2	09/12/19 00:58	9/5/19	
Acenaphthylene	**5.7**	0.91	0.092	2	09/12/19 00:58	9/5/19	
Anthracene	**17**	0.91	0.076	2	09/12/19 00:58	9/5/19	
Benz(a)anthracene	**74**	0.91	0.076	2	09/12/19 00:58	9/5/19	*
Benzo(a)pyrene	**82**	0.91	0.14	2	09/12/19 00:58	9/5/19	
Benzo(b)fluoranthene	**100**	0.91	0.14	2	09/12/19 00:58	9/5/19	
Benzo(g,h,i)perylene	**53**	0.91	0.19	2	09/12/19 00:58	9/5/19	
Benzo(k)fluoranthene	**35**	0.91	0.12	2	09/12/19 00:58	9/5/19	*
Chrysene	**87**	0.91	0.11	2	09/12/19 00:58	9/5/19	*
Dibenz(a,h)anthracene	**14**	0.91	0.18	2	09/12/19 00:58	9/5/19	
Dibenzofuran	**2.8**	0.91	0.090	2	09/12/19 00:58	9/5/19	
Fluoranthene	**140**	0.91	0.098	2	09/12/19 00:58	9/5/19	
Fluorene	**6.2**	0.91	0.11	2	09/12/19 00:58	9/5/19	
Indeno(1,2,3-cd)pyrene	**59**	0.91	0.20	2	09/12/19 00:58	9/5/19	
Naphthalene	**6.1**	1.8	0.30	2	09/12/19 00:58	9/5/19	
Phenanthrene	**74**	0.91	0.14	2	09/12/19 00:58	9/5/19	
Pyrene	**150**	0.91	0.10	2	09/12/19 00:58	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	68	23 - 110	09/12/19 00:58	
Fluorene-d10	62	26 - 102	09/12/19 00:58	
Terphenyl-d14	75	27 - 115	09/12/19 00:58	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/26/19 14:45
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	D6-SC1b-40to50-82619	**Units:**	ug/Kg
Lab Code:	K1907934-043	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**8.6**	1.7	0.24	2	09/12/19 01:37	9/5/19	*
Acenaphthene	**15**	0.86	0.094	2	09/12/19 01:37	9/5/19	
Acenaphthylene	**8.4**	0.86	0.092	2	09/12/19 01:37	9/5/19	
Anthracene	**22**	0.86	0.076	2	09/12/19 01:37	9/5/19	
Benz(a)anthracene	**70**	0.86	0.076	2	09/12/19 01:37	9/5/19	*
Benzo(a)pyrene	**81**	0.86	0.14	2	09/12/19 01:37	9/5/19	
Benzo(b)fluoranthene	**99**	0.86	0.14	2	09/12/19 01:37	9/5/19	
Benzo(g,h,i)perylene	**62**	0.86	0.19	2	09/12/19 01:37	9/5/19	
Benzo(k)fluoranthene	**36**	0.86	0.12	2	09/12/19 01:37	9/5/19	*
Chrysene	**90**	0.86	0.11	2	09/12/19 01:37	9/5/19	*
Dibenz(a,h)anthracene	**14**	0.86	0.18	2	09/12/19 01:37	9/5/19	
Dibenzofuran	**4.4**	0.86	0.090	2	09/12/19 01:37	9/5/19	
Fluoranthene	**160**	0.86	0.098	2	09/12/19 01:37	9/5/19	
Fluorene	**12**	0.86	0.11	2	09/12/19 01:37	9/5/19	
Indeno(1,2,3-cd)pyrene	**62**	0.86	0.20	2	09/12/19 01:37	9/5/19	
Naphthalene	**11**	1.7	0.30	2	09/12/19 01:37	9/5/19	
Phenanthrene	**120**	0.86	0.14	2	09/12/19 01:37	9/5/19	
Pyrene	**170**	0.86	0.10	2	09/12/19 01:37	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	82	23 - 110	09/12/19 01:37	
Fluorene-d10	74	26 - 102	09/12/19 01:37	
Terphenyl-d14	90	27 - 115	09/12/19 01:37	

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Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/26/19 14:50
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	D6-SC1b-50to60-82619	**Units:**	ug/Kg
Lab Code:	K1907934-044	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**16**	1.6	0.24	2	09/12/19 02:17	9/5/19	*
Acenaphthene	**18**	0.82	0.094	2	09/12/19 02:17	9/5/19	
Acenaphthylene	**16**	0.82	0.092	2	09/12/19 02:17	9/5/19	
Anthracene	**28**	0.82	0.076	2	09/12/19 02:17	9/5/19	
Benz(a)anthracene	**67**	0.82	0.076	2	09/12/19 02:17	9/5/19	*
Benzo(a)pyrene	**84**	0.82	0.14	2	09/12/19 02:17	9/5/19	
Benzo(b)fluoranthene	**97**	0.82	0.14	2	09/12/19 02:17	9/5/19	
Benzo(g,h,i)perylene	**75**	0.82	0.19	2	09/12/19 02:17	9/5/19	
Benzo(k)fluoranthene	**32**	0.82	0.12	2	09/12/19 02:17	9/5/19	*
Chrysene	**92**	0.82	0.11	2	09/12/19 02:17	9/5/19	*
Dibenz(a,h)anthracene	**13**	0.82	0.18	2	09/12/19 02:17	9/5/19	
Dibenzofuran	**7.2**	0.82	0.090	2	09/12/19 02:17	9/5/19	
Fluoranthene	**160**	0.82	0.098	2	09/12/19 02:17	9/5/19	
Fluorene	**12**	0.82	0.11	2	09/12/19 02:17	9/5/19	
Indeno(1,2,3-cd)pyrene	**69**	0.82	0.20	2	09/12/19 02:17	9/5/19	
Naphthalene	**25**	1.6	0.30	2	09/12/19 02:17	9/5/19	
Phenanthrene	**130**	0.82	0.14	2	09/12/19 02:17	9/5/19	
Pyrene	**210**	0.82	0.10	2	09/12/19 02:17	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	80	23 - 110	09/12/19 02:17	
Fluorene-d10	73	26 - 102	09/12/19 02:17	
Terphenyl-d14	88	27 - 115	09/12/19 02:17	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/26/19 15:30
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	D6-SC1b-60to70-82619	**Units:**	ug/Kg
Lab Code:	K1907934-045	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**7.7**	1.5	0.24	2	09/12/19 02:56	9/5/19	*
Acenaphthene	**7.6**	0.77	0.094	2	09/12/19 02:56	9/5/19	
Acenaphthylene	**7.7**	0.77	0.092	2	09/12/19 02:56	9/5/19	
Anthracene	**16**	0.77	0.076	2	09/12/19 02:56	9/5/19	
Benz(a)anthracene	**43**	0.77	0.076	2	09/12/19 02:56	9/5/19	*
Benzo(a)pyrene	**53**	0.77	0.14	2	09/12/19 02:56	9/5/19	
Benzo(b)fluoranthene	**61**	0.77	0.14	2	09/12/19 02:56	9/5/19	
Benzo(g,h,i)perylene	**44**	0.77	0.19	2	09/12/19 02:56	9/5/19	
Benzo(k)fluoranthene	**21**	0.77	0.12	2	09/12/19 02:56	9/5/19	*
Chrysene	**60**	0.77	0.11	2	09/12/19 02:56	9/5/19	*
Dibenz(a,h)anthracene	**9.1**	0.77	0.18	2	09/12/19 02:56	9/5/19	
Dibenzofuran	**2.9**	0.77	0.090	2	09/12/19 02:56	9/5/19	
Fluoranthene	**88**	0.77	0.098	2	09/12/19 02:56	9/5/19	
Fluorene	**5.5**	0.77	0.11	2	09/12/19 02:56	9/5/19	
Indeno(1,2,3-cd)pyrene	**42**	0.77	0.20	2	09/12/19 02:56	9/5/19	
Naphthalene	**11**	1.5	0.30	2	09/12/19 02:56	9/5/19	
Phenanthrene	**69**	0.77	0.14	2	09/12/19 02:56	9/5/19	
Pyrene	**120**	0.77	0.10	2	09/12/19 02:56	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	76	23 - 110	09/12/19 02:56	
Fluorene-d10	68	26 - 102	09/12/19 02:56	
Terphenyl-d14	81	27 - 115	09/12/19 02:56	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/26/19 15:40
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	D6-SC1b-70to80-82619	**Units:**	ug/Kg
Lab Code:	K1907934-046	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**1.0**	0.74	0.12	1	09/11/19 18:23	9/5/19	*
Acenaphthene	**1.0**	0.37	0.047	1	09/11/19 18:23	9/5/19	
Acenaphthylene	**0.90**	0.37	0.046	1	09/11/19 18:23	9/5/19	
Anthracene	**1.6**	0.37	0.038	1	09/11/19 18:23	9/5/19	
Benz(a)anthracene	**4.8**	0.37	0.038	1	09/11/19 18:23	9/5/19	*
Benzo(a)pyrene	**6.2**	0.37	0.070	1	09/11/19 18:23	9/5/19	
Benzo(b)fluoranthene	**7.6**	0.37	0.066	1	09/11/19 18:23	9/5/19	
Benzo(g,h,i)perylene	**5.4**	0.37	0.095	1	09/11/19 18:23	9/5/19	
Benzo(k)fluoranthene	**2.4**	0.37	0.057	1	09/11/19 18:23	9/5/19	*
Chrysene	**6.6**	0.37	0.055	1	09/11/19 18:23	9/5/19	*
Dibenz(a,h)anthracene	**1.0**	0.37	0.086	1	09/11/19 18:23	9/5/19	
Dibenzofuran	**0.45**	0.37	0.045	1	09/11/19 18:23	9/5/19	
Fluoranthene	**11**	0.37	0.049	1	09/11/19 18:23	9/5/19	
Fluorene	**0.76**	0.37	0.052	1	09/11/19 18:23	9/5/19	
Indeno(1,2,3-cd)pyrene	**5.2**	0.37	0.096	1	09/11/19 18:23	9/5/19	
Naphthalene	**1.6**	0.74	0.15	1	09/11/19 18:23	9/5/19	
Phenanthrene	**8.6**	0.37	0.066	1	09/11/19 18:23	9/5/19	
Pyrene	**14**	0.37	0.050	1	09/11/19 18:23	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	84	23 - 110	09/11/19 18:23	
Fluorene-d10	72	26 - 102	09/11/19 18:23	
Terphenyl-d14	91	27 - 115	09/11/19 18:23	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/26/19 16:55
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	D6-SC1b-80to90-82619	**Units:**	ug/Kg
Lab Code:	K1907934-047	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**1.0**	0.71	0.12	1	09/11/19 19:03	9/5/19	*
Acenaphthene	**0.82**	0.36	0.047	1	09/11/19 19:03	9/5/19	
Acenaphthylene	**0.69**	0.36	0.046	1	09/11/19 19:03	9/5/19	
Anthracene	**1.4**	0.36	0.038	1	09/11/19 19:03	9/5/19	
Benz(a)anthracene	**4.6**	0.36	0.038	1	09/11/19 19:03	9/5/19	*
Benzo(a)pyrene	**5.4**	0.36	0.070	1	09/11/19 19:03	9/5/19	
Benzo(b)fluoranthene	**6.7**	0.36	0.066	1	09/11/19 19:03	9/5/19	
Benzo(g,h,i)perylene	**4.9**	0.36	0.095	1	09/11/19 19:03	9/5/19	
Benzo(k)fluoranthene	**2.0**	0.36	0.057	1	09/11/19 19:03	9/5/19	*
Chrysene	**6.0**	0.36	0.055	1	09/11/19 19:03	9/5/19	*
Dibenz(a,h)anthracene	**0.93**	0.36	0.086	1	09/11/19 19:03	9/5/19	
Dibenzofuran	**0.42**	0.36	0.045	1	09/11/19 19:03	9/5/19	
Fluoranthene	**9.5**	0.36	0.049	1	09/11/19 19:03	9/5/19	
Fluorene	**0.69**	0.36	0.052	1	09/11/19 19:03	9/5/19	
Indeno(1,2,3-cd)pyrene	**4.6**	0.36	0.096	1	09/11/19 19:03	9/5/19	
Naphthalene	**1.6**	0.71	0.15	1	09/11/19 19:03	9/5/19	
Phenanthrene	**7.5**	0.36	0.066	1	09/11/19 19:03	9/5/19	
Pyrene	**12**	0.36	0.050	1	09/11/19 19:03	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	84	23 - 110	09/11/19 19:03	
Fluorene-d10	73	26 - 102	09/11/19 19:03	
Terphenyl-d14	91	27 - 115	09/11/19 19:03	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/26/19 17:00
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	D6-SC1b-90to100-82619	**Units:**	ug/Kg
Lab Code:	K1907934-048	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**0.30** J	0.66	0.12	1	09/11/19 10:27	9/5/19	
Acenaphthene	**0.15** J	0.33	0.047	1	09/11/19 10:27	9/5/19	
Acenaphthylene	**0.11** J	0.33	0.046	1	09/11/19 10:27	9/5/19	
Anthracene	**0.23** J	0.33	0.038	1	09/11/19 10:27	9/5/19	
Benz(a)anthracene	**0.63**	0.33	0.038	1	09/11/19 10:27	9/5/19	
Benzo(a)pyrene	**0.76**	0.33	0.070	1	09/11/19 10:27	9/5/19	
Benzo(b)fluoranthene	**1.2**	0.33	0.066	1	09/11/19 10:27	9/5/19	
Benzo(g,h,i)perylene	**0.76**	0.33	0.095	1	09/11/19 10:27	9/5/19	
Benzo(k)fluoranthene	**0.34**	0.33	0.057	1	09/11/19 10:27	9/5/19	
Chrysene	**0.83**	0.33	0.055	1	09/11/19 10:27	9/5/19	
Dibenz(a,h)anthracene	**0.17** J	0.33	0.086	1	09/11/19 10:27	9/5/19	
Dibenzofuran	**0.13** J	0.33	0.045	1	09/11/19 10:27	9/5/19	
Fluoranthene	**1.4**	0.33	0.049	1	09/11/19 10:27	9/5/19	
Fluorene	**0.17** J	0.33	0.052	1	09/11/19 10:27	9/5/19	
Indeno(1,2,3-cd)pyrene	**0.65**	0.33	0.096	1	09/11/19 10:27	9/5/19	
Naphthalene	**0.35** J	0.66	0.15	1	09/11/19 10:27	9/5/19	
Phenanthrene	**1.2**	0.33	0.066	1	09/11/19 10:27	9/5/19	
Pyrene	**1.7**	0.33	0.050	1	09/11/19 10:27	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	85	23 - 110	09/11/19 10:27	
Fluorene-d10	74	26 - 102	09/11/19 10:27	
Terphenyl-d14	92	27 - 115	09/11/19 10:27	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/26/19 17:40
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	D6-SC1b-100to110-82619	**Units:**	ug/Kg
Lab Code:	K1907934-049	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**0.18** J	0.69	0.12	1	09/11/19 11:07	9/5/19	
Acenaphthene	**0.091** J	0.35	0.047	1	09/11/19 11:07	9/5/19	
Acenaphthylene	**0.073** J	0.35	0.046	1	09/11/19 11:07	9/5/19	
Anthracene	**0.084** J	0.35	0.038	1	09/11/19 11:07	9/5/19	
Benz(a)anthracene	**0.38**	0.35	0.038	1	09/11/19 11:07	9/5/19	
Benzo(a)pyrene	**0.50**	0.35	0.070	1	09/11/19 11:07	9/5/19	
Benzo(b)fluoranthene	**0.82**	0.35	0.066	1	09/11/19 11:07	9/5/19	
Benzo(g,h,i)perylene	**0.41**	0.35	0.095	1	09/11/19 11:07	9/5/19	
Benzo(k)fluoranthene	**0.20** J	0.35	0.057	1	09/11/19 11:07	9/5/19	
Chrysene	**0.50**	0.35	0.055	1	09/11/19 11:07	9/5/19	
Dibenz(a,h)anthracene	**0.099** J	0.35	0.086	1	09/11/19 11:07	9/5/19	
Dibenzofuran	**0.10** J	0.35	0.045	1	09/11/19 11:07	9/5/19	
Fluoranthene	**0.66**	0.35	0.049	1	09/11/19 11:07	9/5/19	
Fluorene	**0.11** J	0.35	0.052	1	09/11/19 11:07	9/5/19	
Indeno(1,2,3-cd)pyrene	**0.39**	0.35	0.096	1	09/11/19 11:07	9/5/19	
Naphthalene	**0.23** J	0.69	0.15	1	09/11/19 11:07	9/5/19	
Phenanthrene	**0.56**	0.35	0.066	1	09/11/19 11:07	9/5/19	
Pyrene	**0.80**	0.35	0.050	1	09/11/19 11:07	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	74	23 - 110	09/11/19 11:07	
Fluorene-d10	61	26 - 102	09/11/19 11:07	
Terphenyl-d14	80	27 - 115	09/11/19 11:07	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/26/19 17:50
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	D6-SC1b-110to120-82619	**Units:**	ug/Kg
Lab Code:	K1907934-050	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**0.14**	**J**	0.68	0.12	1	09/11/19 11:47	9/5/19	
Acenaphthene	**0.064**	**J**	0.34	0.047	1	09/11/19 11:47	9/5/19	
Acenaphthylene	ND	U	0.34	0.046	1	09/11/19 11:47	9/5/19	
Anthracene	ND	U	0.34	0.038	1	09/11/19 11:47	9/5/19	
Benz(a)anthracene	**0.13**	**J**	0.34	0.038	1	09/11/19 11:47	9/5/19	
Benzo(a)pyrene	**0.15**	**J**	0.34	0.070	1	09/11/19 11:47	9/5/19	
Benzo(b)fluoranthene	**0.40**		0.34	0.066	1	09/11/19 11:47	9/5/19	
Benzo(g,h,i)perylene	**0.16**	**J**	0.34	0.095	1	09/11/19 11:47	9/5/19	
Benzo(k)fluoranthene	**0.10**	**J**	0.34	0.057	1	09/11/19 11:47	9/5/19	
Chrysene	**0.15**	**J**	0.34	0.055	1	09/11/19 11:47	9/5/19	
Dibenz(a,h)anthracene	ND	U	0.34	0.086	1	09/11/19 11:47	9/5/19	
Dibenzofuran	**0.071**	**J**	0.34	0.045	1	09/11/19 11:47	9/5/19	
Fluoranthene	**0.20**	**J**	0.34	0.049	1	09/11/19 11:47	9/5/19	
Fluorene	**0.080**	**J**	0.34	0.052	1	09/11/19 11:47	9/5/19	
Indeno(1,2,3-cd)pyrene	**0.15**	**J**	0.34	0.096	1	09/11/19 11:47	9/5/19	
Naphthalene	ND	U	0.68	0.15	1	09/11/19 11:47	9/5/19	
Phenanthrene	**0.31**	**J**	0.34	0.066	1	09/11/19 11:47	9/5/19	
Pyrene	**0.28**	**J**	0.34	0.050	1	09/11/19 11:47	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	84	23 - 110	09/11/19 11:47	
Fluorene-d10	70	26 - 102	09/11/19 11:47	
Terphenyl-d14	88	27 - 115	09/11/19 11:47	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/26/19 15:00
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	411-SC1b-50to60-82619	**Units:**	ug/Kg
Lab Code:	K1907934-052	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**19**	4.1	0.60	5	09/12/19 09:31	9/5/19	
Acenaphthene	**20**	2.1	0.24	5	09/12/19 09:31	9/5/19	
Acenaphthylene	**17**	2.1	0.23	5	09/12/19 09:31	9/5/19	
Anthracene	**30**	2.1	0.19	5	09/12/19 09:31	9/5/19	
Benz(a)anthracene	**69**	2.1	0.19	5	09/12/19 09:31	9/5/19	
Benzo(a)pyrene	**87**	2.1	0.35	5	09/12/19 09:31	9/5/19	
Benzo(b)fluoranthene	**99**	2.1	0.33	5	09/12/19 09:31	9/5/19	
Benzo(g,h,i)perylene	**77**	2.1	0.48	5	09/12/19 09:31	9/5/19	
Benzo(k)fluoranthene	**36**	2.1	0.29	5	09/12/19 09:31	9/5/19	
Chrysene	**93**	2.1	0.28	5	09/12/19 09:31	9/5/19	
Dibenz(a,h)anthracene	**14**	2.1	0.43	5	09/12/19 09:31	9/5/19	
Dibenzofuran	**7.7**	2.1	0.23	5	09/12/19 09:31	9/5/19	
Fluoranthene	**180**	2.1	0.25	5	09/12/19 09:31	9/5/19	
Fluorene	**14**	2.1	0.26	5	09/12/19 09:31	9/5/19	
Indeno(1,2,3-cd)pyrene	**72**	2.1	0.48	5	09/12/19 09:31	9/5/19	
Naphthalene	**33**	4.1	0.75	5	09/12/19 09:31	9/5/19	
Phenanthrene	**150**	2.1	0.33	5	09/12/19 09:31	9/5/19	
Pyrene	**220**	2.1	0.25	5	09/12/19 09:31	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	81	23 - 110	09/12/19 09:31	
Fluorene-d10	73	26 - 102	09/12/19 09:31	
Terphenyl-d14	85	27 - 115	09/12/19 09:31	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 14:55
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J5-SC1b-20to30-82719	**Units:**	ug/Kg
Lab Code:	K1907934-053	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**20**	1.9	0.24	2	09/12/19 03:36	9/5/19	
Acenaphthene	**20**	0.97	0.094	2	09/12/19 03:36	9/5/19	
Acenaphthylene	**10**	0.97	0.092	2	09/12/19 03:36	9/5/19	
Anthracene	**24**	0.97	0.076	2	09/12/19 03:36	9/5/19	
Benz(a)anthracene	**48**	0.97	0.076	2	09/12/19 03:36	9/5/19	
Benzo(a)pyrene	**62**	0.97	0.14	2	09/12/19 03:36	9/5/19	
Benzo(b)fluoranthene	**71**	0.97	0.14	2	09/12/19 03:36	9/5/19	
Benzo(g,h,i)perylene	**51**	0.97	0.19	2	09/12/19 03:36	9/5/19	
Benzo(k)fluoranthene	**23**	0.97	0.12	2	09/12/19 03:36	9/5/19	
Chrysene	**63**	0.97	0.11	2	09/12/19 03:36	9/5/19	
Dibenz(a,h)anthracene	**9.6**	0.97	0.18	2	09/12/19 03:36	9/5/19	
Dibenzofuran	**9.3**	0.97	0.090	2	09/12/19 03:36	9/5/19	
Fluoranthene	**130**	0.97	0.098	2	09/12/19 03:36	9/5/19	
Fluorene	**22**	0.97	0.11	2	09/12/19 03:36	9/5/19	
Indeno(1,2,3-cd)pyrene	**48**	0.97	0.20	2	09/12/19 03:36	9/5/19	
Naphthalene	**36**	1.9	0.30	2	09/12/19 03:36	9/5/19	
Phenanthrene	**120**	0.97	0.14	2	09/12/19 03:36	9/5/19	
Pyrene	**140**	0.97	0.10	2	09/12/19 03:36	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	78	23 - 110	09/12/19 03:36	
Fluorene-d10	68	26 - 102	09/12/19 03:36	
Terphenyl-d14	84	27 - 115	09/12/19 03:36	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 15:00
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J5-SC1b-30to40-82719	**Units:**	ug/Kg
Lab Code:	K1907934-054	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**10**	0.93	0.12	1	09/11/19 12:26	9/5/19	
Acenaphthene	**9.1**	0.47	0.047	1	09/11/19 12:26	9/5/19	
Acenaphthylene	**7.5**	0.47	0.046	1	09/11/19 12:26	9/5/19	
Anthracene	**11**	0.47	0.038	1	09/11/19 12:26	9/5/19	
Benz(a)anthracene	**30**	0.47	0.038	1	09/11/19 12:26	9/5/19	
Benzo(a)pyrene	**40**	0.47	0.070	1	09/11/19 12:26	9/5/19	
Benzo(b)fluoranthene	**47**	0.47	0.066	1	09/11/19 12:26	9/5/19	
Benzo(g,h,i)perylene	**31**	0.47	0.095	1	09/11/19 12:26	9/5/19	
Benzo(k)fluoranthene	**15**	0.47	0.057	1	09/11/19 12:26	9/5/19	
Chrysene	**37**	0.47	0.055	1	09/11/19 12:26	9/5/19	
Dibenz(a,h)anthracene	**6.4**	0.47	0.086	1	09/11/19 12:26	9/5/19	
Dibenzofuran	**4.9**	0.47	0.045	1	09/11/19 12:26	9/5/19	
Fluoranthene	**69**	0.47	0.049	1	09/11/19 12:26	9/5/19	
Fluorene	**8.6**	0.47	0.052	1	09/11/19 12:26	9/5/19	
Indeno(1,2,3-cd)pyrene	**31**	0.47	0.096	1	09/11/19 12:26	9/5/19	
Naphthalene	**20**	0.93	0.15	1	09/11/19 12:26	9/5/19	
Phenanthrene	**45**	0.47	0.066	1	09/11/19 12:26	9/5/19	
Pyrene	**76**	0.47	0.050	1	09/11/19 12:26	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	81	23 - 110	09/11/19 12:26	
Fluorene-d10	69	26 - 102	09/11/19 12:26	
Terphenyl-d14	88	27 - 115	09/11/19 12:26	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 16:10
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J5-SC1b-40to50-82719	**Units:**	ug/Kg
Lab Code:	K1907934-055	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**18**	4.4	0.60	5	09/12/19 11:09	9/10/19	
Acenaphthene	**21**	2.2	0.24	5	09/12/19 11:09	9/10/19	
Acenaphthylene	**14**	2.2	0.23	5	09/12/19 11:09	9/10/19	
Anthracene	**27**	2.2	0.19	5	09/12/19 11:09	9/10/19	
Benz(a)anthracene	**77**	2.2	0.19	5	09/12/19 11:09	9/10/19	
Benzo(a)pyrene	**100**	2.2	0.35	5	09/12/19 11:09	9/10/19	
Benzo(b)fluoranthene	**120**	2.2	0.33	5	09/12/19 11:09	9/10/19	
Benzo(g,h,i)perylene	**87**	2.2	0.48	5	09/12/19 11:09	9/10/19	
Benzo(k)fluoranthene	**47**	2.2	0.29	5	09/12/19 11:09	9/10/19	
Chrysene	**110**	2.2	0.28	5	09/12/19 11:09	9/10/19	
Dibenz(a,h)anthracene	**15**	2.2	0.43	5	09/12/19 11:09	9/10/19	
Dibenzofuran	**12**	2.2	0.23	5	09/12/19 11:09	9/10/19	
Fluoranthene	**190**	2.2	0.25	5	09/12/19 11:09	9/10/19	
Fluorene	**24**	2.2	0.26	5	09/12/19 11:09	9/10/19	
Indeno(1,2,3-cd)pyrene	**82**	2.2	0.48	5	09/12/19 11:09	9/10/19	
Naphthalene	**31**	4.4	0.75	5	09/12/19 11:09	9/10/19	
Phenanthrene	**150**	2.2	0.33	5	09/12/19 11:09	9/10/19	
Pyrene	**240**	2.2	0.25	5	09/12/19 11:09	9/10/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	75	23 - 110	09/12/19 11:09	
Fluorene-d10	71	26 - 102	09/12/19 11:09	
Terphenyl-d14	82	27 - 115	09/12/19 11:09	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 16:15
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J5-SC1b-50to60-82719	**Units:**	ug/Kg
Lab Code:	K1907934-056	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**14**	4.4	0.60	5	09/12/19 10:10	9/5/19	
Acenaphthene	**29**	2.2	0.24	5	09/12/19 10:10	9/5/19	
Acenaphthylene	**14**	2.2	0.23	5	09/12/19 10:10	9/5/19	
Anthracene	**40**	2.2	0.19	5	09/12/19 10:10	9/5/19	
Benz(a)anthracene	**99**	2.2	0.19	5	09/12/19 10:10	9/5/19	
Benzo(a)pyrene	**110**	2.2	0.35	5	09/12/19 10:10	9/5/19	
Benzo(b)fluoranthene	**150**	2.2	0.33	5	09/12/19 10:10	9/5/19	
Benzo(g,h,i)perylene	**88**	2.2	0.48	5	09/12/19 10:10	9/5/19	
Benzo(k)fluoranthene	**53**	2.2	0.29	5	09/12/19 10:10	9/5/19	
Chrysene	**140**	2.2	0.28	5	09/12/19 10:10	9/5/19	
Dibenz(a,h)anthracene	**20**	2.2	0.43	5	09/12/19 10:10	9/5/19	
Dibenzofuran	**8.7**	2.2	0.23	5	09/12/19 10:10	9/5/19	
Fluoranthene	**270**	2.2	0.25	5	09/12/19 10:10	9/5/19	
Fluorene	**25**	2.2	0.26	5	09/12/19 10:10	9/5/19	
Indeno(1,2,3-cd)pyrene	**88**	2.2	0.48	5	09/12/19 10:10	9/5/19	
Naphthalene	**21**	4.4	0.75	5	09/12/19 10:10	9/5/19	
Phenanthrene	**190**	2.2	0.33	5	09/12/19 10:10	9/5/19	
Pyrene	**300**	2.2	0.25	5	09/12/19 10:10	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	75	23 - 110	09/12/19 10:10	
Fluorene-d10	63	26 - 102	09/12/19 10:10	
Terphenyl-d14	79	27 - 115	09/12/19 10:10	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 16:20
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J5-SC1b-60to70-82719	**Units:**	ug/Kg
Lab Code:	K1907934-057	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**6.3**	1.7	0.24	2	09/12/19 04:15	9/5/19	
Acenaphthene	**11**	0.87	0.094	2	09/12/19 04:15	9/5/19	
Acenaphthylene	**7.2**	0.87	0.092	2	09/12/19 04:15	9/5/19	
Anthracene	**15**	0.87	0.076	2	09/12/19 04:15	9/5/19	
Benz(a)anthracene	**38**	0.87	0.076	2	09/12/19 04:15	9/5/19	
Benzo(a)pyrene	**49**	0.87	0.14	2	09/12/19 04:15	9/5/19	
Benzo(b)fluoranthene	**61**	0.87	0.14	2	09/12/19 04:15	9/5/19	
Benzo(g,h,i)perylene	**44**	0.87	0.19	2	09/12/19 04:15	9/5/19	
Benzo(k)fluoranthene	**20**	0.87	0.12	2	09/12/19 04:15	9/5/19	
Chrysene	**54**	0.87	0.11	2	09/12/19 04:15	9/5/19	
Dibenz(a,h)anthracene	**8.2**	0.87	0.18	2	09/12/19 04:15	9/5/19	
Dibenzofuran	**3.8**	0.87	0.090	2	09/12/19 04:15	9/5/19	
Fluoranthene	**91**	0.87	0.098	2	09/12/19 04:15	9/5/19	
Fluorene	**9.0**	0.87	0.11	2	09/12/19 04:15	9/5/19	
Indeno(1,2,3-cd)pyrene	**41**	0.87	0.20	2	09/12/19 04:15	9/5/19	
Naphthalene	**11**	1.7	0.30	2	09/12/19 04:15	9/5/19	
Phenanthrene	**65**	0.87	0.14	2	09/12/19 04:15	9/5/19	
Pyrene	**110**	0.87	0.10	2	09/12/19 04:15	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	74	23 - 110	09/12/19 04:15	
Fluorene-d10	65	26 - 102	09/12/19 04:15	
Terphenyl-d14	80	27 - 115	09/12/19 04:15	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 16:25
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J5-SC1b-70to80-82719	**Units:**	ug/Kg
Lab Code:	K1907934-058	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**10**	1.5	0.24	2	09/12/19 05:34	9/5/19	
Acenaphthene	**9.0**	0.74	0.094	2	09/12/19 05:34	9/5/19	
Acenaphthylene	**10**	0.74	0.092	2	09/12/19 05:34	9/5/19	
Anthracene	**19**	0.74	0.076	2	09/12/19 05:34	9/5/19	
Benz(a)anthracene	**40**	0.74	0.076	2	09/12/19 05:34	9/5/19	
Benzo(a)pyrene	**51**	0.74	0.14	2	09/12/19 05:34	9/5/19	
Benzo(b)fluoranthene	**57**	0.74	0.14	2	09/12/19 05:34	9/5/19	
Benzo(g,h,i)perylene	**48**	0.74	0.19	2	09/12/19 05:34	9/5/19	
Benzo(k)fluoranthene	**19**	0.74	0.12	2	09/12/19 05:34	9/5/19	
Chrysene	**57**	0.74	0.11	2	09/12/19 05:34	9/5/19	
Dibenz(a,h)anthracene	**7.4**	0.74	0.18	2	09/12/19 05:34	9/5/19	
Dibenzofuran	**5.0**	0.74	0.090	2	09/12/19 05:34	9/5/19	
Fluoranthene	**91**	0.74	0.098	2	09/12/19 05:34	9/5/19	
Fluorene	**7.8**	0.74	0.11	2	09/12/19 05:34	9/5/19	
Indeno(1,2,3-cd)pyrene	**43**	0.74	0.20	2	09/12/19 05:34	9/5/19	
Naphthalene	**17**	1.5	0.30	2	09/12/19 05:34	9/5/19	
Phenanthrene	**75**	0.74	0.14	2	09/12/19 05:34	9/5/19	
Pyrene	**130**	0.74	0.10	2	09/12/19 05:34	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	71	23 - 110	09/12/19 05:34	
Fluorene-d10	65	26 - 102	09/12/19 05:34	
Terphenyl-d14	73	27 - 115	09/12/19 05:34	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 17:25
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J5-SC1b-80to90-82719	**Units:**	ug/Kg
Lab Code:	K1907934-059	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**0.20** J	0.70	0.12	1	09/11/19 13:06	9/5/19	
Acenaphthene	**0.21** J	0.35	0.047	1	09/11/19 13:06	9/5/19	
Acenaphthylene	**0.11** J	0.35	0.046	1	09/11/19 13:06	9/5/19	
Anthracene	**0.20** J	0.35	0.038	1	09/11/19 13:06	9/5/19	
Benz(a)anthracene	**0.53**	0.35	0.038	1	09/11/19 13:06	9/5/19	
Benzo(a)pyrene	**0.69**	0.35	0.070	1	09/11/19 13:06	9/5/19	
Benzo(b)fluoranthene	**0.86**	0.35	0.066	1	09/11/19 13:06	9/5/19	
Benzo(g,h,i)perylene	**0.68**	0.35	0.095	1	09/11/19 13:06	9/5/19	
Benzo(k)fluoranthene	**0.23** J	0.35	0.057	1	09/11/19 13:06	9/5/19	
Chrysene	**0.72**	0.35	0.055	1	09/11/19 13:06	9/5/19	
Dibenz(a,h)anthracene	**0.14** J	0.35	0.086	1	09/11/19 13:06	9/5/19	
Dibenzofuran	**0.11** J	0.35	0.045	1	09/11/19 13:06	9/5/19	
Fluoranthene	**1.0**	0.35	0.049	1	09/11/19 13:06	9/5/19	
Fluorene	**0.14** J	0.35	0.052	1	09/11/19 13:06	9/5/19	
Indeno(1,2,3-cd)pyrene	**0.58**	0.35	0.096	1	09/11/19 13:06	9/5/19	
Naphthalene	**0.23** J	0.70	0.15	1	09/11/19 13:06	9/5/19	
Phenanthrene	**1.3**	0.35	0.066	1	09/11/19 13:06	9/5/19	
Pyrene	**1.8**	0.35	0.050	1	09/11/19 13:06	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	74	23 - 110	09/11/19 13:06	
Fluorene-d10	60	26 - 102	09/11/19 13:06	
Terphenyl-d14	76	27 - 115	09/11/19 13:06	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 17:30
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J5-SC1b-90to100-82719	**Units:**	ug/Kg
Lab Code:	K1907934-060	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**0.22**	**J**	0.69	0.12	1	09/11/19 13:45	9/5/19	
Acenaphthene	**0.11**	**J**	0.35	0.047	1	09/11/19 13:45	9/5/19	
Acenaphthylene	**0.094**	**J**	0.35	0.046	1	09/11/19 13:45	9/5/19	
Anthracene	**0.14**	**J**	0.35	0.038	1	09/11/19 13:45	9/5/19	
Benz(a)anthracene	**0.47**		0.35	0.038	1	09/11/19 13:45	9/5/19	
Benzo(a)pyrene	**0.57**		0.35	0.070	1	09/11/19 13:45	9/5/19	
Benzo(b)fluoranthene	**0.82**		0.35	0.066	1	09/11/19 13:45	9/5/19	
Benzo(g,h,i)perylene	**0.60**		0.35	0.095	1	09/11/19 13:45	9/5/19	
Benzo(k)fluoranthene	**0.28**	**J**	0.35	0.057	1	09/11/19 13:45	9/5/19	
Chrysene	**0.63**		0.35	0.055	1	09/11/19 13:45	9/5/19	
Dibenz(a,h)anthracene	**0.12**	**J**	0.35	0.086	1	09/11/19 13:45	9/5/19	
Dibenzofuran	**0.12**	**J**	0.35	0.045	1	09/11/19 13:45	9/5/19	
Fluoranthene	**0.88**		0.35	0.049	1	09/11/19 13:45	9/5/19	
Fluorene	**0.13**	**J**	0.35	0.052	1	09/11/19 13:45	9/5/19	
Indeno(1,2,3-cd)pyrene	**0.57**		0.35	0.096	1	09/11/19 13:45	9/5/19	
Naphthalene	**0.29**	**J**	0.69	0.15	1	09/11/19 13:45	9/5/19	
Phenanthrene	**0.93**		0.35	0.066	1	09/11/19 13:45	9/5/19	
Pyrene	**1.4**		0.35	0.050	1	09/11/19 13:45	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	70	23 - 110	09/11/19 13:45	
Fluorene-d10	60	26 - 102	09/11/19 13:45	
Terphenyl-d14	77	27 - 115	09/11/19 13:45	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 17:35
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J5-SC1b-100to110-82719	**Units:**	ug/Kg
Lab Code:	K1907934-061	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**0.12**	**J**	0.69	0.12	1	09/11/19 14:25	9/5/19	
Acenaphthene	**0.054**	**J**	0.34	0.047	1	09/11/19 14:25	9/5/19	
Acenaphthylene	ND	U	0.34	0.046	1	09/11/19 14:25	9/5/19	
Anthracene	**0.040**	**J**	0.34	0.038	1	09/11/19 14:25	9/5/19	
Benz(a)anthracene	**0.11**	**J**	0.34	0.038	1	09/11/19 14:25	9/5/19	
Benzo(a)pyrene	**0.14**	**J**	0.34	0.070	1	09/11/19 14:25	9/5/19	
Benzo(b)fluoranthene	**0.28**	**J**	0.34	0.066	1	09/11/19 14:25	9/5/19	
Benzo(g,h,i)perylene	**0.15**	**J**	0.34	0.095	1	09/11/19 14:25	9/5/19	
Benzo(k)fluoranthene	ND	U	0.34	0.057	1	09/11/19 14:25	9/5/19	
Chrysene	**0.16**	**J**	0.34	0.055	1	09/11/19 14:25	9/5/19	
Dibenz(a,h)anthracene	ND	U	0.34	0.086	1	09/11/19 14:25	9/5/19	
Dibenzofuran	**0.070**	**J**	0.34	0.045	1	09/11/19 14:25	9/5/19	
Fluoranthene	**0.18**	**J**	0.34	0.049	1	09/11/19 14:25	9/5/19	
Fluorene	**0.073**	**J**	0.34	0.052	1	09/11/19 14:25	9/5/19	
Indeno(1,2,3-cd)pyrene	**0.15**	**J**	0.34	0.096	1	09/11/19 14:25	9/5/19	
Naphthalene	ND	U	0.69	0.15	1	09/11/19 14:25	9/5/19	
Phenanthrene	**0.29**	**J**	0.34	0.066	1	09/11/19 14:25	9/5/19	
Pyrene	**0.30**	**J**	0.34	0.050	1	09/11/19 14:25	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	74	23 - 110	09/11/19 14:25	
Fluorene-d10	62	26 - 102	09/11/19 14:25	
Terphenyl-d14	80	27 - 115	09/11/19 14:25	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 10:00
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J3-SC1b-20to30-82719	**Units:**	ug/Kg
Lab Code:	K1907934-064	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**9.8**	1.5	0.24	2	09/12/19 06:13	9/5/19	
Acenaphthene	**18**	0.74	0.094	2	09/12/19 06:13	9/5/19	
Acenaphthylene	**7.7**	0.74	0.092	2	09/12/19 06:13	9/5/19	
Anthracene	**22**	0.74	0.076	2	09/12/19 06:13	9/5/19	
Benz(a)anthracene	**54**	0.74	0.076	2	09/12/19 06:13	9/5/19	
Benzo(a)pyrene	**62**	0.74	0.14	2	09/12/19 06:13	9/5/19	
Benzo(b)fluoranthene	**78**	0.74	0.14	2	09/12/19 06:13	9/5/19	
Benzo(g,h,i)perylene	**55**	0.74	0.19	2	09/12/19 06:13	9/5/19	
Benzo(k)fluoranthene	**26**	0.74	0.12	2	09/12/19 06:13	9/5/19	
Chrysene	**75**	0.74	0.11	2	09/12/19 06:13	9/5/19	
Dibenz(a,h)anthracene	**10**	0.74	0.18	2	09/12/19 06:13	9/5/19	
Dibenzofuran	**5.7**	0.74	0.090	2	09/12/19 06:13	9/5/19	
Fluoranthene	**130**	0.74	0.098	2	09/12/19 06:13	9/5/19	
Fluorene	**19**	0.74	0.11	2	09/12/19 06:13	9/5/19	
Indeno(1,2,3-cd)pyrene	**52**	0.74	0.20	2	09/12/19 06:13	9/5/19	
Naphthalene	**19**	1.5	0.30	2	09/12/19 06:13	9/5/19	
Phenanthrene	**140**	0.74	0.14	2	09/12/19 06:13	9/5/19	
Pyrene	**170**	0.74	0.10	2	09/12/19 06:13	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	75	23 - 110	09/12/19 06:13	
Fluorene-d10	67	26 - 102	09/12/19 06:13	
Terphenyl-d14	81	27 - 115	09/12/19 06:13	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 10:05
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J3-SC1b-30to40-82719	**Units:**	ug/Kg
Lab Code:	K1907934-065	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**20**	4.0	0.60	5	09/12/19 10:50	9/5/19	
Acenaphthene	**44**	2.0	0.24	5	09/12/19 10:50	9/5/19	
Acenaphthylene	**14**	2.0	0.23	5	09/12/19 10:50	9/5/19	
Anthracene	**45**	2.0	0.19	5	09/12/19 10:50	9/5/19	
Benz(a)anthracene	**100**	2.0	0.19	5	09/12/19 10:50	9/5/19	
Benzo(a)pyrene	**110**	2.0	0.35	5	09/12/19 10:50	9/5/19	
Benzo(b)fluoranthene	**140**	2.0	0.33	5	09/12/19 10:50	9/5/19	
Benzo(g,h,i)perylene	**99**	2.0	0.48	5	09/12/19 10:50	9/5/19	
Benzo(k)fluoranthene	**48**	2.0	0.29	5	09/12/19 10:50	9/5/19	
Chrysene	**140**	2.0	0.28	5	09/12/19 10:50	9/5/19	
Dibenz(a,h)anthracene	**18**	2.0	0.43	5	09/12/19 10:50	9/5/19	
Dibenzofuran	**10**	2.0	0.23	5	09/12/19 10:50	9/5/19	
Fluoranthene	**290**	2.0	0.25	5	09/12/19 10:50	9/5/19	
Fluorene	**40**	2.0	0.26	5	09/12/19 10:50	9/5/19	
Indeno(1,2,3-cd)pyrene	**94**	2.0	0.48	5	09/12/19 10:50	9/5/19	
Naphthalene	**32**	4.0	0.75	5	09/12/19 10:50	9/5/19	
Phenanthrene	**430**	2.0	0.33	5	09/12/19 10:50	9/5/19	
Pyrene	**360**	2.0	0.25	5	09/12/19 10:50	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	74	23 - 110	09/12/19 10:50	
Fluorene-d10	67	26 - 102	09/12/19 10:50	
Terphenyl-d14	78	27 - 115	09/12/19 10:50	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 11:20
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J3-SC1b-40to50-82719	**Units:**	ug/Kg
Lab Code:	K1907934-066	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**12**	1.5	0.24	2	09/12/19 06:53	9/5/19	
Acenaphthene	**64**	0.75	0.094	2	09/12/19 06:53	9/5/19	
Acenaphthylene	**9.1**	0.75	0.092	2	09/12/19 06:53	9/5/19	
Anthracene	**16**	0.75	0.076	2	09/12/19 06:53	9/5/19	
Benz(a)anthracene	**28**	0.75	0.076	2	09/12/19 06:53	9/5/19	
Benzo(a)pyrene	**39**	0.75	0.14	2	09/12/19 06:53	9/5/19	
Benzo(b)fluoranthene	**44**	0.75	0.14	2	09/12/19 06:53	9/5/19	
Benzo(g,h,i)perylene	**42**	0.75	0.19	2	09/12/19 06:53	9/5/19	
Benzo(k)fluoranthene	**14**	0.75	0.12	2	09/12/19 06:53	9/5/19	
Chrysene	**40**	0.75	0.11	2	09/12/19 06:53	9/5/19	
Dibenz(a,h)anthracene	**5.7**	0.75	0.18	2	09/12/19 06:53	9/5/19	
Dibenzofuran	**4.6**	0.75	0.090	2	09/12/19 06:53	9/5/19	
Fluoranthene	**78**	0.75	0.098	2	09/12/19 06:53	9/5/19	
Fluorene	**18**	0.75	0.11	2	09/12/19 06:53	9/5/19	
Indeno(1,2,3-cd)pyrene	**37**	0.75	0.20	2	09/12/19 06:53	9/5/19	
Naphthalene	**19**	1.5	0.30	2	09/12/19 06:53	9/5/19	
Phenanthrene	**87**	0.75	0.14	2	09/12/19 06:53	9/5/19	
Pyrene	**120**	0.75	0.10	2	09/12/19 06:53	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	70	23 - 110	09/12/19 06:53	
Fluorene-d10	59	26 - 102	09/12/19 06:53	
Terphenyl-d14	73	27 - 115	09/12/19 06:53	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 11:25
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J3-SC1b-50to60-82719	**Units:**	ug/Kg
Lab Code:	K1907934-067	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**6.2**	0.67	0.12	1	09/11/19 15:05	9/5/19	
Acenaphthene	**4.8**	0.33	0.047	1	09/11/19 15:05	9/5/19	
Acenaphthylene	**6.6**	0.33	0.046	1	09/11/19 15:05	9/5/19	
Anthracene	**10**	0.33	0.038	1	09/11/19 15:05	9/5/19	
Benz(a)anthracene	**17**	0.33	0.038	1	09/11/19 15:05	9/5/19	
Benzo(a)pyrene	**28**	0.33	0.070	1	09/11/19 15:05	9/5/19	
Benzo(b)fluoranthene	**31**	0.33	0.066	1	09/11/19 15:05	9/5/19	
Benzo(g,h,i)perylene	**31**	0.33	0.095	1	09/11/19 15:05	9/5/19	
Benzo(k)fluoranthene	**9.9**	0.33	0.057	1	09/11/19 15:05	9/5/19	
Chrysene	**26**	0.33	0.055	1	09/11/19 15:05	9/5/19	
Dibenz(a,h)anthracene	**2.9**	0.33	0.086	1	09/11/19 15:05	9/5/19	
Dibenzofuran	**2.6**	0.33	0.045	1	09/11/19 15:05	9/5/19	
Fluoranthene	**61**	0.33	0.049	1	09/11/19 15:05	9/5/19	
Fluorene	**5.1**	0.33	0.052	1	09/11/19 15:05	9/5/19	
Indeno(1,2,3-cd)pyrene	**28**	0.33	0.096	1	09/11/19 15:05	9/5/19	
Naphthalene	**16**	0.67	0.15	1	09/11/19 15:05	9/5/19	
Phenanthrene	**43**	0.33	0.066	1	09/11/19 15:05	9/5/19	
Pyrene	**79**	0.33	0.050	1	09/11/19 15:05	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	70	23 - 110	09/11/19 15:05	
Fluorene-d10	61	26 - 102	09/11/19 15:05	
Terphenyl-d14	73	27 - 115	09/11/19 15:05	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 11:30
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J3-SC1b-60to70-82719	**Units:**	ug/Kg
Lab Code:	K1907934-068	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**2.9**	0.59	0.12	1	09/11/19 15:45	9/5/19	
Acenaphthene	**0.36**	0.29	0.047	1	09/11/19 15:45	9/5/19	
Acenaphthylene	**2.5**	0.29	0.046	1	09/11/19 15:45	9/5/19	
Anthracene	**2.9**	0.29	0.038	1	09/11/19 15:45	9/5/19	
Benz(a)anthracene	**14**	0.29	0.038	1	09/11/19 15:45	9/5/19	
Benzo(a)pyrene	**22**	0.29	0.070	1	09/11/19 15:45	9/5/19	
Benzo(b)fluoranthene	**20**	0.29	0.066	1	09/11/19 15:45	9/5/19	
Benzo(g,h,i)perylene	**18**	0.29	0.095	1	09/11/19 15:45	9/5/19	
Benzo(k)fluoranthene	**6.5**	0.29	0.057	1	09/11/19 15:45	9/5/19	
Chrysene	**17**	0.29	0.055	1	09/11/19 15:45	9/5/19	
Dibenz(a,h)anthracene	**2.0**	0.29	0.086	1	09/11/19 15:45	9/5/19	
Dibenzofuran	**0.88**	0.29	0.045	1	09/11/19 15:45	9/5/19	
Fluoranthene	**37**	0.29	0.049	1	09/11/19 15:45	9/5/19	
Fluorene	**0.73**	0.29	0.052	1	09/11/19 15:45	9/5/19	
Indeno(1,2,3-cd)pyrene	**18**	0.29	0.096	1	09/11/19 15:45	9/5/19	
Naphthalene	**7.7**	0.59	0.15	1	09/11/19 15:45	9/5/19	
Phenanthrene	**12**	0.29	0.066	1	09/11/19 15:45	9/5/19	
Pyrene	**50**	0.29	0.050	1	09/11/19 15:45	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	80	23 - 110	09/11/19 15:45	
Fluorene-d10	68	26 - 102	09/11/19 15:45	
Terphenyl-d14	89	27 - 115	09/11/19 15:45	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 11:35
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J3-SC1b-70to80-82719	**Units:**	ug/Kg
Lab Code:	K1907934-069	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**2.2**	0.60	0.12	1	09/11/19 16:24	9/5/19	
Acenaphthene	**0.19** J	0.30	0.047	1	09/11/19 16:24	9/5/19	
Acenaphthylene	**0.49**	0.30	0.046	1	09/11/19 16:24	9/5/19	
Anthracene	**1.1**	0.30	0.038	1	09/11/19 16:24	9/5/19	
Benz(a)anthracene	**2.0**	0.30	0.038	1	09/11/19 16:24	9/5/19	
Benzo(a)pyrene	**3.4**	0.30	0.070	1	09/11/19 16:24	9/5/19	
Benzo(b)fluoranthene	**3.3**	0.30	0.066	1	09/11/19 16:24	9/5/19	
Benzo(g,h,i)perylene	**3.4**	0.30	0.095	1	09/11/19 16:24	9/5/19	
Benzo(k)fluoranthene	**1.1**	0.30	0.057	1	09/11/19 16:24	9/5/19	
Chrysene	**2.6**	0.30	0.055	1	09/11/19 16:24	9/5/19	
Dibenz(a,h)anthracene	**0.37**	0.30	0.086	1	09/11/19 16:24	9/5/19	
Dibenzofuran	**0.20** J	0.30	0.045	1	09/11/19 16:24	9/5/19	
Fluoranthene	**6.1**	0.30	0.049	1	09/11/19 16:24	9/5/19	
Fluorene	**0.45**	0.30	0.052	1	09/11/19 16:24	9/5/19	
Indeno(1,2,3-cd)pyrene	**3.1**	0.30	0.096	1	09/11/19 16:24	9/5/19	
Naphthalene	**1.2**	0.60	0.15	1	09/11/19 16:24	9/5/19	
Phenanthrene	**6.7**	0.30	0.066	1	09/11/19 16:24	9/5/19	
Pyrene	**9.0**	0.30	0.050	1	09/11/19 16:24	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	88	23 - 110	09/11/19 16:24	
Fluorene-d10	78	26 - 102	09/11/19 16:24	
Terphenyl-d14	98	27 - 115	09/11/19 16:24	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 12:20
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J3-SC1b-80to90-82719	**Units:**	ug/Kg
Lab Code:	K1907934-070	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**8.6**	0.60	0.12	1	09/11/19 17:04	9/5/19	
Acenaphthene	**1.9**	0.30	0.047	1	09/11/19 17:04	9/5/19	
Acenaphthylene	**5.9**	0.30	0.046	1	09/11/19 17:04	9/5/19	
Anthracene	**7.5**	0.30	0.038	1	09/11/19 17:04	9/5/19	
Benz(a)anthracene	**31**	0.30	0.038	1	09/11/19 17:04	9/5/19	
Benzo(a)pyrene	**46**	0.30	0.070	1	09/11/19 17:04	9/5/19	
Benzo(b)fluoranthene	**46**	0.30	0.066	1	09/11/19 17:04	9/5/19	
Benzo(g,h,i)perylene	**41**	0.30	0.095	1	09/11/19 17:04	9/5/19	
Benzo(k)fluoranthene	**15**	0.30	0.057	1	09/11/19 17:04	9/5/19	
Chrysene	**38**	0.30	0.055	1	09/11/19 17:04	9/5/19	
Dibenz(a,h)anthracene	**5.0**	0.30	0.086	1	09/11/19 17:04	9/5/19	
Dibenzofuran	**1.2**	0.30	0.045	1	09/11/19 17:04	9/5/19	
Fluoranthene	**72**	0.30	0.049	1	09/11/19 17:04	9/5/19	
Fluorene	**2.5**	0.30	0.052	1	09/11/19 17:04	9/5/19	
Indeno(1,2,3-cd)pyrene	**39**	0.30	0.096	1	09/11/19 17:04	9/5/19	
Naphthalene	**7.7**	0.60	0.15	1	09/11/19 17:04	9/5/19	
Phenanthrene	**32**	0.30	0.066	1	09/11/19 17:04	9/5/19	
Pyrene	**89**	0.30	0.050	1	09/11/19 17:04	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	69	23 - 110	09/11/19 17:04	
Fluorene-d10	59	26 - 102	09/11/19 17:04	
Terphenyl-d14	76	27 - 115	09/11/19 17:04	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 12:25
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J3-SC1b-90to100-82719	**Units:**	ug/Kg
Lab Code:	K1907934-071	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**2.1**	0.61	0.12	1	09/11/19 00:17	9/5/19	
Acenaphthene	**1.9**	0.31	0.047	1	09/11/19 00:17	9/5/19	
Acenaphthylene	**5.4**	0.31	0.046	1	09/11/19 00:17	9/5/19	
Anthracene	**6.8**	0.31	0.038	1	09/11/19 00:17	9/5/19	
Benz(a)anthracene	**23**	0.31	0.038	1	09/11/19 00:17	9/5/19	
Benzo(a)pyrene	**30**	0.31	0.070	1	09/11/19 00:17	9/5/19	
Benzo(b)fluoranthene	**28**	0.31	0.066	1	09/11/19 00:17	9/5/19	
Benzo(g,h,i)perylene	**23**	0.31	0.095	1	09/11/19 00:17	9/5/19	
Benzo(k)fluoranthene	**10**	0.31	0.057	1	09/11/19 00:17	9/5/19	
Chrysene	**28**	0.31	0.055	1	09/11/19 00:17	9/5/19	
Dibenz(a,h)anthracene	**3.1**	0.31	0.086	1	09/11/19 00:17	9/5/19	
Dibenzofuran	**0.87**	0.31	0.045	1	09/11/19 00:17	9/5/19	
Fluoranthene	**45**	0.31	0.049	1	09/11/19 00:17	9/5/19	
Fluorene	**2.0**	0.31	0.052	1	09/11/19 00:17	9/5/19	
Indeno(1,2,3-cd)pyrene	**22**	0.31	0.096	1	09/11/19 00:17	9/5/19	
Naphthalene	**6.1**	0.61	0.15	1	09/11/19 00:17	9/5/19	
Phenanthrene	**26**	0.31	0.066	1	09/11/19 00:17	9/5/19	
Pyrene	**71**	0.31	0.050	1	09/11/19 00:17	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	68	23 - 110	09/11/19 00:17	
Fluorene-d10	73	26 - 102	09/11/19 00:17	
Terphenyl-d14	84	27 - 115	09/11/19 00:17	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 09:55
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	J3-SC1b-10to20-82719	**Units:**	ug/Kg
Lab Code:	K1907934-072	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**0.47** J	0.60	0.12	1	09/11/19 00:46	9/5/19	
Acenaphthene	**0.58**	0.30	0.047	1	09/11/19 00:46	9/5/19	
Acenaphthylene	**0.53**	0.30	0.046	1	09/11/19 00:46	9/5/19	
Anthracene	**0.98**	0.30	0.038	1	09/11/19 00:46	9/5/19	
Benz(a)anthracene	**3.6**	0.30	0.038	1	09/11/19 00:46	9/5/19	
Benzo(a)pyrene	**4.4**	0.30	0.070	1	09/11/19 00:46	9/5/19	
Benzo(b)fluoranthene	**5.7**	0.30	0.066	1	09/11/19 00:46	9/5/19	
Benzo(g,h,i)perylene	**4.5**	0.30	0.095	1	09/11/19 00:46	9/5/19	
Benzo(k)fluoranthene	**2.2**	0.30	0.057	1	09/11/19 00:46	9/5/19	
Chrysene	**5.3**	0.30	0.055	1	09/11/19 00:46	9/5/19	
Dibenz(a,h)anthracene	**0.76**	0.30	0.086	1	09/11/19 00:46	9/5/19	
Dibenzofuran	**0.35**	0.30	0.045	1	09/11/19 00:46	9/5/19	
Fluoranthene	**7.8**	0.30	0.049	1	09/11/19 00:46	9/5/19	
Fluorene	**0.59**	0.30	0.052	1	09/11/19 00:46	9/5/19	
Indeno(1,2,3-cd)pyrene	**4.0**	0.30	0.096	1	09/11/19 00:46	9/5/19	
Naphthalene	**0.95**	0.60	0.15	1	09/11/19 00:46	9/5/19	
Phenanthrene	**6.2**	0.30	0.066	1	09/11/19 00:46	9/5/19	
Pyrene	**12**	0.30	0.050	1	09/11/19 00:46	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	66	23 - 110	09/11/19 00:46	
Fluorene-d10	69	26 - 102	09/11/19 00:46	
Terphenyl-d14	78	27 - 115	09/11/19 00:46	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 12:35
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	412-SC1b-80to90-82719	**Units:**	ug/Kg
Lab Code:	K1907934-073	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**10**	0.60	0.12	1	09/11/19 01:14	9/5/19	
Acenaphthene	**4.4**	0.30	0.047	1	09/11/19 01:14	9/5/19	
Acenaphthylene	**8.3**	0.30	0.046	1	09/11/19 01:14	9/5/19	
Anthracene	**16**	0.30	0.038	1	09/11/19 01:14	9/5/19	
Benz(a)anthracene	**52**	0.30	0.038	1	09/11/19 01:14	9/5/19	
Benzo(a)pyrene	**59**	0.30	0.070	1	09/11/19 01:14	9/5/19	
Benzo(b)fluoranthene	**57**	0.30	0.066	1	09/11/19 01:14	9/5/19	
Benzo(g,h,i)perylene	**37**	0.30	0.095	1	09/11/19 01:14	9/5/19	
Benzo(k)fluoranthene	**18**	0.30	0.057	1	09/11/19 01:14	9/5/19	
Chrysene	**53**	0.30	0.055	1	09/11/19 01:14	9/5/19	
Dibenz(a,h)anthracene	**6.4**	0.30	0.086	1	09/11/19 01:14	9/5/19	
Dibenzofuran	**1.3**	0.30	0.045	1	09/11/19 01:14	9/5/19	
Fluoranthene	**71**	0.30	0.049	1	09/11/19 01:14	9/5/19	
Fluorene	**2.7**	0.30	0.052	1	09/11/19 01:14	9/5/19	
Indeno(1,2,3-cd)pyrene	**37**	0.30	0.096	1	09/11/19 01:14	9/5/19	
Naphthalene	**8.4**	0.60	0.15	1	09/11/19 01:14	9/5/19	
Phenanthrene	**40**	0.30	0.066	1	09/11/19 01:14	9/5/19	
Pyrene	**100**	0.30	0.050	1	09/11/19 01:14	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	60	23 - 110	09/11/19 01:14	
Fluorene-d10	62	26 - 102	09/11/19 01:14	
Terphenyl-d14	71	27 - 115	09/11/19 01:14	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/26/19 10:30
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	L3-SC1b-20to30-82619	**Units:**	ug/Kg
Lab Code:	K1907934-074	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**0.64**	0.63	0.12	1	09/11/19 01:43	9/5/19	
Acenaphthene	**0.67**	0.31	0.047	1	09/11/19 01:43	9/5/19	
Acenaphthylene	**2.3**	0.31	0.046	1	09/11/19 01:43	9/5/19	
Anthracene	**2.0**	0.31	0.038	1	09/11/19 01:43	9/5/19	
Benz(a)anthracene	**11**	0.31	0.038	1	09/11/19 01:43	9/5/19	
Benzo(a)pyrene	**16**	0.31	0.070	1	09/11/19 01:43	9/5/19	
Benzo(b)fluoranthene	**17**	0.31	0.066	1	09/11/19 01:43	9/5/19	
Benzo(g,h,i)perylene	**13**	0.31	0.095	1	09/11/19 01:43	9/5/19	
Benzo(k)fluoranthene	**6.4**	0.31	0.057	1	09/11/19 01:43	9/5/19	
Chrysene	**14**	0.31	0.055	1	09/11/19 01:43	9/5/19	
Dibenz(a,h)anthracene	**1.8**	0.31	0.086	1	09/11/19 01:43	9/5/19	
Dibenzofuran	**0.44**	0.31	0.045	1	09/11/19 01:43	9/5/19	
Fluoranthene	**18**	0.31	0.049	1	09/11/19 01:43	9/5/19	
Fluorene	**0.66**	0.31	0.052	1	09/11/19 01:43	9/5/19	
Indeno(1,2,3-cd)pyrene	**13**	0.31	0.096	1	09/11/19 01:43	9/5/19	
Naphthalene	**1.4**	0.63	0.15	1	09/11/19 01:43	9/5/19	
Phenanthrene	**13**	0.31	0.066	1	09/11/19 01:43	9/5/19	
Pyrene	**33**	0.31	0.050	1	09/11/19 01:43	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	66	23 - 110	09/11/19 01:43	
Fluorene-d10	68	26 - 102	09/11/19 01:43	
Terphenyl-d14	79	27 - 115	09/11/19 01:43	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/26/19 10:35
Sample Matrix:	Soil	**Date Received:**	08/29/19 11:35
Sample Name:	L3-SC1b-30to40-82619	**Units:**	ug/Kg
Lab Code:	K1907934-075	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**0.70**	0.60	0.12	1	09/11/19 02:11	9/5/19	
Acenaphthene	**0.35**	0.30	0.047	1	09/11/19 02:11	9/5/19	
Acenaphthylene	**1.1**	0.30	0.046	1	09/11/19 02:11	9/5/19	
Anthracene	**0.96**	0.30	0.038	1	09/11/19 02:11	9/5/19	
Benz(a)anthracene	**6.7**	0.30	0.038	1	09/11/19 02:11	9/5/19	
Benzo(a)pyrene	**9.6**	0.30	0.070	1	09/11/19 02:11	9/5/19	
Benzo(b)fluoranthene	**9.7**	0.30	0.066	1	09/11/19 02:11	9/5/19	
Benzo(g,h,i)perylene	**8.2**	0.30	0.095	1	09/11/19 02:11	9/5/19	
Benzo(k)fluoranthene	**3.1**	0.30	0.057	1	09/11/19 02:11	9/5/19	
Chrysene	**8.8**	0.30	0.055	1	09/11/19 02:11	9/5/19	
Dibenz(a,h)anthracene	**1.1**	0.30	0.086	1	09/11/19 02:11	9/5/19	
Dibenzofuran	**0.29**	0.30	0.045	1	09/11/19 02:11	9/5/19	J
Fluoranthene	**8.3**	0.30	0.049	1	09/11/19 02:11	9/5/19	
Fluorene	**0.38**	0.30	0.052	1	09/11/19 02:11	9/5/19	
Indeno(1,2,3-cd)pyrene	**7.7**	0.30	0.096	1	09/11/19 02:11	9/5/19	
Naphthalene	**1.1**	0.60	0.15	1	09/11/19 02:11	9/5/19	
Phenanthrene	**7.8**	0.30	0.066	1	09/11/19 02:11	9/5/19	
Pyrene	**22**	0.30	0.050	1	09/11/19 02:11	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	61	23 - 110	09/11/19 02:11	
Fluorene-d10	64	26 - 102	09/11/19 02:11	
Terphenyl-d14	73	27 - 115	09/11/19 02:11	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	KQ1912514-03	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	ND U	0.47	0.12	1	09/10/19 07:25	9/4/19	
Acenaphthene	ND U	0.24	0.047	1	09/10/19 07:25	9/4/19	
Acenaphthylene	ND U	0.24	0.046	1	09/10/19 07:25	9/4/19	
Anthracene	ND U	0.24	0.038	1	09/10/19 07:25	9/4/19	
Benz(a)anthracene	ND U	0.24	0.038	1	09/10/19 07:25	9/4/19	
Benzo(a)pyrene	ND U	0.24	0.070	1	09/10/19 07:25	9/4/19	
Benzo(b)fluoranthene	ND U	0.24	0.066	1	09/10/19 07:25	9/4/19	
Benzo(g,h,i)perylene	ND U	0.24	0.095	1	09/10/19 07:25	9/4/19	
Benzo(k)fluoranthene	ND U	0.24	0.057	1	09/10/19 07:25	9/4/19	
Chrysene	ND U	0.24	0.055	1	09/10/19 07:25	9/4/19	
Dibenz(a,h)anthracene	ND U	0.24	0.086	1	09/10/19 07:25	9/4/19	
Dibenzofuran	ND U	0.24	0.045	1	09/10/19 07:25	9/4/19	
Fluoranthene	ND U	0.24	0.049	1	09/10/19 07:25	9/4/19	
Fluorene	ND U	0.24	0.052	1	09/10/19 07:25	9/4/19	
Indeno(1,2,3-cd)pyrene	ND U	0.24	0.096	1	09/10/19 07:25	9/4/19	
Naphthalene	ND U	0.47	0.15	1	09/10/19 07:25	9/4/19	
Phenanthrene	ND U	0.24	0.066	1	09/10/19 07:25	9/4/19	
Pyrene	ND U	0.24	0.050	1	09/10/19 07:25	9/4/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	75	23 - 110	09/10/19 07:25	
Fluorene-d10	61	26 - 102	09/10/19 07:25	
Terphenyl-d14	83	27 - 115	09/10/19 07:25	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	KQ1912548-03	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	ND U	0.48	0.12	1	09/10/19 22:51	9/5/19	
Acenaphthene	ND U	0.24	0.047	1	09/10/19 22:51	9/5/19	
Acenaphthylene	ND U	0.24	0.046	1	09/10/19 22:51	9/5/19	
Anthracene	ND U	0.24	0.038	1	09/10/19 22:51	9/5/19	
Benz(a)anthracene	ND U	0.24	0.038	1	09/10/19 22:51	9/5/19	
Benzo(a)pyrene	ND U	0.24	0.070	1	09/10/19 22:51	9/5/19	
Benzo(b)fluoranthene	ND U	0.24	0.066	1	09/10/19 22:51	9/5/19	
Benzo(g,h,i)perylene	ND U	0.24	0.095	1	09/10/19 22:51	9/5/19	
Benzo(k)fluoranthene	ND U	0.24	0.057	1	09/10/19 22:51	9/5/19	
Chrysene	ND U	0.24	0.055	1	09/10/19 22:51	9/5/19	
Dibenz(a,h)anthracene	ND U	0.24	0.086	1	09/10/19 22:51	9/5/19	
Dibenzofuran	ND U	0.24	0.045	1	09/10/19 22:51	9/5/19	
Fluoranthene	ND U	0.24	0.049	1	09/10/19 22:51	9/5/19	
Fluorene	ND U	0.24	0.052	1	09/10/19 22:51	9/5/19	
Indeno(1,2,3-cd)pyrene	ND U	0.24	0.096	1	09/10/19 22:51	9/5/19	
Naphthalene	ND U	0.48	0.15	1	09/10/19 22:51	9/5/19	
Phenanthrene	ND U	0.24	0.066	1	09/10/19 22:51	9/5/19	
Pyrene	ND U	0.24	0.050	1	09/10/19 22:51	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	72	23 - 110	09/10/19 22:51	
Fluorene-d10	79	26 - 102	09/10/19 22:51	
Terphenyl-d14	85	27 - 115	09/10/19 22:51	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	KQ1912549-03	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	ND U	0.48	0.12	1	09/10/19 19:57	9/5/19	
Acenaphthene	ND U	0.24	0.047	1	09/10/19 19:57	9/5/19	
Acenaphthylene	ND U	0.24	0.046	1	09/10/19 19:57	9/5/19	
Anthracene	ND U	0.24	0.038	1	09/10/19 19:57	9/5/19	
Benz(a)anthracene	ND U	0.24	0.038	1	09/10/19 19:57	9/5/19	
Benzo(a)pyrene	ND U	0.24	0.070	1	09/10/19 19:57	9/5/19	
Benzo(b)fluoranthene	ND U	0.24	0.066	1	09/10/19 19:57	9/5/19	
Benzo(g,h,i)perylene	ND U	0.24	0.095	1	09/10/19 19:57	9/5/19	
Benzo(k)fluoranthene	ND U	0.24	0.057	1	09/10/19 19:57	9/5/19	
Chrysene	ND U	0.24	0.055	1	09/10/19 19:57	9/5/19	
Dibenz(a,h)anthracene	ND U	0.24	0.086	1	09/10/19 19:57	9/5/19	
Dibenzofuran	ND U	0.24	0.045	1	09/10/19 19:57	9/5/19	
Fluoranthene	ND U	0.24	0.049	1	09/10/19 19:57	9/5/19	
Fluorene	ND U	0.24	0.052	1	09/10/19 19:57	9/5/19	
Indeno(1,2,3-cd)pyrene	ND U	0.24	0.096	1	09/10/19 19:57	9/5/19	
Naphthalene	ND U	0.48	0.15	1	09/10/19 19:57	9/5/19	
Phenanthrene	ND U	0.24	0.066	1	09/10/19 19:57	9/5/19	
Pyrene	ND U	0.24	0.050	1	09/10/19 19:57	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	83	23 - 110	09/10/19 19:57	
Fluorene-d10	75	26 - 102	09/10/19 19:57	
Terphenyl-d14	90	27 - 115	09/10/19 19:57	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	KQ1912582-03	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	ND	U	0.48	0.12	1	09/11/19 08:28	9/5/19	
Acenaphthene	ND	U	0.24	0.047	1	09/11/19 08:28	9/5/19	
Acenaphthylene	ND	U	0.24	0.046	1	09/11/19 08:28	9/5/19	
Anthracene	ND	U	0.24	0.038	1	09/11/19 08:28	9/5/19	
Benz(a)anthracene	ND	U	0.24	0.038	1	09/11/19 08:28	9/5/19	
Benzo(a)pyrene	ND	U	0.24	0.070	1	09/11/19 08:28	9/5/19	
Benzo(b)fluoranthene	ND	U	0.24	0.066	1	09/11/19 08:28	9/5/19	
Benzo(g,h,i)perylene	ND	U	0.24	0.095	1	09/11/19 08:28	9/5/19	
Benzo(k)fluoranthene	ND	U	0.24	0.057	1	09/11/19 08:28	9/5/19	
Chrysene	ND	U	0.24	0.055	1	09/11/19 08:28	9/5/19	
Dibenz(a,h)anthracene	ND	U	0.24	0.086	1	09/11/19 08:28	9/5/19	
Dibenzofuran	ND	U	0.24	0.045	1	09/11/19 08:28	9/5/19	
Fluoranthene	ND	U	0.24	0.049	1	09/11/19 08:28	9/5/19	
Fluorene	ND	U	0.24	0.052	1	09/11/19 08:28	9/5/19	
Indeno(1,2,3-cd)pyrene	ND	U	0.24	0.096	1	09/11/19 08:28	9/5/19	
Naphthalene	ND	U	0.48	0.15	1	09/11/19 08:28	9/5/19	
Phenanthrene	**0.068**	**J**	0.24	0.066	1	09/11/19 08:28	9/5/19	
Pyrene	ND	U	0.24	0.050	1	09/11/19 08:28	9/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	91	23 - 110	09/11/19 08:28	
Fluorene-d10	82	26 - 102	09/11/19 08:28	
Terphenyl-d14	98	27 - 115	09/11/19 08:28	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	KQ1912768-03	**Basis:**	Dry

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	ND U	0.49	0.12	1	09/12/19 06:51	9/10/19	
Acenaphthene	ND U	0.24	0.047	1	09/12/19 06:51	9/10/19	
Acenaphthylene	ND U	0.24	0.046	1	09/12/19 06:51	9/10/19	
Anthracene	ND U	0.24	0.038	1	09/12/19 06:51	9/10/19	
Benz(a)anthracene	ND U	0.24	0.038	1	09/12/19 06:51	9/10/19	
Benzo(a)pyrene	ND U	0.24	0.070	1	09/12/19 06:51	9/10/19	
Benzo(b)fluoranthene	ND U	0.24	0.066	1	09/12/19 06:51	9/10/19	
Benzo(g,h,i)perylene	ND U	0.24	0.095	1	09/12/19 06:51	9/10/19	
Benzo(k)fluoranthene	ND U	0.24	0.057	1	09/12/19 06:51	9/10/19	
Chrysene	ND U	0.24	0.055	1	09/12/19 06:51	9/10/19	
Dibenz(a,h)anthracene	ND U	0.24	0.086	1	09/12/19 06:51	9/10/19	
Dibenzofuran	ND U	0.24	0.045	1	09/12/19 06:51	9/10/19	
Fluoranthene	ND U	0.24	0.049	1	09/12/19 06:51	9/10/19	
Fluorene	ND U	0.24	0.052	1	09/12/19 06:51	9/10/19	
Indeno(1,2,3-cd)pyrene	ND U	0.24	0.096	1	09/12/19 06:51	9/10/19	
Naphthalene	ND U	0.49	0.15	1	09/12/19 06:51	9/10/19	
Phenanthrene	ND U	0.24	0.066	1	09/12/19 06:51	9/10/19	
Pyrene	ND U	0.24	0.050	1	09/12/19 06:51	9/10/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	64	23 - 110	09/12/19 06:51	
Fluorene-d10	70	26 - 102	09/12/19 06:51	
Terphenyl-d14	83	27 - 115	09/12/19 06:51	

Client: Pacific Groundwater Group (PGG) **Service Request:** K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Extraction Method: EPA 3541

Sample Name	Lab Code	Fluoranthene-d10 23-110	Fluorene-d10 26-102	Terphenyl-d14 27-115
R4-SC1b-20to30-82819	K1907934-003	66	56	74
R4-SC1b-30to40-82819	K1907934-004	66	58	71
R4-SC1b-40to50-82819	K1907934-005	72	66	77
R4-SC1b-50to60-82819	K1907934-006	88	77	96
R4-SC1b-60to70-82819	K1907934-007	83	71	86
R4-SC1b-70to80-82819	K1907934-008	66	60	71
R4-SC1b-80to90-82819	K1907934-009	85	77	91
R4-SC1b-90to100-82819	K1907934-010	73	64	78
R4-SC1b-100to110-82819	K1907934-012	70	63	75
R4-SC1b-110to120-82819	K1907934-013	64	55	69
R4-SC1b-120to130-82819	K1907934-014	77	69	84
413-SC1b-40to50-82819	K1907934-015	67	56	71
R4-SC1b-130to140-82819	K1907934-016	75	64	82
R4-SC1b-140to150-82819	K1907934-017	75	62	80
J6-SC1b-20to30-82819	K1907934-018	82	69	90
J6-SC1b-30to40-82819	K1907934-019	76	64	84
J6-SC1b-40to50-82819	K1907934-020	81	67	87
J6-SC1b-50to60-82819	K1907934-021	72	64	82
J6-SC1b-60to70-82819	K1907934-022	78	70	87
J6-SC1b-70to80-82819	K1907934-023	92	77	100
J6-SC1b-80to90-82819	K1907934-024	72	62	80
J6-SC1b-90to100-82819	K1907934-025	78	68	86
J6-SC1b-100to110-82819	K1907934-026	77	66	83
J6-SC1b-110to120-82819	K1907934-027	71	58	76
H3-SC1b-20to30-82819	K1907934-030	62	64	69
H3-SC1b-30to40-82919	K1907934-031	71	67	77
H3-SC1b-40to50-82919	K1907934-032	69	64	75
H3-SC1b-50to60-82919	K1907934-033	82	70	86
H3-SC1b-60to70-82919	K1907934-034	67	59	71
H3-SC1b-70to80-82919	K1907934-035	69	61	76
H3-SC1b-80to90-82919	K1907934-036	77	69	84
H3-SC1b-90to100-82919	K1907934-037	67	58	70
H3-SC1b-100to110-82919	K1907934-038	71	60	78
D6-SC1b-20to30-82619	K1907934-041	75	63	83
D6-SC1b-30to40-82619	K1907934-042	68	62	75
D6-SC1b-40to50-82619	K1907934-043	82	74	90
D6-SC1b-50to60-82619	K1907934-044	80	73	88

Client: Pacific Groundwater Group (PGG) **Service Request:** K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Extraction Method: EPA 3541

Sample Name	Lab Code	Fluoranthene-d10 23-110	Fluorene-d10 26-102	Terphenyl-d14 27-115
D6-SC1b-60to70-82619	K1907934-045	76	68	81
D6-SC1b-70to80-82619	K1907934-046	84	72	91
D6-SC1b-80to90-82619	K1907934-047	84	73	91
D6-SC1b-90to100-82619	K1907934-048	85	74	92
D6-SC1b-100to110-82619	K1907934-049	74	61	80
D6-SC1b-110to120-82619	K1907934-050	84	70	88
411-SC1b-50to60-82619	K1907934-052	81	73	85
J5-SC1b-20to30-82719	K1907934-053	78	68	84
J5-SC1b-30to40-82719	K1907934-054	81	69	88
J5-SC1b-40to50-82719	K1907934-055	75	71	82
J5-SC1b-50to60-82719	K1907934-056	75	63	79
J5-SC1b-60to70-82719	K1907934-057	74	65	80
J5-SC1b-70to80-82719	K1907934-058	71	65	73
J5-SC1b-80to90-82719	K1907934-059	74	60	76
J5-SC1b-90to100-82719	K1907934-060	70	60	77
J5-SC1b-100to110-82719	K1907934-061	74	62	80
J3-SC1b-20to30-82719	K1907934-064	75	67	81
J3-SC1b-30to40-82719	K1907934-065	74	67	78
J3-SC1b-40to50-82719	K1907934-066	70	59	73
J3-SC1b-50to60-82719	K1907934-067	70	61	73
J3-SC1b-60to70-82719	K1907934-068	80	68	89
J3-SC1b-70to80-82719	K1907934-069	88	78	98
J3-SC1b-80to90-82719	K1907934-070	69	59	76
J3-SC1b-90to100-82719	K1907934-071	68	73	84
J3-SC1b-10to20-82719	K1907934-072	66	69	78
412-SC1b-80to90-82719	K1907934-073	60	62	71
L3-SC1b-20to30-82619	K1907934-074	66	68	79
L3-SC1b-30to40-82619	K1907934-075	61	64	73
Method Blank	KQ1912514-03	75	61	83
Method Blank	KQ1912548-03	72	79	85
Method Blank	KQ1912549-03	83	75	90
Method Blank	KQ1912582-03	91	82	98
Method Blank	KQ1912768-03	64	70	83
Lab Control Sample	KQ1912514-01	84	72	94
Duplicate Lab Control Sample	KQ1912514-02	85	72	94
Lab Control Sample	KQ1912548-01	69	75	88
Duplicate Lab Control Sample	KQ1912548-02	66	74	82

Client: Pacific Groundwater Group (PGG) **Service Request:** K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: 8270D
Extraction Method: EPA 3541

Sample Name	Lab Code	Fluoranthene-d10 23-110	Fluorene-d10 26-102	Terphenyl-d14 27-115
Lab Control Sample	KQ1912549-01	83	70	93
Duplicate Lab Control Sample	KQ1912549-02	80	68	88
Lab Control Sample	KQ1912582-01	89	77	98
Duplicate Lab Control Sample	KQ1912582-02	89	78	100
Lab Control Sample	KQ1912768-01	62	67	77
Duplicate Lab Control Sample	KQ1912768-02	67	68	81

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QA/QC Report

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/10/19 06:46

Internal Standard Area and RT SUMMARY

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

File ID: J:\MS20\DATA\091019\0910F002.D\ **Lab Code:**KQ1912864-01
Instrument ID: K-MS-20 **Analysis Lot:**650829
Analysis Method: 8270D **Signal ID:**1

		Acenaphthene-d10		Chrysene-d12		Naphthalene-d8	
		Area	**RT**	**Area**	**RT**	**Area**	**RT**
	Result ==>	42,030	8.16	93,365	18.59	74,962	5.90
	Upper Limit ==>	84,060	8.66	186,730	19.09	149,924	6.40
	Lower Limit ==>	21,015	7.66	46,683	18.09	37,481	5.40
Associated Analyses							
Method Blank	KQ1912514-03	43155	8.16	89630	18.59	76956	5.90
Lab Control Sample	KQ1912514-01	43226	8.16	91240	18.59	79850	5.89
Duplicate Lab Control Sample	KQ1912514-02	42655	8.16	90411	18.59	78837	5.90
R4-SC1b-80to90-82819	K1907934-009	39729	8.16	82244	18.61	66279	5.90
R4-SC1b-20to30-82819	K1907934-003	41899	8.16	84697	18.62	73608	5.90
R4-SC1b-30to40-82819	K1907934-004	41174	8.16	84752	18.61	73317	5.90
R4-SC1b-40to50-82819	K1907934-005	38982	8.16	82683	18.63	70856	5.89
R4-SC1b-50to60-82819	K1907934-006	39246	8.17	82534	18.62	68258	5.90
R4-SC1b-60to70-82819	K1907934-007	38133	8.16	80617	18.62	65280	5.90
R4-SC1b-70to80-82819	K1907934-008	39961	8.17	84964	18.62	69474	5.90
R4-SC1b-90to100-82819	K1907934-010	40677	8.17	84787	18.62	67531	5.90
R4-SC1b-100to110-82819	K1907934-012	40095	8.17	84516	18.63	68528	5.90
R4-SC1b-110to120-82819	K1907934-013	39819	8.17	82793	18.64	65637	5.90
R4-SC1b-120to130-82819	K1907934-014	38047	8.17	79953	18.64	63330	5.90
413-SC1b-40to50-82819	K1907934-015	39266	8.17	83222	18.62	69470	5.90
R4-SC1b-130to140-82819	K1907934-016	38796	8.17	81784	18.62	66164	5.90
R4-SC1b-140to150-82819	K1907934-017	39594	8.17	84744	18.62	71450	5.90

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QA/QC Report

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/10/19 06:46

Internal Standard Area and RT SUMMARY

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

File ID: J:\MS20\DATA\091019\0910F002.D\ **Lab Code:**KQ1912864-01
Instrument ID: K-MS-20 **Analysis Lot:**650829
Analysis Method: 8270D **Signal ID:**1

		Perylene-d12		Phenanthrene-d10	
		Area	**RT**	**Area**	**RT**
	Result ==>	105,498	22.79	81,044	11.29
	Upper Limit ==>	210,996	23.29	162,088	11.79
	Lower Limit ==>	52,749	22.29	40,522	10.79
Associated Analyses					
Method Blank	KQ1912514-03	103713	22.79	81399	11.29
Lab Control Sample	KQ1912514-01	103318	22.79	83233	11.29
Duplicate Lab Control Sample	KQ1912514-02	102644	22.79	81952	11.29
R4-SC1b-80to90-82819	K1907934-009	96192	22.83	73864	11.29
R4-SC1b-20to30-82819	K1907934-003	101839	22.83	78035	11.29
R4-SC1b-30to40-82819	K1907934-004	101655	22.83	76456	11.29
R4-SC1b-40to50-82819	K1907934-005	97960	22.86	75111	11.30
R4-SC1b-50to60-82819	K1907934-006	97192	22.83	73216	11.30
R4-SC1b-60to70-82819	K1907934-007	95748	22.84	71618	11.30
R4-SC1b-70to80-82819	K1907934-008	98076	22.83	76665	11.30
R4-SC1b-90to100-82819	K1907934-010	99453	22.84	75957	11.30
R4-SC1b-100to110-82819	K1907934-012	97024	22.85	75873	11.30
R4-SC1b-110to120-82819	K1907934-013	96684	22.87	73683	11.30
R4-SC1b-120to130-82819	K1907934-014	93784	22.87	72141	11.31
413-SC1b-40to50-82819	K1907934-015	97133	22.84	73773	11.30
R4-SC1b-130to140-82819	K1907934-016	97123	22.84	72883	11.30
R4-SC1b-140to150-82819	K1907934-017	99769	22.83	73716	11.30

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QA/QC Report

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/10/19 17:35

Internal Standard Area and RT SUMMARY

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

File ID: J:\MS14\DATA\091019A\0910F027.D\ **Lab Code:**KQ1912846-05
Instrument ID: K-MS-14 **Analysis Lot:**650827
Analysis Method: 8270D **Signal ID:**1

		Acenaphthene-d10		Chrysene-d12		Naphthalene-d8	
		Area	**RT**	**Area**	**RT**	**Area**	**RT**
	Result ==>	33,630	6.25	89,646	9.99	67,559	4.68
	Upper Limit ==>	67,260	6.75	179,292	10.49	135,118	5.18
	Lower Limit ==>	16,815	5.75	44,823	9.49	33,780	4.18
Associated Analyses							
Method Blank	KQ1912548-03	40314	6.24	94972	9.99	76596	4.67
Lab Control Sample	KQ1912548-01	40276	6.24	88077	9.99	80932	4.67
Duplicate Lab Control Sample	KQ1912548-02	38275	6.25	88129	9.99	78184	4.68
J3-SC1b-90to100-82719	K1907934-071	42213	6.24	96273	10.00	79658	4.68
J3-SC1b-10to20-82719	K1907934-072	42658	6.25	98469	10.00	81114	4.68
412-SC1b-80to90-82719	K1907934-073	40000	6.25	97996	10.02	79128	4.67
L3-SC1b-20to30-82619	K1907934-074	40003	6.25	97185	10.00	78018	4.69
L3-SC1b-30to40-82619	K1907934-075	39502	6.25	95731	10.00	76948	4.68

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QA/QC Report

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/10/19 17:35

Internal Standard Area and RT SUMMARY

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

File ID: J:\MS14\DATA\091019A\0910F027.D\ **Lab Code:**KQ1912846-05
Instrument ID: K-MS-14 **Analysis Lot:**650827
Analysis Method: 8270D **Signal ID:**1

		Perylene-d12		Phenanthrene-d10	
		Area	**RT**	**Area**	**RT**
	Result ==>	105,861	13.02	60,233	7.49
	Upper Limit ==>	211,722	13.52	120,466	7.99
	Lower Limit ==>	52,931	12.52	30,117	6.99
Associated Analyses					
Method Blank	KQ1912548-03	108581	13.02	75606	7.49
Lab Control Sample	KQ1912548-01	103369	13.01	74111	7.48
Duplicate Lab Control Sample	KQ1912548-02	99352	13.01	73950	7.48
J3-SC1b-90to100-82719	K1907934-071	118257	13.04	78545	7.49
J3-SC1b-10to20-82719	K1907934-072	116155	13.05	76448	7.49
412-SC1b-80to90-82719	K1907934-073	111767	13.10	75864	7.49
L3-SC1b-20to30-82619	K1907934-074	114426	13.05	74813	7.49
L3-SC1b-30to40-82619	K1907934-075	114292	13.05	72803	7.49

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QA/QC Report

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/10/19 19:18

Internal Standard Area and RT SUMMARY

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

File ID: J:\MS20\DATA\091019A\0910F021.D\ **Lab Code:**KQ1912874-01
Instrument ID: K-MS-20 **Analysis Lot:**650882
Analysis Method: 8270D **Signal ID:**1

		Acenaphthene-d10		Chrysene-d12		Naphthalene-d8	
		Area	**RT**	**Area**	**RT**	**Area**	**RT**
	Result ==>	37,775	8.17	85,136	18.61	68,544	5.89
	Upper Limit ==>	75,550	8.67	170,272	19.11	137,088	6.39
	Lower Limit ==>	18,888	7.67	42,568	18.11	34,272	5.39
Associated Analyses							
Method Blank	KQ1912549-03	38641	8.16	83087	18.61	67498	5.90
Lab Control Sample	KQ1912549-01	38559	8.16	80799	18.60	69951	5.90
Duplicate Lab Control Sample	KQ1912549-02	38212	8.16	81673	18.60	68806	5.90
J6-SC1b-50to60-82819	K1907934-021	37960	8.16	77326	18.65	63980	5.90
J6-SC1b-60to70-82819	K1907934-022	37368	8.17	77227	18.64	63548	5.89
J6-SC1b-70to80-82819	K1907934-023	40573	8.17	82716	18.61	69993	5.90
J6-SC1b-20to30-82819	K1907934-018	37254	8.16	77666	18.62	65371	5.89
J6-SC1b-30to40-82819	K1907934-019	38960	8.16	81331	18.62	68682	5.90
J6-SC1b-40to50-82819	K1907934-020	37681	8.16	78587	18.62	66835	5.90
J6-SC1b-80to90-82819	K1907934-024	38226	8.16	79431	18.61	64839	5.90
J6-SC1b-90to100-82819	K1907934-025	39797	8.16	85004	18.61	68240	5.90
J6-SC1b-100to110-82819	K1907934-026	39461	8.16	83676	18.60	66493	5.89
J6-SC1b-110to120-82819	K1907934-027	40926	8.16	85880	18.60	68471	5.90
H3-SC1b-20to30-82819	K1907934-030	35943	8.18	75295	18.71	63946	5.90
H3-SC1b-30to40-82919	K1907934-031	34519	8.17	74293	18.69	59386	5.89
H3-SC1b-40to50-82919	K1907934-032	34439	8.17	70723	18.71	58146	5.90
H3-SC1b-90to100-82919	K1907934-037	36389	8.17	75881	18.64	58407	5.90

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QA/QC Report

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/10/19 19:18

Internal Standard Area and RT SUMMARY

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

File ID: J:\MS20\DATA\091019A\0910F021.D\ **Lab Code:**KQ1912874-01
Instrument ID: K-MS-20 **Analysis Lot:**650882
Analysis Method: 8270D **Signal ID:**1

		Perylene-d12		Phenanthrene-d10	
		Area	**RT**	**Area**	**RT**
	Result ==>	97,227	22.82	75,591	11.30
	Upper Limit ==>	194,454	23.32	151,182	11.80
	Lower Limit ==>	48,614	22.32	37,796	10.80
Associated Analyses					
Method Blank	KQ1912549-03	95325	22.81	73237	11.30
Lab Control Sample	KQ1912549-01	93956	22.80	73697	11.29
Duplicate Lab Control Sample	KQ1912549-02	95020	22.81	73534	11.29
J6-SC1b-50to60-82819	K1907934-021	93028	22.86	72707	11.30
J6-SC1b-60to70-82819	K1907934-022	91309	22.88	70524	11.30
J6-SC1b-70to80-82819	K1907934-023	97655	22.83	74040	11.30
J6-SC1b-20to30-82819	K1907934-018	92479	22.84	69350	11.30
J6-SC1b-30to40-82819	K1907934-019	94865	22.84	72518	11.30
J6-SC1b-40to50-82819	K1907934-020	92357	22.84	69940	11.30
J6-SC1b-80to90-82819	K1907934-024	92846	22.82	71721	11.30
J6-SC1b-90to100-82819	K1907934-025	98135	22.81	75651	11.30
J6-SC1b-100to110-82819	K1907934-026	96540	22.81	74600	11.30
J6-SC1b-110to120-82819	K1907934-027	98981	22.81	75371	11.30
H3-SC1b-20to30-82819	K1907934-030	86916	22.97	73822	11.34
H3-SC1b-30to40-82919	K1907934-031	85967	22.93	69785	11.32
H3-SC1b-40to50-82919	K1907934-032	85953	22.95	68240	11.32
H3-SC1b-90to100-82919	K1907934-037	88971	22.86	67274	11.30

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/11/19 07:49

Internal Standard Area and RT SUMMARY

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

File ID: J:\MS20\DATA\091119\0911F002.D\ **Lab Code:**KQ1912958-01
Instrument ID: K-MS-20 **Analysis Lot:**650987
Analysis Method: 8270D **Signal ID:**1

		Acenaphthene-d10		Chrysene-d12		Naphthalene-d8	
		Area	**RT**	**Area**	**RT**	**Area**	**RT**
	Result ==>	34,825	8.17	78,031	18.61	62,712	5.90
	Upper Limit ==>	69,650	8.67	156,062	19.11	125,424	6.40
	Lower Limit ==>	17,413	7.67	39,016	18.11	31,356	5.40
Associated Analyses							
Method Blank	KQ1912582-03	35500	8.17	77590	18.61	63059	5.90
Lab Control Sample	KQ1912582-01	35707	8.16	76378	18.60	64059	5.90
D6-SC1b-90to100-82619	K1907934-048	37858	8.16	81415	18.60	67152	5.90
D6-SC1b-100to110-82619	K1907934-049	39421	8.16	83319	18.60	68173	5.90
D6-SC1b-110to120-82619	K1907934-050	38093	8.16	81651	18.60	65786	5.90
J5-SC1b-30to40-82719	K1907934-054	36398	8.16	76327	18.62	65749	5.90
J5-SC1b-80to90-82719	K1907934-059	38143	8.16	79525	18.60	65194	5.90
J5-SC1b-90to100-82719	K1907934-060	38072	8.16	80007	18.60	65645	5.89
J5-SC1b-100to110-82719	K1907934-061	39575	8.16	84349	18.60	67861	5.90
J3-SC1b-50to60-82719	K1907934-067	36261	8.16	76357	18.65	64882	5.90
J3-SC1b-60to70-82719	K1907934-068	38339	8.16	77990	18.60	66693	5.90
J3-SC1b-70to80-82719	K1907934-069	38563	8.16	80110	18.60	68180	5.90
J3-SC1b-80to90-82719	K1907934-070	37641	8.16	74947	18.63	66790	5.90
H3-SC1b-100to110-82919	K1907934-038	37104	8.16	77706	18.60	64098	5.90
D6-SC1b-70to80-82619	K1907934-046	35580	8.16	73839	18.60	62635	5.90
D6-SC1b-80to90-82619	K1907934-047	36428	8.16	75133	18.60	65359	5.90

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QA/QC Report

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/11/19 07:49

Internal Standard Area and RT SUMMARY

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

File ID: J:\MS20\DATA\091119\0911F002.D\ **Lab Code:**KQ1912958-01
Instrument ID: K-MS-20 **Analysis Lot:**650987
Analysis Method: 8270D **Signal ID:**1

		Perylene-d12		Phenanthrene-d10	
		Area	**RT**	**Area**	**RT**
	Result ==>	88,281	22.82	69,535	11.30
	Upper Limit ==>	176,562	23.32	139,070	11.80
	Lower Limit ==>	44,141	22.32	34,768	10.80
Associated Analyses					
Method Blank	KQ1912582-03	88795	22.82	67943	11.30
Lab Control Sample	KQ1912582-01	88906	22.81	68925	11.29
D6-SC1b-90to100-82619	K1907934-048	95310	22.81	72374	11.29
D6-SC1b-100to110-82619	K1907934-049	98684	22.80	74323	11.29
D6-SC1b-110to120-82619	K1907934-050	95059	22.80	72067	11.29
J5-SC1b-30to40-82719	K1907934-054	90245	22.85	67777	11.29
J5-SC1b-80to90-82719	K1907934-059	92735	22.81	70646	11.30
J5-SC1b-90to100-82719	K1907934-060	92819	22.80	71684	11.29
J5-SC1b-100to110-82719	K1907934-061	99057	22.80	75066	11.29
J3-SC1b-50to60-82719	K1907934-067	88257	22.89	68046	11.30
J3-SC1b-60to70-82719	K1907934-068	93147	22.81	72090	11.29
J3-SC1b-70to80-82719	K1907934-069	93453	22.81	73176	11.29
J3-SC1b-80to90-82719	K1907934-070	90557	22.84	69330	11.29
H3-SC1b-100to110-82919	K1907934-038	91516	22.81	69615	11.29
D6-SC1b-70to80-82619	K1907934-046	87340	22.82	64850	11.29
D6-SC1b-80to90-82619	K1907934-047	89882	22.82	67256	11.29

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QA/QC Report

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/11/19 20:22

Internal Standard Area and RT SUMMARY

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

File ID: J:\MS20\DATA\091119A\0911F021.D\ **Lab Code:**KQ1912959-01
Instrument ID: K-MS-20 **Analysis Lot:**651037
Analysis Method: 8270D **Signal ID:**1

		Acenaphthene-d10		Chrysene-d12		Naphthalene-d8	
		Area	**RT**	**Area**	**RT**	**Area**	**RT**
	Result ==>	35,846	8.16	80,110	18.60	63,983	5.90
	Upper Limit ==>	71,692	8.66	160,220	19.10	127,966	6.40
	Lower Limit ==>	17,923	7.66	40,055	18.10	31,992	5.40
Associated Analyses							
H3-SC1b-50to60-82919	K1907934-033	35539	8.16	72273	18.65	64983	5.90
H3-SC1b-70to80-82919	K1907934-035	34894	8.16	71324	18.62	59974	5.90
H3-SC1b-80to90-82919	K1907934-036	36170	8.16	75318	18.61	64571	5.90
H3-SC1b-60to70-82919	K1907934-034	36540	8.16	76553	18.62	62238	5.90
D6-SC1b-20to30-82619	K1907934-041	37016	8.16	77115	18.61	64088	5.90
D6-SC1b-30to40-82619	K1907934-042	34685	8.16	72618	18.62	61748	5.90
D6-SC1b-40to50-82619	K1907934-043	35214	8.17	72265	18.64	58914	5.90
D6-SC1b-50to60-82619	K1907934-044	35137	8.17	71953	18.65	59834	5.90
D6-SC1b-60to70-82619	K1907934-045	34960	8.17	73235	18.64	60558	5.90
J5-SC1b-20to30-82719	K1907934-053	35789	8.17	73886	18.63	61771	5.90
J5-SC1b-60to70-82719	K1907934-057	35338	8.17	74044	18.64	61093	5.90
Duplicate Lab Control Sample	KQ1912582-02	33997	8.16	71455	18.61	61563	5.90
J5-SC1b-70to80-82719	K1907934-058	34253	8.17	73677	18.65	62010	5.90
J3-SC1b-20to30-82719	K1907934-064	34468	8.17	71761	18.64	61269	5.90
J3-SC1b-40to50-82719	K1907934-066	35474	8.17	71931	18.65	60251	5.90

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QA/QC Report

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/11/19 20:22

Internal Standard Area and RT SUMMARY

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

File ID: J:\MS20\DATA\091119A\0911F021.D\ **Lab Code:**KQ1912959-01
Instrument ID: K-MS-20 **Analysis Lot:**651037
Analysis Method: 8270D **Signal ID:**1

		Perylene-d12		Phenanthrene-d10	
		Area	**RT**	**Area**	**RT**
	Result ==>	90,731	22.80	70,282	11.29
	Upper Limit ==>	181,462	23.30	140,564	11.79
	Lower Limit ==>	45,366	22.30	35,141	10.79
Associated Analyses					
H3-SC1b-50to60-82919	K1907934-033	84871	22.88	65525	11.30
H3-SC1b-70to80-82919	K1907934-035	85104	22.83	64098	11.29
H3-SC1b-80to90-82919	K1907934-036	88738	22.83	68148	11.29
H3-SC1b-60to70-82919	K1907934-034	91330	22.84	68550	11.30
D6-SC1b-20to30-82619	K1907934-041	92409	22.83	69760	11.29
D6-SC1b-30to40-82619	K1907934-042	86341	22.83	66826	11.30
D6-SC1b-40to50-82619	K1907934-043	85191	22.87	66453	11.30
D6-SC1b-50to60-82619	K1907934-044	85078	22.89	66921	11.31
D6-SC1b-60to70-82619	K1907934-045	84395	22.86	66543	11.30
J5-SC1b-20to30-82719	K1907934-053	87104	22.84	67335	11.30
J5-SC1b-60to70-82719	K1907934-057	85821	22.87	67545	11.30
Duplicate Lab Control Sample	KQ1912582-02	84446	22.82	66143	11.30
J5-SC1b-70to80-82719	K1907934-058	86858	22.89	67400	11.31
J3-SC1b-20to30-82719	K1907934-064	83195	22.88	65365	11.31
J3-SC1b-40to50-82719	K1907934-066	84858	22.89	66189	11.31

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QA/QC Report

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/12/19 06:23

Internal Standard Area and RT SUMMARY

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

File ID: J:\MS14\DATA\091219A\0912F002.D\ **Lab Code:**KQ1913028-01
Instrument ID: K-MS-14 **Analysis Lot:**651187
Analysis Method: 8270D **Signal ID:**1

		Acenaphthene-d10		Chrysene-d12		Naphthalene-d8	
		Area	**RT**	**Area**	**RT**	**Area**	**RT**
	Result ==>	32,700	6.25	87,128	9.99	64,932	4.68
	Upper Limit ==>	65,400	6.75	174,256	10.49	129,864	5.18
	Lower Limit ==>	16,350	5.75	43,564	9.49	32,466	4.18
Associated Analyses							
Method Blank	KQ1912768-03	37285	6.24	86689	9.99	69496	4.67
Duplicate Lab Control Sample	KQ1912768-02	34315	6.24	79816	9.99	68151	4.67
J5-SC1b-40to50-82719	K1907934-055	31885	6.24	87864	10.00	56721	4.67

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QA/QC Report

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/12/19 06:23

Internal Standard Area and RT SUMMARY

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

File ID: J:\MS14\DATA\091219A\0912F002.D\ **Lab Code:**KQ1913028-01
Instrument ID: K-MS-14 **Analysis Lot:**651187
Analysis Method: 8270D **Signal ID:**1

		Perylene-d12		Phenanthrene-d10	
		Area	**RT**	**Area**	**RT**
	Result ==>	104,478	13.02	64,924	7.49
	Upper Limit ==>	208,956	13.52	129,848	7.99
	Lower Limit ==>	52,239	12.52	32,462	6.99
Associated Analyses					
Method Blank	KQ1912768-03	92488	13.02	75253	7.49
Duplicate Lab Control Sample	KQ1912768-02	92241	13.01	64431	7.48
J5-SC1b-40to50-82719	K1907934-055	105814	13.07	65170	7.49

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/12/19 08:12

Internal Standard Area and RT SUMMARY

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

File ID: J:\MS20\DATA\091219\0912F002.D\ **Lab Code:**KQ1912961-01
Instrument ID: K-MS-20 **Analysis Lot:**651053
Analysis Method: 8270D **Signal ID:**1

		Acenaphthene-d10		Chrysene-d12		Naphthalene-d8	
		Area	**RT**	**Area**	**RT**	**Area**	**RT**
	Result ==>	33,929	8.16	73,444	18.61	60,059	5.90
	Upper Limit ==>	67,858	8.66	146,888	19.11	120,118	6.40
	Lower Limit ==>	16,965	7.66	36,722	18.11	30,030	5.40
Associated Analyses							
411-SC1b-50to60-82619	K1907934-052	33827	8.16	71804	18.62	58643	5.90
J5-SC1b-50to60-82719	K1907934-056	33174	8.16	71104	18.63	59430	5.90
J3-SC1b-30to40-82719	K1907934-065	33591	8.16	71282	18.63	58091	5.90

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QA/QC Report

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/12/19 08:12

Internal Standard Area and RT SUMMARY

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

File ID: J:\MS20\DATA\091219\0912F002.D\ **Lab Code:**KQ1912961-01
Instrument ID: K-MS-20 **Analysis Lot:**651053
Analysis Method: 8270D **Signal ID:**1

		Perylene-d12		Phenanthrene-d10	
		Area	**RT**	**Area**	**RT**
	Result ==>	83,823	22.82	66,154	11.30
	Upper Limit ==>	167,646	23.32	132,308	11.80
	Lower Limit ==>	41,912	22.32	33,077	10.80
Associated Analyses					
411-SC1b-50to60-82619	K1907934-052	85119	22.83	64523	11.30
J5-SC1b-50to60-82719	K1907934-056	81717	22.86	63335	11.30
J3-SC1b-30to40-82719	K1907934-065	83862	22.84	64472	11.30

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/13/19 07:00

Internal Standard Area and RT SUMMARY

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

File ID: J:\MS14\DATA\091319\0913F002.D\ **Lab Code:**KQ1913033-01
Instrument ID: K-MS-14 **Analysis Lot:**651204
Analysis Method: 8270D **Signal ID:**1

		Acenaphthene-d10		Chrysene-d12		Naphthalene-d8	
		Area	**RT**	**Area**	**RT**	**Area**	**RT**
	Result ==>	32,300	6.24	88,256	9.99	66,811	4.68
	Upper Limit ==>	64,600	6.74	176,512	10.49	133,622	5.18
	Lower Limit ==>	16,150	5.74	44,128	9.49	33,406	4.18
Associated Analyses							
Lab Control Sample	KQ1912768-01	39055	6.24	87979	9.99	78912	4.67

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QA/QC Report

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/13/19 07:00

Internal Standard Area and RT SUMMARY

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

File ID: J:\MS14\DATA\091319\0913F002.D\ **Lab Code:**KQ1913033-01
Instrument ID: K-MS-14 **Analysis Lot:**651204
Analysis Method: 8270D **Signal ID:**1

		Perylene-d12		Phenanthrene-d10	
		Area	**RT**	**Area**	**RT**
	Result ==>	106,724	13.02	61,957	7.49
	Upper Limit ==>	213,448	13.52	123,914	7.99
	Lower Limit ==>	53,362	12.52	30,979	6.99
Associated Analyses					
Lab Control Sample	KQ1912768-01	103711	13.02	72473	7.49

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/10/19
Sample Matrix:	Soil	**Date Extracted:**	09/04/19

Duplicate Lab Control Sample Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method:	8270D	**Units:**	ug/Kg
Prep Method:	EPA 3541	**Basis:**	Dry
		Analysis Lot:	650829

	Lab Control Sample KQ1912514-01			Duplicate Lab Control Sample KQ1912514-02					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
2-Methylnaphthalene	57.7	100	58	58.6	100	59	52-85	2	40
Acenaphthene	61.8	100	62	62.6	100	63	51-82	1	40
Acenaphthylene	66.0	100	66	66.9	100	67	51-80	1	40
Anthracene	70.5	100	71	70.9	100	71	56-87	<1	40
Benz(a)anthracene	72.6	100	73	71.8	100	72	65-97	1	40
Benzo(a)pyrene	74.2	100	74	74.3	100	74	64-103	<1	40
Benzo(b)fluoranthene	76.5	100	77	76.9	100	77	63-99	<1	40
Benzo(g,h,i)perylene	70.8	100	71	70.7	100	71	56-101	<1	40
Benzo(k)fluoranthene	71.0	100	71	71.3	100	71	62-99	<1	40
Chrysene	69.5	100	70	68.9	100	69	63-100	<1	40
Dibenz(a,h)anthracene	75.4	100	75	75.2	100	75	56-104	<1	40
Dibenzofuran	64.1	100	64	65.0	100	65	14-125	1	40
Fluoranthene	69.5	100	69	69.3	100	69	45-96	<1	40
Fluorene	62.6	100	63	63.1	100	63	52-83	<1	40
Indeno(1,2,3-cd)pyrene	77.8	100	78	77.4	100	77	61-105	<1	40
Naphthalene	54.4	100	54	54.9	100	55	48-77	<1	40
Phenanthrene	63.8	100	64	64.6	100	65	48-85	1	40
Pyrene	69.4	100	69	69.4	100	69	59-98	<1	40

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/10/19
Sample Matrix:	Soil	**Date Extracted:**	09/05/19

Duplicate Lab Control Sample Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method:	8270D	**Units:**	ug/Kg
Prep Method:	EPA 3541	**Basis:**	Dry
		Analysis Lot:	650827

	Lab Control Sample KQ1912548-01			Duplicate Lab Control Sample KQ1912548-02					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
2-Methylnaphthalene	59.3	100	59	58.5	100	59	52-85	1	40
Acenaphthene	62.3	100	62	62.9	100	63	51-82	<1	40
Acenaphthylene	62.6	100	63	62.8	100	63	51-80	<1	40
Anthracene	69.4	100	69	68.0	100	68	56-87	2	40
Benz(a)anthracene	74.7	100	75	71.1	100	71	65-97	5	40
Benzo(a)pyrene	75.3	100	75	72.6	100	73	64-103	4	40
Benzo(b)fluoranthene	77.0	100	77	74.4	100	74	63-99	3	40
Benzo(g,h,i)perylene	68.2	100	68	66.3	100	66	56-101	3	40
Benzo(k)fluoranthene	75.7	100	76	73.0	100	73	62-99	4	40
Chrysene	73.5	100	74	69.7	100	70	63-100	5	40
Dibenz(a,h)anthracene	69.9	100	70	67.2	100	67	56-104	4	40
Dibenzofuran	63.7	100	64	64.8	100	65	14-125	2	40
Fluoranthene	58.5	100	58	57.3	100	57	45-96	2	40
Fluorene	64.7	100	65	65.6	100	66	52-83	1	40
Indeno(1,2,3-cd)pyrene	71.5	100	72	68.5	100	68	61-105	4	40
Naphthalene	58.8	100	59	59.1	100	59	48-77	<1	40
Phenanthrene	63.7	100	64	63.0	100	63	48-85	1	40
Pyrene	74.9	100	75	72.7	100	73	59-98	3	40

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/10/19
Sample Matrix:	Soil	**Date Extracted:**	09/05/19

Duplicate Lab Control Sample Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method:	8270D	**Units:**	ug/Kg
Prep Method:	EPA 3541	**Basis:**	Dry
		Analysis Lot:	650882

	Lab Control Sample KQ1912549-01			Duplicate Lab Control Sample KQ1912549-02					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
2-Methylnaphthalene	59.1	100	59	51.3	100	51 *	52-85	14	40
Acenaphthene	62.3	100	62	54.5	100	55	51-82	13	40
Acenaphthylene	66.5	100	67	58.0	100	58	51-80	14	40
Anthracene	70.7	100	71	62.5	100	63	56-87	12	40
Benz(a)anthracene	73.2	100	73	63.0	100	63 *	65-97	15	40
Benzo(a)pyrene	74.4	100	74	64.0	100	64	64-103	15	40
Benzo(b)fluoranthene	75.2	100	75	65.4	100	65	63-99	14	40
Benzo(g,h,i)perylene	70.1	100	70	66.2	100	66	56-101	6	40
Benzo(k)fluoranthene	72.3	100	72	61.1	100	61 *	62-99	17	40
Chrysene	70.5	100	70	61.0	100	61 *	63-100	14	40
Dibenz(a,h)anthracene	75.1	100	75	64.9	100	65	56-104	15	40
Dibenzofuran	64.8	100	65	56.3	100	56	14-125	14	40
Fluoranthene	69.6	100	70	68.3	100	68	45-96	2	40
Fluorene	63.3	100	63	55.2	100	55	52-83	14	40
Indeno(1,2,3-cd)pyrene	77.5	100	78	67.4	100	67	61-105	14	40
Naphthalene	56.4	100	56	47.6	100	48	48-77	17	40
Phenanthrene	65.2	100	65	58.2	100	58	48-85	11	40
Pyrene	70.5	100	71	79.4	100	79	59-98	12	40

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/11/19 - 09/12/19
Sample Matrix:	Soil	**Date Extracted:**	09/05/19

Duplicate Lab Control Sample Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method:	8270D	**Units:**	ug/Kg
Prep Method:	EPA 3541	**Basis:**	Dry
		Analysis Lot:	650987

	Lab Control Sample KQ1912582-01			Duplicate Lab Control Sample KQ1912582-02					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
2-Methylnaphthalene	68.0	100	68	67.0	100	67	52-85	1	40
Acenaphthene	69.9	100	70	70.8	100	71	51-82	1	40
Acenaphthylene	74.3	100	74	75.7	100	76	51-80	2	40
Anthracene	77.1	100	77	77.1	100	77	56-87	<1	40
Benz(a)anthracene	78.9	100	79	78.6	100	79	65-97	<1	40
Benzo(a)pyrene	79.4	100	79	79.2	100	79	64-103	<1	40
Benzo(b)fluoranthene	79.8	100	80	77.5	100	78	63-99	3	40
Benzo(g,h,i)perylene	75.0	100	75	74.9	100	75	56-101	<1	40
Benzo(k)fluoranthene	77.7	100	78	77.2	100	77	62-99	<1	40
Chrysene	75.0	100	75	76.7	100	77	63-100	2	40
Dibenz(a,h)anthracene	80.8	100	81	81.1	100	81	56-104	<1	40
Dibenzofuran	72.5	100	72	73.9	100	74	14-125	2	40
Fluoranthene	76.0	100	76	75.8	100	76	45-96	<1	40
Fluorene	69.9	100	70	71.8	100	72	52-83	3	40
Indeno(1,2,3-cd)pyrene	82.0	100	82	80.8	100	81	61-105	1	40
Naphthalene	63.5	100	64	63.9	100	64	48-77	<1	40
Phenanthrene	70.2	100	70	71.0	100	71	48-85	1	40
Pyrene	75.0	100	75	77.3	100	77	59-98	3	40

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/13/19 - 09/12/19
Sample Matrix:	Soil	**Date Extracted:**	09/10/19

Duplicate Lab Control Sample Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method:	8270D	**Units:**	ug/Kg
Prep Method:	EPA 3541	**Basis:**	Dry
		Analysis Lot:	651204

	Lab Control Sample KQ1912768-01			Duplicate Lab Control Sample KQ1912768-02					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
2-Methylnaphthalene	53.1	100	53	56.1	100	56	52-85	5	40
Acenaphthene	55.9	100	56	58.4	100	58	51-82	4	40
Acenaphthylene	55.9	100	56	58.1	100	58	51-80	4	40
Anthracene	62.1	100	62	66.1	100	66	56-87	6	40
Benz(a)anthracene	65.2	100	65	69.3	100	69	65-97	6	40
Benzo(a)pyrene	65.6	100	66	70.4	100	70	64-103	7	40
Benzo(b)fluoranthene	68.1	100	68	73.9	100	74	63-99	8	40
Benzo(g,h,i)perylene	63.2	100	63	62.8	100	63	56-101	<1	40
Benzo(k)fluoranthene	64.9	100	65	70.4	100	70	62-99	8	40
Chrysene	63.3	100	63	68.6	100	69	63-100	8	40
Dibenz(a,h)anthracene	63.4	100	63	62.2	100	62	56-104	2	40
Dibenzofuran	57.2	100	57	60.3	100	60	14-125	5	40
Fluoranthene	52.9	100	53	57.7	100	58	45-96	9	40
Fluorene	58.4	100	58	60.7	100	61	52-83	4	40
Indeno(1,2,3-cd)pyrene	65.3	100	65	63.2	100	63	61-105	3	40
Naphthalene	53.2	100	53	56.3	100	56	48-77	6	40
Phenanthrene	56.6	100	57	60.3	100	60	48-85	6	40
Pyrene	65.5	100	65	70.9	100	71	59-98	8	40

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/10/19 07:25
Sample Matrix:	Soil	**Date Extracted:**	09/04/19

Method Blank Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Sample Name:	Method Blank	**Instrument ID:**	K-MS-20
Lab Code:	KQ1912514-03	**File ID:**	J:\MS20\DATA\091019\0910F003.D\
Analysis Method:	8270D	**Analysis Lot:**	650829,650882
Prep Method:	EPA 3541	**Extraction Lot:**	343655

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ1912514-01	J:\MS20\DATA\091019\0910F004.D\	09/10/19 08:05
Duplicate Lab Control Sample	KQ1912514-02	J:\MS20\DATA\091019\0910F005.D\	09/10/19 08:45
R4-SC1b-80to90-82819	K1907934-009	J:\MS20\DATA\091019\0910F006.D\	09/10/19 09:24
R4-SC1b-20to30-82819	K1907934-003	J:\MS20\DATA\091019\0910F007.D\	09/10/19 10:04
R4-SC1b-30to40-82819	K1907934-004	J:\MS20\DATA\091019\0910F008.D\	09/10/19 10:43
R4-SC1b-40to50-82819	K1907934-005	J:\MS20\DATA\091019\0910F009.D\	09/10/19 11:23
R4-SC1b-50to60-82819	K1907934-006	J:\MS20\DATA\091019\0910F010.D\	09/10/19 12:03
R4-SC1b-60to70-82819	K1907934-007	J:\MS20\DATA\091019\0910F011.D\	09/10/19 12:42
R4-SC1b-70to80-82819	K1907934-008	J:\MS20\DATA\091019\0910F012.D\	09/10/19 13:22
R4-SC1b-90to100-82819	K1907934-010	J:\MS20\DATA\091019\0910F013.D\	09/10/19 14:01
R4-SC1b-100to110-82819	K1907934-012	J:\MS20\DATA\091019\0910F014.D\	09/10/19 14:41
R4-SC1b-110to120-82819	K1907934-013	J:\MS20\DATA\091019\0910F015.D\	09/10/19 15:20
R4-SC1b-120to130-82819	K1907934-014	J:\MS20\DATA\091019\0910F016.D\	09/10/19 16:00
413-SC1b-40to50-82819	K1907934-015	J:\MS20\DATA\091019\0910F017.D\	09/10/19 16:40
R4-SC1b-130to140-82819	K1907934-016	J:\MS20\DATA\091019\0910F018.D\	09/10/19 17:19
R4-SC1b-140to150-82819	K1907934-017	J:\MS20\DATA\091019\0910F019.D\	09/10/19 17:59
J6-SC1b-50to60-82819	K1907934-021	J:\MS20\DATA\091019A\0910F025.D\	09/10/19 21:56
J6-SC1b-60to70-82819	K1907934-022	J:\MS20\DATA\091019A\0910F026.D\	09/10/19 22:35
J6-SC1b-70to80-82819	K1907934-023	J:\MS20\DATA\091019A\0910F027.D\	09/10/19 23:15
J6-SC1b-20to30-82819	K1907934-018	J:\MS20\DATA\091019A\0910F028.D\	09/10/19 23:54
J6-SC1b-30to40-82819	K1907934-019	J:\MS20\DATA\091019A\0910F029.D\	09/11/19 00:34
J6-SC1b-40to50-82819	K1907934-020	J:\MS20\DATA\091019A\0910F030.D\	09/11/19 01:13

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/10/19 22:51
Sample Matrix:	Soil	**Date Extracted:**	09/05/19

Method Blank Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Sample Name:	Method Blank	**Instrument ID:**	K-MS-14
Lab Code:	KQ1912548-03	**File ID:**	J:\MS14\DATA\091019A\0910F038.D\
Analysis Method:	8270D	**Analysis Lot:**	650827
Prep Method:	EPA 3541	**Extraction Lot:**	343659

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ1912548-01	J:\MS14\DATA\091019A\0910F039.D\	09/10/19 23:20
Duplicate Lab Control Sample	KQ1912548-02	J:\MS14\DATA\091019A\0910F040.D\	09/10/19 23:48
J3-SC1b-90to100-82719	K1907934-071	J:\MS14\DATA\091019A\0910F041.D\	09/11/19 00:17
J3-SC1b-10to20-82719	K1907934-072	J:\MS14\DATA\091019A\0910F042.D\	09/11/19 00:46
412-SC1b-80to90-82719	K1907934-073	J:\MS14\DATA\091019A\0910F043.D\	09/11/19 01:14
L3-SC1b-20to30-82619	K1907934-074	J:\MS14\DATA\091019A\0910F044.D\	09/11/19 01:43
L3-SC1b-30to40-82619	K1907934-075	J:\MS14\DATA\091019A\0910F045.D\	09/11/19 02:11

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/10/19 19:57
Sample Matrix:	Soil	**Date Extracted:**	09/05/19

Method Blank Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Sample Name:	Method Blank	**Instrument ID:**	K-MS-20
Lab Code:	KQ1912549-03	**File ID:**	J:\MS20\DATA\091019A\0910F022.D\
Analysis Method:	8270D	**Analysis Lot:**	650882,650987,651037
Prep Method:	EPA 3541	**Extraction Lot:**	343656

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ1912549-01	J:\MS20\DATA\091019A\0910F023.D\	09/10/19 20:37
Duplicate Lab Control Sample	KQ1912549-02	J:\MS20\DATA\091019A\0910F024.D\	09/10/19 21:16
J6-SC1b-80to90-82819	K1907934-024	J:\MS20\DATA\091019A\0910F031.D\	09/11/19 01:53
J6-SC1b-90to100-82819	K1907934-025	J:\MS20\DATA\091019A\0910F032.D\	09/11/19 02:32
J6-SC1b-100to110-82819	K1907934-026	J:\MS20\DATA\091019A\0910F033.D\	09/11/19 03:12
J6-SC1b-110to120-82819	K1907934-027	J:\MS20\DATA\091019A\0910F034.D\	09/11/19 03:51
H3-SC1b-20to30-82819	K1907934-030	J:\MS20\DATA\091019A\0910F035.D\	09/11/19 04:31
H3-SC1b-30to40-82919	K1907934-031	J:\MS20\DATA\091019A\0910F036.D\	09/11/19 05:10
H3-SC1b-40to50-82919	K1907934-032	J:\MS20\DATA\091019A\0910F037.D\	09/11/19 05:50
H3-SC1b-90to100-82919	K1907934-037	J:\MS20\DATA\091019A\0910F038.D\	09/11/19 06:30
H3-SC1b-100to110-82919	K1907934-038	J:\MS20\DATA\091119\0911F017.D\	09/11/19 17:44
D6-SC1b-70to80-82619	K1907934-046	J:\MS20\DATA\091119\0911F018.D\	09/11/19 18:23
D6-SC1b-80to90-82619	K1907934-047	J:\MS20\DATA\091119\0911F019.D\	09/11/19 19:03
H3-SC1b-50to60-82919	K1907934-033	J:\MS20\DATA\091119A\0911F023.D\	09/11/19 21:41
H3-SC1b-70to80-82919	K1907934-035	J:\MS20\DATA\091119A\0911F024.D\	09/11/19 22:20
H3-SC1b-80to90-82919	K1907934-036	J:\MS20\DATA\091119A\0911F025.D\	09/11/19 23:00
H3-SC1b-60to70-82919	K1907934-034	J:\MS20\DATA\091119A\0911F026.D\	09/11/19 23:39
D6-SC1b-20to30-82619	K1907934-041	J:\MS20\DATA\091119A\0911F027.D\	09/12/19 00:19
D6-SC1b-30to40-82619	K1907934-042	J:\MS20\DATA\091119A\0911F028.D\	09/12/19 00:58
D6-SC1b-40to50-82619	K1907934-043	J:\MS20\DATA\091119A\0911F029.D\	09/12/19 01:37
D6-SC1b-50to60-82619	K1907934-044	J:\MS20\DATA\091119A\0911F030.D\	09/12/19 02:17
D6-SC1b-60to70-82619	K1907934-045	J:\MS20\DATA\091119A\0911F031.D\	09/12/19 02:56

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	NA
Sample Matrix:	Soil	**Date Extracted:**	09/04/19

Method Blank Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Sample Name:		**Instrument ID:**	
Lab Code:		**File ID:**	
Analysis Method:	8270D	**Analysis Lot:**	650882,650987,651037
Prep Method:	EPA 3541	**Extraction Lot:**	343655

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
J6-SC1b-50to60-82819	K1907934-021	J:\MS20\DATA\091019A\0910F025.D\	09/10/19 21:56
J6-SC1b-60to70-82819	K1907934-022	J:\MS20\DATA\091019A\0910F026.D\	09/10/19 22:35
J6-SC1b-70to80-82819	K1907934-023	J:\MS20\DATA\091019A\0910F027.D\	09/10/19 23:15
J6-SC1b-20to30-82819	K1907934-018	J:\MS20\DATA\091019A\0910F028.D\	09/10/19 23:54
J6-SC1b-30to40-82819	K1907934-019	J:\MS20\DATA\091019A\0910F029.D\	09/11/19 00:34
J6-SC1b-40to50-82819	K1907934-020	J:\MS20\DATA\091019A\0910F030.D\	09/11/19 01:13

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/11/19 08:28
Sample Matrix:	Soil	**Date Extracted:**	09/05/19

Method Blank Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Sample Name:	Method Blank	**Instrument ID:**	K-MS-20
Lab Code:	KQ1912582-03	**File ID:**	J:\MS20\DATA\091119\0911F003.D\
Analysis Method:	8270D	**Analysis Lot:**	650987,651037,651053
Prep Method:	EPA 3541	**Extraction Lot:**	343658

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ1912582-01	J:\MS20\DATA\091119\0911F004.D\	09/11/19 09:08
D6-SC1b-90to100-82619	K1907934-048	J:\MS20\DATA\091119\0911F006.D\	09/11/19 10:27
D6-SC1b-100to110-82619	K1907934-049	J:\MS20\DATA\091119\0911F007.D\	09/11/19 11:07
D6-SC1b-110to120-82619	K1907934-050	J:\MS20\DATA\091119\0911F008.D\	09/11/19 11:47
J5-SC1b-30to40-82719	K1907934-054	J:\MS20\DATA\091119\0911F009.D\	09/11/19 12:26
J5-SC1b-80to90-82719	K1907934-059	J:\MS20\DATA\091119\0911F010.D\	09/11/19 13:06
J5-SC1b-90to100-82719	K1907934-060	J:\MS20\DATA\091119\0911F011.D\	09/11/19 13:45
J5-SC1b-100to110-82719	K1907934-061	J:\MS20\DATA\091119\0911F012.D\	09/11/19 14:25
J3-SC1b-50to60-82719	K1907934-067	J:\MS20\DATA\091119\0911F013.D\	09/11/19 15:05
J3-SC1b-60to70-82719	K1907934-068	J:\MS20\DATA\091119\0911F014.D\	09/11/19 15:45
J3-SC1b-70to80-82719	K1907934-069	J:\MS20\DATA\091119\0911F015.D\	09/11/19 16:24
J3-SC1b-80to90-82719	K1907934-070	J:\MS20\DATA\091119\0911F016.D\	09/11/19 17:04
J5-SC1b-20to30-82719	K1907934-053	J:\MS20\DATA\091119A\0911F032.D\	09/12/19 03:36
J5-SC1b-60to70-82719	K1907934-057	J:\MS20\DATA\091119A\0911F033.D\	09/12/19 04:15
Duplicate Lab Control Sample	KQ1912582-02	J:\MS20\DATA\091119A\0911F034.D\	09/12/19 04:54
J5-SC1b-70to80-82719	K1907934-058	J:\MS20\DATA\091119A\0911F035.D\	09/12/19 05:34
J3-SC1b-20to30-82719	K1907934-064	J:\MS20\DATA\091119A\0911F036.D\	09/12/19 06:13
J3-SC1b-40to50-82719	K1907934-066	J:\MS20\DATA\091119A\0911F037.D\	09/12/19 06:53
411-SC1b-50to60-82619	K1907934-052	J:\MS20\DATA\091219\0912F004.D\	09/12/19 09:31
J5-SC1b-50to60-82719	K1907934-056	J:\MS20\DATA\091219\0912F005.D\	09/12/19 10:10
J3-SC1b-30to40-82719	K1907934-065	J:\MS20\DATA\091219\0912F006.D\	09/12/19 10:50

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	NA
Sample Matrix:	Soil	**Date Extracted:**	09/05/19

Method Blank Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Sample Name:		**Instrument ID:**	
Lab Code:		**File ID:**	
Analysis Method:	8270D	**Analysis Lot:**	650987,651037,651053
Prep Method:	EPA 3541	**Extraction Lot:**	343656

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
H3-SC1b-100to110-82919	K1907934-038	J:\MS20\DATA\091119\0911F017.D\	09/11/19 17:44
D6-SC1b-70to80-82619	K1907934-046	J:\MS20\DATA\091119\0911F018.D\	09/11/19 18:23
D6-SC1b-80to90-82619	K1907934-047	J:\MS20\DATA\091119\0911F019.D\	09/11/19 19:03

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/12/19 06:51
Sample Matrix:	Soil	**Date Extracted:**	09/10/19

Method Blank Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Sample Name:	Method Blank	**Instrument ID:**	K-MS-14
Lab Code:	KQ1912768-03	**File ID:**	J:\MS14\DATA\091219A\0912F003.D\
Analysis Method:	8270D	**Analysis Lot:**	651187,651204
Prep Method:	EPA 3541	**Extraction Lot:**	344130

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Duplicate Lab Control Sample	KQ1912768-02	J:\MS14\DATA\091219A\0912F009.D\	09/12/19 10:40
J5-SC1b-40to50-82719	K1907934-055	J:\MS14\DATA\091219A\0912F010.D\	09/12/19 11:09
Lab Control Sample	KQ1912768-01	J:\MS14\DATA\091319\0913F004.D\	09/13/19 08:26

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/10/19 08:05
Sample Matrix:	Soil	**Date Extracted:**	09/04/19

Lab Control Sample Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Sample Name:	Lab Control Sample	**Instrument ID:**	K-MS-20
Lab Code:	KQ1912514-01	**File ID:**	J:\MS20\DATA\091019\0910F004.D\
Analysis Method:	8270D	**Analysis Lot:**	650829,650882
Prep Method:	EPA 3541	**Extraction Lot:**	343655

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1912514-03	J:\MS20\DATA\091019\0910F003.D\	09/10/19 07:25
Duplicate Lab Control Sample	KQ1912514-02	J:\MS20\DATA\091019\0910F005.D\	09/10/19 08:45
R4-SC1b-80to90-82819	K1907934-009	J:\MS20\DATA\091019\0910F006.D\	09/10/19 09:24
R4-SC1b-20to30-82819	K1907934-003	J:\MS20\DATA\091019\0910F007.D\	09/10/19 10:04
R4-SC1b-30to40-82819	K1907934-004	J:\MS20\DATA\091019\0910F008.D\	09/10/19 10:43
R4-SC1b-40to50-82819	K1907934-005	J:\MS20\DATA\091019\0910F009.D\	09/10/19 11:23
R4-SC1b-50to60-82819	K1907934-006	J:\MS20\DATA\091019\0910F010.D\	09/10/19 12:03
R4-SC1b-60to70-82819	K1907934-007	J:\MS20\DATA\091019\0910F011.D\	09/10/19 12:42
R4-SC1b-70to80-82819	K1907934-008	J:\MS20\DATA\091019\0910F012.D\	09/10/19 13:22
R4-SC1b-90to100-82819	K1907934-010	J:\MS20\DATA\091019\0910F013.D\	09/10/19 14:01
R4-SC1b-100to110-82819	K1907934-012	J:\MS20\DATA\091019\0910F014.D\	09/10/19 14:41
R4-SC1b-110to120-82819	K1907934-013	J:\MS20\DATA\091019\0910F015.D\	09/10/19 15:20
R4-SC1b-120to130-82819	K1907934-014	J:\MS20\DATA\091019\0910F016.D\	09/10/19 16:00
413-SC1b-40to50-82819	K1907934-015	J:\MS20\DATA\091019\0910F017.D\	09/10/19 16:40
R4-SC1b-130to140-82819	K1907934-016	J:\MS20\DATA\091019\0910F018.D\	09/10/19 17:19
R4-SC1b-140to150-82819	K1907934-017	J:\MS20\DATA\091019\0910F019.D\	09/10/19 17:59
J6-SC1b-50to60-82819	K1907934-021	J:\MS20\DATA\091019A\0910F025.D\	09/10/19 21:56
J6-SC1b-60to70-82819	K1907934-022	J:\MS20\DATA\091019A\0910F026.D\	09/10/19 22:35
J6-SC1b-70to80-82819	K1907934-023	J:\MS20\DATA\091019A\0910F027.D\	09/10/19 23:15
J6-SC1b-20to30-82819	K1907934-018	J:\MS20\DATA\091019A\0910F028.D\	09/10/19 23:54
J6-SC1b-30to40-82819	K1907934-019	J:\MS20\DATA\091019A\0910F029.D\	09/11/19 00:34
J6-SC1b-40to50-82819	K1907934-020	J:\MS20\DATA\091019A\0910F030.D\	09/11/19 01:13

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/10/19 23:20
Sample Matrix:	Soil	**Date Extracted:**	09/05/19

Lab Control Sample Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Sample Name:	Lab Control Sample	**Instrument ID:**	K-MS-14
Lab Code:	KQ1912548-01	**File ID:**	J:\MS14\DATA\091019A\0910F039.D\
Analysis Method:	8270D	**Analysis Lot:**	650827
Prep Method:	EPA 3541	**Extraction Lot:**	343659

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1912548-03	J:\MS14\DATA\091019A\0910F038.D\	09/10/19 22:51
Duplicate Lab Control Sample	KQ1912548-02	J:\MS14\DATA\091019A\0910F040.D\	09/10/19 23:48
J3-SC1b-90to100-82719	K1907934-071	J:\MS14\DATA\091019A\0910F041.D\	09/11/19 00:17
J3-SC1b-10to20-82719	K1907934-072	J:\MS14\DATA\091019A\0910F042.D\	09/11/19 00:46
412-SC1b-80to90-82719	K1907934-073	J:\MS14\DATA\091019A\0910F043.D\	09/11/19 01:14
L3-SC1b-20to30-82619	K1907934-074	J:\MS14\DATA\091019A\0910F044.D\	09/11/19 01:43
L3-SC1b-30to40-82619	K1907934-075	J:\MS14\DATA\091019A\0910F045.D\	09/11/19 02:11

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/10/19 20:37
Sample Matrix:	Soil	**Date Extracted:**	09/05/19

Lab Control Sample Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Sample Name:	Lab Control Sample	**Instrument ID:**	K-MS-20
Lab Code:	KQ1912549-01	**File ID:**	J:\MS20\DATA\091019A\0910F023.D\
Analysis Method:	8270D	**Analysis Lot:**	650882,650987,651037
Prep Method:	EPA 3541	**Extraction Lot:**	343656

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1912549-03	J:\MS20\DATA\091019A\0910F022.D\	09/10/19 19:57
Duplicate Lab Control Sample	KQ1912549-02	J:\MS20\DATA\091019A\0910F024.D\	09/10/19 21:16
J6-SC1b-80to90-82819	K1907934-024	J:\MS20\DATA\091019A\0910F031.D\	09/11/19 01:53
J6-SC1b-90to100-82819	K1907934-025	J:\MS20\DATA\091019A\0910F032.D\	09/11/19 02:32
J6-SC1b-100to110-82819	K1907934-026	J:\MS20\DATA\091019A\0910F033.D\	09/11/19 03:12
J6-SC1b-110to120-82819	K1907934-027	J:\MS20\DATA\091019A\0910F034.D\	09/11/19 03:51
H3-SC1b-20to30-82819	K1907934-030	J:\MS20\DATA\091019A\0910F035.D\	09/11/19 04:31
H3-SC1b-30to40-82919	K1907934-031	J:\MS20\DATA\091019A\0910F036.D\	09/11/19 05:10
H3-SC1b-40to50-82919	K1907934-032	J:\MS20\DATA\091019A\0910F037.D\	09/11/19 05:50
H3-SC1b-90to100-82919	K1907934-037	J:\MS20\DATA\091019A\0910F038.D\	09/11/19 06:30
H3-SC1b-100to110-82919	K1907934-038	J:\MS20\DATA\091119\0911F017.D\	09/11/19 17:44
D6-SC1b-70to80-82619	K1907934-046	J:\MS20\DATA\091119\0911F018.D\	09/11/19 18:23
D6-SC1b-80to90-82619	K1907934-047	J:\MS20\DATA\091119\0911F019.D\	09/11/19 19:03
H3-SC1b-50to60-82919	K1907934-033	J:\MS20\DATA\091119A\0911F023.D\	09/11/19 21:41
H3-SC1b-70to80-82919	K1907934-035	J:\MS20\DATA\091119A\0911F024.D\	09/11/19 22:20
H3-SC1b-80to90-82919	K1907934-036	J:\MS20\DATA\091119A\0911F025.D\	09/11/19 23:00
H3-SC1b-60to70-82919	K1907934-034	J:\MS20\DATA\091119A\0911F026.D\	09/11/19 23:39
D6-SC1b-20to30-82619	K1907934-041	J:\MS20\DATA\091119A\0911F027.D\	09/12/19 00:19
D6-SC1b-30to40-82619	K1907934-042	J:\MS20\DATA\091119A\0911F028.D\	09/12/19 00:58
D6-SC1b-40to50-82619	K1907934-043	J:\MS20\DATA\091119A\0911F029.D\	09/12/19 01:37
D6-SC1b-50to60-82619	K1907934-044	J:\MS20\DATA\091119A\0911F030.D\	09/12/19 02:17
D6-SC1b-60to70-82619	K1907934-045	J:\MS20\DATA\091119A\0911F031.D\	09/12/19 02:56

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	NA
Sample Matrix:	Soil	**Date Extracted:**	09/04/19

Lab Control Sample Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Sample Name:		**Instrument ID:**	
Lab Code:		**File ID:**	
Analysis Method:	8270D	**Analysis Lot:**	650882,650987,651037
Prep Method:	EPA 3541	**Extraction Lot:**	343655

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
J6-SC1b-50to60-82819	K1907934-021	J:\MS20\DATA\091019A\0910F025.D\	09/10/19 21:56
J6-SC1b-60to70-82819	K1907934-022	J:\MS20\DATA\091019A\0910F026.D\	09/10/19 22:35
J6-SC1b-70to80-82819	K1907934-023	J:\MS20\DATA\091019A\0910F027.D\	09/10/19 23:15
J6-SC1b-20to30-82819	K1907934-018	J:\MS20\DATA\091019A\0910F028.D\	09/10/19 23:54
J6-SC1b-30to40-82819	K1907934-019	J:\MS20\DATA\091019A\0910F029.D\	09/11/19 00:34
J6-SC1b-40to50-82819	K1907934-020	J:\MS20\DATA\091019A\0910F030.D\	09/11/19 01:13

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/11/19 09:08
Sample Matrix:	Soil	**Date Extracted:**	09/05/19

Lab Control Sample Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Sample Name:	Lab Control Sample	**Instrument ID:**	K-MS-20
Lab Code:	KQ1912582-01	**File ID:**	J:\MS20\DATA\091119\0911F004.D\
Analysis Method:	8270D	**Analysis Lot:**	650987,651037,651053
Prep Method:	EPA 3541	**Extraction Lot:**	343658

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1912582-03	J:\MS20\DATA\091119\0911F003.D\	09/11/19 08:28
D6-SC1b-90to100-82619	K1907934-048	J:\MS20\DATA\091119\0911F006.D\	09/11/19 10:27
D6-SC1b-100to110-82619	K1907934-049	J:\MS20\DATA\091119\0911F007.D\	09/11/19 11:07
D6-SC1b-110to120-82619	K1907934-050	J:\MS20\DATA\091119\0911F008.D\	09/11/19 11:47
J5-SC1b-30to40-82719	K1907934-054	J:\MS20\DATA\091119\0911F009.D\	09/11/19 12:26
J5-SC1b-80to90-82719	K1907934-059	J:\MS20\DATA\091119\0911F010.D\	09/11/19 13:06
J5-SC1b-90to100-82719	K1907934-060	J:\MS20\DATA\091119\0911F011.D\	09/11/19 13:45
J5-SC1b-100to110-82719	K1907934-061	J:\MS20\DATA\091119\0911F012.D\	09/11/19 14:25
J3-SC1b-50to60-82719	K1907934-067	J:\MS20\DATA\091119\0911F013.D\	09/11/19 15:05
J3-SC1b-60to70-82719	K1907934-068	J:\MS20\DATA\091119\0911F014.D\	09/11/19 15:45
J3-SC1b-70to80-82719	K1907934-069	J:\MS20\DATA\091119\0911F015.D\	09/11/19 16:24
J3-SC1b-80to90-82719	K1907934-070	J:\MS20\DATA\091119\0911F016.D\	09/11/19 17:04
J5-SC1b-20to30-82719	K1907934-053	J:\MS20\DATA\091119A\0911F032.D\	09/12/19 03:36
J5-SC1b-60to70-82719	K1907934-057	J:\MS20\DATA\091119A\0911F033.D\	09/12/19 04:15
Duplicate Lab Control Sample	KQ1912582-02	J:\MS20\DATA\091119A\0911F034.D\	09/12/19 04:54
J5-SC1b-70to80-82719	K1907934-058	J:\MS20\DATA\091119A\0911F035.D\	09/12/19 05:34
J3-SC1b-20to30-82719	K1907934-064	J:\MS20\DATA\091119A\0911F036.D\	09/12/19 06:13
J3-SC1b-40to50-82719	K1907934-066	J:\MS20\DATA\091119A\0911F037.D\	09/12/19 06:53
411-SC1b-50to60-82619	K1907934-052	J:\MS20\DATA\091219\0912F004.D\	09/12/19 09:31
J5-SC1b-50to60-82719	K1907934-056	J:\MS20\DATA\091219\0912F005.D\	09/12/19 10:10
J3-SC1b-30to40-82719	K1907934-065	J:\MS20\DATA\091219\0912F006.D\	09/12/19 10:50

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	NA
Sample Matrix:	Soil	**Date Extracted:**	09/05/19

Lab Control Sample Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Sample Name:		**Instrument ID:**	
Lab Code:		**File ID:**	
Analysis Method:	8270D	**Analysis Lot:**	650987,651037,651053
Prep Method:	EPA 3541	**Extraction Lot:**	343656

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
H3-SC1b-100to110-82919	K1907934-038	J:\MS20\DATA\091119\0911F017.D\	09/11/19 17:44
D6-SC1b-70to80-82619	K1907934-046	J:\MS20\DATA\091119\0911F018.D\	09/11/19 18:23
D6-SC1b-80to90-82619	K1907934-047	J:\MS20\DATA\091119\0911F019.D\	09/11/19 19:03

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/13/19 08:26
Sample Matrix:	Soil	**Date Extracted:**	09/10/19

Lab Control Sample Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Sample Name:	Lab Control Sample	**Instrument ID:**	K-MS-14
Lab Code:	KQ1912768-01	**File ID:**	J:\MS14\DATA\091319\0913F004.D\
Analysis Method:	8270D	**Analysis Lot:**	651187,651204
Prep Method:	EPA 3541	**Extraction Lot:**	344130

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1912768-03	J:\MS14\DATA\091219A\0912F003.D\	09/12/19 06:51
Duplicate Lab Control Sample	KQ1912768-02	J:\MS14\DATA\091219A\0912F009.D\	09/12/19 10:40
J5-SC1b-40to50-82719	K1907934-055	J:\MS14\DATA\091219A\0912F010.D\	09/12/19 11:09

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QC/QC Report

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/10/19 17:06

Tune Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

File ID: J:\MS14\DATA\091019A\0910F026.D\ **Analytical Method:** 8270D
Instrument ID: K-MS-14 **Analysis Lot:** 650827

Target Mass	Relative to Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	24.73	163885	Pass
68	69	0	2	0.00	0	Pass
69	198	0	100	27.63	183090	Pass
70	69	0	2	0.56	1022	Pass
127	198	10	80	40.08	265536	Pass
197	198	0	2	0.00	0	Pass
198	442	30	100	38.54	662570	Pass
199	198	5	9	6.77	44826	Pass
275	198	10	60	37.42	247914	Pass
365	442	1	50	2.13	36682	Pass
441	443	0.01	100	74.02	251754	Pass
442	442	30	100	100.00	1719296	Pass
443	442	15	24	19.78	340117	Pass

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1912846-05	J:\MS14\DATA\091019A\0910F027.D\	09/10/19 17:35	
Method Blank	KQ1912548-03	J:\MS14\DATA\091019A\0910F038.D\	09/10/19 22:51	
Lab Control Sample	KQ1912548-01	J:\MS14\DATA\091019A\0910F039.D\	09/10/19 23:20	
Duplicate Lab Control Sample	KQ1912548-02	J:\MS14\DATA\091019A\0910F040.D\	09/10/19 23:48	
J3-SC1b-90to100-82719	K1907934-071	J:\MS14\DATA\091019A\0910F041.D\	09/11/19 00:17	
J3-SC1b-10to20-82719	K1907934-072	J:\MS14\DATA\091019A\0910F042.D\	09/11/19 00:46	
412-SC1b-80to90-82719	K1907934-073	J:\MS14\DATA\091019A\0910F043.D\	09/11/19 01:14	
L3-SC1b-20to30-82619	K1907934-074	J:\MS14\DATA\091019A\0910F044.D\	09/11/19 01:43	
L3-SC1b-30to40-82619	K1907934-075	J:\MS14\DATA\091019A\0910F045.D\	09/11/19 02:11	

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/10/19 06:06

Tune Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

File ID: J:\MS20\DATA\091019\0910F001.D\ **Analytical Method:** 8270D
Instrument ID: K-MS-20 **Analysis Lot:** 650829

Target Mass	Relative to Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	18.93	95157	Pass
68	69	0	2	0.00	0	Pass
69	198	0	100	23.77	119461	Pass
70	69	0	2	0.58	690	Pass
127	198	10	80	37.56	188785	Pass
197	198	0	2	0.00	0	Pass
198	442	30	100	36.21	502570	Pass
199	198	5	9	6.84	34386	Pass
275	198	10	60	36.97	185813	Pass
365	442	1	50	1.87	25890	Pass
441	443	0.01	100	79.31	224533	Pass
442	442	30	100	100.00	1388032	Pass
443	442	15	24	20.40	283093	Pass

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1912864-01	J:\MS20\DATA\091019\0910F002.D\	09/10/19 06:46	
Method Blank	KQ1912514-03	J:\MS20\DATA\091019\0910F003.D\	09/10/19 07:25	
Lab Control Sample	KQ1912514-01	J:\MS20\DATA\091019\0910F004.D\	09/10/19 08:05	
Duplicate Lab Control Sample	KQ1912514-02	J:\MS20\DATA\091019\0910F005.D\	09/10/19 08:45	
R4-SC1b-80to90-82819	K1907934-009	J:\MS20\DATA\091019\0910F006.D\	09/10/19 09:24	
R4-SC1b-20to30-82819	K1907934-003	J:\MS20\DATA\091019\0910F007.D\	09/10/19 10:04	
R4-SC1b-30to40-82819	K1907934-004	J:\MS20\DATA\091019\0910F008.D\	09/10/19 10:43	
R4-SC1b-40to50-82819	K1907934-005	J:\MS20\DATA\091019\0910F009.D\	09/10/19 11:23	
R4-SC1b-50to60-82819	K1907934-006	J:\MS20\DATA\091019\0910F010.D\	09/10/19 12:03	
R4-SC1b-60to70-82819	K1907934-007	J:\MS20\DATA\091019\0910F011.D\	09/10/19 12:42	
R4-SC1b-70to80-82819	K1907934-008	J:\MS20\DATA\091019\0910F012.D\	09/10/19 13:22	
R4-SC1b-90to100-82819	K1907934-010	J:\MS20\DATA\091019\0910F013.D\	09/10/19 14:01	
R4-SC1b-100to110-82819	K1907934-012	J:\MS20\DATA\091019\0910F014.D\	09/10/19 14:41	
R4-SC1b-110to120-82819	K1907934-013	J:\MS20\DATA\091019\0910F015.D\	09/10/19 15:20	
R4-SC1b-120to130-82819	K1907934-014	J:\MS20\DATA\091019\0910F016.D\	09/10/19 16:00	
413-SC1b-40to50-82819	K1907934-015	J:\MS20\DATA\091019\0910F017.D\	09/10/19 16:40	
R4-SC1b-130to140-82819	K1907934-016	J:\MS20\DATA\091019\0910F018.D\	09/10/19 17:19	
R4-SC1b-140to150-82819	K1907934-017	J:\MS20\DATA\091019\0910F019.D\	09/10/19 17:59	

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/10/19 18:38

Tune Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

File ID: J:\MS20\DATA\091019A\0910F020.D\ **Analytical Method:** 8270D
Instrument ID: K-MS-20 **Analysis Lot:** 650882

Target Mass	Relative to Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	18.69	84880	Pass
68	69	0	2	0.00	0	Pass
69	198	0	100	23.58	107095	Pass
70	69	0	2	0.57	606	Pass
127	198	10	80	36.96	167893	Pass
197	198	0	2	0.00	0	Pass
198	442	30	100	37.84	454208	Pass
199	198	5	9	6.70	30429	Pass
275	198	10	60	36.19	164373	Pass
365	442	1	50	1.87	22386	Pass
441	443	0.01	100	80.02	194602	Pass
442	442	30	100	100.00	1200298	Pass
443	442	15	24	20.26	243178	Pass

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1912874-01	J:\MS20\DATA\091019A\0910F021.D\	09/10/19 19:18	
Method Blank	KQ1912549-03	J:\MS20\DATA\091019A\0910F022.D\	09/10/19 19:57	
Lab Control Sample	KQ1912549-01	J:\MS20\DATA\091019A\0910F023.D\	09/10/19 20:37	
Duplicate Lab Control Sample	KQ1912549-02	J:\MS20\DATA\091019A\0910F024.D\	09/10/19 21:16	
J6-SC1b-50to60-82819	K1907934-021	J:\MS20\DATA\091019A\0910F025.D\	09/10/19 21:56	
J6-SC1b-60to70-82819	K1907934-022	J:\MS20\DATA\091019A\0910F026.D\	09/10/19 22:35	
J6-SC1b-70to80-82819	K1907934-023	J:\MS20\DATA\091019A\0910F027.D\	09/10/19 23:15	
J6-SC1b-20to30-82819	K1907934-018	J:\MS20\DATA\091019A\0910F028.D\	09/10/19 23:54	
J6-SC1b-30to40-82819	K1907934-019	J:\MS20\DATA\091019A\0910F029.D\	09/11/19 00:34	
J6-SC1b-40to50-82819	K1907934-020	J:\MS20\DATA\091019A\0910F030.D\	09/11/19 01:13	
J6-SC1b-80to90-82819	K1907934-024	J:\MS20\DATA\091019A\0910F031.D\	09/11/19 01:53	
J6-SC1b-90to100-82819	K1907934-025	J:\MS20\DATA\091019A\0910F032.D\	09/11/19 02:32	
J6-SC1b-100to110-82819	K1907934-026	J:\MS20\DATA\091019A\0910F033.D\	09/11/19 03:12	
J6-SC1b-110to120-82819	K1907934-027	J:\MS20\DATA\091019A\0910F034.D\	09/11/19 03:51	
H3-SC1b-20to30-82819	K1907934-030	J:\MS20\DATA\091019A\0910F035.D\	09/11/19 04:31	
H3-SC1b-30to40-82919	K1907934-031	J:\MS20\DATA\091019A\0910F036.D\	09/11/19 05:10	
H3-SC1b-40to50-82919	K1907934-032	J:\MS20\DATA\091019A\0910F037.D\	09/11/19 05:50	
H3-SC1b-90to100-82919	K1907934-037	J:\MS20\DATA\091019A\0910F038.D\	09/11/19 06:30	

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/11/19 07:09

Tune Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

File ID: J:\MS20\DATA\091119\0911F001.D\ **Analytical Method:** 8270D
Instrument ID: K-MS-20 **Analysis Lot:** 650987

Target Mass	Relative to Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	17.63	72992	Pass
68	69	0	2	0.00	0	Pass
69	198	0	100	22.80	94396	Pass
70	69	0	2	0.45	426	Pass
127	198	10	80	36.65	151775	Pass
197	198	0	2	0.00	0	Pass
198	442	30	100	34.92	414101	Pass
199	198	5	9	6.65	27552	Pass
275	198	10	60	37.05	153410	Pass
365	442	1	50	1.82	21525	Pass
441	443	0.01	100	81.36	193258	Pass
442	442	30	100	100.00	1185792	Pass
443	442	15	24	20.03	237546	Pass

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1912958-01	J:\MS20\DATA\091119\0911F002.D\	09/11/19 07:49	
Method Blank	KQ1912582-03	J:\MS20\DATA\091119\0911F003.D\	09/11/19 08:28	
Lab Control Sample	KQ1912582-01	J:\MS20\DATA\091119\0911F004.D\	09/11/19 09:08	
D6-SC1b-90to100-82619	K1907934-048	J:\MS20\DATA\091119\0911F006.D\	09/11/19 10:27	
D6-SC1b-100to110-82619	K1907934-049	J:\MS20\DATA\091119\0911F007.D\	09/11/19 11:07	
D6-SC1b-110to120-82619	K1907934-050	J:\MS20\DATA\091119\0911F008.D\	09/11/19 11:47	
J5-SC1b-30to40-82719	K1907934-054	J:\MS20\DATA\091119\0911F009.D\	09/11/19 12:26	
J5-SC1b-80to90-82719	K1907934-059	J:\MS20\DATA\091119\0911F010.D\	09/11/19 13:06	
J5-SC1b-90to100-82719	K1907934-060	J:\MS20\DATA\091119\0911F011.D\	09/11/19 13:45	
J5-SC1b-100to110-82719	K1907934-061	J:\MS20\DATA\091119\0911F012.D\	09/11/19 14:25	
J3-SC1b-50to60-82719	K1907934-067	J:\MS20\DATA\091119\0911F013.D\	09/11/19 15:05	
J3-SC1b-60to70-82719	K1907934-068	J:\MS20\DATA\091119\0911F014.D\	09/11/19 15:45	
J3-SC1b-70to80-82719	K1907934-069	J:\MS20\DATA\091119\0911F015.D\	09/11/19 16:24	
J3-SC1b-80to90-82719	K1907934-070	J:\MS20\DATA\091119\0911F016.D\	09/11/19 17:04	
H3-SC1b-100to110-82919	K1907934-038	J:\MS20\DATA\091119\0911F017.D\	09/11/19 17:44	
D6-SC1b-70to80-82619	K1907934-046	J:\MS20\DATA\091119\0911F018.D\	09/11/19 18:23	
D6-SC1b-80to90-82619	K1907934-047	J:\MS20\DATA\091119\0911F019.D\	09/11/19 19:03	

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/11/19 19:42

Tune Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

File ID: J:\MS20\DATA\091119A\0911F020.D\ **Analytical Method:** 8270D
Instrument ID: K-MS-20 **Analysis Lot:** 651037

Target Mass	Relative to Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	18.94	86610	Pass
68	69	0	2	0.00	0	Pass
69	198	0	100	24.24	110800	Pass
70	69	0	2	0.58	645	Pass
127	198	10	80	37.54	171606	Pass
197	198	0	2	0.00	0	Pass
198	442	30	100	37.45	457173	Pass
199	198	5	9	6.69	30589	Pass
275	198	10	60	36.09	165013	Pass
365	442	1	50	1.84	22413	Pass
441	443	0.01	100	80.71	198506	Pass
442	442	30	100	100.00	1220842	Pass
443	442	15	24	20.15	245952	Pass

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1912959-01	J:\MS20\DATA\091119A\0911F021.D\	09/11/19 20:22	
H3-SC1b-50to60-82919	K1907934-033	J:\MS20\DATA\091119A\0911F023.D\	09/11/19 21:41	
H3-SC1b-70to80-82919	K1907934-035	J:\MS20\DATA\091119A\0911F024.D\	09/11/19 22:20	
H3-SC1b-80to90-82919	K1907934-036	J:\MS20\DATA\091119A\0911F025.D\	09/11/19 23:00	
H3-SC1b-60to70-82919	K1907934-034	J:\MS20\DATA\091119A\0911F026.D\	09/11/19 23:39	
D6-SC1b-20to30-82619	K1907934-041	J:\MS20\DATA\091119A\0911F027.D\	09/12/19 00:19	
D6-SC1b-30to40-82619	K1907934-042	J:\MS20\DATA\091119A\0911F028.D\	09/12/19 00:58	
D6-SC1b-40to50-82619	K1907934-043	J:\MS20\DATA\091119A\0911F029.D\	09/12/19 01:37	
D6-SC1b-50to60-82619	K1907934-044	J:\MS20\DATA\091119A\0911F030.D\	09/12/19 02:17	
D6-SC1b-60to70-82619	K1907934-045	J:\MS20\DATA\091119A\0911F031.D\	09/12/19 02:56	
J5-SC1b-20to30-82719	K1907934-053	J:\MS20\DATA\091119A\0911F032.D\	09/12/19 03:36	
J5-SC1b-60to70-82719	K1907934-057	J:\MS20\DATA\091119A\0911F033.D\	09/12/19 04:15	
Duplicate Lab Control Sample	KQ1912582-02	J:\MS20\DATA\091119A\0911F034.D\	09/12/19 04:54	
J5-SC1b-70to80-82719	K1907934-058	J:\MS20\DATA\091119A\0911F035.D\	09/12/19 05:34	
J3-SC1b-20to30-82719	K1907934-064	J:\MS20\DATA\091119A\0911F036.D\	09/12/19 06:13	
J3-SC1b-40to50-82719	K1907934-066	J:\MS20\DATA\091119A\0911F037.D\	09/12/19 06:53	

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/12/19 07:33

Tune Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

File ID: J:\MS20\DATA\091219\0912F001.D\ **Analytical Method:** 8270D
Instrument ID: K-MS-20 **Analysis Lot:** 651053

Target Mass	Relative to Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	19.32	81594	Pass
68	69	0	2	0.00	0	Pass
69	198	0	100	23.98	101299	Pass
70	69	0	2	0.69	697	Pass
127	198	10	80	37.74	159402	Pass
197	198	0	2	0.00	0	Pass
198	442	30	100	37.15	422357	Pass
199	198	5	9	6.83	28829	Pass
275	198	10	60	36.32	153408	Pass
365	442	1	50	1.89	21477	Pass
441	443	0.01	100	79.41	183402	Pass
442	442	30	100	100.00	1136896	Pass
443	442	15	24	20.31	230954	Pass

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1912961-01	J:\MS20\DATA\091219\0912F002.D\	09/12/19 08:12	
411-SC1b-50to60-82619	K1907934-052	J:\MS20\DATA\091219\0912F004.D\	09/12/19 09:31	
J5-SC1b-50to60-82719	K1907934-056	J:\MS20\DATA\091219\0912F005.D\	09/12/19 10:10	
J3-SC1b-30to40-82719	K1907934-065	J:\MS20\DATA\091219\0912F006.D\	09/12/19 10:50	

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/12/19 05:54

Tune Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

File ID: J:\MS14\DATA\091219A\0912F001.D\ **Analytical Method:** 8270D
Instrument ID: K-MS-14 **Analysis Lot:** 651187

Target Mass	Relative to Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	24.28	154106	Pass
68	69	0	2	0.00	0	Pass
69	198	0	100	27.93	177249	Pass
70	69	0	2	0.65	1147	Pass
127	198	10	80	40.91	259602	Pass
197	198	0	2	0.00	0	Pass
198	442	30	100	36.35	634602	Pass
199	198	5	9	6.92	43898	Pass
275	198	10	60	37.71	239338	Pass
365	442	1	50	2.11	36866	Pass
441	443	0.01	100	73.72	257664	Pass
442	442	30	100	100.00	1745770	Pass
443	442	15	24	20.02	349525	Pass

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1913028-01	J:\MS14\DATA\091219A\0912F002.D\	09/12/19 06:23	
Method Blank	KQ1912768-03	J:\MS14\DATA\091219A\0912F003.D\	09/12/19 06:51	
Duplicate Lab Control Sample	KQ1912768-02	J:\MS14\DATA\091219A\0912F009.D\	09/12/19 10:40	
J5-SC1b-40to50-82719	K1907934-055	J:\MS14\DATA\091219A\0912F010.D\	09/12/19 11:09	

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/13/19 06:32

Tune Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

File ID: J:\MS14\DATA\091319\0913F001.D\ **Analytical Method:** 8270D
Instrument ID: K-MS-14 **Analysis Lot:** 651204

Target Mass	Relative to Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	23.57	168416	Pass
68	69	0	2	0.00	0	Pass
69	198	0	100	27.93	199558	Pass
70	69	0	2	0.68	1353	Pass
127	198	10	80	37.76	269794	Pass
197	198	0	2	0.00	0	Pass
198	442	30	100	36.56	714560	Pass
199	198	5	9	6.72	48018	Pass
275	198	10	60	38.93	278144	Pass
365	442	1	50	2.10	41090	Pass
441	443	0.01	100	74.72	288661	Pass
442	442	30	100	100.00	1954645	Pass
443	442	15	24	19.76	386304	Pass

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1913033-01	J:\MS14\DATA\091319\0913F002.D\	09/13/19 07:00	
Lab Control Sample	KQ1912768-01	J:\MS14\DATA\091319\0913F004.D\	09/13/19 08:26	

Client: Pacific Groundwater Group (PGG) **Service Request:** K1907934
Project: Swan Island Lagoon Sediment Investigation **Calibration Date:** 6/6/2019

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Calibration ID: KC1900224 **Signal ID:** 1
Instrument ID: K-MS-20

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1900224-01	SIM-PAH ICAL @.002ug/mL | SVM61-6A	J:\MS20\DATA\060619A\0606F010.D	06/06/2019 12:16
02	KC1900224-02	SIM-PAH ICAL @.004ug/mL | SVM61-6B	J:\MS20\DATA\060619A\0606F011.D	06/06/2019 12:55
03	KC1900224-03	SIM-PAH ICAL @.008ug/mL | SVM61-6C	J:\MS20\DATA\060619A\0606F012.D	06/06/2019 13:35
04	KC1900224-04	SIM-PAH ICAL @ 0.02ug/mL | SVM61-6D	J:\MS20\DATA\060619A\0606F013.D	06/06/2019 14:14
05	KC1900224-05	SIM-PAH ICAL @ 0.1ug/mL | SVM61-6E	J:\MS20\DATA\060619A\0606F014.D	06/06/2019 14:53
06	KC1900224-06	SIM-PAH ICAL @ 0.2ug/mL | SVM61-6F	J:\MS20\DATA\060619A\0606F015.D	06/06/2019 15:32
07	KC1900224-07	SIM-PAH ICAL @ 0.4ug/mL | SVM61-6G	J:\MS20\DATA\060619A\0606F016.D	06/06/2019 16:12
08	KC1900224-08	SIM-PAH ICAL @ 1.0ug/mL | SVM61-6H	J:\MS20\DATA\060619A\0606F017.D	06/06/2019 16:51
09	KC1900224-09	SIM-PAH ICAL @ 1.6ug/mL | SVM61-6J	J:\MS20\DATA\060619A\0606F018.D	06/06/2019 17:30
10	KC1900224-10	SIM-PAH ICAL @ 2.0ug/mL | SVM61-6J	J:\MS20\DATA\060619A\0606F019.D	06/06/2019 18:09

Analyte

2-Methylnaphthalene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	2.000	0.7282	02	4.000	0.7648	03	8.000	0.7299	04	20.000	0.7623
05	100.000	0.7688	06	200.000	0.7423	07	400.000	0.7529	08	1000.000	0.7122
09	1600.000	0.6956	10	2000.000	0.662						

Acenaphthene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	2.000	1.278	02	4.000	1.27	03	8.000	1.217	04	20.000	1.219
05	100.000	1.219	06	200.000	1.188	07	400.000	1.198	08	1000.000	1.171
09	1600.000	1.178	10	2000.000	1.148						

Acenaphthylene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	2.000	1.842	02	4.000	1.849	03	8.000	1.773	04	20.000	1.902
05	100.000	1.926	06	200.000	1.869	07	400.000	1.902	08	1000.000	1.885
09	1600.000	1.874	10	2000.000	1.827						

Anthracene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	2.000	1.093	02	4.000	1.093	03	8.000	1.061	04	20.000	1.075
05	100.000	1.098	06	200.000	1.056	07	400.000	1.099	08	1000.000	1.064
09	1600.000	1.073	10	2000.000	1.048						

Benz(a)anthracene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	2.000	1.492	02	4.000	1.402	03	8.000	1.271	04	20.000	1.252
05	100.000	1.225	06	200.000	1.209	07	400.000	1.224	08	1000.000	1.252
09	1600.000	1.27	10	2000.000	1.255						

Client: Pacific Groundwater Group (PGG) **Service Request:** K1907934
Project: Swan Island Lagoon Sediment Investigation **Calibration Date:** 6/6/2019

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Calibration ID: KC1900224 **Signal ID:** 1
Instrument ID: K-MS-20

Analyte

Benzo(a)pyrene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	2.000	1.055	02	4.000	1.027	03	8.000	1.014	04	20.000	1.024
05	100.000	1.071	06	200.000	1.075	07	400.000	1.096	08	1000.000	1.08
09	1600.000	1.098	10	2000.000	1.066						

Benzo(b)fluoranthene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	2.000	1.167	02	4.000	1.16	03	8.000	1.152	04	20.000	1.128
05	100.000	1.171	06	200.000	1.189	07	400.000	1.245	08	1000.000	1.221
09	1600.000	1.232	10	2000.000	1.208						

Benzo(g,h,i)perylene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	2.000	1.316	02	4.000	1.267	03	8.000	1.283	04	20.000	1.249
05	100.000	1.289	06	200.000	1.249	07	400.000	1.253	08	1000.000	1.205
09	1600.000	1.208	10	2000.000	1.172						

Benzo(k)fluoranthene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	2.000	1.134	02	4.000	1.188	03	8.000	1.19	04	20.000	1.196
05	100.000	1.248	06	200.000	1.233	07	400.000	1.263	08	1000.000	1.21
09	1600.000	1.226	10	2000.000	1.172						

Chrysene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	2.000	1.315	02	4.000	1.266	03	8.000	1.289	04	20.000	1.273
05	100.000	1.255	06	200.000	1.232	07	400.000	1.22	08	1000.000	1.198
09	1600.000	1.207	10	2000.000	1.193						

Dibenz(a,h)anthracene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	2.000	1.168	02	4.000	1.148	03	8.000	1.15	04	20.000	1.15
05	100.000	1.212	06	200.000	1.191	07	400.000	1.204	08	1000.000	1.163
09	1600.000	1.172	10	2000.000	1.141						

Dibenzofuran

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	2.000	1.888	02	4.000	1.813	03	8.000	1.771	04	20.000	1.818
05	100.000	1.824	06	200.000	1.79	07	400.000	1.801	08	1000.000	1.771
09	1600.000	1.779	10	2000.000	1.714						

Fluoranthene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	2.000	1.354	02	4.000	1.324	03	8.000	1.337	04	20.000	1.326
05	100.000	1.367	06	200.000	1.343	07	400.000	1.361	08	1000.000	1.291
09	1600.000	1.289	10	2000.000	1.244						

Client: Pacific Groundwater Group (PGG) **Service Request:** K1907934
Project: Swan Island Lagoon Sediment Investigation **Calibration Date:** 6/6/2019

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Calibration ID: KC1900224 **Signal ID:** 1
Instrument ID: K-MS-20

Analyte

Fluoranthene-d10

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	2.000	1.149	02	4.000	1.118	03	8.000	1.104	04	20.000	1.093
05	100.000	1.114	06	200.000	1.097	07	400.000	1.125	08	1000.000	1.108
09	1600.000	1.131	10	2000.000	1.11						

Fluorene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	2.000	1.546	02	4.000	1.507	03	8.000	1.475	04	20.000	1.479
05	100.000	1.492	06	200.000	1.446	07	400.000	1.45	08	1000.000	1.397
09	1600.000	1.387	10	2000.000	1.349						

Fluorene-d10

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	2.000	1.296	02	4.000	1.257	03	8.000	1.198	04	20.000	1.16
05	100.000	1.157	06	200.000	1.129	07	400.000	1.137	08	1000.000	1.12
09	1600.000	1.124	10	2000.000	1.072						

Indeno(1,2,3-cd)pyrene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	2.000	1.042	02	4.000	0.9975	03	8.000	1	04	20.000	0.9732
05	100.000	1.041	06	200.000	1.051	07	400.000	1.094	08	1000.000	1.072
09	1600.000	1.076	10	2000.000	1.049						

Naphthalene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	2.000	1.128	02	4.000	1.147	03	8.000	1.143	04	20.000	1.146
05	100.000	1.122	06	200.000	1.109	07	400.000	1.095	08	1000.000	1.05
09	1600.000	1.02	10	2000.000	0.9837						

Phenanthrene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	2.000	1.236	02	4.000	1.249	03	8.000	1.232	04	20.000	1.216
05	100.000	1.228	06	200.000	1.171	07	400.000	1.204	08	1000.000	1.15
09	1600.000	1.149	10	2000.000	1.124						

Pyrene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	2.000	1.344	02	4.000	1.311	03	8.000	1.316	04	20.000	1.304
05	100.000	1.29	06	200.000	1.268	07	400.000	1.273	08	1000.000	1.279
09	1600.000	1.312	10	2000.000	1.282						

Terphenyl-d14

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	2.000	0.9759	02	4.000	0.8747	03	8.000	0.8696	04	20.000	0.8798
05	100.000	0.8716	06	200.000	0.8545	07	400.000	0.861	08	1000.000	0.8713
09	1600.000	0.878	10	2000.000	0.8687						

Client: Pacific Groundwater Group (PGG) **Service Request:** K1907934
Project: Swan Island Lagoon Sediment Investigation **Calibration Date:** 6/6/2019

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Calibration ID: KC1900224 **Signal ID:** 1
Instrument ID: K-MS-20

		Calibration Evaluation				Calibration Evaluation	
Analyte Name	Compound Type	Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
2-Methylnaphthalene	TRG	Average RF	% RSD	4.7	≤20	0.7319	0.40
Acenaphthene	TRG	Average RF	% RSD	3.4	≤20	1.209	0.90
Acenaphthylene	TRG	Average RF	% RSD	2.4	≤20	1.865	0.90
Anthracene	TRG	Average RF	% RSD	1.8	≤20	1.076	0.70
Benz(a)anthracene	TRG	Average RF	% RSD	7.0	≤20	1.285	0.80
Benzo(a)pyrene	TRG	Average RF	% RSD	2.8	≤20	1.061	0.70
Benzo(b)fluoranthene	TRG	Average RF	% RSD	3.2	≤20	1.187	0.70
Benzo(g,h,i)perylene	TRG	Average RF	% RSD	3.5	≤20	1.249	0.50
Benzo(k)fluoranthene	TRG	Average RF	% RSD	3.2	≤20	1.206	0.70
Chrysene	TRG	Average RF	% RSD	3.3	≤20	1.245	0.70
Dibenz(a,h)anthracene	TRG	Average RF	% RSD	2.1	≤20	1.17	0.40
Dibenzofuran	TRG	Average RF	% RSD	2.5	≤20	1.797	0.80
Fluoranthene	TRG	Average RF	% RSD	2.9	≤20	1.324	0.60
Fluoranthene-d10	SURR	Average RF	% RSD	1.5	≤20	1.115	0.01
Fluorene	TRG	Average RF	% RSD	4.2	≤20	1.453	0.90
Fluorene-d10	SURR	Average RF	% RSD	5.8	≤20	1.165	0.01
Indeno(1,2,3-cd)pyrene	TRG	Average RF	% RSD	3.7	≤20	1.039	0.50
Naphthalene	TRG	Average RF	% RSD	5.2	≤20	1.094	0.70
Phenanthrene	TRG	Average RF	% RSD	3.7	≤20	1.196	0.70
Pyrene	TRG	Average RF	% RSD	1.8	≤20	1.298	0.60
Terphenyl-d14	SURR	Average RF	% RSD	3.9	≤20	0.8805	0.01

Client: Pacific Groundwater Group (PGG) **Service Request:** K1907934
Project: Swan Island Lagoon Sediment Investigation **Calibration Date:** 6/17/2019

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Calibration ID: KC1900232 **Signal ID:** 1
Instrument ID: K-MS-14

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1900232-01	SIM-PAH @ 0.004ug/mL SVM61-6B	J:\MS14\DATA\061719\0617F008.D	06/17/2019 09:58
02	KC1900232-02	SIM-PAH @ 0.008ug/mL SVM61-6C	J:\MS14\DATA\061719\0617F009.D	06/17/2019 10:26
03	KC1900232-03	SIM-PAH @ 0.02ug/mL SVM61-6D	J:\MS14\DATA\061719\0617F010.D	06/17/2019 10:54
04	KC1900232-04	SIM-PAH @ 0.1ug/mL SVM61-6E	J:\MS14\DATA\061719\0617F011.D	06/17/2019 11:22
05	KC1900232-05	SIM-PAH @ 0.2ug/mL SVM61-6F	J:\MS14\DATA\061719\0617F012.D	06/17/2019 11:50
06	KC1900232-06	SIM-PAH @ 0.4ug/mL SVM61-6G	J:\MS14\DATA\061719\0617F013.D	06/17/2019 12:17
07	KC1900232-07	SIM-PAH @ 1.0ug/mL SVM61-6H	J:\MS14\DATA\061719\0617F014.D	06/17/2019 12:46
08	KC1900232-08	SIM-PAH @ 1.6ug/mL SVM61-6I	J:\MS14\DATA\061719\0617F015.D	06/17/2019 13:14
09	KC1900232-09	SIM-PAH @ 2.0ug/mL SVM61-6J	J:\MS14\DATA\061719\0617F016.D	06/17/2019 13:42

Analyte

2-Methylnaphthalene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	0.7645	02	8.000	0.7452	03	20.000	0.7555	04	100.000	0.7403
05	200.000	0.7129	06	400.000	0.6966	07	1000.000	0.6553	08	1600.000	0.6586
09	2000.000	0.6418									

Acenaphthene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.327	02	8.000	1.266	03	20.000	1.29	04	100.000	1.304
05	200.000	1.272	06	400.000	1.298	07	1000.000	1.248	08	1600.000	1.264
09	2000.000	1.226									

Acenaphthylene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	2.357	02	8.000	2.196	03	20.000	2.105	04	100.000	2.122
05	200.000	2.096	06	400.000	2.136	07	1000.000	2.085	08	1600.000	2.107
09	2000.000	2.039									

Anthracene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.161	02	8.000	1.163	03	20.000	1.17	04	100.000	1.195
05	200.000	1.148	06	400.000	1.175	07	1000.000	1.15	08	1600.000	1.161
09	2000.000	1.126									

Benz(a)anthracene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.287	02	8.000	1.246	03	20.000	1.201	04	100.000	1.208
05	200.000	1.206	06	400.000	1.258	07	1000.000	1.285	08	1600.000	1.304
09	2000.000	1.278									

Benzo(a)pyrene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.126	02	8.000	1.082	03	20.000	1.069	04	100.000	1.057
05	200.000	1.042	06	400.000	1.068	07	1000.000	1.04	08	1600.000	1.056

Client: Pacific Groundwater Group (PGG) **Service Request:** K1907934
Project: Swan Island Lagoon Sediment Investigation **Calibration Date:** 6/17/2019

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Calibration ID: KC1900232 **Signal ID:** 1
Instrument ID: K-MS-14

Analyte

Benzo(a)pyrene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
09	2000.000	1.023									

Benzo(b)fluoranthene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.14	02	8.000	1.129	03	20.000	1.146	04	100.000	1.189
05	200.000	1.202	06	400.000	1.242	07	1000.000	1.183	08	1600.000	1.202
09	2000.000	1.161									

Benzo(g,h,i)perylene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.344	02	8.000	1.337	03	20.000	1.354	04	100.000	1.343
05	200.000	1.303	06	400.000	1.262	07	1000.000	1.078	08	1600.000	1.02
09	2000.000	0.95									

Benzo(k)fluoranthene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.118	02	8.000	1.14	03	20.000	1.136	04	100.000	1.183
05	200.000	1.186	06	400.000	1.184	07	1000.000	1.126	08	1600.000	1.132
09	2000.000	1.095									

Chrysene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.184	02	8.000	1.176	03	20.000	1.197	04	100.000	1.203
05	200.000	1.192	06	400.000	1.21	07	1000.000	1.195	08	1600.000	1.222
09	2000.000	1.199									

Dibenz(a,h)anthracene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.136	02	8.000	1.172	03	20.000	1.236	04	100.000	1.296
05	200.000	1.279	06	400.000	1.245	07	1000.000	1.117	08	1600.000	1.095
09	2000.000	1.02									

Dibenzofuran

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.972	02	8.000	1.966	03	20.000	2.013	04	100.000	2.041
05	200.000	1.979	06	400.000	1.993	07	1000.000	1.982	08	1600.000	1.919
09	2000.000	1.855									

Fluoranthene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.636	02	8.000	1.669	03	20.000	1.678	04	100.000	1.66
05	200.000	1.553	06	400.000	1.557	07	1000.000	1.686	08	1600.000	1.736
09	2000.000	1.686									

Fluoranthene-d10

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.323	02	8.000	1.38	03	20.000	1.339	04	100.000	1.303

Client: Pacific Groundwater Group (PGG) **Service Request:** K1907934
Project: Swan Island Lagoon Sediment Investigation **Calibration Date:** 6/17/2019

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Calibration ID: KC1900232 **Signal ID:** 1
Instrument ID: K-MS-14

Analyte

Fluoranthene-d10

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
05	200.000	1.24	06	400.000	1.292	07	1000.000	1.45	08	1600.000	1.512
09	2000.000	1.466									

Fluorene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.548	02	8.000	1.54	03	20.000	1.468	04	100.000	1.472
05	200.000	1.437	06	400.000	1.461	07	1000.000	1.399	08	1600.000	1.412
09	2000.000	1.376									

Fluorene-d10

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.179	02	8.000	1.134	03	20.000	1.097	04	100.000	1.094
05	200.000	1.066	06	400.000	1.099	07	1000.000	1.064	08	1600.000	1.079
09	2000.000	1.053									

Indeno(1,2,3-cd)pyrene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.068	02	8.000	1.031	03	20.000	1.083	04	100.000	1.116
05	200.000	1.112	06	400.000	1.104	07	1000.000	0.9799	08	1600.000	0.9629
09	2000.000	0.9022									

Naphthalene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.079	02	8.000	1.191	03	20.000	1.168	04	100.000	1.138
05	200.000	1.112	06	400.000	1.122	07	1000.000	1.089	08	1600.000	1.097
09	2000.000	1.07									

Phenanthrene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.286	02	8.000	1.272	03	20.000	1.228	04	100.000	1.233
05	200.000	1.195	06	400.000	1.231	07	1000.000	1.196	08	1600.000	1.199
09	2000.000	1.168									

Pyrene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.269	02	8.000	1.256	03	20.000	1.213	04	100.000	1.118
05	200.000	1.053	06	400.000	1.051	07	1000.000	1.187	08	1600.000	1.275
09	2000.000	1.275									

Terphenyl-d14

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	0.9105	02	8.000	0.9217	03	20.000	0.9015	04	100.000	0.8587
05	200.000	0.8214	06	400.000	0.8367	07	1000.000	0.8537	08	1600.000	0.8754
09	2000.000	0.8483									

Client: Pacific Groundwater Group (PGG) **Service Request:** K1907934
Project: Swan Island Lagoon Sediment Investigation **Calibration Date:** 6/17/2019

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Calibration ID: KC1900232 **Signal ID:** 1
Instrument ID: K-MS-14

		Calibration Evaluation				Calibration Evaluation	
Analyte Name	Compound Type	Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
2-Methylnaphthalene	TRG	Average RF	% RSD	6.6	≤20	0.7079	0.40
Acenaphthene	TRG	Average RF	% RSD	2.4	≤20	1.277	0.90
Acenaphthylene	TRG	Average RF	% RSD	4.3	≤20	2.138	0.90
Anthracene	TRG	Average RF	% RSD	1.7	≤20	1.161	0.70
Benz(a)anthracene	TRG	Average RF	% RSD	3.2	≤20	1.253	0.80
Benzo(a)pyrene	TRG	Average RF	% RSD	2.8	≤20	1.062	0.70
Benzo(b)fluoranthene	TRG	Average RF	% RSD	3.1	≤20	1.177	0.70
Benzo(g,h,i)perylene	TRG	Average RF	% RSD	13.1	≤20	1.221	0.50
Benzo(k)fluoranthene	TRG	Average RF	% RSD	2.8	≤20	1.145	0.70
Chrysene	TRG	Average RF	% RSD	1.2	≤20	1.198	0.70
Dibenz(a,h)anthracene	TRG	Average RF	% RSD	7.9	≤20	1.177	0.40
Dibenzofuran	TRG	Average RF	% RSD	2.7	≤20	1.969	0.80
Fluoranthene	TRG	Average RF	% RSD	3.7	≤20	1.651	0.60
Fluoranthene-d10	SURR	Average RF	% RSD	6.7	≤20	1.367	0.01
Fluorene	TRG	Average RF	% RSD	4.1	≤20	1.457	0.90
Fluorene-d10	SURR	Average RF	% RSD	3.6	≤20	1.096	0.01
Indeno(1,2,3-cd)pyrene	TRG	Average RF	% RSD	7.3	≤20	1.04	0.50
Naphthalene	TRG	Average RF	% RSD	3.7	≤20	1.118	0.70
Phenanthrene	TRG	Average RF	% RSD	3.1	≤20	1.223	0.70
Pyrene	TRG	Average RF	% RSD	7.8	≤20	1.188	0.60
Terphenyl-d14	SURR	Average RF	% RSD	4.0	≤20	0.8698	0.01

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QA/QC Report

Client: Pacific Groundwater Group (PGG) **Service Request:** K1907934
Project: Swan Island Lagoon Sediment Investigation **Calibration Date:** 6/6/2019

Initial Calibration Verification Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Calibration ID: KC1900224 **Signal ID:** 1
Instrument ID: K-MS-20

#	Lab Code	Sample Name	File Location	Acquisition Date
11	KC1900224-11	SIM-PAH ICV @ 0.4ug/mL | SVM61 -6K	J:\MS20\DATA\060619A\0606F020.D	06/06/2019 18:49

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
2-Methylnaphthalene	400	364	7.319E-1	6.66E-1	-8.999	±30	Average RF
Acenaphthene	400	365	1.209E0	1.102E0	-8.774	±30	Average RF
Acenaphthylene	400	404	1.865E0	1.884E0	0.998	±30	Average RF
Anthracene	400	398	1.076E0	1.072E0	-0.407	±30	Average RF
Benz(a)anthracene	400	354	1.285E0	1.136E0	-11.607	±30	Average RF
Benzo(a)pyrene	400	390	1.061E0	1.033E0	-2.597	±30	Average RF
Benzo(b)fluoranthene	400	380	1.187E0	1.128E0	-5.005	±30	Average RF
Benzo(g,h,i)perylene	400	350	1.249E0	1.092E0	-12.602	±30	Average RF
Benzo(k)fluoranthene	400	391	1.206E0	1.179E0	-2.269	±30	Average RF
Chrysene	400	354	1.245E0	1.101E0	-11.578	±30	Average RF
Dibenz(a,h)anthracene	400	366	1.17E0	1.07E0	-8.529	±30	Average RF
Dibenzofuran	400	342	1.797E0	1.536E0	-14.504	±30	Average RF
Fluoranthene	400	399	1.324E0	1.32E0	-0.253	±30	Average RF
Fluorene	400	374	1.453E0	1.357E0	-6.580	±30	Average RF
Indeno(1,2,3-cd)pyrene	400	407	1.039E0	1.058E0	1.83	±30	Average RF
Naphthalene	400	369	1.094E0	1.01E0	-7.700	±30	Average RF
Phenanthrene	400	368	1.196E0	1.1E0	-8.021	±30	Average RF
Pyrene	400	361	1.298E0	1.17E0	-9.827	±30	Average RF

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
Fluoranthene-d10	400	411	1.115E0	1.145E0	2.70	±30	Average RF
Fluorene-d10	400	402	1.165E0	1.172E0	0.567	±30	Average RF
Terphenyl-d14	400	393	8.805E-1	8.648E-1	-1.787	±30	Average RF

ALS Group USA, Corp.
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QA/QC Report

Client: Pacific Groundwater Group (PGG) **Service Request:** K1907934
Project: Swan Island Lagoon Sediment Investigation **Calibration Date:** 6/17/2019

Initial Calibration Verification Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Calibration ID: KC1900232 **Signal ID:** 1
Instrument ID: K-MS-14

#	Lab Code	Sample Name	File Location	Acquisition Date
10	KC1900232-10	SIM-PAH ICV @ 0.4ug/mL SVM61-6K	J:\MS14\DATA\061719\0617F017.D	06/17/2019 14:10

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
2-Methylnaphthalene	400	363	7.079E-1	6.42E-1	-9.303	±30	Average RF
Acenaphthene	400	365	1.277E0	1.166E0	-8.708	±30	Average RF
Acenaphthylene	400	387	2.138E0	2.066E0	-3.368	±30	Average RF
Anthracene	400	388	1.161E0	1.125E0	-3.102	±30	Average RF
Benz(a)anthracene	400	374	1.253E0	1.171E0	-6.559	±30	Average RF
Benzo(a)pyrene	400	387	1.062E0	1.028E0	-3.271	±30	Average RF
Benzo(b)fluoranthene	400	403	1.177E0	1.187E0	0.823	±30	Average RF
Benzo(g,h,i)perylene	400	328	1.221E0	1.002E0	-17.973	±30	Average RF
Benzo(k)fluoranthene	400	399	1.145E0	1.142E0	-0.249	±30	Average RF
Chrysene	400	363	1.198E0	1.087E0	-9.267	±30	Average RF
Dibenz(a,h)anthracene	400	345	1.177E0	1.014E0	-13.853	±30	Average RF
Dibenzofuran	400	344	1.969E0	1.694E0	-13.954	±30	Average RF
Fluoranthene	400	377	1.651E0	1.555E0	-5.809	±30	Average RF
Fluorene	400	377	1.457E0	1.372E0	-5.862	±30	Average RF
Indeno(1,2,3-cd)pyrene	400	384	1.04E0	9.972E-1	-4.083	±30	Average RF
Naphthalene	400	380	1.118E0	1.062E0	-5.062	±30	Average RF
Phenanthrene	400	365	1.223E0	1.116E0	-8.735	±30	Average RF
Pyrene	400	334	1.188E0	9.925E-1	-16.483	±30	Average RF

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
Fluoranthene-d10	400	391	1.367E0	1.336E0	-2.264	±30	Average RF
Fluorene-d10	400	410	1.096E0	1.124E0	2.49	±30	Average RF
Terphenyl-d14	400	403	8.698E-1	8.765E-1	0.774	±30	Average RF

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/10/19 17:35

Continuing Calibration Verification (CCV) Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method:	8270D	**Calibration Date:**	6/17/2019
File ID:	J:\MS14\DATA\091019A\0910F027.D\	**Calibration ID:**	KC1900232
Signal ID:	1	**Analysis Lot:**	650827
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
2-Methylnaphthalene	400	352	0.7079	0.623	-12.0	NA	±20	Average RF
Acenaphthene	400	354	1.2771	1.1301	-11.5	NA	±20	Average RF
Acenaphthylene	400	343	2.1381	1.8353	-14.2	NA	±20	Average RF
Anthracene	400	362	1.161	1.0515	-9.4	NA	±20	Average RF
Benz(a)anthracene	400	360	1.2528	1.1271	-10.0	NA	±20	Average RF
Benzo(a)pyrene	400	383	1.0625	1.0172	-4.3	NA	±20	Average RF
Benzo(b)fluoranthene	400	385	1.1771	1.1342	-3.6	NA	±20	Average RF
Benzo(g,h,i)perylene	400	378	1.2212	1.1539	-5.5	NA	±20	Average RF
Benzo(k)fluoranthene	400	387	1.1445	1.108	-3.2	NA	±20	Average RF
Chrysene	400	358	1.1975	1.0725	-10.4	NA	±20	Average RF
Dibenz(a,h)anthracene	400	380	1.1773	1.1174	-5.1	NA	±20	Average RF
Dibenzofuran	400	355	1.9689	1.7473	-11.3	NA	±20	Average RF
Fluoranthene	400	363	1.6512	1.497	-9.3	NA	±20	Average RF
Fluorene	400	348	1.457	1.2667	-13.1	NA	±20	Average RF
Indeno(1,2,3-cd)pyrene	400	385	1.0397	1.0016	-3.7	NA	±20	Average RF
Naphthalene	400	352	1.1184	0.9829	-12.1	NA	±20	Average RF
Phenanthrene	400	346	1.2231	1.0588	-13.4	NA	±20	Average RF
Pyrene	400	368	1.1884	1.0941	-7.9	NA	±20	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Fluoranthene-d10	400	434	1.3672	1.4825	8.4	NA	±20	Average RF
Fluorene-d10	400	413	1.0963	1.1307	3.1	NA	±20	Average RF
Terphenyl-d14	400	420	0.8698	0.9139	5.1	NA	±20	Average RF

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/10/19 06:46

Continuing Calibration Verification (CCV) Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method:	8270D	**Calibration Date:**	6/6/2019
File ID:	J:\MS20\DATA\091019\0910F002.D\	**Calibration ID:**	KC1900224
Signal ID:	1	**Analysis Lot:**	650829
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
2-Methylnaphthalene	400	368	0.7319	0.674	-7.9	NA	±20	Average RF
Acenaphthene	400	365	1.2085	1.1024	-8.8	NA	±20	Average RF
Acenaphthylene	400	388	1.8649	1.8083	-3.0	NA	±20	Average RF
Anthracene	400	388	1.0761	1.0437	-3.0	NA	±20	Average RF
Benz(a)anthracene	400	365	1.2851	1.1733	-8.7	NA	±20	Average RF
Benzo(a)pyrene	400	376	1.0605	0.9965	-6.0	NA	±20	Average RF
Benzo(b)fluoranthene	400	388	1.1872	1.1505	-3.1	NA	±20	Average RF
Benzo(g,h,i)perylene	400	361	1.2492	1.1285	-9.7	NA	±20	Average RF
Benzo(k)fluoranthene	400	373	1.2061	1.1234	-6.9	NA	±20	Average RF
Chrysene	400	355	1.2447	1.1059	-11.2	NA	±20	Average RF
Dibenz(a,h)anthracene	400	386	1.1698	1.1296	-3.4	NA	±20	Average RF
Dibenzofuran	400	376	1.7969	1.6911	-5.9	NA	±20	Average RF
Fluoranthene	400	389	1.3237	1.2888	-2.6	NA	±20	Average RF
Fluorene	400	369	1.4529	1.3392	-7.8	NA	±20	Average RF
Indeno(1,2,3-cd)pyrene	400	393	1.0394	1.0224	-1.6	NA	±20	Average RF
Naphthalene	400	347	1.0944	0.9497	-13.2	NA	±20	Average RF
Phenanthrene	400	364	1.1959	1.0892	-8.9	NA	±20	Average RF
Pyrene	400	365	1.2979	1.1842	-8.8	NA	±20	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Fluoranthene-d10	400	452	1.115	1.2589	12.9	NA	±20	Average RF
Fluorene-d10	400	422	1.1652	1.2288	5.5	NA	±20	Average RF
Terphenyl-d14	400	442	0.8805	0.9722	10.4	NA	±20	Average RF

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/10/19 19:18

Continuing Calibration Verification (CCV) Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method:	8270D	**Calibration Date:**	6/6/2019
File ID:	J:\MS20\DATA\091019A\0910F021.D\	**Calibration ID:**	KC1900224
Signal ID:	1	**Analysis Lot:**	650882
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
2-Methylnaphthalene	400	357	0.7319	0.6541	-10.6	NA	±20	Average RF
Acenaphthene	400	368	1.2085	1.1125	-7.9	NA	±20	Average RF
Acenaphthylene	400	393	1.8649	1.8329	-1.7	NA	±20	Average RF
Anthracene	400	379	1.0761	1.0209	-5.1	NA	±20	Average RF
Benz(a)anthracene	400	369	1.2851	1.1868	-7.6	NA	±20	Average RF
Benzo(a)pyrene	400	379	1.0605	1.0037	-5.4	NA	±20	Average RF
Benzo(b)fluoranthene	400	378	1.1872	1.1211	-5.6	NA	±20	Average RF
Benzo(g,h,i)perylene	400	357	1.2492	1.1162	-10.6	NA	±20	Average RF
Benzo(k)fluoranthene	400	373	1.2061	1.1245	-6.8	NA	±20	Average RF
Chrysene	400	358	1.2447	1.1135	-10.5	NA	±20	Average RF
Dibenz(a,h)anthracene	400	386	1.1698	1.128	-3.6	NA	±20	Average RF
Dibenzofuran	400	380	1.7969	1.7082	-4.9	NA	±20	Average RF
Fluoranthene	400	380	1.3237	1.2559	-5.1	NA	±20	Average RF
Fluorene	400	377	1.4529	1.3681	-5.8	NA	±20	Average RF
Indeno(1,2,3-cd)pyrene	400	385	1.0394	0.9996	-3.8	NA	±20	Average RF
Naphthalene	400	343	1.0944	0.9383	-14.3	NA	±20	Average RF
Phenanthrene	400	356	1.1959	1.0647	-11.0	NA	±20	Average RF
Pyrene	400	369	1.2979	1.1974	-7.7	NA	±20	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Fluoranthene-d10	400	451	1.115	1.256	12.7	NA	±20	Average RF
Fluorene-d10	400	425	1.1652	1.2394	6.4	NA	±20	Average RF
Terphenyl-d14	400	443	0.8805	0.9745	10.7	NA	±20	Average RF

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/11/19 07:49

Continuing Calibration Verification (CCV) Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method:	8270D	**Calibration Date:**	6/6/2019
File ID:	J:\MS20\DATA\091119\0911F002.D\	**Calibration ID:**	KC1900224
Signal ID:	1	**Analysis Lot:**	650987
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
2-Methylnaphthalene	400	351	0.7319	0.6429	-12.2	NA	±20	Average RF
Acenaphthene	400	372	1.2085	1.124	-7.0	NA	±20	Average RF
Acenaphthylene	400	392	1.8649	1.8277	-2.0	NA	±20	Average RF
Anthracene	400	382	1.0761	1.0287	-4.4	NA	±20	Average RF
Benz(a)anthracene	400	361	1.2851	1.161	-9.7	NA	±20	Average RF
Benzo(a)pyrene	400	376	1.0605	0.9964	-6.0	NA	±20	Average RF
Benzo(b)fluoranthene	400	371	1.1872	1.1001	-7.3	NA	±20	Average RF
Benzo(g,h,i)perylene	400	356	1.2492	1.1116	-11.0	NA	±20	Average RF
Benzo(k)fluoranthene	400	368	1.2061	1.1095	-8.0	NA	±20	Average RF
Chrysene	400	356	1.2447	1.1082	-11.0	NA	±20	Average RF
Dibenz(a,h)anthracene	400	384	1.1698	1.1239	-3.9	NA	±20	Average RF
Dibenzofuran	400	380	1.7969	1.7074	-5.0	NA	±20	Average RF
Fluoranthene	400	383	1.3237	1.2672	-4.3	NA	±20	Average RF
Fluorene	400	371	1.4529	1.3492	-7.1	NA	±20	Average RF
Indeno(1,2,3-cd)pyrene	400	379	1.0394	0.9859	-5.1	NA	±20	Average RF
Naphthalene	400	343	1.0944	0.9371	-14.4	NA	±20	Average RF
Phenanthrene	400	360	1.1959	1.0769	-10.0	NA	±20	Average RF
Pyrene	400	366	1.2979	1.1885	-8.4	NA	±20	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Fluoranthene-d10	400	446	1.115	1.2425	11.4	NA	±20	Average RF
Fluorene-d10	400	426	1.1652	1.2406	6.5	NA	±20	Average RF
Terphenyl-d14	400	445	0.8805	0.9789	11.2	NA	±20	Average RF

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/11/19 20:22

Continuing Calibration Verification (CCV) Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method:	8270D	**Calibration Date:**	6/6/2019
File ID:	J:\MS20\DATA\091119A\0911F021.D\	**Calibration ID:**	KC1900224
Signal ID:	1	**Analysis Lot:**	651037
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
2-Methylnaphthalene	400	361	0.7319	0.6603	-9.8	NA	±20	Average RF
Acenaphthene	400	367	1.2085	1.1083	-8.3	NA	±20	Average RF
Acenaphthylene	400	385	1.8649	1.7967	-3.7	NA	±20	Average RF
Anthracene	400	374	1.0761	1.0074	-6.4	NA	±20	Average RF
Benz(a)anthracene	400	363	1.2851	1.1652	-9.3	NA	±20	Average RF
Benzo(a)pyrene	400	372	1.0605	0.987	-6.9	NA	±20	Average RF
Benzo(b)fluoranthene	400	374	1.1872	1.1097	-6.5	NA	±20	Average RF
Benzo(g,h,i)perylene	400	354	1.2492	1.1053	-11.5	NA	±20	Average RF
Benzo(k)fluoranthene	400	376	1.2061	1.1351	-5.9	NA	±20	Average RF
Chrysene	400	355	1.2447	1.106	-11.1	NA	±20	Average RF
Dibenz(a,h)anthracene	400	382	1.1698	1.1167	-4.5	NA	±20	Average RF
Dibenzofuran	400	375	1.7969	1.6828	-6.4	NA	±20	Average RF
Fluoranthene	400	384	1.3237	1.2712	-4.0	NA	±20	Average RF
Fluorene	400	368	1.4529	1.3382	-7.9	NA	±20	Average RF
Indeno(1,2,3-cd)pyrene	400	381	1.0394	0.9906	-4.7	NA	±20	Average RF
Naphthalene	400	343	1.0944	0.9371	-14.4	NA	±20	Average RF
Phenanthrene	400	362	1.1959	1.0822	-9.5	NA	±20	Average RF
Pyrene	400	364	1.2979	1.1809	-9.0	NA	±20	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Fluoranthene-d10	400	452	1.115	1.2588	12.9	NA	±20	Average RF
Fluorene-d10	400	421	1.1652	1.2258	5.2	NA	±20	Average RF
Terphenyl-d14	400	444	0.8805	0.9779	11.1	NA	±20	Average RF

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/12/19 08:12

Continuing Calibration Verification (CCV) Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method:	8270D	**Calibration Date:**	6/6/2019
File ID:	J:\MS20\DATA\091219\0912F002.D\	**Calibration ID:**	KC1900224
Signal ID:	1	**Analysis Lot:**	651053
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
2-Methylnaphthalene	400	359	0.7319	0.6567	-10.3	NA	±20	Average RF
Acenaphthene	400	367	1.2085	1.1089	-8.2	NA	±20	Average RF
Acenaphthylene	400	387	1.8649	1.802	-3.4	NA	±20	Average RF
Anthracene	400	379	1.0761	1.0191	-5.3	NA	±20	Average RF
Benz(a)anthracene	400	369	1.2851	1.1851	-7.8	NA	±20	Average RF
Benzo(a)pyrene	400	374	1.0605	0.9927	-6.4	NA	±20	Average RF
Benzo(b)fluoranthene	400	372	1.1872	1.105	-6.9	NA	±20	Average RF
Benzo(g,h,i)perylene	400	355	1.2492	1.1091	-11.2	NA	±20	Average RF
Benzo(k)fluoranthene	400	374	1.2061	1.1267	-6.6	NA	±20	Average RF
Chrysene	400	361	1.2447	1.1246	-9.7	NA	±20	Average RF
Dibenz(a,h)anthracene	400	387	1.1698	1.132	-3.2	NA	±20	Average RF
Dibenzofuran	400	371	1.7969	1.6673	-7.2	NA	±20	Average RF
Fluoranthene	400	383	1.3237	1.2664	-4.3	NA	±20	Average RF
Fluorene	400	373	1.4529	1.353	-6.9	NA	±20	Average RF
Indeno(1,2,3-cd)pyrene	400	379	1.0394	0.9846	-5.3	NA	±20	Average RF
Naphthalene	400	346	1.0944	0.9477	-13.4	NA	±20	Average RF
Phenanthrene	400	365	1.1959	1.0906	-8.8	NA	±20	Average RF
Pyrene	400	380	1.2979	1.2334	-5.0	NA	±20	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Fluoranthene-d10	400	456	1.115	1.2703	13.9	NA	±20	Average RF
Fluorene-d10	400	423	1.1652	1.2321	5.7	NA	±20	Average RF
Terphenyl-d14	400	460	0.8805	1.012	14.9	NA	±20	Average RF

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/12/19 06:23

Continuing Calibration Verification (CCV) Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method:	8270D	**Calibration Date:**	6/17/2019
File ID:	J:\MS14\DATA\091219A\0912F002.D\	**Calibration ID:**	KC1900232
Signal ID:	1	**Analysis Lot:**	651187
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
2-Methylnaphthalene	400	353	0.7079	0.6243	-11.8	NA	±20	Average RF
Acenaphthene	400	350	1.2771	1.1179	-12.5	NA	±20	Average RF
Acenaphthylene	400	340	2.1381	1.8187	-14.9	NA	±20	Average RF
Anthracene	400	360	1.161	1.0443	-10.1	NA	±20	Average RF
Benz(a)anthracene	400	358	1.2528	1.1198	-10.6	NA	±20	Average RF
Benzo(a)pyrene	400	388	1.0625	1.0303	-3.0	NA	±20	Average RF
Benzo(b)fluoranthene	400	385	1.1771	1.1317	-3.9	NA	±20	Average RF
Benzo(g,h,i)perylene	400	372	1.2212	1.1361	-7.0	NA	±20	Average RF
Benzo(k)fluoranthene	400	373	1.1445	1.0669	-6.8	NA	±20	Average RF
Chrysene	400	360	1.1975	1.0768	-10.1	NA	±20	Average RF
Dibenz(a,h)anthracene	400	370	1.1773	1.0878	-7.6	NA	±20	Average RF
Dibenzofuran	400	348	1.9689	1.7133	-13.0	NA	±20	Average RF
Fluoranthene	400	344	1.6512	1.4184	-14.1	NA	±20	Average RF
Fluorene	400	352	1.457	1.2835	-11.9	NA	±20	Average RF
Indeno(1,2,3-cd)pyrene	400	375	1.0397	0.9756	-6.2	NA	±20	Average RF
Naphthalene	400	349	1.1184	0.9768	-12.7	NA	±20	Average RF
Phenanthrene	400	345	1.2231	1.0557	-13.7	NA	±20	Average RF
Pyrene	400	381	1.1884	1.1325	-4.7	NA	±20	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Fluoranthene-d10	400	416	1.3672	1.4233	4.1	NA	±20	Average RF
Fluorene-d10	400	424	1.0963	1.1616	6.0	NA	±20	Average RF
Terphenyl-d14	400	434	0.8698	0.9446	8.6	NA	±20	Average RF

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/13/19 07:00

Continuing Calibration Verification (CCV) Summary
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method:	8270D	**Calibration Date:**	6/17/2019
File ID:	J:\MS14\DATA\091319\0913F002.D\	**Calibration ID:**	KC1900232
Signal ID:	1	**Analysis Lot:**	651204
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
2-Methylnaphthalene	400	339	0.7079	0.6003	-15.2	NA	±20	Average RF
Acenaphthene	400	349	1.2771	1.1141	-12.8	NA	±20	Average RF
Acenaphthylene	400	336	2.1381	1.7968	-16.0	NA	±20	Average RF
Anthracene	400	355	1.161	1.0308	-11.2	NA	±20	Average RF
Benz(a)anthracene	400	353	1.2528	1.1058	-11.7	NA	±20	Average RF
Benzo(a)pyrene	400	377	1.0625	1.0013	-5.8	NA	±20	Average RF
Benzo(b)fluoranthene	400	377	1.1771	1.1089	-5.8	NA	±20	Average RF
Benzo(g,h,i)perylene	400	354	1.2212	1.0811	-11.5	NA	±20	Average RF
Benzo(k)fluoranthene	400	372	1.1445	1.0656	-6.9	NA	±20	Average RF
Chrysene	400	353	1.1975	1.0569	-11.7	NA	±20	Average RF
Dibenz(a,h)anthracene	400	358	1.1773	1.0546	-10.4	NA	±20	Average RF
Dibenzofuran	400	341	1.9689	1.679	-14.7	NA	±20	Average RF
Fluoranthene	400	349	1.6512	1.4413	-12.7	NA	±20	Average RF
Fluorene	400	349	1.457	1.2708	-12.8	NA	±20	Average RF
Indeno(1,2,3-cd)pyrene	400	356	1.0397	0.925	-11.0	NA	±20	Average RF
Naphthalene	400	343	1.1184	0.959	-14.2	NA	±20	Average RF
Phenanthrene	400	346	1.2231	1.0567	-13.6	NA	±20	Average RF
Pyrene	400	363	1.1884	1.0778	-9.3	NA	±20	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Fluoranthene-d10	400	426	1.3672	1.4577	6.6	NA	±20	Average RF
Fluorene-d10	400	421	1.0963	1.1533	5.2	NA	±20	Average RF
Terphenyl-d14	400	420	0.8698	0.9139	5.1	NA	±20	Average RF

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115

Analysis Run Log
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: **Analysis Lot:**650827
Instrument ID:K-MS-14

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS14\DATA\091019A\0910F026.D\	ZZZZZZZ	ZZZZZZZ	9/10/2019	17:06:00	
J:\MS14\DATA\091019A\0910F026.D\	ZZZZZZZ	ZZZZZZZ	9/10/2019	17:06:00	
J:\MS14\DATA\091019A\0910F026.D\	ZZZZZZZ	ZZZZZZZ	9/10/2019	17:06:00	
J:\MS14\DATA\091019A\0910F027.D\	ZZZZZZZ	ZZZZZZZ	9/10/2019	17:35:00	
J:\MS14\DATA\091019A\0910F027.D\	Continuing Calibration Verification	KQ1912846-05	9/10/2019	17:35:00	
J:\MS14\DATA\091019A\0910F027.D\	ZZZZZZZ	ZZZZZZZ	9/10/2019	17:35:00	
J:\MS14\DATA\091019A\0910F030.D\	ZZZZZZZ	ZZZZZZZ	9/10/2019	19:01:00	
J:\MS14\DATA\091019A\0910F031.D\	ZZZZZZZ	ZZZZZZZ	9/10/2019	19:30:00	
J:\MS14\DATA\091019A\0910F032.D\	ZZZZZZZ	ZZZZZZZ	9/10/2019	19:59:00	
J:\MS14\DATA\091019A\0910F033.D\	ZZZZZZZ	ZZZZZZZ	9/10/2019	20:28:00	
J:\MS14\DATA\091019A\0910F034.D\	ZZZZZZZ	ZZZZZZZ	9/10/2019	20:56:00	
J:\MS14\DATA\091019A\0910F035.D\	ZZZZZZZ	ZZZZZZZ	9/10/2019	21:25:00	
J:\MS14\DATA\091019A\0910F036.D\	ZZZZZZZ	ZZZZZZZ	9/10/2019	21:54:00	
J:\MS14\DATA\091019A\0910F037.D\	ZZZZZZZ	ZZZZZZZ	9/10/2019	22:22:00	
J:\MS14\DATA\091019A\0910F038.D\	Method Blank	KQ1912548-03	9/10/2019	22:51:00	
J:\MS14\DATA\091019A\0910F039.D\	Lab Control Sample	KQ1912548-01	9/10/2019	23:20:00	
J:\MS14\DATA\091019A\0910F040.D\	Duplicate Lab Control Sample	KQ1912548-02	9/10/2019	23:48:00	
J:\MS14\DATA\091019A\0910F041.D\	J3-SC1b-90to100-82719	K1907934-071	9/11/2019	00:17:00	
J:\MS14\DATA\091019A\0910F042.D\	J3-SC1b-10to20-82719	K1907934-072	9/11/2019	00:46:00	
J:\MS14\DATA\091019A\0910F043.D\	412-SC1b-80to90-82719	K1907934-073	9/11/2019	01:14:00	
J:\MS14\DATA\091019A\0910F044.D\	L3-SC1b-20to30-82619	K1907934-074	9/11/2019	01:43:00	
J:\MS14\DATA\091019A\0910F045.D\	L3-SC1b-30to40-82619	K1907934-075	9/11/2019	02:11:00	

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115

Analysis Run Log
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: **Analysis Lot:**650829
Instrument ID:K-MS-14

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS20\DATA\091019\0910F001.D\	ZZZZZZZ	ZZZZZZZ	9/10/2019	06:06:00	
J:\MS20\DATA\091019\0910F002.D\	Continuing Calibration Verification	KQ1912864-01	9/10/2019	06:46:00	
J:\MS20\DATA\091019\0910F003.D\	Method Blank	KQ1912514-03	9/10/2019	07:25:00	
J:\MS20\DATA\091019\0910F004.D\	Lab Control Sample	KQ1912514-01	9/10/2019	08:05:00	
J:\MS20\DATA\091019\0910F005.D\	Duplicate Lab Control Sample	KQ1912514-02	9/10/2019	08:45:00	
J:\MS20\DATA\091019\0910F006.D\	R4-SC1b-80to90-82819	K1907934-009	9/10/2019	09:24:00	
J:\MS20\DATA\091019\0910F007.D\	R4-SC1b-20to30-82819	K1907934-003	9/10/2019	10:04:00	
J:\MS20\DATA\091019\0910F008.D\	R4-SC1b-30to40-82819	K1907934-004	9/10/2019	10:43:00	
J:\MS20\DATA\091019\0910F009.D\	R4-SC1b-40to50-82819	K1907934-005	9/10/2019	11:23:00	
J:\MS20\DATA\091019\0910F010.D\	R4-SC1b-50to60-82819	K1907934-006	9/10/2019	12:03:00	
J:\MS20\DATA\091019\0910F011.D\	R4-SC1b-60to70-82819	K1907934-007	9/10/2019	12:42:00	
J:\MS20\DATA\091019\0910F012.D\	R4-SC1b-70to80-82819	K1907934-008	9/10/2019	13:22:00	
J:\MS20\DATA\091019\0910F013.D\	R4-SC1b-90to100-82819	K1907934-010	9/10/2019	14:01:00	
J:\MS20\DATA\091019\0910F014.D\	R4-SC1b-100to110-82819	K1907934-012	9/10/2019	14:41:00	
J:\MS20\DATA\091019\0910F015.D\	R4-SC1b-110to120-82819	K1907934-013	9/10/2019	15:20:00	
J:\MS20\DATA\091019\0910F016.D\	R4-SC1b-120to130-82819	K1907934-014	9/10/2019	16:00:00	
J:\MS20\DATA\091019\0910F017.D\	413-SC1b-40to50-82819	K1907934-015	9/10/2019	16:40:00	
J:\MS20\DATA\091019\0910F018.D\	R4-SC1b-130to140-82819	K1907934-016	9/10/2019	17:19:00	
J:\MS20\DATA\091019\0910F019.D\	R4-SC1b-140to150-82819	K1907934-017	9/10/2019	17:59:00	

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115

Analysis Run Log
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: **Analysis Lot:**650882
Instrument ID:K-MS-14

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS20\DATA\091019A\0910F020.D\	ZZZZZZZ	ZZZZZZZ	9/10/2019	18:38:00	
J:\MS20\DATA\091019A\0910F021.D\	Continuing Calibration Verification	KQ1912874-01	9/10/2019	19:18:00	
J:\MS20\DATA\091019A\0910F022.D\	Method Blank	KQ1912549-03	9/10/2019	19:57:00	
J:\MS20\DATA\091019A\0910F023.D\	Lab Control Sample	KQ1912549-01	9/10/2019	20:37:00	
J:\MS20\DATA\091019A\0910F024.D\	Duplicate Lab Control Sample	KQ1912549-02	9/10/2019	21:16:00	
J:\MS20\DATA\091019A\0910F025.D\	J6-SC1b-50to60-82819	K1907934-021	9/10/2019	21:56:00	
J:\MS20\DATA\091019A\0910F026.D\	J6-SC1b-60to70-82819	K1907934-022	9/10/2019	22:35:00	
J:\MS20\DATA\091019A\0910F027.D\	J6-SC1b-70to80-82819	K1907934-023	9/10/2019	23:15:00	
J:\MS20\DATA\091019A\0910F028.D\	J6-SC1b-20to30-82819	K1907934-018	9/10/2019	23:54:00	
J:\MS20\DATA\091019A\0910F029.D\	J6-SC1b-30to40-82819	K1907934-019	9/11/2019	00:34:00	
J:\MS20\DATA\091019A\0910F030.D\	J6-SC1b-40to50-82819	K1907934-020	9/11/2019	01:13:00	
J:\MS20\DATA\091019A\0910F031.D\	J6-SC1b-80to90-82819	K1907934-024	9/11/2019	01:53:00	
J:\MS20\DATA\091019A\0910F032.D\	J6-SC1b-90to100-82819	K1907934-025	9/11/2019	02:32:00	
J:\MS20\DATA\091019A\0910F033.D\	J6-SC1b-100to110-82819	K1907934-026	9/11/2019	03:12:00	
J:\MS20\DATA\091019A\0910F034.D\	J6-SC1b-110to120-82819	K1907934-027	9/11/2019	03:51:00	
J:\MS20\DATA\091019A\0910F035.D\	H3-SC1b-20to30-82819	K1907934-030	9/11/2019	04:31:00	
J:\MS20\DATA\091019A\0910F036.D\	H3-SC1b-30to40-82919	K1907934-031	9/11/2019	05:10:00	
J:\MS20\DATA\091019A\0910F037.D\	H3-SC1b-40to50-82919	K1907934-032	9/11/2019	05:50:00	
J:\MS20\DATA\091019A\0910F038.D\	H3-SC1b-90to100-82919	K1907934-037	9/11/2019	06:30:00	

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115

Analysis Run Log
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: **Analysis Lot:**650987
Instrument ID:K-MS-14

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS20\DATA\091119\0911F001.D\	ZZZZZZZ	ZZZZZZZ	9/11/2019	07:09:00	
J:\MS20\DATA\091119\0911F002.D\	Continuing Calibration Verification	KQ1912958-01	9/11/2019	07:49:00	
J:\MS20\DATA\091119\0911F003.D\	Method Blank	KQ1912582-03	9/11/2019	08:28:00	
J:\MS20\DATA\091119\0911F004.D\	Lab Control Sample	KQ1912582-01	9/11/2019	09:08:00	
J:\MS20\DATA\091119\0911F005.D\	ZZZZZZZ	ZZZZZZZ	9/11/2019	09:48:00	
J:\MS20\DATA\091119\0911F006.D\	D6-SC1b-90to100-82619	K1907934-048	9/11/2019	10:27:00	
J:\MS20\DATA\091119\0911F007.D\	D6-SC1b-100to110-82619	K1907934-049	9/11/2019	11:07:00	
J:\MS20\DATA\091119\0911F008.D\	D6-SC1b-110to120-82619	K1907934-050	9/11/2019	11:47:00	
J:\MS20\DATA\091119\0911F009.D\	J5-SC1b-30to40-82719	K1907934-054	9/11/2019	12:26:00	
J:\MS20\DATA\091119\0911F010.D\	J5-SC1b-80to90-82719	K1907934-059	9/11/2019	13:06:00	
J:\MS20\DATA\091119\0911F011.D\	J5-SC1b-90to100-82719	K1907934-060	9/11/2019	13:45:00	
J:\MS20\DATA\091119\0911F012.D\	J5-SC1b-100to110-82719	K1907934-061	9/11/2019	14:25:00	
J:\MS20\DATA\091119\0911F013.D\	J3-SC1b-50to60-82719	K1907934-067	9/11/2019	15:05:00	
J:\MS20\DATA\091119\0911F014.D\	J3-SC1b-60to70-82719	K1907934-068	9/11/2019	15:45:00	
J:\MS20\DATA\091119\0911F015.D\	J3-SC1b-70to80-82719	K1907934-069	9/11/2019	16:24:00	
J:\MS20\DATA\091119\0911F016.D\	J3-SC1b-80to90-82719	K1907934-070	9/11/2019	17:04:00	
J:\MS20\DATA\091119\0911F017.D\	H3-SC1b-100to110-82919	K1907934-038	9/11/2019	17:44:00	
J:\MS20\DATA\091119\0911F018.D\	D6-SC1b-70to80-82619	K1907934-046	9/11/2019	18:23:00	
J:\MS20\DATA\091119\0911F019.D\	D6-SC1b-80to90-82619	K1907934-047	9/11/2019	19:03:00	

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115

Analysis Run Log
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: **Analysis Lot:**651037
Instrument ID:K-MS-14

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS20\DATA\091119A\0911F020.D\	ZZZZZZZ	ZZZZZZZ	9/11/2019	19:42:00	
J:\MS20\DATA\091119A\0911F021.D\	Continuing Calibration Verification	KQ1912959-01	9/11/2019	20:22:00	
J:\MS20\DATA\091119A\0911F023.D\	H3-SC1b-50to60-82919	K1907934-033	9/11/2019	21:41:00	
J:\MS20\DATA\091119A\0911F024.D\	H3-SC1b-70to80-82919	K1907934-035	9/11/2019	22:20:00	
J:\MS20\DATA\091119A\0911F025.D\	H3-SC1b-80to90-82919	K1907934-036	9/11/2019	23:00:00	
J:\MS20\DATA\091119A\0911F026.D\	H3-SC1b-60to70-82919	K1907934-034	9/11/2019	23:39:00	
J:\MS20\DATA\091119A\0911F027.D\	D6-SC1b-20to30-82619	K1907934-041	9/12/2019	00:19:00	
J:\MS20\DATA\091119A\0911F028.D\	D6-SC1b-30to40-82619	K1907934-042	9/12/2019	00:58:00	
J:\MS20\DATA\091119A\0911F029.D\	D6-SC1b-40to50-82619	K1907934-043	9/12/2019	01:37:00	
J:\MS20\DATA\091119A\0911F030.D\	D6-SC1b-50to60-82619	K1907934-044	9/12/2019	02:17:00	
J:\MS20\DATA\091119A\0911F031.D\	D6-SC1b-60to70-82619	K1907934-045	9/12/2019	02:56:00	
J:\MS20\DATA\091119A\0911F032.D\	J5-SC1b-20to30-82719	K1907934-053	9/12/2019	03:36:00	
J:\MS20\DATA\091119A\0911F033.D\	J5-SC1b-60to70-82719	K1907934-057	9/12/2019	04:15:00	
J:\MS20\DATA\091119A\0911F034.D\	Duplicate Lab Control Sample	KQ1912582-02	9/12/2019	04:54:00	
J:\MS20\DATA\091119A\0911F035.D\	J5-SC1b-70to80-82719	K1907934-058	9/12/2019	05:34:00	
J:\MS20\DATA\091119A\0911F036.D\	J3-SC1b-20to30-82719	K1907934-064	9/12/2019	06:13:00	
J:\MS20\DATA\091119A\0911F037.D\	J3-SC1b-40to50-82719	K1907934-066	9/12/2019	06:53:00	

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115

Analysis Run Log
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: **Analysis Lot:**651053
Instrument ID:K-MS-14

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS20\DATA\091219\0912F001.D\	ZZZZZZZ	ZZZZZZZ	9/12/2019	07:33:00	
J:\MS20\DATA\091219\0912F002.D\	Continuing Calibration Verification	KQ1912961-01	9/12/2019	08:12:00	
J:\MS20\DATA\091219\0912F004.D\	411-SC1b-50to60-82619	K1907934-052	9/12/2019	09:31:00	
J:\MS20\DATA\091219\0912F005.D\	J5-SC1b-50to60-82719	K1907934-056	9/12/2019	10:10:00	
J:\MS20\DATA\091219\0912F006.D\	J3-SC1b-30to40-82719	K1907934-065	9/12/2019	10:50:00	

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115

Analysis Run Log
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: **Analysis Lot:**651187
Instrument ID:K-MS-14

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS14\DATA\091219A\0912F001.D\	ZZZZZZZ	ZZZZZZZ	9/12/2019	05:54:00	
J:\MS14\DATA\091219A\0912F002.D\	Continuing Calibration Verification	KQ1913028-01	9/12/2019	06:23:00	
J:\MS14\DATA\091219A\0912F003.D\	Method Blank	KQ1912768-03	9/12/2019	06:51:00	
J:\MS14\DATA\091219A\0912F008.D\	ZZZZZZZ	ZZZZZZZ	9/12/2019	10:12:00	
J:\MS14\DATA\091219A\0912F009.D\	Duplicate Lab Control Sample	KQ1912768-02	9/12/2019	10:40:00	
J:\MS14\DATA\091219A\0912F010.D\	J5-SC1b-40to50-82719	K1907934-055	9/12/2019	11:09:00	

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115

Analysis Run Log
Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Analysis Method: **Analysis Lot:**651204
Instrument ID:K-MS-14

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS14\DATA\091319\0913F001.D\	ZZZZZZZ	ZZZZZZZ	9/13/2019	06:32:00	
J:\MS14\DATA\091319\0913F002.D\	Continuing Calibration Verification	KQ1913033-01	9/13/2019	07:00:00	
J:\MS14\DATA\091319\0913F004.D\	Lab Control Sample	KQ1912768-01	9/13/2019	08:26:00	

Prep Summary Report

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115
Sample Matrix: Soil

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Prep Method: EPA 3541 **Extraction Lot:** 343655
Analytical Method: 8270D **Extraction Date:** 09/04/19 16:32

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
R4-SC1b-20to30-82819	K1907934-003	8/28/19	8/29/19	40.762 g	2 mL	54.3
R4-SC1b-30to40-82819	K1907934-004	8/28/19	8/29/19	40.764 g	2 mL	56.7
R4-SC1b-40to50-82819	K1907934-005	8/28/19	8/29/19	40.422 g	2 mL	53.8
R4-SC1b-50to60-82819	K1907934-006	8/28/19	8/29/19	40.542 g	2 mL	55.4
R4-SC1b-60to70-82819	K1907934-007	8/28/19	8/29/19	40.943 g	2 mL	55.6
R4-SC1b-70to80-82819	K1907934-008	8/28/19	8/29/19	41.122 g	2 mL	57.1
R4-SC1b-80to90-82819	K1907934-009	8/28/19	8/29/19	40.526 g	2 mL	54.6
R4-SC1b-90to100-82819	K1907934-010	8/28/19	8/29/19	40.784 g	2 mL	56.2
R4-SC1b-100to110-82819	K1907934-012	8/28/19	8/29/19	40.737 g	2 mL	54.1
R4-SC1b-110to120-82819	K1907934-013	8/28/19	8/29/19	40.841 g	2 mL	54.8
R4-SC1b-120to130-82819	K1907934-014	8/28/19	8/29/19	40.387 g	2 mL	56.6
413-SC1b-40to50-82819	K1907934-015	8/28/19	8/29/19	40.310 g	2 mL	56.6
R4-SC1b-130to140-82819	K1907934-016	8/28/19	8/29/19	40.116 g	2 mL	65.2
R4-SC1b-140to150-82819	K1907934-017	8/28/19	8/29/19	41.774 g	2 mL	76.6
J6-SC1b-20to30-82819	K1907934-018	8/28/19	8/29/19	40.147 g	2 mL	54.3
J6-SC1b-30to40-82819	K1907934-019	8/28/19	8/29/19	41.612 g	2 mL	55.4
J6-SC1b-40to50-82819	K1907934-020	8/28/19	8/29/19	40.252 g	2 mL	56.3
J6-SC1b-50to60-82819	K1907934-021	8/28/19	8/29/19	40.998 g	2 mL	59.0
J6-SC1b-60to70-82819	K1907934-022	8/28/19	8/29/19	42.491 g	2 mL	62.2
J6-SC1b-70to80-82819	K1907934-023	8/28/19	8/29/19	41.452 g	2 mL	69.5
Lab Control Sample	KQ1912514-01LCS	NA	NA	20.00 g	2 mL	
Duplicate Lab Control Sample	KQ1912514-02DLCS	NA	NA	20.00 g	2 mL	
Method Blank	KQ1912514-03MB	NA	NA	42.4910 g	2 mL	

Prep Summary Report

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115
Sample Matrix: Soil

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Prep Method: EPA 3541 **Extraction Lot:** 343656
Analytical Method: 8270D **Extraction Date:** 09/05/19 10:55

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
J6-SC1b-80to90-82819	K1907934-024	8/28/19	8/29/19	41.593 g	2 mL	71.3
J6-SC1b-90to100-82819	K1907934-025	8/28/19	8/29/19	40.569 g	2 mL	69.2
J6-SC1b-100to110-82819	K1907934-026	8/28/19	8/29/19	40.477 g	2 mL	71.6
J6-SC1b-110to120-82819	K1907934-027	8/28/19	8/29/19	40.482 g	2 mL	73.1
H3-SC1b-20to30-82819	K1907934-030	8/28/19	8/29/19	20.242 g	2 mL	59.6
H3-SC1b-30to40-82919	K1907934-031	8/29/19	8/29/19	40.777 g	2 mL	73.6
H3-SC1b-40to50-82919	K1907934-032	8/29/19	8/29/19	40.269 g	2 mL	73.8
H3-SC1b-50to60-82919	K1907934-033	8/29/19	8/29/19	40.300 g	2 mL	70.2
H3-SC1b-60to70-82919	K1907934-034	8/29/19	8/29/19	40.334 g	2 mL	63.8
H3-SC1b-70to80-82919	K1907934-035	8/29/19	8/29/19	41.055 g	2 mL	51.5
H3-SC1b-80to90-82919	K1907934-036	8/29/19	8/29/19	40.060 g	2 mL	57.7
H3-SC1b-90to100-82919	K1907934-037	8/29/19	8/29/19	40.732 g	2 mL	64.6
H3-SC1b-100to110-82919	K1907934-038	8/29/19	8/29/19	21.589 g	2 mL	65.1
D6-SC1b-20to30-82619	K1907934-041	8/26/19	8/29/19	40.405 g	2 mL	53.2
D6-SC1b-30to40-82619	K1907934-042	8/26/19	8/29/19	40.485 g	2 mL	54.1
D6-SC1b-40to50-82619	K1907934-043	8/26/19	8/29/19	40.932 g	2 mL	56.9
D6-SC1b-50to60-82619	K1907934-044	8/26/19	8/29/19	40.483 g	2 mL	60.5
D6-SC1b-60to70-82619	K1907934-045	8/26/19	8/29/19	41.829 g	2 mL	62.3
D6-SC1b-70to80-82619	K1907934-046	8/26/19	8/29/19	40.972 g	2 mL	66.0
D6-SC1b-80to90-82619	K1907934-047	8/26/19	8/29/19	41.289 g	2 mL	67.8
Lab Control Sample	KQ1912549-01LCS	NA	NA	20.00 g	2 mL	
Duplicate Lab Control Sample	KQ1912549-02DLCS	NA	NA	20.00 g	2 mL	
Method Blank	KQ1912549-03MB	NA	NA	41.8290 g	2 mL	

Prep Summary Report

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115
Sample Matrix: Soil

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Prep Method: EPA 3541 **Extraction Lot:** 343658
Analytical Method: 8270D **Extraction Date:** 09/05/19 15:45

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
D6-SC1b-90to100-82619	K1907934-048	8/26/19	8/29/19	41.952 g	2 mL	72.4
D6-SC1b-100to110-82619	K1907934-049	8/26/19	8/29/19	40.704 g	2 mL	71.2
D6-SC1b-110to120-82619	K1907934-050	8/26/19	8/29/19	41.050 g	2 mL	71.6
411-SC1b-50to60-82619	K1907934-052	8/26/19	8/29/19	40.299 g	2 mL	60.5
J5-SC1b-20to30-82719	K1907934-053	8/27/19	8/29/19	40.261 g	2 mL	51.4
J5-SC1b-30to40-82719	K1907934-054	8/27/19	8/29/19	41.239 g	2 mL	52.1
J5-SC1b-50to60-82719	K1907934-056	8/27/19	8/29/19	40.798 g	2 mL	56.1
J5-SC1b-60to70-82719	K1907934-057	8/27/19	8/29/19	40.613 g	2 mL	56.8
J5-SC1b-70to80-82719	K1907934-058	8/27/19	8/29/19	41.390 g	2 mL	65.7
J5-SC1b-80to90-82719	K1907934-059	8/27/19	8/29/19	40.620 g	2 mL	70.7
J5-SC1b-90to100-82719	K1907934-060	8/27/19	8/29/19	40.216 g	2 mL	71.7
J5-SC1b-100to110-82719	K1907934-061	8/27/19	8/29/19	41.064 g	2 mL	71.0
J3-SC1b-20to30-82719	K1907934-064	8/27/19	8/29/19	40.513 g	2 mL	66.9
J3-SC1b-30to40-82719	K1907934-065	8/27/19	8/29/19	41.755 g	2 mL	59.9
J3-SC1b-40to50-82719	K1907934-066	8/27/19	8/29/19	40.219 g	2 mL	66.6
J3-SC1b-50to60-82719	K1907934-067	8/27/19	8/29/19	40.201 g	2 mL	74.5
J3-SC1b-60to70-82719	K1907934-068	8/27/19	8/29/19	40.599 g	2 mL	83.5
J3-SC1b-70to80-82719	K1907934-069	8/27/19	8/29/19	40.526 g	2 mL	81.8
J3-SC1b-80to90-82719	K1907934-070	8/27/19	8/29/19	41.371 g	2 mL	80.2
Lab Control Sample	KQ1912582-01LCS	NA	NA	20.00 g	2 mL	
Duplicate Lab Control Sample	KQ1912582-02DLCS	NA	NA	20.00 g	2 mL	
Method Blank	KQ1912582-03MB	NA	NA	41.9520 g	2 mL	

Prep Summary Report

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115
Sample Matrix: Soil

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Prep Method: EPA 3541 **Extraction Lot:** 344130
Analytical Method: 8270D **Extraction Date:** 09/10/19 10:16

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
J5-SC1b-40to50-82719	K1907934-055	8/27/19	8/29/19	40.9040 g	2 mL	55.2
Lab Control Sample	KQ1912768-01LCS	NA	NA	20.00 g	2 mL	
Duplicate Lab Control Sample	KQ1912768-02DLCS	NA	NA	20.00 g	2 mL	
Method Blank	KQ1912768-03MB	NA	NA	40.9040 g	2 mL	

Prep Summary Report

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115
Sample Matrix: Soil

Polynuclear Aromatic Hydrocarbons by GC/MS SIM Ultra Low Level

Prep Method: EPA 3541 **Extraction Lot:** 343659
Analytical Method: 8270D **Extraction Date:** 09/05/19 15:24

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
J3-SC1b-90to100-82719	K1907934-071	8/27/19	8/29/19	42.044 g	2 mL	77.5
J3-SC1b-10to20-82719	K1907934-072	8/27/19	8/29/19	40.650 g	2 mL	82.4
412-SC1b-80to90-82719	K1907934-073	8/27/19	8/29/19	41.305 g	2 mL	80.5
L3-SC1b-20to30-82619	K1907934-074	8/26/19	8/29/19	40.214 g	2 mL	79.5
L3-SC1b-30to40-82619	K1907934-075	8/26/19	8/29/19	41.174 g	2 mL	80.5
Lab Control Sample	KQ1912548-01LCS	NA	NA	20.00 g	2 mL	
Duplicate Lab Control Sample	KQ1912548-02DLCS	NA	NA	20.00 g	2 mL	
Method Blank	KQ1912548-03MB	NA	NA	42.0440 g	2 mL	

Polycyclic Aromatic Hydrocarbons by GC/MS SIM

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
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Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/27/19 08:40
Sample Matrix:	Water	**Date Received:**	08/29/19 11:35
Sample Name:	711-82719	**Units:**	ug/L
Lab Code:	K1907934-001	**Basis:**	NA

Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method: 8270D
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**0.0013**	**J**	0.020	0.0013	1	09/03/19 13:46	8/30/19	
Acenaphthene	ND	U	0.020	0.0012	1	09/03/19 13:46	8/30/19	
Acenaphthylene	ND	U	0.020	0.0011	1	09/03/19 13:46	8/30/19	
Anthracene	ND	U	0.020	0.00082	1	09/03/19 13:46	8/30/19	
Benz(a)anthracene	**0.0019**	**J**	0.020	0.00097	1	09/03/19 13:46	8/30/19	
Benzo(a)pyrene	ND	U	0.020	0.0011	1	09/03/19 13:46	8/30/19	
Benzo(b)fluoranthene	ND	U	0.020	0.00083	1	09/03/19 13:46	8/30/19	
Benzo(g,h,i)perylene	ND	U	0.020	0.00086	1	09/03/19 13:46	8/30/19	
Benzo(k)fluoranthene	ND	U	0.020	0.00094	1	09/03/19 13:46	8/30/19	
Chrysene	ND	U	0.020	0.00076	1	09/03/19 13:46	8/30/19	
Dibenz(a,h)anthracene	ND	U	0.020	0.0013	1	09/03/19 13:46	8/30/19	
Fluoranthene	ND	U	0.020	0.00082	1	09/03/19 13:46	8/30/19	
Fluorene	ND	U	0.020	0.0011	1	09/03/19 13:46	8/30/19	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	0.00089	1	09/03/19 13:46	8/30/19	
Naphthalene	**0.0019**	**J**	0.020	0.0014	1	09/03/19 13:46	8/30/19	
Phenanthrene	**0.0015**	**J**	0.020	0.0011	1	09/03/19 13:46	8/30/19	
Pyrene	ND	U	0.020	0.0010	1	09/03/19 13:46	8/30/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	89	42 - 133	09/03/19 13:46	
Fluorene-d10	105	42 - 131	09/03/19 13:46	
Terphenyl-d14	75	32 - 129	09/03/19 13:46	

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Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	08/28/19 08:20
Sample Matrix:	Water	**Date Received:**	08/29/19 11:35
Sample Name:	712-82819	**Units:**	ug/L
Lab Code:	K1907934-002	**Basis:**	NA

Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method: 8270D
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	**0.0013**	**J**	0.020	0.0013	1	09/03/19 14:15	8/30/19	
Acenaphthene	ND	U	0.020	0.0012	1	09/03/19 14:15	8/30/19	
Acenaphthylene	ND	U	0.020	0.0011	1	09/03/19 14:15	8/30/19	
Anthracene	ND	U	0.020	0.00082	1	09/03/19 14:15	8/30/19	
Benz(a)anthracene	**0.0016**	**J**	0.020	0.00097	1	09/03/19 14:15	8/30/19	
Benzo(a)pyrene	ND	U	0.020	0.0011	1	09/03/19 14:15	8/30/19	
Benzo(b)fluoranthene	ND	U	0.020	0.00083	1	09/03/19 14:15	8/30/19	
Benzo(g,h,i)perylene	ND	U	0.020	0.00086	1	09/03/19 14:15	8/30/19	
Benzo(k)fluoranthene	ND	U	0.020	0.00094	1	09/03/19 14:15	8/30/19	
Chrysene	ND	U	0.020	0.00076	1	09/03/19 14:15	8/30/19	
Dibenz(a,h)anthracene	ND	U	0.020	0.0013	1	09/03/19 14:15	8/30/19	
Fluoranthene	ND	U	0.020	0.00082	1	09/03/19 14:15	8/30/19	
Fluorene	ND	U	0.020	0.0011	1	09/03/19 14:15	8/30/19	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	0.00089	1	09/03/19 14:15	8/30/19	
Naphthalene	**0.0020**	**J**	0.020	0.0014	1	09/03/19 14:15	8/30/19	
Phenanthrene	**0.0013**	**J**	0.020	0.0011	1	09/03/19 14:15	8/30/19	
Pyrene	ND	U	0.020	0.0010	1	09/03/19 14:15	8/30/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	86	42 - 133	09/03/19 14:15	
Fluorene-d10	106	42 - 131	09/03/19 14:15	
Terphenyl-d14	80	32 - 129	09/03/19 14:15	

Analytical Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KQ1912331-03	**Basis:**	NA

Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method: 8270D
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	ND	U	0.020	0.0013	1	09/03/19 12:22	8/30/19	
Acenaphthene	ND	U	0.020	0.0012	1	09/03/19 12:22	8/30/19	
Acenaphthylene	ND	U	0.020	0.0011	1	09/03/19 12:22	8/30/19	
Anthracene	ND	U	0.020	0.00082	1	09/03/19 12:22	8/30/19	
Benz(a)anthracene	**0.0020**	**J**	0.020	0.00097	1	09/03/19 12:22	8/30/19	
Benzo(a)pyrene	ND	U	0.020	0.0011	1	09/03/19 12:22	8/30/19	
Benzo(b)fluoranthene	ND	U	0.020	0.00083	1	09/03/19 12:22	8/30/19	
Benzo(g,h,i)perylene	ND	U	0.020	0.00086	1	09/03/19 12:22	8/30/19	
Benzo(k)fluoranthene	ND	U	0.020	0.00094	1	09/03/19 12:22	8/30/19	
Chrysene	ND	U	0.020	0.00076	1	09/03/19 12:22	8/30/19	
Dibenz(a,h)anthracene	ND	U	0.020	0.0013	1	09/03/19 12:22	8/30/19	
Fluoranthene	ND	U	0.020	0.00082	1	09/03/19 12:22	8/30/19	
Fluorene	ND	U	0.020	0.0011	1	09/03/19 12:22	8/30/19	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	0.00089	1	09/03/19 12:22	8/30/19	
Naphthalene	**0.0019**	**J**	0.020	0.0014	1	09/03/19 12:22	8/30/19	
Phenanthrene	**0.0016**	**J**	0.020	0.0011	1	09/03/19 12:22	8/30/19	
Pyrene	ND	U	0.020	0.0010	1	09/03/19 12:22	8/30/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	92	42 - 133	09/03/19 12:22	
Fluorene-d10	111	42 - 131	09/03/19 12:22	
Terphenyl-d14	84	32 - 129	09/03/19 12:22	

Client: Pacific Groundwater Group (PGG) **Service Request:** K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method: 8270D
Extraction Method: EPA 3511

Sample Name	Lab Code	Fluoranthene-d10 42-133	Fluorene-d10 42-131	Terphenyl-d14 32-129
711-82719	K1907934-001	89	105	75
712-82819	K1907934-002	86	106	80
Method Blank	KQ1912331-03	92	111	84
Lab Control Sample	KQ1912331-01	92	104	88
Duplicate Lab Control Sample	KQ1912331-02	89	104	96

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/03/19 11:54

Internal Standard Area and RT SUMMARY
Polycyclic Aromatic Hydrocarbons by GC/MS SIM

File ID: J:\MS14\DATA\090319\0903F003.D\ **Lab Code:**KQ1912478-01
Instrument ID: K-MS-14 **Analysis Lot:**649761
Analysis Method: 8270D **Signal ID:**1

		Acenaphthene-d10		Chrysene-d12		Naphthalene-d8	
		Area	**RT**	**Area**	**RT**	**Area**	**RT**
	Result ==>	33,710	6.25	94,054	9.99	70,640	4.68
	Upper Limit ==>	67,420	6.75	188,108	10.49	141,280	5.18
	Lower Limit ==>	16,855	5.75	47,027	9.49	35,320	4.18
Associated Analyses							
Method Blank	KQ1912331-03	46890	6.25	99481	10.00	91083	4.69
Lab Control Sample	KQ1912331-01	43616	6.25	92663	9.99	90024	4.69
Duplicate Lab Control Sample	KQ1912331-02	42316	6.25	91830	9.99	86549	4.69
711-82719	K1907934-001	45208	6.25	95845	10.00	85702	4.69
712-82819	K1907934-002	45484	6.25	95261	10.00	86775	4.69

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QA/QC Report

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/03/19 11:54

Internal Standard Area and RT SUMMARY
Polycyclic Aromatic Hydrocarbons by GC/MS SIM

File ID: J:\MS14\DATA\090319\0903F003.D\ **Lab Code:**KQ1912478-01
Instrument ID: K-MS-14 **Analysis Lot:**649761
Analysis Method: 8270D **Signal ID:**1

		Perylene-d12		Phenanthrene-d10	
		Area	**RT**	**Area**	**RT**
	Result ==>	108,222	13.03	58,133	7.49
	Upper Limit ==>	216,444	13.53	116,266	7.99
	Lower Limit ==>	54,111	12.53	29,067	6.99
Associated Analyses					
Method Blank	KQ1912331-03	114348	13.02	88538	7.49
Lab Control Sample	KQ1912331-01	103553	13.02	81263	7.49
Duplicate Lab Control Sample	KQ1912331-02	104462	13.02	80599	7.49
711-82719	K1907934-001	108698	13.02	85578	7.49
712-82819	K1907934-002	108368	13.02	85949	7.49

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/03/19
Sample Matrix:	Water	**Date Extracted:**	08/30/19

Duplicate Lab Control Sample Summary
Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method:	8270D	**Units:**	ug/L
Prep Method:	EPA 3511	**Basis:**	NA
		Analysis Lot:	649761

	Lab Control Sample KQ1912331-01			Duplicate Lab Control Sample KQ1912331-02					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
2-Methylnaphthalene	2.41	2.78	87	2.44	2.78	88	48-120	1	30
Acenaphthene	2.61	2.78	94	2.61	2.78	94	63-121	<1	30
Acenaphthylene	2.64	2.78	95	2.62	2.78	94	58-124	<1	30
Anthracene	2.81	2.78	101	2.75	2.78	99	68-127	2	30
Benz(a)anthracene	2.83	2.78	102	2.77	2.78	100	74-124	2	30
Benzo(a)pyrene	2.87	2.78	103	2.81	2.78	101	75-131	2	30
Benzo(b)fluoranthene	3.02	2.78	109	2.96	2.78	107	73-136	2	30
Benzo(g,h,i)perylene	2.53	2.78	91	2.51	2.78	90	63-127	<1	30
Benzo(k)fluoranthene	2.87	2.78	103	2.83	2.78	102	74-134	2	30
Chrysene	2.70	2.78	97	2.67	2.78	96	74-132	<1	30
Dibenz(a,h)anthracene	2.56	2.78	92	2.52	2.78	91	59-135	1	30
Fluoranthene	2.22	2.78	80	2.18	2.78	78	70-127	2	30
Fluorene	2.68	2.78	96	2.68	2.78	96	68-121	<1	30
Indeno(1,2,3-cd)pyrene	2.60	2.78	93	2.57	2.78	93	63-136	<1	30
Naphthalene	2.45	2.78	88	2.45	2.78	88	52-115	<1	30
Phenanthrene	2.61	2.78	94	2.54	2.78	92	64-126	3	30
Pyrene	2.99	2.78	108	2.95	2.78	106	72-127	1	30

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/03/19 12:22
Sample Matrix:	Water	**Date Extracted:**	08/30/19

Method Blank Summary
Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Sample Name:	Method Blank	**Instrument ID:**	K-MS-14
Lab Code:	KQ1912331-03	**File ID:**	J:\MS14\DATA\090319\0903F004.D\
Analysis Method:	8270D	**Analysis Lot:**	649761
Prep Method:	EPA 3511	**Extraction Lot:**	343623

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ1912331-01	J:\MS14\DATA\090319\0903F005.D\	09/03/19 12:50
Duplicate Lab Control Sample	KQ1912331-02	J:\MS14\DATA\090319\0903F006.D\	09/03/19 13:18
711-82719	K1907934-001	J:\MS14\DATA\090319\0903F007.D\	09/03/19 13:46
712-82819	K1907934-002	J:\MS14\DATA\090319\0903F008.D\	09/03/19 14:15

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QA/QC Report

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/03/19 12:50
Sample Matrix:	Water	**Date Extracted:**	08/30/19

Lab Control Sample Summary
Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Sample Name:	Lab Control Sample	**Instrument ID:**	K-MS-14
Lab Code:	KQ1912331-01	**File ID:**	J:\MS14\DATA\090319\0903F005.D\
Analysis Method:	8270D	**Analysis Lot:**	649761
Prep Method:	EPA 3511	**Extraction Lot:**	343623

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1912331-03	J:\MS14\DATA\090319\0903F004.D\	09/03/19 12:22
Duplicate Lab Control Sample	KQ1912331-02	J:\MS14\DATA\090319\0903F006.D\	09/03/19 13:18
711-82719	K1907934-001	J:\MS14\DATA\090319\0903F007.D\	09/03/19 13:46
712-82819	K1907934-002	J:\MS14\DATA\090319\0903F008.D\	09/03/19 14:15

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115 **Date Analyzed:**09/03/19 11:26

Tune Summary
Polycyclic Aromatic Hydrocarbons by GC/MS SIM

File ID: J:\MS14\DATA\090319\0903F002.D\ **Analytical Method:** 8270D
Instrument ID: K-MS-14 **Analysis Lot:** 649761

Target Mass	Relative to Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	24.32	166479	Pass
68	69	0	2	0.00	0	Pass
69	198	0	100	28.64	195994	Pass
70	69	0	2	0.76	1482	Pass
127	198	10	80	38.33	262314	Pass
197	198	0	2	0.00	0	Pass
198	442	30	100	41.63	684437	Pass
199	198	5	9	6.96	47605	Pass
275	198	10	60	37.79	258666	Pass
365	442	1	50	2.13	35053	Pass
441	443	0.01	100	74.62	245106	Pass
442	442	30	100	100.00	1644181	Pass
443	442	15	24	19.98	328453	Pass

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1912478-01	J:\MS14\DATA\090319\0903F003.D\	09/03/19 11:54	
Method Blank	KQ1912331-03	J:\MS14\DATA\090319\0903F004.D\	09/03/19 12:22	
Lab Control Sample	KQ1912331-01	J:\MS14\DATA\090319\0903F005.D\	09/03/19 12:50	
Duplicate Lab Control Sample	KQ1912331-02	J:\MS14\DATA\090319\0903F006.D\	09/03/19 13:18	
711-82719	K1907934-001	J:\MS14\DATA\090319\0903F007.D\	09/03/19 13:46	
712-82819	K1907934-002	J:\MS14\DATA\090319\0903F008.D\	09/03/19 14:15	

Client: Pacific Groundwater Group (PGG) **Service Request:** K1907934
Project: Swan Island Lagoon Sediment Investigation **Calibration Date:** 6/17/2019

Initial Calibration Summary
Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Calibration ID: KC1900232 **Signal ID:** 1
Instrument ID: K-MS-14

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1900232-01	SIM-PAH @ 0.004ug/mL SVM61-6B	J:\MS14\DATA\061719\0617F008.D	06/17/2019 09:58
02	KC1900232-02	SIM-PAH @ 0.008ug/mL SVM61-6C	J:\MS14\DATA\061719\0617F009.D	06/17/2019 10:26
03	KC1900232-03	SIM-PAH @ 0.02ug/mL SVM61-6D	J:\MS14\DATA\061719\0617F010.D	06/17/2019 10:54
04	KC1900232-04	SIM-PAH @ 0.1ug/mL SVM61-6E	J:\MS14\DATA\061719\0617F011.D	06/17/2019 11:22
05	KC1900232-05	SIM-PAH @ 0.2ug/mL SVM61-6F	J:\MS14\DATA\061719\0617F012.D	06/17/2019 11:50
06	KC1900232-06	SIM-PAH @ 0.4ug/mL SVM61-6G	J:\MS14\DATA\061719\0617F013.D	06/17/2019 12:17
07	KC1900232-07	SIM-PAH @ 1.0ug/mL SVM61-6H	J:\MS14\DATA\061719\0617F014.D	06/17/2019 12:46
08	KC1900232-08	SIM-PAH @ 1.6ug/mL SVM61-6I	J:\MS14\DATA\061719\0617F015.D	06/17/2019 13:14
09	KC1900232-09	SIM-PAH @ 2.0ug/mL SVM61-6J	J:\MS14\DATA\061719\0617F016.D	06/17/2019 13:42

Analyte

2-Methylnaphthalene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	0.7645	02	8.000	0.7452	03	20.000	0.7555	04	100.000	0.7403
05	200.000	0.7129	06	400.000	0.6966	07	1000.000	0.6553	08	1600.000	0.6586
09	2000.000	0.6418									

Acenaphthene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.327	02	8.000	1.266	03	20.000	1.29	04	100.000	1.304
05	200.000	1.272	06	400.000	1.298	07	1000.000	1.248	08	1600.000	1.264
09	2000.000	1.226									

Acenaphthylene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	2.357	02	8.000	2.196	03	20.000	2.105	04	100.000	2.122
05	200.000	2.096	06	400.000	2.136	07	1000.000	2.085	08	1600.000	2.107
09	2000.000	2.039									

Anthracene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.161	02	8.000	1.163	03	20.000	1.17	04	100.000	1.195
05	200.000	1.148	06	400.000	1.175	07	1000.000	1.15	08	1600.000	1.161
09	2000.000	1.126									

Benz(a)anthracene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.287	02	8.000	1.246	03	20.000	1.201	04	100.000	1.208
05	200.000	1.206	06	400.000	1.258	07	1000.000	1.285	08	1600.000	1.304
09	2000.000	1.278									

Benzo(a)pyrene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.126	02	8.000	1.082	03	20.000	1.069	04	100.000	1.057
05	200.000	1.042	06	400.000	1.068	07	1000.000	1.04	08	1600.000	1.056

Client: Pacific Groundwater Group (PGG) **Service Request:** K1907934
Project: Swan Island Lagoon Sediment Investigation **Calibration Date:** 6/17/2019

Initial Calibration Summary
Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Calibration ID: KC1900232 **Signal ID:** 1
Instrument ID: K-MS-14

Analyte

Benzo(a)pyrene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
09	2000.000	1.023									

Benzo(b)fluoranthene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.14	02	8.000	1.129	03	20.000	1.146	04	100.000	1.189
05	200.000	1.202	06	400.000	1.242	07	1000.000	1.183	08	1600.000	1.202
09	2000.000	1.161									

Benzo(g,h,i)perylene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.344	02	8.000	1.337	03	20.000	1.354	04	100.000	1.343
05	200.000	1.303	06	400.000	1.262	07	1000.000	1.078	08	1600.000	1.02
09	2000.000	0.95									

Benzo(k)fluoranthene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.118	02	8.000	1.14	03	20.000	1.136	04	100.000	1.183
05	200.000	1.186	06	400.000	1.184	07	1000.000	1.126	08	1600.000	1.132
09	2000.000	1.095									

Chrysene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.184	02	8.000	1.176	03	20.000	1.197	04	100.000	1.203
05	200.000	1.192	06	400.000	1.21	07	1000.000	1.195	08	1600.000	1.222
09	2000.000	1.199									

Dibenz(a,h)anthracene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.136	02	8.000	1.172	03	20.000	1.236	04	100.000	1.296
05	200.000	1.279	06	400.000	1.245	07	1000.000	1.117	08	1600.000	1.095
09	2000.000	1.02									

Fluoranthene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.636	02	8.000	1.669	03	20.000	1.678	04	100.000	1.66
05	200.000	1.553	06	400.000	1.557	07	1000.000	1.686	08	1600.000	1.736
09	2000.000	1.686									

Fluoranthene-d10

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.323	02	8.000	1.38	03	20.000	1.339	04	100.000	1.303
05	200.000	1.24	06	400.000	1.292	07	1000.000	1.45	08	1600.000	1.512
09	2000.000	1.466									

Fluorene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.548	02	8.000	1.54	03	20.000	1.468	04	100.000	1.472

Client: Pacific Groundwater Group (PGG) **Service Request:** K1907934
Project: Swan Island Lagoon Sediment Investigation **Calibration Date:** 6/17/2019

Initial Calibration Summary
Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Calibration ID: KC1900232 **Signal ID:** 1
Instrument ID: K-MS-14

Analyte

Fluorene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
05	200.000	1.437	06	400.000	1.461	07	1000.000	1.399	08	1600.000	1.412
09	2000.000	1.376									

Fluorene-d10

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.179	02	8.000	1.134	03	20.000	1.097	04	100.000	1.094
05	200.000	1.066	06	400.000	1.099	07	1000.000	1.064	08	1600.000	1.079
09	2000.000	1.053									

Indeno(1,2,3-cd)pyrene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.068	02	8.000	1.031	03	20.000	1.083	04	100.000	1.116
05	200.000	1.112	06	400.000	1.104	07	1000.000	0.9799	08	1600.000	0.9629
09	2000.000	0.9022									

Naphthalene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.079	02	8.000	1.191	03	20.000	1.168	04	100.000	1.138
05	200.000	1.112	06	400.000	1.122	07	1000.000	1.089	08	1600.000	1.097
09	2000.000	1.07									

Phenanthrene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.286	02	8.000	1.272	03	20.000	1.228	04	100.000	1.233
05	200.000	1.195	06	400.000	1.231	07	1000.000	1.196	08	1600.000	1.199
09	2000.000	1.168									

Pyrene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	1.269	02	8.000	1.256	03	20.000	1.213	04	100.000	1.118
05	200.000	1.053	06	400.000	1.051	07	1000.000	1.187	08	1600.000	1.275
09	2000.000	1.275									

Terphenyl-d14

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	4.000	0.9105	02	8.000	0.9217	03	20.000	0.9015	04	100.000	0.8587
05	200.000	0.8214	06	400.000	0.8367	07	1000.000	0.8537	08	1600.000	0.8754
09	2000.000	0.8483									

Client: Pacific Groundwater Group (PGG) **Service Request:** K1907934
Project: Swan Island Lagoon Sediment Investigation **Calibration Date:** 6/17/2019

Initial Calibration Summary
Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Calibration ID: KC1900232 **Signal ID:** 1
Instrument ID: K-MS-14

		Calibration Evaluation				Calibration Evaluation	
Analyte Name	Compound Type	Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
2-Methylnaphthalene	TRG	Average RF	% RSD	6.6	≤20	0.7079	0.40
Acenaphthene	TRG	Average RF	% RSD	2.4	≤20	1.277	0.90
Acenaphthylene	TRG	Average RF	% RSD	4.3	≤20	2.138	0.90
Anthracene	TRG	Average RF	% RSD	1.7	≤20	1.161	0.70
Benz(a)anthracene	TRG	Average RF	% RSD	3.2	≤20	1.253	0.80
Benzo(a)pyrene	TRG	Average RF	% RSD	2.8	≤20	1.062	0.70
Benzo(b)fluoranthene	TRG	Average RF	% RSD	3.1	≤20	1.177	0.70
Benzo(g,h,i)perylene	TRG	Average RF	% RSD	13.1	≤20	1.221	0.50
Benzo(k)fluoranthene	TRG	Average RF	% RSD	2.8	≤20	1.145	0.70
Chrysene	TRG	Average RF	% RSD	1.2	≤20	1.198	0.70
Dibenz(a,h)anthracene	TRG	Average RF	% RSD	7.9	≤20	1.177	0.40
Fluoranthene	TRG	Average RF	% RSD	3.7	≤20	1.651	0.60
Fluoranthene-d10	SURR	Average RF	% RSD	6.7	≤20	1.367	0.01
Fluorene	TRG	Average RF	% RSD	4.1	≤20	1.457	0.90
Fluorene-d10	SURR	Average RF	% RSD	3.6	≤20	1.096	0.01
Indeno(1,2,3-cd)pyrene	TRG	Average RF	% RSD	7.3	≤20	1.04	0.50
Naphthalene	TRG	Average RF	% RSD	3.7	≤20	1.118	0.70
Phenanthrene	TRG	Average RF	% RSD	3.1	≤20	1.223	0.70
Pyrene	TRG	Average RF	% RSD	7.8	≤20	1.188	0.60
Terphenyl-d14	SURR	Average RF	% RSD	4.0	≤20	0.8698	0.01

Client: Pacific Groundwater Group (PGG) **Service Request:** K1907934
Project: Swan Island Lagoon Sediment Investigation **Calibration Date:** 6/17/2019

Initial Calibration Verification Summary
Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Calibration ID: KC1900232 **Signal ID:** 1
Instrument ID: K-MS-14

#	Lab Code	Sample Name	File Location	Acquisition Date
10	KC1900232-10	SIM-PAH ICV @ 0.4ug/mL SVM61-6K	J:\MS14\DATA\061719\0617F017.D	06/17/2019 14:10

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
2-Methylnaphthalene	400	363	7.079E-1	6.42E-1	-9.303	±30	Average RF
Acenaphthene	400	365	1.277E0	1.166E0	-8.708	±30	Average RF
Acenaphthylene	400	387	2.138E0	2.066E0	-3.368	±30	Average RF
Anthracene	400	388	1.161E0	1.125E0	-3.102	±30	Average RF
Benz(a)anthracene	400	374	1.253E0	1.171E0	-6.559	±30	Average RF
Benzo(a)pyrene	400	387	1.062E0	1.028E0	-3.271	±30	Average RF
Benzo(b)fluoranthene	400	403	1.177E0	1.187E0	0.823	±30	Average RF
Benzo(g,h,i)perylene	400	328	1.221E0	1.002E0	-17.973	±30	Average RF
Benzo(k)fluoranthene	400	399	1.145E0	1.142E0	-0.249	±30	Average RF
Chrysene	400	363	1.198E0	1.087E0	-9.267	±30	Average RF
Dibenz(a,h)anthracene	400	345	1.177E0	1.014E0	-13.853	±30	Average RF
Fluoranthene	400	377	1.651E0	1.555E0	-5.809	±30	Average RF
Fluorene	400	377	1.457E0	1.372E0	-5.862	±30	Average RF
Indeno(1,2,3-cd)pyrene	400	384	1.04E0	9.972E-1	-4.083	±30	Average RF
Naphthalene	400	380	1.118E0	1.062E0	-5.062	±30	Average RF
Phenanthrene	400	365	1.223E0	1.116E0	-8.735	±30	Average RF
Pyrene	400	334	1.188E0	9.925E-1	-16.483	±30	Average RF

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
Fluoranthene-d10	400	391	1.367E0	1.336E0	-2.264	±30	Average RF
Fluorene-d10	400	410	1.096E0	1.124E0	2.49	±30	Average RF
Terphenyl-d14	400	403	8.698E-1	8.765E-1	0.774	±30	Average RF

Client:	Pacific Groundwater Group (PGG)	**Service Request:**	K1907934
Project:	Swan Island Lagoon Sediment Investigation/2006-00115	**Date Analyzed:**	09/03/19 11:54

Continuing Calibration Verification (CCV) Summary
Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method:	8270D	**Calibration Date:**	6/17/2019
File ID:	J:\MS14\DATA\090319\0903F003.D\	**Calibration ID:**	KC1900232
Signal ID:	1	**Analysis Lot:**	649761
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
2-Methylnaphthalene	400	339	0.7079	0.5994	-15.3	NA	±20	Average RF
Acenaphthene	400	355	1.2771	1.1335	-11.2	NA	±20	Average RF
Acenaphthylene	400	345	2.1381	1.8443	-13.7	NA	±20	Average RF
Anthracene	400	361	1.161	1.0472	-9.8	NA	±20	Average RF
Benz(a)anthracene	400	362	1.2528	1.1323	-9.6	NA	±20	Average RF
Benzo(a)pyrene	400	382	1.0625	1.0144	-4.5	NA	±20	Average RF
Benzo(b)fluoranthene	400	394	1.1771	1.1588	-1.6	NA	±20	Average RF
Benzo(g,h,i)perylene	400	386	1.2212	1.1773	-3.6	NA	±20	Average RF
Benzo(k)fluoranthene	400	383	1.1445	1.0969	-4.2	NA	±20	Average RF
Chrysene	400	361	1.1975	1.0798	-9.8	NA	±20	Average RF
Dibenz(a,h)anthracene	400	378	1.1773	1.1124	-5.5	NA	±20	Average RF
Fluoranthene	400	353	1.6512	1.4565	-11.8	NA	±20	Average RF
Fluorene	400	348	1.457	1.2666	-13.1	NA	±20	Average RF
Indeno(1,2,3-cd)pyrene	400	396	1.0397	1.0294	-1.0	NA	±20	Average RF
Naphthalene	400	348	1.1184	0.9743	-12.9	NA	±20	Average RF
Phenanthrene	400	348	1.2231	1.0649	-12.9	NA	±20	Average RF
Pyrene	400	333	1.1884	0.9894	-16.7	NA	±20	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Fluoranthene-d10	400	417	1.3672	1.4258	4.3	NA	±20	Average RF
Fluorene-d10	400	417	1.0963	1.1435	4.3	NA	±20	Average RF
Terphenyl-d14	400	399	0.8698	0.8668	-0.3	NA	±20	Average RF

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115

Analysis Run Log
Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method: **Analysis Lot:**649761
Instrument ID:K-MS-14

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS14\DATA\090319\0903F002.D\	ZZZZZZZ	ZZZZZZZ	9/3/2019	11:26:00	
J:\MS14\DATA\090319\0903F003.D\	Continuing Calibration Verification	KQ1912478-01	9/3/2019	11:54:00	
J:\MS14\DATA\090319\0903F004.D\	Method Blank	KQ1912331-03	9/3/2019	12:22:00	
J:\MS14\DATA\090319\0903F005.D\	Lab Control Sample	KQ1912331-01	9/3/2019	12:50:00	
J:\MS14\DATA\090319\0903F006.D\	Duplicate Lab Control Sample	KQ1912331-02	9/3/2019	13:18:00	
J:\MS14\DATA\090319\0903F007.D\	711-82719	K1907934-001	9/3/2019	13:46:00	
J:\MS14\DATA\090319\0903F008.D\	712-82819	K1907934-002	9/3/2019	14:15:00	

Prep Summary Report

Client: Pacific Groundwater Group (PGG) **Service Request:**K1907934
Project: Swan Island Lagoon Sediment Investigation/2006-00115
Sample Matrix: Water

Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Prep Method: EPA 3511 **Extraction Lot:** 343623
Analytical Method: 8270D **Extraction Date:** 08/30/19 10:59

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
711-82719	K1907934-001	8/27/19	8/29/19	450 mL	2 mL	
712-82819	K1907934-002	8/28/19	8/29/19	450 mL	2 mL	
Lab Control Sample	KQ1912331-01LCS	NA	NA	450 mL	2 mL	
Duplicate Lab Control Sample	KQ1912331-02DLCS	NA	NA	450 mL	2 mL	
Method Blank	KQ1912331-03MB	NA	NA	450 mL	2 mL	

APPENDIX D2
ANALYTICAL LABORATORY DATA SUMMARY REPORTS TESTAMERICA

eurofins | Environment Testing TestAmerica



ANALYTICAL REPORT

Eurofins TestAmerica, Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

Laboratory Job ID: 580-88125-1
Client Project/Site: Swan Island Lagoon Sediment Investigatio

For:
Pacific Groundwater Group
2377 Eastlake Avenue E
Seattle, Washington 98102

Attn: Ms. Inger Jackson

M. Elaine Walker

Authorized for release by:
8/30/2019 2:34:25 PM

Elaine Walker, Project Manager II
(253)248-4972
elaine.walker@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 580-88125-1

Laboratory: Eurofins TestAmerica, Seattle

Narrative

CASE NARRATIVE
Client: Pacific Groundwater Group
Project: Swan Island Lagoon Sediment Investigation
Report Number: 580-88125-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) resulting from a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are an unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes within the calibration range of the instrument or that reduces the interferences thereby enabling the quantification of target analytes.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

These samples were previously received under various COCs and were archived per client request. The samples were activated on 7/26/2019; the samples were removed from the freezer to perform these analyses.

Receipt Exceptions

The following samples were frozen upon receipt by the laboratory. They were taken out of the freezer on 8/11, extracted the morning of 8/12, and then placed back into the freezer. Therefore the samples are within hold for analyses with the exception of Grainsize, TOC, Total Solids and Mercury. Mercury still has a 28-Day hold time if samples are frozen. Grainsize does not get frozen and this method has a 6 month hold time.TOC and Total Solids have 6 months if frozen. These analyses were activated after the hold times for these methods had expired. A1-0to30-102018 (580-88125-1), A2-0to26-100818 (580-88125-2), A3-0to31-100818 (580-88125-3), A4-0to25-100818 (580-88125-4), A5-0to25-100818 (580-88125-5), A6-0to23-100818 (580-88125-6), A7-0to26-100918 (580-88125-7), C4-0to27-100918 (580-88125-8), D2-0to19-101018 (580-88125-9), F2-0to19-101018 (580-88125-10), H2-0to30-101218 (580-88125-12), J2A3-0to18-101218 (580-88125-13), M4-0to26-101918 (580-88125-14), 515-0to26-101918 (580-88125-15), N5-0to28-101418 (580-88125-16), N7-0to27-101418 (580-88125-17), O7-0to27-101918 (580-88125-18), Q2-0to13-101818 (580-88125-19), Q6-0to27-102018 (580-88125-20), T6-0to29-101618 (580-88125-21), (580-88125-A-10 MS) and (580-88125-A-10 MSD)

One or more containers for the following samples were broken in storage: A1-0to30-102018 (580-88125-1), H2-0to30-101218 (580-88125-12) and M4-0to26-101918 (580-88125-14). They have been taken to disposal and destroyed. Analysts have found enough back up sample for their analyses.

This report contains all data with the exception of the 1668A PCB Congeners, being performed at Eurofins TestAmerica Knoxville. This data will be reported under separate cover.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

DIOXIN/ FURAN

Samples A1-0to30-102018 (580-88125-1), A2-0to26-100818 (580-88125-2), A3-0to31-100818 (580-88125-3), A4-0to25-100818 (580-88125-4), A5-0to25-100818 (580-88125-5), A6-0to23-100818 (580-88125-6), A7-0to26-100918 (580-88125-7), C4-0to27-100918 (580-88125-8), D2-0to19-101018 (580-88125-9), F2-0to19-101018 (580-88125-10), G6-0to27-101818 (580-88125-11), H2-0to30-101218 (580-88125-12), J2A3-0to18-101218 (580-88125-13), M4-0to26-101918 (580-88125-14), 515-0to26-101918 (580-88125-15),

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N5-0to28-101418 (580-88125-16), N7-0to27-101418 (580-88125-17), O7-0to27-101918 (580-88125-18), Q2-0to13-101818 (580-88125-19), Q6-0to27-102018 (580-88125-20) and T6-0to29-101618 (580-88125-21) were analyzed for Dioxin/ Furan in accordance with 1613B. The samples were prepared on 08/14/2019 and analyzed on 08/17/2019, 08/19/2019, 08/20/2019 and 08/21/2019.

OCDD was detected in method blank MB 320-315077/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

1,2,3,4,7,8-HxCDD, OCDD and Total HxCDD were detected in method blank MB 320-315080/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

1,2,3,4,6,7,8-HpCDF, 1,2,3,6,7,8-HxCDD, 1,2,3,7,8-PeCDD, 1,2,3,7,8-PeCDF and 2,3,4,7,8-PeCDF failed the recovery criteria low for LCSSRM 320-315077/4-A. 1,2,3,6,7,8-HxCDD, 1,2,3,7,8-PeCDD, 1,2,3,7,8-PeCDF and 2,3,4,7,8-PeCDF failed the recovery criteria low for LCSSRM 320-315077/5-A.

2,3,7,8-TCDD failed the recovery criteria high. 1,2,3,6,7,8-HxCDD failed the recovery criteria low for LCSSRM 320-315080/4-A. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

POLYCHLORINATED BIPHENYLS (PCBS)

Samples A1-0to30-102018 (580-88125-1), A2-0to26-100818 (580-88125-2), A3-0to31-100818 (580-88125-3), A4-0to25-100818 (580-88125-4), A5-0to25-100818 (580-88125-5), A6-0to23-100818 (580-88125-6), A7-0to26-100918 (580-88125-7), C4-0to27-100918 (580-88125-8), D2-0to19-101018 (580-88125-9), F2-0to19-101018 (580-88125-10), G6-0to27-101818 (580-88125-11), H2-0to30-101218 (580-88125-12), J2A3-0to18-101218 (580-88125-13), M4-0to26-101918 (580-88125-14), 515-0to26-101918 (580-88125-15), N5-0to28-101418 (580-88125-16), N7-0to27-101418 (580-88125-17), O7-0to27-101918 (580-88125-18), Q2-0to13-101818 (580-88125-19), Q6-0to27-102018 (580-88125-20) and T6-0to29-101618 (580-88125-21) were analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA sw-846 method 8082A. The samples were prepared on 08/13/2019 and analyzed on 08/15/2019 and 08/16/2019.

Surrogate recovery for the following samples were outside control limits: A2-0to26-100818 (580-88125-2), A4-0to25-100818 (580-88125-4), A6-0to23-100818 (580-88125-6), A7-0to26-100918 (580-88125-7), C4-0to27-100918 (580-88125-8), D2-0to19-101018 (580-88125-9), and F2-0to19-101018 (580-88125-10). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis were not performed.

Internal standard (ISTD) response for the following sample exceeded the control limit on Column ZB-CLPesticides-1 and ZB-CLPesticides-2: J2A3-0to18-101218 (580-88125-13). As such, the sample results associated with this ISTD were reported from the other column, which met ISTD acceptance criteria.

The continuing calibration verification (CCV) associated with batch 580-308439 recovered above the upper control limit for PCB-1232. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: G6-0to27-101818 (580-88125-11), H2-0to30-101218 (580-88125-12), J2A3-0to18-101218 (580-88125-13), M4-0to26-101918 (580-88125-14), 515-0to26-101918 (580-88125-15), N5-0to28-101418 (580-88125-16), N7-0to27-101418 (580-88125-17), O7-0to27-101918 (580-88125-18), Q2-0to13-101818 (580-88125-19), Q6-0to27-102018 (580-88125-20), T6-0to29-101618 (580-88125-21) and (CCV 580-308439/3).

The continuing calibration verification (CCV) associated with 580-308439 recovered high and outside the control limits for PCB-1221 on one column. Results are confirmed on both columns and reported from the passing column. The following samples are impacted: G6-0to27-101818 (580-88125-11), H2-0to30-101218 (580-88125-12), J2A3-0to18-101218 (580-88125-13), M4-0to26-101918 (580-88125-14), N5-0to28-101418 (580-88125-16), N7-0to27-101418 (580-88125-17), O7-0to27-101918 (580-88125-18), Q2-0to13-101818 (580-88125-19), Q6-0to27-102018 (580-88125-20), T6-0to29-101618 (580-88125-21) and (CCV 580-308439/6).

The continuing calibration verification (CCV) associated with batch 580-308552 recovered above the upper control limit for PCB-1232,

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PCB-1016 and PCB-1260. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: A5-0to25-100818 (580-88125-5), (CCV 580-308552/13), (CCV 580-308552/3) and (CCVIS 580-308552/7).

The continuing calibration verification (CCV) associated with 580-308552 recovered high and outside the control limits for PCB-1221 on one column. Results are confirmed on both columns and reported from the passing column. The following samples are impacted: A5-0to25-100818 (580-88125-5) and (CCV 580-308552/6).

The following continuing calibration verification (CCV) standard associated with batch 580-308552 recovered outside acceptance criteria for %D for surrogate DCB Decachlorobiphenyl and Tetrachloro-m-xylene. Since all the other surrogates were within %D criteria; therefore, the data have been reported. The following samples are impacted: (CCV 580-308552/13) and (CCVIS 580-308552/7).

The following closing continuing calibration verification (CCV) and continuing calibration blank (CCB) standard associated with batch 580-308552 failed to meet acceptance limits for Tetrachloro-m-xylene and DCB Decachlorobiphenyl. The associated samples were analyzed following a successful CCV, indicating that the sample matrix is adversely affecting the instrument and causing the failures.

Due to the high concentration, PCB-1260 failed the recovery criteria high for the MS of sample G6-0to27-101818MS (580-88125-11) in batch 580-308439. PCB-1260 failed the recovery criteria low for the MSD of sample G6-0to27-101818MSD (580-88125-11) in batch 580-308439. PCB-1260 exceeded the RPD limit. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

In analytical batch 580-308439, the %RPD between the primary and confirmation column exceeded 40% for PCB-1260 and PCB-1254 for the following sample(s): G6-0to27-101818 (580-88125-11[1.0]), H2-0to30-101218 (580-88125-12[1.0]), M4-0to26-101918 (580-88125-14[1.0]), N7-0to27-101418 (580-88125-17[1.0]), O7-0to27-101918 (580-88125-18[1.0]), (580-88125-D-11-D MS) and (580-88125-D-11-E MSD). The lower value(s) has been reported in accordance with the laboratory's SOP.

%RPD between the primary and confirmation column exceeded 40% for some analytes for the following sample: A4-0to25-100818 (580-88125-4[3.0]). The lower values have been reported in accordance with the laboratory's SOP.

The following samples required a TBA clean-up to reduce matrix interferences caused by sulfur: A1-0to30-102018 (580-88125-1), A1-0to30-102018 MS (580-88125-1 MS), A1-0to30-102018 MSD (580-88125-1 MSD), A2-0to26-100818 (580-88125-2), A3-0to31-100818 (580-88125-3), A4-0to25-100818 (580-88125-4), A6-0to23-100818 (580-88125-6), A7-0to26-100918 (580-88125-7), C4-0to27-100918 (580-88125-8), D2-0to19-101018 (580-88125-9), F2-0to19-101018 (580-88125-10), G6-0to27-101818 (580-88125-11), G6-0to27-101818 MS (580-88125-11 MS), G6-0to27-101818 MSD (580-88125-11 MSD), H2-0to30-101218 (580-88125-12), J2A3-0to18-101218 (580-88125-13), M4-0to26-101918 (580-88125-14), N5-0to28-101418 (580-88125-16), N7-0to27-101418 (580-88125-17), O7-0to27-101918 (580-88125-18), Q2-0to13-101818 (580-88125-19), Q6-0to27-102018 (580-88125-20), T6-0to29-101618 (580-88125-21), (LCS 580-308204/2-A), and (MB 580-308204/1-A).

Sample A4-0to25-100818 (580-88125-4)[3X] required dilution prior to analysis to bring the concentration of target analytes within the calibration range. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DIESEL AND EXTENDED RANGE ORGANICS

Samples A1-0to30-102018 (580-88125-1), A2-0to26-100818 (580-88125-2), A3-0to31-100818 (580-88125-3), A4-0to25-100818 (580-88125-4), A5-0to25-100818 (580-88125-5), A6-0to23-100818 (580-88125-6), A7-0to26-100918 (580-88125-7), C4-0to27-100918 (580-88125-8), D2-0to19-101018 (580-88125-9), F2-0to19-101018 (580-88125-10), G6-0to27-101818 (580-88125-11), H2-0to30-101218 (580-88125-12), J2A3-0to18-101218 (580-88125-13), M4-0to26-101918 (580-88125-14), 515-0to26-101918 (580-88125-15), N5-0to28-101418 (580-88125-16), N7-0to27-101418 (580-88125-17), O7-0to27-101918 (580-88125-18), Q2-0to13-101818 (580-88125-19), Q6-0to27-102018 (580-88125-20) and T6-0to29-101618 (580-88125-21) were analyzed for diesel and extended range organics in accordance with Method NWTPH-Dx. The samples were prepared on 08/12/2019 and 08/13/2019 and analyzed on 08/14/2019 and 08/15/2019.

Surrogate recovery for the following samples were outside control limits: A6-0to23-100818 (580-88125-6) and J2A3-0to18-101218 (580-88125-13). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis were not performed.

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The following samples contained a hydrocarbon pattern in the diesel range; however, the elution pattern was later than the typical diesel fuel pattern used by the laboratory for quantitative purposes: A1-0to30-102018 (580-88125-1), A2-0to26-100818 (580-88125-2), A3-0to31-100818 (580-88125-3), A4-0to25-100818 (580-88125-4), A5-0to25-100818 (580-88125-5), A6-0to23-100818 (580-88125-6), A7-0to26-100918 (580-88125-7), C4-0to27-100918 (580-88125-8), D2-0to19-101018 (580-88125-9), F2-0to19-101018 (580-88125-10), G6-0to27-101818 (580-88125-11), G6-0to27-101818 DU (580-88125-11 DU), H2-0to30-101218 (580-88125-12), J2A3-0to18-101218 (580-88125-13), M4-0to26-101918 (580-88125-14), 515-0to26-101918 (580-88125-15), N5-0to28-101418 (580-88125-16), N7-0to27-101418 (580-88125-17), O7-0to27-101918 (580-88125-18), Q2-0to13-101818 (580-88125-19), Q6-0to27-102018 (580-88125-20) and T6-0to29-101618 (580-88125-21).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)

Samples A1-0to30-102018 (580-88125-1), A2-0to26-100818 (580-88125-2), A3-0to31-100818 (580-88125-3), A4-0to25-100818 (580-88125-4), A5-0to25-100818 (580-88125-5), A6-0to23-100818 (580-88125-6), A7-0to26-100918 (580-88125-7), C4-0to27-100918 (580-88125-8), D2-0to19-101018 (580-88125-9), F2-0to19-101018 (580-88125-10), G6-0to27-101818 (580-88125-11), H2-0to30-101218 (580-88125-12), J2A3-0to18-101218 (580-88125-13), M4-0to26-101918 (580-88125-14), 515-0to26-101918 (580-88125-15), N5-0to28-101418 (580-88125-16), N7-0to27-101418 (580-88125-17), O7-0to27-101918 (580-88125-18), Q2-0to13-101818 (580-88125-19), Q6-0to27-102018 (580-88125-20) and T6-0to29-101618 (580-88125-21) were analyzed for Metals (ICPMS) in accordance with 6020A_LL. The samples were prepared on 08/09/2019 and 08/14/2019 and analyzed on 08/13/2019 and 08/14/2019.

Lead was detected in method blank MB 580-308354/6-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Because the result concentration was less than ½ the reporting limit, no corrective action was performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL MERCURY

Samples A1-0to30-102018 (580-88125-1), A2-0to26-100818 (580-88125-2), A3-0to31-100818 (580-88125-3), A4-0to25-100818 (580-88125-4), A5-0to25-100818 (580-88125-5), A6-0to23-100818 (580-88125-6), A7-0to26-100918 (580-88125-7), C4-0to27-100918 (580-88125-8), D2-0to19-101018 (580-88125-9), F2-0to19-101018 (580-88125-10), G6-0to27-101818 (580-88125-11), H2-0to30-101218 (580-88125-12), J2A3-0to18-101218 (580-88125-13), M4-0to26-101918 (580-88125-14), 515-0to26-101918 (580-88125-15), N5-0to28-101418 (580-88125-16), N7-0to27-101418 (580-88125-17), O7-0to27-101918 (580-88125-18), Q2-0to13-101818 (580-88125-19), Q6-0to27-102018 (580-88125-20) and T6-0to29-101618 (580-88125-21) were analyzed for total mercury in accordance with EPA SW-846 Method 7471A. The samples were prepared on 08/14/2019 and analyzed on 08/14/2019 and 08/15/2019.

Mercury failed the recovery criteria high for the MS of sample A1-0to30-102018MS (580-88125-1) in batch 580-308412. Mercury failed the recovery criteria high for the MSD of sample A1-0to30-102018MSD (580-88125-1) in batch 580-308412. The associated LCS and LCSD recoveries met acceptance limits.

Mercury exceeded the RPD limit for the duplicate of sample A1-0to30-102018DU (580-88125-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PUGET SOUND ESTUARY PROGRAM TOTAL ORGANIC CARBON

Samples A1-0to30-102018 (580-88125-1), A2-0to26-100818 (580-88125-2), A3-0to31-100818 (580-88125-3), A4-0to25-100818 (580-88125-4), A5-0to25-100818 (580-88125-5), A6-0to23-100818 (580-88125-6), A7-0to26-100918 (580-88125-7), C4-0to27-100918 (580-88125-8), D2-0to19-101018 (580-88125-9), F2-0to19-101018 (580-88125-10), G6-0to27-101818 (580-88125-11), H2-0to30-101218 (580-88125-12), J2A3-0to18-101218 (580-88125-13), M4-0to26-101918 (580-88125-14), 515-0to26-101918 (580-88125-15), N5-0to28-101418 (580-88125-16), N7-0to27-101418 (580-88125-17), O7-0to27-101918 (580-88125-18), Q2-0to13-101818 (580-88125-19), Q6-0to27-102018 (580-88125-20) and T6-0to29-101618 (580-88125-21) were analyzed for Puget Sound Estuary Program total organic carbon in accordance with EPA SW-846 Method 9060, modified to meet the Puget Sound Estuary Program requirements. The samples were analyzed on 08/18/2019.

Total Organic Carbon - Duplicates was detected in method blank MB 580-308680/3 at a level that was above the method detection limit

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but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Because the result concentration was less than ½ the reporting limit, no corrective action was performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GRAIN SIZE

Samples A1-0to30-102018 (580-88125-1), A2-0to26-100818 (580-88125-2), A3-0to31-100818 (580-88125-3), A4-0to25-100818 (580-88125-4), A5-0to25-100818 (580-88125-5), A6-0to23-100818 (580-88125-6), A7-0to26-100918 (580-88125-7), C4-0to27-100918 (580-88125-8), D2-0to19-101018 (580-88125-9), F2-0to19-101018 (580-88125-10), G6-0to27-101818 (580-88125-11), H2-0to30-101218 (580-88125-12), J2A3-0to18-101218 (580-88125-13), M4-0to26-101918 (580-88125-14), 515-0to26-101918 (580-88125-15), N5-0to28-101418 (580-88125-16), N7-0to27-101418 (580-88125-17), O7-0to27-101918 (580-88125-18), Q2-0to13-101818 (580-88125-19), Q6-0to27-102018 (580-88125-20) and T6-0to29-101618 (580-88125-21) were analyzed for grain size in accordance with ASTM D7928 & D6913. The samples were analyzed on 08/06/2019.

Coarse Sand and Medium Sand exceeded the RPD limit for the duplicate of sample G6-0to27-101818DU (580-88125-11).

Coarse Sand exceeded the RPD limit for the duplicate of sample A1-0to30-102018DU (580-88125-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SPECIFIC GRAVITY

Samples A1-0to30-102018 (580-88125-1), A2-0to26-100818 (580-88125-2), A3-0to31-100818 (580-88125-3), A4-0to25-100818 (580-88125-4), A5-0to25-100818 (580-88125-5), A6-0to23-100818 (580-88125-6), A7-0to26-100918 (580-88125-7), C4-0to27-100918 (580-88125-8), D2-0to19-101018 (580-88125-9), F2-0to19-101018 (580-88125-10), G6-0to27-101818 (580-88125-11), H2-0to30-101218 (580-88125-12), J2A3-0to18-101218 (580-88125-13), M4-0to26-101918 (580-88125-14), 515-0to26-101918 (580-88125-15), N5-0to28-101418 (580-88125-16), N7-0to27-101418 (580-88125-17), O7-0to27-101918 (580-88125-18), Q2-0to13-101818 (580-88125-19), Q6-0to27-102018 (580-88125-20) and T6-0to29-101618 (580-88125-21) were analyzed for specific gravity in accordance with ASTM D854. The samples were analyzed on 08/13/2019 and 08/14/2019.

The density (or specific gravity) of the samples was determined using SOP number KNOX-WC-0015, based on ASTM Methods D1475 (replaced D1963) and D854. A Hubbard-Carmick type pycnometer is tared on a four-place analytical balance. The pycnometer filled with water is weighed to calibrate the volume at the desired temperature. The pycnometer filled with sample is weighed to determine the weight of the sample at the calibrated volume. The standard temperature for this procedure is 25ºC. The density and specific gravity of the material are calculated using the following equations:

d(SAMP) = [C(T) - A] / V(T)

Where:
d(SAMP) = Density of the liquid sample at temperature T, g/cm3
C(T) = Weight of pycnometer filled with sample at temperature T, g
A = Weight of pycnometer, g
V(T) = Volume of pycnometer at temperature T, cm3

d(SAMP) = [C(T) - A] / [V(T) - [(D(T) - C(T)) / dH2O(T)]]

Where:
d(SAMP) = Density of the solid sample at temperature T, g/cm3
D(T) = Weight of pycnometer filled with water and an aliquot of the sample at temperature T, g
C(T) = Weight of pycnometer partially filled with an aliquot of the sample at temperature T, g
A = Weight of pycnometer, g
dH2O(T) = Density of pure water at temperature T, g/cm3
V(T) = Volume of pycnometer at temperature T, cm3

S(T) = d(SAMP) / dH2O(T)

Job ID: 580-88125-1 (Continued)

Laboratory: Eurofins TestAmerica, Seattle (Continued)

Where:
S(T) = Specific gravity of the sample at temperature T, unitless
d(SAMP) = Density of the sample at temperature T, g/cm3
dH2O(T) = Density of pure water at temperature T, g/cm3
T = Temperature of analysis

Conversion factors:
1 lb/gal = 0.1198 g/cm3
1 Kg/cu. m = 0.001 g/cm3

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS

Samples A1-0to30-102018 (580-88125-1), A2-0to26-100818 (580-88125-2), A3-0to31-100818 (580-88125-3), A4-0to25-100818 (580-88125-4), A5-0to25-100818 (580-88125-5), A6-0to23-100818 (580-88125-6), A7-0to26-100918 (580-88125-7), C4-0to27-100918 (580-88125-8), D2-0to19-101018 (580-88125-9), F2-0to19-101018 (580-88125-10), G6-0to27-101818 (580-88125-11), H2-0to30-101218 (580-88125-12), J2A3-0to18-101218 (580-88125-13), M4-0to26-101918 (580-88125-14), 515-0to26-101918 (580-88125-15), N5-0to28-101418 (580-88125-16), N7-0to27-101418 (580-88125-17), O7-0to27-101918 (580-88125-18), Q2-0to13-101818 (580-88125-19), Q6-0to27-102018 (580-88125-20) and T6-0to29-101618 (580-88125-21) were analyzed for percent solids in accordance with ASTM D2216. The samples were analyzed on 08/13/2019.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL SOLIDS @ 70C

Samples A1-0to30-102018 (580-88125-1), A2-0to26-100818 (580-88125-2), A3-0to31-100818 (580-88125-3), A4-0to25-100818 (580-88125-4), A5-0to25-100818 (580-88125-5), A6-0to23-100818 (580-88125-6), A7-0to26-100918 (580-88125-7), C4-0to27-100918 (580-88125-8), D2-0to19-101018 (580-88125-9), F2-0to19-101018 (580-88125-10), G6-0to27-101818 (580-88125-11), H2-0to30-101218 (580-88125-12), J2A3-0to18-101218 (580-88125-13), M4-0to26-101918 (580-88125-14), 515-0to26-101918 (580-88125-15), N5-0to28-101418 (580-88125-16), N7-0to27-101418 (580-88125-17), O7-0to27-101918 (580-88125-18), Q2-0to13-101818 (580-88125-19), Q6-0to27-102018 (580-88125-20) and T6-0to29-101618 (580-88125-21) were analyzed for Total Solids @ 70C in accordance with Moisture @ 70C. The samples were analyzed on 08/21/2019.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
p	The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.
X	Surrogate is outside control limits

Dioxin

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
B	Compound was found in the blank and sample.
E	Result exceeded calibration range.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
F1	MS and/or MSD Recovery is outside acceptance limits.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Geotechnical

Qualifier	Qualifier Description
F3	Duplicate RPD exceeds the control limit
H	Sample was prepped or analyzed beyond the specified holding time

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample ID: A1-0to30-102018
Lab Sample ID: 580-88125-1

Date Collected: 10/20/18 12:05
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 55.1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.4	1.3	ug/Kg	☼	08/13/19 10:43	08/15/19 22:52	1
PCB-1221	ND		3.4	1.6	ug/Kg	☼	08/13/19 10:43	08/15/19 22:52	1
PCB-1232	ND		3.4	1.6	ug/Kg	☼	08/13/19 10:43	08/15/19 22:52	1
PCB-1242	ND		3.4	0.84	ug/Kg	☼	08/13/19 10:43	08/15/19 22:52	1
PCB-1248	ND		3.4	0.62	ug/Kg	☼	08/13/19 10:43	08/15/19 22:52	1
PCB-1254	ND		3.4	1.4	ug/Kg	☼	08/13/19 10:43	08/15/19 22:52	1
PCB-1260	ND		3.4	1.3	ug/Kg	☼	08/13/19 10:43	08/15/19 22:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*61*		*39 - 142*	*08/13/19 10:43*	*08/15/19 22:52*	*1*
Tetrachloro-m-xylene	*54*		*35 - 129*	*08/13/19 10:43*	*08/15/19 22:52*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		83	20	mg/Kg	☼	08/12/19 12:08	08/14/19 17:36	1
Motor Oil (>C24-C36)	**49**	**J**	83	29	mg/Kg	☼	08/12/19 12:08	08/14/19 17:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*93*		*50 - 150*	*08/12/19 12:08*	*08/14/19 17:36*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	**0.0015**	**J**	0.0046	0.00015	ug/Kg	☼	08/14/19 12:31	08/17/19 08:20	1
1,2,3,4,6,7,8-HpCDF	ND	*	0.0046	0.00022	ug/Kg	☼	08/14/19 12:31	08/17/19 08:20	1
1,2,3,4,7,8,9-HpCDF	ND	*	0.0046	0.00025	ug/Kg	☼	08/14/19 12:31	08/17/19 08:20	1
1,2,3,4,7,8-HxCDD	ND		0.0046	0.00014	ug/Kg	☼	08/14/19 12:31	08/17/19 08:20	1
1,2,3,4,7,8-HxCDF	ND		0.0046	0.000082	ug/Kg	☼	08/14/19 12:31	08/17/19 08:20	1
1,2,3,6,7,8-HxCDD	ND	*	0.0046	0.00014	ug/Kg	☼	08/14/19 12:31	08/17/19 08:20	1
1,2,3,6,7,8-HxCDF	ND		0.0046	0.000086	ug/Kg	☼	08/14/19 12:31	08/17/19 08:20	1
1,2,3,7,8,9-HxCDD	ND		0.0046	0.00013	ug/Kg	☼	08/14/19 12:31	08/17/19 08:20	1
1,2,3,7,8,9-HxCDF	ND		0.0046	0.000084	ug/Kg	☼	08/14/19 12:31	08/17/19 08:20	1
1,2,3,7,8-PeCDD	ND	*	0.0046	0.00025	ug/Kg	☼	08/14/19 12:31	08/17/19 08:20	1
1,2,3,7,8-PeCDF	ND	*	0.0046	0.00015	ug/Kg	☼	08/14/19 12:31	08/17/19 08:20	1
2,3,4,6,7,8-HxCDF	ND		0.0046	0.000077	ug/Kg	☼	08/14/19 12:31	08/17/19 08:20	1
2,3,4,7,8-PeCDF	ND	*	0.0046	0.00016	ug/Kg	☼	08/14/19 12:31	08/17/19 08:20	1
2,3,7,8-TCDD	ND	*	0.00091	0.00016	ug/Kg	☼	08/14/19 12:31	08/17/19 08:20	1
2,3,7,8-TCDF	ND		0.00091	0.00011	ug/Kg	☼	08/14/19 12:31	08/17/19 08:20	1
OCDD	**0.027**	**B**	0.0091	0.00031	ug/Kg	☼	08/14/19 12:31	08/17/19 08:20	1
OCDF	ND		0.0091	0.00034	ug/Kg	☼	08/14/19 12:31	08/17/19 08:20	1
Total HpCDD	**0.0037**	**J**	0.0046	0.00015	ug/Kg	☼	08/14/19 12:31	08/17/19 08:20	1
Total HpCDF	ND	*	0.0046	0.00025	ug/Kg	☼	08/14/19 12:31	08/17/19 08:20	1
Total HxCDD	**0.00054**	**J**	0.0046	0.00014	ug/Kg	☼	08/14/19 12:31	08/17/19 08:20	1
Total HxCDF	ND		0.0046	0.000086	ug/Kg	☼	08/14/19 12:31	08/17/19 08:20	1
Total PeCDD	ND	*	0.0046	0.00025	ug/Kg	☼	08/14/19 12:31	08/17/19 08:20	1
Total PeCDF	ND		0.0046	0.00016	ug/Kg	☼	08/14/19 12:31	08/17/19 08:20	1
Total TCDD	ND		0.00091	0.00016	ug/Kg	☼	08/14/19 12:31	08/17/19 08:20	1
Total TCDF	ND		0.00091	0.00011	ug/Kg	☼	08/14/19 12:31	08/17/19 08:20	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,6,7,8-HpCDD	*42*		*23 - 140*	*08/14/19 12:31*	*08/17/19 08:20*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*45*		*28 - 143*	*08/14/19 12:31*	*08/17/19 08:20*	*1*

Client Sample ID: A1-0to30-102018
Lab Sample ID: 580-88125-1

Date Collected: 10/20/18 12:05
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 55.1

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,4,7,8,9-HpCDF	51		26 - 138	08/14/19 12:31	08/17/19 08:20	1
13C-1,2,3,4,7,8-HxCDD	57		32 - 141	08/14/19 12:31	08/17/19 08:20	1
13C-1,2,3,4,7,8-HxCDF	66		26 - 152	08/14/19 12:31	08/17/19 08:20	1
13C-1,2,3,6,7,8-HxCDD	59		28 - 130	08/14/19 12:31	08/17/19 08:20	1
13C-1,2,3,6,7,8-HxCDF	61		26 - 123	08/14/19 12:31	08/17/19 08:20	1
13C-1,2,3,7,8,9-HxCDF	64		29 - 147	08/14/19 12:31	08/17/19 08:20	1
13C-1,2,3,7,8-PeCDD	61		25 - 181	08/14/19 12:31	08/17/19 08:20	1
13C-1,2,3,7,8-PeCDF	62		24 - 185	08/14/19 12:31	08/17/19 08:20	1
13C-2,3,4,6,7,8-HxCDF	62		28 - 136	08/14/19 12:31	08/17/19 08:20	1
13C-2,3,4,7,8-PeCDF	64		21 - 178	08/14/19 12:31	08/17/19 08:20	1
13C-2,3,7,8-TCDD	65		25 - 164	08/14/19 12:31	08/17/19 08:20	1
13C-2,3,7,8-TCDF	71		24 - 169	08/14/19 12:31	08/17/19 08:20	1
13C-OCDD	35		17 - 157	08/14/19 12:31	08/17/19 08:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	105		35 - 197	08/14/19 12:31	08/17/19 08:20	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.0		0.28	0.056	mg/Kg	☼	08/09/19 14:36	08/13/19 15:02	5
Cadmium	0.074	J	0.22	0.043	mg/Kg	☼	08/09/19 14:36	08/13/19 15:02	5
Copper	46		0.56	0.12	mg/Kg	☼	08/09/19 14:36	08/13/19 15:02	5
Lead	12		0.28	0.027	mg/Kg	☼	08/09/19 14:36	08/13/19 15:02	5
Zinc	65		2.8	0.90	mg/Kg	☼	08/09/19 14:36	08/13/19 15:02	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.059	H F1	0.043	0.013	mg/Kg	☼	08/14/19 10:54	08/14/19 18:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	2900	H B	2000	97	mg/Kg			08/18/19 13:17	1
Total Solids	55.1	H	0.1	0.1	%			08/13/19 17:21	1
Percent Moisture	44	H	0.10	0.10	%			08/21/19 13:20	1
Percent Solids	56	H	0.10	0.10	%			08/21/19 13:20	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	19.5	H			%			08/06/19 11:26	1
Coarse Sand	1.6	H			%			08/06/19 11:26	1
Fine Sand	18.7	H			%			08/06/19 11:26	1
Gravel	0.0	H			%			08/06/19 11:26	1
Medium Sand	0.3	H			%			08/06/19 11:26	1
Silt	59.9	H			%			08/06/19 11:26	1

Method: D854 - Specific Gravity

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Density	1.52		0.0100	0.0100	g/cm3			08/13/19 00:00	1
Specific Gravity	1.53		0.0100	0.0100	NONE			08/13/19 00:00	1

Client Sample ID: A2-0to26-100818
Date Collected: 10/08/18 14:04
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-2
Matrix: Solid
Percent Solids: 31.7

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		5.9	2.2	ug/Kg	☼	08/13/19 10:43	08/15/19 23:43	1
PCB-1221	ND		5.9	2.8	ug/Kg	☼	08/13/19 10:43	08/15/19 23:43	1
PCB-1232	ND		5.9	2.8	ug/Kg	☼	08/13/19 10:43	08/15/19 23:43	1
PCB-1242	ND		5.9	1.5	ug/Kg	☼	08/13/19 10:43	08/15/19 23:43	1
PCB-1248	ND		5.9	1.1	ug/Kg	☼	08/13/19 10:43	08/15/19 23:43	1
PCB-1254	ND		5.9	2.3	ug/Kg	☼	08/13/19 10:43	08/15/19 23:43	1
PCB-1260	**6.0**	**p**	5.9	2.3	ug/Kg	☼	08/13/19 10:43	08/15/19 23:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*37*	*p X*	*39 - 142*	*08/13/19 10:43*	*08/15/19 23:43*	*1*
Tetrachloro-m-xylene	*53*		*35 - 129*	*08/13/19 10:43*	*08/15/19 23:43*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**76**	**J**	120	30	mg/Kg	☼	08/12/19 12:08	08/14/19 17:59	1
Motor Oil (>C24-C36)	**280**		120	42	mg/Kg	☼	08/12/19 12:08	08/14/19 17:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*88*		*50 - 150*	*08/12/19 12:08*	*08/14/19 17:59*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	**1.1**		0.0078	0.0060	ug/Kg	☼	08/14/19 12:31	08/17/19 09:08	1
1,2,3,4,6,7,8-HpCDF	**0.13**	*****	0.0078	0.0019	ug/Kg	☼	08/14/19 12:31	08/17/19 09:08	1
1,2,3,4,7,8,9-HpCDF	**0.0060**	**J ***	0.0078	0.0023	ug/Kg	☼	08/14/19 12:31	08/17/19 09:08	1
1,2,3,4,7,8-HxCDD	**0.0038**	**J**	0.0078	0.00069	ug/Kg	☼	08/14/19 12:31	08/17/19 09:08	1
1,2,3,4,7,8-HxCDF	**0.0090**		0.0078	0.00066	ug/Kg	☼	08/14/19 12:31	08/17/19 09:08	1
1,2,3,6,7,8-HxCDD	**0.022**	*****	0.0078	0.00069	ug/Kg	☼	08/14/19 12:31	08/17/19 09:08	1
1,2,3,6,7,8-HxCDF	**0.0035**	**J**	0.0078	0.00073	ug/Kg	☼	08/14/19 12:31	08/17/19 09:08	1
1,2,3,7,8,9-HxCDD	**0.0086**		0.0078	0.00065	ug/Kg	☼	08/14/19 12:31	08/17/19 09:08	1
1,2,3,7,8,9-HxCDF	ND		0.0078	0.00067	ug/Kg	☼	08/14/19 12:31	08/17/19 09:08	1
1,2,3,7,8-PeCDD	**0.0018**	**J ***	0.0078	0.00059	ug/Kg	☼	08/14/19 12:31	08/17/19 09:08	1
1,2,3,7,8-PeCDF	**0.0014**	**J ***	0.0078	0.00038	ug/Kg	☼	08/14/19 12:31	08/17/19 09:08	1
2,3,4,6,7,8-HxCDF	**0.0018**	**J**	0.0078	0.00064	ug/Kg	☼	08/14/19 12:31	08/17/19 09:08	1
2,3,4,7,8-PeCDF	**0.0021**	**J ***	0.0078	0.00043	ug/Kg	☼	08/14/19 12:31	08/17/19 09:08	1
2,3,7,8-TCDD	**0.00058**	**J * q**	0.0016	0.00032	ug/Kg	☼	08/14/19 12:31	08/17/19 09:08	1
OCDD	**8.5**	**E B**	0.016	0.0036	ug/Kg	☼	08/14/19 12:31	08/17/19 09:08	1
OCDF	**0.58**		0.016	0.00062	ug/Kg	☼	08/14/19 12:31	08/17/19 09:08	1
Total HpCDD	**2.7**		0.0078	0.0060	ug/Kg	☼	08/14/19 12:31	08/17/19 09:08	1
Total HpCDF	**0.61**	*****	0.0078	0.0021	ug/Kg	☼	08/14/19 12:31	08/17/19 09:08	1
Total HxCDD	**0.20**		0.0078	0.00067	ug/Kg	☼	08/14/19 12:31	08/17/19 09:08	1
Total HxCDF	**0.15**		0.0078	0.00068	ug/Kg	☼	08/14/19 12:31	08/17/19 09:08	1
Total PeCDD	**0.0081**	*** q**	0.0078	0.00059	ug/Kg	☼	08/14/19 12:31	08/17/19 09:08	1
Total PeCDF	**0.017**		0.0078	0.00041	ug/Kg	☼	08/14/19 12:31	08/17/19 09:08	1
Total TCDD	**0.0079**	**q**	0.0016	0.00032	ug/Kg	☼	08/14/19 12:31	08/17/19 09:08	1
Total TCDF	**0.0080**	**q**	0.0016	0.00031	ug/Kg	☼	08/14/19 12:31	08/17/19 09:08	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,6,7,8-HpCDD	*44*		*23 - 140*	*08/14/19 12:31*	*08/17/19 09:08*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*46*		*28 - 143*	*08/14/19 12:31*	*08/17/19 09:08*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*52*		*26 - 138*	*08/14/19 12:31*	*08/17/19 09:08*	*1*

Client Sample ID: A2-0to26-100818
Date Collected: 10/08/18 14:04
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-2
Matrix: Solid
Percent Solids: 31.7

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,4,7,8-HxCDD	60		32 - 141	08/14/19 12:31	08/17/19 09:08	1
13C-1,2,3,4,7,8-HxCDF	69		26 - 152	08/14/19 12:31	08/17/19 09:08	1
13C-1,2,3,6,7,8-HxCDD	55		28 - 130	08/14/19 12:31	08/17/19 09:08	1
13C-1,2,3,6,7,8-HxCDF	60		26 - 123	08/14/19 12:31	08/17/19 09:08	1
13C-1,2,3,7,8,9-HxCDF	65		29 - 147	08/14/19 12:31	08/17/19 09:08	1
13C-1,2,3,7,8-PeCDD	60		25 - 181	08/14/19 12:31	08/17/19 09:08	1
13C-1,2,3,7,8-PeCDF	62		24 - 185	08/14/19 12:31	08/17/19 09:08	1
13C-2,3,4,6,7,8-HxCDF	62		28 - 136	08/14/19 12:31	08/17/19 09:08	1
13C-2,3,4,7,8-PeCDF	62		21 - 178	08/14/19 12:31	08/17/19 09:08	1
13C-2,3,7,8-TCDD	61		25 - 164	08/14/19 12:31	08/17/19 09:08	1
13C-2,3,7,8-TCDF	71		24 - 169	08/14/19 12:31	08/17/19 09:08	1
13C-OCDD	43		17 - 157	08/14/19 12:31	08/17/19 09:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	105		35 - 197	08/14/19 12:31	08/17/19 09:08	1

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	0.0021		0.0016	0.00025	ug/Kg	☼	08/14/19 12:31	08/21/19 00:35	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF	69		24 - 169	08/14/19 12:31	08/21/19 00:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	99		35 - 197	08/14/19 12:31	08/21/19 00:35	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	7.7		0.41	0.082	mg/Kg	☼	08/09/19 14:36	08/13/19 15:11	5
Cadmium	0.34		0.33	0.063	mg/Kg	☼	08/09/19 14:36	08/13/19 15:11	5
Copper	95		0.82	0.18	mg/Kg	☼	08/09/19 14:36	08/13/19 15:11	5
Lead	26		0.41	0.039	mg/Kg	☼	08/09/19 14:36	08/13/19 15:11	5
Zinc	210		4.1	1.3	mg/Kg	☼	08/09/19 14:36	08/13/19 15:11	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.14	H	0.070	0.021	mg/Kg	☼	08/14/19 10:54	08/14/19 18:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	35000	H B	2000	97	mg/Kg			08/18/19 13:35	1
Total Solids	31.7	H	0.1	0.1	%			08/13/19 17:21	1
Percent Moisture	66	H	0.10	0.10	%			08/21/19 13:20	1
Percent Solids	34	H	0.10	0.10	%			08/21/19 13:20	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	20.7	H			%			08/06/19 11:26	1
Coarse Sand	0.1	H			%			08/06/19 11:26	1
Fine Sand	14.4	H			%			08/06/19 11:26	1
Gravel	0.0	H			%			08/06/19 11:26	1
Medium Sand	0.3	H			%			08/06/19 11:26	1

Client: Pacific Groundwater Group
Job ID: 580-88125-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: A2-0to26-100818
Lab Sample ID: 580-88125-2
Date Collected: 10/08/18 14:04
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 31.7

Method: D7928/D6913 - ASTM D7928/D6913 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silt	64.5	H			%			08/06/19 11:26	1

Method: D854 - Specific Gravity

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Density	1.23		0.0100	0.0100	g/cm3			08/13/19 00:00	1
Specific Gravity	1.23		0.0100	0.0100	NONE			08/13/19 00:00	1

Client Sample ID: A3-0to31-100818
Lab Sample ID: 580-88125-3
Date Collected: 10/08/18 11:14
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 33.3

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		5.8	2.1	ug/Kg	☼	08/13/19 10:43	08/16/19 00:00	1
PCB-1221	ND		5.8	2.8	ug/Kg	☼	08/13/19 10:43	08/16/19 00:00	1
PCB-1232	ND		5.8	2.8	ug/Kg	☼	08/13/19 10:43	08/16/19 00:00	1
PCB-1242	ND		5.8	1.4	ug/Kg	☼	08/13/19 10:43	08/16/19 00:00	1
PCB-1248	ND		5.8	1.0	ug/Kg	☼	08/13/19 10:43	08/16/19 00:00	1
PCB-1254	**44**		5.8	2.3	ug/Kg	☼	08/13/19 10:43	08/16/19 00:00	1
PCB-1260	ND		5.8	2.2	ug/Kg	☼	08/13/19 10:43	08/16/19 00:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*54*		*39 - 142*	*08/13/19 10:43*	*08/16/19 00:00*	*1*
Tetrachloro-m-xylene	*60*		*35 - 129*	*08/13/19 10:43*	*08/16/19 00:00*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**54**	**J**	120	30	mg/Kg	☼	08/12/19 12:08	08/14/19 18:21	1
Motor Oil (>C24-C36)	**290**		120	42	mg/Kg	☼	08/12/19 12:08	08/14/19 18:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*99*		*50 - 150*	*08/12/19 12:08*	*08/14/19 18:21*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	**1.0**		0.0074	0.0045	ug/Kg	☼	08/14/19 12:31	08/17/19 09:55	1
1,2,3,4,6,7,8-HpCDF	**0.17**	*	0.0074	0.0025	ug/Kg	☼	08/14/19 12:31	08/17/19 09:55	1
1,2,3,4,7,8,9-HpCDF	**0.0068**	**J ***	0.0074	0.0029	ug/Kg	☼	08/14/19 12:31	08/17/19 09:55	1
1,2,3,4,7,8-HxCDD	**0.0031**	**J**	0.0074	0.00060	ug/Kg	☼	08/14/19 12:31	08/17/19 09:55	1
1,2,3,4,7,8-HxCDF	**0.0084**		0.0074	0.00067	ug/Kg	☼	08/14/19 12:31	08/17/19 09:55	1
1,2,3,6,7,8-HxCDD	**0.022**	*	0.0074	0.00062	ug/Kg	☼	08/14/19 12:31	08/17/19 09:55	1
1,2,3,6,7,8-HxCDF	**0.0030**	**J**	0.0074	0.00073	ug/Kg	☼	08/14/19 12:31	08/17/19 09:55	1
1,2,3,7,8,9-HxCDD	**0.0068**	**J**	0.0074	0.00057	ug/Kg	☼	08/14/19 12:31	08/17/19 09:55	1
1,2,3,7,8,9-HxCDF	ND		0.0074	0.00072	ug/Kg	☼	08/14/19 12:31	08/17/19 09:55	1
1,2,3,7,8-PeCDD	**0.0015**	**J ***	0.0074	0.00063	ug/Kg	☼	08/14/19 12:31	08/17/19 09:55	1
1,2,3,7,8-PeCDF	ND	*	0.0074	0.00041	ug/Kg	☼	08/14/19 12:31	08/17/19 09:55	1
2,3,4,6,7,8-HxCDF	**0.00081**	**J**	0.0074	0.00072	ug/Kg	☼	08/14/19 12:31	08/17/19 09:55	1
2,3,4,7,8-PeCDF	**0.0018**	**J ***	0.0074	0.00045	ug/Kg	☼	08/14/19 12:31	08/17/19 09:55	1
2,3,7,8-TCDD	**0.00080**	**J ***	0.0015	0.00031	ug/Kg	☼	08/14/19 12:31	08/17/19 09:55	1
OCDD	**7.4**	**E B**	0.015	0.0025	ug/Kg	☼	08/14/19 12:31	08/17/19 09:55	1
OCDF	**0.92**		0.015	0.00073	ug/Kg	☼	08/14/19 12:31	08/17/19 09:55	1
Total HpCDD	**2.1**		0.0074	0.0045	ug/Kg	☼	08/14/19 12:31	08/17/19 09:55	1
Total HpCDF	**0.88**	*	0.0074	0.0027	ug/Kg	☼	08/14/19 12:31	08/17/19 09:55	1
Total HxCDD	**0.18**	**q**	0.0074	0.00060	ug/Kg	☼	08/14/19 12:31	08/17/19 09:55	1
Total HxCDF	**0.20**		0.0074	0.00071	ug/Kg	☼	08/14/19 12:31	08/17/19 09:55	1
Total PeCDD	**0.011**	*** q**	0.0074	0.00063	ug/Kg	☼	08/14/19 12:31	08/17/19 09:55	1
Total PeCDF	**0.020**	**q**	0.0074	0.00043	ug/Kg	☼	08/14/19 12:31	08/17/19 09:55	1
Total TCDD	**0.0094**	**q**	0.0015	0.00031	ug/Kg	☼	08/14/19 12:31	08/17/19 09:55	1
Total TCDF	**0.012**	**q**	0.0015	0.00034	ug/Kg	☼	08/14/19 12:31	08/17/19 09:55	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,6,7,8-HpCDD	*46*		*23 - 140*	*08/14/19 12:31*	*08/17/19 09:55*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*49*		*28 - 143*	*08/14/19 12:31*	*08/17/19 09:55*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*54*		*26 - 138*	*08/14/19 12:31*	*08/17/19 09:55*	*1*

Client Sample ID: A3-0to31-100818
Lab Sample ID: 580-88125-3
Date Collected: 10/08/18 11:14
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 33.3

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,7,8-HxCDD	*62*		*32 - 141*	*08/14/19 12:31*	*08/17/19 09:55*	*1*
13C-1,2,3,4,7,8-HxCDF	*73*		*26 - 152*	*08/14/19 12:31*	*08/17/19 09:55*	*1*
13C-1,2,3,6,7,8-HxCDD	*57*		*28 - 130*	*08/14/19 12:31*	*08/17/19 09:55*	*1*
13C-1,2,3,6,7,8-HxCDF	*65*		*26 - 123*	*08/14/19 12:31*	*08/17/19 09:55*	*1*
13C-1,2,3,7,8,9-HxCDF	*65*		*29 - 147*	*08/14/19 12:31*	*08/17/19 09:55*	*1*
13C-1,2,3,7,8-PeCDD	*58*		*25 - 181*	*08/14/19 12:31*	*08/17/19 09:55*	*1*
13C-1,2,3,7,8-PeCDF	*62*		*24 - 185*	*08/14/19 12:31*	*08/17/19 09:55*	*1*
13C-2,3,4,6,7,8-HxCDF	*63*		*28 - 136*	*08/14/19 12:31*	*08/17/19 09:55*	*1*
13C-2,3,4,7,8-PeCDF	*64*		*21 - 178*	*08/14/19 12:31*	*08/17/19 09:55*	*1*
13C-2,3,7,8-TCDD	*61*		*25 - 164*	*08/14/19 12:31*	*08/17/19 09:55*	*1*
13C-2,3,7,8-TCDF	*68*		*24 - 169*	*08/14/19 12:31*	*08/17/19 09:55*	*1*
13C-OCDD	*47*		*17 - 157*	*08/14/19 12:31*	*08/17/19 09:55*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*100*		*35 - 197*	*08/14/19 12:31*	*08/17/19 09:55*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	0.0020		0.0015	0.00012	ug/Kg	☼	08/14/19 12:31	08/21/19 01:14	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*72*		*24 - 169*	*08/14/19 12:31*	*08/21/19 01:14*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*97*		*35 - 197*	*08/14/19 12:31*	*08/21/19 01:14*	*1*

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	8.1		0.49	0.098	mg/Kg	☼	08/09/19 14:36	08/13/19 15:07	5
Cadmium	0.41		0.39	0.076	mg/Kg	☼	08/09/19 14:36	08/13/19 15:07	5
Copper	110		0.98	0.22	mg/Kg	☼	08/09/19 14:36	08/13/19 15:07	5
Lead	31		0.49	0.047	mg/Kg	☼	08/09/19 14:36	08/13/19 15:07	5
Zinc	220		4.9	1.6	mg/Kg	☼	08/09/19 14:36	08/13/19 15:07	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.16	H	0.055	0.017	mg/Kg	☼	08/14/19 10:54	08/14/19 18:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	40000	H B	2000	97	mg/Kg			08/18/19 13:40	1
Total Solids	33.3	H	0.1	0.1	%			08/13/19 17:21	1
Percent Moisture	66	H	0.10	0.10	%			08/21/19 13:20	1
Percent Solids	34	H	0.10	0.10	%			08/21/19 13:20	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	23.5	H			%			08/06/19 11:26	1
Coarse Sand	0.1	H			%			08/06/19 11:26	1
Fine Sand	11.8	H			%			08/06/19 11:26	1
Gravel	0.0	H			%			08/06/19 11:26	1
Medium Sand	0.3	H			%			08/06/19 11:26	1

Client: Pacific Groundwater Group
Job ID: 580-88125-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: A3-0to31-100818
Lab Sample ID: 580-88125-3
Date Collected: 10/08/18 11:14
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 33.3

Method: D7928/D6913 - ASTM D7928/D6913 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silt	64.3	H			%			08/06/19 11:26	1

Method: D854 - Specific Gravity

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Density	1.25		0.0100	0.0100	g/cm3			08/13/19 00:00	1
Specific Gravity	1.25		0.0100	0.0100	NONE			08/13/19 00:00	1

Client Sample ID: A4-0to25-100818
Date Collected: 10/08/18 13:26
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-4
Matrix: Solid
Percent Solids: 38.8

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		4.5	1.7	ug/Kg	☼	08/13/19 10:43	08/16/19 00:17	1
PCB-1221	ND		4.5	2.2	ug/Kg	☼	08/13/19 10:43	08/16/19 00:17	1
PCB-1232	ND		4.5	2.2	ug/Kg	☼	08/13/19 10:43	08/16/19 00:17	1
PCB-1242	ND		4.5	1.1	ug/Kg	☼	08/13/19 10:43	08/16/19 00:17	1
PCB-1248	ND		4.5	0.82	ug/Kg	☼	08/13/19 10:43	08/16/19 00:17	1
PCB-1260	ND		4.5	1.7	ug/Kg	☼	08/13/19 10:43	08/16/19 00:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*32*	*p X*	*39 - 142*	*08/13/19 10:43*	*08/16/19 00:17*	*1*
Tetrachloro-m-xylene	*51*		*35 - 129*	*08/13/19 10:43*	*08/16/19 00:17*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1254	**85**	**p**	14	5.4	ug/Kg	☼	08/13/19 10:43	08/16/19 20:54	3

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*64*		*39 - 142*	*08/13/19 10:43*	*08/16/19 20:54*	*3*
Tetrachloro-m-xylene	*67*		*35 - 129*	*08/13/19 10:43*	*08/16/19 20:54*	*3*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**110**	**J**	120	30	mg/Kg	☼	08/12/19 12:08	08/14/19 18:43	1
Motor Oil (>C24-C36)	**420**		120	43	mg/Kg	☼	08/12/19 12:08	08/14/19 18:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*97*		*50 - 150*	*08/12/19 12:08*	*08/14/19 18:43*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	**0.66**		0.0065	0.0022	ug/Kg	☼	08/14/19 12:31	08/17/19 10:43	1
1,2,3,4,6,7,8-HpCDF	**0.14**	*****	0.0065	0.0019	ug/Kg	☼	08/14/19 12:31	08/17/19 10:43	1
1,2,3,4,7,8,9-HpCDF	**0.0094**	*****	0.0065	0.0023	ug/Kg	☼	08/14/19 12:31	08/17/19 10:43	1
1,2,3,4,7,8-HxCDD	**0.0045**	**J**	0.0065	0.00062	ug/Kg	☼	08/14/19 12:31	08/17/19 10:43	1
1,2,3,4,7,8-HxCDF	**0.013**		0.0065	0.00069	ug/Kg	☼	08/14/19 12:31	08/17/19 10:43	1
1,2,3,6,7,8-HxCDD	**0.027**	*****	0.0065	0.00064	ug/Kg	☼	08/14/19 12:31	08/17/19 10:43	1
1,2,3,6,7,8-HxCDF	**0.0054**	**J q**	0.0065	0.00075	ug/Kg	☼	08/14/19 12:31	08/17/19 10:43	1
1,2,3,7,8,9-HxCDD	**0.0095**		0.0065	0.00060	ug/Kg	☼	08/14/19 12:31	08/17/19 10:43	1
1,2,3,7,8,9-HxCDF	ND		0.0065	0.00080	ug/Kg	☼	08/14/19 12:31	08/17/19 10:43	1
1,2,3,7,8-PeCDD	**0.0017**	**J * q**	0.0065	0.00078	ug/Kg	☼	08/14/19 12:31	08/17/19 10:43	1
1,2,3,7,8-PeCDF	**0.0025**	**J ***	0.0065	0.00055	ug/Kg	☼	08/14/19 12:31	08/17/19 10:43	1
2,3,4,6,7,8-HxCDF	**0.0025**	**J q**	0.0065	0.00080	ug/Kg	☼	08/14/19 12:31	08/17/19 10:43	1
2,3,4,7,8-PeCDF	**0.0028**	**J ***	0.0065	0.00060	ug/Kg	☼	08/14/19 12:31	08/17/19 10:43	1
2,3,7,8-TCDD	**0.00086**	**J * q**	0.0013	0.00030	ug/Kg	☼	08/14/19 12:31	08/17/19 10:43	1
OCDD	**5.3**	**E B**	0.013	0.0019	ug/Kg	☼	08/14/19 12:31	08/17/19 10:43	1
OCDF	**0.58**		0.013	0.00064	ug/Kg	☼	08/14/19 12:31	08/17/19 10:43	1
Total HpCDD	**1.3**		0.0065	0.0022	ug/Kg	☼	08/14/19 12:31	08/17/19 10:43	1
Total HpCDF	**0.71**	*****	0.0065	0.0021	ug/Kg	☼	08/14/19 12:31	08/17/19 10:43	1
Total HxCDD	**0.22**	**q**	0.0065	0.00062	ug/Kg	☼	08/14/19 12:31	08/17/19 10:43	1
Total HxCDF	**0.25**	**q**	0.0065	0.00076	ug/Kg	☼	08/14/19 12:31	08/17/19 10:43	1
Total PeCDD	**0.016**	*** q**	0.0065	0.00078	ug/Kg	☼	08/14/19 12:31	08/17/19 10:43	1
Total PeCDF	**0.033**		0.0065	0.00057	ug/Kg	☼	08/14/19 12:31	08/17/19 10:43	1

Client Sample ID: A4-0to25-100818
Lab Sample ID: 580-88125-4

Date Collected: 10/08/18 13:26
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 38.8

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TCDD	0.010	q	0.0013	0.00030	ug/Kg	☼	08/14/19 12:31	08/17/19 10:43	1
Total TCDF	0.023	q	0.0013	0.00036	ug/Kg	☼	08/14/19 12:31	08/17/19 10:43	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,6,7,8-HpCDD	*58*		*23 - 140*	*08/14/19 12:31*	*08/17/19 10:43*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*57*		*28 - 143*	*08/14/19 12:31*	*08/17/19 10:43*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*59*		*26 - 138*	*08/14/19 12:31*	*08/17/19 10:43*	*1*
13C-1,2,3,4,7,8-HxCDD	*75*		*32 - 141*	*08/14/19 12:31*	*08/17/19 10:43*	*1*
13C-1,2,3,4,7,8-HxCDF	*96*		*26 - 152*	*08/14/19 12:31*	*08/17/19 10:43*	*1*
13C-1,2,3,6,7,8-HxCDD	*65*		*28 - 130*	*08/14/19 12:31*	*08/17/19 10:43*	*1*
13C-1,2,3,6,7,8-HxCDF	*82*		*26 - 123*	*08/14/19 12:31*	*08/17/19 10:43*	*1*
13C-1,2,3,7,8,9-HxCDF	*76*		*29 - 147*	*08/14/19 12:31*	*08/17/19 10:43*	*1*
13C-1,2,3,7,8-PeCDD	*75*		*25 - 181*	*08/14/19 12:31*	*08/17/19 10:43*	*1*
13C-1,2,3,7,8-PeCDF	*77*		*24 - 185*	*08/14/19 12:31*	*08/17/19 10:43*	*1*
13C-2,3,4,6,7,8-HxCDF	*75*		*28 - 136*	*08/14/19 12:31*	*08/17/19 10:43*	*1*
13C-2,3,4,7,8-PeCDF	*77*		*21 - 178*	*08/14/19 12:31*	*08/17/19 10:43*	*1*
13C-2,3,7,8-TCDD	*67*		*25 - 164*	*08/14/19 12:31*	*08/17/19 10:43*	*1*
13C-2,3,7,8-TCDF	*78*		*24 - 169*	*08/14/19 12:31*	*08/17/19 10:43*	*1*
13C-OCDD	*57*		*17 - 157*	*08/14/19 12:31*	*08/17/19 10:43*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*106*		*35 - 197*	*08/14/19 12:31*	*08/17/19 10:43*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	0.0047		0.0013	0.00019	ug/Kg	☼	08/14/19 12:31	08/21/19 01:52	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*92*		*24 - 169*	*08/14/19 12:31*	*08/21/19 01:52*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*103*		*35 - 197*	*08/14/19 12:31*	*08/21/19 01:52*	*1*

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	9.2		0.39	0.078	mg/Kg	☼	08/14/19 14:06	08/14/19 18:04	5
Cadmium	0.64		0.31	0.060	mg/Kg	☼	08/14/19 14:06	08/14/19 18:04	5
Copper	170		0.78	0.17	mg/Kg	☼	08/14/19 14:06	08/14/19 18:04	5
Lead	68	B	0.39	0.038	mg/Kg	☼	08/14/19 14:06	08/14/19 18:04	5
Zinc	360		3.9	1.3	mg/Kg	☼	08/14/19 14:06	08/14/19 18:04	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.28	H	0.055	0.016	mg/Kg	☼	08/14/19 10:54	08/14/19 18:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	29000	H B	2000	97	mg/Kg			08/18/19 13:49	1
Total Solids	38.8	H	0.1	0.1	%			08/13/19 17:21	1
Percent Moisture	61	H	0.10	0.10	%			08/21/19 13:20	1
Percent Solids	39	H	0.10	0.10	%			08/21/19 13:20	1

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88125-1

Client Sample ID: A4-0to25-100818
Date Collected: 10/08/18 13:26
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-4
Matrix: Solid
Percent Solids: 38.8

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	27.2	H			%			08/06/19 11:26	1
Coarse Sand	0.0	H			%			08/06/19 11:26	1
Fine Sand	12.0	H			%			08/06/19 11:26	1
Gravel	0.0	H			%			08/06/19 11:26	1
Medium Sand	0.3	H			%			08/06/19 11:26	1
Silt	60.6	H			%			08/06/19 11:26	1

Method: D854 - Specific Gravity

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Density	1.32		0.0100	0.0100	g/cm3			08/13/19 00:00	1
Specific Gravity	1.32		0.0100	0.0100	NONE			08/13/19 00:00	1

Client Sample ID: A5-0to25-100818
Lab Sample ID: 580-88125-5

Date Collected: 10/08/18 14:38
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 33.3

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		5.8	2.1	ug/Kg	☼	08/13/19 10:43	08/16/19 21:10	1
PCB-1221	ND		5.8	2.8	ug/Kg	☼	08/13/19 10:43	08/16/19 21:10	1
PCB-1232	ND		5.8	2.8	ug/Kg	☼	08/13/19 10:43	08/16/19 21:10	1
PCB-1242	ND		5.8	1.4	ug/Kg	☼	08/13/19 10:43	08/16/19 21:10	1
PCB-1248	ND		5.8	1.0	ug/Kg	☼	08/13/19 10:43	08/16/19 21:10	1
PCB-1254	**45**		5.8	2.3	ug/Kg	☼	08/13/19 10:43	08/16/19 21:10	1
PCB-1260	ND		5.8	2.2	ug/Kg	☼	08/13/19 10:43	08/16/19 21:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*64*		*39 - 142*	*08/13/19 10:43*	*08/16/19 21:10*	*1*
Tetrachloro-m-xylene	*69*		*35 - 129*	*08/13/19 10:43*	*08/16/19 21:10*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**93**	**J**	140	34	mg/Kg	☼	08/12/19 12:08	08/14/19 19:05	1
Motor Oil (>C24-C36)	**450**		140	48	mg/Kg	☼	08/12/19 12:08	08/14/19 19:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*97*		*50 - 150*	*08/12/19 12:08*	*08/14/19 19:05*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	**0.93**		0.0073	0.0049	ug/Kg	☼	08/14/19 12:31	08/19/19 12:09	1
1,2,3,4,6,7,8-HpCDF	**0.18**	*	0.0073	0.0031	ug/Kg	☼	08/14/19 12:31	08/19/19 12:09	1
1,2,3,4,7,8,9-HpCDF	**0.011**		0.0073	0.0035	ug/Kg	☼	08/14/19 12:31	08/19/19 12:09	1
1,2,3,4,7,8-HxCDD	**0.0042**	**J**	0.0073	0.00072	ug/Kg	☼	08/14/19 12:31	08/19/19 12:09	1
1,2,3,4,7,8-HxCDF	**0.015**		0.0073	0.00089	ug/Kg	☼	08/14/19 12:31	08/19/19 12:09	1
1,2,3,6,7,8-HxCDD	**0.025**	*	0.0073	0.00077	ug/Kg	☼	08/14/19 12:31	08/19/19 12:09	1
1,2,3,6,7,8-HxCDF	**0.0053**	**J**	0.0073	0.00096	ug/Kg	☼	08/14/19 12:31	08/19/19 12:09	1
1,2,3,7,8,9-HxCDD	**0.0052**	**J q**	0.0073	0.00070	ug/Kg	☼	08/14/19 12:31	08/19/19 12:09	1
1,2,3,7,8,9-HxCDF	ND		0.0073	0.0010	ug/Kg	☼	08/14/19 12:31	08/19/19 12:09	1
1,2,3,7,8-PeCDD	ND	*	0.0073	0.00088	ug/Kg	☼	08/14/19 12:31	08/19/19 12:09	1
1,2,3,7,8-PeCDF	**0.0020**	**J ***	0.0073	0.00049	ug/Kg	☼	08/14/19 12:31	08/19/19 12:09	1
2,3,4,6,7,8-HxCDF	**0.0030**	**J**	0.0073	0.00092	ug/Kg	☼	08/14/19 12:31	08/19/19 12:09	1
2,3,4,7,8-PeCDF	**0.0031**	**J ***	0.0073	0.00052	ug/Kg	☼	08/14/19 12:31	08/19/19 12:09	1
2,3,7,8-TCDD	**0.00082**	**J ***	0.0015	0.00035	ug/Kg	☼	08/14/19 12:31	08/19/19 12:09	1
OCDD	**7.1**	**E B**	0.015	0.0027	ug/Kg	☼	08/14/19 12:31	08/19/19 12:09	1
OCDF	**0.82**		0.015	0.00081	ug/Kg	☼	08/14/19 12:31	08/19/19 12:09	1
Total HpCDD	**2.0**		0.0073	0.0049	ug/Kg	☼	08/14/19 12:31	08/19/19 12:09	1
Total HpCDF	**0.93**	*	0.0073	0.0033	ug/Kg	☼	08/14/19 12:31	08/19/19 12:09	1
Total HxCDD	**0.21**	**q**	0.0073	0.00073	ug/Kg	☼	08/14/19 12:31	08/19/19 12:09	1
Total HxCDF	**0.25**		0.0073	0.00095	ug/Kg	☼	08/14/19 12:31	08/19/19 12:09	1
Total PeCDD	**0.011**	*** q**	0.0073	0.00088	ug/Kg	☼	08/14/19 12:31	08/19/19 12:09	1
Total PeCDF	**0.028**	**q**	0.0073	0.00051	ug/Kg	☼	08/14/19 12:31	08/19/19 12:09	1
Total TCDD	**0.013**	**q**	0.0015	0.00035	ug/Kg	☼	08/14/19 12:31	08/19/19 12:09	1
Total TCDF	**0.022**	**q**	0.0015	0.00030	ug/Kg	☼	08/14/19 12:31	08/19/19 12:09	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,6,7,8-HpCDD	*80*		*23 - 140*	*08/14/19 12:31*	*08/19/19 12:09*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*77*		*28 - 143*	*08/14/19 12:31*	*08/19/19 12:09*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*86*		*26 - 138*	*08/14/19 12:31*	*08/19/19 12:09*	*1*

Client Sample ID: A5-0to25-100818
Date Collected: 10/08/18 14:38
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-5
Matrix: Solid
Percent Solids: 33.3

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,4,7,8-HxCDD	103		32 - 141	08/14/19 12:31	08/19/19 12:09	1
13C-1,2,3,4,7,8-HxCDF	120		26 - 152	08/14/19 12:31	08/19/19 12:09	1
13C-1,2,3,6,7,8-HxCDD	88		28 - 130	08/14/19 12:31	08/19/19 12:09	1
13C-1,2,3,6,7,8-HxCDF	110		26 - 123	08/14/19 12:31	08/19/19 12:09	1
13C-1,2,3,7,8,9-HxCDF	103		29 - 147	08/14/19 12:31	08/19/19 12:09	1
13C-1,2,3,7,8-PeCDD	67		25 - 181	08/14/19 12:31	08/19/19 12:09	1
13C-1,2,3,7,8-PeCDF	69		24 - 185	08/14/19 12:31	08/19/19 12:09	1
13C-2,3,4,6,7,8-HxCDF	106		28 - 136	08/14/19 12:31	08/19/19 12:09	1
13C-2,3,4,7,8-PeCDF	73		21 - 178	08/14/19 12:31	08/19/19 12:09	1
13C-2,3,7,8-TCDD	66		25 - 164	08/14/19 12:31	08/19/19 12:09	1
13C-2,3,7,8-TCDF	71		24 - 169	08/14/19 12:31	08/19/19 12:09	1
13C-OCDD	79		17 - 157	08/14/19 12:31	08/19/19 12:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	105		35 - 197	08/14/19 12:31	08/19/19 12:09	1

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	0.0035		0.0015	0.00020	ug/Kg	☼	08/14/19 12:31	08/21/19 02:30	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF	73		24 - 169	08/14/19 12:31	08/21/19 02:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	101		35 - 197	08/14/19 12:31	08/21/19 02:30	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	9.7		0.49	0.099	mg/Kg	☼	08/14/19 14:06	08/14/19 18:08	5
Cadmium	0.48		0.40	0.076	mg/Kg	☼	08/14/19 14:06	08/14/19 18:08	5
Copper	130		0.99	0.22	mg/Kg	☼	08/14/19 14:06	08/14/19 18:08	5
Lead	38	B	0.49	0.047	mg/Kg	☼	08/14/19 14:06	08/14/19 18:08	5
Zinc	270		4.9	1.6	mg/Kg	☼	08/14/19 14:06	08/14/19 18:08	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.18	H	0.061	0.018	mg/Kg	☼	08/14/19 10:54	08/14/19 18:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	33000	H B	2000	97	mg/Kg			08/18/19 13:54	1
Total Solids	33.3	H	0.1	0.1	%			08/13/19 17:21	1
Percent Moisture	66	H	0.10	0.10	%			08/21/19 13:20	1
Percent Solids	34	H	0.10	0.10	%			08/21/19 13:20	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	23.5	H			%			08/06/19 11:26	1
Coarse Sand	0.0	H			%			08/06/19 11:26	1
Fine Sand	10.0	H			%			08/06/19 11:26	1
Gravel	0.0	H			%			08/06/19 11:26	1
Medium Sand	0.4	H			%			08/06/19 11:26	1

Client: Pacific Groundwater Group
Job ID: 580-88125-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: A5-0to25-100818
Lab Sample ID: 580-88125-5
Date Collected: 10/08/18 14:38
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 33.3

Method: D7928/D6913 - ASTM D7928/D6913 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silt	66.0	H			%			08/06/19 11:26	1

Method: D854 - Specific Gravity

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Density	1.24		0.0100	0.0100	g/cm3			08/13/19 00:00	1
Specific Gravity	1.24		0.0100	0.0100	NONE			08/13/19 00:00	1

Client Sample ID: A6-0to23-100818
Lab Sample ID: 580-88125-6

Date Collected: 10/08/18 16:08
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 39.3

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		4.5	1.7	ug/Kg	☼	08/13/19 10:43	08/16/19 00:50	1
PCB-1221	ND		4.5	2.1	ug/Kg	☼	08/13/19 10:43	08/16/19 00:50	1
PCB-1232	ND		4.5	2.1	ug/Kg	☼	08/13/19 10:43	08/16/19 00:50	1
PCB-1242	ND		4.5	1.1	ug/Kg	☼	08/13/19 10:43	08/16/19 00:50	1
PCB-1248	ND		4.5	0.81	ug/Kg	☼	08/13/19 10:43	08/16/19 00:50	1
PCB-1254	**52**		4.5	1.8	ug/Kg	☼	08/13/19 10:43	08/16/19 00:50	1
PCB-1260	ND		4.5	1.7	ug/Kg	☼	08/13/19 10:43	08/16/19 00:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*32*	*p X*	*39 - 142*	*08/13/19 10:43*	*08/16/19 00:50*	*1*
Tetrachloro-m-xylene	*56*		*35 - 129*	*08/13/19 10:43*	*08/16/19 00:50*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		89	22	mg/Kg	☼	08/12/19 12:08	08/14/19 19:27	1
Motor Oil (>C24-C36)	**51**	**J**	89	31	mg/Kg	☼	08/12/19 12:08	08/14/19 19:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*18*	*X*	*50 - 150*	*08/12/19 12:08*	*08/14/19 19:27*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	**0.65**		0.0064	0.0029	ug/Kg	☼	08/14/19 12:31	08/19/19 12:57	1
1,2,3,4,6,7,8-HpCDF	**0.12**	*****	0.0064	0.0023	ug/Kg	☼	08/14/19 12:31	08/19/19 12:57	1
1,2,3,4,7,8,9-HpCDF	**0.0056**	**J**	0.0064	0.0023	ug/Kg	☼	08/14/19 12:31	08/19/19 12:57	1
1,2,3,4,7,8-HxCDD	**0.0026**	**J**	0.0064	0.00047	ug/Kg	☼	08/14/19 12:31	08/19/19 12:57	1
1,2,3,4,7,8-HxCDF	**0.0076**		0.0064	0.00070	ug/Kg	☼	08/14/19 12:31	08/19/19 12:57	1
1,2,3,6,7,8-HxCDD	**0.018**	*****	0.0064	0.00050	ug/Kg	☼	08/14/19 12:31	08/19/19 12:57	1
1,2,3,6,7,8-HxCDF	**0.0030**	**J**	0.0064	0.00077	ug/Kg	☼	08/14/19 12:31	08/19/19 12:57	1
1,2,3,7,8,9-HxCDD	**0.0056**	**J**	0.0064	0.00046	ug/Kg	☼	08/14/19 12:31	08/19/19 12:57	1
1,2,3,7,8,9-HxCDF	ND		0.0064	0.00080	ug/Kg	☼	08/14/19 12:31	08/19/19 12:57	1
1,2,3,7,8-PeCDD	**0.00096**	**J * q**	0.0064	0.00050	ug/Kg	☼	08/14/19 12:31	08/19/19 12:57	1
1,2,3,7,8-PeCDF	**0.00098**	**J * q**	0.0064	0.00029	ug/Kg	☼	08/14/19 12:31	08/19/19 12:57	1
2,3,4,6,7,8-HxCDF	**0.0012**	**J**	0.0064	0.00074	ug/Kg	☼	08/14/19 12:31	08/19/19 12:57	1
2,3,4,7,8-PeCDF	**0.0016**	**J ***	0.0064	0.00032	ug/Kg	☼	08/14/19 12:31	08/19/19 12:57	1
2,3,7,8-TCDD	**0.00045**	**J * q**	0.0013	0.00029	ug/Kg	☼	08/14/19 12:31	08/19/19 12:57	1
OCDD	**5.2**	**E B**	0.013	0.0019	ug/Kg	☼	08/14/19 12:31	08/19/19 12:57	1
OCDF	**0.60**		0.013	0.00057	ug/Kg	☼	08/14/19 12:31	08/19/19 12:57	1
Total HpCDD	**1.4**		0.0064	0.0029	ug/Kg	☼	08/14/19 12:31	08/19/19 12:57	1
Total HpCDF	**0.67**	*****	0.0064	0.0023	ug/Kg	☼	08/14/19 12:31	08/19/19 12:57	1
Total HxCDD	**0.14**	**q**	0.0064	0.00048	ug/Kg	☼	08/14/19 12:31	08/19/19 12:57	1
Total HxCDF	**0.17**		0.0064	0.00075	ug/Kg	☼	08/14/19 12:31	08/19/19 12:57	1
Total PeCDD	**0.010**	*** q**	0.0064	0.00050	ug/Kg	☼	08/14/19 12:31	08/19/19 12:57	1
Total PeCDF	**0.019**	**q**	0.0064	0.00031	ug/Kg	☼	08/14/19 12:31	08/19/19 12:57	1
Total TCDD	**0.0078**	**q**	0.0013	0.00029	ug/Kg	☼	08/14/19 12:31	08/19/19 12:57	1
Total TCDF	**0.011**	**q**	0.0013	0.00022	ug/Kg	☼	08/14/19 12:31	08/19/19 12:57	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,6,7,8-HpCDD	*55*		*23 - 140*	*08/14/19 12:31*	*08/19/19 12:57*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*49*		*28 - 143*	*08/14/19 12:31*	*08/19/19 12:57*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*61*		*26 - 138*	*08/14/19 12:31*	*08/19/19 12:57*	*1*

Client Sample ID: A6-0to23-100818
Date Collected: 10/08/18 16:08
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-6
Matrix: Solid
Percent Solids: 39.3

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,4,7,8-HxCDD	70		32 - 141	08/14/19 12:31	08/19/19 12:57	1
13C-1,2,3,4,7,8-HxCDF	85		26 - 152	08/14/19 12:31	08/19/19 12:57	1
13C-1,2,3,6,7,8-HxCDD	59		28 - 130	08/14/19 12:31	08/19/19 12:57	1
13C-1,2,3,6,7,8-HxCDF	74		26 - 123	08/14/19 12:31	08/19/19 12:57	1
13C-1,2,3,7,8,9-HxCDF	72		29 - 147	08/14/19 12:31	08/19/19 12:57	1
13C-1,2,3,7,8-PeCDD	67		25 - 181	08/14/19 12:31	08/19/19 12:57	1
13C-1,2,3,7,8-PeCDF	70		24 - 185	08/14/19 12:31	08/19/19 12:57	1
13C-2,3,4,6,7,8-HxCDF	73		28 - 136	08/14/19 12:31	08/19/19 12:57	1
13C-2,3,4,7,8-PeCDF	71		21 - 178	08/14/19 12:31	08/19/19 12:57	1
13C-2,3,7,8-TCDD	67		25 - 164	08/14/19 12:31	08/19/19 12:57	1
13C-2,3,7,8-TCDF	74		24 - 169	08/14/19 12:31	08/19/19 12:57	1
13C-OCDD	55		17 - 157	08/14/19 12:31	08/19/19 12:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	103		35 - 197	08/14/19 12:31	08/19/19 12:57	1

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	0.0017		0.0013	0.00014	ug/Kg	☼	08/14/19 12:31	08/21/19 03:09	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF	77		24 - 169	08/14/19 12:31	08/21/19 03:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	103		35 - 197	08/14/19 12:31	08/21/19 03:09	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	9.1		0.37	0.074	mg/Kg	☼	08/14/19 14:06	08/14/19 18:13	5
Cadmium	0.41		0.30	0.057	mg/Kg	☼	08/14/19 14:06	08/14/19 18:13	5
Copper	160		0.74	0.16	mg/Kg	☼	08/14/19 14:06	08/14/19 18:13	5
Lead	31	B	0.37	0.035	mg/Kg	☼	08/14/19 14:06	08/14/19 18:13	5
Zinc	240		3.7	1.2	mg/Kg	☼	08/14/19 14:06	08/14/19 18:13	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.16	H	0.052	0.015	mg/Kg	☼	08/14/19 10:54	08/14/19 18:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	27000	H B	2000	97	mg/Kg			08/18/19 13:59	1
Total Solids	39.3	H	0.1	0.1	%			08/13/19 17:21	1
Percent Moisture	60	H	0.10	0.10	%			08/21/19 13:20	1
Percent Solids	40	H	0.10	0.10	%			08/21/19 13:20	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	20.3	H			%			08/06/19 11:26	1
Coarse Sand	0.5	H			%			08/06/19 11:26	1
Fine Sand	21.0	H			%			08/06/19 11:26	1
Gravel	0.0	H			%			08/06/19 11:26	1
Medium Sand	1.6	H			%			08/06/19 11:26	1

Client: Pacific Groundwater Group
Job ID: 580-88125-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: A6-0to23-100818
Lab Sample ID: 580-88125-6
Date Collected: 10/08/18 16:08
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 39.3

Method: D7928/D6913 - ASTM D7928/D6913 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silt	56.6	H			%			08/06/19 11:26	1

Method: D854 - Specific Gravity

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Density	1.30		0.0100	0.0100	g/cm3			08/13/19 00:00	1
Specific Gravity	1.30		0.0100	0.0100	NONE			08/13/19 00:00	1

Client Sample ID: A7-0to26-100918
Lab Sample ID: 580-88125-7

Date Collected: 10/09/18 13:23
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 37.8

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		4.9	1.8	ug/Kg	☼	08/13/19 10:43	08/16/19 01:07	1
PCB-1221	ND		4.9	2.3	ug/Kg	☼	08/13/19 10:43	08/16/19 01:07	1
PCB-1232	ND		4.9	2.3	ug/Kg	☼	08/13/19 10:43	08/16/19 01:07	1
PCB-1242	ND		4.9	1.2	ug/Kg	☼	08/13/19 10:43	08/16/19 01:07	1
PCB-1248	ND		4.9	0.89	ug/Kg	☼	08/13/19 10:43	08/16/19 01:07	1
PCB-1254	**57**		4.9	1.9	ug/Kg	☼	08/13/19 10:43	08/16/19 01:07	1
PCB-1260	ND		4.9	1.9	ug/Kg	☼	08/13/19 10:43	08/16/19 01:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*31*	*p X*	*39 - 142*	*08/13/19 10:43*	*08/16/19 01:07*	*1*
Tetrachloro-m-xylene	*57*		*35 - 129*	*08/13/19 10:43*	*08/16/19 01:07*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**73**	**J**	120	29	mg/Kg	☼	08/12/19 12:08	08/14/19 19:49	1
Motor Oil (>C24-C36)	**350**		120	41	mg/Kg	☼	08/12/19 12:08	08/14/19 19:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*95*		*50 - 150*	*08/12/19 12:08*	*08/14/19 19:49*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	**0.81**		0.0065	0.0036	ug/Kg	☼	08/14/19 12:31	08/19/19 13:44	1
1,2,3,4,6,7,8-HpCDF	**0.20**	*	0.0065	0.0029	ug/Kg	☼	08/14/19 12:31	08/19/19 13:44	1
1,2,3,4,7,8,9-HpCDF	**0.011**		0.0065	0.0035	ug/Kg	☼	08/14/19 12:31	08/19/19 13:44	1
1,2,3,4,7,8-HxCDD	**0.0030**	**J**	0.0065	0.00066	ug/Kg	☼	08/14/19 12:31	08/19/19 13:44	1
1,2,3,4,7,8-HxCDF	**0.011**		0.0065	0.00095	ug/Kg	☼	08/14/19 12:31	08/19/19 13:44	1
1,2,3,6,7,8-HxCDD	**0.021**	*	0.0065	0.00074	ug/Kg	☼	08/14/19 12:31	08/19/19 13:44	1
1,2,3,6,7,8-HxCDF	**0.0042**	**J**	0.0065	0.0010	ug/Kg	☼	08/14/19 12:31	08/19/19 13:44	1
1,2,3,7,8,9-HxCDD	**0.0052**	**J**	0.0065	0.00066	ug/Kg	☼	08/14/19 12:31	08/19/19 13:44	1
1,2,3,7,8,9-HxCDF	ND		0.0065	0.0010	ug/Kg	☼	08/14/19 12:31	08/19/19 13:44	1
1,2,3,7,8-PeCDD	ND	*	0.0065	0.00093	ug/Kg	☼	08/14/19 12:31	08/19/19 13:44	1
1,2,3,7,8-PeCDF	**0.0020**	**J ***	0.0065	0.00045	ug/Kg	☼	08/14/19 12:31	08/19/19 13:44	1
2,3,4,6,7,8-HxCDF	**0.0024**	**J**	0.0065	0.00098	ug/Kg	☼	08/14/19 12:31	08/19/19 13:44	1
2,3,4,7,8-PeCDF	**0.0026**	**J ***	0.0065	0.00051	ug/Kg	☼	08/14/19 12:31	08/19/19 13:44	1
2,3,7,8-TCDD	**0.00047**	**J * q**	0.0013	0.00025	ug/Kg	☼	08/14/19 12:31	08/19/19 13:44	1
OCDD	**6.0**	**E B**	0.013	0.0025	ug/Kg	☼	08/14/19 12:31	08/19/19 13:44	1
OCDF	**1.1**		0.013	0.00081	ug/Kg	☼	08/14/19 12:31	08/19/19 13:44	1
Total HpCDD	**1.7**		0.0065	0.0036	ug/Kg	☼	08/14/19 12:31	08/19/19 13:44	1
Total HpCDF	**1.1**	*	0.0065	0.0032	ug/Kg	☼	08/14/19 12:31	08/19/19 13:44	1
Total HxCDD	**0.17**		0.0065	0.00069	ug/Kg	☼	08/14/19 12:31	08/19/19 13:44	1
Total HxCDF	**0.25**		0.0065	0.0010	ug/Kg	☼	08/14/19 12:31	08/19/19 13:44	1
Total PeCDD	**0.016**	*** q**	0.0065	0.00093	ug/Kg	☼	08/14/19 12:31	08/19/19 13:44	1
Total PeCDF	**0.031**	**q**	0.0065	0.00048	ug/Kg	☼	08/14/19 12:31	08/19/19 13:44	1
Total TCDD	**0.0085**	**q**	0.0013	0.00025	ug/Kg	☼	08/14/19 12:31	08/19/19 13:44	1
Total TCDF	**0.019**	**q**	0.0013	0.00033	ug/Kg	☼	08/14/19 12:31	08/19/19 13:44	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,6,7,8-HpCDD	*57*		*23 - 140*	*08/14/19 12:31*	*08/19/19 13:44*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*56*		*28 - 143*	*08/14/19 12:31*	*08/19/19 13:44*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*63*		*26 - 138*	*08/14/19 12:31*	*08/19/19 13:44*	*1*

Client Sample ID: A7-0to26-100918
Date Collected: 10/09/18 13:23
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-7
Matrix: Solid
Percent Solids: 37.8

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,4,7,8-HxCDD	68		32 - 141	08/14/19 12:31	08/19/19 13:44	1
13C-1,2,3,4,7,8-HxCDF	87		26 - 152	08/14/19 12:31	08/19/19 13:44	1
13C-1,2,3,6,7,8-HxCDD	64		28 - 130	08/14/19 12:31	08/19/19 13:44	1
13C-1,2,3,6,7,8-HxCDF	77		26 - 123	08/14/19 12:31	08/19/19 13:44	1
13C-1,2,3,7,8,9-HxCDF	76		29 - 147	08/14/19 12:31	08/19/19 13:44	1
13C-1,2,3,7,8-PeCDD	69		25 - 181	08/14/19 12:31	08/19/19 13:44	1
13C-1,2,3,7,8-PeCDF	73		24 - 185	08/14/19 12:31	08/19/19 13:44	1
13C-2,3,4,6,7,8-HxCDF	76		28 - 136	08/14/19 12:31	08/19/19 13:44	1
13C-2,3,4,7,8-PeCDF	72		21 - 178	08/14/19 12:31	08/19/19 13:44	1
13C-2,3,7,8-TCDD	69		25 - 164	08/14/19 12:31	08/19/19 13:44	1
13C-2,3,7,8-TCDF	76		24 - 169	08/14/19 12:31	08/19/19 13:44	1
13C-OCDD	50		17 - 157	08/14/19 12:31	08/19/19 13:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	104		35 - 197	08/14/19 12:31	08/19/19 13:44	1

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	0.0027		0.0013	0.00017	ug/Kg	☼	08/14/19 12:31	08/21/19 03:47	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF	76		24 - 169	08/14/19 12:31	08/21/19 03:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	95		35 - 197	08/14/19 12:31	08/21/19 03:47	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	9.5		0.35	0.070	mg/Kg	☼	08/14/19 14:06	08/14/19 18:17	5
Cadmium	0.32		0.28	0.054	mg/Kg	☼	08/14/19 14:06	08/14/19 18:17	5
Copper	150		0.70	0.15	mg/Kg	☼	08/14/19 14:06	08/14/19 18:17	5
Lead	30	B	0.35	0.034	mg/Kg	☼	08/14/19 14:06	08/14/19 18:17	5
Zinc	240		3.5	1.1	mg/Kg	☼	08/14/19 14:06	08/14/19 18:17	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.14	H	0.063	0.019	mg/Kg	☼	08/14/19 10:54	08/14/19 18:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	32000	H B	2000	97	mg/Kg			08/18/19 14:03	1
Total Solids	37.8	H	0.1	0.1	%			08/13/19 17:21	1
Percent Moisture	61	H	0.10	0.10	%			08/21/19 13:20	1
Percent Solids	39	H	0.10	0.10	%			08/21/19 13:20	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	15.3	H			%			08/06/19 11:26	1
Coarse Sand	0.3	H			%			08/06/19 11:26	1
Fine Sand	25.8	H			%			08/06/19 11:26	1
Gravel	0.9	H			%			08/06/19 11:26	1
Medium Sand	1.8	H			%			08/06/19 11:26	1

Client: Pacific Groundwater Group
Job ID: 580-88125-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: A7-0to26-100918
Lab Sample ID: 580-88125-7
Date Collected: 10/09/18 13:23
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 37.8

Method: D7928/D6913 - ASTM D7928/D6913 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silt	55.9	H			%			08/06/19 11:26	1

Method: D854 - Specific Gravity

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Density	1.26		0.0100	0.0100	g/cm3			08/13/19 00:00	1
Specific Gravity	1.26		0.0100	0.0100	NONE			08/13/19 00:00	1

Client Sample ID: C4-0to27-100918
Lab Sample ID: 580-88125-8

Date Collected: 10/09/18 08:28
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 37.5

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		4.8	1.8	ug/Kg	☼	08/13/19 10:43	08/16/19 01:24	1
PCB-1221	ND		4.8	2.3	ug/Kg	☼	08/13/19 10:43	08/16/19 01:24	1
PCB-1232	ND		4.8	2.3	ug/Kg	☼	08/13/19 10:43	08/16/19 01:24	1
PCB-1242	ND		4.8	1.2	ug/Kg	☼	08/13/19 10:43	08/16/19 01:24	1
PCB-1248	ND		4.8	0.86	ug/Kg	☼	08/13/19 10:43	08/16/19 01:24	1
PCB-1254	**130**		4.8	1.9	ug/Kg	☼	08/13/19 10:43	08/16/19 01:24	1
PCB-1260	ND		4.8	1.8	ug/Kg	☼	08/13/19 10:43	08/16/19 01:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*36*	*p X*	*39 - 142*	*08/13/19 10:43*	*08/16/19 01:24*	*1*
Tetrachloro-m-xylene	*42*		*35 - 129*	*08/13/19 10:43*	*08/16/19 01:24*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**140**		120	29	mg/Kg	☼	08/12/19 12:08	08/14/19 20:35	1
Motor Oil (>C24-C36)	**870**		120	41	mg/Kg	☼	08/12/19 12:08	08/14/19 20:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*96*		*50 - 150*	*08/12/19 12:08*	*08/14/19 20:35*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	**0.73**		0.0065	0.0031	ug/Kg	☼	08/14/19 12:31	08/19/19 14:32	1
1,2,3,4,6,7,8-HpCDF	**0.14**	*	0.0065	0.0022	ug/Kg	☼	08/14/19 12:31	08/19/19 14:32	1
1,2,3,4,7,8,9-HpCDF	**0.0064**	J	0.0065	0.0027	ug/Kg	☼	08/14/19 12:31	08/19/19 14:32	1
1,2,3,4,7,8-HxCDD	**0.0028**	J	0.0065	0.00047	ug/Kg	☼	08/14/19 12:31	08/19/19 14:32	1
1,2,3,4,7,8-HxCDF	**0.0085**		0.0065	0.00065	ug/Kg	☼	08/14/19 12:31	08/19/19 14:32	1
1,2,3,6,7,8-HxCDD	**0.018**	*	0.0065	0.00050	ug/Kg	☼	08/14/19 12:31	08/19/19 14:32	1
1,2,3,6,7,8-HxCDF	**0.0036**	J	0.0065	0.00071	ug/Kg	☼	08/14/19 12:31	08/19/19 14:32	1
1,2,3,7,8,9-HxCDD	**0.0053**	J	0.0065	0.00046	ug/Kg	☼	08/14/19 12:31	08/19/19 14:32	1
1,2,3,7,8,9-HxCDF	ND		0.0065	0.00070	ug/Kg	☼	08/14/19 12:31	08/19/19 14:32	1
1,2,3,7,8-PeCDD	**0.0015**	J *	0.0065	0.00053	ug/Kg	☼	08/14/19 12:31	08/19/19 14:32	1
1,2,3,7,8-PeCDF	**0.0011**	J *	0.0065	0.00043	ug/Kg	☼	08/14/19 12:31	08/19/19 14:32	1
2,3,4,6,7,8-HxCDF	**0.0016**	J	0.0065	0.00065	ug/Kg	☼	08/14/19 12:31	08/19/19 14:32	1
2,3,4,7,8-PeCDF	**0.0016**	J *	0.0065	0.00047	ug/Kg	☼	08/14/19 12:31	08/19/19 14:32	1
2,3,7,8-TCDD	**0.00047**	J * q	0.0013	0.00027	ug/Kg	☼	08/14/19 12:31	08/19/19 14:32	1
OCDD	**5.4**	E B	0.013	0.0021	ug/Kg	☼	08/14/19 12:31	08/19/19 14:32	1
OCDF	**0.69**		0.013	0.00072	ug/Kg	☼	08/14/19 12:31	08/19/19 14:32	1
Total HpCDD	**1.6**		0.0065	0.0031	ug/Kg	☼	08/14/19 12:31	08/19/19 14:32	1
Total HpCDF	**0.73**	*	0.0065	0.0025	ug/Kg	☼	08/14/19 12:31	08/19/19 14:32	1
Total HxCDD	**0.15**		0.0065	0.00048	ug/Kg	☼	08/14/19 12:31	08/19/19 14:32	1
Total HxCDF	**0.19**		0.0065	0.00068	ug/Kg	☼	08/14/19 12:31	08/19/19 14:32	1
Total PeCDD	**0.0079**	* q	0.0065	0.00053	ug/Kg	☼	08/14/19 12:31	08/19/19 14:32	1
Total PeCDF	**0.021**		0.0065	0.00045	ug/Kg	☼	08/14/19 12:31	08/19/19 14:32	1
Total TCDD	**0.0081**	q	0.0013	0.00027	ug/Kg	☼	08/14/19 12:31	08/19/19 14:32	1
Total TCDF	**0.012**	q	0.0013	0.00025	ug/Kg	☼	08/14/19 12:31	08/19/19 14:32	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,6,7,8-HpCDD	*47*		*23 - 140*	*08/14/19 12:31*	*08/19/19 14:32*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*48*		*28 - 143*	*08/14/19 12:31*	*08/19/19 14:32*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*52*		*26 - 138*	*08/14/19 12:31*	*08/19/19 14:32*	*1*

Client Sample ID: C4-0to27-100918
Lab Sample ID: 580-88125-8

Date Collected: 10/09/18 08:28
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 37.5

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,4,7,8-HxCDD	58		32 - 141	08/14/19 12:31	08/19/19 14:32	1
13C-1,2,3,4,7,8-HxCDF	74		26 - 152	08/14/19 12:31	08/19/19 14:32	1
13C-1,2,3,6,7,8-HxCDD	53		28 - 130	08/14/19 12:31	08/19/19 14:32	1
13C-1,2,3,6,7,8-HxCDF	64		26 - 123	08/14/19 12:31	08/19/19 14:32	1
13C-1,2,3,7,8,9-HxCDF	63		29 - 147	08/14/19 12:31	08/19/19 14:32	1
13C-1,2,3,7,8-PeCDD	58		25 - 181	08/14/19 12:31	08/19/19 14:32	1
13C-1,2,3,7,8-PeCDF	62		24 - 185	08/14/19 12:31	08/19/19 14:32	1
13C-2,3,4,6,7,8-HxCDF	63		28 - 136	08/14/19 12:31	08/19/19 14:32	1
13C-2,3,4,7,8-PeCDF	64		21 - 178	08/14/19 12:31	08/19/19 14:32	1
13C-2,3,7,8-TCDD	59		25 - 164	08/14/19 12:31	08/19/19 14:32	1
13C-2,3,7,8-TCDF	65		24 - 169	08/14/19 12:31	08/19/19 14:32	1
13C-OCDD	49		17 - 157	08/14/19 12:31	08/19/19 14:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	100		35 - 197	08/14/19 12:31	08/19/19 14:32	1

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	0.0018		0.0013	0.00019	ug/Kg	☼	08/14/19 12:31	08/21/19 04:26	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF	67		24 - 169	08/14/19 12:31	08/21/19 04:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	96		35 - 197	08/14/19 12:31	08/21/19 04:26	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	8.2		0.47	0.094	mg/Kg	☼	08/14/19 14:06	08/14/19 18:22	5
Cadmium	0.44		0.37	0.072	mg/Kg	☼	08/14/19 14:06	08/14/19 18:22	5
Copper	120		0.94	0.21	mg/Kg	☼	08/14/19 14:06	08/14/19 18:22	5
Lead	35	B	0.47	0.045	mg/Kg	☼	08/14/19 14:06	08/14/19 18:22	5
Zinc	240		4.7	1.5	mg/Kg	☼	08/14/19 14:06	08/14/19 18:22	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.23	H	0.063	0.019	mg/Kg	☼	08/14/19 10:54	08/14/19 18:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	30000	H B	2000	97	mg/Kg			08/18/19 14:07	1
Total Solids	37.5	H	0.1	0.1	%			08/13/19 17:21	1
Percent Moisture	64	H	0.10	0.10	%			08/21/19 13:20	1
Percent Solids	36	H	0.10	0.10	%			08/21/19 13:20	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	18.0	H			%			08/06/19 11:26	1
Coarse Sand	0.1	H			%			08/06/19 11:26	1
Fine Sand	24.3	H			%			08/06/19 11:26	1
Gravel	0.6	H			%			08/06/19 11:26	1
Medium Sand	1.5	H			%			08/06/19 11:26	1

Client: Pacific Groundwater Group
Job ID: 580-88125-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: C4-0to27-100918
Lab Sample ID: 580-88125-8
Date Collected: 10/09/18 08:28
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 37.5

Method: D7928/D6913 - ASTM D7928/D6913 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silt	55.4	H			%			08/06/19 11:26	1

Method: D854 - Specific Gravity

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Density	1.25		0.0100	0.0100	g/cm3			08/13/19 00:00	1
Specific Gravity	1.25		0.0100	0.0100	NONE			08/13/19 00:00	1

Client Sample ID: D2-0to19-101018
Lab Sample ID: 580-88125-9

Date Collected: 10/10/18 15:21
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 70.6

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.5	0.94	ug/Kg	☼	08/13/19 10:43	08/16/19 01:41	1
PCB-1221	ND		2.5	1.2	ug/Kg	☼	08/13/19 10:43	08/16/19 01:41	1
PCB-1232	ND		2.5	1.2	ug/Kg	☼	08/13/19 10:43	08/16/19 01:41	1
PCB-1242	ND		2.5	0.62	ug/Kg	☼	08/13/19 10:43	08/16/19 01:41	1
PCB-1248	ND		2.5	0.46	ug/Kg	☼	08/13/19 10:43	08/16/19 01:41	1
PCB-1254	ND		2.5	1.0	ug/Kg	☼	08/13/19 10:43	08/16/19 01:41	1
PCB-1260	**8.1**	**p**	2.5	0.98	ug/Kg	☼	08/13/19 10:43	08/16/19 01:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*37*	*p X*	*39 - 142*	*08/13/19 10:43*	*08/16/19 01:41*	*1*
Tetrachloro-m-xylene	*58*		*35 - 129*	*08/13/19 10:43*	*08/16/19 01:41*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**56**	**J**	57	14	mg/Kg	☼	08/12/19 12:08	08/14/19 20:58	1
Motor Oil (>C24-C36)	**360**		57	20	mg/Kg	☼	08/12/19 12:08	08/14/19 20:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*93*		*50 - 150*	*08/12/19 12:08*	*08/14/19 20:58*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	**0.14**		0.0036	0.0010	ug/Kg	☼	08/14/19 12:31	08/19/19 15:19	1
1,2,3,4,6,7,8-HpCDF	**0.034**	*****	0.0036	0.00049	ug/Kg	☼	08/14/19 12:31	08/19/19 15:19	1
1,2,3,4,7,8,9-HpCDF	**0.0015**	**J**	0.0036	0.00064	ug/Kg	☼	08/14/19 12:31	08/19/19 15:19	1
1,2,3,4,7,8-HxCDD	**0.00050**	**J q**	0.0036	0.00019	ug/Kg	☼	08/14/19 12:31	08/19/19 15:19	1
1,2,3,4,7,8-HxCDF	**0.0030**	**J**	0.0036	0.00021	ug/Kg	☼	08/14/19 12:31	08/19/19 15:19	1
1,2,3,6,7,8-HxCDD	**0.0034**	**J ***	0.0036	0.00020	ug/Kg	☼	08/14/19 12:31	08/19/19 15:19	1
1,2,3,6,7,8-HxCDF	**0.00085**	**J**	0.0036	0.00023	ug/Kg	☼	08/14/19 12:31	08/19/19 15:19	1
1,2,3,7,8,9-HxCDD	**0.0013**	**J**	0.0036	0.00019	ug/Kg	☼	08/14/19 12:31	08/19/19 15:19	1
1,2,3,7,8,9-HxCDF	ND		0.0036	0.00024	ug/Kg	☼	08/14/19 12:31	08/19/19 15:19	1
1,2,3,7,8-PeCDD	ND	*	0.0036	0.00020	ug/Kg	☼	08/14/19 12:31	08/19/19 15:19	1
1,2,3,7,8-PeCDF	**0.00023**	**J ***	0.0036	0.00014	ug/Kg	☼	08/14/19 12:31	08/19/19 15:19	1
2,3,4,6,7,8-HxCDF	**0.00049**	**J**	0.0036	0.00022	ug/Kg	☼	08/14/19 12:31	08/19/19 15:19	1
2,3,4,7,8-PeCDF	**0.00048**	**J ***	0.0036	0.00016	ug/Kg	☼	08/14/19 12:31	08/19/19 15:19	1
2,3,7,8-TCDD	ND	*	0.00071	0.00013	ug/Kg	☼	08/14/19 12:31	08/19/19 15:19	1
2,3,7,8-TCDF	**0.00045**	**J**	0.00071	0.00011	ug/Kg	☼	08/14/19 12:31	08/19/19 15:19	1
OCDD	**1.3**	**B**	0.0071	0.00058	ug/Kg	☼	08/14/19 12:31	08/19/19 15:19	1
OCDF	**0.16**		0.0071	0.00025	ug/Kg	☼	08/14/19 12:31	08/19/19 15:19	1
Total HpCDD	**0.35**		0.0036	0.0010	ug/Kg	☼	08/14/19 12:31	08/19/19 15:19	1
Total HpCDF	**0.16**	*****	0.0036	0.00056	ug/Kg	☼	08/14/19 12:31	08/19/19 15:19	1
Total HxCDD	**0.026**	**q**	0.0036	0.00019	ug/Kg	☼	08/14/19 12:31	08/19/19 15:19	1
Total HxCDF	**0.040**		0.0036	0.00022	ug/Kg	☼	08/14/19 12:31	08/19/19 15:19	1
Total PeCDD	**0.00087**	**J * q**	0.0036	0.00020	ug/Kg	☼	08/14/19 12:31	08/19/19 15:19	1
Total PeCDF	**0.0065**		0.0036	0.00015	ug/Kg	☼	08/14/19 12:31	08/19/19 15:19	1
Total TCDD	**0.00083**	**q**	0.00071	0.00013	ug/Kg	☼	08/14/19 12:31	08/19/19 15:19	1
Total TCDF	**0.0042**	**q**	0.00071	0.00011	ug/Kg	☼	08/14/19 12:31	08/19/19 15:19	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,6,7,8-HpCDD	*55*		*23 - 140*	*08/14/19 12:31*	*08/19/19 15:19*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*56*		*28 - 143*	*08/14/19 12:31*	*08/19/19 15:19*	*1*

Client Sample ID: D2-0to19-101018
Lab Sample ID: 580-88125-9
Date Collected: 10/10/18 15:21
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 70.6

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,4,7,8,9-HpCDF	58		26 - 138	08/14/19 12:31	08/19/19 15:19	1
13C-1,2,3,4,7,8-HxCDD	65		32 - 141	08/14/19 12:31	08/19/19 15:19	1
13C-1,2,3,4,7,8-HxCDF	81		26 - 152	08/14/19 12:31	08/19/19 15:19	1
13C-1,2,3,6,7,8-HxCDD	61		28 - 130	08/14/19 12:31	08/19/19 15:19	1
13C-1,2,3,6,7,8-HxCDF	71		26 - 123	08/14/19 12:31	08/19/19 15:19	1
13C-1,2,3,7,8,9-HxCDF	68		29 - 147	08/14/19 12:31	08/19/19 15:19	1
13C-1,2,3,7,8-PeCDD	62		25 - 181	08/14/19 12:31	08/19/19 15:19	1
13C-1,2,3,7,8-PeCDF	62		24 - 185	08/14/19 12:31	08/19/19 15:19	1
13C-2,3,4,6,7,8-HxCDF	68		28 - 136	08/14/19 12:31	08/19/19 15:19	1
13C-2,3,4,7,8-PeCDF	63		21 - 178	08/14/19 12:31	08/19/19 15:19	1
13C-2,3,7,8-TCDD	59		25 - 164	08/14/19 12:31	08/19/19 15:19	1
13C-2,3,7,8-TCDF	63		24 - 169	08/14/19 12:31	08/19/19 15:19	1
13C-OCDD	54		17 - 157	08/14/19 12:31	08/19/19 15:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	104		35 - 197	08/14/19 12:31	08/19/19 15:19	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.9		0.23	0.045	mg/Kg	☼	08/14/19 14:06	08/14/19 18:26	5
Cadmium	0.18		0.18	0.035	mg/Kg	☼	08/14/19 14:06	08/14/19 18:26	5
Copper	95		0.45	0.10	mg/Kg	☼	08/14/19 14:06	08/14/19 18:26	5
Lead	24	B	0.23	0.022	mg/Kg	☼	08/14/19 14:06	08/14/19 18:26	5
Zinc	150		2.3	0.73	mg/Kg	☼	08/14/19 14:06	08/14/19 18:26	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.028	H	0.027	0.0082	mg/Kg	☼	08/14/19 10:54	08/14/19 18:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	12000	H B	2000	97	mg/Kg			08/18/19 14:12	1
Total Solids	70.6	H	0.1	0.1	%			08/13/19 17:21	1
Percent Moisture	30	H	0.10	0.10	%			08/21/19 13:20	1
Percent Solids	70	H	0.10	0.10	%			08/21/19 13:20	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	3.8	H			%			08/06/19 11:26	1
Coarse Sand	2.7	H			%			08/06/19 11:26	1
Fine Sand	50.1	H			%			08/06/19 11:26	1
Gravel	1.1	H			%			08/06/19 11:26	1
Medium Sand	39.2	H			%			08/06/19 11:26	1
Silt	3.1	H			%			08/06/19 11:26	1

Method: D854 - Specific Gravity

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Density	1.84		0.0100	0.0100	g/cm3			08/13/19 00:00	1
Specific Gravity	1.85		0.0100	0.0100	NONE			08/13/19 00:00	1

Client Sample ID: F2-0to19-101018
Lab Sample ID: 580-88125-10

Date Collected: 10/10/18 16:36
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 69.3

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.6	0.98	ug/Kg	☼	08/13/19 10:43	08/16/19 01:57	1
PCB-1221	ND		2.6	1.3	ug/Kg	☼	08/13/19 10:43	08/16/19 01:57	1
PCB-1232	ND		2.6	1.3	ug/Kg	☼	08/13/19 10:43	08/16/19 01:57	1
PCB-1242	ND		2.6	0.65	ug/Kg	☼	08/13/19 10:43	08/16/19 01:57	1
PCB-1248	ND		2.6	0.48	ug/Kg	☼	08/13/19 10:43	08/16/19 01:57	1
PCB-1254	**18**	**p**	2.6	1.0	ug/Kg	☼	08/13/19 10:43	08/16/19 01:57	1
PCB-1260	ND		2.6	1.0	ug/Kg	☼	08/13/19 10:43	08/16/19 01:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*37*	*p X*	*39 - 142*	*08/13/19 10:43*	*08/16/19 01:57*	*1*
Tetrachloro-m-xylene	*60*		*35 - 129*	*08/13/19 10:43*	*08/16/19 01:57*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**54**		53	13	mg/Kg	☼	08/12/19 12:08	08/14/19 21:20	1
Motor Oil (>C24-C36)	**210**		53	18	mg/Kg	☼	08/12/19 12:08	08/14/19 21:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*92*		*50 - 150*	*08/12/19 12:08*	*08/14/19 21:20*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	**0.14**		0.0036	0.0010	ug/Kg	☼	08/14/19 12:31	08/19/19 16:07	1
1,2,3,4,6,7,8-HpCDF	**0.022**	*****	0.0036	0.00047	ug/Kg	☼	08/14/19 12:31	08/19/19 16:07	1
1,2,3,4,7,8,9-HpCDF	**0.0012**	**J**	0.0036	0.00059	ug/Kg	☼	08/14/19 12:31	08/19/19 16:07	1
1,2,3,4,7,8-HxCDD	**0.00049**	**J q**	0.0036	0.00021	ug/Kg	☼	08/14/19 12:31	08/19/19 16:07	1
1,2,3,4,7,8-HxCDF	**0.0016**	**J**	0.0036	0.00016	ug/Kg	☼	08/14/19 12:31	08/19/19 16:07	1
1,2,3,6,7,8-HxCDD	**0.0030**	**J ***	0.0036	0.00022	ug/Kg	☼	08/14/19 12:31	08/19/19 16:07	1
1,2,3,6,7,8-HxCDF	**0.00089**	**J**	0.0036	0.00016	ug/Kg	☼	08/14/19 12:31	08/19/19 16:07	1
1,2,3,7,8,9-HxCDD	**0.0012**	**J**	0.0036	0.00020	ug/Kg	☼	08/14/19 12:31	08/19/19 16:07	1
1,2,3,7,8,9-HxCDF	ND		0.0036	0.00017	ug/Kg	☼	08/14/19 12:31	08/19/19 16:07	1
1,2,3,7,8-PeCDD	ND	*	0.0036	0.00024	ug/Kg	☼	08/14/19 12:31	08/19/19 16:07	1
1,2,3,7,8-PeCDF	**0.00031**	**J * q**	0.0036	0.00014	ug/Kg	☼	08/14/19 12:31	08/19/19 16:07	1
2,3,4,6,7,8-HxCDF	**0.00044**	**J**	0.0036	0.00016	ug/Kg	☼	08/14/19 12:31	08/19/19 16:07	1
2,3,4,7,8-PeCDF	**0.00038**	**J ***	0.0036	0.00016	ug/Kg	☼	08/14/19 12:31	08/19/19 16:07	1
2,3,7,8-TCDD	**0.00039**	**J ***	0.00073	0.00012	ug/Kg	☼	08/14/19 12:31	08/19/19 16:07	1
2,3,7,8-TCDF	**0.00053**	**J**	0.00073	0.00015	ug/Kg	☼	08/14/19 12:31	08/19/19 16:07	1
OCDD	**1.2**	**B**	0.0073	0.00055	ug/Kg	☼	08/14/19 12:31	08/19/19 16:07	1
OCDF	**0.096**		0.0073	0.00026	ug/Kg	☼	08/14/19 12:31	08/19/19 16:07	1
Total HpCDD	**0.40**		0.0036	0.0010	ug/Kg	☼	08/14/19 12:31	08/19/19 16:07	1
Total HpCDF	**0.099**	*****	0.0036	0.00053	ug/Kg	☼	08/14/19 12:31	08/19/19 16:07	1
Total HxCDD	**0.037**	**q**	0.0036	0.00021	ug/Kg	☼	08/14/19 12:31	08/19/19 16:07	1
Total HxCDF	**0.027**		0.0036	0.00016	ug/Kg	☼	08/14/19 12:31	08/19/19 16:07	1
Total PeCDD	**0.0013**	**J * q**	0.0036	0.00024	ug/Kg	☼	08/14/19 12:31	08/19/19 16:07	1
Total PeCDF	**0.0066**	**q**	0.0036	0.00015	ug/Kg	☼	08/14/19 12:31	08/19/19 16:07	1
Total TCDD	**0.0022**	**q**	0.00073	0.00012	ug/Kg	☼	08/14/19 12:31	08/19/19 16:07	1
Total TCDF	**0.0037**		0.00073	0.00015	ug/Kg	☼	08/14/19 12:31	08/19/19 16:07	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,6,7,8-HpCDD	*55*		*23 - 140*	*08/14/19 12:31*	*08/19/19 16:07*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*56*		*28 - 143*	*08/14/19 12:31*	*08/19/19 16:07*	*1*

Client Sample ID: F2-0to19-101018
Lab Sample ID: 580-88125-10

Date Collected: 10/10/18 16:36
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 69.3

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,7,8,9-HpCDF	*60*		*26 - 138*	*08/14/19 12:31*	*08/19/19 16:07*	*1*
13C-1,2,3,4,7,8-HxCDD	*65*		*32 - 141*	*08/14/19 12:31*	*08/19/19 16:07*	*1*
13C-1,2,3,4,7,8-HxCDF	*80*		*26 - 152*	*08/14/19 12:31*	*08/19/19 16:07*	*1*
13C-1,2,3,6,7,8-HxCDD	*62*		*28 - 130*	*08/14/19 12:31*	*08/19/19 16:07*	*1*
13C-1,2,3,6,7,8-HxCDF	*72*		*26 - 123*	*08/14/19 12:31*	*08/19/19 16:07*	*1*
13C-1,2,3,7,8,9-HxCDF	*70*		*29 - 147*	*08/14/19 12:31*	*08/19/19 16:07*	*1*
13C-1,2,3,7,8-PeCDD	*65*		*25 - 181*	*08/14/19 12:31*	*08/19/19 16:07*	*1*
13C-1,2,3,7,8-PeCDF	*68*		*24 - 185*	*08/14/19 12:31*	*08/19/19 16:07*	*1*
13C-2,3,4,6,7,8-HxCDF	*71*		*28 - 136*	*08/14/19 12:31*	*08/19/19 16:07*	*1*
13C-2,3,4,7,8-PeCDF	*68*		*21 - 178*	*08/14/19 12:31*	*08/19/19 16:07*	*1*
13C-2,3,7,8-TCDD	*64*		*25 - 164*	*08/14/19 12:31*	*08/19/19 16:07*	*1*
13C-2,3,7,8-TCDF	*69*		*24 - 169*	*08/14/19 12:31*	*08/19/19 16:07*	*1*
13C-OCDD	*54*		*17 - 157*	*08/14/19 12:31*	*08/19/19 16:07*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*106*		*35 - 197*	*08/14/19 12:31*	*08/19/19 16:07*	*1*

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	3.6		0.24	0.049	mg/Kg	☼	08/14/19 14:06	08/14/19 18:31	5
Cadmium	0.17	J	0.20	0.038	mg/Kg	☼	08/14/19 14:06	08/14/19 18:31	5
Copper	46		0.49	0.11	mg/Kg	☼	08/14/19 14:06	08/14/19 18:31	5
Lead	12	B	0.24	0.024	mg/Kg	☼	08/14/19 14:06	08/14/19 18:31	5
Zinc	130		2.4	0.79	mg/Kg	☼	08/14/19 14:06	08/14/19 18:31	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.070	H	0.029	0.0086	mg/Kg	☼	08/14/19 10:54	08/14/19 18:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	38000	H B	2000	97	mg/Kg			08/18/19 14:17	1
Total Solids	69.3	H	0.1	0.1	%			08/13/19 17:21	1
Percent Moisture	31	H	0.10	0.10	%			08/21/19 13:20	1
Percent Solids	69	H	0.10	0.10	%			08/21/19 13:20	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	2.0	H			%			08/06/19 11:26	1
Coarse Sand	1.8	H			%			08/06/19 11:26	1
Fine Sand	62.3	H			%			08/06/19 11:26	1
Gravel	2.2	H			%			08/06/19 11:26	1
Medium Sand	27.4	H			%			08/06/19 11:26	1
Silt	4.5	H			%			08/06/19 11:26	1

Method: D854 - Specific Gravity

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Density	1.73		0.0100	0.0100	g/cm3			08/13/19 00:00	1
Specific Gravity	1.74		0.0100	0.0100	NONE			08/13/19 00:00	1

Client Sample ID: G6-0to27-101818
Date Collected: 10/18/18 14:12
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-11
Matrix: Solid
Percent Solids: 32.7

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		6.1	2.3	ug/Kg	☼	08/13/19 11:37	08/15/19 14:12	1
PCB-1221	ND		6.1	2.9	ug/Kg	☼	08/13/19 11:37	08/15/19 14:12	1
PCB-1232	ND		6.1	2.9	ug/Kg	☼	08/13/19 11:37	08/15/19 14:12	1
PCB-1242	ND		6.1	1.5	ug/Kg	☼	08/13/19 11:37	08/15/19 14:12	1
PCB-1248	ND		6.1	1.1	ug/Kg	☼	08/13/19 11:37	08/15/19 14:12	1
PCB-1254	ND		6.1	2.4	ug/Kg	☼	08/13/19 11:37	08/15/19 14:12	1
PCB-1260	**86**	**F2 F1 p**	6.1	2.3	ug/Kg	☼	08/13/19 11:37	08/15/19 14:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*56*		*39 - 142*	*08/13/19 11:37*	*08/15/19 14:12*	*1*
Tetrachloro-m-xylene	*59*		*35 - 129*	*08/13/19 11:37*	*08/15/19 14:12*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**140**		140	35	mg/Kg	☼	08/13/19 09:12	08/15/19 20:31	1
Motor Oil (>C24-C36)	**640**		140	50	mg/Kg	☼	08/13/19 09:12	08/15/19 20:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*106*		*50 - 150*	*08/13/19 09:12*	*08/15/19 20:31*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	**1.1**		0.0076	0.0043	ug/Kg	☼	08/14/19 12:31	08/19/19 16:54	1
1,2,3,4,6,7,8-HpCDF	**0.30**	*	0.0076	0.0038	ug/Kg	☼	08/14/19 12:31	08/19/19 16:54	1
1,2,3,4,7,8,9-HpCDF	**0.019**		0.0076	0.0046	ug/Kg	☼	08/14/19 12:31	08/19/19 16:54	1
1,2,3,4,7,8-HxCDD	**0.0044**	**J**	0.0076	0.00062	ug/Kg	☼	08/14/19 12:31	08/19/19 16:54	1
1,2,3,4,7,8-HxCDF	**0.030**		0.0076	0.0012	ug/Kg	☼	08/14/19 12:31	08/19/19 16:54	1
1,2,3,6,7,8-HxCDD	**0.036**	*	0.0076	0.00064	ug/Kg	☼	08/14/19 12:31	08/19/19 16:54	1
1,2,3,6,7,8-HxCDF	**0.0075**	**J**	0.0076	0.0013	ug/Kg	☼	08/14/19 12:31	08/19/19 16:54	1
1,2,3,7,8,9-HxCDD	**0.0083**		0.0076	0.00059	ug/Kg	☼	08/14/19 12:31	08/19/19 16:54	1
1,2,3,7,8,9-HxCDF	ND		0.0076	0.0013	ug/Kg	☼	08/14/19 12:31	08/19/19 16:54	1
1,2,3,7,8-PeCDD	ND	*	0.0076	0.00077	ug/Kg	☼	08/14/19 12:31	08/19/19 16:54	1
1,2,3,7,8-PeCDF	**0.0022**	**J ***	0.0076	0.00053	ug/Kg	☼	08/14/19 12:31	08/19/19 16:54	1
2,3,4,6,7,8-HxCDF	**0.0035**	**J**	0.0076	0.0012	ug/Kg	☼	08/14/19 12:31	08/19/19 16:54	1
2,3,4,7,8-PeCDF	**0.0039**	**J ***	0.0076	0.00058	ug/Kg	☼	08/14/19 12:31	08/19/19 16:54	1
2,3,7,8-TCDD	**0.00053**	**J * q**	0.0015	0.00032	ug/Kg	☼	08/14/19 12:31	08/19/19 16:54	1
OCDD	**9.2**	**E B**	0.015	0.0029	ug/Kg	☼	08/14/19 12:31	08/19/19 16:54	1
OCDF	**1.5**		0.015	0.00089	ug/Kg	☼	08/14/19 12:31	08/19/19 16:54	1
Total HpCDD	**2.4**		0.0076	0.0043	ug/Kg	☼	08/14/19 12:31	08/19/19 16:54	1
Total HpCDF	**1.6**	*	0.0076	0.0042	ug/Kg	☼	08/14/19 12:31	08/19/19 16:54	1
Total HxCDD	**0.24**	**q**	0.0076	0.00062	ug/Kg	☼	08/14/19 12:31	08/19/19 16:54	1
Total HxCDF	**0.40**		0.0076	0.0013	ug/Kg	☼	08/14/19 12:31	08/19/19 16:54	1
Total PeCDD	**0.010**	*** q**	0.0076	0.00077	ug/Kg	☼	08/14/19 12:31	08/19/19 16:54	1
Total PeCDF	**0.042**		0.0076	0.00056	ug/Kg	☼	08/14/19 12:31	08/19/19 16:54	1
Total TCDD	**0.012**	**q**	0.0015	0.00032	ug/Kg	☼	08/14/19 12:31	08/19/19 16:54	1
Total TCDF	**0.029**		0.0015	0.00031	ug/Kg	☼	08/14/19 12:31	08/19/19 16:54	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,6,7,8-HpCDD	*46*		*23 - 140*	*08/14/19 12:31*	*08/19/19 16:54*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*50*		*28 - 143*	*08/14/19 12:31*	*08/19/19 16:54*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*51*		*26 - 138*	*08/14/19 12:31*	*08/19/19 16:54*	*1*

Client Sample ID: G6-0to27-101818
Lab Sample ID: 580-88125-11
Date Collected: 10/18/18 14:12
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 32.7

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,7,8-HxCDD	*61*		*32 - 141*	*08/14/19 12:31*	*08/19/19 16:54*	*1*
13C-1,2,3,4,7,8-HxCDF	*74*		*26 - 152*	*08/14/19 12:31*	*08/19/19 16:54*	*1*
13C-1,2,3,6,7,8-HxCDD	*52*		*28 - 130*	*08/14/19 12:31*	*08/19/19 16:54*	*1*
13C-1,2,3,6,7,8-HxCDF	*67*		*26 - 123*	*08/14/19 12:31*	*08/19/19 16:54*	*1*
13C-1,2,3,7,8,9-HxCDF	*65*		*29 - 147*	*08/14/19 12:31*	*08/19/19 16:54*	*1*
13C-1,2,3,7,8-PeCDD	*60*		*25 - 181*	*08/14/19 12:31*	*08/19/19 16:54*	*1*
13C-1,2,3,7,8-PeCDF	*64*		*24 - 185*	*08/14/19 12:31*	*08/19/19 16:54*	*1*
13C-2,3,4,6,7,8-HxCDF	*64*		*28 - 136*	*08/14/19 12:31*	*08/19/19 16:54*	*1*
13C-2,3,4,7,8-PeCDF	*65*		*21 - 178*	*08/14/19 12:31*	*08/19/19 16:54*	*1*
13C-2,3,7,8-TCDD	*60*		*25 - 164*	*08/14/19 12:31*	*08/19/19 16:54*	*1*
13C-2,3,7,8-TCDF	*67*		*24 - 169*	*08/14/19 12:31*	*08/19/19 16:54*	*1*
13C-OCDD	*47*		*17 - 157*	*08/14/19 12:31*	*08/19/19 16:54*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*104*		*35 - 197*	*08/14/19 12:31*	*08/19/19 16:54*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**0.0036**		0.0015	0.00029	ug/Kg	☼	08/14/19 12:31	08/21/19 05:04	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*71*		*24 - 169*	*08/14/19 12:31*	*08/21/19 05:04*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*104*		*35 - 197*	*08/14/19 12:31*	*08/21/19 05:04*	*1*

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**14**		0.55	0.11	mg/Kg	☼	08/14/19 14:06	08/14/19 18:35	5
Cadmium	**1.1**		0.44	0.085	mg/Kg	☼	08/14/19 14:06	08/14/19 18:35	5
Copper	**260**		1.1	0.24	mg/Kg	☼	08/14/19 14:06	08/14/19 18:35	5
Lead	**64**	**B**	0.55	0.053	mg/Kg	☼	08/14/19 14:06	08/14/19 18:35	5
Zinc	**570**		5.5	1.8	mg/Kg	☼	08/14/19 14:06	08/14/19 18:35	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.30**	**H**	0.059	0.018	mg/Kg	☼	08/14/19 10:54	08/14/19 18:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	**35000**	**H B**	2000	97	mg/Kg			08/18/19 14:21	1
Total Solids	**32.7**	**H**	0.1	0.1	%			08/13/19 17:21	1
Percent Moisture	**68**	**H**	0.10	0.10	%			08/21/19 13:20	1
Percent Solids	**32**	**H**	0.10	0.10	%			08/21/19 13:20	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	**25.1**	**H**			%			08/06/19 11:30	1
Coarse Sand	**0.1**	**H**			%			08/06/19 11:30	1
Fine Sand	**8.8**	**H**			%			08/06/19 11:30	1
Gravel	**0.0**	**H**			%			08/06/19 11:30	1
Medium Sand	**0.8**	**H**			%			08/06/19 11:30	1

Client: Pacific Groundwater Group
Job ID: 580-88125-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: G6-0to27-101818
Lab Sample ID: 580-88125-11
Date Collected: 10/18/18 14:12
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 32.7

Method: D7928/D6913 - ASTM D7928/D6913 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silt	65.2	H			%			08/06/19 11:30	1

Method: D854 - Specific Gravity

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Density	1.25		0.0100	0.0100	g/cm3			08/13/19 00:00	1
Specific Gravity	1.26		0.0100	0.0100	NONE			08/13/19 00:00	1

Client Sample ID: H2-0to30-101218
Lab Sample ID: 580-88125-12

Date Collected: 10/12/18 10:28
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 42.1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		4.5	1.7	ug/Kg	☼	08/13/19 11:37	08/15/19 15:03	1
PCB-1221	ND		4.5	2.1	ug/Kg	☼	08/13/19 11:37	08/15/19 15:03	1
PCB-1232	ND		4.5	2.1	ug/Kg	☼	08/13/19 11:37	08/15/19 15:03	1
PCB-1242	ND		4.5	1.1	ug/Kg	☼	08/13/19 11:37	08/15/19 15:03	1
PCB-1248	ND		4.5	0.81	ug/Kg	☼	08/13/19 11:37	08/15/19 15:03	1
PCB-1254	ND		4.5	1.8	ug/Kg	☼	08/13/19 11:37	08/15/19 15:03	1
PCB-1260	**20**	**p**	4.5	1.7	ug/Kg	☼	08/13/19 11:37	08/15/19 15:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*62*		*39 - 142*	*08/13/19 11:37*	*08/15/19 15:03*	*1*
Tetrachloro-m-xylene	*65*		*35 - 129*	*08/13/19 11:37*	*08/15/19 15:03*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**80**	**J**	96	24	mg/Kg	☼	08/12/19 12:08	08/14/19 21:43	1
Motor Oil (>C24-C36)	**500**		96	34	mg/Kg	☼	08/12/19 12:08	08/14/19 21:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*95*		*50 - 150*	*08/12/19 12:08*	*08/14/19 21:43*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	**0.35**		0.0058	0.0016	ug/Kg	☼	08/14/19 12:31	08/19/19 17:42	1
1,2,3,4,6,7,8-HpCDF	**0.088**	*****	0.0058	0.0014	ug/Kg	☼	08/14/19 12:31	08/19/19 17:42	1
1,2,3,4,7,8,9-HpCDF	**0.0045**	**J**	0.0058	0.0017	ug/Kg	☼	08/14/19 12:31	08/19/19 17:42	1
1,2,3,4,7,8-HxCDD	**0.0020**	**J**	0.0058	0.00036	ug/Kg	☼	08/14/19 12:31	08/19/19 17:42	1
1,2,3,4,7,8-HxCDF	**0.0086**		0.0058	0.00050	ug/Kg	☼	08/14/19 12:31	08/19/19 17:42	1
1,2,3,6,7,8-HxCDD	**0.010**	*****	0.0058	0.00039	ug/Kg	☼	08/14/19 12:31	08/19/19 17:42	1
1,2,3,6,7,8-HxCDF	**0.0025**	**J**	0.0058	0.00055	ug/Kg	☼	08/14/19 12:31	08/19/19 17:42	1
1,2,3,7,8,9-HxCDD	**0.0031**	**J**	0.0058	0.00035	ug/Kg	☼	08/14/19 12:31	08/19/19 17:42	1
1,2,3,7,8,9-HxCDF	ND		0.0058	0.00054	ug/Kg	☼	08/14/19 12:31	08/19/19 17:42	1
1,2,3,7,8-PeCDD	**0.00071**	**J * q**	0.0058	0.00039	ug/Kg	☼	08/14/19 12:31	08/19/19 17:42	1
1,2,3,7,8-PeCDF	**0.00086**	**J ***	0.0058	0.00032	ug/Kg	☼	08/14/19 12:31	08/19/19 17:42	1
2,3,4,6,7,8-HxCDF	**0.0011**	**J**	0.0058	0.00050	ug/Kg	☼	08/14/19 12:31	08/19/19 17:42	1
2,3,4,7,8-PeCDF	**0.0014**	**J ***	0.0058	0.00035	ug/Kg	☼	08/14/19 12:31	08/19/19 17:42	1
2,3,7,8-TCDD	**0.00043**	**J * q**	0.0012	0.00019	ug/Kg	☼	08/14/19 12:31	08/19/19 17:42	1
OCDD	**2.7**	**B**	0.012	0.0011	ug/Kg	☼	08/14/19 12:31	08/19/19 17:42	1
OCDF	**0.38**		0.012	0.00050	ug/Kg	☼	08/14/19 12:31	08/19/19 17:42	1
Total HpCDD	**0.76**		0.0058	0.0016	ug/Kg	☼	08/14/19 12:31	08/19/19 17:42	1
Total HpCDF	**0.42**	*****	0.0058	0.0015	ug/Kg	☼	08/14/19 12:31	08/19/19 17:42	1
Total HxCDD	**0.084**	**q**	0.0058	0.00037	ug/Kg	☼	08/14/19 12:31	08/19/19 17:42	1
Total HxCDF	**0.13**		0.0058	0.00052	ug/Kg	☼	08/14/19 12:31	08/19/19 17:42	1
Total PeCDD	**0.0055**	**J * q**	0.0058	0.00039	ug/Kg	☼	08/14/19 12:31	08/19/19 17:42	1
Total PeCDF	**0.016**	**q**	0.0058	0.00033	ug/Kg	☼	08/14/19 12:31	08/19/19 17:42	1
Total TCDD	**0.0064**	**q**	0.0012	0.00019	ug/Kg	☼	08/14/19 12:31	08/19/19 17:42	1
Total TCDF	**0.011**	**q**	0.0012	0.00022	ug/Kg	☼	08/14/19 12:31	08/19/19 17:42	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,6,7,8-HpCDD	*58*		*23 - 140*	*08/14/19 12:31*	*08/19/19 17:42*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*58*		*28 - 143*	*08/14/19 12:31*	*08/19/19 17:42*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*64*		*26 - 138*	*08/14/19 12:31*	*08/19/19 17:42*	*1*

Client Sample ID: H2-0to30-101218
Lab Sample ID: 580-88125-12

Date Collected: 10/12/18 10:28
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 42.1

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,4,7,8-HxCDD	73		32 - 141	08/14/19 12:31	08/19/19 17:42	1
13C-1,2,3,4,7,8-HxCDF	91		26 - 152	08/14/19 12:31	08/19/19 17:42	1
13C-1,2,3,6,7,8-HxCDD	62		28 - 130	08/14/19 12:31	08/19/19 17:42	1
13C-1,2,3,6,7,8-HxCDF	80		26 - 123	08/14/19 12:31	08/19/19 17:42	1
13C-1,2,3,7,8,9-HxCDF	78		29 - 147	08/14/19 12:31	08/19/19 17:42	1
13C-1,2,3,7,8-PeCDD	71		25 - 181	08/14/19 12:31	08/19/19 17:42	1
13C-1,2,3,7,8-PeCDF	73		24 - 185	08/14/19 12:31	08/19/19 17:42	1
13C-2,3,4,6,7,8-HxCDF	78		28 - 136	08/14/19 12:31	08/19/19 17:42	1
13C-2,3,4,7,8-PeCDF	75		21 - 178	08/14/19 12:31	08/19/19 17:42	1
13C-2,3,7,8-TCDD	69		25 - 164	08/14/19 12:31	08/19/19 17:42	1
13C-2,3,7,8-TCDF	75		24 - 169	08/14/19 12:31	08/19/19 17:42	1
13C-OCDD	58		17 - 157	08/14/19 12:31	08/19/19 17:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	104		35 - 197	08/14/19 12:31	08/19/19 17:42	1

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	0.0013		0.0012	0.00015	ug/Kg	☼	08/14/19 12:31	08/21/19 05:42	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF	78		24 - 169	08/14/19 12:31	08/21/19 05:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	97		35 - 197	08/14/19 12:31	08/21/19 05:42	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	7.9		0.34	0.067	mg/Kg	☼	08/14/19 14:06	08/14/19 18:40	5
Cadmium	0.62		0.27	0.052	mg/Kg	☼	08/14/19 14:06	08/14/19 18:40	5
Copper	100		0.67	0.15	mg/Kg	☼	08/14/19 14:06	08/14/19 18:40	5
Lead	32	B	0.34	0.032	mg/Kg	☼	08/14/19 14:06	08/14/19 18:40	5
Zinc	270		3.4	1.1	mg/Kg	☼	08/14/19 14:06	08/14/19 18:40	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.16	H	0.046	0.014	mg/Kg	☼	08/14/19 10:54	08/14/19 18:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	36000	H B	2000	97	mg/Kg			08/18/19 14:26	1
Total Solids	42.1	H	0.1	0.1	%			08/13/19 17:21	1
Percent Moisture	57	H	0.10	0.10	%			08/21/19 13:20	1
Percent Solids	43	H	0.10	0.10	%			08/21/19 13:20	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	13.2	H			%			08/06/19 11:30	1
Coarse Sand	0.6	H			%			08/06/19 11:30	1
Fine Sand	42.2	H			%			08/06/19 11:30	1
Gravel	0.0	H			%			08/06/19 11:30	1
Medium Sand	3.5	H			%			08/06/19 11:30	1

Client: Pacific Groundwater Group
Job ID: 580-88125-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: H2-0to30-101218
Lab Sample ID: 580-88125-12
Date Collected: 10/12/18 10:28
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 42.1

Method: D7928/D6913 - ASTM D7928/D6913 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silt	40.5	H			%			08/06/19 11:30	1

Method: D854 - Specific Gravity

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Density	1.36		0.0100	0.0100	g/cm3			08/13/19 00:00	1
Specific Gravity	1.37		0.0100	0.0100	NONE			08/14/19 00:00	1

Client Sample ID: J2A3-0to18-101218
Lab Sample ID: 580-88125-13

Date Collected: 10/12/18 12:57
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 80.8

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.4	0.90	ug/Kg	☼	08/13/19 11:37	08/15/19 15:19	1
PCB-1221	ND		2.4	1.2	ug/Kg	☼	08/13/19 11:37	08/15/19 15:19	1
PCB-1232	ND		2.4	1.2	ug/Kg	☼	08/13/19 11:37	08/15/19 15:19	1
PCB-1242	ND		2.4	0.60	ug/Kg	☼	08/13/19 11:37	08/15/19 15:19	1
PCB-1248	ND		2.4	0.44	ug/Kg	☼	08/13/19 11:37	08/15/19 15:19	1
PCB-1254	ND		2.4	0.97	ug/Kg	☼	08/13/19 11:37	08/15/19 15:19	1
PCB-1260	**16**		2.4	0.94	ug/Kg	☼	08/13/19 11:37	08/15/19 15:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*85*		*39 - 142*	*08/13/19 11:37*	*08/15/19 15:19*	*1*
Tetrachloro-m-xylene	*85*		*35 - 129*	*08/13/19 11:37*	*08/15/19 15:19*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**16**	**J**	38	9.3	mg/Kg	☼	08/12/19 12:08	08/14/19 22:05	1
Motor Oil (>C24-C36)	**130**		38	13	mg/Kg	☼	08/12/19 12:08	08/14/19 22:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*15*	*X*	*50 - 150*	*08/12/19 12:08*	*08/14/19 22:05*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	**0.038**		0.0031	0.00032	ug/Kg	☼	08/14/19 12:31	08/19/19 18:29	1
1,2,3,4,6,7,8-HpCDF	**0.0093**	*** q**	0.0031	0.00033	ug/Kg	☼	08/14/19 12:31	08/19/19 18:29	1
1,2,3,4,7,8,9-HpCDF	ND		0.0031	0.00039	ug/Kg	☼	08/14/19 12:31	08/19/19 18:29	1
1,2,3,4,7,8-HxCDD	**0.00051**	**J**	0.0031	0.00018	ug/Kg	☼	08/14/19 12:31	08/19/19 18:29	1
1,2,3,4,7,8-HxCDF	**0.0011**	**J q**	0.0031	0.00017	ug/Kg	☼	08/14/19 12:31	08/19/19 18:29	1
1,2,3,6,7,8-HxCDD	**0.0015**	**J * q**	0.0031	0.00020	ug/Kg	☼	08/14/19 12:31	08/19/19 18:29	1
1,2,3,6,7,8-HxCDF	**0.00042**	**J**	0.0031	0.00018	ug/Kg	☼	08/14/19 12:31	08/19/19 18:29	1
1,2,3,7,8,9-HxCDD	**0.00093**	**J**	0.0031	0.00018	ug/Kg	☼	08/14/19 12:31	08/19/19 18:29	1
1,2,3,7,8,9-HxCDF	ND		0.0031	0.00020	ug/Kg	☼	08/14/19 12:31	08/19/19 18:29	1
1,2,3,7,8-PeCDD	**0.00031**	**J * q**	0.0031	0.00018	ug/Kg	☼	08/14/19 12:31	08/19/19 18:29	1
1,2,3,7,8-PeCDF	**0.00017**	**J ***	0.0031	0.00010	ug/Kg	☼	08/14/19 12:31	08/19/19 18:29	1
2,3,4,6,7,8-HxCDF	**0.00022**	**J**	0.0031	0.00018	ug/Kg	☼	08/14/19 12:31	08/19/19 18:29	1
2,3,4,7,8-PeCDF	ND	*	0.0031	0.00011	ug/Kg	☼	08/14/19 12:31	08/19/19 18:29	1
2,3,7,8-TCDD	ND	*	0.00062	0.00011	ug/Kg	☼	08/14/19 12:31	08/19/19 18:29	1
2,3,7,8-TCDF	**0.00040**	**J**	0.00062	0.000078	ug/Kg	☼	08/14/19 12:31	08/19/19 18:29	1
OCDD	**0.32**	**B**	0.0062	0.00034	ug/Kg	☼	08/14/19 12:31	08/19/19 18:29	1
OCDF	**0.032**		0.0062	0.00029	ug/Kg	☼	08/14/19 12:31	08/19/19 18:29	1
Total HpCDD	**0.086**		0.0031	0.00032	ug/Kg	☼	08/14/19 12:31	08/19/19 18:29	1
Total HpCDF	**0.038**	*** q**	0.0031	0.00036	ug/Kg	☼	08/14/19 12:31	08/19/19 18:29	1
Total HxCDD	**0.013**	**q**	0.0031	0.00019	ug/Kg	☼	08/14/19 12:31	08/19/19 18:29	1
Total HxCDF	**0.016**	**q**	0.0031	0.00018	ug/Kg	☼	08/14/19 12:31	08/19/19 18:29	1
Total PeCDD	**0.0015**	**J q**	0.0031	0.00018	ug/Kg	☼	08/14/19 12:31	08/19/19 18:29	1
Total PeCDF	**0.0028**	**J q**	0.0031	0.00010	ug/Kg	☼	08/14/19 12:31	08/19/19 18:29	1
Total TCDD	**0.00078**	**q**	0.00062	0.00011	ug/Kg	☼	08/14/19 12:31	08/19/19 18:29	1
Total TCDF	**0.0027**	**q**	0.00062	0.000078	ug/Kg	☼	08/14/19 12:31	08/19/19 18:29	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,6,7,8-HpCDD	*57*		*23 - 140*	*08/14/19 12:31*	*08/19/19 18:29*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*58*		*28 - 143*	*08/14/19 12:31*	*08/19/19 18:29*	*1*

Client Sample ID: J2A3-0to18-101218
Lab Sample ID: 580-88125-13

Date Collected: 10/12/18 12:57
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 80.8

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,4,7,8,9-HpCDF	59		26 - 138	08/14/19 12:31	08/19/19 18:29	1
13C-1,2,3,4,7,8-HxCDD	77		32 - 141	08/14/19 12:31	08/19/19 18:29	1
13C-1,2,3,4,7,8-HxCDF	101		26 - 152	08/14/19 12:31	08/19/19 18:29	1
13C-1,2,3,6,7,8-HxCDD	62		28 - 130	08/14/19 12:31	08/19/19 18:29	1
13C-1,2,3,6,7,8-HxCDF	88		26 - 123	08/14/19 12:31	08/19/19 18:29	1
13C-1,2,3,7,8,9-HxCDF	75		29 - 147	08/14/19 12:31	08/19/19 18:29	1
13C-1,2,3,7,8-PeCDD	70		25 - 181	08/14/19 12:31	08/19/19 18:29	1
13C-1,2,3,7,8-PeCDF	71		24 - 185	08/14/19 12:31	08/19/19 18:29	1
13C-2,3,4,6,7,8-HxCDF	82		28 - 136	08/14/19 12:31	08/19/19 18:29	1
13C-2,3,4,7,8-PeCDF	71		21 - 178	08/14/19 12:31	08/19/19 18:29	1
13C-2,3,7,8-TCDD	66		25 - 164	08/14/19 12:31	08/19/19 18:29	1
13C-2,3,7,8-TCDF	76		24 - 169	08/14/19 12:31	08/19/19 18:29	1
13C-OCDD	54		17 - 157	08/14/19 12:31	08/19/19 18:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	103		35 - 197	08/14/19 12:31	08/19/19 18:29	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.1		0.18	0.037	mg/Kg	☼	08/14/19 14:06	08/14/19 19:03	5
Cadmium	0.73		0.15	0.028	mg/Kg	☼	08/14/19 14:06	08/14/19 19:03	5
Copper	34		0.37	0.081	mg/Kg	☼	08/14/19 14:06	08/14/19 19:03	5
Lead	19	B	0.18	0.018	mg/Kg	☼	08/14/19 14:06	08/14/19 19:03	5
Zinc	190		1.8	0.59	mg/Kg	☼	08/14/19 14:06	08/14/19 19:03	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.024	H	0.024	0.0071	mg/Kg	☼	08/14/19 10:54	08/14/19 18:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	13000	H B	2000	97	mg/Kg			08/18/19 14:31	1
Total Solids	80.8	H	0.1	0.1	%			08/13/19 17:21	1
Percent Moisture	22	H	0.10	0.10	%			08/21/19 13:20	1
Percent Solids	78	H	0.10	0.10	%			08/21/19 13:20	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	0.0	H			%			08/06/19 11:30	1
Coarse Sand	10.3	H			%			08/06/19 11:30	1
Fine Sand	31.3	H			%			08/06/19 11:30	1
Gravel	11.0	H			%			08/06/19 11:30	1
Medium Sand	43.0	H			%			08/06/19 11:30	1
Silt	4.4	H			%			08/06/19 11:30	1

Method: D854 - Specific Gravity

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Density	1.91		0.0100	0.0100	g/cm3			08/13/19 00:00	1
Specific Gravity	1.91		0.0100	0.0100	NONE			08/14/19 00:00	1

Client Sample ID: M4-0to26-101918
Date Collected: 10/19/18 13:11
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-14
Matrix: Solid
Percent Solids: 38.4

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		4.5	1.7	ug/Kg	☼	08/13/19 11:37	08/15/19 15:36	1
PCB-1221	ND		4.5	2.2	ug/Kg	☼	08/13/19 11:37	08/15/19 15:36	1
PCB-1232	ND		4.5	2.2	ug/Kg	☼	08/13/19 11:37	08/15/19 15:36	1
PCB-1242	ND		4.5	1.1	ug/Kg	☼	08/13/19 11:37	08/15/19 15:36	1
PCB-1248	ND		4.5	0.81	ug/Kg	☼	08/13/19 11:37	08/15/19 15:36	1
PCB-1254	ND		4.5	1.8	ug/Kg	☼	08/13/19 11:37	08/15/19 15:36	1
PCB-1260	**32**	**p**	4.5	1.7	ug/Kg	☼	08/13/19 11:37	08/15/19 15:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*68*		*39 - 142*	*08/13/19 11:37*	*08/15/19 15:36*	*1*
Tetrachloro-m-xylene	*63*		*35 - 129*	*08/13/19 11:37*	*08/15/19 15:36*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**160**		81	20	mg/Kg	☼	08/12/19 12:08	08/14/19 22:28	1
Motor Oil (>C24-C36)	**600**		81	28	mg/Kg	☼	08/12/19 12:08	08/14/19 22:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*73*		*50 - 150*	*08/12/19 12:08*	*08/14/19 22:28*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	**0.72**		0.0065	0.0023	ug/Kg	☼	08/14/19 12:34	08/19/19 19:16	1
1,2,3,4,6,7,8-HpCDF	**0.21**		0.0065	0.0026	ug/Kg	☼	08/14/19 12:34	08/19/19 19:16	1
1,2,3,4,7,8,9-HpCDF	**0.014**		0.0065	0.0031	ug/Kg	☼	08/14/19 12:34	08/19/19 19:16	1
1,2,3,4,7,8-HxCDD	**0.0042**	**J B**	0.0065	0.00065	ug/Kg	☼	08/14/19 12:34	08/19/19 19:16	1
1,2,3,4,7,8-HxCDF	**0.030**		0.0065	0.0012	ug/Kg	☼	08/14/19 12:34	08/19/19 19:16	1
1,2,3,6,7,8-HxCDD	**0.027**	*	0.0065	0.00068	ug/Kg	☼	08/14/19 12:34	08/19/19 19:16	1
1,2,3,6,7,8-HxCDF	**0.0075**		0.0065	0.0013	ug/Kg	☼	08/14/19 12:34	08/19/19 19:16	1
1,2,3,7,8,9-HxCDD	**0.0082**		0.0065	0.00063	ug/Kg	☼	08/14/19 12:34	08/19/19 19:16	1
1,2,3,7,8,9-HxCDF	ND		0.0065	0.0015	ug/Kg	☼	08/14/19 12:34	08/19/19 19:16	1
1,2,3,7,8-PeCDD	**0.0019**	**J**	0.0065	0.00068	ug/Kg	☼	08/14/19 12:34	08/19/19 19:16	1
1,2,3,7,8-PeCDF	ND		0.0065	0.00065	ug/Kg	☼	08/14/19 12:34	08/19/19 19:16	1
2,3,4,6,7,8-HxCDF	**0.0032**	**J**	0.0065	0.0013	ug/Kg	☼	08/14/19 12:34	08/19/19 19:16	1
2,3,4,7,8-PeCDF	**0.0037**	**J**	0.0065	0.00073	ug/Kg	☼	08/14/19 12:34	08/19/19 19:16	1
2,3,7,8-TCDD	**0.00077**	**J q**	0.0013	0.00034	ug/Kg	☼	08/14/19 12:34	08/19/19 19:16	1
OCDD	**6.3**	**E B**	0.013	0.0023	ug/Kg	☼	08/14/19 12:34	08/19/19 19:16	1
OCDF	**0.77**		0.013	0.0011	ug/Kg	☼	08/14/19 12:34	08/19/19 19:16	1
Total HpCDD	**1.5**		0.0065	0.0023	ug/Kg	☼	08/14/19 12:34	08/19/19 19:16	1
Total HpCDF	**0.93**		0.0065	0.0029	ug/Kg	☼	08/14/19 12:34	08/19/19 19:16	1
Total HxCDD	**0.22**	**B**	0.0065	0.00065	ug/Kg	☼	08/14/19 12:34	08/19/19 19:16	1
Total HxCDF	**0.38**		0.0065	0.0013	ug/Kg	☼	08/14/19 12:34	08/19/19 19:16	1
Total PeCDD	**0.015**	**q**	0.0065	0.00068	ug/Kg	☼	08/14/19 12:34	08/19/19 19:16	1
Total PeCDF	**0.040**		0.0065	0.00069	ug/Kg	☼	08/14/19 12:34	08/19/19 19:16	1
Total TCDD	**0.012**	**q**	0.0013	0.00034	ug/Kg	☼	08/14/19 12:34	08/19/19 19:16	1
Total TCDF	**0.024**		0.0013	0.00037	ug/Kg	☼	08/14/19 12:34	08/19/19 19:16	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,6,7,8-HpCDD	*61*		*23 - 140*	*08/14/19 12:34*	*08/19/19 19:16*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*60*		*28 - 143*	*08/14/19 12:34*	*08/19/19 19:16*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*67*		*26 - 138*	*08/14/19 12:34*	*08/19/19 19:16*	*1*

Client Sample ID: M4-0to26-101918
Date Collected: 10/19/18 13:11
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-14
Matrix: Solid
Percent Solids: 38.4

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,7,8-HxCDD	*80*		*32 - 141*	*08/14/19 12:34*	*08/19/19 19:16*	*1*
13C-1,2,3,4,7,8-HxCDF	*105*		*26 - 152*	*08/14/19 12:34*	*08/19/19 19:16*	*1*
13C-1,2,3,6,7,8-HxCDD	*65*		*28 - 130*	*08/14/19 12:34*	*08/19/19 19:16*	*1*
13C-1,2,3,6,7,8-HxCDF	*90*		*26 - 123*	*08/14/19 12:34*	*08/19/19 19:16*	*1*
13C-1,2,3,7,8,9-HxCDF	*77*		*29 - 147*	*08/14/19 12:34*	*08/19/19 19:16*	*1*
13C-1,2,3,7,8-PeCDD	*72*		*25 - 181*	*08/14/19 12:34*	*08/19/19 19:16*	*1*
13C-1,2,3,7,8-PeCDF	*72*		*24 - 185*	*08/14/19 12:34*	*08/19/19 19:16*	*1*
13C-2,3,4,6,7,8-HxCDF	*82*		*28 - 136*	*08/14/19 12:34*	*08/19/19 19:16*	*1*
13C-2,3,4,7,8-PeCDF	*72*		*21 - 178*	*08/14/19 12:34*	*08/19/19 19:16*	*1*
13C-2,3,7,8-TCDD	*66*		*25 - 164*	*08/14/19 12:34*	*08/19/19 19:16*	*1*
13C-2,3,7,8-TCDF	*71*		*24 - 169*	*08/14/19 12:34*	*08/19/19 19:16*	*1*
13C-OCDD	*66*		*17 - 157*	*08/14/19 12:34*	*08/19/19 19:16*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*97*		*35 - 197*	*08/14/19 12:34*	*08/19/19 19:16*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**0.0039**		0.0013	0.00025	ug/Kg	☼	08/14/19 12:34	08/21/19 06:21	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*75*		*24 - 169*	*08/14/19 12:34*	*08/21/19 06:21*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*58*		*35 - 197*	*08/14/19 12:34*	*08/21/19 06:21*	*1*

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**11**		0.36	0.072	mg/Kg	☼	08/14/19 14:06	08/14/19 19:07	5
Cadmium	**0.68**		0.29	0.056	mg/Kg	☼	08/14/19 14:06	08/14/19 19:07	5
Copper	**160**		0.72	0.16	mg/Kg	☼	08/14/19 14:06	08/14/19 19:07	5
Lead	**57**	**B**	0.36	0.035	mg/Kg	☼	08/14/19 14:06	08/14/19 19:07	5
Zinc	**390**		3.6	1.2	mg/Kg	☼	08/14/19 14:06	08/14/19 19:07	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.29**	**H**	0.055	0.016	mg/Kg	☼	08/14/19 10:54	08/14/19 18:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	**31000**	**H B**	2000	97	mg/Kg			08/18/19 14:40	1
Total Solids	**38.4**	**H**	0.1	0.1	%			08/13/19 17:21	1
Percent Moisture	**61**	**H**	0.10	0.10	%			08/21/19 13:20	1
Percent Solids	**39**	**H**	0.10	0.10	%			08/21/19 13:20	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	**17.9**	**H**			%			08/06/19 11:30	1
Coarse Sand	**0.1**	**H**			%			08/06/19 11:30	1
Fine Sand	**23.4**	**H**			%			08/06/19 11:30	1
Gravel	**0.0**	**H**			%			08/06/19 11:30	1
Medium Sand	**2.3**	**H**			%			08/06/19 11:30	1

Client: Pacific Groundwater Group
Job ID: 580-88125-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: M4-0to26-101918
Lab Sample ID: 580-88125-14
Date Collected: 10/19/18 13:11
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 38.4

Method: D7928/D6913 - ASTM D7928/D6913 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silt	56.3	H			%			08/06/19 11:30	1

Method: D854 - Specific Gravity

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Density	1.32		0.0100	0.0100	g/cm3			08/13/19 00:00	1
Specific Gravity	1.32		0.0100	0.0100	NONE			08/14/19 00:00	1

Client Sample ID: 515-0to26-101918
Lab Sample ID: 580-88125-15
Date Collected: 10/19/18 13:11
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 38.4

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		5.0	1.9	ug/Kg	☼	08/13/19 11:37	08/15/19 15:53	1
PCB-1221	ND		5.0	2.4	ug/Kg	☼	08/13/19 11:37	08/15/19 15:53	1
PCB-1232	ND		5.0	2.4	ug/Kg	☼	08/13/19 11:37	08/15/19 15:53	1
PCB-1242	ND		5.0	1.2	ug/Kg	☼	08/13/19 11:37	08/15/19 15:53	1
PCB-1248	ND		5.0	0.91	ug/Kg	☼	08/13/19 11:37	08/15/19 15:53	1
PCB-1254	**74**		5.0	2.0	ug/Kg	☼	08/13/19 11:37	08/15/19 15:53	1
PCB-1260	ND		5.0	1.9	ug/Kg	☼	08/13/19 11:37	08/15/19 15:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*69*		*39 - 142*	*08/13/19 11:37*	*08/15/19 15:53*	*1*
Tetrachloro-m-xylene	*65*		*35 - 129*	*08/13/19 11:37*	*08/15/19 15:53*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**150**		90	22	mg/Kg	☼	08/12/19 12:08	08/14/19 22:50	1
Motor Oil (>C24-C36)	**540**		90	32	mg/Kg	☼	08/12/19 12:08	08/14/19 22:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*77*		*50 - 150*	*08/12/19 12:08*	*08/14/19 22:50*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	**0.71**		0.0063	0.0024	ug/Kg	☼	08/14/19 12:34	08/19/19 20:04	1
1,2,3,4,6,7,8-HpCDF	**0.22**		0.0063	0.0036	ug/Kg	☼	08/14/19 12:34	08/19/19 20:04	1
1,2,3,4,7,8,9-HpCDF	**0.016**		0.0063	0.0040	ug/Kg	☼	08/14/19 12:34	08/19/19 20:04	1
1,2,3,4,7,8-HxCDD	**0.0037**	**J B**	0.0063	0.00090	ug/Kg	☼	08/14/19 12:34	08/19/19 20:04	1
1,2,3,4,7,8-HxCDF	**0.030**		0.0063	0.0011	ug/Kg	☼	08/14/19 12:34	08/19/19 20:04	1
1,2,3,6,7,8-HxCDD	**0.026**	*	0.0063	0.00095	ug/Kg	☼	08/14/19 12:34	08/19/19 20:04	1
1,2,3,6,7,8-HxCDF	**0.0092**		0.0063	0.0012	ug/Kg	☼	08/14/19 12:34	08/19/19 20:04	1
1,2,3,7,8,9-HxCDD	**0.0063**		0.0063	0.00087	ug/Kg	☼	08/14/19 12:34	08/19/19 20:04	1
1,2,3,7,8,9-HxCDF	ND		0.0063	0.0014	ug/Kg	☼	08/14/19 12:34	08/19/19 20:04	1
1,2,3,7,8-PeCDD	ND		0.0063	0.0013	ug/Kg	☼	08/14/19 12:34	08/19/19 20:04	1
1,2,3,7,8-PeCDF	**0.0028**	**J**	0.0063	0.00076	ug/Kg	☼	08/14/19 12:34	08/19/19 20:04	1
2,3,4,6,7,8-HxCDF	**0.0032**	**J**	0.0063	0.0014	ug/Kg	☼	08/14/19 12:34	08/19/19 20:04	1
2,3,4,7,8-PeCDF	**0.0040**	**J**	0.0063	0.00082	ug/Kg	☼	08/14/19 12:34	08/19/19 20:04	1
2,3,7,8-TCDD	**0.00054**	**J q**	0.0013	0.00041	ug/Kg	☼	08/14/19 12:34	08/19/19 20:04	1
OCDD	**6.1**	**E B**	0.013	0.0027	ug/Kg	☼	08/14/19 12:34	08/19/19 20:04	1
OCDF	**0.78**		0.013	0.0015	ug/Kg	☼	08/14/19 12:34	08/19/19 20:04	1
Total HpCDD	**1.4**		0.0063	0.0024	ug/Kg	☼	08/14/19 12:34	08/19/19 20:04	1
Total HpCDF	**0.99**		0.0063	0.0038	ug/Kg	☼	08/14/19 12:34	08/19/19 20:04	1
Total HxCDD	**0.20**	**q B**	0.0063	0.00091	ug/Kg	☼	08/14/19 12:34	08/19/19 20:04	1
Total HxCDF	**0.37**		0.0063	0.0013	ug/Kg	☼	08/14/19 12:34	08/19/19 20:04	1
Total PeCDD	**0.011**	**q**	0.0063	0.0013	ug/Kg	☼	08/14/19 12:34	08/19/19 20:04	1
Total PeCDF	**0.049**	**q**	0.0063	0.00079	ug/Kg	☼	08/14/19 12:34	08/19/19 20:04	1
Total TCDD	**0.011**	**q**	0.0013	0.00041	ug/Kg	☼	08/14/19 12:34	08/19/19 20:04	1
Total TCDF	**0.024**		0.0013	0.00059	ug/Kg	☼	08/14/19 12:34	08/19/19 20:04	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,6,7,8-HpCDD	*49*		*23 - 140*	*08/14/19 12:34*	*08/19/19 20:04*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*47*		*28 - 143*	*08/14/19 12:34*	*08/19/19 20:04*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*54*		*26 - 138*	*08/14/19 12:34*	*08/19/19 20:04*	*1*

Client Sample ID: 515-0to26-101918
Lab Sample ID: 580-88125-15
Date Collected: 10/19/18 13:11
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 38.4

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,7,8-HxCDD	*70*		*32 - 141*	*08/14/19 12:34*	*08/19/19 20:04*	*1*
13C-1,2,3,4,7,8-HxCDF	*95*		*26 - 152*	*08/14/19 12:34*	*08/19/19 20:04*	*1*
13C-1,2,3,6,7,8-HxCDD	*54*		*28 - 130*	*08/14/19 12:34*	*08/19/19 20:04*	*1*
13C-1,2,3,6,7,8-HxCDF	*80*		*26 - 123*	*08/14/19 12:34*	*08/19/19 20:04*	*1*
13C-1,2,3,7,8,9-HxCDF	*67*		*29 - 147*	*08/14/19 12:34*	*08/19/19 20:04*	*1*
13C-1,2,3,7,8-PeCDD	*62*		*25 - 181*	*08/14/19 12:34*	*08/19/19 20:04*	*1*
13C-1,2,3,7,8-PeCDF	*64*		*24 - 185*	*08/14/19 12:34*	*08/19/19 20:04*	*1*
13C-2,3,4,6,7,8-HxCDF	*69*		*28 - 136*	*08/14/19 12:34*	*08/19/19 20:04*	*1*
13C-2,3,4,7,8-PeCDF	*67*		*21 - 178*	*08/14/19 12:34*	*08/19/19 20:04*	*1*
13C-2,3,7,8-TCDD	*58*		*25 - 164*	*08/14/19 12:34*	*08/19/19 20:04*	*1*
13C-2,3,7,8-TCDF	*65*		*24 - 169*	*08/14/19 12:34*	*08/19/19 20:04*	*1*
13C-OCDD	*56*		*17 - 157*	*08/14/19 12:34*	*08/19/19 20:04*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*98*		*35 - 197*	*08/14/19 12:34*	*08/19/19 20:04*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	0.0041		0.0013	0.00038	ug/Kg	☼	08/14/19 12:34	08/21/19 06:59	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*77*		*24 - 169*	*08/14/19 12:34*	*08/21/19 06:59*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*101*		*35 - 197*	*08/14/19 12:34*	*08/21/19 06:59*	*1*

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	14		0.35	0.069	mg/Kg	☼	08/14/19 14:06	08/14/19 19:12	5
Cadmium	0.78		0.28	0.053	mg/Kg	☼	08/14/19 14:06	08/14/19 19:12	5
Copper	170		0.69	0.15	mg/Kg	☼	08/14/19 14:06	08/14/19 19:12	5
Lead	66	B	0.35	0.033	mg/Kg	☼	08/14/19 14:06	08/14/19 19:12	5
Zinc	420		3.5	1.1	mg/Kg	☼	08/14/19 14:06	08/14/19 19:12	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.92	H	0.053	0.016	mg/Kg	☼	08/14/19 10:54	08/15/19 01:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	35000	H B	2000	97	mg/Kg			08/18/19 14:45	1
Total Solids	38.4	H	0.1	0.1	%			08/13/19 17:21	1
Percent Moisture	61	H	0.10	0.10	%			08/21/19 13:20	1
Percent Solids	39	H	0.10	0.10	%			08/21/19 13:20	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	13.5	H			%			08/06/19 11:30	1
Coarse Sand	0.1	H			%			08/06/19 11:30	1
Fine Sand	24.6	H			%			08/06/19 11:30	1
Gravel	0.0	H			%			08/06/19 11:30	1
Medium Sand	2.5	H			%			08/06/19 11:30	1

Client: Pacific Groundwater Group
Job ID: 580-88125-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: 515-0to26-101918
Lab Sample ID: 580-88125-15
Date Collected: 10/19/18 13:11
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 38.4

Method: D7928/D6913 - ASTM D7928/D6913 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silt	59.2	H			%			08/06/19 11:30	1

Method: D854 - Specific Gravity

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Density	1.32		0.0100	0.0100	g/cm3			08/13/19 00:00	1
Specific Gravity	1.33		0.0100	0.0100	NONE			08/14/19 00:00	1

Client Sample ID: N5-0to28-101418
Lab Sample ID: 580-88125-16

Date Collected: 10/14/18 16:46
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 31.4

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		6.3	2.3	ug/Kg	☼	08/13/19 11:37	08/15/19 16:10	1
PCB-1221	ND		6.3	3.0	ug/Kg	☼	08/13/19 11:37	08/15/19 16:10	1
PCB-1232	ND		6.3	3.0	ug/Kg	☼	08/13/19 11:37	08/15/19 16:10	1
PCB-1242	ND		6.3	1.6	ug/Kg	☼	08/13/19 11:37	08/15/19 16:10	1
PCB-1248	ND		6.3	1.1	ug/Kg	☼	08/13/19 11:37	08/15/19 16:10	1
PCB-1254	ND		6.3	2.5	ug/Kg	☼	08/13/19 11:37	08/15/19 16:10	1
PCB-1260	**24**		6.3	2.4	ug/Kg	☼	08/13/19 11:37	08/15/19 16:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*67*		*39 - 142*	*08/13/19 11:37*	*08/15/19 16:10*	*1*
Tetrachloro-m-xylene	*69*		*35 - 129*	*08/13/19 11:37*	*08/15/19 16:10*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**88**	**J**	120	28	mg/Kg	☼	08/12/19 12:08	08/14/19 23:13	1
Motor Oil (>C24-C36)	**360**		120	40	mg/Kg	☼	08/12/19 12:08	08/14/19 23:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*96*		*50 - 150*	*08/12/19 12:08*	*08/14/19 23:13*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	**0.53**		0.0078	0.0027	ug/Kg	☼	08/14/19 12:34	08/20/19 05:16	1
1,2,3,4,6,7,8-HpCDF	**0.18**		0.0078	0.0029	ug/Kg	☼	08/14/19 12:34	08/20/19 05:16	1
1,2,3,4,7,8,9-HpCDF	**0.0097**		0.0078	0.0035	ug/Kg	☼	08/14/19 12:34	08/20/19 05:16	1
1,2,3,4,7,8-HxCDD	**0.0025**	**J B**	0.0078	0.00048	ug/Kg	☼	08/14/19 12:34	08/20/19 05:16	1
1,2,3,4,7,8-HxCDF	**0.020**		0.0078	0.0011	ug/Kg	☼	08/14/19 12:34	08/20/19 05:16	1
1,2,3,6,7,8-HxCDD	**0.018**	*	0.0078	0.00048	ug/Kg	☼	08/14/19 12:34	08/20/19 05:16	1
1,2,3,6,7,8-HxCDF	**0.0049**	**J**	0.0078	0.0013	ug/Kg	☼	08/14/19 12:34	08/20/19 05:16	1
1,2,3,7,8,9-HxCDD	**0.0062**	**J**	0.0078	0.00045	ug/Kg	☼	08/14/19 12:34	08/20/19 05:16	1
1,2,3,7,8,9-HxCDF	ND		0.0078	0.0011	ug/Kg	☼	08/14/19 12:34	08/20/19 05:16	1
1,2,3,7,8-PeCDD	**0.00099**	**J q**	0.0078	0.00054	ug/Kg	☼	08/14/19 12:34	08/20/19 05:16	1
1,2,3,7,8-PeCDF	ND		0.0078	0.00058	ug/Kg	☼	08/14/19 12:34	08/20/19 05:16	1
2,3,4,6,7,8-HxCDF	**0.0018**	**J q**	0.0078	0.0011	ug/Kg	☼	08/14/19 12:34	08/20/19 05:16	1
2,3,4,7,8-PeCDF	**0.0021**	**J**	0.0078	0.00064	ug/Kg	☼	08/14/19 12:34	08/20/19 05:16	1
2,3,7,8-TCDD	**0.00056**	**J**	0.0016	0.00032	ug/Kg	☼	08/14/19 12:34	08/20/19 05:16	1
OCDD	**4.3**	**B**	0.016	0.0015	ug/Kg	☼	08/14/19 12:34	08/20/19 05:16	1
OCDF	**0.70**		0.016	0.00059	ug/Kg	☼	08/14/19 12:34	08/20/19 05:16	1
Total HpCDD	**1.0**		0.0078	0.0027	ug/Kg	☼	08/14/19 12:34	08/20/19 05:16	1
Total HpCDF	**0.82**		0.0078	0.0032	ug/Kg	☼	08/14/19 12:34	08/20/19 05:16	1
Total HxCDD	**0.098**	**q B**	0.0078	0.00047	ug/Kg	☼	08/14/19 12:34	08/20/19 05:16	1
Total HxCDF	**0.22**	**q**	0.0078	0.0012	ug/Kg	☼	08/14/19 12:34	08/20/19 05:16	1
Total PeCDD	**0.0067**	**J q**	0.0078	0.00054	ug/Kg	☼	08/14/19 12:34	08/20/19 05:16	1
Total PeCDF	**0.024**	**q**	0.0078	0.00061	ug/Kg	☼	08/14/19 12:34	08/20/19 05:16	1
Total TCDD	**0.0044**		0.0016	0.00032	ug/Kg	☼	08/14/19 12:34	08/20/19 05:16	1
Total TCDF	**0.0089**	**q**	0.0016	0.00036	ug/Kg	☼	08/14/19 12:34	08/20/19 05:16	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,6,7,8-HpCDD	*63*		*23 - 140*	*08/14/19 12:34*	*08/20/19 05:16*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*63*		*28 - 143*	*08/14/19 12:34*	*08/20/19 05:16*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*71*		*26 - 138*	*08/14/19 12:34*	*08/20/19 05:16*	*1*

Client Sample ID: N5-0to28-101418
Date Collected: 10/14/18 16:46
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-16
Matrix: Solid
Percent Solids: 31.4

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,4,7,8-HxCDD	69		32 - 141	08/14/19 12:34	08/20/19 05:16	1
13C-1,2,3,4,7,8-HxCDF	80		26 - 152	08/14/19 12:34	08/20/19 05:16	1
13C-1,2,3,6,7,8-HxCDD	64		28 - 130	08/14/19 12:34	08/20/19 05:16	1
13C-1,2,3,6,7,8-HxCDF	71		26 - 123	08/14/19 12:34	08/20/19 05:16	1
13C-1,2,3,7,8,9-HxCDF	75		29 - 147	08/14/19 12:34	08/20/19 05:16	1
13C-1,2,3,7,8-PeCDD	73		25 - 181	08/14/19 12:34	08/20/19 05:16	1
13C-1,2,3,7,8-PeCDF	72		24 - 185	08/14/19 12:34	08/20/19 05:16	1
13C-2,3,4,6,7,8-HxCDF	71		28 - 136	08/14/19 12:34	08/20/19 05:16	1
13C-2,3,4,7,8-PeCDF	74		21 - 178	08/14/19 12:34	08/20/19 05:16	1
13C-2,3,7,8-TCDD	67		25 - 164	08/14/19 12:34	08/20/19 05:16	1
13C-2,3,7,8-TCDF	70		24 - 169	08/14/19 12:34	08/20/19 05:16	1
13C-OCDD	64		17 - 157	08/14/19 12:34	08/20/19 05:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	96		35 - 197	08/14/19 12:34	08/20/19 05:16	1

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	0.0017		0.0016	0.00015	ug/Kg	☼	08/14/19 12:34	08/20/19 16:34	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF	75		24 - 169	08/14/19 12:34	08/20/19 16:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	88		35 - 197	08/14/19 12:34	08/20/19 16:34	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	10		0.50	0.10	mg/Kg	☼	08/14/19 14:06	08/14/19 19:16	5
Cadmium	0.53		0.40	0.077	mg/Kg	☼	08/14/19 14:06	08/14/19 19:16	5
Copper	140		1.0	0.22	mg/Kg	☼	08/14/19 14:06	08/14/19 19:16	5
Lead	44	B	0.50	0.048	mg/Kg	☼	08/14/19 14:06	08/14/19 19:16	5
Zinc	310		5.0	1.6	mg/Kg	☼	08/14/19 14:06	08/14/19 19:16	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.22	H	0.070	0.021	mg/Kg	☼	08/14/19 10:54	08/15/19 01:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	35000	H B	2000	97	mg/Kg			08/18/19 14:49	1
Total Solids	31.4	H	0.1	0.1	%			08/13/19 17:21	1
Percent Moisture	67	H	0.10	0.10	%			08/21/19 13:20	1
Percent Solids	33	H	0.10	0.10	%			08/21/19 13:20	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	19.4	H			%			08/06/19 11:30	1
Coarse Sand	0.0	H			%			08/06/19 11:30	1
Fine Sand	11.1	H			%			08/06/19 11:30	1
Gravel	0.0	H			%			08/06/19 11:30	1
Medium Sand	0.5	H			%			08/06/19 11:30	1

Client: Pacific Groundwater Group
Job ID: 580-88125-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: N5-0to28-101418
Lab Sample ID: 580-88125-16
Date Collected: 10/14/18 16:46
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 31.4

Method: D7928/D6913 - ASTM D7928/D6913 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silt	69.0	H			%			08/06/19 11:30	1

Method: D854 - Specific Gravity

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Density	1.24		0.0100	0.0100	g/cm3			08/13/19 00:00	1
Specific Gravity	1.24		0.0100	0.0100	NONE			08/14/19 00:00	1

Client Sample ID: N7-0to27-101418
Lab Sample ID: 580-88125-17

Date Collected: 10/14/18 15:10
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 34.8

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		5.5	2.0	ug/Kg	☼	08/13/19 11:37	08/15/19 16:26	1
PCB-1221	ND		5.5	2.6	ug/Kg	☼	08/13/19 11:37	08/15/19 16:26	1
PCB-1232	ND		5.5	2.6	ug/Kg	☼	08/13/19 11:37	08/15/19 16:26	1
PCB-1242	ND		5.5	1.3	ug/Kg	☼	08/13/19 11:37	08/15/19 16:26	1
PCB-1248	ND		5.5	0.99	ug/Kg	☼	08/13/19 11:37	08/15/19 16:26	1
PCB-1254	ND		5.5	2.2	ug/Kg	☼	08/13/19 11:37	08/15/19 16:26	1
PCB-1260	**37**	**p**	5.5	2.1	ug/Kg	☼	08/13/19 11:37	08/15/19 16:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*57*		*39 - 142*	*08/13/19 11:37*	*08/15/19 16:26*	*1*
Tetrachloro-m-xylene	*59*		*35 - 129*	*08/13/19 11:37*	*08/15/19 16:26*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**120**		100	24	mg/Kg	☼	08/12/19 12:08	08/14/19 23:35	1
Motor Oil (>C24-C36)	**500**		100	35	mg/Kg	☼	08/12/19 12:08	08/14/19 23:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*60*		*50 - 150*	*08/12/19 12:08*	*08/14/19 23:35*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	**0.80**		0.0072	0.0037	ug/Kg	☼	08/14/19 12:34	08/20/19 06:04	1
1,2,3,4,6,7,8-HpCDF	**0.31**		0.0072	0.0048	ug/Kg	☼	08/14/19 12:34	08/20/19 06:04	1
1,2,3,4,7,8,9-HpCDF	**0.028**		0.0072	0.0055	ug/Kg	☼	08/14/19 12:34	08/20/19 06:04	1
1,2,3,4,7,8-HxCDD	**0.0029**	**J B**	0.0072	0.0014	ug/Kg	☼	08/14/19 12:34	08/20/19 06:04	1
1,2,3,4,7,8-HxCDF	**0.069**		0.0072	0.0011	ug/Kg	☼	08/14/19 12:34	08/20/19 06:04	1
1,2,3,6,7,8-HxCDD	**0.025**	*****	0.0072	0.0015	ug/Kg	☼	08/14/19 12:34	08/20/19 06:04	1
1,2,3,6,7,8-HxCDF	**0.013**		0.0072	0.0012	ug/Kg	☼	08/14/19 12:34	08/20/19 06:04	1
1,2,3,7,8,9-HxCDD	**0.0059**	**J**	0.0072	0.0014	ug/Kg	☼	08/14/19 12:34	08/20/19 06:04	1
1,2,3,7,8,9-HxCDF	ND		0.0072	0.0010	ug/Kg	☼	08/14/19 12:34	08/20/19 06:04	1
1,2,3,7,8-PeCDD	**0.0016**	**J**	0.0072	0.00055	ug/Kg	☼	08/14/19 12:34	08/20/19 06:04	1
1,2,3,7,8-PeCDF	**0.0020**	**J q**	0.0072	0.00099	ug/Kg	☼	08/14/19 12:34	08/20/19 06:04	1
2,3,4,6,7,8-HxCDF	**0.0058**	**J**	0.0072	0.0011	ug/Kg	☼	08/14/19 12:34	08/20/19 06:04	1
2,3,4,7,8-PeCDF	**0.0060**	**J**	0.0072	0.0011	ug/Kg	☼	08/14/19 12:34	08/20/19 06:04	1
2,3,7,8-TCDD	**0.00062**	**J**	0.0014	0.00030	ug/Kg	☼	08/14/19 12:34	08/20/19 06:04	1
OCDD	**7.0**	**E B**	0.014	0.0025	ug/Kg	☼	08/14/19 12:34	08/20/19 06:04	1
OCDF	**0.73**		0.014	0.00065	ug/Kg	☼	08/14/19 12:34	08/20/19 06:04	1
Total HpCDD	**1.7**		0.0072	0.0037	ug/Kg	☼	08/14/19 12:34	08/20/19 06:04	1
Total HpCDF	**1.3**		0.0072	0.0052	ug/Kg	☼	08/14/19 12:34	08/20/19 06:04	1
Total HxCDD	**0.17**	**q B**	0.0072	0.0014	ug/Kg	☼	08/14/19 12:34	08/20/19 06:04	1
Total HxCDF	**0.55**		0.0072	0.0011	ug/Kg	☼	08/14/19 12:34	08/20/19 06:04	1
Total PeCDD	**0.011**	**q**	0.0072	0.00055	ug/Kg	☼	08/14/19 12:34	08/20/19 06:04	1
Total PeCDF	**0.056**	**q**	0.0072	0.0010	ug/Kg	☼	08/14/19 12:34	08/20/19 06:04	1
Total TCDD	**0.0061**		0.0014	0.00030	ug/Kg	☼	08/14/19 12:34	08/20/19 06:04	1
Total TCDF	**0.0083**	**q**	0.0014	0.00032	ug/Kg	☼	08/14/19 12:34	08/20/19 06:04	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,6,7,8-HpCDD	*57*		*23 - 140*	*08/14/19 12:34*	*08/20/19 06:04*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*54*		*28 - 143*	*08/14/19 12:34*	*08/20/19 06:04*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*64*		*26 - 138*	*08/14/19 12:34*	*08/20/19 06:04*	*1*

Client Sample ID: N7-0to27-101418
Date Collected: 10/14/18 15:10
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-17
Matrix: Solid
Percent Solids: 34.8

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,7,8-HxCDD	*59*		*32 - 141*	*08/14/19 12:34*	*08/20/19 06:04*	*1*
13C-1,2,3,4,7,8-HxCDF	*69*		*26 - 152*	*08/14/19 12:34*	*08/20/19 06:04*	*1*
13C-1,2,3,6,7,8-HxCDD	*55*		*28 - 130*	*08/14/19 12:34*	*08/20/19 06:04*	*1*
13C-1,2,3,6,7,8-HxCDF	*63*		*26 - 123*	*08/14/19 12:34*	*08/20/19 06:04*	*1*
13C-1,2,3,7,8,9-HxCDF	*65*		*29 - 147*	*08/14/19 12:34*	*08/20/19 06:04*	*1*
13C-1,2,3,7,8-PeCDD	*60*		*25 - 181*	*08/14/19 12:34*	*08/20/19 06:04*	*1*
13C-1,2,3,7,8-PeCDF	*61*		*24 - 185*	*08/14/19 12:34*	*08/20/19 06:04*	*1*
13C-2,3,4,6,7,8-HxCDF	*61*		*28 - 136*	*08/14/19 12:34*	*08/20/19 06:04*	*1*
13C-2,3,4,7,8-PeCDF	*62*		*21 - 178*	*08/14/19 12:34*	*08/20/19 06:04*	*1*
13C-2,3,7,8-TCDD	*57*		*25 - 164*	*08/14/19 12:34*	*08/20/19 06:04*	*1*
13C-2,3,7,8-TCDF	*58*		*24 - 169*	*08/14/19 12:34*	*08/20/19 06:04*	*1*
13C-OCDD	*59*		*17 - 157*	*08/14/19 12:34*	*08/20/19 06:04*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*91*		*35 - 197*	*08/14/19 12:34*	*08/20/19 06:04*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**0.0015**		0.0014	0.00020	ug/Kg	☼	08/14/19 12:34	08/20/19 17:12	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*62*		*24 - 169*	*08/14/19 12:34*	*08/20/19 17:12*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*82*		*35 - 197*	*08/14/19 12:34*	*08/20/19 17:12*	*1*

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**13**		0.42	0.084	mg/Kg	☼	08/14/19 14:06	08/14/19 19:21	5
Cadmium	**0.53**		0.34	0.065	mg/Kg	☼	08/14/19 14:06	08/14/19 19:21	5
Copper	**230**		0.84	0.18	mg/Kg	☼	08/14/19 14:06	08/14/19 19:21	5
Lead	**45**	**B**	0.42	0.040	mg/Kg	☼	08/14/19 14:06	08/14/19 19:21	5
Zinc	**360**		4.2	1.3	mg/Kg	☼	08/14/19 14:06	08/14/19 19:21	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.18**	**H**	0.059	0.018	mg/Kg	☼	08/14/19 10:54	08/15/19 02:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	**35000**	**H B**	2000	97	mg/Kg			08/18/19 14:54	1
Total Solids	**34.8**	**H**	0.1	0.1	%			08/13/19 17:21	1
Percent Moisture	**62**	**H**	0.10	0.10	%			08/21/19 13:20	1
Percent Solids	**38**	**H**	0.10	0.10	%			08/21/19 13:20	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	**17.6**	**H**			%			08/06/19 11:30	1
Coarse Sand	**0.5**	**H**			%			08/06/19 11:30	1
Fine Sand	**20.9**	**H**			%			08/06/19 11:30	1
Gravel	**0.0**	**H**			%			08/06/19 11:30	1
Medium Sand	**4.4**	**H**			%			08/06/19 11:30	1

Client: Pacific Groundwater Group
Job ID: 580-88125-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: N7-0to27-101418
Lab Sample ID: 580-88125-17
Date Collected: 10/14/18 15:10
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 34.8

Method: D7928/D6913 - ASTM D7928/D6913 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silt	56.7	H			%			08/06/19 11:30	1

Method: D854 - Specific Gravity

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Density	1.26		0.0100	0.0100	g/cm3			08/13/19 00:00	1
Specific Gravity	1.27		0.0100	0.0100	NONE			08/14/19 00:00	1

Client Sample ID: O7-0to27-101918
Date Collected: 10/19/18 15:36
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-18
Matrix: Solid
Percent Solids: 33.9

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		5.8	2.2	ug/Kg	☼	08/13/19 11:37	08/15/19 16:43	1
PCB-1221	ND		5.8	2.8	ug/Kg	☼	08/13/19 11:37	08/15/19 16:43	1
PCB-1232	ND		5.8	2.8	ug/Kg	☼	08/13/19 11:37	08/15/19 16:43	1
PCB-1242	ND		5.8	1.4	ug/Kg	☼	08/13/19 11:37	08/15/19 16:43	1
PCB-1248	ND		5.8	1.1	ug/Kg	☼	08/13/19 11:37	08/15/19 16:43	1
PCB-1254	**39**	**p**	5.8	2.3	ug/Kg	☼	08/13/19 11:37	08/15/19 16:43	1
PCB-1260	ND		5.8	2.2	ug/Kg	☼	08/13/19 11:37	08/15/19 16:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*54*		*39 - 142*	*08/13/19 11:37*	*08/15/19 16:43*	*1*
Tetrachloro-m-xylene	*54*		*35 - 129*	*08/13/19 11:37*	*08/15/19 16:43*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**95**	**J**	100	25	mg/Kg	☼	08/12/19 12:08	08/14/19 23:58	1
Motor Oil (>C24-C36)	**490**		100	35	mg/Kg	☼	08/12/19 12:08	08/14/19 23:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*96*		*50 - 150*	*08/12/19 12:08*	*08/14/19 23:58*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	**0.93**		0.0074	0.0047	ug/Kg	☼	08/14/19 12:34	08/20/19 06:51	1
1,2,3,4,6,7,8-HpCDF	**0.32**		0.0074	0.0055	ug/Kg	☼	08/14/19 12:34	08/20/19 06:51	1
1,2,3,4,7,8,9-HpCDF	**0.023**		0.0074	0.0066	ug/Kg	☼	08/14/19 12:34	08/20/19 06:51	1
1,2,3,4,7,8-HxCDD	**0.0039**	**J B**	0.0074	0.00063	ug/Kg	☼	08/14/19 12:34	08/20/19 06:51	1
1,2,3,4,7,8-HxCDF	**0.065**		0.0074	0.0032	ug/Kg	☼	08/14/19 12:34	08/20/19 06:51	1
1,2,3,6,7,8-HxCDD	**0.031**	*****	0.0074	0.00066	ug/Kg	☼	08/14/19 12:34	08/20/19 06:51	1
1,2,3,6,7,8-HxCDF	**0.014**		0.0074	0.0034	ug/Kg	☼	08/14/19 12:34	08/20/19 06:51	1
1,2,3,7,8,9-HxCDD	**0.0078**		0.0074	0.00061	ug/Kg	☼	08/14/19 12:34	08/20/19 06:51	1
1,2,3,7,8,9-HxCDF	ND		0.0074	0.0033	ug/Kg	☼	08/14/19 12:34	08/20/19 06:51	1
1,2,3,7,8-PeCDD	**0.0019**	**J**	0.0074	0.00091	ug/Kg	☼	08/14/19 12:34	08/20/19 06:51	1
1,2,3,7,8-PeCDF	**0.0020**	**J**	0.0074	0.0012	ug/Kg	☼	08/14/19 12:34	08/20/19 06:51	1
2,3,4,6,7,8-HxCDF	**0.0058**	**J**	0.0074	0.0031	ug/Kg	☼	08/14/19 12:34	08/20/19 06:51	1
2,3,4,7,8-PeCDF	**0.0062**	**J**	0.0074	0.0013	ug/Kg	☼	08/14/19 12:34	08/20/19 06:51	1
2,3,7,8-TCDD	**0.00066**	**J q**	0.0015	0.00036	ug/Kg	☼	08/14/19 12:34	08/20/19 06:51	1
OCDD	**7.6**	**E B**	0.015	0.0025	ug/Kg	☼	08/14/19 12:34	08/20/19 06:51	1
OCDF	**0.93**		0.015	0.00072	ug/Kg	☼	08/14/19 12:34	08/20/19 06:51	1
Total HpCDD	**2.0**		0.0074	0.0047	ug/Kg	☼	08/14/19 12:34	08/20/19 06:51	1
Total HpCDF	**1.4**		0.0074	0.0060	ug/Kg	☼	08/14/19 12:34	08/20/19 06:51	1
Total HxCDD	**0.20**	**q B**	0.0074	0.00064	ug/Kg	☼	08/14/19 12:34	08/20/19 06:51	1
Total HxCDF	**0.56**		0.0074	0.0033	ug/Kg	☼	08/14/19 12:34	08/20/19 06:51	1
Total PeCDD	**0.016**	**q**	0.0074	0.00091	ug/Kg	☼	08/14/19 12:34	08/20/19 06:51	1
Total PeCDF	**0.072**		0.0074	0.0012	ug/Kg	☼	08/14/19 12:34	08/20/19 06:51	1
Total TCDD	**0.0099**	**q**	0.0015	0.00036	ug/Kg	☼	08/14/19 12:34	08/20/19 06:51	1
Total TCDF	**0.012**		0.0015	0.00063	ug/Kg	☼	08/14/19 12:34	08/20/19 06:51	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,6,7,8-HpCDD	*60*		*23 - 140*	*08/14/19 12:34*	*08/20/19 06:51*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*57*		*28 - 143*	*08/14/19 12:34*	*08/20/19 06:51*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*66*		*26 - 138*	*08/14/19 12:34*	*08/20/19 06:51*	*1*

Client Sample ID: O7-0to27-101918
Lab Sample ID: 580-88125-18

Date Collected: 10/19/18 15:36
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 33.9

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,4,7,8-HxCDD	63		32 - 141	08/14/19 12:34	08/20/19 06:51	1
13C-1,2,3,4,7,8-HxCDF	72		26 - 152	08/14/19 12:34	08/20/19 06:51	1
13C-1,2,3,6,7,8-HxCDD	58		28 - 130	08/14/19 12:34	08/20/19 06:51	1
13C-1,2,3,6,7,8-HxCDF	66		26 - 123	08/14/19 12:34	08/20/19 06:51	1
13C-1,2,3,7,8,9-HxCDF	68		29 - 147	08/14/19 12:34	08/20/19 06:51	1
13C-1,2,3,7,8-PeCDD	63		25 - 181	08/14/19 12:34	08/20/19 06:51	1
13C-1,2,3,7,8-PeCDF	63		24 - 185	08/14/19 12:34	08/20/19 06:51	1
13C-2,3,4,6,7,8-HxCDF	65		28 - 136	08/14/19 12:34	08/20/19 06:51	1
13C-2,3,4,7,8-PeCDF	65		21 - 178	08/14/19 12:34	08/20/19 06:51	1
13C-2,3,7,8-TCDD	59		25 - 164	08/14/19 12:34	08/20/19 06:51	1
13C-2,3,7,8-TCDF	60		24 - 169	08/14/19 12:34	08/20/19 06:51	1
13C-OCDD	60		17 - 157	08/14/19 12:34	08/20/19 06:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	91		35 - 197	08/14/19 12:34	08/20/19 06:51	1

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	0.0023		0.0015	0.00024	ug/Kg	☼	08/14/19 12:34	08/20/19 17:50	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF	67		24 - 169	08/14/19 12:34	08/20/19 17:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	82		35 - 197	08/14/19 12:34	08/20/19 17:50	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	12		0.53	0.11	mg/Kg	☼	08/14/19 14:06	08/14/19 19:25	5
Cadmium	0.44		0.42	0.081	mg/Kg	☼	08/14/19 14:06	08/14/19 19:25	5
Copper	150		1.1	0.23	mg/Kg	☼	08/14/19 14:06	08/14/19 19:25	5
Lead	42	B	0.53	0.051	mg/Kg	☼	08/14/19 14:06	08/14/19 19:25	5
Zinc	300		5.3	1.7	mg/Kg	☼	08/14/19 14:06	08/14/19 19:25	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	H	0.061	0.018	mg/Kg	☼	08/14/19 10:54	08/15/19 02:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	35000	H B	2000	97	mg/Kg			08/18/19 14:58	1
Total Solids	33.9	H	0.1	0.1	%			08/13/19 17:21	1
Percent Moisture	65	H	0.10	0.10	%			08/21/19 13:20	1
Percent Solids	35	H	0.10	0.10	%			08/21/19 13:20	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	20.1	H			%			08/06/19 11:30	1
Coarse Sand	0.2	H			%			08/06/19 11:30	1
Fine Sand	20.7	H			%			08/06/19 11:30	1
Gravel	0.0	H			%			08/06/19 11:30	1
Medium Sand	3.0	H			%			08/06/19 11:30	1

Client: Pacific Groundwater Group
Job ID: 580-88125-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: O7-0to27-101918
Lab Sample ID: 580-88125-18
Date Collected: 10/19/18 15:36
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 33.9

Method: D7928/D6913 - ASTM D7928/D6913 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silt	56.0	H			%			08/06/19 11:30	1

Method: D854 - Specific Gravity

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Density	1.27		0.0100	0.0100	g/cm3			08/13/19 00:00	1
Specific Gravity	1.27		0.0100	0.0100	NONE			08/14/19 00:00	1

Client Sample ID: Q2-0to13-101818
Date Collected: 10/18/18 09:39
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-19
Matrix: Solid
Percent Solids: 68.4

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.6	0.96	ug/Kg	☼	08/13/19 11:37	08/15/19 17:00	1
PCB-1221	ND		2.6	1.2	ug/Kg	☼	08/13/19 11:37	08/15/19 17:00	1
PCB-1232	ND		2.6	1.2	ug/Kg	☼	08/13/19 11:37	08/15/19 17:00	1
PCB-1242	ND		2.6	0.64	ug/Kg	☼	08/13/19 11:37	08/15/19 17:00	1
PCB-1248	ND		2.6	0.47	ug/Kg	☼	08/13/19 11:37	08/15/19 17:00	1
PCB-1254	**1.4**	**J**	2.6	1.0	ug/Kg	☼	08/13/19 11:37	08/15/19 17:00	1
PCB-1260	ND		2.6	1.0	ug/Kg	☼	08/13/19 11:37	08/15/19 17:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*60*		*39 - 142*	*08/13/19 11:37*	*08/15/19 17:00*	*1*
Tetrachloro-m-xylene	*61*		*35 - 129*	*08/13/19 11:37*	*08/15/19 17:00*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**16**	**J**	41	10	mg/Kg	☼	08/12/19 12:08	08/15/19 00:43	1
Motor Oil (>C24-C36)	**60**		41	14	mg/Kg	☼	08/12/19 12:08	08/15/19 00:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*95*		*50 - 150*	*08/12/19 12:08*	*08/15/19 00:43*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	**0.0066**		0.0037	0.00027	ug/Kg	☼	08/14/19 12:34	08/20/19 07:39	1
1,2,3,4,6,7,8-HpCDF	**0.0015**	**J q**	0.0037	0.00024	ug/Kg	☼	08/14/19 12:34	08/20/19 07:39	1
1,2,3,4,7,8,9-HpCDF	ND		0.0037	0.00027	ug/Kg	☼	08/14/19 12:34	08/20/19 07:39	1
1,2,3,4,7,8-HxCDD	ND		0.0037	0.00017	ug/Kg	☼	08/14/19 12:34	08/20/19 07:39	1
1,2,3,4,7,8-HxCDF	**0.00014**	**J q**	0.0037	0.00012	ug/Kg	☼	08/14/19 12:34	08/20/19 07:39	1
1,2,3,6,7,8-HxCDD	**0.00025**	**J q ***	0.0037	0.00017	ug/Kg	☼	08/14/19 12:34	08/20/19 07:39	1
1,2,3,6,7,8-HxCDF	ND		0.0037	0.00013	ug/Kg	☼	08/14/19 12:34	08/20/19 07:39	1
1,2,3,7,8,9-HxCDD	ND		0.0037	0.00016	ug/Kg	☼	08/14/19 12:34	08/20/19 07:39	1
1,2,3,7,8,9-HxCDF	ND		0.0037	0.00012	ug/Kg	☼	08/14/19 12:34	08/20/19 07:39	1
1,2,3,7,8-PeCDD	ND		0.0037	0.00025	ug/Kg	☼	08/14/19 12:34	08/20/19 07:39	1
1,2,3,7,8-PeCDF	ND		0.0037	0.00014	ug/Kg	☼	08/14/19 12:34	08/20/19 07:39	1
2,3,4,6,7,8-HxCDF	ND		0.0037	0.00011	ug/Kg	☼	08/14/19 12:34	08/20/19 07:39	1
2,3,4,7,8-PeCDF	ND		0.0037	0.00015	ug/Kg	☼	08/14/19 12:34	08/20/19 07:39	1
2,3,7,8-TCDD	ND		0.00073	0.00015	ug/Kg	☼	08/14/19 12:34	08/20/19 07:39	1
2,3,7,8-TCDF	ND		0.00073	0.00012	ug/Kg	☼	08/14/19 12:34	08/20/19 07:39	1
OCDD	**0.060**	**B**	0.0073	0.00033	ug/Kg	☼	08/14/19 12:34	08/20/19 07:39	1
OCDF	**0.0063**	**J**	0.0073	0.00030	ug/Kg	☼	08/14/19 12:34	08/20/19 07:39	1
Total HpCDD	**0.014**		0.0037	0.00027	ug/Kg	☼	08/14/19 12:34	08/20/19 07:39	1
Total HpCDF	**0.0063**	**q**	0.0037	0.00025	ug/Kg	☼	08/14/19 12:34	08/20/19 07:39	1
Total HxCDD	**0.0018**	**J q B**	0.0037	0.00016	ug/Kg	☼	08/14/19 12:34	08/20/19 07:39	1
Total HxCDF	**0.0019**	**J q**	0.0037	0.00012	ug/Kg	☼	08/14/19 12:34	08/20/19 07:39	1
Total PeCDD	ND		0.0037	0.00025	ug/Kg	☼	08/14/19 12:34	08/20/19 07:39	1
Total PeCDF	**0.00032**	**J q**	0.0037	0.00014	ug/Kg	☼	08/14/19 12:34	08/20/19 07:39	1
Total TCDD	ND		0.00073	0.00015	ug/Kg	☼	08/14/19 12:34	08/20/19 07:39	1
Total TCDF	ND		0.00073	0.00012	ug/Kg	☼	08/14/19 12:34	08/20/19 07:39	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,6,7,8-HpCDD	*41*		*23 - 140*	*08/14/19 12:34*	*08/20/19 07:39*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*40*		*28 - 143*	*08/14/19 12:34*	*08/20/19 07:39*	*1*

Client Sample ID: Q2-0to13-101818
Date Collected: 10/18/18 09:39
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-19
Matrix: Solid
Percent Solids: 68.4

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,4,7,8,9-HpCDF	49		26 - 138	08/14/19 12:34	08/20/19 07:39	1
13C-1,2,3,4,7,8-HxCDD	51		32 - 141	08/14/19 12:34	08/20/19 07:39	1
13C-1,2,3,4,7,8-HxCDF	57		26 - 152	08/14/19 12:34	08/20/19 07:39	1
13C-1,2,3,6,7,8-HxCDD	48		28 - 130	08/14/19 12:34	08/20/19 07:39	1
13C-1,2,3,6,7,8-HxCDF	52		26 - 123	08/14/19 12:34	08/20/19 07:39	1
13C-1,2,3,7,8,9-HxCDF	55		29 - 147	08/14/19 12:34	08/20/19 07:39	1
13C-1,2,3,7,8-PeCDD	53		25 - 181	08/14/19 12:34	08/20/19 07:39	1
13C-1,2,3,7,8-PeCDF	54		24 - 185	08/14/19 12:34	08/20/19 07:39	1
13C-2,3,4,6,7,8-HxCDF	54		28 - 136	08/14/19 12:34	08/20/19 07:39	1
13C-2,3,4,7,8-PeCDF	58		21 - 178	08/14/19 12:34	08/20/19 07:39	1
13C-2,3,7,8-TCDD	55		25 - 164	08/14/19 12:34	08/20/19 07:39	1
13C-2,3,7,8-TCDF	58		24 - 169	08/14/19 12:34	08/20/19 07:39	1
13C-OCDD	35		17 - 157	08/14/19 12:34	08/20/19 07:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	89		35 - 197	08/14/19 12:34	08/20/19 07:39	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.7		0.26	0.052	mg/Kg	☼	08/14/19 14:06	08/14/19 19:30	5
Cadmium	0.12	J	0.21	0.040	mg/Kg	☼	08/14/19 14:06	08/14/19 19:30	5
Copper	33		0.52	0.11	mg/Kg	☼	08/14/19 14:06	08/14/19 19:30	5
Lead	14	B	0.26	0.025	mg/Kg	☼	08/14/19 14:06	08/14/19 19:30	5
Zinc	110		2.6	0.84	mg/Kg	☼	08/14/19 14:06	08/14/19 19:30	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.043	H	0.037	0.011	mg/Kg	☼	08/14/19 10:54	08/14/19 17:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	7400	H B	2000	97	mg/Kg			08/18/19 15:02	1
Total Solids	68.4	H	0.1	0.1	%			08/13/19 17:21	1
Percent Moisture	30	H	0.10	0.10	%			08/21/19 13:20	1
Percent Solids	70	H	0.10	0.10	%			08/21/19 13:20	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	6.9	H			%			08/06/19 11:30	1
Coarse Sand	2.4	H			%			08/06/19 11:30	1
Fine Sand	31.8	H			%			08/06/19 11:30	1
Gravel	2.0	H			%			08/06/19 11:30	1
Medium Sand	16.0	H			%			08/06/19 11:30	1
Silt	40.9	H			%			08/06/19 11:30	1

Method: D854 - Specific Gravity

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Density	1.76		0.0100	0.0100	g/cm3			08/13/19 00:00	1
Specific Gravity	1.76		0.0100	0.0100	NONE			08/14/19 00:00	1

Client Sample ID: Q6-0to27-102018
Date Collected: 10/20/18 09:19
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-20
Matrix: Solid
Percent Solids: 30.5

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		6.2	2.3	ug/Kg	☼	08/13/19 11:37	08/15/19 17:17	1
PCB-1221	ND		6.2	3.0	ug/Kg	☼	08/13/19 11:37	08/15/19 17:17	1
PCB-1232	ND		6.2	3.0	ug/Kg	☼	08/13/19 11:37	08/15/19 17:17	1
PCB-1242	ND		6.2	1.5	ug/Kg	☼	08/13/19 11:37	08/15/19 17:17	1
PCB-1248	ND		6.2	1.1	ug/Kg	☼	08/13/19 11:37	08/15/19 17:17	1
PCB-1254	ND		6.2	2.5	ug/Kg	☼	08/13/19 11:37	08/15/19 17:17	1
PCB-1260	**9.9**		6.2	2.4	ug/Kg	☼	08/13/19 11:37	08/15/19 17:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*53*		*39 - 142*	*08/13/19 11:37*	*08/15/19 17:17*	*1*
Tetrachloro-m-xylene	*58*		*35 - 129*	*08/13/19 11:37*	*08/15/19 17:17*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**120**		87	21	mg/Kg	☼	08/12/19 12:08	08/15/19 01:05	1
Motor Oil (>C24-C36)	**570**		87	30	mg/Kg	☼	08/12/19 12:08	08/15/19 01:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*72*		*50 - 150*	*08/12/19 12:08*	*08/15/19 01:05*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	**1.1**		0.0082	0.0061	ug/Kg	☼	08/14/19 12:34	08/20/19 08:26	1
1,2,3,4,6,7,8-HpCDF	**0.31**		0.0082	0.0063	ug/Kg	☼	08/14/19 12:34	08/20/19 08:26	1
1,2,3,4,7,8,9-HpCDF	**0.018**		0.0082	0.0074	ug/Kg	☼	08/14/19 12:34	08/20/19 08:26	1
1,2,3,4,7,8-HxCDD	**0.0052**	**J q B**	0.0082	0.00097	ug/Kg	☼	08/14/19 12:34	08/20/19 08:26	1
1,2,3,4,7,8-HxCDF	**0.043**		0.0082	0.0019	ug/Kg	☼	08/14/19 12:34	08/20/19 08:26	1
1,2,3,6,7,8-HxCDD	**0.033**	*	0.0082	0.0010	ug/Kg	☼	08/14/19 12:34	08/20/19 08:26	1
1,2,3,6,7,8-HxCDF	**0.012**		0.0082	0.0021	ug/Kg	☼	08/14/19 12:34	08/20/19 08:26	1
1,2,3,7,8,9-HxCDD	**0.0088**		0.0082	0.00094	ug/Kg	☼	08/14/19 12:34	08/20/19 08:26	1
1,2,3,7,8,9-HxCDF	ND		0.0082	0.0020	ug/Kg	☼	08/14/19 12:34	08/20/19 08:26	1
1,2,3,7,8-PeCDD	ND		0.0082	0.0011	ug/Kg	☼	08/14/19 12:34	08/20/19 08:26	1
1,2,3,7,8-PeCDF	**0.0016**	**J q**	0.0082	0.0011	ug/Kg	☼	08/14/19 12:34	08/20/19 08:26	1
2,3,4,6,7,8-HxCDF	**0.0046**	**J**	0.0082	0.0019	ug/Kg	☼	08/14/19 12:34	08/20/19 08:26	1
2,3,4,7,8-PeCDF	**0.0047**	**J**	0.0082	0.0012	ug/Kg	☼	08/14/19 12:34	08/20/19 08:26	1
2,3,7,8-TCDD	**0.0010**	**J q**	0.0016	0.00037	ug/Kg	☼	08/14/19 12:34	08/20/19 08:26	1
OCDD	**7.9**	**E B**	0.016	0.0028	ug/Kg	☼	08/14/19 12:34	08/20/19 08:26	1
OCDF	**1.2**		0.016	0.00084	ug/Kg	☼	08/14/19 12:34	08/20/19 08:26	1
Total HpCDD	**2.5**		0.0082	0.0061	ug/Kg	☼	08/14/19 12:34	08/20/19 08:26	1
Total HpCDF	**1.5**		0.0082	0.0068	ug/Kg	☼	08/14/19 12:34	08/20/19 08:26	1
Total HxCDD	**0.25**	**q B**	0.0082	0.00098	ug/Kg	☼	08/14/19 12:34	08/20/19 08:26	1
Total HxCDF	**0.45**		0.0082	0.0020	ug/Kg	☼	08/14/19 12:34	08/20/19 08:26	1
Total PeCDD	**0.012**	**q**	0.0082	0.0011	ug/Kg	☼	08/14/19 12:34	08/20/19 08:26	1
Total PeCDF	**0.059**	**q**	0.0082	0.0011	ug/Kg	☼	08/14/19 12:34	08/20/19 08:26	1
Total TCDD	**0.012**	**q**	0.0016	0.00037	ug/Kg	☼	08/14/19 12:34	08/20/19 08:26	1
Total TCDF	**0.015**	**q**	0.0016	0.00055	ug/Kg	☼	08/14/19 12:34	08/20/19 08:26	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,6,7,8-HpCDD	*57*		*23 - 140*	*08/14/19 12:34*	*08/20/19 08:26*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*54*		*28 - 143*	*08/14/19 12:34*	*08/20/19 08:26*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*63*		*26 - 138*	*08/14/19 12:34*	*08/20/19 08:26*	*1*

Client Sample ID: Q6-0to27-102018
Date Collected: 10/20/18 09:19
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-20
Matrix: Solid
Percent Solids: 30.5

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,4,7,8-HxCDD	58		32 - 141	08/14/19 12:34	08/20/19 08:26	1
13C-1,2,3,4,7,8-HxCDF	70		26 - 152	08/14/19 12:34	08/20/19 08:26	1
13C-1,2,3,6,7,8-HxCDD	58		28 - 130	08/14/19 12:34	08/20/19 08:26	1
13C-1,2,3,6,7,8-HxCDF	63		26 - 123	08/14/19 12:34	08/20/19 08:26	1
13C-1,2,3,7,8,9-HxCDF	64		29 - 147	08/14/19 12:34	08/20/19 08:26	1
13C-1,2,3,7,8-PeCDD	61		25 - 181	08/14/19 12:34	08/20/19 08:26	1
13C-1,2,3,7,8-PeCDF	62		24 - 185	08/14/19 12:34	08/20/19 08:26	1
13C-2,3,4,6,7,8-HxCDF	62		28 - 136	08/14/19 12:34	08/20/19 08:26	1
13C-2,3,4,7,8-PeCDF	64		21 - 178	08/14/19 12:34	08/20/19 08:26	1
13C-2,3,7,8-TCDD	59		25 - 164	08/14/19 12:34	08/20/19 08:26	1
13C-2,3,7,8-TCDF	62		24 - 169	08/14/19 12:34	08/20/19 08:26	1
13C-OCDD	58		17 - 157	08/14/19 12:34	08/20/19 08:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	96		35 - 197	08/14/19 12:34	08/20/19 08:26	1

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	0.0024		0.0016	0.00024	ug/Kg	☼	08/14/19 12:34	08/20/19 18:29	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF	72		24 - 169	08/14/19 12:34	08/20/19 18:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	92		35 - 197	08/14/19 12:34	08/20/19 18:29	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	9.4		0.55	0.11	mg/Kg	☼	08/14/19 14:06	08/14/19 19:34	5
Cadmium	0.44		0.44	0.085	mg/Kg	☼	08/14/19 14:06	08/14/19 19:34	5
Copper	120		1.1	0.24	mg/Kg	☼	08/14/19 14:06	08/14/19 19:34	5
Lead	36	B	0.55	0.053	mg/Kg	☼	08/14/19 14:06	08/14/19 19:34	5
Zinc	280		5.5	1.8	mg/Kg	☼	08/14/19 14:06	08/14/19 19:34	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.16	H	0.060	0.018	mg/Kg	☼	08/14/19 10:54	08/14/19 17:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	39000	H B	2000	97	mg/Kg			08/18/19 15:07	1
Total Solids	30.5	H	0.1	0.1	%			08/13/19 17:21	1
Percent Moisture	69	H	0.10	0.10	%			08/21/19 13:20	1
Percent Solids	31	H	0.10	0.10	%			08/21/19 13:20	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	19.4	H			%			08/06/19 11:30	1
Coarse Sand	0.2	H			%			08/06/19 11:30	1
Fine Sand	10.1	H			%			08/06/19 11:30	1
Gravel	0.0	H			%			08/06/19 11:30	1
Medium Sand	0.3	H			%			08/06/19 11:30	1

Client: Pacific Groundwater Group
Job ID: 580-88125-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: Q6-0to27-102018
Lab Sample ID: 580-88125-20
Date Collected: 10/20/18 09:19
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 30.5

Method: D7928/D6913 - ASTM D7928/D6913 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silt	70.0	H			%			08/06/19 11:30	1

Method: D854 - Specific Gravity

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Density	1.24		0.0100	0.0100	g/cm3			08/13/19 00:00	1
Specific Gravity	1.24		0.0100	0.0100	NONE			08/14/19 00:00	1

Client Sample ID: T6-0to29-101618
Lab Sample ID: 580-88125-21

Date Collected: 10/16/18 14:38
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 32.5

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		5.8	2.1	ug/Kg	☼	08/13/19 11:37	08/15/19 17:33	1
PCB-1221	ND		5.8	2.7	ug/Kg	☼	08/13/19 11:37	08/15/19 17:33	1
PCB-1232	ND		5.8	2.7	ug/Kg	☼	08/13/19 11:37	08/15/19 17:33	1
PCB-1242	ND		5.8	1.4	ug/Kg	☼	08/13/19 11:37	08/15/19 17:33	1
PCB-1248	ND		5.8	1.0	ug/Kg	☼	08/13/19 11:37	08/15/19 17:33	1
PCB-1254	ND		5.8	2.3	ug/Kg	☼	08/13/19 11:37	08/15/19 17:33	1
PCB-1260	**17**		5.8	2.2	ug/Kg	☼	08/13/19 11:37	08/15/19 17:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*53*		*39 - 142*	*08/13/19 11:37*	*08/15/19 17:33*	*1*
Tetrachloro-m-xylene	*54*		*35 - 129*	*08/13/19 11:37*	*08/15/19 17:33*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**140**		91	22	mg/Kg	☼	08/12/19 12:08	08/15/19 01:28	1
Motor Oil (>C24-C36)	**660**		91	32	mg/Kg	☼	08/12/19 12:08	08/15/19 01:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*86*		*50 - 150*	*08/12/19 12:08*	*08/15/19 01:28*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	**0.39**		0.0076	0.0024	ug/Kg	☼	08/14/19 12:34	08/20/19 09:14	1
1,2,3,4,6,7,8-HpCDF	**0.10**		0.0076	0.0022	ug/Kg	☼	08/14/19 12:34	08/20/19 09:14	1
1,2,3,4,7,8,9-HpCDF	**0.0071**	**J**	0.0076	0.0026	ug/Kg	☼	08/14/19 12:34	08/20/19 09:14	1
1,2,3,4,7,8-HxCDD	**0.0028**	**J B**	0.0076	0.00052	ug/Kg	☼	08/14/19 12:34	08/20/19 09:14	1
1,2,3,4,7,8-HxCDF	**0.017**		0.0076	0.00084	ug/Kg	☼	08/14/19 12:34	08/20/19 09:14	1
1,2,3,6,7,8-HxCDD	**0.013**	*****	0.0076	0.00058	ug/Kg	☼	08/14/19 12:34	08/20/19 09:14	1
1,2,3,6,7,8-HxCDF	**0.0050**	**J**	0.0076	0.00088	ug/Kg	☼	08/14/19 12:34	08/20/19 09:14	1
1,2,3,7,8,9-HxCDD	**0.0063**	**J**	0.0076	0.00052	ug/Kg	☼	08/14/19 12:34	08/20/19 09:14	1
1,2,3,7,8,9-HxCDF	ND		0.0076	0.00082	ug/Kg	☼	08/14/19 12:34	08/20/19 09:14	1
1,2,3,7,8-PeCDD	**0.0014**	**J**	0.0076	0.00053	ug/Kg	☼	08/14/19 12:34	08/20/19 09:14	1
1,2,3,7,8-PeCDF	ND		0.0076	0.00073	ug/Kg	☼	08/14/19 12:34	08/20/19 09:14	1
2,3,4,6,7,8-HxCDF	**0.0024**	**J**	0.0076	0.00079	ug/Kg	☼	08/14/19 12:34	08/20/19 09:14	1
2,3,4,7,8-PeCDF	**0.0025**	**J**	0.0076	0.00078	ug/Kg	☼	08/14/19 12:34	08/20/19 09:14	1
2,3,7,8-TCDD	**0.00040**	**J q**	0.0015	0.00032	ug/Kg	☼	08/14/19 12:34	08/20/19 09:14	1
OCDD	**3.2**	**B**	0.015	0.0014	ug/Kg	☼	08/14/19 12:34	08/20/19 09:14	1
OCDF	**0.33**		0.015	0.00052	ug/Kg	☼	08/14/19 12:34	08/20/19 09:14	1
Total HpCDD	**0.86**		0.0076	0.0024	ug/Kg	☼	08/14/19 12:34	08/20/19 09:14	1
Total HpCDF	**0.45**		0.0076	0.0024	ug/Kg	☼	08/14/19 12:34	08/20/19 09:14	1
Total HxCDD	**0.10**	**B**	0.0076	0.00054	ug/Kg	☼	08/14/19 12:34	08/20/19 09:14	1
Total HxCDF	**0.17**	**q**	0.0076	0.00083	ug/Kg	☼	08/14/19 12:34	08/20/19 09:14	1
Total PeCDD	**0.011**	**q**	0.0076	0.00053	ug/Kg	☼	08/14/19 12:34	08/20/19 09:14	1
Total PeCDF	**0.030**		0.0076	0.00075	ug/Kg	☼	08/14/19 12:34	08/20/19 09:14	1
Total TCDD	**0.0072**	**q**	0.0015	0.00032	ug/Kg	☼	08/14/19 12:34	08/20/19 09:14	1
Total TCDF	**0.014**	**q**	0.0015	0.00028	ug/Kg	☼	08/14/19 12:34	08/20/19 09:14	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,6,7,8-HpCDD	*54*		*23 - 140*	*08/14/19 12:34*	*08/20/19 09:14*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*52*		*28 - 143*	*08/14/19 12:34*	*08/20/19 09:14*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*62*		*26 - 138*	*08/14/19 12:34*	*08/20/19 09:14*	*1*

Client Sample ID: T6-0to29-101618
Lab Sample ID: 580-88125-21

Date Collected: 10/16/18 14:38
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 32.5

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,7,8-HxCDD	*59*		*32 - 141*	*08/14/19 12:34*	*08/20/19 09:14*	*1*
13C-1,2,3,4,7,8-HxCDF	*70*		*26 - 152*	*08/14/19 12:34*	*08/20/19 09:14*	*1*
13C-1,2,3,6,7,8-HxCDD	*58*		*28 - 130*	*08/14/19 12:34*	*08/20/19 09:14*	*1*
13C-1,2,3,6,7,8-HxCDF	*63*		*26 - 123*	*08/14/19 12:34*	*08/20/19 09:14*	*1*
13C-1,2,3,7,8,9-HxCDF	*66*		*29 - 147*	*08/14/19 12:34*	*08/20/19 09:14*	*1*
13C-1,2,3,7,8-PeCDD	*62*		*25 - 181*	*08/14/19 12:34*	*08/20/19 09:14*	*1*
13C-1,2,3,7,8-PeCDF	*63*		*24 - 185*	*08/14/19 12:34*	*08/20/19 09:14*	*1*
13C-2,3,4,6,7,8-HxCDF	*63*		*28 - 136*	*08/14/19 12:34*	*08/20/19 09:14*	*1*
13C-2,3,4,7,8-PeCDF	*65*		*21 - 178*	*08/14/19 12:34*	*08/20/19 09:14*	*1*
13C-2,3,7,8-TCDD	*61*		*25 - 164*	*08/14/19 12:34*	*08/20/19 09:14*	*1*
13C-2,3,7,8-TCDF	*63*		*24 - 169*	*08/14/19 12:34*	*08/20/19 09:14*	*1*
13C-OCDD	*52*		*17 - 157*	*08/14/19 12:34*	*08/20/19 09:14*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*93*		*35 - 197*	*08/14/19 12:34*	*08/20/19 09:14*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	0.0020		0.0015	0.00019	ug/Kg	☼	08/14/19 12:34	08/20/19 19:07	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*66*		*24 - 169*	*08/14/19 12:34*	*08/20/19 19:07*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*84*		*35 - 197*	*08/14/19 12:34*	*08/20/19 19:07*	*1*

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	10		0.51	0.10	mg/Kg	☼	08/14/19 14:13	08/14/19 19:39	5
Cadmium	0.46		0.41	0.078	mg/Kg	☼	08/14/19 14:13	08/14/19 19:39	5
Copper	150		1.0	0.22	mg/Kg	☼	08/14/19 14:13	08/14/19 19:39	5
Lead	39	B	0.51	0.049	mg/Kg	☼	08/14/19 14:13	08/14/19 19:39	5
Zinc	310		5.1	1.6	mg/Kg	☼	08/14/19 14:13	08/14/19 19:39	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.25	H	0.071	0.021	mg/Kg	☼	08/14/19 10:54	08/14/19 17:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	36000	H	2000	97	mg/Kg			08/18/19 15:23	1
Total Solids	32.5	H	0.1	0.1	%			08/13/19 17:21	1
Percent Moisture	67	H	0.10	0.10	%			08/21/19 13:20	1
Percent Solids	33	H	0.10	0.10	%			08/21/19 13:20	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	16.3	H			%			08/06/19 11:30	1
Coarse Sand	0.5	H			%			08/06/19 11:30	1
Fine Sand	9.2	H			%			08/06/19 11:30	1
Gravel	0.0	H			%			08/06/19 11:30	1
Medium Sand	1.6	H			%			08/06/19 11:30	1

Client: Pacific Groundwater Group
Job ID: 580-88125-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: T6-0to29-101618
Lab Sample ID: 580-88125-21
Date Collected: 10/16/18 14:38
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 32.5

Method: D7928/D6913 - ASTM D7928/D6913 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silt	72.4	H			%			08/06/19 11:30	1

Method: D854 - Specific Gravity

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Density	1.25		0.0100	0.0100	g/cm3			08/13/19 00:00	1
Specific Gravity	1.25		0.0100	0.0100	NONE			08/14/19 00:00	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 580-308204/1-A
Matrix: Solid
Analysis Batch: 308462

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 308204

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.0	0.74	ug/Kg		08/13/19 10:43	08/15/19 22:19	1
PCB-1221	ND		2.0	0.95	ug/Kg		08/13/19 10:43	08/15/19 22:19	1
PCB-1232	ND		2.0	0.95	ug/Kg		08/13/19 10:43	08/15/19 22:19	1
PCB-1242	ND		2.0	0.49	ug/Kg		08/13/19 10:43	08/15/19 22:19	1
PCB-1248	ND		2.0	0.36	ug/Kg		08/13/19 10:43	08/15/19 22:19	1
PCB-1254	ND		2.0	0.79	ug/Kg		08/13/19 10:43	08/15/19 22:19	1
PCB-1260	ND		2.0	0.77	ug/Kg		08/13/19 10:43	08/15/19 22:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*81*		*39 - 142*	*08/13/19 10:43*	*08/15/19 22:19*	*1*
Tetrachloro-m-xylene	*69*		*35 - 129*	*08/13/19 10:43*	*08/15/19 22:19*	*1*

Lab Sample ID: LCS 580-308204/2-A
Matrix: Solid
Analysis Batch: 308462

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 308204

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
PCB-1016			50.0	41.5		ug/Kg		83	41 - 138		
PCB-1260			50.0	42.9		ug/Kg		86	47 - 142		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*78*		*39 - 142*
Tetrachloro-m-xylene	*73*		*35 - 129*

Lab Sample ID: 580-88125-1 MS
Matrix: Solid
Analysis Batch: 308462

Client Sample ID: A1-0to30-102018
Prep Type: Total/NA
Prep Batch: 308204

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
PCB-1016	ND		81.9	58.9		ug/Kg	☼	72	41 - 138		
PCB-1260	ND		81.9	60.2		ug/Kg	☼	73	47 - 142		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*63*		*39 - 142*
Tetrachloro-m-xylene	*59*		*35 - 129*

Lab Sample ID: 580-88125-1 MSD
Matrix: Solid
Analysis Batch: 308462

Client Sample ID: A1-0to30-102018
Prep Type: Total/NA
Prep Batch: 308204

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	ND		83.7	63.9		ug/Kg	☼	76	41 - 138	8	21
PCB-1260	ND		83.7	60.4		ug/Kg	☼	72	47 - 142	0	19

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*63*		*39 - 142*
Tetrachloro-m-xylene	*62*		*35 - 129*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: MB 580-308212/1-A
Matrix: Solid
Analysis Batch: 308439

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 308212

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.0	0.74	ug/Kg		08/13/19 11:37	08/15/19 13:39	1
PCB-1221	ND		2.0	0.95	ug/Kg		08/13/19 11:37	08/15/19 13:39	1
PCB-1232	ND		2.0	0.95	ug/Kg		08/13/19 11:37	08/15/19 13:39	1
PCB-1242	ND		2.0	0.49	ug/Kg		08/13/19 11:37	08/15/19 13:39	1
PCB-1248	ND		2.0	0.36	ug/Kg		08/13/19 11:37	08/15/19 13:39	1
PCB-1254	ND		2.0	0.79	ug/Kg		08/13/19 11:37	08/15/19 13:39	1
PCB-1260	ND		2.0	0.77	ug/Kg		08/13/19 11:37	08/15/19 13:39	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*79*		*39 - 142*	*08/13/19 11:37*	*08/15/19 13:39*	*1*
Tetrachloro-m-xylene	*70*		*35 - 129*	*08/13/19 11:37*	*08/15/19 13:39*	*1*

Lab Sample ID: LCS 580-308212/2-A
Matrix: Solid
Analysis Batch: 308439

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 308212

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
PCB-1016			50.0	40.9		ug/Kg		82	41 - 138		
PCB-1260			50.0	44.2		ug/Kg		88	47 - 142		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*76*		*39 - 142*
Tetrachloro-m-xylene	*67*		*35 - 129*

Lab Sample ID: 580-88125-11 MS
Matrix: Solid
Analysis Batch: 308439

Client Sample ID: G6-0to27-101818
Prep Type: Total/NA
Prep Batch: 308212

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
PCB-1016	ND	F2	151	96.5		ug/Kg	☼	64	41 - 138		
PCB-1260	86	F2 F1 p	151	529	E F1 p	ug/Kg	☼	293	47 - 142		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*63*		*39 - 142*
Tetrachloro-m-xylene	*63*		*35 - 129*

Lab Sample ID: 580-88125-11 MSD
Matrix: Solid
Analysis Batch: 308439

Client Sample ID: G6-0to27-101818
Prep Type: Total/NA
Prep Batch: 308212

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	ND		150	120		ug/Kg	☼	80	41 - 138	3	21
PCB-1260	86	F2 F1 p	150	91.2	p F2 F1	ug/Kg	☼	3	47 - 142	141	19

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*61*		*39 - 142*
Tetrachloro-m-xylene	*65*		*35 - 129*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-308116/1-A
Client Sample ID: Method Blank
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 308360
Prep Batch: 308116

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg		08/12/19 12:08	08/14/19 16:29	1
Motor Oil (>C24-C36)	ND		50	18	mg/Kg		08/12/19 12:08	08/14/19 16:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*102*		*50 - 150*	*08/12/19 12:08*	*08/14/19 16:29*	*1*

Lab Sample ID: LCS 580-308116/2-A
Client Sample ID: Lab Control Sample
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 308360
Prep Batch: 308116

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
#2 Diesel (C10-C24)	500	516		mg/Kg		103	70 - 125
Motor Oil (>C24-C36)	500	509		mg/Kg		102	70 - 129

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*116*		*50 - 150*

Lab Sample ID: LCSD 580-308116/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 308360
Prep Batch: 308116

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	500	507		mg/Kg		101	70 - 125	2	16
Motor Oil (>C24-C36)	500	504		mg/Kg		101	70 - 129	1	16

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*122*		*50 - 150*

Lab Sample ID: 580-88125-10 MS
Client Sample ID: F2-0to19-101018
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 308360
Prep Batch: 308116

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
#2 Diesel (C10-C24)	54		439	461		mg/Kg	☼	93	70 - 125
Motor Oil (>C24-C36)	210		439	661		mg/Kg	☼	102	70 - 129

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
o-Terphenyl	*100*		*50 - 150*

Lab Sample ID: 580-88125-10 MSD
Client Sample ID: F2-0to19-101018
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 308360
Prep Batch: 308116

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	54		448	488		mg/Kg	☼	97	70 - 125	6	16
Motor Oil (>C24-C36)	210		448	766		mg/Kg	☼	123	70 - 129	15	16

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: 580-88125-10 MSD
Matrix: Solid
Analysis Batch: 308360

Client Sample ID: F2-0to19-101018
Prep Type: Total/NA
Prep Batch: 308116

Surrogate	MSD %Recovery	MSD Qualifier	Limits
o-Terphenyl	121		50 - 150

Lab Sample ID: MB 580-308184/1-A
Matrix: Solid
Analysis Batch: 308457

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 308184

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg		08/13/19 09:11	08/15/19 13:11	1
Motor Oil (>C24-C36)	ND		50	18	mg/Kg		08/13/19 09:11	08/15/19 13:11	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	114		50 - 150	08/13/19 09:11	08/15/19 13:11	1

Lab Sample ID: LCS 580-308184/2-A
Matrix: Solid
Analysis Batch: 308457

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 308184

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
#2 Diesel (C10-C24)	500	522		mg/Kg		104	70 - 125
Motor Oil (>C24-C36)	500	530		mg/Kg		106	70 - 129

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	107		50 - 150

Lab Sample ID: LCSD 580-308184/3-A
Matrix: Solid
Analysis Batch: 308457

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 308184

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	500	570		mg/Kg		114	70 - 125	9	16
Motor Oil (>C24-C36)	500	577		mg/Kg		115	70 - 129	9	16

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
o-Terphenyl	92		50 - 150

Lab Sample ID: 580-88125-11 DU
Matrix: Solid
Analysis Batch: 308457

Client Sample ID: G6-0to27-101818
Prep Type: Total/NA
Prep Batch: 308184

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
#2 Diesel (C10-C24)	140		137	J	mg/Kg	☼	4	35
Motor Oil (>C24-C36)	640		615		mg/Kg	☼	3	35

Surrogate	DU %Recovery	DU Qualifier	Limits
o-Terphenyl	105		50 - 150

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-315077/1-A
Matrix: Solid
Analysis Batch: 316206

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 315077

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	ND		0.0050	0.00015	ug/Kg		08/14/19 12:31	08/17/19 03:36	1
1,2,3,4,6,7,8-HpCDF	ND		0.0050	0.00015	ug/Kg		08/14/19 12:31	08/17/19 03:36	1
1,2,3,4,7,8,9-HpCDF	ND		0.0050	0.00020	ug/Kg		08/14/19 12:31	08/17/19 03:36	1
1,2,3,4,7,8-HxCDD	ND		0.0050	0.00013	ug/Kg		08/14/19 12:31	08/17/19 03:36	1
1,2,3,4,7,8-HxCDF	ND		0.0050	0.000071	ug/Kg		08/14/19 12:31	08/17/19 03:36	1
1,2,3,6,7,8-HxCDD	ND		0.0050	0.00014	ug/Kg		08/14/19 12:31	08/17/19 03:36	1
1,2,3,6,7,8-HxCDF	ND		0.0050	0.000080	ug/Kg		08/14/19 12:31	08/17/19 03:36	1
1,2,3,7,8,9-HxCDD	ND		0.0050	0.00013	ug/Kg		08/14/19 12:31	08/17/19 03:36	1
1,2,3,7,8,9-HxCDF	ND		0.0050	0.000085	ug/Kg		08/14/19 12:31	08/17/19 03:36	1
1,2,3,7,8-PeCDD	ND		0.0050	0.00022	ug/Kg		08/14/19 12:31	08/17/19 03:36	1
1,2,3,7,8-PeCDF	ND		0.0050	0.00016	ug/Kg		08/14/19 12:31	08/17/19 03:36	1
2,3,4,6,7,8-HxCDF	ND		0.0050	0.000071	ug/Kg		08/14/19 12:31	08/17/19 03:36	1
2,3,4,7,8-PeCDF	ND		0.0050	0.00018	ug/Kg		08/14/19 12:31	08/17/19 03:36	1
2,3,7,8-TCDD	ND		0.0010	0.00019	ug/Kg		08/14/19 12:31	08/17/19 03:36	1
2,3,7,8-TCDF	ND		0.0010	0.00014	ug/Kg		08/14/19 12:31	08/17/19 03:36	1
OCDD	0.000897	J	0.010	0.00016	ug/Kg		08/14/19 12:31	08/17/19 03:36	1
OCDF	ND		0.010	0.00024	ug/Kg		08/14/19 12:31	08/17/19 03:36	1
Total HpCDD	ND		0.0050	0.00018	ug/Kg		08/14/19 12:31	08/17/19 03:36	1
Total HpCDF	ND		0.0050	0.00020	ug/Kg		08/14/19 12:31	08/17/19 03:36	1
Total HxCDD	ND		0.0050	0.00014	ug/Kg		08/14/19 12:31	08/17/19 03:36	1
Total HxCDF	ND		0.0050	0.000085	ug/Kg		08/14/19 12:31	08/17/19 03:36	1
Total PeCDD	ND		0.0050	0.00022	ug/Kg		08/14/19 12:31	08/17/19 03:36	1
Total PeCDF	ND		0.0050	0.00021	ug/Kg		08/14/19 12:31	08/17/19 03:36	1
Total TCDD	ND		0.0010	0.00019	ug/Kg		08/14/19 12:31	08/17/19 03:36	1
Total TCDF	ND		0.0010	0.00014	ug/Kg		08/14/19 12:31	08/17/19 03:36	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,6,7,8-HpCDD	*76*		*23 - 140*	*08/14/19 12:31*	*08/17/19 03:36*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*85*		*28 - 143*	*08/14/19 12:31*	*08/17/19 03:36*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*83*		*26 - 138*	*08/14/19 12:31*	*08/17/19 03:36*	*1*
13C-1,2,3,4,7,8-HxCDD	*94*		*32 - 141*	*08/14/19 12:31*	*08/17/19 03:36*	*1*
13C-1,2,3,4,7,8-HxCDF	*108*		*26 - 152*	*08/14/19 12:31*	*08/17/19 03:36*	*1*
13C-1,2,3,6,7,8-HxCDD	*85*		*28 - 130*	*08/14/19 12:31*	*08/17/19 03:36*	*1*
13C-1,2,3,6,7,8-HxCDF	*99*		*26 - 123*	*08/14/19 12:31*	*08/17/19 03:36*	*1*
13C-1,2,3,7,8,9-HxCDF	*92*		*29 - 147*	*08/14/19 12:31*	*08/17/19 03:36*	*1*
13C-1,2,3,7,8-PeCDD	*70*		*25 - 181*	*08/14/19 12:31*	*08/17/19 03:36*	*1*
13C-1,2,3,7,8-PeCDF	*71*		*24 - 185*	*08/14/19 12:31*	*08/17/19 03:36*	*1*
13C-2,3,4,6,7,8-HxCDF	*98*		*28 - 136*	*08/14/19 12:31*	*08/17/19 03:36*	*1*
13C-2,3,4,7,8-PeCDF	*68*		*21 - 178*	*08/14/19 12:31*	*08/17/19 03:36*	*1*
13C-2,3,7,8-TCDD	*64*		*25 - 164*	*08/14/19 12:31*	*08/17/19 03:36*	*1*
13C-2,3,7,8-TCDF	*73*		*24 - 169*	*08/14/19 12:31*	*08/17/19 03:36*	*1*
13C-OCDD	*71*		*17 - 157*	*08/14/19 12:31*	*08/17/19 03:36*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*93*		*35 - 197*	*08/14/19 12:31*	*08/17/19 03:36*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-315077/2-A
Matrix: Solid
Analysis Batch: 316206

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 315077

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2,3,4,6,7,8-HpCDD			0.100	0.108		ug/Kg		108	70 - 140		
1,2,3,4,6,7,8-HpCDF			0.100	0.108		ug/Kg		108	82 - 122		
1,2,3,4,7,8,9-HpCDF			0.100	0.107		ug/Kg		107	78 - 138		
1,2,3,4,7,8-HxCDD			0.100	0.105		ug/Kg		105	70 - 164		
1,2,3,4,7,8-HxCDF			0.100	0.0990		ug/Kg		99	72 - 134		
1,2,3,6,7,8-HxCDD			0.100	0.111		ug/Kg		111	76 - 134		
1,2,3,6,7,8-HxCDF			0.100	0.108		ug/Kg		108	84 - 130		
1,2,3,7,8,9-HxCDD			0.100	0.110		ug/Kg		110	64 - 162		
1,2,3,7,8,9-HxCDF			0.100	0.110		ug/Kg		110	78 - 130		
1,2,3,7,8-PeCDD			0.100	0.107		ug/Kg		107	70 - 142		
1,2,3,7,8-PeCDF			0.100	0.113		ug/Kg		113	80 - 134		
2,3,4,6,7,8-HxCDF			0.100	0.107		ug/Kg		107	70 - 156		
2,3,4,7,8-PeCDF			0.100	0.111		ug/Kg		111	68 - 160		
2,3,7,8-TCDD			0.0200	0.0210		ug/Kg		105	67 - 158		
2,3,7,8-TCDF			0.0200	0.0205		ug/Kg		102	75 - 158		
OCDD			0.200	0.211		ug/Kg		106	78 - 144		
OCDF			0.200	0.204		ug/Kg		102	63 - 170		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-1,2,3,4,6,7,8-HpCDD	*53*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*59*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*60*		*20 - 186*
13C-1,2,3,4,7,8-HxCDD	*66*		*21 - 193*
13C-1,2,3,4,7,8-HxCDF	*75*		*19 - 202*
13C-1,2,3,6,7,8-HxCDD	*64*		*25 - 163*
13C-1,2,3,6,7,8-HxCDF	*69*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*70*		*17 - 205*
13C-1,2,3,7,8-PeCDD	*64*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*66*		*21 - 192*
13C-2,3,4,6,7,8-HxCDF	*69*		*22 - 176*
13C-2,3,4,7,8-PeCDF	*67*		*13 - 328*
13C-2,3,7,8-TCDD	*66*		*20 - 175*
13C-2,3,7,8-TCDF	*69*		*22 - 152*
13C-OCDD	*49*		*13 - 199*

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*96*		*31 - 191*

Lab Sample ID: LCSD 320-315077/3-A
Matrix: Solid
Analysis Batch: 316206

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 315077

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,3,4,6,7,8-HpCDD			0.100	0.111		ug/Kg		111	70 - 140	2	50
1,2,3,4,6,7,8-HpCDF			0.100	0.106		ug/Kg		106	82 - 122	2	50
1,2,3,4,7,8,9-HpCDF			0.100	0.100		ug/Kg		100	78 - 138	6	50
1,2,3,4,7,8-HxCDD			0.100	0.102		ug/Kg		102	70 - 164	4	50
1,2,3,4,7,8-HxCDF			0.100	0.0985		ug/Kg		98	72 - 134	1	50

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-315077/3-A
Matrix: Solid
Analysis Batch: 316206

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 315077

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,3,6,7,8-HxCDD			0.100	0.107		ug/Kg		107	76 - 134	4	50
1,2,3,6,7,8-HxCDF			0.100	0.109		ug/Kg		109	84 - 130	1	50
1,2,3,7,8,9-HxCDD			0.100	0.106		ug/Kg		106	64 - 162	4	50
1,2,3,7,8,9-HxCDF			0.100	0.105		ug/Kg		105	78 - 130	5	50
1,2,3,7,8-PeCDD			0.100	0.105		ug/Kg		105	70 - 142	2	50
1,2,3,7,8-PeCDF			0.100	0.111		ug/Kg		111	80 - 134	2	50
2,3,4,6,7,8-HxCDF			0.100	0.106		ug/Kg		106	70 - 156	1	50
2,3,4,7,8-PeCDF			0.100	0.110		ug/Kg		110	68 - 160	1	50
2,3,7,8-TCDD			0.0200	0.0212		ug/Kg		106	67 - 158	1	50
2,3,7,8-TCDF			0.0200	0.0210		ug/Kg		105	75 - 158	3	50
OCDD			0.200	0.210		ug/Kg		105	78 - 144	1	50
OCDF			0.200	0.208		ug/Kg		104	63 - 170	2	50

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C-1,2,3,4,6,7,8-HpCDD	*54*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*63*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*63*		*20 - 186*
13C-1,2,3,4,7,8-HxCDD	*69*		*21 - 193*
13C-1,2,3,4,7,8-HxCDF	*78*		*19 - 202*
13C-1,2,3,6,7,8-HxCDD	*68*		*25 - 163*
13C-1,2,3,6,7,8-HxCDF	*71*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*74*		*17 - 205*
13C-1,2,3,7,8-PeCDD	*65*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*64*		*21 - 192*
13C-2,3,4,6,7,8-HxCDF	*72*		*22 - 176*
13C-2,3,4,7,8-PeCDF	*64*		*13 - 328*
13C-2,3,7,8-TCDD	*65*		*20 - 175*
13C-2,3,7,8-TCDF	*70*		*22 - 152*
13C-OCDD	*50*		*13 - 199*

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*95*		*31 - 191*

Lab Sample ID: LCSSRM 320-315077/4-A
Matrix: Solid
Analysis Batch: 316206

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 315077

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3,4,6,7,8-HpCDD			0.153	0.133		ug/Kg		86.8	62.6 - 137.4
1,2,3,4,6,7,8-HpCDF			0.0139	0.00985	*	ug/Kg		70.9	73.5 - 126.5
1,2,3,4,7,8,9-HpCDF			0.00125	0.000832	J q	ug/Kg		66.6	50.4 - 149.6
1,2,3,4,7,8-HxCDD			0.00112	0.00109	J	ug/Kg		97.6	53.6 - 146.4
1,2,3,4,7,8-HxCDF			0.000860	0.000637	J	ug/Kg		74.1	48.8 - 151.2
1,2,3,6,7,8-HxCDD			0.00439	0.00291	J *	ug/Kg		66.3	80.0 - 120.0

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSSRM 320-315077/4-A
Matrix: Solid
Analysis Batch: 316206

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 315077

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3,6,7,8-HxCDF	0.000580	0.000568	J	ug/Kg		98.0	55.2 - 144.8
1,2,3,7,8,9-HxCDD	0.00200	0.00220	J	ug/Kg		109.9	40.0 - 160.0
1,2,3,7,8,9-HxCDF	0.000120	0.000275	J	ug/Kg		229.0	0.0 - 233.3
1,2,3,7,8-PeCDD	0.000390	ND	*	ug/Kg		0	17.9 - 182.1
1,2,3,7,8-PeCDF	0.000230	ND	*	ug/Kg		0	4.3 - 195.7
2,3,4,6,7,8-HxCDF	0.000720	0.000396	J	ug/Kg		55.0	0.0 - 227.8
2,3,4,7,8-PeCDF	0.000340	ND	*	ug/Kg		0	58.8 - 141.2
2,3,7,8-TCDD	0.000110	ND		ug/Kg		0	0.0 - 227.3
2,3,7,8-TCDF	0.000700	0.000611	J	ug/Kg		87.3	51.4 - 148.6
OCDD	7.87	7.21	E	ug/Kg		91.6	79.0 - 121.0
OCDF	0.0582	0.0500		ug/Kg		85.9	44.3 - 155.7

Isotope Dilution	*LCSSRM %Recovery*	*LCSSRM Qualifier*	*Limits*
13C-1,2,3,4,6,7,8-HpCDD	*57*		*23 - 140*
13C-1,2,3,4,6,7,8-HpCDF	*64*		*28 - 143*
13C-1,2,3,4,7,8,9-HpCDF	*66*		*26 - 138*
13C-1,2,3,4,7,8-HxCDD	*67*		*32 - 141*
13C-1,2,3,4,7,8-HxCDF	*76*		*26 - 152*
13C-1,2,3,6,7,8-HxCDD	*64*		*28 - 130*
13C-1,2,3,6,7,8-HxCDF	*70*		*26 - 123*
13C-1,2,3,7,8,9-HxCDF	*71*		*29 - 147*
13C-1,2,3,7,8-PeCDD	*65*		*25 - 181*
13C-1,2,3,7,8-PeCDF	*64*		*24 - 185*
13C-2,3,4,6,7,8-HxCDF	*69*		*28 - 136*
13C-2,3,4,7,8-PeCDF	*66*		*21 - 178*
13C-2,3,7,8-TCDD	*65*		*25 - 164*
13C-2,3,7,8-TCDF	*67*		*24 - 169*
13C-OCDD	*57*		*17 - 157*

Surrogate	*LCSSRM %Recovery*	*LCSSRM Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*96*		*35 - 197*

Lab Sample ID: LCSSRM 320-315077/5-A
Matrix: Solid
Analysis Batch: 316206

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 315077

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3,4,6,7,8-HpCDD	0.153	0.134		ug/Kg		87.7	62.6 - 137.4
1,2,3,4,6,7,8-HpCDF	0.0139	0.0107		ug/Kg		77.2	73.5 - 126.5

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSSRM 320-315077/5-A
Matrix: Solid
Analysis Batch: 316206

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 315077

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2,3,4,7,8,9-HpCDF			0.00125	0.000710	J q	ug/Kg		56.8	50.4 - 149.6		
1,2,3,4,7,8-HxCDD			0.00112	0.00106	J	ug/Kg		94.2	53.6 - 146.4		
1,2,3,4,7,8-HxCDF			0.000860	0.000528	J	ug/Kg		61.4	48.8 - 151.2		
1,2,3,6,7,8-HxCDD			0.00439	0.00300	J *	ug/Kg		68.3	80.0 - 120.0		
1,2,3,6,7,8-HxCDF			0.000580	0.000330	J q	ug/Kg		56.9	55.2 - 144.8		
1,2,3,7,8,9-HxCDD			0.00200	0.00195	J	ug/Kg		97.7	40.0 - 160.0		
1,2,3,7,8,9-HxCDF			0.000120	0.000164	J q	ug/Kg		136.6	0.0 - 233.3		
1,2,3,7,8-PeCDD			0.000390	ND	*	ug/Kg		0	17.9 - 182.1		
1,2,3,7,8-PeCDF			0.000230	ND	*	ug/Kg		0	4.3 - 195.7		
2,3,4,6,7,8-HxCDF			0.000720	0.000340	J	ug/Kg		47.3	0.0 - 227.8		
2,3,4,7,8-PeCDF			0.000340	ND	*	ug/Kg		0	58.8 - 141.2		
2,3,7,8-TCDD			0.000110	0.000297	J *	ug/Kg		270.2	0.0 - 227.3		
2,3,7,8-TCDF			0.000700	0.000569	J	ug/Kg		81.4	51.4 - 148.6		
OCDD			7.87	7.16	E	ug/Kg		91.0	79.0 - 121.0		
OCDF			0.0582	0.0521		ug/Kg		89.6	44.3 - 155.7		

Isotope Dilution	*LCSSRM %Recovery*	*LCSSRM Qualifier*	*Limits*
13C-1,2,3,4,6,7,8-HpCDD	*56*		*23 - 140*
13C-1,2,3,4,6,7,8-HpCDF	*62*		*28 - 143*
13C-1,2,3,4,7,8,9-HpCDF	*65*		*26 - 138*
13C-1,2,3,4,7,8-HxCDD	*69*		*32 - 141*
13C-1,2,3,4,7,8-HxCDF	*82*		*26 - 152*
13C-1,2,3,6,7,8-HxCDD	*67*		*28 - 130*
13C-1,2,3,6,7,8-HxCDF	*71*		*26 - 123*
13C-1,2,3,7,8,9-HxCDF	*71*		*29 - 147*
13C-1,2,3,7,8-PeCDD	*66*		*25 - 181*
13C-1,2,3,7,8-PeCDF	*68*		*24 - 185*
13C-2,3,4,6,7,8-HxCDF	*74*		*28 - 136*
13C-2,3,4,7,8-PeCDF	*66*		*21 - 178*
13C-2,3,7,8-TCDD	*67*		*25 - 164*
13C-2,3,7,8-TCDF	*68*		*24 - 169*
13C-OCDD	*55*		*17 - 157*

Surrogate	*LCSSRM %Recovery*	*LCSSRM Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*103*		*35 - 197*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-315080/1-A
Matrix: Solid
Analysis Batch: 316531

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 315080

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	ND		0.0050	0.00017	ug/Kg		08/14/19 12:34	08/20/19 02:06	1
1,2,3,4,6,7,8-HpCDF	ND		0.0050	0.00016	ug/Kg		08/14/19 12:34	08/20/19 02:06	1
1,2,3,4,7,8,9-HpCDF	ND		0.0050	0.00021	ug/Kg		08/14/19 12:34	08/20/19 02:06	1
1,2,3,4,7,8-HxCDD	0.000147	J q	0.0050	0.000097	ug/Kg		08/14/19 12:34	08/20/19 02:06	1
1,2,3,4,7,8-HxCDF	ND		0.0050	0.000089	ug/Kg		08/14/19 12:34	08/20/19 02:06	1
1,2,3,6,7,8-HxCDD	ND		0.0050	0.000097	ug/Kg		08/14/19 12:34	08/20/19 02:06	1
1,2,3,6,7,8-HxCDF	ND		0.0050	0.000097	ug/Kg		08/14/19 12:34	08/20/19 02:06	1
1,2,3,7,8,9-HxCDD	ND		0.0050	0.000092	ug/Kg		08/14/19 12:34	08/20/19 02:06	1
1,2,3,7,8,9-HxCDF	ND		0.0050	0.000097	ug/Kg		08/14/19 12:34	08/20/19 02:06	1
1,2,3,7,8-PeCDD	ND		0.0050	0.00028	ug/Kg		08/14/19 12:34	08/20/19 02:06	1
1,2,3,7,8-PeCDF	ND		0.0050	0.00016	ug/Kg		08/14/19 12:34	08/20/19 02:06	1
2,3,4,6,7,8-HxCDF	ND		0.0050	0.000088	ug/Kg		08/14/19 12:34	08/20/19 02:06	1
2,3,4,7,8-PeCDF	ND		0.0050	0.00018	ug/Kg		08/14/19 12:34	08/20/19 02:06	1
2,3,7,8-TCDD	ND		0.0010	0.00015	ug/Kg		08/14/19 12:34	08/20/19 02:06	1
2,3,7,8-TCDF	ND		0.0010	0.00014	ug/Kg		08/14/19 12:34	08/20/19 02:06	1
OCDD	0.00103	J	0.010	0.00018	ug/Kg		08/14/19 12:34	08/20/19 02:06	1
OCDF	ND		0.010	0.00025	ug/Kg		08/14/19 12:34	08/20/19 02:06	1
Total HpCDD	ND		0.0050	0.00017	ug/Kg		08/14/19 12:34	08/20/19 02:06	1
Total HpCDF	ND		0.0050	0.00021	ug/Kg		08/14/19 12:34	08/20/19 02:06	1
Total HxCDD	0.000461	J q	0.0050	0.000095	ug/Kg		08/14/19 12:34	08/20/19 02:06	1
Total HxCDF	ND		0.0050	0.000097	ug/Kg		08/14/19 12:34	08/20/19 02:06	1
Total PeCDD	ND		0.0050	0.00028	ug/Kg		08/14/19 12:34	08/20/19 02:06	1
Total PeCDF	ND		0.0050	0.00018	ug/Kg		08/14/19 12:34	08/20/19 02:06	1
Total TCDD	ND		0.0010	0.00015	ug/Kg		08/14/19 12:34	08/20/19 02:06	1
Total TCDF	ND		0.0010	0.00014	ug/Kg		08/14/19 12:34	08/20/19 02:06	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,6,7,8-HpCDD	*75*		*23 - 140*	*08/14/19 12:34*	*08/20/19 02:06*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*76*		*28 - 143*	*08/14/19 12:34*	*08/20/19 02:06*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*79*		*26 - 138*	*08/14/19 12:34*	*08/20/19 02:06*	*1*
13C-1,2,3,4,7,8-HxCDD	*79*		*32 - 141*	*08/14/19 12:34*	*08/20/19 02:06*	*1*
13C-1,2,3,4,7,8-HxCDF	*89*		*26 - 152*	*08/14/19 12:34*	*08/20/19 02:06*	*1*
13C-1,2,3,6,7,8-HxCDD	*77*		*28 - 130*	*08/14/19 12:34*	*08/20/19 02:06*	*1*
13C-1,2,3,6,7,8-HxCDF	*82*		*26 - 123*	*08/14/19 12:34*	*08/20/19 02:06*	*1*
13C-1,2,3,7,8,9-HxCDF	*83*		*29 - 147*	*08/14/19 12:34*	*08/20/19 02:06*	*1*
13C-1,2,3,7,8-PeCDD	*65*		*25 - 181*	*08/14/19 12:34*	*08/20/19 02:06*	*1*
13C-1,2,3,7,8-PeCDF	*63*		*24 - 185*	*08/14/19 12:34*	*08/20/19 02:06*	*1*
13C-2,3,4,6,7,8-HxCDF	*83*		*28 - 136*	*08/14/19 12:34*	*08/20/19 02:06*	*1*
13C-2,3,4,7,8-PeCDF	*64*		*21 - 178*	*08/14/19 12:34*	*08/20/19 02:06*	*1*
13C-2,3,7,8-TCDD	*61*		*25 - 164*	*08/14/19 12:34*	*08/20/19 02:06*	*1*
13C-2,3,7,8-TCDF	*60*		*24 - 169*	*08/14/19 12:34*	*08/20/19 02:06*	*1*
13C-OCDD	*69*		*17 - 157*	*08/14/19 12:34*	*08/20/19 02:06*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*88*		*35 - 197*	*08/14/19 12:34*	*08/20/19 02:06*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-315080/2-A
Matrix: Solid
Analysis Batch: 316531

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 315080

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2,3,4,6,7,8-HpCDD			0.100	0.110		ug/Kg		110	70 - 140		
1,2,3,4,6,7,8-HpCDF			0.100	0.106		ug/Kg		106	82 - 122		
1,2,3,4,7,8,9-HpCDF			0.100	0.102		ug/Kg		102	78 - 138		
1,2,3,4,7,8-HxCDD			0.100	0.106		ug/Kg		106	70 - 164		
1,2,3,4,7,8-HxCDF			0.100	0.0992		ug/Kg		99	72 - 134		
1,2,3,6,7,8-HxCDD			0.100	0.114		ug/Kg		114	76 - 134		
1,2,3,6,7,8-HxCDF			0.100	0.106		ug/Kg		106	84 - 130		
1,2,3,7,8,9-HxCDD			0.100	0.111		ug/Kg		111	64 - 162		
1,2,3,7,8,9-HxCDF			0.100	0.107		ug/Kg		107	78 - 130		
1,2,3,7,8-PeCDD			0.100	0.103		ug/Kg		103	70 - 142		
1,2,3,7,8-PeCDF			0.100	0.104		ug/Kg		104	80 - 134		
2,3,4,6,7,8-HxCDF			0.100	0.106		ug/Kg		106	70 - 156		
2,3,4,7,8-PeCDF			0.100	0.110		ug/Kg		110	68 - 160		
2,3,7,8-TCDD			0.0200	0.0202		ug/Kg		101	67 - 158		
2,3,7,8-TCDF			0.0200	0.0209		ug/Kg		104	75 - 158		
OCDD			0.200	0.211		ug/Kg		105	78 - 144		
OCDF			0.200	0.205		ug/Kg		102	63 - 170		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-1,2,3,4,6,7,8-HpCDD	*67*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*66*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*73*		*20 - 186*
13C-1,2,3,4,7,8-HxCDD	*71*		*21 - 193*
13C-1,2,3,4,7,8-HxCDF	*83*		*19 - 202*
13C-1,2,3,6,7,8-HxCDD	*70*		*25 - 163*
13C-1,2,3,6,7,8-HxCDF	*76*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*78*		*17 - 205*
13C-1,2,3,7,8-PeCDD	*75*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*72*		*21 - 192*
13C-2,3,4,6,7,8-HxCDF	*77*		*22 - 176*
13C-2,3,4,7,8-PeCDF	*73*		*13 - 328*
13C-2,3,7,8-TCDD	*69*		*20 - 175*
13C-2,3,7,8-TCDF	*69*		*22 - 152*
13C-OCDD	*66*		*13 - 199*

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*101*		*31 - 191*

Lab Sample ID: LCSD 320-315080/3-A
Matrix: Solid
Analysis Batch: 316531

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 315080

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,3,4,6,7,8-HpCDD			0.100	0.106		ug/Kg		106	70 - 140	4	50
1,2,3,4,6,7,8-HpCDF			0.100	0.108		ug/Kg		108	82 - 122	2	50
1,2,3,4,7,8,9-HpCDF			0.100	0.102		ug/Kg		102	78 - 138	0	50
1,2,3,4,7,8-HxCDD			0.100	0.106		ug/Kg		106	70 - 164	1	50
1,2,3,4,7,8-HxCDF			0.100	0.0996		ug/Kg		100	72 - 134	0	50

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-315080/3-A
Matrix: Solid
Analysis Batch: 316531

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 315080

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,3,6,7,8-HxCDD			0.100	0.112		ug/Kg		112	76 - 134	2	50
1,2,3,6,7,8-HxCDF			0.100	0.107		ug/Kg		107	84 - 130	1	50
1,2,3,7,8,9-HxCDD			0.100	0.110		ug/Kg		110	64 - 162	2	50
1,2,3,7,8,9-HxCDF			0.100	0.103		ug/Kg		103	78 - 130	4	50
1,2,3,7,8-PeCDD			0.100	0.103		ug/Kg		103	70 - 142	0	50
1,2,3,7,8-PeCDF			0.100	0.110		ug/Kg		110	80 - 134	6	50
2,3,4,6,7,8-HxCDF			0.100	0.108		ug/Kg		108	70 - 156	2	50
2,3,4,7,8-PeCDF			0.100	0.110		ug/Kg		110	68 - 160	1	50
2,3,7,8-TCDD			0.0200	0.0210		ug/Kg		105	67 - 158	4	50
2,3,7,8-TCDF			0.0200	0.0210		ug/Kg		105	75 - 158	1	50
OCDD			0.200	0.208		ug/Kg		104	78 - 144	1	50
OCDF			0.200	0.205		ug/Kg		102	63 - 170	0	50

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C-1,2,3,4,6,7,8-HpCDD	*67*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*68*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*72*		*20 - 186*
13C-1,2,3,4,7,8-HxCDD	*71*		*21 - 193*
13C-1,2,3,4,7,8-HxCDF	*80*		*19 - 202*
13C-1,2,3,6,7,8-HxCDD	*67*		*25 - 163*
13C-1,2,3,6,7,8-HxCDF	*74*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*77*		*17 - 205*
13C-1,2,3,7,8-PeCDD	*73*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*72*		*21 - 192*
13C-2,3,4,6,7,8-HxCDF	*75*		*22 - 176*
13C-2,3,4,7,8-PeCDF	*73*		*13 - 328*
13C-2,3,7,8-TCDD	*67*		*20 - 175*
13C-2,3,7,8-TCDF	*67*		*22 - 152*
13C-OCDD	*64*		*13 - 199*

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*93*		*31 - 191*

Lab Sample ID: LCSSRM 320-315080/4-A
Matrix: Solid
Analysis Batch: 316531

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 315080

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3,4,6,7,8-HpCDD			0.153	0.142		ug/Kg		92.8	62.6 - 137.4
1,2,3,4,6,7,8-HpCDF			0.0139	0.0118		ug/Kg		84.6	73.5 - 126.5
1,2,3,4,7,8,9-HpCDF			0.00125	0.000887	J q	ug/Kg		70.9	50.4 - 149.6
1,2,3,4,7,8-HxCDD			0.00112	0.00106	J	ug/Kg		94.9	53.6 - 146.4
1,2,3,4,7,8-HxCDF			0.000860	0.000589	J	ug/Kg		68.5	48.8 - 151.2
1,2,3,6,7,8-HxCDD			0.00439	0.00316	J *	ug/Kg		71.9	80.0 - 120.0

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSSRM 320-315080/4-A
Matrix: Solid
Analysis Batch: 316531

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 315080

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3,6,7,8-HxCDF	0.000580	0.000655	J	ug/Kg		112.9	55.2 - 144.8
1,2,3,7,8,9-HxCDD	0.00200	0.00226	J	ug/Kg		113.1	40.0 - 160.0
1,2,3,7,8,9-HxCDF	0.000120	0.000258	J	ug/Kg		214.7	0.0 - 233.3
1,2,3,7,8-PeCDD	0.000390	0.000356	J	ug/Kg		91.3	17.9 - 182.1
1,2,3,7,8-PeCDF	0.000230	0.000250	J q	ug/Kg		108.6	4.3 - 195.7
2,3,4,6,7,8-HxCDF	0.000720	0.000407	J q	ug/Kg		56.5	0.0 - 227.8
2,3,4,7,8-PeCDF	0.000340	0.000309	J	ug/Kg		90.9	58.8 - 141.2
2,3,7,8-TCDD	0.000110	0.000233	J q	ug/Kg		211.4	0.0 - 227.3
2,3,7,8-TCDF	0.000700	0.000542	J	ug/Kg		77.4	51.4 - 148.6
OCDD	7.87	7.33	E	ug/Kg		93.2	79.0 - 121.0
OCDF	0.0582	0.0561		ug/Kg		96.5	44.3 - 155.7

Isotope Dilution	*LCSSRM %Recovery*	*LCSSRM Qualifier*	*Limits*
13C-1,2,3,4,6,7,8-HpCDD	*66*		*23 - 140*
13C-1,2,3,4,6,7,8-HpCDF	*67*		*28 - 143*
13C-1,2,3,4,7,8,9-HpCDF	*72*		*26 - 138*
13C-1,2,3,4,7,8-HxCDD	*68*		*32 - 141*
13C-1,2,3,4,7,8-HxCDF	*78*		*26 - 152*
13C-1,2,3,6,7,8-HxCDD	*68*		*28 - 130*
13C-1,2,3,6,7,8-HxCDF	*72*		*26 - 123*
13C-1,2,3,7,8,9-HxCDF	*73*		*29 - 147*
13C-1,2,3,7,8-PeCDD	*72*		*25 - 181*
13C-1,2,3,7,8-PeCDF	*70*		*24 - 185*
13C-2,3,4,6,7,8-HxCDF	*73*		*28 - 136*
13C-2,3,4,7,8-PeCDF	*71*		*21 - 178*
13C-2,3,7,8-TCDD	*67*		*25 - 164*
13C-2,3,7,8-TCDF	*68*		*24 - 169*
13C-OCDD	*68*		*17 - 157*

Surrogate	*LCSSRM %Recovery*	*LCSSRM Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*99*		*35 - 197*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 580-307998/5-A
Matrix: Solid
Analysis Batch: 308295

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 307998

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.25	0.050	mg/Kg		08/09/19 14:36	08/13/19 12:47	5

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 580-307998/5-A
Matrix: Solid
Analysis Batch: 308295

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 307998

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		0.20	0.039	mg/Kg		08/09/19 14:36	08/13/19 12:47	5
Copper	ND		0.50	0.11	mg/Kg		08/09/19 14:36	08/13/19 12:47	5
Lead	ND		0.25	0.024	mg/Kg		08/09/19 14:36	08/13/19 12:47	5
Zinc	ND		2.5	0.81	mg/Kg		08/09/19 14:36	08/13/19 12:47	5

Lab Sample ID: LCS 580-307998/6-A
Matrix: Solid
Analysis Batch: 308295

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 307998

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	50.0	49.7		mg/Kg		99	80 - 120
Cadmium	50.0	51.6		mg/Kg		103	80 - 120
Copper	50.0	49.1		mg/Kg		98	80 - 120
Lead	50.0	51.7		mg/Kg		103	80 - 120
Zinc	50.0	49.3		mg/Kg		99	80 - 120

Lab Sample ID: LCSD 580-307998/7-A
Matrix: Solid
Analysis Batch: 308295

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 307998

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	50.0	50.0		mg/Kg		100	80 - 120	1	20
Cadmium	50.0	51.6		mg/Kg		103	80 - 120	0	20
Copper	50.0	49.7		mg/Kg		99	80 - 120	1	20
Lead	50.0	51.5		mg/Kg		103	80 - 120	0	20
Zinc	50.0	47.8		mg/Kg		96	80 - 120	3	20

Lab Sample ID: MB 580-308354/6-A
Matrix: Solid
Analysis Batch: 308408

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 308354

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.25	0.050	mg/Kg		08/14/19 14:06	08/14/19 17:04	5
Cadmium	ND		0.20	0.039	mg/Kg		08/14/19 14:06	08/14/19 17:04	5
Copper	ND		0.50	0.11	mg/Kg		08/14/19 14:06	08/14/19 17:04	5
Lead	0.0330	J	0.25	0.024	mg/Kg		08/14/19 14:06	08/14/19 17:04	5
Zinc	ND		2.5	0.81	mg/Kg		08/14/19 14:06	08/14/19 17:04	5

Lab Sample ID: LCS 580-308354/7-A
Matrix: Solid
Analysis Batch: 308408

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 308354

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	50.0	50.8		mg/Kg		102	80 - 120
Cadmium	50.0	50.1		mg/Kg		100	80 - 120
Copper	50.0	50.9		mg/Kg		102	80 - 120
Lead	50.0	50.3		mg/Kg		101	80 - 120
Zinc	50.0	48.6		mg/Kg		97	80 - 120

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 580-308354/8-A
Client Sample ID: Lab Control Sample Dup
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 308408
Prep Batch: 308354

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	50.0	50.8		mg/Kg		102	80 - 120	0	20
Cadmium	50.0	50.2		mg/Kg		100	80 - 120	0	20
Copper	50.0	50.7		mg/Kg		101	80 - 120	0	20
Lead	50.0	50.1		mg/Kg		100	80 - 120	0	20
Zinc	50.0	49.5		mg/Kg		99	80 - 120	2	20

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 580-308326/6-A
Client Sample ID: Method Blank
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 308412
Prep Batch: 308326

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.030	0.0090	mg/Kg		08/14/19 10:54	08/14/19 18:05	1

Lab Sample ID: LCS 580-308326/7-A
Client Sample ID: Lab Control Sample
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 308412
Prep Batch: 308326

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.167	0.177		mg/Kg		106	80 - 120

Lab Sample ID: LCSD 580-308326/8-A
Client Sample ID: Lab Control Sample Dup
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 308412
Prep Batch: 308326

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.167	0.178		mg/Kg		107	80 - 120	1	20

Lab Sample ID: 580-88125-1 MS
Client Sample ID: A1-0to30-102018
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 308412
Prep Batch: 308326

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.059	H F1	0.242	0.358	F1	mg/Kg	☼	124	80 - 120

Lab Sample ID: 580-88125-1 MSD
Client Sample ID: A1-0to30-102018
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 308412
Prep Batch: 308326

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.059	H F1	0.233	0.341	F1	mg/Kg	☼	121	80 - 120	5	20

Lab Sample ID: 580-88125-1 DU
Client Sample ID: A1-0to30-102018
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 308412
Prep Batch: 308326

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Mercury	0.059	H F1	0.0455	F5	mg/Kg	☼	26	20

Method: 9060_PSEP - TOC (Puget Sound)

Lab Sample ID: MB 580-308680/3
Matrix: Solid
Analysis Batch: 308680

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	207	J	2000	97	mg/Kg			08/18/19 13:09	1

Lab Sample ID: MB 580-308680/36
Matrix: Solid
Analysis Batch: 308680

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	ND		2000	97	mg/Kg			08/18/19 15:16	1

Lab Sample ID: LCS 580-308680/37
Matrix: Solid
Analysis Batch: 308680

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	5080	5860		mg/Kg		115	40 - 180

Lab Sample ID: LCS 580-308680/4
Matrix: Solid
Analysis Batch: 308680

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	5080	6440		mg/Kg		127	40 - 180

Lab Sample ID: LCSD 580-308680/38
Matrix: Solid
Analysis Batch: 308680

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	5080	5560		mg/Kg		109	40 - 180	5	32

Lab Sample ID: LCSD 580-308680/5
Matrix: Solid
Analysis Batch: 308680

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	5080	5630		mg/Kg		111	40 - 180	13	32

Lab Sample ID: 580-88125-1 MS
Matrix: Solid
Analysis Batch: 308680

Client Sample ID: A1-0to30-102018
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	2900	H B	120000	130000		mg/Kg		106	68 - 149

Method: 9060_PSEP - TOC (Puget Sound) (Continued)

Lab Sample ID: 580-88125-1 MSD
Matrix: Solid
Analysis Batch: 308680

Client Sample ID: A1-0to30-102018
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	2900	H B	120000	133000		mg/Kg		109	68 - 149	2	32

Lab Sample ID: 580-88125-21 MS
Matrix: Solid
Analysis Batch: 308680

Client Sample ID: T6-0to29-101618
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon - Duplicates	36000	H	120000	179000		mg/Kg		119	68 - 149		

Lab Sample ID: 580-88125-21 MSD
Matrix: Solid
Analysis Batch: 308680

Client Sample ID: T6-0to29-101618
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	36000	H	120000	131000		mg/Kg		79	68 - 149	31	32

Lab Sample ID: 580-88125-1 DU
Matrix: Solid
Analysis Batch: 308680

Client Sample ID: A1-0to30-102018
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon - Duplicates	2900	H B	2940		mg/Kg		2	50

Lab Sample ID: 580-88125-21 DU
Matrix: Solid
Analysis Batch: 308680

Client Sample ID: T6-0to29-101618
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon - Duplicates	36000	H	35800		mg/Kg		1	50

Lab Sample ID: 580-88125-1 TRL
Matrix: Solid
Analysis Batch: 308680

Client Sample ID: A1-0to30-102018
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	TRL Result	TRL Qualifier	Unit	D	RSD	RSD Limit
Total Organic Carbon - Duplicates	2900	H B	2930		mg/Kg		1	20

Lab Sample ID: 580-88125-21 TRL
Matrix: Solid
Analysis Batch: 308680

Client Sample ID: T6-0to29-101618
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	TRL Result	TRL Qualifier	Unit	D	RSD	RSD Limit
Total Organic Carbon - Duplicates	36000	H	35400		mg/Kg		1	20

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-88125-8 DU
Matrix: Solid
Analysis Batch: 308264

Client Sample ID: C4-0to27-100918
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Solids	37.5	H	37.7		%		0.5	20

Lab Sample ID: 580-88125-21 DU
Matrix: Solid
Analysis Batch: 308264

Client Sample ID: T6-0to29-101618
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Solids	32.5	H	32.7		%		0.6	20

Method: Moisture 70C - Percent Moisture, 70 C

Lab Sample ID: 580-88125-1 DU
Matrix: Solid
Analysis Batch: 308996

Client Sample ID: A1-0to30-102018
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	44	H	44		%		1	20
Percent Solids	56	H	56		%		0.9	20

Method: D7928/D6913 - ASTM D7928/D6913

Lab Sample ID: 580-88125-1 DU
Matrix: Solid
Analysis Batch: 307634

Client Sample ID: A1-0to30-102018
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Clay	19.5	H	20.5		%		5	20
Coarse Sand	1.6	H	0.7	F3	%		78	20
Fine Sand	18.7	H	19.5		%		4	20
Gravel	0.0	H	0.0		%		NC	20
Medium Sand	0.3	H	0.3		%		0	20
Silt	59.9	H	59.0		%		2	20

Lab Sample ID: 580-88125-11 DU
Matrix: Solid
Analysis Batch: 307638

Client Sample ID: G6-0to27-101818
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Clay	25.1	H	26.1		%		4	20
Coarse Sand	0.1	H	0.0	F3	%		200	20
Fine Sand	8.8	H	9.3		%		6	20
Gravel	0.0	H	0.0		%		NC	20
Medium Sand	0.8	H	0.6	F3	%		29	20
Silt	65.2	H	64.0		%		2	20

Method: D854 - Specific Gravity

Lab Sample ID: LCS 140-32648/1
Matrix: Solid
Analysis Batch: 32648

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Specific Gravity			1.00	1.000		NONE		100	99 - 101		

Lab Sample ID: 580-88125-2 DU
Matrix: Solid
Analysis Batch: 32648

Client Sample ID: A2-0to26-100818
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Specific Gravity	1.23			1.231		NONE				0	10

Lab Sample ID: 580-88125-11 DU
Matrix: Solid
Analysis Batch: 32648

Client Sample ID: G6-0to27-101818
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Specific Gravity	1.26			1.263		NONE				0.4	10

Lab Sample ID: LCS 140-32679/1
Matrix: Solid
Analysis Batch: 32679

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Specific Gravity			1.00	1.000		NONE		100	99 - 101		

Lab Sample ID: 580-88125-12 DU
Matrix: Solid
Analysis Batch: 32679

Client Sample ID: H2-0to30-101218
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Specific Gravity	1.37			1.373		NONE				0.4	10

Lab Sample ID: LCS 140-32736/1
Matrix: Solid
Analysis Batch: 32736

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Density			0.997	0.9971		g/cm3		100	99 - 101		

Lab Sample ID: 580-88125-2 DU
Matrix: Solid
Analysis Batch: 32736

Client Sample ID: A2-0to26-100818
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Density	1.23			1.227		g/cm3				0	10

Lab Sample ID: 580-88125-11 DU
Matrix: Solid
Analysis Batch: 32736

Client Sample ID: G6-0to27-101818
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Density	1.25			1.259		g/cm3				0.4	10

Method: D854 - Specific Gravity

Lab Sample ID: LCS 140-32737/1
Matrix: Solid
Analysis Batch: 32737

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Density			0.997	0.9971		g/cm3		100	99 - 101		

Lab Sample ID: 580-88125-12 DU
Matrix: Solid
Analysis Batch: 32737

Client Sample ID: H2-0to30-101218
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Density	1.36			1.369		g/cm3				0.4	10

Lab Chronicle

Client: Pacific Groundwater Group
Job ID: 580-88125-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: A1-0to30-102018
Lab Sample ID: 580-88125-1
Date Collected: 10/20/18 12:05
Matrix: Solid
Date Received: 07/26/19 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	308680	08/18/19 13:17	JKM	TAL SEA
Total/NA	Analysis	D 2216		1	308264	08/13/19 17:21	JCM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	308996	08/21/19 13:20	JKM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	307634	08/06/19 11:26	AAC	TAL SEA
Total/NA	Analysis	D854		1	32648	08/13/19 00:00	AKL	TAL KNX
Total/NA	Analysis	D854		1	32736	08/13/19 00:00	AKL	TAL KNX

Client Sample ID: A1-0to30-102018
Lab Sample ID: 580-88125-1
Date Collected: 10/20/18 12:05
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 55.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			308204	08/13/19 10:43	FCG	TAL SEA
Total/NA	Analysis	8082A		1	308462	08/15/19 22:52	CJB	TAL SEA
Total/NA	Prep	3546			308116	08/12/19 12:08	MWW	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	308360	08/14/19 17:36	CJ	TAL SEA
Total/NA	Prep	HRMS-Sox			315077	08/14/19 12:31	SR1	TAL SAC
Total/NA	Analysis	1613B		1	316206	08/17/19 08:20	SMA	TAL SAC
Total/NA	Prep	3050B			307998	08/09/19 14:36	ART	TAL SEA
Total/NA	Analysis	6020B		5	308295	08/13/19 15:02	FCW	TAL SEA
Total/NA	Prep	7471A			308326	08/14/19 10:54	ART	TAL SEA
Total/NA	Analysis	7471A		1	308412	08/14/19 18:11	T1H	TAL SEA

Client Sample ID: A2-0to26-100818
Lab Sample ID: 580-88125-2
Date Collected: 10/08/18 14:04
Matrix: Solid
Date Received: 07/26/19 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	308680	08/18/19 13:35	JKM	TAL SEA
Total/NA	Analysis	D 2216		1	308264	08/13/19 17:21	JCM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	308996	08/21/19 13:20	JKM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	307634	08/06/19 11:26	AAC	TAL SEA
Total/NA	Analysis	D854		1	32648	08/13/19 00:00	AKL	TAL KNX
Total/NA	Analysis	D854		1	32736	08/13/19 00:00	AKL	TAL KNX

Client Sample ID: A2-0to26-100818
Lab Sample ID: 580-88125-2
Date Collected: 10/08/18 14:04
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 31.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			308204	08/13/19 10:43	FCG	TAL SEA
Total/NA	Analysis	8082A		1	308462	08/15/19 23:43	CJB	TAL SEA
Total/NA	Prep	3546			308116	08/12/19 12:08	MWW	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	308360	08/14/19 17:59	CJ	TAL SEA

Client Sample ID: A2-0to26-100818

Lab Sample ID: 580-88125-2
Date Collected: 10/08/18 14:04
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 31.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox	RA		315077	08/14/19 12:31	SR1	TAL SAC
Total/NA	Analysis	1613B	RA	1	316854	08/21/19 00:35	SMA	TAL SAC
Total/NA	Prep	HRMS-Sox			315077	08/14/19 12:31	SR1	TAL SAC
Total/NA	Analysis	1613B		1	316206	08/17/19 09:08	SMA	TAL SAC
Total/NA	Prep	3050B			307998	08/09/19 14:36	ART	TAL SEA
Total/NA	Analysis	6020B		5	308295	08/13/19 15:11	FCW	TAL SEA
Total/NA	Prep	7471A			308326	08/14/19 10:54	ART	TAL SEA
Total/NA	Analysis	7471A		1	308412	08/14/19 18:21	T1H	TAL SEA

Client Sample ID: A3-0to31-100818

Lab Sample ID: 580-88125-3
Date Collected: 10/08/18 11:14
Matrix: Solid
Date Received: 07/26/19 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	308680	08/18/19 13:40	JKM	TAL SEA
Total/NA	Analysis	D 2216		1	308264	08/13/19 17:21	JCM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	308996	08/21/19 13:20	JKM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	307634	08/06/19 11:26	AAC	TAL SEA
Total/NA	Analysis	D854		1	32648	08/13/19 00:00	AKL	TAL KNX
Total/NA	Analysis	D854		1	32736	08/13/19 00:00	AKL	TAL KNX

Client Sample ID: A3-0to31-100818

Lab Sample ID: 580-88125-3
Date Collected: 10/08/18 11:14
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 33.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			308204	08/13/19 10:43	FCG	TAL SEA
Total/NA	Analysis	8082A		1	308462	08/16/19 00:00	CJB	TAL SEA
Total/NA	Prep	3546			308116	08/12/19 12:08	MWW	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	308360	08/14/19 18:21	CJ	TAL SEA
Total/NA	Prep	HRMS-Sox	RA		315077	08/14/19 12:31	SR1	TAL SAC
Total/NA	Analysis	1613B	RA	1	316854	08/21/19 01:14	SMA	TAL SAC
Total/NA	Prep	HRMS-Sox			315077	08/14/19 12:31	SR1	TAL SAC
Total/NA	Analysis	1613B		1	316206	08/17/19 09:55	SMA	TAL SAC
Total/NA	Prep	3050B			307998	08/09/19 14:36	ART	TAL SEA
Total/NA	Analysis	6020B		5	308295	08/13/19 15:07	FCW	TAL SEA
Total/NA	Prep	7471A			308326	08/14/19 10:54	ART	TAL SEA
Total/NA	Analysis	7471A		1	308412	08/14/19 18:23	T1H	TAL SEA

Client Sample ID: A4-0to25-100818

Lab Sample ID: 580-88125-4
Date Collected: 10/08/18 13:26
Matrix: Solid
Date Received: 07/26/19 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	308680	08/18/19 13:49	JKM	TAL SEA

Lab Chronicle

Client: Pacific Groundwater Group
Job ID: 580-88125-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: A4-0to25-100818
Lab Sample ID: 580-88125-4
Date Collected: 10/08/18 13:26
Matrix: Solid
Date Received: 07/26/19 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	308264	08/13/19 17:21	JCM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	308996	08/21/19 13:20	JKM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	307634	08/06/19 11:26	AAC	TAL SEA
Total/NA	Analysis	D854		1	32648	08/13/19 00:00	AKL	TAL KNX
Total/NA	Analysis	D854		1	32736	08/13/19 00:00	AKL	TAL KNX

Client Sample ID: A4-0to25-100818
Lab Sample ID: 580-88125-4
Date Collected: 10/08/18 13:26
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 38.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			308204	08/13/19 10:43	FCG	TAL SEA
Total/NA	Analysis	8082A		1	308462	08/16/19 00:17	CJB	TAL SEA
Total/NA	Prep	3550B	DL		308204	08/13/19 10:43	FCG	TAL SEA
Total/NA	Analysis	8082A	DL	3	308552	08/16/19 20:54	W1T	TAL SEA
Total/NA	Prep	3546			308116	08/12/19 12:08	MWW	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	308360	08/14/19 18:43	CJ	TAL SEA
Total/NA	Prep	HRMS-Sox	RA		315077	08/14/19 12:31	SR1	TAL SAC
Total/NA	Analysis	1613B	RA	1	316854	08/21/19 01:52	SMA	TAL SAC
Total/NA	Prep	HRMS-Sox			315077	08/14/19 12:31	SR1	TAL SAC
Total/NA	Analysis	1613B		1	316206	08/17/19 10:43	SMA	TAL SAC
Total/NA	Prep	3050B			308354	08/14/19 14:06	ART	TAL SEA
Total/NA	Analysis	6020B		5	308408	08/14/19 18:04	FCW	TAL SEA
Total/NA	Prep	7471A			308326	08/14/19 10:54	ART	TAL SEA
Total/NA	Analysis	7471A		1	308412	08/14/19 18:25	T1H	TAL SEA

Client Sample ID: A5-0to25-100818
Lab Sample ID: 580-88125-5
Date Collected: 10/08/18 14:38
Matrix: Solid
Date Received: 07/26/19 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	308680	08/18/19 13:54	JKM	TAL SEA
Total/NA	Analysis	D 2216		1	308264	08/13/19 17:21	JCM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	308996	08/21/19 13:20	JKM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	307634	08/06/19 11:26	AAC	TAL SEA
Total/NA	Analysis	D854		1	32648	08/13/19 00:00	AKL	TAL KNX
Total/NA	Analysis	D854		1	32736	08/13/19 00:00	AKL	TAL KNX

Lab Chronicle

Client: Pacific Groundwater Group
Job ID: 580-88125-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: A5-0to25-100818
Lab Sample ID: 580-88125-5
Date Collected: 10/08/18 14:38
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 33.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			308204	08/13/19 10:43	FCG	TAL SEA
Total/NA	Analysis	8082A		1	308552	08/16/19 21:10	W1T	TAL SEA
Total/NA	Prep	3546			308116	08/12/19 12:08	MWW	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	308360	08/14/19 19:05	CJ	TAL SEA
Total/NA	Prep	HRMS-Sox	RA		315077	08/14/19 12:31	SR1	TAL SAC
Total/NA	Analysis	1613B	RA	1	316854	08/21/19 02:30	SMA	TAL SAC
Total/NA	Prep	HRMS-Sox			315077	08/14/19 12:31	SR1	TAL SAC
Total/NA	Analysis	1613B		1	316404	08/19/19 12:09	ALM	TAL SAC
Total/NA	Prep	3050B			308354	08/14/19 14:06	ART	TAL SEA
Total/NA	Analysis	6020B		5	308408	08/14/19 18:08	FCW	TAL SEA
Total/NA	Prep	7471A			308326	08/14/19 10:54	ART	TAL SEA
Total/NA	Analysis	7471A		1	308412	08/14/19 18:32	T1H	TAL SEA

Client Sample ID: A6-0to23-100818
Lab Sample ID: 580-88125-6
Date Collected: 10/08/18 16:08
Matrix: Solid
Date Received: 07/26/19 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	308680	08/18/19 13:59	JKM	TAL SEA
Total/NA	Analysis	D 2216		1	308264	08/13/19 17:21	JCM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	308996	08/21/19 13:20	JKM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	307634	08/06/19 11:26	AAC	TAL SEA
Total/NA	Analysis	D854		1	32648	08/13/19 00:00	AKL	TAL KNX
Total/NA	Analysis	D854		1	32736	08/13/19 00:00	AKL	TAL KNX

Client Sample ID: A6-0to23-100818
Lab Sample ID: 580-88125-6
Date Collected: 10/08/18 16:08
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 39.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			308204	08/13/19 10:43	FCG	TAL SEA
Total/NA	Analysis	8082A		1	308462	08/16/19 00:50	CJB	TAL SEA
Total/NA	Prep	3546			308116	08/12/19 12:08	MWW	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	308360	08/14/19 19:27	CJ	TAL SEA
Total/NA	Prep	HRMS-Sox	RA		315077	08/14/19 12:31	SR1	TAL SAC
Total/NA	Analysis	1613B	RA	1	316854	08/21/19 03:09	SMA	TAL SAC
Total/NA	Prep	HRMS-Sox			315077	08/14/19 12:31	SR1	TAL SAC
Total/NA	Analysis	1613B		1	316404	08/19/19 12:57	ALM	TAL SAC
Total/NA	Prep	3050B			308354	08/14/19 14:06	ART	TAL SEA
Total/NA	Analysis	6020B		5	308408	08/14/19 18:13	FCW	TAL SEA
Total/NA	Prep	7471A			308326	08/14/19 10:54	ART	TAL SEA
Total/NA	Analysis	7471A		1	308412	08/14/19 18:35	T1H	TAL SEA

Client Sample ID: A7-0to26-100918

Lab Sample ID: 580-88125-7
Date Collected: 10/09/18 13:23
Matrix: Solid
Date Received: 07/26/19 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	308680	08/18/19 14:03	JKM	TAL SEA
Total/NA	Analysis	D 2216		1	308264	08/13/19 17:21	JCM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	308996	08/21/19 13:20	JKM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	307634	08/06/19 11:26	AAC	TAL SEA
Total/NA	Analysis	D854		1	32648	08/13/19 00:00	AKL	TAL KNX
Total/NA	Analysis	D854		1	32736	08/13/19 00:00	AKL	TAL KNX

Client Sample ID: A7-0to26-100918

Lab Sample ID: 580-88125-7
Date Collected: 10/09/18 13:23
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 37.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			308204	08/13/19 10:43	FCG	TAL SEA
Total/NA	Analysis	8082A		1	308462	08/16/19 01:07	CJB	TAL SEA
Total/NA	Prep	3546			308116	08/12/19 12:08	MWW	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	308360	08/14/19 19:49	CJ	TAL SEA
Total/NA	Prep	HRMS-Sox	RA		315077	08/14/19 12:31	SR1	TAL SAC
Total/NA	Analysis	1613B	RA	1	316854	08/21/19 03:47	SMA	TAL SAC
Total/NA	Prep	HRMS-Sox			315077	08/14/19 12:31	SR1	TAL SAC
Total/NA	Analysis	1613B		1	316404	08/19/19 13:44	ALM	TAL SAC
Total/NA	Prep	3050B			308354	08/14/19 14:06	ART	TAL SEA
Total/NA	Analysis	6020B		5	308408	08/14/19 18:17	FCW	TAL SEA
Total/NA	Prep	7471A			308326	08/14/19 10:54	ART	TAL SEA
Total/NA	Analysis	7471A		1	308412	08/14/19 18:37	T1H	TAL SEA

Client Sample ID: C4-0to27-100918

Lab Sample ID: 580-88125-8
Date Collected: 10/09/18 08:28
Matrix: Solid
Date Received: 07/26/19 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	308680	08/18/19 14:07	JKM	TAL SEA
Total/NA	Analysis	D 2216		1	308264	08/13/19 17:21	JCM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	308996	08/21/19 13:20	JKM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	307634	08/06/19 11:26	AAC	TAL SEA
Total/NA	Analysis	D854		1	32648	08/13/19 00:00	AKL	TAL KNX
Total/NA	Analysis	D854		1	32736	08/13/19 00:00	AKL	TAL KNX

Client Sample ID: C4-0to27-100918

Lab Sample ID: 580-88125-8
Date Collected: 10/09/18 08:28
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 37.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			308204	08/13/19 10:43	FCG	TAL SEA
Total/NA	Analysis	8082A		1	308462	08/16/19 01:24	CJB	TAL SEA

Lab Chronicle

Client: Pacific Groundwater Group
Job ID: 580-88125-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: C4-0to27-100918
Lab Sample ID: 580-88125-8
Date Collected: 10/09/18 08:28
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 37.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			308116	08/12/19 12:08	MWW	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	308360	08/14/19 20:35	CJ	TAL SEA
Total/NA	Prep	HRMS-Sox	RA		315077	08/14/19 12:31	SR1	TAL SAC
Total/NA	Analysis	1613B	RA	1	316854	08/21/19 04:26	SMA	TAL SAC
Total/NA	Prep	HRMS-Sox			315077	08/14/19 12:31	SR1	TAL SAC
Total/NA	Analysis	1613B		1	316404	08/19/19 14:32	ALM	TAL SAC
Total/NA	Prep	3050B			308354	08/14/19 14:06	ART	TAL SEA
Total/NA	Analysis	6020B		5	308408	08/14/19 18:22	FCW	TAL SEA
Total/NA	Prep	7471A			308326	08/14/19 10:54	ART	TAL SEA
Total/NA	Analysis	7471A		1	308412	08/14/19 18:39	T1H	TAL SEA

Client Sample ID: D2-0to19-101018
Lab Sample ID: 580-88125-9
Date Collected: 10/10/18 15:21
Matrix: Solid
Date Received: 07/26/19 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	308680	08/18/19 14:12	JKM	TAL SEA
Total/NA	Analysis	D 2216		1	308264	08/13/19 17:21	JCM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	308996	08/21/19 13:20	JKM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	307634	08/06/19 11:26	AAC	TAL SEA
Total/NA	Analysis	D854		1	32648	08/13/19 00:00	AKL	TAL KNX
Total/NA	Analysis	D854		1	32736	08/13/19 00:00	AKL	TAL KNX

Client Sample ID: D2-0to19-101018
Lab Sample ID: 580-88125-9
Date Collected: 10/10/18 15:21
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 70.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			308204	08/13/19 10:43	FCG	TAL SEA
Total/NA	Analysis	8082A		1	308462	08/16/19 01:41	CJB	TAL SEA
Total/NA	Prep	3546			308116	08/12/19 12:08	MWW	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	308360	08/14/19 20:58	CJ	TAL SEA
Total/NA	Prep	HRMS-Sox			315077	08/14/19 12:31	SR1	TAL SAC
Total/NA	Analysis	1613B		1	316404	08/19/19 15:19	ALM	TAL SAC
Total/NA	Prep	3050B			308354	08/14/19 14:06	ART	TAL SEA
Total/NA	Analysis	6020B		5	308408	08/14/19 18:26	FCW	TAL SEA
Total/NA	Prep	7471A			308326	08/14/19 10:54	ART	TAL SEA
Total/NA	Analysis	7471A		1	308412	08/14/19 18:41	T1H	TAL SEA

Client Sample ID: F2-0to19-101018
Lab Sample ID: 580-88125-10
Date Collected: 10/10/18 16:36
Matrix: Solid
Date Received: 07/26/19 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	308680	08/18/19 14:17	JKM	TAL SEA

Lab Chronicle

Client: Pacific Groundwater Group
Job ID: 580-88125-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: F2-0to19-101018
Lab Sample ID: 580-88125-10
Date Collected: 10/10/18 16:36
Matrix: Solid
Date Received: 07/26/19 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	308264	08/13/19 17:21	JCM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	308996	08/21/19 13:20	JKM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	307634	08/06/19 11:26	AAC	TAL SEA
Total/NA	Analysis	D854		1	32648	08/13/19 00:00	AKL	TAL KNX
Total/NA	Analysis	D854		1	32736	08/13/19 00:00	AKL	TAL KNX

Client Sample ID: F2-0to19-101018
Lab Sample ID: 580-88125-10
Date Collected: 10/10/18 16:36
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 69.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			308204	08/13/19 10:43	FCG	TAL SEA
Total/NA	Analysis	8082A		1	308462	08/16/19 01:57	CJB	TAL SEA
Total/NA	Prep	3546			308116	08/12/19 12:08	MWW	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	308360	08/14/19 21:20	CJ	TAL SEA
Total/NA	Prep	HRMS-Sox			315077	08/14/19 12:31	SR1	TAL SAC
Total/NA	Analysis	1613B		1	316404	08/19/19 16:07	ALM	TAL SAC
Total/NA	Prep	3050B			308354	08/14/19 14:06	ART	TAL SEA
Total/NA	Analysis	6020B		5	308408	08/14/19 18:31	FCW	TAL SEA
Total/NA	Prep	7471A			308326	08/14/19 10:54	ART	TAL SEA
Total/NA	Analysis	7471A		1	308412	08/14/19 18:44	T1H	TAL SEA

Client Sample ID: G6-0to27-101818
Lab Sample ID: 580-88125-11
Date Collected: 10/18/18 14:12
Matrix: Solid
Date Received: 07/26/19 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	308680	08/18/19 14:21	JKM	TAL SEA
Total/NA	Analysis	D 2216		1	308264	08/13/19 17:21	JCM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	308996	08/21/19 13:20	JKM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	307638	08/06/19 11:30	AAC	TAL SEA
Total/NA	Analysis	D854		1	32648	08/13/19 00:00	AKL	TAL KNX
Total/NA	Analysis	D854		1	32736	08/13/19 00:00	AKL	TAL KNX

Client Sample ID: G6-0to27-101818
Lab Sample ID: 580-88125-11
Date Collected: 10/18/18 14:12
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 32.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			308212	08/13/19 11:37	FCG	TAL SEA
Total/NA	Analysis	8082A		1	308439	08/15/19 14:12	TL1	TAL SEA
Total/NA	Prep	3546			308184	08/13/19 09:12	FCG	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	308457	08/15/19 20:31	T1W	TAL SEA

Lab Chronicle

Client: Pacific Groundwater Group
Job ID: 580-88125-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: G6-0to27-101818
Lab Sample ID: 580-88125-11
Date Collected: 10/18/18 14:12
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 32.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox	RA		315077	08/14/19 12:31	SR1	TAL SAC
Total/NA	Analysis	1613B	RA	1	316854	08/21/19 05:04	SMA	TAL SAC
Total/NA	Prep	HRMS-Sox			315077	08/14/19 12:31	SR1	TAL SAC
Total/NA	Analysis	1613B		1	316404	08/19/19 16:54	ALM	TAL SAC
Total/NA	Prep	3050B			308354	08/14/19 14:06	ART	TAL SEA
Total/NA	Analysis	6020B		5	308408	08/14/19 18:35	FCW	TAL SEA
Total/NA	Prep	7471A			308326	08/14/19 10:54	ART	TAL SEA
Total/NA	Analysis	7471A		1	308412	08/14/19 18:46	T1H	TAL SEA

Client Sample ID: H2-0to30-101218
Lab Sample ID: 580-88125-12
Date Collected: 10/12/18 10:28
Matrix: Solid
Date Received: 07/26/19 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	308680	08/18/19 14:26	JKM	TAL SEA
Total/NA	Analysis	D 2216		1	308264	08/13/19 17:21	JCM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	308996	08/21/19 13:20	JKM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	307638	08/06/19 11:30	AAC	TAL SEA
Total/NA	Analysis	D854		1	32737	08/13/19 00:00	AKL	TAL KNX
Total/NA	Analysis	D854		1	32679	08/14/19 00:00	AKL	TAL KNX

Client Sample ID: H2-0to30-101218
Lab Sample ID: 580-88125-12
Date Collected: 10/12/18 10:28
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 42.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			308212	08/13/19 11:37	FCG	TAL SEA
Total/NA	Analysis	8082A		1	308439	08/15/19 15:03	TL1	TAL SEA
Total/NA	Prep	3546			308116	08/12/19 12:08	MWW	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	308360	08/14/19 21:43	CJ	TAL SEA
Total/NA	Prep	HRMS-Sox	RA		315077	08/14/19 12:31	SR1	TAL SAC
Total/NA	Analysis	1613B	RA	1	316854	08/21/19 05:42	SMA	TAL SAC
Total/NA	Prep	HRMS-Sox			315077	08/14/19 12:31	SR1	TAL SAC
Total/NA	Analysis	1613B		1	316404	08/19/19 17:42	ALM	TAL SAC
Total/NA	Prep	3050B			308354	08/14/19 14:06	ART	TAL SEA
Total/NA	Analysis	6020B		5	308408	08/14/19 18:40	FCW	TAL SEA
Total/NA	Prep	7471A			308326	08/14/19 10:54	ART	TAL SEA
Total/NA	Analysis	7471A		1	308412	08/14/19 18:48	T1H	TAL SEA

Client Sample ID: J2A3-0to18-101218
Lab Sample ID: 580-88125-13
Date Collected: 10/12/18 12:57
Matrix: Solid
Date Received: 07/26/19 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	308680	08/18/19 14:31	JKM	TAL SEA

Lab Chronicle

Client: Pacific Groundwater Group
Job ID: 580-88125-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: J2A3-0to18-101218
Lab Sample ID: 580-88125-13
Date Collected: 10/12/18 12:57
Matrix: Solid
Date Received: 07/26/19 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	308264	08/13/19 17:21	JCM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	308996	08/21/19 13:20	JKM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	307638	08/06/19 11:30	AAC	TAL SEA
Total/NA	Analysis	D854		1	32737	08/13/19 00:00	AKL	TAL KNX
Total/NA	Analysis	D854		1	32679	08/14/19 00:00	AKL	TAL KNX

Client Sample ID: J2A3-0to18-101218
Lab Sample ID: 580-88125-13
Date Collected: 10/12/18 12:57
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 80.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			308212	08/13/19 11:37	FCG	TAL SEA
Total/NA	Analysis	8082A		1	308439	08/15/19 15:19	TL1	TAL SEA
Total/NA	Prep	3546			308116	08/12/19 12:08	MWW	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	308360	08/14/19 22:05	CJ	TAL SEA
Total/NA	Prep	HRMS-Sox			315077	08/14/19 12:31	SR1	TAL SAC
Total/NA	Analysis	1613B		1	316404	08/19/19 18:29	ALM	TAL SAC
Total/NA	Prep	3050B			308354	08/14/19 14:06	ART	TAL SEA
Total/NA	Analysis	6020B		5	308408	08/14/19 19:03	FCW	TAL SEA
Total/NA	Prep	7471A			308326	08/14/19 10:54	ART	TAL SEA
Total/NA	Analysis	7471A		1	308412	08/14/19 18:51	T1H	TAL SEA

Client Sample ID: M4-0to26-101918
Lab Sample ID: 580-88125-14
Date Collected: 10/19/18 13:11
Matrix: Solid
Date Received: 07/26/19 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	308680	08/18/19 14:40	JKM	TAL SEA
Total/NA	Analysis	D 2216		1	308264	08/13/19 17:21	JCM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	308996	08/21/19 13:20	JKM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	307638	08/06/19 11:30	AAC	TAL SEA
Total/NA	Analysis	D854		1	32737	08/13/19 00:00	AKL	TAL KNX
Total/NA	Analysis	D854		1	32679	08/14/19 00:00	AKL	TAL KNX

Client Sample ID: M4-0to26-101918
Lab Sample ID: 580-88125-14
Date Collected: 10/19/18 13:11
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 38.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			308212	08/13/19 11:37	FCG	TAL SEA
Total/NA	Analysis	8082A		1	308439	08/15/19 15:36	TL1	TAL SEA
Total/NA	Prep	3546			308116	08/12/19 12:08	MWW	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	308360	08/14/19 22:28	CJ	TAL SEA

Client Sample ID: M4-0to26-101918
Lab Sample ID: 580-88125-14
Date Collected: 10/19/18 13:11
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 38.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox	RA		315080	08/14/19 12:34	SR1	TAL SAC
Total/NA	Analysis	1613B	RA	1	316854	08/21/19 06:21	SMA	TAL SAC
Total/NA	Prep	HRMS-Sox			315080	08/14/19 12:34	SR1	TAL SAC
Total/NA	Analysis	1613B		1	316404	08/19/19 19:16	ALM	TAL SAC
Total/NA	Prep	3050B			308354	08/14/19 14:06	ART	TAL SEA
Total/NA	Analysis	6020B		5	308408	08/14/19 19:07	FCW	TAL SEA
Total/NA	Prep	7471A			308326	08/14/19 10:54	ART	TAL SEA
Total/NA	Analysis	7471A		1	308412	08/14/19 18:53	T1H	TAL SEA

Client Sample ID: 515-0to26-101918
Lab Sample ID: 580-88125-15
Date Collected: 10/19/18 13:11
Matrix: Solid
Date Received: 07/26/19 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	308680	08/18/19 14:45	JKM	TAL SEA
Total/NA	Analysis	D 2216		1	308264	08/13/19 17:21	JCM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	308996	08/21/19 13:20	JKM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	307638	08/06/19 11:30	AAC	TAL SEA
Total/NA	Analysis	D854		1	32737	08/13/19 00:00	AKL	TAL KNX
Total/NA	Analysis	D854		1	32679	08/14/19 00:00	AKL	TAL KNX

Client Sample ID: 515-0to26-101918
Lab Sample ID: 580-88125-15
Date Collected: 10/19/18 13:11
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 38.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			308212	08/13/19 11:37	FCG	TAL SEA
Total/NA	Analysis	8082A		1	308439	08/15/19 15:53	TL1	TAL SEA
Total/NA	Prep	3546			308116	08/12/19 12:08	MWW	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	308360	08/14/19 22:50	CJ	TAL SEA
Total/NA	Prep	HRMS-Sox	RA		315080	08/14/19 12:34	SR1	TAL SAC
Total/NA	Analysis	1613B	RA	1	316854	08/21/19 06:59	SMA	TAL SAC
Total/NA	Prep	HRMS-Sox			315080	08/14/19 12:34	SR1	TAL SAC
Total/NA	Analysis	1613B		1	316404	08/19/19 20:04	ALM	TAL SAC
Total/NA	Prep	3050B			308354	08/14/19 14:06	ART	TAL SEA
Total/NA	Analysis	6020B		5	308408	08/14/19 19:12	FCW	TAL SEA
Total/NA	Prep	7471A			308326	08/14/19 10:54	ART	TAL SEA
Total/NA	Analysis	7471A		1	308412	08/15/19 01:57	T1H	TAL SEA

Client Sample ID: N5-0to28-101418
Lab Sample ID: 580-88125-16
Date Collected: 10/14/18 16:46
Matrix: Solid
Date Received: 07/26/19 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	308680	08/18/19 14:49	JKM	TAL SEA

Lab Chronicle

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88125-1

Client Sample ID: N5-0to28-101418
Date Collected: 10/14/18 16:46
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-16
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	308264	08/13/19 17:21	JCM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	308996	08/21/19 13:20	JKM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	307638	08/06/19 11:30	AAC	TAL SEA
Total/NA	Analysis	D854		1	32737	08/13/19 00:00	AKL	TAL KNX
Total/NA	Analysis	D854		1	32679	08/14/19 00:00	AKL	TAL KNX

Client Sample ID: N5-0to28-101418
Date Collected: 10/14/18 16:46
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-16
Matrix: Solid
Percent Solids: 31.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			308212	08/13/19 11:37	FCG	TAL SEA
Total/NA	Analysis	8082A		1	308439	08/15/19 16:10	TL1	TAL SEA
Total/NA	Prep	3546			308116	08/12/19 12:08	MWW	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	308360	08/14/19 23:13	CJ	TAL SEA
Total/NA	Prep	HRMS-Sox	RA		315080	08/14/19 12:34	SR1	TAL SAC
Total/NA	Analysis	1613B	RA	1	316846	08/20/19 16:34	ALM	TAL SAC
Total/NA	Prep	HRMS-Sox			315080	08/14/19 12:34	SR1	TAL SAC
Total/NA	Analysis	1613B		1	316531	08/20/19 05:16	SMA	TAL SAC
Total/NA	Prep	3050B			308354	08/14/19 14:06	ART	TAL SEA
Total/NA	Analysis	6020B		5	308408	08/14/19 19:16	FCW	TAL SEA
Total/NA	Prep	7471A			308326	08/14/19 10:54	ART	TAL SEA
Total/NA	Analysis	7471A		1	308412	08/15/19 01:59	T1H	TAL SEA

Client Sample ID: N7-0to27-101418
Date Collected: 10/14/18 15:10
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-17
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	308680	08/18/19 14:54	JKM	TAL SEA
Total/NA	Analysis	D 2216		1	308264	08/13/19 17:21	JCM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	308996	08/21/19 13:20	JKM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	307638	08/06/19 11:30	AAC	TAL SEA
Total/NA	Analysis	D854		1	32737	08/13/19 00:00	AKL	TAL KNX
Total/NA	Analysis	D854		1	32679	08/14/19 00:00	AKL	TAL KNX

Client Sample ID: N7-0to27-101418
Date Collected: 10/14/18 15:10
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-17
Matrix: Solid
Percent Solids: 34.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			308212	08/13/19 11:37	FCG	TAL SEA
Total/NA	Analysis	8082A		1	308439	08/15/19 16:26	TL1	TAL SEA

Lab Chronicle

Client: Pacific Groundwater Group
Job ID: 580-88125-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: N7-0to27-101418
Lab Sample ID: 580-88125-17
Date Collected: 10/14/18 15:10
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 34.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			308116	08/12/19 12:08	MWW	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	308360	08/14/19 23:35	CJ	TAL SEA
Total/NA	Prep	HRMS-Sox	RA		315080	08/14/19 12:34	SR1	TAL SAC
Total/NA	Analysis	1613B	RA	1	316846	08/20/19 17:12	ALM	TAL SAC
Total/NA	Prep	HRMS-Sox			315080	08/14/19 12:34	SR1	TAL SAC
Total/NA	Analysis	1613B		1	316531	08/20/19 06:04	SMA	TAL SAC
Total/NA	Prep	3050B			308354	08/14/19 14:06	ART	TAL SEA
Total/NA	Analysis	6020B		5	308408	08/14/19 19:21	FCW	TAL SEA
Total/NA	Prep	7471A			308326	08/14/19 10:54	ART	TAL SEA
Total/NA	Analysis	7471A		1	308412	08/15/19 02:02	T1H	TAL SEA

Client Sample ID: O7-0to27-101918
Lab Sample ID: 580-88125-18
Date Collected: 10/19/18 15:36
Matrix: Solid
Date Received: 07/26/19 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	308680	08/18/19 14:58	JKM	TAL SEA
Total/NA	Analysis	D 2216		1	308264	08/13/19 17:21	JCM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	308996	08/21/19 13:20	JKM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	307638	08/06/19 11:30	AAC	TAL SEA
Total/NA	Analysis	D854		1	32737	08/13/19 00:00	AKL	TAL KNX
Total/NA	Analysis	D854		1	32679	08/14/19 00:00	AKL	TAL KNX

Client Sample ID: O7-0to27-101918
Lab Sample ID: 580-88125-18
Date Collected: 10/19/18 15:36
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 33.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			308212	08/13/19 11:37	FCG	TAL SEA
Total/NA	Analysis	8082A		1	308439	08/15/19 16:43	TL1	TAL SEA
Total/NA	Prep	3546			308116	08/12/19 12:08	MWW	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	308360	08/14/19 23:58	CJ	TAL SEA
Total/NA	Prep	HRMS-Sox	RA		315080	08/14/19 12:34	SR1	TAL SAC
Total/NA	Analysis	1613B	RA	1	316846	08/20/19 17:50	ALM	TAL SAC
Total/NA	Prep	HRMS-Sox			315080	08/14/19 12:34	SR1	TAL SAC
Total/NA	Analysis	1613B		1	316531	08/20/19 06:51	SMA	TAL SAC
Total/NA	Prep	3050B			308354	08/14/19 14:06	ART	TAL SEA
Total/NA	Analysis	6020B		5	308408	08/14/19 19:25	FCW	TAL SEA
Total/NA	Prep	7471A			308326	08/14/19 10:54	ART	TAL SEA
Total/NA	Analysis	7471A		1	308412	08/15/19 02:04	T1H	TAL SEA

Lab Chronicle

Client: Pacific Groundwater Group
Job ID: 580-88125-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: Q2-0to13-101818
Lab Sample ID: 580-88125-19
Date Collected: 10/18/18 09:39
Matrix: Solid
Date Received: 07/26/19 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	308680	08/18/19 15:02	JKM	TAL SEA
Total/NA	Analysis	D 2216		1	308264	08/13/19 17:21	JCM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	308996	08/21/19 13:20	JKM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	307638	08/06/19 11:30	AAC	TAL SEA
Total/NA	Analysis	D854		1	32737	08/13/19 00:00	AKL	TAL KNX
Total/NA	Analysis	D854		1	32679	08/14/19 00:00	AKL	TAL KNX

Client Sample ID: Q2-0to13-101818
Lab Sample ID: 580-88125-19
Date Collected: 10/18/18 09:39
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 68.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			308212	08/13/19 11:37	FCG	TAL SEA
Total/NA	Analysis	8082A		1	308439	08/15/19 17:00	TL1	TAL SEA
Total/NA	Prep	3546			308116	08/12/19 12:08	MWW	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	308360	08/15/19 00:43	CJ	TAL SEA
Total/NA	Prep	HRMS-Sox			315080	08/14/19 12:34	SR1	TAL SAC
Total/NA	Analysis	1613B		1	316531	08/20/19 07:39	SMA	TAL SAC
Total/NA	Prep	3050B			308354	08/14/19 14:06	ART	TAL SEA
Total/NA	Analysis	6020B		5	308408	08/14/19 19:30	FCW	TAL SEA
Total/NA	Prep	7471A			308326	08/14/19 10:54	ART	TAL SEA
Total/NA	Analysis	7471A		1	308412	08/14/19 17:24	T1H	TAL SEA

Client Sample ID: Q6-0to27-102018
Lab Sample ID: 580-88125-20
Date Collected: 10/20/18 09:19
Matrix: Solid
Date Received: 07/26/19 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	308680	08/18/19 15:07	JKM	TAL SEA
Total/NA	Analysis	D 2216		1	308264	08/13/19 17:21	JCM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	308996	08/21/19 13:20	JKM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	307638	08/06/19 11:30	AAC	TAL SEA
Total/NA	Analysis	D854		1	32737	08/13/19 00:00	AKL	TAL KNX
Total/NA	Analysis	D854		1	32679	08/14/19 00:00	AKL	TAL KNX

Client Sample ID: Q6-0to27-102018
Lab Sample ID: 580-88125-20
Date Collected: 10/20/18 09:19
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 30.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			308212	08/13/19 11:37	FCG	TAL SEA
Total/NA	Analysis	8082A		1	308439	08/15/19 17:17	TL1	TAL SEA
Total/NA	Prep	3546			308116	08/12/19 12:08	MWW	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	308360	08/15/19 01:05	CJ	TAL SEA

Lab Chronicle

Client: Pacific Groundwater Group
Job ID: 580-88125-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: Q6-0to27-102018
Lab Sample ID: 580-88125-20
Date Collected: 10/20/18 09:19
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 30.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox	RA		315080	08/14/19 12:34	SR1	TAL SAC
Total/NA	Analysis	1613B	RA	1	316846	08/20/19 18:29	ALM	TAL SAC
Total/NA	Prep	HRMS-Sox			315080	08/14/19 12:34	SR1	TAL SAC
Total/NA	Analysis	1613B		1	316531	08/20/19 08:26	SMA	TAL SAC
Total/NA	Prep	3050B			308354	08/14/19 14:06	ART	TAL SEA
Total/NA	Analysis	6020B		5	308408	08/14/19 19:34	FCW	TAL SEA
Total/NA	Prep	7471A			308326	08/14/19 10:54	ART	TAL SEA
Total/NA	Analysis	7471A		1	308412	08/14/19 17:26	T1H	TAL SEA

Client Sample ID: T6-0to29-101618
Lab Sample ID: 580-88125-21
Date Collected: 10/16/18 14:38
Matrix: Solid
Date Received: 07/26/19 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	308680	08/18/19 15:23	JKM	TAL SEA
Total/NA	Analysis	D 2216		1	308264	08/13/19 17:21	JCM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	308996	08/21/19 13:20	JKM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	307638	08/06/19 11:30	AAC	TAL SEA
Total/NA	Analysis	D854		1	32737	08/13/19 00:00	AKL	TAL KNX
Total/NA	Analysis	D854		1	32679	08/14/19 00:00	AKL	TAL KNX

Client Sample ID: T6-0to29-101618
Lab Sample ID: 580-88125-21
Date Collected: 10/16/18 14:38
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 32.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			308212	08/13/19 11:37	FCG	TAL SEA
Total/NA	Analysis	8082A		1	308439	08/15/19 17:33	TL1	TAL SEA
Total/NA	Prep	3546			308116	08/12/19 12:08	MWW	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	308360	08/15/19 01:28	CJ	TAL SEA
Total/NA	Prep	HRMS-Sox	RA		315080	08/14/19 12:34	SR1	TAL SAC
Total/NA	Analysis	1613B	RA	1	316846	08/20/19 19:07	ALM	TAL SAC
Total/NA	Prep	HRMS-Sox			315080	08/14/19 12:34	SR1	TAL SAC
Total/NA	Analysis	1613B		1	316531	08/20/19 09:14	SMA	TAL SAC
Total/NA	Prep	3050B			308354	08/14/19 14:13	ART	TAL SEA
Total/NA	Analysis	6020B		5	308408	08/14/19 19:39	FCW	TAL SEA
Total/NA	Prep	7471A			308326	08/14/19 10:54	ART	TAL SEA
Total/NA	Analysis	7471A		1	308412	08/14/19 17:28	T1H	TAL SEA

Laboratory References:

TAL KNX = Eurofins TestAmerica, Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

TAL SEA = Eurofins TestAmerica, Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Pacific Groundwater Group
Job ID: 580-88125-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Laboratory: Eurofins TestAmerica, Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-024	01-19-22
Alaska (UST)	State Program	17-024	01-19-20
ANAB	Dept. of Defense ELAP	L2236	01-19-22
ANAB	DoD	L2236	01-19-22
ANAB	ISO/IEC 17025	L2236	01-19-22
ANAB	ISO/IEC 17025	L2236	01-19-22
California	State	2901	11-05-19
California	State Program	2901	11-05-19
Montana (UST)	State	NA	04-13-21
Montana (UST)	State Program	N/A	04-30-20
Oregon	NELAP	WA100007	11-05-19
Oregon	NELAP	WA100007	11-05-19
US Fish & Wildlife	Federal	LE058448-0	07-31-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	Federal	P330-14-00126	02-10-20
USDA	US Federal Programs	P330-17-00039	02-10-20
Washington	State	C553	02-17-20
Washington	State Program	C553	02-17-20

Laboratory: Eurofins TestAmerica, Knoxville

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
	AFCEE	N/A	
ANAB	Dept. of Defense ELAP	L2311	02-14-22
ANAB	Dept. of Energy	L2311.01	02-14-22
ANAB	DoD	L2311	02-13-22
ANAB	DOE	L2311.01	02-13-22
ANAB	ISO/IEC 17025	L2311	02-13-22
Arkansas DEQ	State	2423	06-16-20
Arkansas DEQ	State Program	88-0688	06-16-20
California	State	2423	06-30-20
California	State Program	2423	06-30-20
Colorado	State	TN00009	02-29-20
Colorado	State Program	TN00009	02-28-20
Connecticut	State	PH-0223	09-30-19
Connecticut	State Program	PH-0223	09-30-19
Florida	NELAP	E87177	06-30-20
Florida	NELAP	E87177	06-30-20
Georgia	State Program	906	04-13-20
Georgia (DW)	State	906	04-13-20
Hawaii	State	NA	04-13-20
Hawaii	State Program	N/A	04-13-20
Kansas	NELAP	E-10349	10-31-19
Kansas	NELAP	E-10349	10-31-19
Kentucky (DW)	State	90101	12-31-19
Kentucky (DW)	State Program	90101	12-31-19
Louisiana	NELAP	83979	06-30-20
Louisiana (DW)	NELAP	LA160005	12-31-19
Louisiana (DW)	State	LA019	12-31-19

Accreditation/Certification Summary

Client: Pacific Groundwater Group
Job ID: 580-88125-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Laboratory: Eurofins TestAmerica, Knoxville (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Maryland	State	277	03-31-20
Maryland	State Program	277	03-31-20
Michigan	State	9933	04-13-20
Michigan	State Program	9933	04-13-20
Nevada	State	TN00009	07-31-20
Nevada	State Program	TN00009	07-31-20
New Hampshire	NELAP	2999	01-17-20
New Jersey	NELAP	TN001	06-30-20
New Jersey	NELAP	TN001	06-30-20
New York	NELAP	10781	03-31-20
New York	NELAP	10781	03-31-20
North Carolina (DW)	State	21705	07-31-20
North Carolina (DW)	State Program	21705	07-31-20
North Carolina (WW/SW)	State Program	64	12-31-19
Ohio VAP	State	CL0059	08-28-20
Ohio VAP	State Program	CL0059	08-28-20
Oklahoma	State	9415	08-31-19
Oklahoma	State Program	9415	08-31-20
Oregon	NELAP	TNI0189	01-01-20
Oregon	NELAP	TNI0189	01-01-20
Pennsylvania	NELAP	68-00576	12-31-19
Pennsylvania	NELAP	68-00576	12-31-19
Tennessee	State	02014	04-13-20
Tennessee	State Program	2014	04-13-20
Texas	NELAP	T104704380-16-9	08-31-20
Texas	NELAP	T104704380-18-12	08-31-19
US Fish & Wildlife	Federal	LE-058448-0	07-31-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	Federal	P330-16-00262	08-20-22
Utah	NELAP	TN00009	07-31-20
Virginia	NELAP	460176	09-14-19
Virginia	NELAP	460176	09-14-19
Washington	State	C593	01-19-20
Washington	State Program	C593	01-19-20
West Virginia (DW)	State	9955C	12-31-19
West Virginia (DW)	State Program	9955C	12-31-19
West Virginia DEP	State	345	04-30-20
West Virginia DEP	State Program	345	04-30-20
Wisconsin	State Program	998044300	08-31-20

Accreditation/Certification Summary

Client: Pacific Groundwater Group
Job ID: 580-88125-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Laboratory: Eurofins TestAmerica, Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State Program	17-020	01-20-21
ANAB	Dept. of Defense ELAP	L2468	01-20-21
ANAB	DoD	L2468	01-20-21
ANAB	DOE	L2468.01	01-20-21
ANAB	ISO/IEC 17025	L2468	08-09-21
Arizona	State	AZ0708	08-11-20
Arizona	State Program	AZ0708	08-11-20
Arkansas DEQ	State Program	88-0691	06-17-20
California	State	2897	01-31-20
California	State Program	2897	01-31-20
Colorado	State Program	CA00044	08-31-19
Connecticut	State	PH-0691	06-30-21
Connecticut	State Program	PH-0691	06-30-21
Florida	NELAP	E87570	06-30-20
Florida	NELAP	E87570	06-30-20
Hawaii	State	<cert No.>	01-29-20
Hawaii	State Program	N/A	01-29-20
Illinois	NELAP	200060	03-17-20 *
Illinois	NELAP	200060	03-17-20
Kansas	NELAP	E-10375	10-31-19
Louisiana	NELAP	30612	06-30-20
Maine	State Program	CA0004	04-14-20
Michigan	State	9947	01-29-20
Michigan	State Program	9947	01-31-20
New Hampshire	NELAP	2997	04-20-20
New York	NELAP	11666	04-01-20
Oregon	NELAP	4040	01-29-20
Oregon	NELAP	4040	01-29-20
Pennsylvania	NELAP	68-01272	03-31-20
Pennsylvania	NELAP	68-01272	03-31-20
Texas	NELAP	T104704399	05-31-20
Texas	NELAP	T104704399-19-13	05-31-20
US Fish & Wildlife	Federal	LE148388-0	07-31-20
US Fish & Wildlife	US Federal Programs	58448	07-31-20
USDA	Federal	P330-18-00239	01-17-21
USEPA UCMR	Federal	CA00044	12-31-20
Utah	NELAP	CA00044	02-29-20
Vermont	State Program	VT-4040	04-16-20
Virginia	NELAP	460278	03-14-20
Virginia	NELAP	460278	03-14-20
Washington	State	C581	05-05-20
Washington	State Program	C581	05-05-20
West Virginia (DW)	State	9930C	12-31-19
West Virginia (DW)	State Program	9930C	12-31-19
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Sample Summary

Client: Pacific Groundwater Group
Job ID: 580-88125-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
580-88125-1	A1-0to30-102018	Solid	10/20/18 12:05	07/26/19 13:10	
580-88125-2	A2-0to26-100818	Solid	10/08/18 14:04	07/26/19 13:10	
580-88125-3	A3-0to31-100818	Solid	10/08/18 11:14	07/26/19 13:10	
580-88125-4	A4-0to25-100818	Solid	10/08/18 13:26	07/26/19 13:10	
580-88125-5	A5-0to25-100818	Solid	10/08/18 14:38	07/26/19 13:10	
580-88125-6	A6-0to23-100818	Solid	10/08/18 16:08	07/26/19 13:10	
580-88125-7	A7-0to26-100918	Solid	10/09/18 13:23	07/26/19 13:10	
580-88125-8	C4-0to27-100918	Solid	10/09/18 08:28	07/26/19 13:10	
580-88125-9	D2-0to19-101018	Solid	10/10/18 15:21	07/26/19 13:10	
580-88125-10	F2-0to19-101018	Solid	10/10/18 16:36	07/26/19 13:10	
580-88125-11	G6-0to27-101818	Solid	10/18/18 14:12	07/26/19 13:10	
580-88125-12	H2-0to30-101218	Solid	10/12/18 10:28	07/26/19 13:10	
580-88125-13	J2A3-0to18-101218	Solid	10/12/18 12:57	07/26/19 13:10	
580-88125-14	M4-0to26-101918	Solid	10/19/18 13:11	07/26/19 13:10	
580-88125-15	515-0to26-101918	Solid	10/19/18 13:11	07/26/19 13:10	
580-88125-16	N5-0to28-101418	Solid	10/14/18 16:46	07/26/19 13:10	
580-88125-17	N7-0to27-101418	Solid	10/14/18 15:10	07/26/19 13:10	
580-88125-18	O7-0to27-101918	Solid	10/19/18 15:36	07/26/19 13:10	
580-88125-19	Q2-0to13-101818	Solid	10/18/18 09:39	07/26/19 13:10	
580-88125-20	Q6-0to27-102018	Solid	10/20/18 09:19	07/26/19 13:10	
580-88125-21	T6-0to29-101618	Solid	10/16/18 14:38	07/26/19 13:10	

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Janet Know	Site Contact/Sampler: Jeff Parker	Date:7/25/2019	COC No:
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:Elaine Walker	Carrier:	1 of 2 COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115 88125
2377 Eastlake Ave E, Seattle WA 98102	standard			SDG No.
206 329 0141 Phone	TAT if different from Below			
206 329 6968 FAX	[x] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	1668A - PCB Congeners	8082A - PCB Aroclors	1613B - Dioxin/Furans	6020B Metals - As, Cd, Cu, Pb, Zn	7471A - Mercury	ASTM D7928/D6913 - Grain Size	D854 - Specific Gravity	NWTPH-Diesel Extended	SM9060 - TOC	Total Solids	Moisture @70 C	Sample Specific Notes:
A1-0to30-102018	10/20/2018	12:05:00 PM		S		x	x	x	x	x	x	x	x	x	x	x	580-81257-5
-2 A2-0to26-100818	10/8/2018	2:04:00 PM		S		x	x	x	x	x	x	x	x	x	x	x	580-81041-5
A3-0to31-100818	10/8/2018	11:14:00 AM		S		x	x	x	x	x	x	x	x	x	x	x	580-81041-2
-4 A4-0to25-100818	10/8/2018	1:26:00 PM		S		x	x	x	x	x	x	x	x	x	x	x	580-81041-3
A5-0to25-100818	10/8/2018	2:38:00 PM		S		x	x	x	x	x	x	x	x	x	x	x	580-81041-4
-6 A6-0to23-100818	10/8/2018	4:08:00 PM		S		x	x	x	x	x	x	x	x	x	x	x	580-81041-6
A7-0to26-100918	10/9/2018	1:23:00 PM		S		x	x	x	x	x	x	x	x	x	x	x	580-81041-10
-8 C4-0to27-100918	10/9/2018	8:28:00 AM		S		x	x	x	x	x	x	x	x	x	x	x	580-81041-12
D2-0to19-101018	10/10/2018	3:21:00 PM		S		x	x	x	x	x	x	x	x	x	x	x	580-81041-28
-10 F2-0to19-101018	10/10/2018	4:36:00 PM		S		x	x	x	x	x	x	x	x	x	x	x	580-81041-29
G6-0to27-101818	10/18/2018	2:12:00 PM		S		x	x	x	x	x	x	x	x	x	x	x	580-81213-8
-12 H2-0to30-101218	10/12/2018	10:28:00 AM		S		x	x	x	x	x	x	x	x	x	x	x	580-81081-32

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification

[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

[ ] Return To Client _____ Months

Archive remaining samples

530-88125 Chain of Custody

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PGG	7/26/19 1310	M. Elaine Walker	Eurofins TestAmerica	07/26/2019 @ 1310
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Form No. CA-C-WI-002, dated 04/07/2011

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Janet Know	Site Contact/Sampler: Jeff Parker	Date:7/25/2019	COC No:
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:Elaine Walker	Carrier:	2 of 2 COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	standard			98125
206 329 0141 Phone	TAT if different from Below ____			SDG No.
206 329 6968 FAX	[X] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

	Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	1668A - PCB Congeners	8082A - PCB Aroclors	1613B - Dioxin/Furans	6020B Metals - As, Cd, Cu, Pb, Zn	7471A - Mercury	ASTM D7928/D6913 - Grain Size	D854 - Specific Gravity	NWTPH-Diesel Extended	SM9060 - TOC	Total Solids	Moisture @70 C	Sample Specific Notes:
	J2A3-0to18-101218	10/12/2018	12:57:00 PM		S		x	x	x	x	x	x	x	x	x	x	x	580-81081-29
-14	M4-0to26-101918	10/19/2018	1:11:00 PM		S		x	x	x	x	x	x	x	x	x	x	x	580-81257-42
	515-0to26-101918	10/19/2018	1:11:00 PM		S		x	x	x	x	x	x	x	x	x	x	x	580-81257-44
-16	N5-0to28-101418	10/14/2018	4:46:00 PM		S		x	x	x	x	x	x	x	x	x	x	x	580-81081-10
	N7-0to27-101418	10/14/2018	3:10:00 PM		S		x	x	x	x	x	x	x	x	x	x	x	580-81081-8
-18	O7-0to27-101918	10/19/2018	3:36:00 PM		S		x	x	x	x	x	x	x	x	x	x	x	580-81257-39
	Q2-0to13-101818	10/18/2018	9:39:00 AM		S		x	x	x	x	x	x	x	x	x	x	x	580-81213-4
-20	Q6-0to27-102018	10/20/2018	9:19:00 AM		S		x	x	x	x	x	x	x	x	x	x	x	580-81257-23
	T6-0to29-101618	10/16/2018	2:38:00 PM		S		x	x	x	x	x	x	x	x	x	x	x	580-81156-24

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] Return To Client [ ] Disposal By Lab [X] Archive For _____ Months

Archive remaining samples

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Jeff Parker	PGG	7/26/19 1310	M. Elaine Walker	Eurofins TestAmerica	07/26/2019 @ 1310
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Form No. CA-C-WI-002, dated 04/07/2011

Eurofins TestAmerica, Seattle
5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310 Fax: 253-922-5047

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Walker, Elaine M	Carrier Tracking No(s):	COC No: 580-68736.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: elaine.walker@testamericainc.com	State of Origin: Oregon	Page: Page 1 of 3
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 580-88125-1
Address: 5815 Middlebrook Pike, ,	Due Date Requested: 8/14/2019			
City: Knoxville	TAT Requested (days):			
State, Zip: TN, 37921				
Phone: 865-291-3000(Tel) 865-584-4315(Fax)	PO #:			
Email:	WO #:			
Project Name: Swan Island Lagoon Sediment Investigatio	Project #: 58013007			
Site:	SSOW#:			

Analysis Requested

580-88125 Chain of Custody

Preservation Codes:
A - HCL
- Hexane
None
AsNaO2
Na2O4S
Na2SO3
Na2S2O3
I2SO4
SP Dodecahydrate
cetone
ICAA
w - pH 4-5
Z - other (specify)
L - EDA
Other:



Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	D854/ Specific Gravity	1668B/1668_P_Sox 209 PCBs plus Totals	Screen_1668/Screen_PCB_P_S	Total Number of contai	Special Instructions/Note:
			Preservation Code		X	X				X	
A1-0to30-102018	10/20/18	12:05 Pacific		Solid			X	X	X	1	580-81257-5
A2-0to26-100818	10/8/18	14:04 Pacific		Solid			X	X	X	1	580-81041-5
A3-0to31-100818	10/8/18	11:14 Pacific		Solid			X	X	X	1	580-81041-2
A4-0to25-100818	10/8/18	13:26 Pacific		Solid			X	X	X	1	580-81041-3
A5-0to25-100818	10/8/18	14:38 Pacific		Solid			X	X	X	1	580-81041-4
A6-0to23-100818	10/8/18	16:08 Pacific		Solid			X	X	X	1	580-81041-6
A7-0to26-100918	10/9/18	13:23 Pacific		Solid			X	X	X	1	580-81041-10
C4-0to27-100918	10/9/18	08:28 Pacific		Solid			X	X	X	1	580-81041-12
D2-0to19-101018	10/10/18	15:21 Pacific		Solid			X	X	X	1	580-81041-28

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: K Presley	Date/Time: 8/8/19 1045	Company: TA Euro	Received by: [signature]	Date/Time: 8-8-19 13:30	Company: ETA KNX
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks

Ver: 01/16/2019

Eurofins TestAmerica, Seattle
5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310 Fax: 253-922-5047

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Walker, Elaine M	Carrier Tracking No(s):	COC No: 580-68736.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: elaine.walker@testamericainc.com	State of Origin: Oregon	Page: Page 2 of 3
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 580-88125-1
Address: 5815 Middlebrook Pike, ,	Due Date Requested: 8/14/2019			
City: Knoxville	TAT Requested (days):			
State, Zip: TN, 37921				
Phone: 865-291-3000(Tel) 865-584-4315(Fax)	PO #:			
Email:	WO #:			
Project Name: Swan Island Lagoon Sediment Investigatio	Project #: 58013007			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	D854/ Specific Gravity	1668B/1668_P_Sox 209 PCBs plus Totals	Screen_1668/Screen_PCB_P_S	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
F2-0to19-101018	10/10/18	16:36 Pacific		Solid			X	X	X	1	580-81041-29
G6-0to27-101818	10/18/18	14:12 Pacific		Solid			X	X	X	1	580-81213-8
H2-0to30-101218	10/12/18	10:28 Pacific		Solid			X	X	X	1	580-81081-32
J2A3-0to18-101218	10/12/18	12:57 Pacific		Solid			X	X	X	1	580-81081-29
M4-0to26-101918	10/19/18	13:11 Pacific		Solid			X	X	X	1	580-81257-42
515-0to26-101918	10/19/18	13:11 Pacific		Solid			X	X	X	1	580-81257-44
N5-0to28-101418	10/14/18	16:46 Pacific		Solid			X	X	X	1	580-81081-10
N7-0to27-101418	10/14/18	15:10 Pacific		Solid			X	X	X	1	580-81081-8
O7-0to27-101918	10/19/18	15:36 Pacific		Solid			X	X	X	1	580-81257-39

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon cut subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) | Primary Deliverable Rank: 2 | Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: K Preste	Date/Time: 8/8/19 1045	Company: [illegible]	Received by: [illegible]	Date/Time: 8-8-19 15:30	Company: BTA KW X
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

Eurofins TestAmerica, Seattle
5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310 Fax 253-922-5047

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Walker, Elaine M	Carrier Tracking No(s):	COC No: 580-68736.3
Client Contact: Shipping/Receiving	Phone:	E-Mail: elaine.walker@testamericainc.com	State of Origin: Oregon	Page: Page 3 of 3
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 580-88125-1
Address: 5815 Middlebrook Pike, ,	Due Date Requested: 8/14/2019			
City: Knoxville	TAT Requested (days):			
State, Zip: TN, 37921				
Phone: 865-291-3000(Tel) 865-584-4315(Fax)	PO #:			
Email:	WO #:			
Project Name: Swan Island Lagoon Sediment Investigatio	Project #: 58013007			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	D854/ Specific Gravity	1668B/1668B_P_Sox_209 PCBs plus Totals	Screen_1668/Screen_PCB_P_S	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
Q2-0to13-101818	10/18/18	09:39 Pacific		Solid			X	X	X	1	580-81213-4
Q6-0to27-102018	10/20/18	09:19 Pacific		Solid			X	X	X	1	580-81257-23
T6-0to29-101618	10/16/18	14:38 Pacific		Solid			X	X	X	1	580-81156-24

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	8/8/19 1045	ETA	[signature]	8-8-19 10:30	ETA KNX
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

Isotope Dilution Summary

Client: Pacific Groundwater Group
Job ID: 580-88125-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Solid **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	HxCDD (32-141)	HxCDF (26-152)	HxDD (28-130)	HxDF (26-123)	HxCF (29-147)
580-88125-1	A1-0to30-102018	42	45	51	57	66	59	61	64
580-88125-2	A2-0to26-100818	44	46	52	60	69	55	60	65
580-88125-2 - RA	A2-0to26-100818								
580-88125-3	A3-0to31-100818	46	49	54	62	73	57	65	65
580-88125-3 - RA	A3-0to31-100818								
580-88125-4	A4-0to25-100818	58	57	59	75	96	65	82	76
580-88125-4 - RA	A4-0to25-100818								
580-88125-5	A5-0to25-100818	80	77	86	103	120	88	110	103
580-88125-5 - RA	A5-0to25-100818								
580-88125-6	A6-0to23-100818	55	49	61	70	85	59	74	72
580-88125-6 - RA	A6-0to23-100818								
580-88125-7	A7-0to26-100918	57	56	63	68	87	64	77	76
580-88125-7 - RA	A7-0to26-100918								
580-88125-8	C4-0to27-100918	47	48	52	58	74	53	64	63
580-88125-8 - RA	C4-0to27-100918								
580-88125-9	D2-0to19-101018	55	56	58	65	81	61	71	68
580-88125-10	F2-0to19-101018	55	56	60	65	80	62	72	70
580-88125-11	G6-0to27-101818	46	50	51	61	74	52	67	65
580-88125-11 - RA	G6-0to27-101818								
580-88125-12	H2-0to30-101218	58	58	64	73	91	62	80	78
580-88125-12 - RA	H2-0to30-101218								
580-88125-13	J2A3-0to18-101218	57	58	59	77	101	62	88	75
580-88125-14	M4-0to26-101918	61	60	67	80	105	65	90	77
580-88125-14 - RA	M4-0to26-101918								
580-88125-15	515-0to26-101918	49	47	54	70	95	54	80	67
580-88125-15 - RA	515-0to26-101918								
580-88125-16	N5-0to28-101418	63	63	71	69	80	64	71	75
580-88125-16 - RA	N5-0to28-101418								
580-88125-17	N7-0to27-101418	57	54	64	59	69	55	63	65
580-88125-17 - RA	N7-0to27-101418								
580-88125-18	O7-0to27-101918	60	57	66	63	72	58	66	68
580-88125-18 - RA	O7-0to27-101918								
580-88125-19	Q2-0to13-101818	41	40	49	51	57	48	52	55
580-88125-20	Q6-0to27-102018	57	54	63	58	70	58	63	64
580-88125-20 - RA	Q6-0to27-102018								
580-88125-21	T6-0to29-101618	54	52	62	59	70	58	63	66
580-88125-21 - RA	T6-0to29-101618								
LCSSRM 320-315077/4-A	Lab Control Sample	57	64	66	67	76	64	70	71
LCSSRM 320-315077/5-A	Lab Control Sample	56	62	65	69	82	67	71	71
LCSSRM 320-315080/4-A	Lab Control Sample	66	67	72	68	78	68	72	73
MB 320-315077/1-A	Method Blank	76	85	83	94	108	85	99	92
MB 320-315080/1-A	Method Blank	75	76	79	79	89	77	82	83

		Percent Isotope Dilution Recovery (Acceptance Limits)						
Lab Sample ID	Client Sample ID	PeCDD (25-181)	PeCDF (24-185)	13CHxCF (28-136)	PeCF (21-178)	TCDD (25-164)	TCDF (24-169)	OCDD (17-157)
580-88125-1	A1-0to30-102018	61	62	62	64	65	71	35
580-88125-2	A2-0to26-100818	60	62	62	62	61	71	43
580-88125-2 - RA	A2-0to26-100818						69	
580-88125-3	A3-0to31-100818	58	62	63	64	61	68	47

Eurofins TestAmerica, Seattle

Isotope Dilution Summary

Client: Pacific Groundwater Group
Job ID: 580-88125-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Matrix: Solid
Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)						
Lab Sample ID	Client Sample ID	PeCDD (25-181)	PeCDF (24-185)	13CHxCF (28-136)	PeCF (21-178)	TCDD (25-164)	TCDF (24-169)	OCDD (17-157)
580-88125-3 - RA	A3-0to31-100818						72	
580-88125-4	A4-0to25-100818	75	77	75	77	67	78	57
580-88125-4 - RA	A4-0to25-100818						92	
580-88125-5	A5-0to25-100818	67	69	106	73	66	71	79
580-88125-5 - RA	A5-0to25-100818						73	
580-88125-6	A6-0to23-100818	67	70	73	71	67	74	55
580-88125-6 - RA	A6-0to23-100818						77	
580-88125-7	A7-0to26-100918	69	73	76	72	69	76	50
580-88125-7 - RA	A7-0to26-100918						76	
580-88125-8	C4-0to27-100918	58	62	63	64	59	65	49
580-88125-8 - RA	C4-0to27-100918						67	
580-88125-9	D2-0to19-101018	62	62	68	63	59	63	54
580-88125-10	F2-0to19-101018	65	68	71	68	64	69	54
580-88125-11	G6-0to27-101818	60	64	64	65	60	67	47
580-88125-11 - RA	G6-0to27-101818						71	
580-88125-12	H2-0to30-101218	71	73	78	75	69	75	58
580-88125-12 - RA	H2-0to30-101218						78	
580-88125-13	J2A3-0to18-101218	70	71	82	71	66	76	54
580-88125-14	M4-0to26-101918	72	72	82	72	66	71	66
580-88125-14 - RA	M4-0to26-101918						75	
580-88125-15	515-0to26-101918	62	64	69	67	58	65	56
580-88125-15 - RA	515-0to26-101918						77	
580-88125-16	N5-0to28-101418	73	72	71	74	67	70	64
580-88125-16 - RA	N5-0to28-101418						75	
580-88125-17	N7-0to27-101418	60	61	61	62	57	58	59
580-88125-17 - RA	N7-0to27-101418						62	
580-88125-18	O7-0to27-101918	63	63	65	65	59	60	60
580-88125-18 - RA	O7-0to27-101918						67	
580-88125-19	Q2-0to13-101818	53	54	54	58	55	58	35
580-88125-20	Q6-0to27-102018	61	62	62	64	59	62	58
580-88125-20 - RA	Q6-0to27-102018						72	
580-88125-21	T6-0to29-101618	62	63	63	65	61	63	52
580-88125-21 - RA	T6-0to29-101618						66	
LCSSRM 320-315077/4-A	Lab Control Sample	65	64	69	66	65	67	57
LCSSRM 320-315077/5-A	Lab Control Sample	66	68	74	66	67	68	55
LCSSRM 320-315080/4-A	Lab Control Sample	72	70	73	71	67	68	68
MB 320-315077/1-A	Method Blank	70	71	98	68	64	73	71
MB 320-315080/1-A	Method Blank	65	63	83	64	61	60	69

Surrogate Legend

HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF

13CHxCF = 13C-2,3,4,6,7,8-HxCDF
PeCF = 13C-2,3,4,7,8-PeCDF
TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
OCDD = 13C-OCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Solid **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	HxCDD (21-193)	HxCDF (19-202)	HxDD (25-163)	HxDF (21-159)	HxCF (17-205)
LCS 320-315077/2-A	Lab Control Sample	53	59	60	66	75	64	69	70
LCS 320-315080/2-A	Lab Control Sample	67	66	73	71	83	70	76	78
LCSD 320-315077/3-A	Lab Control Sample Dup	54	63	63	69	78	68	71	74
LCSD 320-315080/3-A	Lab Control Sample Dup	67	68	72	71	80	67	74	77

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PeCDD (21-227)	PeCDF (21-192)	13CHxCF (22-176)	PeCF (13-328)	TCDD (20-175)	TCDF (22-152)	OCDD (13-199)	
LCS 320-315077/2-A	Lab Control Sample	64	66	69	67	66	69	49	
LCS 320-315080/2-A	Lab Control Sample	75	72	77	73	69	69	66	
LCSD 320-315077/3-A	Lab Control Sample Dup	65	64	72	64	65	70	50	
LCSD 320-315080/3-A	Lab Control Sample Dup	73	72	75	73	67	67	64	

Surrogate Legend

HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
PeCF = 13C-2,3,4,7,8-PeCDF
TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
OCDD = 13C-OCDD

eurofins | Environment Testing TestAmerica



ANALYTICAL REPORT

Eurofins TestAmerica, Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

Laboratory Job ID: 580-88125-2
Client Project/Site: Swan Island Lagoon Sediment Investigatio

For:
Pacific Groundwater Group
2377 Eastlake Avenue E
Seattle, Washington 98102

Attn: Ms. Inger Jackson

M. Elaine Walker

Authorized for release by:
9/5/2019 4:47:41 PM

Elaine Walker, Project Manager II
(253)248-4972
elaine.walker@testamericainc.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 580-88125-2

Laboratory: Eurofins TestAmerica, Seattle

Narrative

CASE NARRATIVE
Client: Pacific Groundwater Group
Project: Swan Island Lagoon Sediment Investigation
Report Number: 580-88125-2

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) resulting from a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are an unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes within the calibration range of the instrument or that reduces the interferences thereby enabling the quantification of target analytes.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

Twenty-one samples were activated from archived samples on 7/26/2019 1:10 PM; the samples were previously frozen prior to activation. This report contains results for PBC Congeners by Method 1668A, performed at Eurofins TestAmerica Knoxville. All other added analyses have been reported under separate cover.

Receipt Exceptions

All of the containers for the samples in this job (except for the grain size containers) were kept in the freezer prior to being logged in for analyses.

A1-0to30-102018 (580-88125-1), A2-0to26-100818 (580-88125-2), A3-0to31-100818 (580-88125-3), A4-0to25-100818 (580-88125-4), A5-0to25-100818 (580-88125-5), A6-0to23-100818 (580-88125-6), A7-0to26-100918 (580-88125-7), C4-0to27-100918 (580-88125-8), D2-0to19-101018 (580-88125-9), F2-0to19-101018 (580-88125-10), G6-0to27-101818 (580-88125-11), H2-0to30-101218 (580-88125-12), J2A3-0to18-101218 (580-88125-13), M4-0to26-101918 (580-88125-14), 515-0to26-101918 (580-88125-15), N5-0to28-101418 (580-88125-16), N7-0to27-101418 (580-88125-17), O7-0to27-101918 (580-88125-18), Q2-0to13-101818 (580-88125-19), Q6-0to27-102018 (580-88125-20) and T6-0to29-101618 (580-88125-21)

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

POLYCHLORINATED BIPHENYLS CONGENERS (PCBS)

Samples A1-0to30-102018 (580-88125-1), A2-0to26-100818 (580-88125-2), A3-0to31-100818 (580-88125-3), A4-0to25-100818 (580-88125-4), A5-0to25-100818 (580-88125-5), A6-0to23-100818 (580-88125-6), A7-0to26-100918 (580-88125-7), C4-0to27-100918 (580-88125-8), D2-0to19-101018 (580-88125-9), F2-0to19-101018 (580-88125-10), G6-0to27-101818 (580-88125-11), H2-0to30-101218 (580-88125-12), J2A3-0to18-101218 (580-88125-13), M4-0to26-101918 (580-88125-14), 515-0to26-101918 (580-88125-15), N5-0to28-101418 (580-88125-16), N7-0to27-101418 (580-88125-17), O7-0to27-101918 (580-88125-18), Q2-0to13-101818 (580-88125-19), Q6-0to27-102018 (580-88125-20) and T6-0to29-101618 (580-88125-21) were analyzed for polychlorinated biphenyls congeners (PCBs) in accordance with EPA Method 1668A. The samples were prepared on 08/19/2019 and 08/20/2019 and analyzed on 08/27/2019, 08/29/2019, 08/30/2019, 09/03/2019 and 09/04/2019.

Several analytes were detected in method blank MB 140-32775/15-B at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the

Job ID: 580-88125-2 (Continued)

Laboratory: Eurofins TestAmerica, Seattle (Continued)

MDL and/or RL, the result has been flagged.

Polychlorinated biphenyls, Total was detected in method blank MB 140-32817/16-B at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Several analytes were detected in method blank MB 140-32817/16-B at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

The following samples exhibited elevated noise or matrix interferences for one or more analytes causing elevation of the detection limit (EDL): A3-0to31-100818 (580-88125-3), A4-0to25-100818 (580-88125-4), A5-0to25-100818 (580-88125-5), A6-0to23-100818 (580-88125-6), A7-0to26-100918 (580-88125-7), and G6-0to27-101818 (580-88125-11). The reporting limit (RL) for the affected analytes has been raised to be equal to the EDL, and a "G" qualifier applied.

The following samples went through Gel-Permeation Cleanup procedure, based on EPA method 3640A: A1-0to30-102018 (580-88125-1), A2-0to26-100818 (580-88125-2), A3-0to31-100818 (580-88125-3), A4-0to25-100818 (580-88125-4), A5-0to25-100818 (580-88125-5), A6-0to23-100818 (580-88125-6), A7-0to26-100918 (580-88125-7), C4-0to27-100918 (580-88125-8), D2-0to19-101018 (580-88125-9), F2-0to19-101018 (580-88125-10), G6-0to27-101818 (580-88125-11), H2-0to30-101218 (580-88125-12), J2A3-0to18-101218 (580-88125-13), M4-0to26-101918 (580-88125-14), 515-0to26-101918 (580-88125-15), N5-0to28-101418 (580-88125-16), N7-0to27-101418 (580-88125-17), O7-0to27-101918 (580-88125-18), Q2-0to13-101818 (580-88125-19), Q6-0to27-102018 (580-88125-20) and T6-0to29-101618 (580-88125-21).

Samples A5-0to25-100818 (580-88125-5)[2X], A7-0to26-100918 (580-88125-7)[5X] and N5-0to28-101418 (580-88125-16)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Qualifiers

Dioxin

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
C	The compound co-eluted with other compounds
C108	The compound co-eluted with PCB-108
C110	The compound co-eluted with PCB-110
C12	The compound co-eluted with PCB-12
C128	The compound co-eluted with PCB-128
C129	The compound co-eluted with PCB-129
C134	The compound co-eluted with PCB-134
C135	The compound co-eluted with PCB-135
C139	The compound co-eluted with PCB-139
C147	The compound co-eluted with PCB-147
C153	The compound co-eluted with PCB-153
C156	The compound co-eluted with PCB-156
C171	The compound co-eluted with PCB-171
C18	The compound co-eluted with PCB-18
C180	The compound co-eluted with PCB-180
C183	The compound co-eluted with PCB-183
C198	The compound co-eluted with PCB-198
C20	The compound co-eluted with PCB-20
C21	The compound co-eluted with PCB-21
C26	The compound co-eluted with PCB-26
C40	The compound co-eluted with PCB-40
C43	The compound co-eluted with PCB-43
C44	The compound co-eluted with PCB-44
C45	The compound co-eluted with PCB-45
C49	The compound co-eluted with PCB-49
C50	The compound co-eluted with PCB-50
C59	The compound co-eluted with PCB-59
C61	The compound co-eluted with PCB-61
C83	The compound co-eluted with PCB-83
C85	The compound co-eluted with PCB-85
C86	The compound co-eluted with PCB-86
C88	The compound co-eluted with PCB-88
C90	The compound co-eluted with PCB-90
C93	The compound co-eluted with PCB-93
C98	The compound co-eluted with PCB-98
G	The reported quantitation limit has been raised due to an exhibited elevated noise or matrix interference
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.
S	Ion suppression

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample ID: A1-0to30-102018
Lab Sample ID: 580-88125-1

Date Collected: 10/20/18 12:05
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 55.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	**0.00062**	**J B**	0.0097	0.00013	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-2	**0.00050**	**J q B**	0.0097	0.00014	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-3	ND		0.0097	0.00014	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-4	**0.00099**	**J**	0.019	0.00032	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-5	ND		0.0097	0.00022	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-6	ND		0.0097	0.00022	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-7	**0.00076**	**J**	0.0097	0.00021	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-8	**0.00047**	**J q B**	0.019	0.00022	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-9	ND		0.0097	0.00025	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-10	ND		0.0097	0.00024	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-11	**0.0024**	**J q B**	0.019	0.00021	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-12	ND	C	0.019	0.00021	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-13	ND	C12	0.019	0.00021	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-14	ND		0.0097	0.00019	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-15	**0.00047**	**J q B**	0.0097	0.00022	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-16	ND		0.0097	0.00033	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-17	ND		0.0097	0.00026	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-18	**0.00073**	**J C B**	0.019	0.00022	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-19	**0.00060**	**J q**	0.0097	0.00031	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-20	**0.0012**	**J C B**	0.019	0.00021	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-21	**0.00039**	**J q C B**	0.019	0.00020	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-22	ND		0.0097	0.00022	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-23	ND		0.0097	0.00021	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-24	ND		0.0097	0.00019	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-25	ND		0.0097	0.00020	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-26	ND	C	0.019	0.00020	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-27	ND		0.0097	0.00019	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-28	**0.0012**	**J C20 B**	0.019	0.00021	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-29	ND	C26	0.019	0.00020	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-30	**0.00073**	**J C18 B**	0.019	0.00022	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-31	**0.00066**	**J B**	0.019	0.00020	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-32	**0.00066**	**J B**	0.0097	0.00017	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-33	**0.00039**	**J q C21 B**	0.019	0.00020	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-34	ND		0.0097	0.00022	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-35	ND		0.0097	0.00022	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-36	ND		0.0097	0.00020	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-37	ND		0.0097	0.00021	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-38	ND		0.0097	0.00020	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-39	ND		0.0097	0.00019	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-40	**0.00071**	**J q C**	0.029	0.00021	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-41	**0.00071**	**J q C40**	0.029	0.00021	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-42	ND		0.0097	0.00022	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-43	ND	C	0.019	0.00019	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-44	**0.012**	**J C B**	0.029	0.00019	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-45	**0.0021**	**J C**	0.019	0.00022	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-46	ND		0.0097	0.00026	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-47	**0.012**	**J C44 B**	0.029	0.00019	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-48	ND		0.0097	0.00021	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-49	**0.0019**	**J C**	0.019	0.00017	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1

Client Sample ID: A1-0to30-102018
Lab Sample ID: 580-88125-1

Date Collected: 10/20/18 12:05
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 55.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	**0.00061**	**J C**	0.019	0.00021	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-51	**0.0021**	**J C45**	0.019	0.00022	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-52	**0.0037**	**J q B**	0.0097	0.00022	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-53	**0.00061**	**J C50**	0.019	0.00021	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-54	ND		0.0097	0.00025	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-55	ND		0.0097	0.00015	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-56	**0.00060**	**J q**	0.0097	0.00015	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-57	ND		0.0097	0.00015	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-58	ND		0.0097	0.00015	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-59	ND	C	0.029	0.00014	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-60	ND		0.0097	0.00015	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-61	**0.0030**	**J C B**	0.039	0.00014	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-62	ND	C59	0.029	0.00014	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-63	ND		0.0097	0.00013	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-64	ND		0.0097	0.00014	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-65	**0.012**	**J C44 B**	0.029	0.00019	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-66	**0.0013**	**J**	0.0097	0.00015	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-67	ND		0.0097	0.00014	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-68	**0.0016**	**J**	0.0097	0.00013	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-69	**0.0019**	**J C49**	0.019	0.00017	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-70	**0.0030**	**J C61 B**	0.039	0.00014	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-71	**0.00071**	**J q C40**	0.029	0.00021	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-72	ND		0.0097	0.00015	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-73	ND	C43	0.019	0.00019	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-74	**0.0030**	**J C61 B**	0.039	0.00014	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-75	ND	C59	0.029	0.00014	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-76	**0.0030**	**J C61 B**	0.039	0.00014	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-77	**0.0018**	**J**	0.0097	0.00015	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-78	ND		0.0097	0.00015	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-79	ND		0.0097	0.00013	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-80	ND		0.0097	0.00013	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-81	ND		0.0097	0.00015	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-82	ND		0.0097	0.00047	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-83	**0.0053**	**J C B**	0.019	0.00044	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-84	**0.0018**	**J q**	0.0097	0.00048	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-85	**0.0020**	**J C**	0.029	0.00034	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-86	**0.0061**	**J C B**	0.058	0.00034	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-87	**0.0061**	**J C86 B**	0.058	0.00034	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-88	**0.0020**	**J C**	0.019	0.00041	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-89	ND		0.0097	0.00046	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-90	**0.012**	**J C B**	0.029	0.00036	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-91	**0.0020**	**J C88**	0.019	0.00041	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-92	**0.0027**	**J**	0.0097	0.00043	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-93	ND	C	0.019	0.00042	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-94	ND		0.0097	0.00045	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-95	**0.0076**	**J B**	0.0097	0.00043	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-96	ND		0.0097	0.00034	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-97	**0.0061**	**J C86 B**	0.058	0.00034	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-98	ND	C	0.019	0.00042	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1

Client Sample ID: A1-0to30-102018
Lab Sample ID: 580-88125-1

Date Collected: 10/20/18 12:05
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 55.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	**0.0053**	**J C83 B**	0.019	0.00044	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-100	ND	C93	0.019	0.00042	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-101	**0.012**	**J C90 B**	0.029	0.00036	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-102	ND	C98	0.019	0.00042	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-103	ND		0.0097	0.00040	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-104	ND		0.0097	0.00030	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-105	**0.0022**	**J B**	0.0097	0.00031	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-106	ND		0.0097	0.00031	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-107	ND		0.0097	0.00029	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-108	ND	C	0.019	0.00032	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-109	**0.0061**	**J C86 B**	0.058	0.00034	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-110	**0.011**	**J C B**	0.019	0.00030	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-111	ND		0.0097	0.00029	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-112	ND		0.0097	0.00030	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-113	**0.012**	**J C90 B**	0.029	0.00036	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-114	ND		0.0097	0.00028	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-115	**0.011**	**J C110 B**	0.019	0.00030	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-116	**0.0020**	**J C85**	0.029	0.00034	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-117	**0.0020**	**J C85**	0.029	0.00034	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-118	**0.0062**	**J B**	0.0097	0.00030	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-119	**0.0061**	**J C86 B**	0.058	0.00034	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-120	ND		0.0097	0.00028	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-121	ND		0.0097	0.00029	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-122	ND		0.0097	0.00034	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-123	**0.00058**	**J q**	0.0097	0.00029	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-124	ND	C108	0.019	0.00032	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-125	**0.0061**	**J C86 B**	0.058	0.00034	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-126	**0.00074**	**J q B**	0.0097	0.00030	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-127	ND		0.0097	0.00031	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-128	**0.0025**	**J C**	0.019	0.00031	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-129	**0.019**	**J C B**	0.039	0.00032	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-130	**0.0017**	**J**	0.0097	0.00042	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-131	ND		0.0097	0.00041	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-132	**0.0048**	**J B**	0.0097	0.00040	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-133	ND		0.0097	0.00039	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-134	ND	C	0.019	0.00041	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-135	**0.0057**	**J q C B**	0.019	0.00039	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-136	**0.0024**	**J B**	0.0097	0.00029	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-137	**0.00059**	**J q**	0.0097	0.00033	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-138	**0.019**	**J C129 B**	0.039	0.00032	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-139	ND	C	0.019	0.00035	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-140	ND	C139	0.019	0.00035	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-141	**0.0042**	**J**	0.0097	0.00037	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-142	ND		0.0097	0.00041	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-143	ND	C134	0.019	0.00041	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-144	**0.00080**	**J q**	0.0097	0.00037	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-145	ND		0.0097	0.00028	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-146	**0.0024**	**J B**	0.0097	0.00035	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-147	**0.014**	**J C B**	0.019	0.00036	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1

Client Sample ID: A1-0to30-102018
Lab Sample ID: 580-88125-1

Date Collected: 10/20/18 12:05
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 55.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	ND		0.0097	0.00038	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-149	**0.014**	**J C147 B**	0.019	0.00036	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-150	ND		0.0097	0.00027	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-151	**0.0057**	**J q C135 B**	0.019	0.00039	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-152	ND		0.0097	0.00027	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-153	**0.017**	**J C B**	0.019	0.00029	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-154	ND		0.0097	0.00033	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-155	ND		0.0097	0.00026	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-156	**0.0032**	**J q C B**	0.019	0.00033	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-157	**0.0032**	**J q C156 B**	0.019	0.00033	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-158	**0.0023**	**J B**	0.0097	0.00025	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-159	ND		0.0097	0.00027	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-160	**0.019**	**J C129 B**	0.039	0.00032	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-161	ND		0.0097	0.00026	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-162	ND		0.0097	0.00026	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-163	**0.019**	**J C129 B**	0.039	0.00032	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-164	**0.0012**	**J q**	0.0097	0.00028	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-165	ND		0.0097	0.00031	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-166	**0.0025**	**J C128**	0.019	0.00031	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-167	**0.0021**	**J**	0.0097	0.00022	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-168	**0.017**	**J C153 B**	0.019	0.00029	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-169	**0.00072**	**J**	0.0097	0.00024	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-170	**0.0092**	**J B**	0.0097	0.00038	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-171	**0.0033**	**J C**	0.019	0.00038	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-172	**0.0019**	**J q B**	0.0097	0.00037	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-173	**0.0033**	**J C171**	0.019	0.00038	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-174	**0.0084**	**J B**	0.0097	0.00038	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-175	ND		0.0097	0.00034	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-176	**0.0010**	**J B**	0.0097	0.00024	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-177	**0.0041**	**J q B**	0.0097	0.00039	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-178	**0.0017**	**J**	0.0097	0.00036	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-179	**0.0028**	**J B**	0.0097	0.00026	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-180	**0.019**	**C B**	0.019	0.00030	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-181	ND		0.0097	0.00033	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-182	ND		0.0097	0.00032	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-183	**0.0059**	**J C B**	0.019	0.00032	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-184	ND		0.0097	0.00026	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-185	**0.0059**	**J C183 B**	0.019	0.00032	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-186	ND		0.0097	0.00026	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-187	**0.0083**	**J**	0.0097	0.00033	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-188	ND		0.0097	0.00024	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-189	**0.00066**	**J B**	0.0097	0.00023	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-190	**0.0022**	**J q**	0.0097	0.00027	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-191	**0.00078**	**J**	0.0097	0.00026	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-192	ND		0.0097	0.00028	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-193	**0.019**	**C180 B**	0.019	0.00030	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-194	**0.0033**	**J q B**	0.0097	0.00050	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-195	**0.0012**	**J q**	0.0097	0.00059	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-196	ND		0.0097	0.00032	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1

Client Sample ID: A1-0to30-102018
Lab Sample ID: 580-88125-1

Date Collected: 10/20/18 12:05
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 55.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	ND		0.0097	0.00023	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-198	**0.0043**	**J q C B**	0.019	0.00035	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-199	**0.0043**	**J q C198 B**	0.019	0.00035	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-200	ND		0.0097	0.00025	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-201	ND		0.0097	0.00024	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-202	**0.00063**	**J**	0.0097	0.00027	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-203	**0.0026**	**J q**	0.0097	0.00031	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-204	ND		0.0097	0.00026	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-205	ND		0.0097	0.00038	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-206	**0.45**	**q**	0.0097	0.0011	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-207	ND		0.0097	0.00079	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-208	ND		0.0097	0.00081	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
PCB-209	**0.00046**	**J B**	0.0097	0.00028	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
Total Monochlorobiphenyls	**0.0011**	**J q B**	0.0097	0.00014	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
Total Dichlorobiphenyls	**0.0051**	**J q B**	0.019	0.00023	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
Total Trichlorobiphenyls	**0.0042**	**J q B**	0.019	0.00022	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
Total Tetrachlorobiphenyls	**0.029**	**J q B**	0.039	0.00017	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
Total Pentachlorobiphenyls	**0.060**	**q B**	0.058	0.00035	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
Total Hexachlorobiphenyls	**0.085**	**q B**	0.039	0.00032	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
Total Heptachlorobiphenyls	**0.069**	**q B**	0.019	0.00031	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
Total Octachlorobiphenyls	**0.012**	**J q B**	0.019	0.00034	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
Total Nonachlorobiphenyls	**0.45**	**q**	0.0097	0.00091	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1
Polychlorinated biphenyls, Total	**0.72**	**q B**	0.058	0.00035	ng/g	☼	08/19/19 08:06	08/30/19 10:29	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*79*		*30 - 140*	*08/19/19 08:06*	*08/30/19 10:29*	*1*
PCB-3L	*81*		*30 - 140*	*08/19/19 08:06*	*08/30/19 10:29*	*1*
PCB-4L	*78*		*30 - 140*	*08/19/19 08:06*	*08/30/19 10:29*	*1*
PCB-15L	*81*		*30 - 140*	*08/19/19 08:06*	*08/30/19 10:29*	*1*
PCB-19L	*72*		*30 - 140*	*08/19/19 08:06*	*08/30/19 10:29*	*1*
PCB-37L	*83*		*30 - 140*	*08/19/19 08:06*	*08/30/19 10:29*	*1*
PCB-54L	*90*		*30 - 140*	*08/19/19 08:06*	*08/30/19 10:29*	*1*
PCB-77L	*90*		*30 - 140*	*08/19/19 08:06*	*08/30/19 10:29*	*1*
PCB-81L	*89*		*30 - 140*	*08/19/19 08:06*	*08/30/19 10:29*	*1*
PCB-104L	*82*		*30 - 140*	*08/19/19 08:06*	*08/30/19 10:29*	*1*
PCB-105L	*80*		*30 - 140*	*08/19/19 08:06*	*08/30/19 10:29*	*1*
PCB-114L	*78*		*30 - 140*	*08/19/19 08:06*	*08/30/19 10:29*	*1*
PCB-118L	*79*		*30 - 140*	*08/19/19 08:06*	*08/30/19 10:29*	*1*
PCB-123L	*78*		*30 - 140*	*08/19/19 08:06*	*08/30/19 10:29*	*1*
PCB-126L	*88*		*30 - 140*	*08/19/19 08:06*	*08/30/19 10:29*	*1*
PCB-155L	*94*		*30 - 140*	*08/19/19 08:06*	*08/30/19 10:29*	*1*
PCB-156L	*85*	*C*	*30 - 140*	*08/19/19 08:06*	*08/30/19 10:29*	*1*
PCB-157L	*85*	*C156*	*30 - 140*	*08/19/19 08:06*	*08/30/19 10:29*	*1*
PCB-167L	*84*		*30 - 140*	*08/19/19 08:06*	*08/30/19 10:29*	*1*
PCB-169L	*96*		*30 - 140*	*08/19/19 08:06*	*08/30/19 10:29*	*1*
PCB-170L	*81*		*30 - 140*	*08/19/19 08:06*	*08/30/19 10:29*	*1*
PCB-188L	*78*		*30 - 140*	*08/19/19 08:06*	*08/30/19 10:29*	*1*
PCB-189L	*87*		*30 - 140*	*08/19/19 08:06*	*08/30/19 10:29*	*1*
PCB-202L	*89*		*30 - 140*	*08/19/19 08:06*	*08/30/19 10:29*	*1*
PCB-205L	*78*		*30 - 140*	*08/19/19 08:06*	*08/30/19 10:29*	*1*

Client: Pacific Groundwater Group
Job ID: 580-88125-2
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: A1-0to30-102018
Lab Sample ID: 580-88125-1
Date Collected: 10/20/18 12:05
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 55.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-206L	72		30 - 140	08/19/19 08:06	08/30/19 10:29	1
PCB-208L	81		30 - 140	08/19/19 08:06	08/30/19 10:29	1
PCB-209L	66		30 - 140	08/19/19 08:06	08/30/19 10:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	75		40 - 125	08/19/19 08:06	08/30/19 10:29	1
PCB-111L	88		40 - 125	08/19/19 08:06	08/30/19 10:29	1
PCB-178L	86		40 - 125	08/19/19 08:06	08/30/19 10:29	1

Client Sample ID: A2-0to26-100818
Lab Sample ID: 580-88125-2

Date Collected: 10/08/18 14:04
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 31.7

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.049	B	0.015	0.00051	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-2	0.037	B	0.015	0.00052	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-3	0.045	B	0.015	0.00053	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-4	0.10		0.031	0.0014	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-5	0.0013	J q	0.015	0.00090	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-6	0.024		0.015	0.00090	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-7	0.0077	J	0.015	0.00086	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-8	0.078	B	0.031	0.00088	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-9	0.0075	J q	0.015	0.00099	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-10	0.0051	J	0.015	0.00095	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-11	0.075	B	0.031	0.00086	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-12	0.016	J C q	0.031	0.00086	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-13	0.016	J C12 q	0.031	0.00086	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-14	ND		0.015	0.00075	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-15	0.077	B	0.015	0.00082	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-16	0.049		0.015	0.0011	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-17	0.21	B	0.015	0.00088	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-18	0.12	C B	0.031	0.00075	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-19	0.26		0.015	0.0011	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-20	0.27	C B	0.031	0.0022	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-21	0.12	C B	0.031	0.0021	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-22	0.053	B	0.015	0.0023	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-23	ND		0.015	0.0023	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-24	0.0034	J	0.015	0.00065	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-25	0.037		0.015	0.0021	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-26	0.040	C B	0.031	0.0022	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-27	0.046		0.015	0.00063	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-28	0.27	B C20	0.031	0.0022	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-29	0.040	C26 B	0.031	0.0022	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-30	0.12	C18 B	0.031	0.00075	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-31	0.16	B	0.031	0.0021	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-32	0.15	B	0.015	0.00059	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-33	0.12	B C21	0.031	0.0021	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-34	ND		0.015	0.0024	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-35	0.0067	J B	0.015	0.0024	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-36	ND		0.015	0.0021	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-37	0.085	B	0.015	0.0022	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-38	ND		0.015	0.0022	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-39	ND		0.015	0.0021	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-40	0.38	C	0.046	0.0017	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-41	0.38	C40	0.046	0.0017	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-42	0.15		0.015	0.0018	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-43	0.064	C	0.031	0.0016	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-44	2.4	C B	0.046	0.0015	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-45	0.86	C	0.031	0.0018	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-46	0.047		0.015	0.0020	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-47	2.4	B C44	0.046	0.0015	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-48	0.056		0.015	0.0016	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-49	1.1	C	0.031	0.0014	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1

Client Sample ID: A2-0to26-100818
Lab Sample ID: 580-88125-2

Date Collected: 10/08/18 14:04
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 31.7

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	0.46	C	0.031	0.0017	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-51	0.86	C45	0.031	0.0018	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-52	2.2	B	0.015	0.0017	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-53	0.46	C50	0.031	0.0017	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-54	0.13		0.015	0.00067	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-55	ND		0.015	0.0012	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-56	0.22		0.015	0.0012	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-57	ND		0.015	0.0012	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-58	0.0073	J	0.015	0.0012	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-59	0.084	C	0.046	0.0011	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-60	0.063		0.015	0.0012	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-61	1.6	C B	0.062	0.0011	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-62	0.084	C59	0.046	0.0011	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-63	0.032		0.015	0.0011	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-64	0.24		0.015	0.0011	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-65	2.4	B C44	0.046	0.0015	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-66	0.74		0.015	0.0012	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-67	0.020	q	0.015	0.0011	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-68	0.039		0.015	0.0010	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-69	1.1	C49	0.031	0.0014	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-70	1.6	C61 B	0.062	0.0011	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-71	0.38	C40	0.046	0.0017	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-72	0.032		0.015	0.0012	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-73	0.064	C43	0.031	0.0016	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-74	1.6	C61 B	0.062	0.0011	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-75	0.084	C59	0.046	0.0011	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-76	1.6	C61 B	0.062	0.0011	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-77	0.067		0.015	0.0011	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-78	ND		0.015	0.0012	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-79	0.035		0.015	0.0010	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-80	ND		0.015	0.0011	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-81	0.0018	J	0.015	0.0012	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-82	0.48		0.015	0.00086	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-83	3.1	C B	0.031	0.00079	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-84	1.2		0.015	0.00086	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-85	0.68	C	0.046	0.00061	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-86	3.0	C B	0.093	0.00062	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-87	3.0	B C86	0.093	0.00062	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-88	1.0	C	0.031	0.00074	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-89	0.039		0.015	0.00083	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-90	5.6	C B	0.046	0.00065	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-91	1.0	C88	0.031	0.00074	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-92	1.2		0.015	0.00078	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-93	0.55	C	0.031	0.00076	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-94	0.097		0.015	0.00082	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-95	4.4	B	0.015	0.00077	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-96	0.073		0.015	0.00061	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-97	3.0	B C86	0.093	0.00062	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-98	0.23	C	0.031	0.00075	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88125-2

Client Sample ID: A2-0to26-100818
Date Collected: 10/08/18 14:04
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-2
Matrix: Solid
Percent Solids: 31.7

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	3.1	C83 B	0.031	0.00079	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-100	0.55	C93	0.031	0.00076	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-101	5.6	B C90	0.046	0.00065	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-102	0.23	C98	0.031	0.00075	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-103	0.22		0.015	0.00072	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-104	0.038		0.015	0.00053	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-105	1.2	B	0.015	0.0059	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-106	ND		0.015	0.0059	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-107	0.29		0.015	0.0055	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-108	0.13	C	0.031	0.0060	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-109	3.0	B C86	0.093	0.00062	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-110	5.7	C B	0.031	0.00055	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-111	ND		0.015	0.00052	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-112	ND		0.015	0.00054	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-113	5.6	B C90	0.046	0.00065	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-114	0.068	B	0.015	0.0053	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-115	5.7	B C110	0.031	0.00055	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-116	0.68	C85	0.046	0.00061	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-117	0.68	C85	0.046	0.00061	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-118	3.4	B	0.015	0.0055	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-119	3.0	B C86	0.093	0.00062	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-120	0.045		0.015	0.00050	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-121	ND		0.015	0.00053	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-122	0.045		0.015	0.0065	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-123	0.047		0.015	0.0058	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-124	0.13	C108	0.031	0.0060	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-125	3.0	B C86	0.093	0.00062	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-126	0.0089	J B	0.015	0.0059	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-127	ND		0.015	0.0059	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-128	0.85	C	0.031	0.0022	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-129	6.6	C B	0.062	0.0023	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-130	0.45		0.015	0.0030	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-131	0.081		0.015	0.0029	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-132	2.3	B	0.015	0.0028	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-133	0.16		0.015	0.0027	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-134	0.40	C	0.031	0.0029	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-135	2.8	C B	0.031	0.00044	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-136	1.1	B	0.015	0.00033	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-137	0.25		0.015	0.0023	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-138	6.6	B C129	0.062	0.0023	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-139	0.14	C	0.031	0.0025	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-140	0.14	C139	0.031	0.0025	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-141	1.2		0.015	0.0026	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-142	ND		0.015	0.0029	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-143	0.40	C134	0.031	0.0029	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-144	0.33		0.015	0.00042	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-145	0.0062	J q	0.015	0.00032	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-146	1.3	B	0.015	0.0025	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-147	6.0	C B	0.031	0.0025	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1

Client Sample ID: A2-0to26-100818
Lab Sample ID: 580-88125-2

Date Collected: 10/08/18 14:04
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 31.7

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	0.046		0.015	0.00043	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-149	6.0	B C147	0.031	0.0025	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-150	0.050		0.015	0.00031	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-151	2.8	C135 B	0.031	0.00044	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-152	0.025		0.015	0.00031	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-153	6.1	C B	0.031	0.0020	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-154	0.26	B	0.015	0.00038	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-155	0.0097	J	0.015	0.00030	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-156	0.73	C B	0.031	0.0023	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-157	0.73	C156 B	0.031	0.0023	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-158	0.63	B	0.015	0.0018	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-159	0.072		0.015	0.0019	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-160	6.6	B C129	0.062	0.0023	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-161	ND		0.015	0.0019	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-162	ND		0.015	0.0018	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-163	6.6	B C129	0.062	0.0023	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-164	0.49		0.015	0.0020	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-165	ND		0.015	0.0022	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-166	0.85	C128	0.031	0.0022	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-167	0.23		0.015	0.0016	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-168	6.1	B C153	0.031	0.0020	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-169	ND		0.015	0.0017	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-170	2.6	B	0.015	0.00033	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-171	0.82	C	0.031	0.00033	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-172	0.43	B	0.015	0.00032	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-173	0.82	C171	0.031	0.00033	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-174	2.4	B	0.015	0.00033	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-175	0.095		0.015	0.00030	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-176	0.28	B	0.015	0.00021	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-177	1.5	B	0.015	0.00034	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-178	0.50		0.015	0.00031	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-179	0.95	B	0.015	0.00022	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-180	5.7	C B	0.031	0.00026	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-181	0.034		0.015	0.00029	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-182	0.032		0.015	0.00028	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-183	1.6	C B	0.031	0.00028	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-184	ND		0.015	0.00022	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-185	1.6	B C183	0.031	0.00028	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-186	ND		0.015	0.00022	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-187	2.9		0.015	0.00029	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-188	ND		0.015	0.00020	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-189	0.11	B	0.015	0.0015	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-190	0.60		0.015	0.00023	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-191	0.12		0.015	0.00023	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-192	ND		0.015	0.00025	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-193	5.7	C180 B	0.031	0.00026	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-194	2.0	B	0.015	0.0019	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-195	0.87		0.015	0.0023	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-196	0.85	B	0.015	0.00053	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1

Client Sample ID: A2-0to26-100818
Date Collected: 10/08/18 14:04
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-2
Matrix: Solid
Percent Solids: 31.7

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	0.055		0.015	0.00039	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-198	1.6	C B	0.031	0.00057	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-199	1.6	C198 B	0.031	0.00057	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-200	0.17		0.015	0.00041	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-201	0.16		0.015	0.00039	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-202	0.23		0.015	0.00044	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-203	1.1		0.015	0.00050	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-204	ND		0.015	0.00042	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-205	0.10		0.015	0.0015	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-206	0.61		0.015	0.0030	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-207	0.075		0.015	0.0020	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-208	0.12		0.015	0.0021	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
PCB-209	0.17	B	0.015	0.00078	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
Total Monochlorobiphenyls	0.13	B	0.015	0.00052	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
Total Dichlorobiphenyls	0.39	B q	0.031	0.00093	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
Total Trichlorobiphenyls	1.6	B	0.031	0.0017	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
Total Tetrachlorobiphenyls	11	B q	0.062	0.0013	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
Total Pentachlorobiphenyls	33	B	0.093	0.0023	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
Total Hexachlorobiphenyls	33	B q	0.062	0.0018	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
Total Heptachlorobiphenyls	21	B	0.031	0.00033	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
Total Octachlorobiphenyls	7.1	B	0.031	0.00085	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
Total Nonachlorobiphenyls	0.81		0.015	0.0024	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1
Polychlorinated biphenyls, Total	110	B q	0.093	0.0014	ng/g	☼	08/19/19 08:06	09/03/19 12:52	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*63*		*30 - 140*	*08/19/19 08:06*	*09/03/19 12:52*	*1*
PCB-3L	*67*		*30 - 140*	*08/19/19 08:06*	*09/03/19 12:52*	*1*
PCB-4L	*60*		*30 - 140*	*08/19/19 08:06*	*09/03/19 12:52*	*1*
PCB-15L	*71*		*30 - 140*	*08/19/19 08:06*	*09/03/19 12:52*	*1*
PCB-19L	*58*		*30 - 140*	*08/19/19 08:06*	*09/03/19 12:52*	*1*
PCB-37L	*74*		*30 - 140*	*08/19/19 08:06*	*09/03/19 12:52*	*1*
PCB-54L	*78*		*30 - 140*	*08/19/19 08:06*	*09/03/19 12:52*	*1*
PCB-77L	*83*		*30 - 140*	*08/19/19 08:06*	*09/03/19 12:52*	*1*
PCB-81L	*81*		*30 - 140*	*08/19/19 08:06*	*09/03/19 12:52*	*1*
PCB-104L	*75*		*30 - 140*	*08/19/19 08:06*	*09/03/19 12:52*	*1*
PCB-105L	*72*		*30 - 140*	*08/19/19 08:06*	*09/03/19 12:52*	*1*
PCB-114L	*72*		*30 - 140*	*08/19/19 08:06*	*09/03/19 12:52*	*1*
PCB-118L	*73*		*30 - 140*	*08/19/19 08:06*	*09/03/19 12:52*	*1*
PCB-123L	*70*		*30 - 140*	*08/19/19 08:06*	*09/03/19 12:52*	*1*
PCB-126L	*79*		*30 - 140*	*08/19/19 08:06*	*09/03/19 12:52*	*1*
PCB-155L	*82*		*30 - 140*	*08/19/19 08:06*	*09/03/19 12:52*	*1*
PCB-156L	*77*	*C*	*30 - 140*	*08/19/19 08:06*	*09/03/19 12:52*	*1*
PCB-157L	*77*	*C156*	*30 - 140*	*08/19/19 08:06*	*09/03/19 12:52*	*1*
PCB-167L	*79*		*30 - 140*	*08/19/19 08:06*	*09/03/19 12:52*	*1*
PCB-169L	*88*		*30 - 140*	*08/19/19 08:06*	*09/03/19 12:52*	*1*
PCB-170L	*73*		*30 - 140*	*08/19/19 08:06*	*09/03/19 12:52*	*1*
PCB-188L	*71*		*30 - 140*	*08/19/19 08:06*	*09/03/19 12:52*	*1*
PCB-189L	*77*		*30 - 140*	*08/19/19 08:06*	*09/03/19 12:52*	*1*
PCB-202L	*79*		*30 - 140*	*08/19/19 08:06*	*09/03/19 12:52*	*1*
PCB-205L	*68*		*30 - 140*	*08/19/19 08:06*	*09/03/19 12:52*	*1*

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88125-2

Client Sample ID: A2-0to26-100818
Date Collected: 10/08/18 14:04
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-2
Matrix: Solid
Percent Solids: 31.7

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-206L	61		30 - 140	08/19/19 08:06	09/03/19 12:52	1
PCB-208L	70		30 - 140	08/19/19 08:06	09/03/19 12:52	1
PCB-209L	54		30 - 140	08/19/19 08:06	09/03/19 12:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	73		40 - 125	08/19/19 08:06	09/03/19 12:52	1
PCB-111L	89		40 - 125	08/19/19 08:06	09/03/19 12:52	1
PCB-178L	86		40 - 125	08/19/19 08:06	09/03/19 12:52	1

Client Sample ID: A3-0to31-100818
Lab Sample ID: 580-88125-3

Date Collected: 10/08/18 11:14
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 33.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.095	B	0.015	0.00042	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-2	0.045	B	0.015	0.00044	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-3	0.060	B	0.015	0.00045	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-4	0.14		0.030	0.00092	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-5	0.0053	J	0.015	0.00061	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-6	0.044		0.015	0.00061	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-7	0.011	J	0.015	0.00058	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-8	0.17	B	0.030	0.00060	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-9	0.013	J q	0.015	0.00067	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-10	0.0070	J	0.015	0.00064	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-11	0.075	B	0.030	0.00058	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-12	0.023	J C	0.030	0.00058	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-13	0.023	J C12	0.030	0.00058	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-14	ND		0.015	0.00051	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-15	0.099	B	0.015	0.00057	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-16	0.15		0.015	0.00074	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-17	0.25	B	0.015	0.00058	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-18	0.33	C B	0.030	0.00050	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-19	0.24		0.015	0.00070	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-20	0.45	C B	0.030	0.0036	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-21	0.23	C B	0.030	0.0034	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-22	0.12	B	0.015	0.0037	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-23	ND		0.015	0.0037	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-24	0.0054	J	0.015	0.00043	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-25	0.054		0.015	0.0034	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-26	0.069	C B	0.030	0.0035	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-27	0.055		0.015	0.00042	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-28	0.45	B C20	0.030	0.0036	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-29	0.069	C26 B	0.030	0.0035	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-30	0.33	C18 B	0.030	0.00050	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-31	0.39	B	0.030	0.0034	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-32	0.20	B	0.015	0.00039	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-33	0.23	B C21	0.030	0.0034	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-34	ND		0.015	0.0038	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-35	0.0095	J B	0.015	0.0038	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-36	ND		0.015	0.0034	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-37	0.15	B	0.015	0.0036	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-38	ND		0.015	0.0035	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-39	ND		0.015	0.0033	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-40	1.0	C	0.045	0.033	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-41	1.0	C40	0.045	0.033	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-42	0.42	G	0.035	0.035	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-43	ND	C	0.030	0.030	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-44	5.9	C B	0.045	0.029	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-45	0.95	C G	0.034	0.034	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-46	ND	G	0.040	0.040	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-47	5.9	B C44	0.045	0.029	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-48	0.18	G	0.032	0.032	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-49	2.9	C	0.030	0.027	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1

Client Sample ID: A3-0to31-100818
Lab Sample ID: 580-88125-3

Date Collected: 10/08/18 11:14
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 33.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	**0.68**	**C G**	0.032	0.032	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-51	**0.95**	**C45 G**	0.034	0.034	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-52	**12**	**B G**	0.034	0.034	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-53	**0.68**	**C50 G**	0.032	0.032	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-54	**0.12**		0.015	0.00042	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-55	ND	G	0.023	0.023	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-56	**0.92**	**G**	0.024	0.024	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-57	ND	G	0.024	0.024	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-58	ND	G	0.023	0.023	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-59	ND	C	0.045	0.022	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-60	**0.32**	**G**	0.023	0.023	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-61	**9.1**	**C B**	0.059	0.022	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-62	ND	C59	0.045	0.022	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-63	**0.097**	**G**	0.021	0.021	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-64	**1.2**	**G**	0.021	0.021	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-65	**5.9**	**B C44**	0.045	0.029	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-66	**2.5**	**G**	0.024	0.024	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-67	ND	G	0.022	0.022	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-68	ND	G	0.021	0.021	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-69	**2.9**	**C49**	0.030	0.027	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-70	**9.1**	**C61 B**	0.059	0.022	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-71	**1.0**	**C40**	0.045	0.033	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-72	ND	G	0.023	0.023	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-73	ND	C43	0.030	0.030	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-74	**9.1**	**C61 B**	0.059	0.022	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-75	ND	C59	0.045	0.022	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-76	**9.1**	**C61 B**	0.059	0.022	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-77	**0.14**	**G**	0.023	0.023	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-78	ND	G	0.023	0.023	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-79	**0.15**	**G**	0.020	0.020	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-80	ND	G	0.021	0.021	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-81	ND	G	0.023	0.023	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-82	**2.9**		0.015	0.00087	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-83	**15**	**C B**	0.030	0.00081	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-84	**7.2**		0.015	0.00088	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-85	**3.8**	**C**	0.045	0.00063	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-86	**17**	**C B**	0.089	0.00063	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-87	**17**	**B C86**	0.089	0.00063	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-88	**4.0**	**C**	0.030	0.00075	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-89	**0.20**		0.015	0.00085	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-90	**27**	**C B**	0.045	0.00067	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-91	**4.0**	**C88**	0.030	0.00075	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-92	**5.4**		0.015	0.00080	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-93	**0.77**	**C**	0.030	0.00077	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-94	**0.22**		0.015	0.00084	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-95	**22**	**B**	0.015	0.00079	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-96	**0.20**		0.015	0.00062	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-97	**17**	**B C86**	0.089	0.00063	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-98	**0.85**	**C**	0.030	0.00077	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1

Client Sample ID: A3-0to31-100818
Lab Sample ID: 580-88125-3
Date Collected: 10/08/18 11:14
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 33.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	15	C83 B	0.030	0.00081	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-100	0.77	C93	0.030	0.00077	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-101	27	B C90	0.045	0.00067	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-102	0.85	C98	0.030	0.00077	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-103	0.44		0.015	0.00073	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-104	ND		0.015	0.00054	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-105	7.1	B	0.015	0.012	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-106	ND		0.015	0.013	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-107	1.3		0.015	0.012	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-108	0.78	C	0.030	0.013	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-109	17	B C86	0.089	0.00063	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-110	28	C B	0.030	0.00056	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-111	ND		0.015	0.00053	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-112	ND		0.015	0.00056	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-113	27	B C90	0.045	0.00067	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-114	0.43	B	0.015	0.011	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-115	28	B C110	0.030	0.00056	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-116	3.8	C85	0.045	0.00063	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-117	3.8	C85	0.045	0.00063	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-118	18	B	0.015	0.012	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-119	17	B C86	0.089	0.00063	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-120	0.14		0.015	0.00051	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-121	ND		0.015	0.00054	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-122	0.24		0.015	0.014	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-123	0.26		0.015	0.012	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-124	0.78	C108	0.030	0.013	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-125	17	B C86	0.089	0.00063	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-126	ND		0.015	0.012	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-127	0.036		0.015	0.012	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-128	4.0	C	0.030	0.0033	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-129	25	C B	0.059	0.0034	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-130	1.8		0.015	0.0044	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-131	0.42		0.015	0.0043	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-132	9.2	B	0.015	0.0041	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-133	0.50		0.015	0.0040	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-134	1.7	C	0.030	0.0043	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-135	8.7	C B	0.030	0.00071	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-136	3.8	B	0.015	0.00053	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-137	1.1		0.015	0.0034	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-138	25	B C129	0.059	0.0034	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-139	0.57	C	0.030	0.0037	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-140	0.57	C139	0.030	0.0037	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-141	4.3		0.015	0.0038	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-142	ND		0.015	0.0042	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-143	1.7	C134	0.030	0.0043	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-144	1.1		0.015	0.00067	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-145	0.014	J q	0.015	0.00052	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-146	4.3	B	0.015	0.0036	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-147	20	C B	0.030	0.0037	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1

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Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 33.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	0.11		0.015	0.00069	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-149	20	B C147	0.030	0.0037	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-150	0.14		0.015	0.00050	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-151	8.7	C135 B	0.030	0.00071	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-152	0.064		0.015	0.00049	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-153	20	C B	0.030	0.0030	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-154	0.71	B	0.015	0.00061	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-155	ND		0.015	0.00047	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-156	3.2	C B	0.030	0.0034	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-157	3.2	C156 B	0.030	0.0034	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-158	2.7	B	0.015	0.0026	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-159	0.20		0.015	0.0028	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-160	25	B C129	0.059	0.0034	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-161	ND		0.015	0.0027	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-162	ND		0.015	0.0027	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-163	25	B C129	0.059	0.0034	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-164	1.9		0.015	0.0029	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-165	ND		0.015	0.0033	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-166	4.0	C128	0.030	0.0033	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-167	0.93		0.015	0.0024	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-168	20	B C153	0.030	0.0030	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-169	ND		0.015	0.0025	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-170	6.9	B	0.015	0.00048	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-171	2.3	C	0.030	0.00048	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-172	1.1	B	0.015	0.00046	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-173	2.3	C171	0.030	0.00048	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-174	6.7	B	0.015	0.00048	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-175	0.28		0.015	0.00043	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-176	0.81	B	0.015	0.00030	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-177	4.2	B	0.015	0.00049	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-178	1.3		0.015	0.00045	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-179	2.8	B	0.015	0.00033	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-180	14	C B	0.030	0.00037	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-181	0.081		0.015	0.00042	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-182	0.075		0.015	0.00040	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-183	4.4	C B	0.030	0.00040	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-184	ND		0.015	0.00032	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-185	4.4	B C183	0.030	0.00040	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-186	ND		0.015	0.00032	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-187	7.5		0.015	0.00041	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-188	ND		0.015	0.00030	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-189	0.26	B	0.015	0.0014	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-190	1.4		0.015	0.00033	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-191	0.31		0.015	0.00033	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-192	ND		0.015	0.00036	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-193	14	C180 B	0.030	0.00037	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-194	2.8	B	0.015	0.0086	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-195	1.4		0.015	0.010	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-196	1.5	B	0.015	0.00081	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1

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Percent Solids: 33.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	0.11		0.015	0.00059	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-198	2.8	C B	0.030	0.00086	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-199	2.8	C198 B	0.030	0.00086	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-200	0.38		0.015	0.00063	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-201	0.36		0.015	0.00060	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-202	0.50		0.015	0.00067	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-203	1.9		0.015	0.00077	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-204	ND		0.015	0.00064	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-205	0.15		0.015	0.0065	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-206	0.91	q	0.015	0.0029	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-207	0.10		0.015	0.0020	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-208	0.18		0.015	0.0020	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
PCB-209	0.24	B	0.015	0.00032	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
Total Monochlorobiphenyls	0.20	B	0.015	0.00044	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
Total Dichlorobiphenyls	0.59	B q	0.030	0.00062	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
Total Trichlorobiphenyls	2.7	B	0.030	0.0025	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
Total Tetrachlorobiphenyls	39	B	0.059	0.025	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
Total Pentachlorobiphenyls	160	B	0.089	0.0044	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
Total Hexachlorobiphenyls	120	B q	0.059	0.0026	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
Total Heptachlorobiphenyls	54	B	0.030	0.00044	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
Total Octachlorobiphenyls	12	B	0.030	0.0028	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
Total Nonachlorobiphenyls	1.2	q	0.015	0.0023	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1
Polychlorinated biphenyls, Total	390	B q	0.089	0.0046	ng/g	☼	08/19/19 08:06	09/03/19 13:54	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*70*		*30 - 140*	*08/19/19 08:06*	*09/03/19 13:54*	*1*
PCB-3L	*71*		*30 - 140*	*08/19/19 08:06*	*09/03/19 13:54*	*1*
PCB-4L	*67*		*30 - 140*	*08/19/19 08:06*	*09/03/19 13:54*	*1*
PCB-15L	*75*		*30 - 140*	*08/19/19 08:06*	*09/03/19 13:54*	*1*
PCB-19L	*69*		*30 - 140*	*08/19/19 08:06*	*09/03/19 13:54*	*1*
PCB-37L	*83*		*30 - 140*	*08/19/19 08:06*	*09/03/19 13:54*	*1*
PCB-54L	*88*		*30 - 140*	*08/19/19 08:06*	*09/03/19 13:54*	*1*
PCB-77L	*88*		*30 - 140*	*08/19/19 08:06*	*09/03/19 13:54*	*1*
PCB-81L	*87*		*30 - 140*	*08/19/19 08:06*	*09/03/19 13:54*	*1*
PCB-104L	*78*		*30 - 140*	*08/19/19 08:06*	*09/03/19 13:54*	*1*
PCB-105L	*81*		*30 - 140*	*08/19/19 08:06*	*09/03/19 13:54*	*1*
PCB-114L	*79*		*30 - 140*	*08/19/19 08:06*	*09/03/19 13:54*	*1*
PCB-118L	*80*		*30 - 140*	*08/19/19 08:06*	*09/03/19 13:54*	*1*
PCB-123L	*79*		*30 - 140*	*08/19/19 08:06*	*09/03/19 13:54*	*1*
PCB-126L	*88*		*30 - 140*	*08/19/19 08:06*	*09/03/19 13:54*	*1*
PCB-155L	*91*		*30 - 140*	*08/19/19 08:06*	*09/03/19 13:54*	*1*
PCB-156L	*82*	*C*	*30 - 140*	*08/19/19 08:06*	*09/03/19 13:54*	*1*
PCB-157L	*82*	*C156*	*30 - 140*	*08/19/19 08:06*	*09/03/19 13:54*	*1*
PCB-167L	*80*		*30 - 140*	*08/19/19 08:06*	*09/03/19 13:54*	*1*
PCB-169L	*95*		*30 - 140*	*08/19/19 08:06*	*09/03/19 13:54*	*1*
PCB-170L	*78*		*30 - 140*	*08/19/19 08:06*	*09/03/19 13:54*	*1*
PCB-188L	*76*		*30 - 140*	*08/19/19 08:06*	*09/03/19 13:54*	*1*
PCB-189L	*87*		*30 - 140*	*08/19/19 08:06*	*09/03/19 13:54*	*1*
PCB-202L	*82*		*30 - 140*	*08/19/19 08:06*	*09/03/19 13:54*	*1*
PCB-205L	*78*		*30 - 140*	*08/19/19 08:06*	*09/03/19 13:54*	*1*

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88125-2

Client Sample ID: A3-0to31-100818
Date Collected: 10/08/18 11:14
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-3
Matrix: Solid
Percent Solids: 33.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-206L	70		30 - 140	08/19/19 08:06	09/03/19 13:54	1
PCB-208L	77		30 - 140	08/19/19 08:06	09/03/19 13:54	1
PCB-209L	62		30 - 140	08/19/19 08:06	09/03/19 13:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	73		40 - 125	08/19/19 08:06	09/03/19 13:54	1
PCB-111L	86		40 - 125	08/19/19 08:06	09/03/19 13:54	1
PCB-178L	84		40 - 125	08/19/19 08:06	09/03/19 13:54	1

Client Sample ID: A4-0to25-100818
Lab Sample ID: 580-88125-4

Date Collected: 10/08/18 13:26
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 38.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	1.3	B	0.064	0.0040	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-2	0.15	B	0.064	0.0042	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-3	0.60	B	0.064	0.0044	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-4	1.0		0.13	0.0040	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-5	0.066		0.064	0.0026	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-6	0.52		0.064	0.0026	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-7	0.14		0.064	0.0025	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-8	1.7	B	0.13	0.0025	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-9	0.18		0.064	0.0028	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-10	0.064		0.064	0.0027	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-11	0.15	B	0.13	0.0025	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-12	0.20	C	0.13	0.0024	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-13	0.20	C12	0.13	0.0024	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-14	ND		0.064	0.0021	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-15	0.68	B	0.064	0.0024	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-16	0.93		0.064	0.0031	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-17	1.3	B	0.064	0.0025	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-18	2.0	C B	0.13	0.0021	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-19	0.73		0.064	0.0029	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-20	2.8	C B	0.13	0.024	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-21	1.6	C B	0.13	0.022	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-22	0.70	B	0.064	0.025	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-23	ND		0.064	0.024	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-24	0.031	J	0.064	0.0018	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-25	0.36		0.064	0.023	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-26	0.47	C B	0.13	0.023	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-27	0.23		0.064	0.0018	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-28	2.8	C20 B	0.13	0.024	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-29	0.47	C26 B	0.13	0.023	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-30	2.0	C18 B	0.13	0.0021	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-31	2.4	B	0.13	0.022	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-32	0.93	B	0.064	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-33	1.6	C21 B	0.13	0.022	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-34	ND		0.064	0.025	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-35	0.091	B	0.064	0.025	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-36	ND		0.064	0.023	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-37	0.90	B	0.064	0.024	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-38	ND		0.064	0.023	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-39	0.089		0.064	0.022	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-40	4.5	C	0.19	0.018	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-41	4.5	C40	0.19	0.018	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-42	2.7		0.064	0.020	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-43	0.39	C	0.13	0.017	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-44	25	C B	0.19	0.016	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-45	2.3	C	0.13	0.019	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-46	0.37		0.064	0.022	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-47	25	C44 B	0.19	0.016	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-48	0.90		0.064	0.018	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-49	15	C	0.13	0.015	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88125-2

Client Sample ID: A4-0to25-100818
Date Collected: 10/08/18 13:26
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-4
Matrix: Solid
Percent Solids: 38.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	2.2	C	0.13	0.018	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-51	2.3	C45	0.13	0.019	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-52	57	B	0.064	0.019	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-53	2.2	C50	0.13	0.018	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-54	0.27		0.064	0.0014	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-55	ND		0.064	0.013	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-56	4.5		0.064	0.013	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-57	ND		0.064	0.013	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-58	0.11		0.064	0.013	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-59	0.62	C	0.19	0.012	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-60	1.3		0.064	0.013	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-61	42	C B	0.25	0.012	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-62	0.62	C59	0.19	0.012	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-63	0.49		0.064	0.012	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-64	5.6		0.064	0.012	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-65	25	C44 B	0.19	0.016	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-66	15		0.064	0.013	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-67	0.17		0.064	0.012	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-68	0.34		0.064	0.011	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-69	15	C49	0.13	0.015	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-70	42	C61 B	0.25	0.012	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-71	4.5	C40	0.19	0.018	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-72	0.57		0.064	0.013	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-73	0.39	C43	0.13	0.017	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-74	42	C61 B	0.25	0.012	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-75	0.62	C59	0.19	0.012	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-76	42	C61 B	0.25	0.012	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-77	1.4		0.064	0.012	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-78	ND		0.064	0.013	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-79	2.3		0.064	0.011	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-80	ND		0.064	0.012	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-81	0.060	J	0.064	0.013	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-82	12		0.064	0.0028	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-83	60	C B	0.13	0.0026	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-84	32		0.064	0.0028	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-85	16	C	0.19	0.0020	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-86	72	C B	0.38	0.0020	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-87	72	C86 B	0.38	0.0020	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-88	14	C	0.13	0.0024	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-89	0.85		0.064	0.0027	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-90	110	C B	0.19	0.0021	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-91	14	C88	0.13	0.0024	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-92	22		0.064	0.0026	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-93	1.6	C	0.13	0.0025	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-94	ND		0.064	0.0027	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-95	91	B	0.064	0.0025	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-96	0.62		0.064	0.0020	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-97	72	C86 B	0.38	0.0020	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-98	2.9	C	0.13	0.0025	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1

Client Sample ID: A4-0to25-100818
Lab Sample ID: 580-88125-4
Date Collected: 10/08/18 13:26
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 38.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	60	C83 B	0.13	0.0026	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-100	1.6	C93	0.13	0.0025	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-101	110	C90 B	0.19	0.0021	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-102	2.9	C98	0.13	0.0025	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-103	1.2		0.064	0.0024	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-104	ND		0.064	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-105	30	G B	0.091	0.091	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-106	ND	G	0.093	0.093	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-107	6.0	G	0.087	0.087	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-108	3.5	C	0.13	0.094	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-109	72	C86 B	0.38	0.0020	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-110	120	C B	0.13	0.0018	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-111	ND		0.064	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-112	0.20		0.064	0.0018	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-113	110	C90 B	0.19	0.0021	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-114	1.7	G B	0.084	0.084	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-115	120	C110 B	0.13	0.0018	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-116	16	C85	0.19	0.0020	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-117	16	C85	0.19	0.0020	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-118	80	G B	0.088	0.088	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-119	72	C86 B	0.38	0.0020	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-120	ND		0.064	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-121	ND		0.064	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-122	1.1	G	0.10	0.10	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-123	1.2	G	0.090	0.090	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-124	3.5	C108	0.13	0.094	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-125	72	C86 B	0.38	0.0020	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-126	0.23	G B	0.089	0.089	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-127	ND	G	0.092	0.092	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-128	17	C	0.13	0.0096	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-129	89	C B	0.25	0.0099	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-130	7.0		0.064	0.013	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-131	1.7		0.064	0.012	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-132	34	B	0.064	0.012	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-133	1.5		0.064	0.012	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-134	6.0	C	0.13	0.013	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-135	27	C B	0.13	0.0014	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-136	13	B	0.064	0.0011	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-137	5.2		0.064	0.010	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-138	89	C129 B	0.25	0.0099	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-139	2.0	C	0.13	0.011	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-140	2.0	C139	0.13	0.011	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-141	14		0.064	0.011	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-142	ND		0.064	0.012	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-143	6.0	C134	0.13	0.013	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-144	4.0		0.064	0.0013	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-145	0.067	q	0.064	0.0010	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-146	13	B	0.064	0.011	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-147	63	C B	0.13	0.011	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1

Client Sample ID: A4-0to25-100818
Lab Sample ID: 580-88125-4

Date Collected: 10/08/18 13:26
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 38.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	0.26		0.064	0.0014	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-149	63	C147 B	0.13	0.011	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-150	0.25		0.064	0.00098	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-151	27	C135 B	0.13	0.0014	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-152	0.13		0.064	0.00097	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-153	60	C B	0.13	0.0088	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-154	1.7	B	0.064	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-155	ND		0.064	0.00093	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-156	13	C B	0.13	0.0097	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-157	13	C156 B	0.13	0.0097	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-158	9.9	B	0.064	0.0077	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-159	0.44		0.064	0.0081	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-160	89	C129 B	0.25	0.0099	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-161	ND		0.064	0.0080	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-162	0.37		0.064	0.0079	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-163	89	C129 B	0.25	0.0099	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-164	6.2		0.064	0.0085	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-165	ND		0.064	0.0095	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-166	17	C128	0.13	0.0096	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-167	3.9		0.064	0.0069	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-168	60	C153 B	0.13	0.0088	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-169	ND		0.064	0.0075	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-170	14	B	0.064	0.00099	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-171	4.7	C	0.13	0.0010	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-172	2.2	B	0.064	0.0010	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-173	4.7	C171	0.13	0.0010	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-174	12	B	0.064	0.0010	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-175	0.59		0.064	0.00092	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-176	1.6	B	0.064	0.00065	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-177	7.8	B	0.064	0.0010	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-178	2.5		0.064	0.00097	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-179	4.8	B	0.064	0.00070	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-180	25	C B	0.13	0.00080	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-181	0.25		0.064	0.00089	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-182	0.16		0.064	0.00086	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-183	8.2	C B	0.13	0.00087	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-184	ND		0.064	0.00070	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-185	8.2	C183 B	0.13	0.00087	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-186	ND		0.064	0.00069	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-187	13		0.064	0.00089	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-188	ND		0.064	0.00065	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-189	0.55	B	0.064	0.0042	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-190	2.6		0.064	0.00072	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-191	0.62		0.064	0.00071	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-192	ND		0.064	0.00077	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-193	25	C180 B	0.13	0.00080	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-194	4.3	B	0.064	0.010	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-195	1.9		0.064	0.012	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-196	2.4	B	0.064	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1

Client Sample ID: A4-0to25-100818
Lab Sample ID: 580-88125-4

Date Collected: 10/08/18 13:26
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 38.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	**0.14**	**q**	0.064	0.00085	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-198	**4.9**	**C B**	0.13	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-199	**4.9**	**C198 B**	0.13	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-200	**0.62**		0.064	0.00091	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-201	**0.63**		0.064	0.00086	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-202	**0.99**		0.064	0.00097	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-203	**3.0**		0.064	0.0011	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-204	ND		0.064	0.00093	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-205	**0.23**		0.064	0.0078	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-206	**2.1**		0.064	0.0094	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-207	**0.26**		0.064	0.0065	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-208	**0.53**		0.064	0.0065	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
PCB-209	**0.69**	**B**	0.064	0.0014	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
Total Monochlorobiphenyls	**2.1**	**B**	0.064	0.0042	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
Total Dichlorobiphenyls	**4.7**	**B**	0.13	0.0027	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
Total Trichlorobiphenyls	**16**	**I B**	0.13	0.016	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
Total Tetrachlorobiphenyls	**190**	**B**	0.25	0.014	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
Total Pentachlorobiphenyls	**680**	**B**	0.38	0.031	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
Total Hexachlorobiphenyls	**390**	**q B**	0.25	0.0075	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
Total Heptachlorobiphenyls	**100**	**B**	0.13	0.0010	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
Total Octachlorobiphenyls	**19**	**q B**	0.13	0.0035	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
Total Nonachlorobiphenyls	**2.9**		0.064	0.0075	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1
Polychlorinated biphenyls, Total	**1400**	**q B**	0.38	0.0094	ng/g	☼	08/19/19 08:06	08/27/19 21:33	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*70*		*30 - 140*	*08/19/19 08:06*	*08/27/19 21:33*	*1*
PCB-3L	*73*		*30 - 140*	*08/19/19 08:06*	*08/27/19 21:33*	*1*
PCB-4L	*70*		*30 - 140*	*08/19/19 08:06*	*08/27/19 21:33*	*1*
PCB-15L	*79*		*30 - 140*	*08/19/19 08:06*	*08/27/19 21:33*	*1*
PCB-19L	*71*		*30 - 140*	*08/19/19 08:06*	*08/27/19 21:33*	*1*
PCB-37L	*86*		*30 - 140*	*08/19/19 08:06*	*08/27/19 21:33*	*1*
PCB-54L	*82*		*30 - 140*	*08/19/19 08:06*	*08/27/19 21:33*	*1*
PCB-77L	*93*		*30 - 140*	*08/19/19 08:06*	*08/27/19 21:33*	*1*
PCB-81L	*89*		*30 - 140*	*08/19/19 08:06*	*08/27/19 21:33*	*1*
PCB-104L	*82*		*30 - 140*	*08/19/19 08:06*	*08/27/19 21:33*	*1*
PCB-105L	*82*		*30 - 140*	*08/19/19 08:06*	*08/27/19 21:33*	*1*
PCB-114L	*81*		*30 - 140*	*08/19/19 08:06*	*08/27/19 21:33*	*1*
PCB-118L	*83*		*30 - 140*	*08/19/19 08:06*	*08/27/19 21:33*	*1*
PCB-123L	*80*		*30 - 140*	*08/19/19 08:06*	*08/27/19 21:33*	*1*
PCB-126L	*90*		*30 - 140*	*08/19/19 08:06*	*08/27/19 21:33*	*1*
PCB-155L	*86*		*30 - 140*	*08/19/19 08:06*	*08/27/19 21:33*	*1*
PCB-156L	*84*	*C*	*30 - 140*	*08/19/19 08:06*	*08/27/19 21:33*	*1*
PCB-157L	*84*	*C156*	*30 - 140*	*08/19/19 08:06*	*08/27/19 21:33*	*1*
PCB-167L	*82*		*30 - 140*	*08/19/19 08:06*	*08/27/19 21:33*	*1*
PCB-169L	*94*		*30 - 140*	*08/19/19 08:06*	*08/27/19 21:33*	*1*
PCB-170L	*79*		*30 - 140*	*08/19/19 08:06*	*08/27/19 21:33*	*1*
PCB-188L	*77*		*30 - 140*	*08/19/19 08:06*	*08/27/19 21:33*	*1*
PCB-189L	*86*		*30 - 140*	*08/19/19 08:06*	*08/27/19 21:33*	*1*
PCB-202L	*83*		*30 - 140*	*08/19/19 08:06*	*08/27/19 21:33*	*1*
PCB-205L	*77*		*30 - 140*	*08/19/19 08:06*	*08/27/19 21:33*	*1*

Client: Pacific Groundwater Group
Job ID: 580-88125-2
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: A4-0to25-100818
Lab Sample ID: 580-88125-4
Date Collected: 10/08/18 13:26
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 38.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-206L	71		30 - 140	08/19/19 08:06	08/27/19 21:33	1
PCB-208L	80		30 - 140	08/19/19 08:06	08/27/19 21:33	1
PCB-209L	65		30 - 140	08/19/19 08:06	08/27/19 21:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	76		40 - 125	08/19/19 08:06	08/27/19 21:33	1
PCB-111L	90		40 - 125	08/19/19 08:06	08/27/19 21:33	1
PCB-178L	85		40 - 125	08/19/19 08:06	08/27/19 21:33	1

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88125-2

Client Sample ID: A5-0to25-100818
Date Collected: 10/08/18 14:38
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-5
Matrix: Solid
Percent Solids: 33.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.36	B	0.030	0.0014	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-2	0.067	B	0.030	0.0015	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-3	0.17	B	0.030	0.0015	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-4	0.57		0.060	0.0033	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-5	0.013	J	0.030	0.0021	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-6	0.12		0.030	0.0021	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-7	0.028	J q	0.030	0.0020	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-8	0.47	B	0.060	0.0020	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-9	0.041		0.030	0.0023	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-10	0.023	J q	0.030	0.0022	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-11	0.097	B	0.060	0.0020	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-12	0.061	C	0.060	0.0020	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-13	0.061	C12	0.060	0.0020	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-14	ND		0.030	0.0017	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-15	0.24	B	0.030	0.0019	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-16	0.30		0.030	0.0029	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-17	1.3	B	0.030	0.0023	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-18	0.73	C B	0.060	0.0020	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-19	1.4		0.030	0.0027	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-20	1.7	C B	0.060	0.0090	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-21	0.93	C B	0.060	0.0086	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-22	0.28	B	0.030	0.0095	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-23	ND		0.030	0.0093	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-24	0.012	J	0.030	0.0017	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-25	0.21		0.030	0.0087	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-26	0.17	C B	0.060	0.0089	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-27	0.24		0.030	0.0017	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-28	1.7	C20 B	0.060	0.0090	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-29	0.17	C26 B	0.060	0.0089	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-30	0.73	C18 B	0.060	0.0020	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-31	0.87	B	0.060	0.0085	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-32	1.5	B	0.030	0.0015	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-33	0.93	C21 B	0.060	0.0086	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-34	ND		0.030	0.0097	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-35	0.024	J B	0.030	0.0097	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-36	ND		0.030	0.0088	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-37	0.30	B	0.030	0.0092	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-38	ND		0.030	0.0089	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-39	0.015	J	0.030	0.0084	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-40	1.8	C	0.090	0.090	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-41	1.8	C40	0.090	0.090	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-42	0.58	G	0.096	0.096	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-43	1.2	G C	0.083	0.083	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-44	42	C B	0.090	0.080	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-45	16	G C	0.094	0.094	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-46	0.31	G	0.11	0.11	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-47	42	C44 B	0.090	0.080	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-48	0.20	G	0.088	0.088	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-49	8.6	G C	0.073	0.073	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2

Client Sample ID: A5-0to25-100818
Lab Sample ID: 580-88125-5

Date Collected: 10/08/18 14:38
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 33.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	3.5	G C	0.088	0.088	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-51	16	G C45	0.094	0.094	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-52	7.7	G B	0.092	0.092	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-53	3.5	G C50	0.088	0.088	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-54	1.4		0.030	0.0011	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-55	ND	G	0.064	0.064	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-56	0.63	G	0.065	0.065	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-57	ND	G	0.065	0.065	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-58	ND	G	0.063	0.063	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-59	1.8	C	0.090	0.061	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-60	0.21	G	0.062	0.062	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-61	4.9	C B	0.12	0.061	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-62	1.8	C59	0.090	0.061	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-63	0.53	G	0.056	0.056	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-64	0.79	G	0.058	0.058	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-65	42	C44 B	0.090	0.080	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-66	2.3	G	0.065	0.065	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-67	ND	G	0.059	0.059	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-68	0.82	G	0.056	0.056	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-69	8.6	G C49	0.073	0.073	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-70	4.9	C61 B	0.12	0.061	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-71	1.8	C40	0.090	0.090	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-72	0.13	G	0.063	0.063	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-73	1.2	G C43	0.083	0.083	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-74	4.9	C61 B	0.12	0.061	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-75	1.8	C59	0.090	0.061	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-76	4.9	C61 B	0.12	0.061	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-77	0.21	G	0.064	0.064	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-78	ND	G	0.063	0.063	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-79	0.12	G	0.054	0.054	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-80	ND	G	0.056	0.056	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-81	ND	G	0.061	0.061	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-82	1.4		0.030	0.0042	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-83	14	C B	0.060	0.0038	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-84	3.7		0.030	0.0042	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-85	5.2	C	0.090	0.0030	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-86	11	C B	0.18	0.0030	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-87	11	C86 B	0.18	0.0030	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-88	12	C	0.060	0.0036	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-89	ND		0.030	0.0040	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-90	34	C B	0.090	0.0032	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-91	12	C88	0.060	0.0036	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-92	5.7		0.030	0.0038	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-93	27	C	0.060	0.0037	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-94	2.5		0.030	0.0040	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-95	14	B	0.030	0.0038	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-96	1.1		0.030	0.0029	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-97	11	C86 B	0.18	0.0030	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-98	1.9	C	0.060	0.0037	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2

Client Sample ID: A5-0to25-100818
Lab Sample ID: 580-88125-5
Date Collected: 10/08/18 14:38
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 33.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	14	C83 B	0.060	0.0038	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-100	27	C93	0.060	0.0037	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-101	34	C90 B	0.090	0.0032	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-102	1.9	C98	0.060	0.0037	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-103	5.1		0.030	0.0035	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-104	2.2		0.030	0.0026	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-105	3.0	G B	0.044	0.044	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-106	ND	G	0.045	0.045	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-107	1.0	G	0.042	0.042	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-108	0.33	C	0.060	0.046	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-109	11	C86 B	0.18	0.0030	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-110	17	C B	0.060	0.0027	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-111	0.41		0.030	0.0025	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-112	ND		0.030	0.0026	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-113	34	C90 B	0.090	0.0032	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-114	0.15	G B	0.040	0.040	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-115	17	C110 B	0.060	0.0027	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-116	5.2	C85	0.090	0.0030	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-117	5.2	C85	0.090	0.0030	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-118	8.8	G B	0.043	0.043	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-119	11	C86 B	0.18	0.0030	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-120	0.31		0.030	0.0024	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-121	0.85		0.030	0.0026	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-122	0.096	G	0.049	0.049	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-123	0.14	G	0.044	0.044	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-124	0.33	C108	0.060	0.046	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-125	11	C86 B	0.18	0.0030	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-126	ND	G	0.044	0.044	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-127	ND	G	0.045	0.045	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-128	3.2	C	0.060	0.029	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-129	29	C B	0.12	0.030	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-130	1.5	G	0.039	0.039	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-131	0.27	G	0.038	0.038	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-132	7.0	G B	0.037	0.037	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-133	1.9	G	0.036	0.036	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-134	1.6	C	0.060	0.038	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-135	13	C B	0.060	0.0016	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-136	4.8	B	0.030	0.0012	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-137	1.6	G	0.031	0.031	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-138	29	C129 B	0.12	0.030	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-139	0.95	C	0.060	0.032	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-140	0.95	C139	0.060	0.032	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-141	4.6	G	0.034	0.034	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-142	ND	G	0.038	0.038	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-143	1.6	C134	0.060	0.038	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-144	1.3		0.030	0.0015	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-145	0.028	J	0.030	0.0012	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-146	7.4	G B	0.032	0.032	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-147	42	C B	0.060	0.033	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2

Client Sample ID: A5-0to25-100818
Lab Sample ID: 580-88125-5

Date Collected: 10/08/18 14:38
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 33.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	1.8		0.030	0.0016	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-149	42	C147 B	0.060	0.033	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-150	2.0		0.030	0.0011	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-151	13	C135 B	0.060	0.0016	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-152	1.1		0.030	0.0011	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-153	28	C B	0.060	0.027	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-154	4.6	B	0.030	0.0014	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-155	0.38		0.030	0.0011	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-156	2.6	C B	0.060	0.030	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-157	2.6	C156 B	0.060	0.030	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-158	2.6	B	0.030	0.023	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-159	0.65		0.030	0.025	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-160	29	C129 B	0.12	0.030	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-161	ND		0.030	0.024	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-162	ND		0.030	0.024	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-163	29	C129 B	0.12	0.030	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-164	2.0		0.030	0.026	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-165	0.73		0.030	0.029	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-166	3.2	C128	0.060	0.029	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-167	1.0		0.030	0.020	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-168	28	C153 B	0.060	0.027	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-169	ND		0.030	0.023	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-170	27	B	0.030	0.0011	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-171	8.3	C	0.060	0.0011	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-172	5.6	B	0.030	0.0011	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-173	8.3	C171	0.060	0.0011	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-174	22	B	0.030	0.0011	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-175	1.1		0.030	0.0010	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-176	2.8	B	0.030	0.00071	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-177	13	B	0.030	0.0011	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-178	6.9		0.030	0.0011	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-179	11	B	0.030	0.00076	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-180	65	C B	0.060	0.00088	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-181	0.54		0.030	0.00098	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-182	0.40		0.030	0.00094	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-183	18	C B	0.060	0.00095	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-184	ND		0.030	0.00076	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-185	18	C183 B	0.060	0.00095	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-186	ND		0.030	0.00075	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-187	32		0.030	0.00097	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-188	0.83		0.030	0.00069	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-189	1.3	B	0.030	0.0067	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-190	6.2		0.030	0.00079	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-191	1.4		0.030	0.00078	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-192	ND		0.030	0.00084	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-193	65	C180 B	0.060	0.00088	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-194	28	B	0.030	0.030	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-195	12	G	0.036	0.036	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-196	14	B	0.030	0.00091	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2

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Date Collected: 10/08/18 14:38
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Lab Sample ID: 580-88125-5
Matrix: Solid
Percent Solids: 33.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	0.99		0.030	0.00066	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-198	27	C B	0.060	0.00097	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-199	27	C198 B	0.060	0.00097	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-200	3.7		0.030	0.00071	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-201	3.4		0.030	0.00067	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-202	5.4		0.030	0.00076	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-203	19		0.030	0.00086	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-204	ND		0.030	0.00072	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-205	1.6		0.030	0.023	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-206	17	G	0.035	0.035	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-207	2.1		0.030	0.025	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-208	6.1		0.030	0.027	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
PCB-209	3.5	B	0.030	0.0015	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
Total Monochlorobiphenyls	0.60	B	0.030	0.0015	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
Total Dichlorobiphenyls	1.7	q B	0.060	0.0021	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
Total Trichlorobiphenyls	10	B	0.060	0.0066	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
Total Tetrachlorobiphenyls	96	B	0.12	0.069	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
Total Pentachlorobiphenyls	170	B	0.18	0.017	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
Total Hexachlorobiphenyls	170	B	0.12	0.022	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
Total Heptachlorobiphenyls	220	B	0.060	0.0012	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
Total Octachlorobiphenyls	120	B	0.060	0.0086	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
Total Nonachlorobiphenyls	25		0.030	0.029	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2
Polychlorinated biphenyls, Total	820	q B	0.18	0.017	ng/g	☼	08/19/19 08:06	09/04/19 03:14	2

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*67*		*30 - 140*	*08/19/19 08:06*	*09/04/19 03:14*	*2*
PCB-3L	*70*		*30 - 140*	*08/19/19 08:06*	*09/04/19 03:14*	*2*
PCB-4L	*64*		*30 - 140*	*08/19/19 08:06*	*09/04/19 03:14*	*2*
PCB-15L	*76*		*30 - 140*	*08/19/19 08:06*	*09/04/19 03:14*	*2*
PCB-19L	*68*		*30 - 140*	*08/19/19 08:06*	*09/04/19 03:14*	*2*
PCB-37L	*81*		*30 - 140*	*08/19/19 08:06*	*09/04/19 03:14*	*2*
PCB-54L	*93*		*30 - 140*	*08/19/19 08:06*	*09/04/19 03:14*	*2*
PCB-77L	*88*		*30 - 140*	*08/19/19 08:06*	*09/04/19 03:14*	*2*
PCB-81L	*87*		*30 - 140*	*08/19/19 08:06*	*09/04/19 03:14*	*2*
PCB-104L	*80*		*30 - 140*	*08/19/19 08:06*	*09/04/19 03:14*	*2*
PCB-105L	*79*		*30 - 140*	*08/19/19 08:06*	*09/04/19 03:14*	*2*
PCB-114L	*79*		*30 - 140*	*08/19/19 08:06*	*09/04/19 03:14*	*2*
PCB-118L	*79*		*30 - 140*	*08/19/19 08:06*	*09/04/19 03:14*	*2*
PCB-123L	*78*		*30 - 140*	*08/19/19 08:06*	*09/04/19 03:14*	*2*
PCB-126L	*85*		*30 - 140*	*08/19/19 08:06*	*09/04/19 03:14*	*2*
PCB-155L	*87*		*30 - 140*	*08/19/19 08:06*	*09/04/19 03:14*	*2*
PCB-156L	*83*	*C*	*30 - 140*	*08/19/19 08:06*	*09/04/19 03:14*	*2*
PCB-157L	*83*	*C156*	*30 - 140*	*08/19/19 08:06*	*09/04/19 03:14*	*2*
PCB-167L	*80*		*30 - 140*	*08/19/19 08:06*	*09/04/19 03:14*	*2*
PCB-169L	*92*		*30 - 140*	*08/19/19 08:06*	*09/04/19 03:14*	*2*
PCB-170L	*79*		*30 - 140*	*08/19/19 08:06*	*09/04/19 03:14*	*2*
PCB-188L	*81*		*30 - 140*	*08/19/19 08:06*	*09/04/19 03:14*	*2*
PCB-189L	*79*		*30 - 140*	*08/19/19 08:06*	*09/04/19 03:14*	*2*
PCB-202L	*78*		*30 - 140*	*08/19/19 08:06*	*09/04/19 03:14*	*2*
PCB-205L	*71*		*30 - 140*	*08/19/19 08:06*	*09/04/19 03:14*	*2*

Client: Pacific Groundwater Group
Job ID: 580-88125-2
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: A5-0to25-100818
Lab Sample ID: 580-88125-5
Date Collected: 10/08/18 14:38
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 33.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-206L	67		30 - 140	08/19/19 08:06	09/04/19 03:14	2
PCB-208L	70		30 - 140	08/19/19 08:06	09/04/19 03:14	2
PCB-209L	57		30 - 140	08/19/19 08:06	09/04/19 03:14	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	74		40 - 125	08/19/19 08:06	09/04/19 03:14	2
PCB-111L	89		40 - 125	08/19/19 08:06	09/04/19 03:14	2
PCB-178L	90		40 - 125	08/19/19 08:06	09/04/19 03:14	2

Client Sample ID: A6-0to23-100818
Lab Sample ID: 580-88125-6

Date Collected: 10/08/18 16:08
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 39.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.27	B	0.012	0.0012	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-2	0.075	B	0.012	0.0013	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-3	0.11	B	0.012	0.0013	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-4	0.35	S	0.025	0.00099	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-5	0.010	J	0.012	0.00066	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-6	0.11		0.012	0.00066	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-7	0.025		0.012	0.00063	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-8	0.35	B	0.025	0.00065	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-9	0.032		0.012	0.00072	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-10	0.018		0.012	0.00069	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-11	0.093	B	0.025	0.00063	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-12	0.051	C	0.025	0.00063	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-13	0.051	C12	0.025	0.00063	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-14	ND		0.012	0.00055	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-15	0.16	B	0.012	0.00063	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-16	0.22		0.012	0.0012	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-17	0.97	B	0.012	0.00091	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-18	0.51	C B	0.025	0.00079	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-19	0.88		0.012	0.0011	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-20	0.96	C B	0.025	0.0055	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-21	0.45	C B	0.025	0.0052	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-22	0.18	B	0.012	0.0057	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-23	ND		0.012	0.0056	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-24	0.0092	J	0.012	0.00068	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-25	0.13		0.012	0.0053	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-26	0.20	C B	0.025	0.0054	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-27	0.21		0.012	0.00066	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-28	0.96	B C20	0.025	0.0055	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-29	0.20	C26 B	0.025	0.0054	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-30	0.51	C18 B	0.025	0.00079	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-31	0.60	B	0.025	0.0052	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-32	0.50	B	0.012	0.00061	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-33	0.45	B C21	0.025	0.0052	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-34	0.012		0.012	0.0059	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-35	0.098	B	0.012	0.0059	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-36	0.0059	J	0.012	0.0053	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-37	0.25	B	0.012	0.0055	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-38	ND		0.012	0.0054	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-39	0.014		0.012	0.0051	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-40	1.7	C	0.037	0.0043	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-41	1.7	C40	0.037	0.0043	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-42	0.67		0.012	0.0045	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-43	0.24	C	0.025	0.0039	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-44	10	C B	0.037	0.0038	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-45	2.6	C	0.025	0.0044	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-46	0.16		0.012	0.0052	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-47	10	B C44	0.037	0.0038	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-48	0.26		0.012	0.0042	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-49	4.8	C	0.025	0.0035	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1

Client Sample ID: A6-0to23-100818
Lab Sample ID: 580-88125-6

Date Collected: 10/08/18 16:08
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 39.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	1.5	C	0.025	0.0042	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-51	2.6	C45	0.025	0.0044	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-52	13	B	0.012	0.0044	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-53	1.5	C50	0.025	0.0042	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-54	0.37		0.012	0.00064	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-55	ND		0.012	0.0030	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-56	1.0		0.012	0.0031	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-57	ND		0.012	0.0031	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-58	ND		0.012	0.0030	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-59	0.28	C	0.037	0.0029	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-60	0.28		0.012	0.0030	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-61	8.9	C B	0.049	0.0029	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-62	0.28	C59	0.037	0.0029	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-63	0.14		0.012	0.0027	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-64	1.3		0.012	0.0028	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-65	10	B C44	0.037	0.0038	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-66	3.2		0.012	0.0031	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-67	0.17		0.012	0.0028	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-68	0.13		0.012	0.0027	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-69	4.8	C49	0.025	0.0035	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-70	8.9	C61 B	0.049	0.0029	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-71	1.7	C40	0.037	0.0043	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-72	0.15		0.012	0.0030	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-73	0.24	C43	0.025	0.0039	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-74	8.9	C61 B	0.049	0.0029	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-75	0.28	C59	0.037	0.0029	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-76	8.9	C61 B	0.049	0.0029	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-77	0.54		0.012	0.0029	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-78	ND		0.012	0.0030	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-79	0.21		0.012	0.0025	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-80	ND		0.012	0.0027	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-81	0.016	q	0.012	0.0030	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-82	2.9		0.012	0.0014	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-83	16	C B	0.025	0.0013	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-84	7.7		0.012	0.0014	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-85	3.9	C	0.037	0.0010	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-86	17	C B	0.074	0.0010	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-87	17	B C86	0.074	0.0010	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-88	5.0	C	0.025	0.0012	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-89	0.24		0.012	0.0014	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-90	29	C B	0.037	0.0011	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-91	5.0	C88	0.025	0.0012	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-92	6.3		0.012	0.0013	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-93	1.3	C	0.025	0.0012	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-94	0.48		0.012	0.0013	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-95	24	B	0.012	0.0013	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-96	0.37		0.012	0.00099	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-97	17	B C86	0.074	0.0010	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-98	1.2	C	0.025	0.0012	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88125-2

Client Sample ID: A6-0to23-100818
Date Collected: 10/08/18 16:08
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-6
Matrix: Solid
Percent Solids: 39.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	16	C83 B	0.025	0.0013	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-100	1.3	C93	0.025	0.0012	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-101	29	B C90	0.037	0.0011	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-102	1.2	C98	0.025	0.0012	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-103	0.76		0.012	0.0012	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-104	ND		0.012	0.00087	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-105	7.0	B G	0.015	0.015	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-106	ND	G	0.015	0.015	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-107	1.6	G	0.014	0.014	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-108	0.83	C	0.025	0.015	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-109	17	B C86	0.074	0.0010	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-110	30	C B	0.025	0.00090	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-111	ND		0.012	0.00085	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-112	ND		0.012	0.00089	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-113	29	B C90	0.037	0.0011	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-114	0.41	B G	0.014	0.014	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-115	30	B C110	0.025	0.00090	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-116	3.9	C85	0.037	0.0010	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-117	3.9	C85	0.037	0.0010	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-118	18	B G	0.014	0.014	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-119	17	B C86	0.074	0.0010	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-120	0.23		0.012	0.00081	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-121	ND		0.012	0.00087	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-122	0.26	G	0.016	0.016	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-123	0.26	G	0.014	0.014	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-124	0.83	C108	0.025	0.015	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-125	17	B C86	0.074	0.0010	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-126	0.096	B G	0.014	0.014	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-127	0.043	G	0.015	0.015	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-128	4.5	C	0.025	0.0028	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-129	28	C B	0.049	0.0029	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-130	2.1		0.012	0.0038	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-131	0.46		0.012	0.0037	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-132	11	B	0.012	0.0036	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-133	0.68		0.012	0.0035	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-134	2.0	C	0.025	0.0037	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-135	10	C B	0.025	0.00096	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-136	4.4	B	0.012	0.00072	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-137	1.3		0.012	0.0030	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-138	28	B C129	0.049	0.0029	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-139	0.70	C	0.025	0.0032	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-140	0.70	C139	0.025	0.0032	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-141	4.6		0.012	0.0033	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-142	ND		0.012	0.0037	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-143	2.0	C134	0.025	0.0037	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-144	1.2		0.012	0.00091	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-145	0.020	q	0.012	0.00070	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-146	5.4	B	0.012	0.0032	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-147	24	C B	0.025	0.0033	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1

Client Sample ID: A6-0to23-100818
Lab Sample ID: 580-88125-6

Date Collected: 10/08/18 16:08
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 39.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	0.18		0.012	0.00093	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-149	24	B C147	0.025	0.0033	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-150	0.19		0.012	0.00067	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-151	10	C135 B	0.025	0.00096	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-152	0.097		0.012	0.00066	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-153	22	C B	0.025	0.0026	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-154	1.1	B	0.012	0.00082	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-155	0.013		0.012	0.00064	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-156	3.4	C B	0.025	0.0028	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-157	3.4	C156 B	0.025	0.0028	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-158	2.7	B	0.012	0.0023	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-159	0.18		0.012	0.0024	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-160	28	B C129	0.049	0.0029	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-161	ND		0.012	0.0024	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-162	0.095		0.012	0.0023	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-163	28	B C129	0.049	0.0029	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-164	2.1		0.012	0.0025	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-165	ND		0.012	0.0028	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-166	4.5	C128	0.025	0.0028	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-167	1.0		0.012	0.0021	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-168	22	B C153	0.025	0.0026	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-169	ND		0.012	0.0023	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-170	6.2	B	0.012	0.0012	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-171	2.1	C	0.025	0.0012	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-172	1.0	B	0.012	0.0011	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-173	2.1	C171	0.025	0.0012	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-174	6.0	B	0.012	0.0012	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-175	0.25		0.012	0.0010	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-176	0.77	B	0.012	0.00073	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-177	3.9	B	0.012	0.0012	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-178	1.3		0.012	0.0011	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-179	2.7	B	0.012	0.00079	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-180	12	C B	0.025	0.00091	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-181	0.088		0.012	0.0010	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-182	0.092		0.012	0.00097	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-183	3.7	C B	0.025	0.00098	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-184	ND		0.012	0.00079	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-185	3.7	B C183	0.025	0.00098	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-186	ND		0.012	0.00078	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-187	7.3		0.012	0.0010	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-188	ND		0.012	0.00072	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-189	0.23	B	0.012	0.0014	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-190	1.2		0.012	0.00081	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-191	0.26		0.012	0.00080	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-192	ND		0.012	0.00086	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-193	12	C180 B	0.025	0.00091	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-194	2.3	B	0.012	0.0041	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-195	1.1		0.012	0.0048	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-196	1.2	B	0.012	0.0021	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1

Client Sample ID: A6-0to23-100818
Lab Sample ID: 580-88125-6

Date Collected: 10/08/18 16:08
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 39.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	0.072	q	0.012	0.0015	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-198	2.3	C B	0.025	0.0022	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-199	2.3	C198 B	0.025	0.0022	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-200	0.30		0.012	0.0016	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-201	0.29		0.012	0.0016	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-202	0.45		0.012	0.0017	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-203	1.5		0.012	0.0020	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-204	ND		0.012	0.0017	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-205	0.12		0.012	0.0031	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-206	2.3	q	0.012	0.0041	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-207	0.10		0.012	0.0029	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-208	0.23		0.012	0.0029	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
PCB-209	0.29	B	0.012	0.00057	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
Total Monochlorobiphenyls	0.46	B	0.012	0.0013	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
Total Dichlorobiphenyls	1.2	S B	0.025	0.00068	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
Total Trichlorobiphenyls	6.2	B	0.025	0.0038	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
Total Tetrachlorobiphenyls	52	B q	0.049	0.0033	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
Total Pentachlorobiphenyls	170	B	0.074	0.0054	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
Total Hexachlorobiphenyls	130	B q	0.049	0.0024	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
Total Heptachlorobiphenyls	49	B	0.025	0.00098	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
Total Octachlorobiphenyls	9.6	B q	0.025	0.0024	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
Total Nonachlorobiphenyls	2.6	q	0.012	0.0033	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1
Polychlorinated biphenyls, Total	430	B q	0.074	0.0025	ng/g	☼	08/19/19 08:06	09/03/19 15:58	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*65*		*30 - 140*	*08/19/19 08:06*	*09/03/19 15:58*	*1*
PCB-3L	*68*		*30 - 140*	*08/19/19 08:06*	*09/03/19 15:58*	*1*
PCB-4L	*62*		*30 - 140*	*08/19/19 08:06*	*09/03/19 15:58*	*1*
PCB-15L	*72*		*30 - 140*	*08/19/19 08:06*	*09/03/19 15:58*	*1*
PCB-19L	*67*		*30 - 140*	*08/19/19 08:06*	*09/03/19 15:58*	*1*
PCB-37L	*81*		*30 - 140*	*08/19/19 08:06*	*09/03/19 15:58*	*1*
PCB-54L	*84*		*30 - 140*	*08/19/19 08:06*	*09/03/19 15:58*	*1*
PCB-77L	*86*		*30 - 140*	*08/19/19 08:06*	*09/03/19 15:58*	*1*
PCB-81L	*84*		*30 - 140*	*08/19/19 08:06*	*09/03/19 15:58*	*1*
PCB-104L	*82*		*30 - 140*	*08/19/19 08:06*	*09/03/19 15:58*	*1*
PCB-105L	*77*		*30 - 140*	*08/19/19 08:06*	*09/03/19 15:58*	*1*
PCB-114L	*77*		*30 - 140*	*08/19/19 08:06*	*09/03/19 15:58*	*1*
PCB-118L	*80*		*30 - 140*	*08/19/19 08:06*	*09/03/19 15:58*	*1*
PCB-123L	*77*		*30 - 140*	*08/19/19 08:06*	*09/03/19 15:58*	*1*
PCB-126L	*86*		*30 - 140*	*08/19/19 08:06*	*09/03/19 15:58*	*1*
PCB-155L	*92*		*30 - 140*	*08/19/19 08:06*	*09/03/19 15:58*	*1*
PCB-156L	*82*	*C*	*30 - 140*	*08/19/19 08:06*	*09/03/19 15:58*	*1*
PCB-157L	*82*	*C156*	*30 - 140*	*08/19/19 08:06*	*09/03/19 15:58*	*1*
PCB-167L	*79*		*30 - 140*	*08/19/19 08:06*	*09/03/19 15:58*	*1*
PCB-169L	*89*		*30 - 140*	*08/19/19 08:06*	*09/03/19 15:58*	*1*
PCB-170L	*75*		*30 - 140*	*08/19/19 08:06*	*09/03/19 15:58*	*1*
PCB-188L	*78*		*30 - 140*	*08/19/19 08:06*	*09/03/19 15:58*	*1*
PCB-189L	*84*		*30 - 140*	*08/19/19 08:06*	*09/03/19 15:58*	*1*
PCB-202L	*80*		*30 - 140*	*08/19/19 08:06*	*09/03/19 15:58*	*1*
PCB-205L	*72*		*30 - 140*	*08/19/19 08:06*	*09/03/19 15:58*	*1*

Client: Pacific Groundwater Group
Job ID: 580-88125-2
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: A6-0to23-100818
Lab Sample ID: 580-88125-6
Date Collected: 10/08/18 16:08
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 39.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-206L	66		30 - 140	08/19/19 08:06	09/03/19 15:58	1
PCB-208L	72		30 - 140	08/19/19 08:06	09/03/19 15:58	1
PCB-209L	60		30 - 140	08/19/19 08:06	09/03/19 15:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	73		40 - 125	08/19/19 08:06	09/03/19 15:58	1
PCB-111L	90		40 - 125	08/19/19 08:06	09/03/19 15:58	1
PCB-178L	85		40 - 125	08/19/19 08:06	09/03/19 15:58	1

Client Sample ID: A7-0to26-100918
Date Collected: 10/09/18 13:23
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-7
Matrix: Solid
Percent Solids: 37.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.089	B	0.065	0.0023	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-2	0.039	J q B	0.065	0.0023	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-3	0.061	J B	0.065	0.0024	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-4	0.17		0.13	0.0076	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-5	ND		0.065	0.0046	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-6	0.034	J	0.065	0.0047	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-7	0.0098	J	0.065	0.0045	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-8	0.12	J B	0.13	0.0046	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-9	ND		0.065	0.0051	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-10	0.0090	J	0.065	0.0049	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-11	0.091	J B	0.13	0.0044	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-12	0.036	J C	0.13	0.0044	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-13	0.036	J C12	0.13	0.0044	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-14	ND		0.065	0.0039	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-15	0.11	B	0.065	0.0042	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-16	0.052	J q	0.065	0.0094	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-17	0.47	B	0.065	0.0074	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-18	0.17	C B	0.13	0.0063	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-19	0.46		0.065	0.0088	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-20	1.4	C B	0.13	0.0069	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-21	0.56	C B	0.13	0.0065	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-22	0.077	B	0.065	0.0072	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-23	ND		0.065	0.0071	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-24	ND		0.065	0.0055	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-25	0.26		0.065	0.0067	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-26	0.077	J C B	0.13	0.0068	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-27	0.070		0.065	0.0053	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-28	1.4	C20 B	0.13	0.0069	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-29	0.077	J C26 B	0.13	0.0068	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-30	0.17	C18 B	0.13	0.0063	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-31	0.28	B	0.13	0.0065	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-32	2.0	B	0.065	0.0049	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-33	0.56	C21 B	0.13	0.0065	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-34	ND		0.065	0.0074	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-35	0.022	J B	0.065	0.0074	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-36	ND		0.065	0.0067	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-37	0.11	B	0.065	0.0070	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-38	ND		0.065	0.0068	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-39	ND		0.065	0.0064	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-40	2.1	C	0.20	0.073	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-41	2.1	C40	0.20	0.073	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-42	0.49	G	0.077	0.077	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-43	0.98	C	0.13	0.067	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-44	30	C B	0.20	0.065	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-45	16	C	0.13	0.076	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-46	0.40	G	0.088	0.088	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-47	30	C44 B	0.20	0.065	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-48	ND	G	0.071	0.071	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-49	16	C	0.13	0.059	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5

Client Sample ID: A7-0to26-100918
Lab Sample ID: 580-88125-7
Date Collected: 10/09/18 13:23
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 37.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	7.0	C	0.13	0.072	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-51	16	C45	0.13	0.076	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-52	4.1	G B	0.075	0.075	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-53	7.0	C50	0.13	0.072	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-54	1.6		0.065	0.0029	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-55	ND		0.065	0.052	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-56	0.28		0.065	0.053	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-57	ND		0.065	0.052	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-58	ND		0.065	0.051	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-59	1.0	C	0.20	0.049	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-60	ND		0.065	0.050	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-61	2.5	C B	0.26	0.049	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-62	1.0	C59	0.20	0.049	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-63	0.29		0.065	0.046	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-64	0.42		0.065	0.047	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-65	30	C44 B	0.20	0.065	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-66	1.9		0.065	0.052	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-67	ND		0.065	0.048	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-68	0.39		0.065	0.045	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-69	16	C49	0.13	0.059	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-70	2.5	C61 B	0.26	0.049	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-71	2.1	C40	0.20	0.073	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-72	ND		0.065	0.051	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-73	0.98	C43	0.13	0.067	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-74	2.5	C61 B	0.26	0.049	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-75	1.0	C59	0.20	0.049	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-76	2.5	C61 B	0.26	0.049	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-77	0.12		0.065	0.050	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-78	ND		0.065	0.051	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-79	ND		0.065	0.044	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-80	ND		0.065	0.046	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-81	ND		0.065	0.051	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-82	0.79		0.065	0.0054	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-83	21	C B	0.13	0.0050	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-84	2.2		0.065	0.0055	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-85	3.1	C	0.20	0.0039	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-86	8.1	C B	0.39	0.0040	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-87	8.1	C86 B	0.39	0.0040	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-88	13	C	0.13	0.0047	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-89	ND		0.065	0.0053	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-90	25	C B	0.20	0.0042	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-91	13	C88	0.13	0.0047	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-92	6.1		0.065	0.0050	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-93	4.4	C	0.13	0.0048	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-94	2.5		0.065	0.0052	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-95	9.9	B	0.065	0.0049	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-96	1.2		0.065	0.0039	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-97	8.1	C86 B	0.39	0.0040	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-98	2.3	C	0.13	0.0048	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5

Client Sample ID: A7-0to26-100918
Date Collected: 10/09/18 13:23
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-7
Matrix: Solid
Percent Solids: 37.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	21	C83 B	0.13	0.0050	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-100	4.4	C93	0.13	0.0048	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-101	25	C90 B	0.20	0.0042	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-102	2.3	C98	0.13	0.0048	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-103	3.4		0.065	0.0046	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-104	0.42		0.065	0.0034	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-105	1.7	B	0.065	0.047	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-106	ND		0.065	0.045	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-107	0.86		0.065	0.043	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-108	0.25	q C	0.13	0.046	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-109	8.1	C86 B	0.39	0.0040	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-110	14	C B	0.13	0.0035	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-111	0.11		0.065	0.0033	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-112	ND		0.065	0.0035	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-113	25	C90 B	0.20	0.0042	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-114	ND		0.065	0.042	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-115	14	C110 B	0.13	0.0035	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-116	3.1	C85	0.20	0.0039	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-117	3.1	C85	0.20	0.0039	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-118	8.7	B	0.065	0.043	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-119	8.1	C86 B	0.39	0.0040	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-120	0.27		0.065	0.0032	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-121	0.13		0.065	0.0034	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-122	ND		0.065	0.050	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-123	0.099	q	0.065	0.041	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-124	0.25	q C108	0.13	0.046	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-125	8.1	C86 B	0.39	0.0040	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-126	ND		0.065	0.046	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-127	ND		0.065	0.045	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-128	6.8	C	0.13	0.027	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-129	90	C B	0.26	0.027	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-130	3.2		0.065	0.036	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-131	ND		0.065	0.035	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-132	18	B	0.065	0.034	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-133	1.2		0.065	0.033	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-134	3.6	C	0.13	0.035	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-135	38	C B	0.13	0.0026	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-136	10	B	0.065	0.0020	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-137	1.0	q	0.065	0.028	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-138	90	C129 B	0.26	0.027	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-139	0.71	C	0.13	0.030	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-140	0.71	C139	0.13	0.030	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-141	22		0.065	0.031	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-142	ND		0.065	0.035	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-143	3.6	C134	0.13	0.035	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-144	5.3		0.065	0.0025	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-145	ND		0.065	0.0019	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-146	14	B	0.065	0.030	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-147	74	C B	0.13	0.031	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5

Client Sample ID: A7-0to26-100918
Lab Sample ID: 580-88125-7

Date Collected: 10/09/18 13:23
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 37.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	0.30		0.065	0.0025	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-149	74	C147 B	0.13	0.031	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-150	0.57		0.065	0.0018	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-151	38	C135 B	0.13	0.0026	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-152	0.34		0.065	0.0018	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-153	97	C B	0.13	0.024	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-154	1.9	B	0.065	0.0022	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-155	ND		0.065	0.0017	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-156	8.0	C B	0.13	0.028	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-157	8.0	C156 B	0.13	0.028	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-158	8.6	B	0.065	0.021	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-159	1.8		0.065	0.023	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-160	90	C129 B	0.26	0.027	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-161	ND		0.065	0.022	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-162	ND		0.065	0.022	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-163	90	C129 B	0.26	0.027	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-164	6.4		0.065	0.024	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-165	ND		0.065	0.027	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-166	6.8	C128	0.13	0.027	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-167	2.9		0.065	0.018	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-168	97	C153 B	0.13	0.024	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-169	ND		0.065	0.021	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-170	58	B	0.065	0.0023	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-171	20	C	0.13	0.0025	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-172	9.8	B	0.065	0.0024	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-173	20	C171	0.13	0.0025	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-174	57	B	0.065	0.0025	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-175	2.4		0.065	0.0022	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-176	6.7	B	0.065	0.0015	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-177	33	B	0.065	0.0025	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-178	9.7		0.065	0.0023	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-179	21	B	0.065	0.0017	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-180	140	C B	0.13	0.0019	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-181	ND		0.065	0.0021	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-182	ND		0.065	0.0021	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-183	42	C B	0.13	0.0021	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-184	ND		0.065	0.0017	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-185	42	C183 B	0.13	0.0021	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-186	ND		0.065	0.0016	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-187	60		0.065	0.0021	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-188	ND		0.065	0.0016	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-189	2.1	B	0.065	0.011	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-190	13		0.065	0.0017	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-191	2.9		0.065	0.0017	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-192	ND		0.065	0.0018	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-193	140	C180 B	0.13	0.0019	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-194	26	G B	0.084	0.084	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-195	13	G	0.10	0.10	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-196	14	B	0.065	0.0021	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5

Client Sample ID: A7-0to26-100918
Lab Sample ID: 580-88125-7

Date Collected: 10/09/18 13:23
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 37.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	0.99		0.065	0.0015	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-198	22	C B	0.13	0.0022	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-199	22	C198 B	0.13	0.0022	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-200	3.2		0.065	0.0016	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-201	2.8		0.065	0.0015	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-202	3.4		0.065	0.0017	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-203	16		0.065	0.0020	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-204	ND		0.065	0.0016	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-205	1.3		0.065	0.063	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-206	4.4		0.065	0.011	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-207	0.59		0.065	0.0076	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-208	0.71		0.065	0.0077	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
PCB-209	0.33	B	0.065	0.0026	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
Total Monochlorobiphenyls	0.19	q B	0.065	0.0023	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
Total Dichlorobiphenyls	0.58	B	0.13	0.0048	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
Total Trichlorobiphenyls	6.0	q B	0.13	0.0069	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
Total Tetrachlorobiphenyls	86	B	0.26	0.056	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
Total Pentachlorobiphenyls	130	q B	0.39	0.017	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
Total Hexachlorobiphenyls	420	q B	0.26	0.021	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
Total Heptachlorobiphenyls	480	B	0.13	0.0024	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
Total Octachlorobiphenyls	100	B	0.13	0.024	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
Total Nonachlorobiphenyls	5.7		0.065	0.0088	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5
Polychlorinated biphenyls, Total	1200	q B	0.39	0.016	ng/g	☼	08/19/19 08:06	09/04/19 14:27	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*69*		*30 - 140*	*08/19/19 08:06*	*09/04/19 14:27*	*5*
PCB-3L	*72*		*30 - 140*	*08/19/19 08:06*	*09/04/19 14:27*	*5*
PCB-4L	*61*		*30 - 140*	*08/19/19 08:06*	*09/04/19 14:27*	*5*
PCB-15L	*78*		*30 - 140*	*08/19/19 08:06*	*09/04/19 14:27*	*5*
PCB-19L	*64*		*30 - 140*	*08/19/19 08:06*	*09/04/19 14:27*	*5*
PCB-37L	*87*		*30 - 140*	*08/19/19 08:06*	*09/04/19 14:27*	*5*
PCB-54L	*88*		*30 - 140*	*08/19/19 08:06*	*09/04/19 14:27*	*5*
PCB-77L	*104*		*30 - 140*	*08/19/19 08:06*	*09/04/19 14:27*	*5*
PCB-81L	*101*		*30 - 140*	*08/19/19 08:06*	*09/04/19 14:27*	*5*
PCB-104L	*91*		*30 - 140*	*08/19/19 08:06*	*09/04/19 14:27*	*5*
PCB-105L	*86*		*30 - 140*	*08/19/19 08:06*	*09/04/19 14:27*	*5*
PCB-114L	*88*		*30 - 140*	*08/19/19 08:06*	*09/04/19 14:27*	*5*
PCB-118L	*89*		*30 - 140*	*08/19/19 08:06*	*09/04/19 14:27*	*5*
PCB-123L	*88*		*30 - 140*	*08/19/19 08:06*	*09/04/19 14:27*	*5*
PCB-126L	*95*		*30 - 140*	*08/19/19 08:06*	*09/04/19 14:27*	*5*
PCB-155L	*107*		*30 - 140*	*08/19/19 08:06*	*09/04/19 14:27*	*5*
PCB-156L	*96*	*C*	*30 - 140*	*08/19/19 08:06*	*09/04/19 14:27*	*5*
PCB-157L	*96*	*C156*	*30 - 140*	*08/19/19 08:06*	*09/04/19 14:27*	*5*
PCB-167L	*95*		*30 - 140*	*08/19/19 08:06*	*09/04/19 14:27*	*5*
PCB-169L	*107*		*30 - 140*	*08/19/19 08:06*	*09/04/19 14:27*	*5*
PCB-170L	*96*		*30 - 140*	*08/19/19 08:06*	*09/04/19 14:27*	*5*
PCB-188L	*86*		*30 - 140*	*08/19/19 08:06*	*09/04/19 14:27*	*5*
PCB-189L	*96*		*30 - 140*	*08/19/19 08:06*	*09/04/19 14:27*	*5*
PCB-202L	*96*		*30 - 140*	*08/19/19 08:06*	*09/04/19 14:27*	*5*
PCB-205L	*86*		*30 - 140*	*08/19/19 08:06*	*09/04/19 14:27*	*5*

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88125-2

Client Sample ID: A7-0to26-100918
Date Collected: 10/09/18 13:23
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-7
Matrix: Solid
Percent Solids: 37.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-206L	81		30 - 140	08/19/19 08:06	09/04/19 14:27	5
PCB-208L	94		30 - 140	08/19/19 08:06	09/04/19 14:27	5
PCB-209L	73		30 - 140	08/19/19 08:06	09/04/19 14:27	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	75		40 - 125	08/19/19 08:06	09/04/19 14:27	5
PCB-111L	92		40 - 125	08/19/19 08:06	09/04/19 14:27	5
PCB-178L	83		40 - 125	08/19/19 08:06	09/04/19 14:27	5

Client Sample ID: C4-0to27-100918
Lab Sample ID: 580-88125-8

Date Collected: 10/09/18 08:28
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 37.5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.22	B	0.013	0.00060	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-2	0.047	B	0.013	0.00063	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-3	0.11	B	0.013	0.00065	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-4	0.77		0.026	0.00092	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-5	0.0066	J	0.013	0.00057	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-6	0.067		0.013	0.00057	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-7	0.016		0.013	0.00055	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-8	0.21	B	0.026	0.00056	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-9	0.022		0.013	0.00063	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-10	0.036		0.013	0.00060	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-11	0.075	B	0.026	0.00054	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-12	0.040	C	0.026	0.00054	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-13	0.040	C12	0.026	0.00054	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-14	ND		0.013	0.00047	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-15	0.17	B	0.013	0.00052	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-16	0.12		0.013	0.00081	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-17	1.3	B	0.013	0.00063	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-18	0.33	C B	0.026	0.00055	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-19	2.2		0.013	0.00076	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-20	0.79	C B	0.026	0.0038	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-21	0.30	C B	0.026	0.0036	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-22	0.10	B	0.013	0.0040	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-23	ND		0.013	0.0039	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-24	ND		0.013	0.00047	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-25	0.14		0.013	0.0036	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-26	0.099	C B	0.026	0.0037	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-27	0.30		0.013	0.00046	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-28	0.79	B C20	0.026	0.0038	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-29	0.099	C26 B	0.026	0.0037	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-30	0.33	C18 B	0.026	0.00055	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-31	0.38	B	0.026	0.0036	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-32	0.85	B	0.013	0.00042	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-33	0.30	B C21	0.026	0.0036	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-34	0.0097	J	0.013	0.0040	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-35	0.014	B	0.013	0.0040	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-36	ND		0.013	0.0037	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-37	0.15	B	0.013	0.0038	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-38	ND		0.013	0.0037	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-39	0.0046	J q	0.013	0.0035	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-40	1.5	C	0.039	0.0062	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-41	1.5	C40	0.039	0.0062	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-42	0.49		0.013	0.0065	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-43	0.30	C	0.026	0.0056	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-44	11	C B	0.039	0.0055	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-45	4.8	C	0.026	0.0064	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-46	0.20		0.013	0.0074	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-47	11	B C44	0.039	0.0055	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-48	0.20		0.013	0.0060	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-49	4.6	C	0.026	0.0050	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1

Client Sample ID: C4-0to27-100918
Lab Sample ID: 580-88125-8

Date Collected: 10/09/18 08:28
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 37.5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	2.4	C	0.026	0.0060	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-51	4.8	C45	0.026	0.0064	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-52	6.7	B	0.013	0.0063	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-53	2.4	C50	0.026	0.0060	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-54	0.82		0.013	0.00066	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-55	ND		0.013	0.0044	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-56	0.50		0.013	0.0045	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-57	ND		0.013	0.0044	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-58	0.016	q	0.013	0.0043	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-59	0.33	C	0.039	0.0041	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-60	0.14		0.013	0.0042	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-61	4.2	C B	0.052	0.0042	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-62	0.33	C59	0.039	0.0041	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-63	0.12		0.013	0.0038	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-64	0.63		0.013	0.0040	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-65	11	B C44	0.039	0.0055	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-66	2.0		0.013	0.0044	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-67	0.073		0.013	0.0040	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-68	0.17		0.013	0.0038	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-69	4.6	C49	0.026	0.0050	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-70	4.2	C61 B	0.052	0.0042	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-71	1.5	C40	0.039	0.0062	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-72	0.11		0.013	0.0043	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-73	0.30	C43	0.026	0.0056	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-74	4.2	C61 B	0.052	0.0042	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-75	0.33	C59	0.039	0.0041	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-76	4.2	C61 B	0.052	0.0042	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-77	0.19		0.013	0.0042	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-78	ND		0.013	0.0043	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-79	0.11		0.013	0.0037	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-80	ND		0.013	0.0038	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-81	0.0080	J	0.013	0.0043	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-82	1.3		0.013	0.00089	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-83	9.7	C B	0.026	0.00083	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-84	3.4		0.013	0.00090	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-85	2.0	C	0.039	0.00064	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-86	8.7	C B	0.079	0.00065	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-87	8.7	B C86	0.079	0.00065	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-88	3.2	C	0.026	0.00077	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-89	0.095	q	0.013	0.00087	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-90	18	C B	0.039	0.00068	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-91	3.2	C88	0.026	0.00077	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-92	4.2		0.013	0.00081	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-93	1.7	C	0.026	0.00079	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-94	0.40		0.013	0.00086	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-95	12	B	0.013	0.00081	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-96	0.28		0.013	0.00063	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-97	8.7	B C86	0.079	0.00065	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-98	0.87	C	0.026	0.00079	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1

Client Sample ID: C4-0to27-100918
Lab Sample ID: 580-88125-8

Date Collected: 10/09/18 08:28
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 37.5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	9.7	C83 B	0.026	0.00083	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-100	1.7	C93	0.026	0.00079	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-101	18	B C90	0.039	0.00068	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-102	0.87	C98	0.026	0.00079	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-103	0.83		0.013	0.00075	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-104	0.14		0.013	0.00056	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-105	3.5	B	0.013	0.011	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-106	ND		0.013	0.011	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-107	1.1		0.013	0.010	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-108	0.43	C	0.026	0.011	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-109	8.7	B C86	0.079	0.00065	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-110	15	C B	0.026	0.00057	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-111	0.090		0.013	0.00054	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-112	ND		0.013	0.00057	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-113	18	B C90	0.039	0.00068	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-114	0.19	B	0.013	0.0097	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-115	15	B C110	0.026	0.00057	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-116	2.0	C85	0.039	0.00064	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-117	2.0	C85	0.039	0.00064	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-118	11	B	0.013	0.010	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-119	8.7	B C86	0.079	0.00065	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-120	0.18		0.013	0.00052	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-121	0.064		0.013	0.00056	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-122	0.12		0.013	0.012	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-123	0.13		0.013	0.010	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-124	0.43	C108	0.026	0.011	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-125	8.7	B C86	0.079	0.00065	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-126	0.041	B	0.013	0.010	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-127	0.021		0.013	0.011	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-128	2.9	C	0.026	0.0036	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-129	23	C B	0.052	0.0037	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-130	2.1		0.013	0.0048	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-131	0.28		0.013	0.0047	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-132	7.1	B	0.013	0.0045	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-133	0.95		0.013	0.0044	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-134	1.4	C	0.026	0.0047	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-135	10	C B	0.026	0.0010	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-136	3.3	B	0.013	0.00078	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-137	0.74		0.013	0.0038	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-138	23	B C129	0.052	0.0037	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-139	0.47	C	0.026	0.0040	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-140	0.47	C139	0.026	0.0040	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-141	4.1		0.013	0.0042	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-142	ND		0.013	0.0046	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-143	1.4	C134	0.026	0.0047	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-144	1.0		0.013	0.00099	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-145	0.016		0.013	0.00076	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-146	5.8	B	0.013	0.0040	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-147	20	C B	0.026	0.0041	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1

Client Sample ID: C4-0to27-100918
Lab Sample ID: 580-88125-8

Date Collected: 10/09/18 08:28
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 37.5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	0.22		0.013	0.0010	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-149	20	B C147	0.026	0.0041	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-150	0.16		0.013	0.00073	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-151	10	C135 B	0.026	0.0010	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-152	0.087		0.013	0.00072	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-153	19	C B	0.026	0.0033	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-154	0.82	B	0.013	0.00089	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-155	0.018		0.013	0.00070	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-156	2.4	C B	0.026	0.0036	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-157	2.4	C156 B	0.026	0.0036	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-158	2.1	B	0.013	0.0029	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-159	0.22		0.013	0.0030	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-160	23	B C129	0.052	0.0037	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-161	ND		0.013	0.0030	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-162	0.069		0.013	0.0029	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-163	23	B C129	0.052	0.0037	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-164	1.6		0.013	0.0032	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-165	0.15		0.013	0.0036	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-166	2.9	C128	0.026	0.0036	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-167	0.77		0.013	0.0025	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-168	19	B C153	0.026	0.0033	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-169	ND		0.013	0.0029	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-170	7.0	B	0.013	0.0013	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-171	2.4	C	0.026	0.0013	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-172	1.3	B	0.013	0.0013	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-173	2.4	C171	0.026	0.0013	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-174	7.7	B	0.013	0.0013	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-175	0.41		0.013	0.0012	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-176	0.93	B	0.013	0.00083	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-177	5.8	B	0.013	0.0013	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-178	2.5		0.013	0.0012	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-179	3.9	B	0.013	0.00089	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-180	16	C B	0.026	0.0010	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-181	0.072		0.013	0.0011	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-182	0.096		0.013	0.0011	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-183	5.0	C B	0.026	0.0011	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-184	ND		0.013	0.00089	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-185	5.0	B C183	0.026	0.0011	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-186	ND		0.013	0.00088	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-187	11		0.013	0.0011	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-188	ND		0.013	0.00084	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-189	0.27	B	0.013	0.0023	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-190	1.4		0.013	0.00092	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-191	0.35		0.013	0.00091	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-192	ND		0.013	0.00098	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-193	16	C180 B	0.026	0.0010	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-194	3.9	B	0.013	0.012	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-195	1.8	G	0.015	0.015	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-196	1.8	B	0.013	0.0013	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1

Client Sample ID: C4-0to27-100918
Lab Sample ID: 580-88125-8

Date Collected: 10/09/18 08:28
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 37.5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	0.13		0.013	0.00097	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-198	3.5	C B	0.026	0.0014	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-199	3.5	C198 B	0.026	0.0014	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-200	0.45		0.013	0.0010	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-201	0.47		0.013	0.00099	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-202	0.77		0.013	0.0011	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-203	2.2		0.013	0.0013	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-204	ND		0.013	0.0011	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-205	0.20		0.013	0.0093	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-206	2.8	q	0.013	0.0048	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-207	0.15		0.013	0.0033	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-208	0.28		0.013	0.0034	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
PCB-209	0.63	B	0.013	0.00067	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
Total Monochlorobiphenyls	0.38	B	0.013	0.00062	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
Total Dichlorobiphenyls	1.4	B	0.026	0.00059	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
Total Trichlorobiphenyls	7.1	B q	0.026	0.0027	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
Total Tetrachlorobiphenyls	42	B q	0.052	0.0047	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
Total Pentachlorobiphenyls	99	B q	0.079	0.0039	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
Total Hexachlorobiphenyls	110	B	0.052	0.0029	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
Total Heptachlorobiphenyls	66	B	0.026	0.0011	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
Total Octachlorobiphenyls	15	B	0.026	0.0042	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
Total Nonachlorobiphenyls	3.2	q	0.013	0.0038	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1
Polychlorinated biphenyls, Total	350	B q	0.079	0.0027	ng/g	☼	08/19/19 08:06	09/03/19 18:02	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*65*		*30 - 140*	*08/19/19 08:06*	*09/03/19 18:02*	*1*
PCB-3L	*71*		*30 - 140*	*08/19/19 08:06*	*09/03/19 18:02*	*1*
PCB-4L	*65*		*30 - 140*	*08/19/19 08:06*	*09/03/19 18:02*	*1*
PCB-15L	*76*		*30 - 140*	*08/19/19 08:06*	*09/03/19 18:02*	*1*
PCB-19L	*68*		*30 - 140*	*08/19/19 08:06*	*09/03/19 18:02*	*1*
PCB-37L	*81*		*30 - 140*	*08/19/19 08:06*	*09/03/19 18:02*	*1*
PCB-54L	*90*		*30 - 140*	*08/19/19 08:06*	*09/03/19 18:02*	*1*
PCB-77L	*85*		*30 - 140*	*08/19/19 08:06*	*09/03/19 18:02*	*1*
PCB-81L	*83*		*30 - 140*	*08/19/19 08:06*	*09/03/19 18:02*	*1*
PCB-104L	*87*		*30 - 140*	*08/19/19 08:06*	*09/03/19 18:02*	*1*
PCB-105L	*80*		*30 - 140*	*08/19/19 08:06*	*09/03/19 18:02*	*1*
PCB-114L	*82*		*30 - 140*	*08/19/19 08:06*	*09/03/19 18:02*	*1*
PCB-118L	*84*		*30 - 140*	*08/19/19 08:06*	*09/03/19 18:02*	*1*
PCB-123L	*83*		*30 - 140*	*08/19/19 08:06*	*09/03/19 18:02*	*1*
PCB-126L	*94*		*30 - 140*	*08/19/19 08:06*	*09/03/19 18:02*	*1*
PCB-155L	*98*		*30 - 140*	*08/19/19 08:06*	*09/03/19 18:02*	*1*
PCB-156L	*84*	*C*	*30 - 140*	*08/19/19 08:06*	*09/03/19 18:02*	*1*
PCB-157L	*84*	*C156*	*30 - 140*	*08/19/19 08:06*	*09/03/19 18:02*	*1*
PCB-167L	*85*		*30 - 140*	*08/19/19 08:06*	*09/03/19 18:02*	*1*
PCB-169L	*88*		*30 - 140*	*08/19/19 08:06*	*09/03/19 18:02*	*1*
PCB-170L	*82*		*30 - 140*	*08/19/19 08:06*	*09/03/19 18:02*	*1*
PCB-188L	*80*		*30 - 140*	*08/19/19 08:06*	*09/03/19 18:02*	*1*
PCB-189L	*98*		*30 - 140*	*08/19/19 08:06*	*09/03/19 18:02*	*1*
PCB-202L	*83*		*30 - 140*	*08/19/19 08:06*	*09/03/19 18:02*	*1*
PCB-205L	*78*		*30 - 140*	*08/19/19 08:06*	*09/03/19 18:02*	*1*

Client: Pacific Groundwater Group
Job ID: 580-88125-2
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: C4-0to27-100918
Lab Sample ID: 580-88125-8
Date Collected: 10/09/18 08:28
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 37.5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-206L	67		30 - 140	08/19/19 08:06	09/03/19 18:02	1
PCB-208L	77		30 - 140	08/19/19 08:06	09/03/19 18:02	1
PCB-209L	59		30 - 140	08/19/19 08:06	09/03/19 18:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	70		40 - 125	08/19/19 08:06	09/03/19 18:02	1
PCB-111L	83		40 - 125	08/19/19 08:06	09/03/19 18:02	1
PCB-178L	80		40 - 125	08/19/19 08:06	09/03/19 18:02	1

Client Sample ID: D2-0to19-101018
Lab Sample ID: 580-88125-9

Date Collected: 10/10/18 15:21
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 70.6

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.025	J B	0.047	0.00072	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-2	0.0081	J q B	0.047	0.00074	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-3	0.024	J B	0.047	0.00075	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-4	0.029	J	0.094	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-5	ND		0.047	0.0010	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-6	0.013	J q	0.047	0.0010	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-7	0.0032	J q	0.047	0.0010	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-8	0.031	J B	0.094	0.0010	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-9	0.0032	J q	0.047	0.0011	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-10	ND		0.047	0.0011	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-11	0.020	J B	0.094	0.00099	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-12	0.0098	J C	0.094	0.00099	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-13	0.0098	J C12	0.094	0.00099	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-14	ND		0.047	0.00087	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-15	0.033	J B	0.047	0.00099	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-16	0.016	J q	0.047	0.0020	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-17	0.071	B	0.047	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-18	0.030	J C B	0.094	0.0014	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-19	0.087		0.047	0.0019	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-20	0.096	C B	0.094	0.00095	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-21	0.033	J C B	0.094	0.00090	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-22	0.015	J B	0.047	0.0010	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-23	ND		0.047	0.00098	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-24	ND		0.047	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-25	0.015	J	0.047	0.00092	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-26	0.018	J C B	0.094	0.00094	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-27	0.018	J	0.047	0.0011	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-28	0.096	C20 B	0.094	0.00095	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-29	0.018	J C26 B	0.094	0.00094	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-30	0.030	J C18 B	0.094	0.0014	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-31	0.052	J B	0.094	0.00090	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-32	0.057	B	0.047	0.0011	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-33	0.033	J C21 B	0.094	0.00090	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-34	ND		0.047	0.0010	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-35	0.0028	J B	0.047	0.0010	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-36	ND		0.047	0.00092	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-37	0.031	J B	0.047	0.00097	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-38	ND		0.047	0.00094	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-39	ND		0.047	0.00089	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-40	0.11	J C	0.14	0.0025	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-41	0.11	J C40	0.14	0.0025	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-42	0.043	J	0.047	0.0027	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-43	0.018	J q C	0.094	0.0023	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-44	0.67	C B	0.14	0.0022	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-45	0.30	C	0.094	0.0026	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-46	0.015	J q	0.047	0.0030	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-47	0.67	C44 B	0.14	0.0022	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-48	0.017	J	0.047	0.0024	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-49	0.32	C	0.094	0.0020	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1

Client Sample ID: D2-0to19-101018
Lab Sample ID: 580-88125-9
Date Collected: 10/10/18 15:21
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 70.6

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	0.16	C	0.094	0.0025	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-51	0.30	C45	0.094	0.0026	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-52	0.49	B	0.047	0.0026	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-53	0.16	C50	0.094	0.0025	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-54	0.052		0.047	0.00095	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-55	0.0020	J q	0.047	0.0018	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-56	0.060		0.047	0.0018	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-57	ND		0.047	0.0018	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-58	ND		0.047	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-59	0.026	J C	0.14	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-60	0.017	J	0.047	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-61	0.39	C B	0.19	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-62	0.026	J C59	0.14	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-63	0.0096	J	0.047	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-64	0.062		0.047	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-65	0.67	C44 B	0.14	0.0022	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-66	0.23		0.047	0.0018	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-67	0.0069	J	0.047	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-68	0.013	J	0.047	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-69	0.32	C49	0.094	0.0020	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-70	0.39	C61 B	0.19	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-71	0.11	J C40	0.14	0.0025	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-72	0.010	J	0.047	0.0018	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-73	0.018	J q C43	0.094	0.0023	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-74	0.39	C61 B	0.19	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-75	0.026	J C59	0.14	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-76	0.39	C61 B	0.19	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-77	0.022	J	0.047	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-78	ND		0.047	0.0018	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-79	0.0085	J q	0.047	0.0015	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-80	ND		0.047	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-81	ND		0.047	0.0018	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-82	0.096		0.047	0.0019	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-83	0.69	C B	0.094	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-84	0.24		0.047	0.0019	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-85	0.14	C	0.14	0.0014	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-86	0.59	C B	0.28	0.0014	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-87	0.59	C86 B	0.28	0.0014	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-88	0.22	C	0.094	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-89	ND		0.047	0.0018	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-90	1.2	C B	0.14	0.0014	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-91	0.22	C88	0.094	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-92	0.28		0.047	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-93	0.11	C	0.094	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-94	0.027	J	0.047	0.0018	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-95	0.98	B	0.047	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-96	0.021	J	0.047	0.0013	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-97	0.59	C86 B	0.28	0.0014	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-98	0.059	J C	0.094	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1

Client Sample ID: D2-0to19-101018
Lab Sample ID: 580-88125-9

Date Collected: 10/10/18 15:21
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 70.6

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	0.69	C83 B	0.094	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-100	0.11	C93	0.094	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-101	1.2	C90 B	0.14	0.0014	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-102	0.059	J C98	0.094	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-103	0.060		0.047	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-104	0.011	J	0.047	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-105	0.22	B	0.047	0.0018	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-106	ND		0.047	0.0018	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-107	0.062		0.047	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-108	0.025	J C	0.094	0.0019	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-109	0.59	C86 B	0.28	0.0014	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-110	1.2	C B	0.094	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-111	0.0065	J	0.047	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-112	ND		0.047	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-113	1.2	C90 B	0.14	0.0014	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-114	0.014	J B	0.047	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-115	1.2	C110 B	0.094	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-116	0.14	C85	0.14	0.0014	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-117	0.14	C85	0.14	0.0014	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-118	0.72	B	0.047	0.0018	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-119	0.59	C86 B	0.28	0.0014	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-120	0.010	J q	0.047	0.0011	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-121	0.0062	J	0.047	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-122	0.0073	J q	0.047	0.0020	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-123	0.0094	J q	0.047	0.0018	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-124	0.025	J C108	0.094	0.0019	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-125	0.59	C86 B	0.28	0.0014	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-126	0.0034	J B	0.047	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-127	ND		0.047	0.0018	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-128	0.18	C	0.094	0.0015	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-129	1.4	C B	0.19	0.0015	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-130	0.092		0.047	0.0020	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-131	0.016	J	0.047	0.0019	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-132	0.46	B	0.047	0.0019	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-133	0.037	J	0.047	0.0018	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-134	0.085	J C	0.094	0.0020	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-135	0.70	C B	0.094	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-136	0.26	B	0.047	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-137	0.039	J	0.047	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-138	1.4	C129 B	0.19	0.0015	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-139	0.027	J C	0.094	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-140	0.027	J C139	0.094	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-141	0.26		0.047	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-142	ND		0.047	0.0019	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-143	0.085	J C134	0.094	0.0020	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-144	0.079		0.047	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-145	ND		0.047	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-146	0.30	B	0.047	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-147	1.4	C B	0.094	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1

Client Sample ID: D2-0to19-101018
Lab Sample ID: 580-88125-9
Date Collected: 10/10/18 15:21
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 70.6

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	0.014	J	0.047	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-149	1.4	C147 B	0.094	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-150	0.010	J q	0.047	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-151	0.70	C135 B	0.094	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-152	0.0051	J	0.047	0.0011	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-153	1.3	C B	0.094	0.0014	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-154	0.061	B	0.047	0.0014	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-155	0.0019	J q	0.047	0.0011	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-156	0.13	C B	0.094	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-157	0.13	C156 B	0.094	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-158	0.13	B	0.047	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-159	0.019	J	0.047	0.0013	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-160	1.4	C129 B	0.19	0.0015	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-161	ND		0.047	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-162	ND		0.047	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-163	1.4	C129 B	0.19	0.0015	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-164	0.11		0.047	0.0013	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-165	ND		0.047	0.0015	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-166	0.18	C128	0.094	0.0015	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-167	0.047		0.047	0.0010	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-168	1.3	C153 B	0.094	0.0014	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-169	0.0037	J q	0.047	0.0011	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-170	0.45	B	0.047	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-171	0.16	C	0.094	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-172	0.088	B	0.047	0.0011	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-173	0.16	C171	0.094	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-174	0.52	B	0.047	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-175	0.025	J	0.047	0.0010	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-176	0.065	B	0.047	0.00073	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-177	0.33	B	0.047	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-178	0.12		0.047	0.0011	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-179	0.23	B	0.047	0.00079	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-180	1.1	C B	0.094	0.00091	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-181	0.0054	J	0.047	0.0010	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-182	0.0064	J q	0.047	0.00097	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-183	0.36	C B	0.094	0.00098	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-184	ND		0.047	0.00078	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-185	0.36	C183 B	0.094	0.00098	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-186	ND		0.047	0.00078	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-187	0.72		0.047	0.0010	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-188	0.0045	J	0.047	0.00072	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-189	0.017	J B	0.047	0.00079	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-190	0.096		0.047	0.00081	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-191	0.021	J	0.047	0.00080	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-192	ND		0.047	0.00086	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-193	1.1	C180 B	0.094	0.00091	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-194	0.24	B	0.047	0.0022	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-195	0.093		0.047	0.0026	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-196	0.15	B	0.047	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1

Client Sample ID: D2-0to19-101018
Lab Sample ID: 580-88125-9

Date Collected: 10/10/18 15:21
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 70.6

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	0.0091	J q	0.047	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-198	0.38	C B	0.094	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-199	0.38	C198 B	0.094	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-200	0.035	J	0.047	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-201	0.053		0.047	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-202	0.11		0.047	0.0013	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-203	0.19		0.047	0.0015	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-204	ND		0.047	0.0013	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-205	0.011	J q	0.047	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-206	1.4	q	0.047	0.0047	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-207	0.016	J	0.047	0.0032	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-208	0.048		0.047	0.0033	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
PCB-209	0.046	J B	0.047	0.00045	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
Total Monochlorobiphenyls	0.057	q B	0.047	0.00074	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
Total Dichlorobiphenyls	0.14	q B	0.094	0.0011	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
Total Trichlorobiphenyls	0.54	q B	0.094	0.0011	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
Total Tetrachlorobiphenyls	3.1	q B	0.19	0.0019	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
Total Pentachlorobiphenyls	7.0	q B	0.28	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
Total Hexachlorobiphenyls	7.2	q B	0.19	0.0015	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
Total Heptachlorobiphenyls	4.3	q B	0.094	0.00094	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
Total Octachlorobiphenyls	1.3	q B	0.094	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
Total Nonachlorobiphenyls	1.5	q	0.047	0.0037	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1
Polychlorinated biphenyls, Total	25	q B	0.28	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 22:35	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*73*		*30 - 140*	*08/19/19 08:06*	*08/27/19 22:35*	*1*
PCB-3L	*75*		*30 - 140*	*08/19/19 08:06*	*08/27/19 22:35*	*1*
PCB-4L	*72*		*30 - 140*	*08/19/19 08:06*	*08/27/19 22:35*	*1*
PCB-15L	*82*		*30 - 140*	*08/19/19 08:06*	*08/27/19 22:35*	*1*
PCB-19L	*74*		*30 - 140*	*08/19/19 08:06*	*08/27/19 22:35*	*1*
PCB-37L	*88*		*30 - 140*	*08/19/19 08:06*	*08/27/19 22:35*	*1*
PCB-54L	*82*		*30 - 140*	*08/19/19 08:06*	*08/27/19 22:35*	*1*
PCB-77L	*94*		*30 - 140*	*08/19/19 08:06*	*08/27/19 22:35*	*1*
PCB-81L	*91*		*30 - 140*	*08/19/19 08:06*	*08/27/19 22:35*	*1*
PCB-104L	*86*		*30 - 140*	*08/19/19 08:06*	*08/27/19 22:35*	*1*
PCB-105L	*85*		*30 - 140*	*08/19/19 08:06*	*08/27/19 22:35*	*1*
PCB-114L	*84*		*30 - 140*	*08/19/19 08:06*	*08/27/19 22:35*	*1*
PCB-118L	*84*		*30 - 140*	*08/19/19 08:06*	*08/27/19 22:35*	*1*
PCB-123L	*83*		*30 - 140*	*08/19/19 08:06*	*08/27/19 22:35*	*1*
PCB-126L	*95*		*30 - 140*	*08/19/19 08:06*	*08/27/19 22:35*	*1*
PCB-155L	*91*		*30 - 140*	*08/19/19 08:06*	*08/27/19 22:35*	*1*
PCB-156L	*90*	*C*	*30 - 140*	*08/19/19 08:06*	*08/27/19 22:35*	*1*
PCB-157L	*90*	*C156*	*30 - 140*	*08/19/19 08:06*	*08/27/19 22:35*	*1*
PCB-167L	*90*		*30 - 140*	*08/19/19 08:06*	*08/27/19 22:35*	*1*
PCB-169L	*102*		*30 - 140*	*08/19/19 08:06*	*08/27/19 22:35*	*1*
PCB-170L	*83*		*30 - 140*	*08/19/19 08:06*	*08/27/19 22:35*	*1*
PCB-188L	*82*		*30 - 140*	*08/19/19 08:06*	*08/27/19 22:35*	*1*
PCB-189L	*89*		*30 - 140*	*08/19/19 08:06*	*08/27/19 22:35*	*1*
PCB-202L	*88*		*30 - 140*	*08/19/19 08:06*	*08/27/19 22:35*	*1*
PCB-205L	*82*		*30 - 140*	*08/19/19 08:06*	*08/27/19 22:35*	*1*

Client: Pacific Groundwater Group
Job ID: 580-88125-2
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: D2-0to19-101018
Lab Sample ID: 580-88125-9
Date Collected: 10/10/18 15:21
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 70.6

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-206L	77		30 - 140	08/19/19 08:06	08/27/19 22:35	1
PCB-208L	86		30 - 140	08/19/19 08:06	08/27/19 22:35	1
PCB-209L	71		30 - 140	08/19/19 08:06	08/27/19 22:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	79		40 - 125	08/19/19 08:06	08/27/19 22:35	1
PCB-111L	95		40 - 125	08/19/19 08:06	08/27/19 22:35	1
PCB-178L	93		40 - 125	08/19/19 08:06	08/27/19 22:35	1

Client Sample ID: F2-0to19-101018
Lab Sample ID: 580-88125-10

Date Collected: 10/10/18 16:36
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 69.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.014	B	0.0097	0.00028	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-2	0.0042	J q B	0.0097	0.00029	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-3	0.0094	J B	0.0097	0.00029	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-4	0.043		0.019	0.00080	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-5	0.0011	J q	0.0097	0.00050	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-6	0.013		0.0097	0.00050	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-7	0.0033	J	0.0097	0.00048	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-8	0.043	B	0.019	0.00049	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-9	0.0045	J	0.0097	0.00055	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-10	0.0021	J	0.0097	0.00052	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-11	0.018	J B	0.019	0.00047	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-12	0.0071	J q C	0.019	0.00047	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-13	0.0071	J q C12	0.019	0.00047	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-14	ND		0.0097	0.00041	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-15	0.027	B	0.0097	0.00045	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-16	0.076		0.0097	0.00071	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-17	0.13	B	0.0097	0.00056	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-18	0.17	C B	0.019	0.00048	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-19	0.072		0.0097	0.00067	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-20	0.24	C B	0.019	0.0012	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-21	0.090	C B	0.019	0.0011	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-22	0.046	B	0.0097	0.0013	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-23	ND		0.0097	0.0012	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-24	0.0030	J q	0.0097	0.00042	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-25	0.029		0.0097	0.0012	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-26	0.053	C B	0.019	0.0012	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-27	0.022		0.0097	0.00040	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-28	0.24	C20 B	0.019	0.0012	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-29	0.053	C26 B	0.019	0.0012	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-30	0.17	C18 B	0.019	0.00048	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-31	0.15	B	0.019	0.0011	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-32	0.11	B	0.0097	0.00037	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-33	0.090	C21 B	0.019	0.0011	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-34	0.0024	J	0.0097	0.0013	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-35	0.0046	J B	0.0097	0.0013	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-36	ND		0.0097	0.0012	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-37	0.048	B	0.0097	0.0012	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-38	ND		0.0097	0.0012	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-39	0.0052	J	0.0097	0.0011	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-40	0.27	C	0.029	0.00090	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-41	0.27	C40	0.029	0.00090	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-42	0.16		0.0097	0.00095	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-43	0.024	C	0.019	0.00083	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-44	1.4	C B	0.029	0.00080	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-45	0.45	C	0.019	0.00093	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-46	0.034		0.0097	0.0011	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-47	1.4	C44 B	0.029	0.00080	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-48	0.057		0.0097	0.00087	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-49	0.90	C	0.019	0.00073	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1

Client Sample ID: F2-0to19-101018
Lab Sample ID: 580-88125-10
Date Collected: 10/10/18 16:36
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 69.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	0.22	C	0.019	0.00088	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-51	0.45	C45	0.019	0.00093	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-52	2.0	B	0.0097	0.00092	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-53	0.22	C50	0.019	0.00088	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-54	0.055		0.0097	0.00027	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-55	0.0042	J q	0.0097	0.00064	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-56	0.16		0.0097	0.00065	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-57	ND		0.0097	0.00064	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-58	0.0079	J	0.0097	0.00062	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-59	0.061	C	0.029	0.00061	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-60	0.040		0.0097	0.00062	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-61	1.2	C B	0.039	0.00061	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-62	0.061	C59	0.029	0.00061	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-63	0.030		0.0097	0.00056	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-64	0.27		0.0097	0.00058	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-65	1.4	C44 B	0.029	0.00080	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-66	0.58		0.0097	0.00064	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-67	0.017		0.0097	0.00059	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-68	0.024		0.0097	0.00056	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-69	0.90	C49	0.019	0.00073	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-70	1.2	C61 B	0.039	0.00061	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-71	0.27	C40	0.029	0.00090	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-72	0.039		0.0097	0.00063	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-73	0.024	C43	0.019	0.00083	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-74	1.2	C61 B	0.039	0.00061	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-75	0.061	C59	0.029	0.00061	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-76	1.2	C61 B	0.039	0.00061	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-77	0.043		0.0097	0.00061	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-78	ND		0.0097	0.00063	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-79	0.019		0.0097	0.00053	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-80	ND		0.0097	0.00056	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-81	0.0014	J	0.0097	0.00063	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-82	0.21		0.0097	0.00058	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-83	1.3	C B	0.019	0.00053	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-84	0.72		0.0097	0.00058	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-85	0.29	C	0.029	0.00041	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-86	1.3	C B	0.058	0.00042	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-87	1.3	C86 B	0.058	0.00042	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-88	0.41	C	0.019	0.00050	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-89	0.019	q	0.0097	0.00056	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-90	2.6	C B	0.029	0.00044	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-91	0.41	C88	0.019	0.00050	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-92	0.55		0.0097	0.00053	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-93	0.14	C	0.019	0.00051	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-94	0.036		0.0097	0.00056	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-95	2.5	B	0.0097	0.00052	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-96	0.031		0.0097	0.00041	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-97	1.3	C86 B	0.058	0.00042	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-98	0.11	C	0.019	0.00051	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1

Client Sample ID: F2-0to19-101018
Lab Sample ID: 580-88125-10
Date Collected: 10/10/18 16:36
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 69.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	1.3	C83 B	0.019	0.00053	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-100	0.14	C93	0.019	0.00051	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-101	2.6	C90 B	0.029	0.00044	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-102	0.11	C98	0.019	0.00051	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-103	0.091		0.0097	0.00049	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-104	0.013		0.0097	0.00036	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-105	0.37	B	0.0097	0.0011	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-106	ND		0.0097	0.0011	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-107	0.11		0.0097	0.0010	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-108	0.044	C	0.019	0.0011	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-109	1.3	C86 B	0.058	0.00042	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-110	2.6	C B	0.019	0.00037	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-111	ND		0.0097	0.00035	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-112	ND		0.0097	0.00037	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-113	2.6	C90 B	0.029	0.00044	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-114	0.021	B	0.0097	0.00097	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-115	2.6	C110 B	0.019	0.00037	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-116	0.29	C85	0.029	0.00041	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-117	0.29	C85	0.029	0.00041	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-118	1.3	B	0.0097	0.0010	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-119	1.3	C86 B	0.058	0.00042	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-120	0.020		0.0097	0.00034	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-121	ND		0.0097	0.00036	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-122	0.014		0.0097	0.0012	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-123	0.016		0.0097	0.0010	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-124	0.044	C108	0.019	0.0011	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-125	1.3	C86 B	0.058	0.00042	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-126	0.0042	J B	0.0097	0.0010	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-127	ND		0.0097	0.0011	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-128	0.24	C	0.019	0.00073	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-129	2.0	C B	0.039	0.00075	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-130	0.12		0.0097	0.00099	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-131	0.026		0.0097	0.00095	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-132	0.72	B	0.0097	0.00093	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-133	0.045		0.0097	0.00090	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-134	0.13	C	0.019	0.00096	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-135	1.0	C B	0.019	0.00043	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-136	0.38	B	0.0097	0.00032	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-137	0.052		0.0097	0.00077	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-138	2.0	C129 B	0.039	0.00075	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-139	0.036	C	0.019	0.00082	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-140	0.036	C139	0.019	0.00082	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-141	0.39		0.0097	0.00085	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-142	ND		0.0097	0.00095	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-143	0.13	C134	0.019	0.00096	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-144	0.13		0.0097	0.00040	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-145	0.0018	J q	0.0097	0.00031	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-146	0.38	B	0.0097	0.00081	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-147	2.0	C B	0.019	0.00084	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1

Client Sample ID: F2-0to19-101018
Lab Sample ID: 580-88125-10

Date Collected: 10/10/18 16:36
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 69.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	0.011	q	0.0097	0.00041	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-149	2.0	C147 B	0.019	0.00084	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-150	0.011		0.0097	0.00030	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-151	1.0	C135 B	0.019	0.00043	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-152	0.0056	J	0.0097	0.00030	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-153	1.8	C B	0.019	0.00067	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-154	0.067	B	0.0097	0.00036	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-155	0.0014	J	0.0097	0.00028	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-156	0.18	C B	0.019	0.00076	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-157	0.18	C156 B	0.019	0.00076	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-158	0.19	B	0.0097	0.00059	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-159	0.021		0.0097	0.00062	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-160	2.0	C129 B	0.039	0.00075	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-161	ND		0.0097	0.00061	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-162	ND		0.0097	0.00060	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-163	2.0	C129 B	0.039	0.00075	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-164	0.15		0.0097	0.00065	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-165	ND		0.0097	0.00073	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-166	0.24	C128	0.019	0.00073	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-167	0.064		0.0097	0.00053	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-168	1.8	C153 B	0.019	0.00067	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-169	ND		0.0097	0.00055	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-170	0.66	B	0.0097	0.00060	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-171	0.24	C	0.019	0.00060	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-172	0.12	B	0.0097	0.00058	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-173	0.24	C171	0.019	0.00060	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-174	0.76	B	0.0097	0.00060	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-175	0.037		0.0097	0.00054	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-176	0.097	B	0.0097	0.00038	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-177	0.43	B	0.0097	0.00061	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-178	0.16		0.0097	0.00056	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-179	0.33	B	0.0097	0.00041	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-180	1.6	C B	0.019	0.00047	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-181	0.0072	J	0.0097	0.00052	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-182	0.0074	J	0.0097	0.00050	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-183	0.53	C B	0.019	0.00050	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-184	ND		0.0097	0.00040	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-185	0.53	C183 B	0.019	0.00050	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-186	ND		0.0097	0.00040	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-187	0.91		0.0097	0.00052	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-188	ND		0.0097	0.00037	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-189	0.023	B	0.0097	0.00045	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-190	0.15		0.0097	0.00042	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-191	0.037		0.0097	0.00041	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-192	ND		0.0097	0.00044	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-193	1.6	C180 B	0.019	0.00047	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-194	0.31	B	0.0097	0.0026	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-195	0.15		0.0097	0.0031	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-196	0.19	B	0.0097	0.00053	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1

Client Sample ID: F2-0to19-101018
Lab Sample ID: 580-88125-10

Date Collected: 10/10/18 16:36
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 69.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	0.015		0.0097	0.00038	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-198	0.38	C B	0.019	0.00056	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-199	0.38	C198 B	0.019	0.00056	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-200	0.047		0.0097	0.00041	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-201	0.049		0.0097	0.00039	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-202	0.072		0.0097	0.00044	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-203	0.25		0.0097	0.00050	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-204	ND		0.0097	0.00042	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-205	0.017		0.0097	0.0020	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-206	0.21		0.0097	0.0018	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-207	0.020		0.0097	0.0012	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-208	0.061		0.0097	0.0012	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
PCB-209	0.12	B	0.0097	0.00036	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
Total Monochlorobiphenyls	0.028	q B	0.0097	0.00029	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
Total Dichlorobiphenyls	0.16	q B	0.019	0.00051	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
Total Trichlorobiphenyls	1.3	q B	0.019	0.00096	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
Total Tetrachlorobiphenyls	8.1	q B	0.039	0.00069	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
Total Pentachlorobiphenyls	15	q B	0.058	0.00065	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
Total Hexachlorobiphenyls	10	q B	0.039	0.00065	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
Total Heptachlorobiphenyls	6.1	B	0.019	0.00049	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
Total Octachlorobiphenyls	1.5	B	0.019	0.0010	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
Total Nonachlorobiphenyls	0.29		0.0097	0.0014	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1
Polychlorinated biphenyls, Total	42	q B	0.058	0.00075	ng/g	☼	08/19/19 08:06	09/04/19 05:18	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*79*		*30 - 140*	*08/19/19 08:06*	*09/04/19 05:18*	*1*
PCB-3L	*82*		*30 - 140*	*08/19/19 08:06*	*09/04/19 05:18*	*1*
PCB-4L	*68*		*30 - 140*	*08/19/19 08:06*	*09/04/19 05:18*	*1*
PCB-15L	*80*		*30 - 140*	*08/19/19 08:06*	*09/04/19 05:18*	*1*
PCB-19L	*73*		*30 - 140*	*08/19/19 08:06*	*09/04/19 05:18*	*1*
PCB-37L	*84*		*30 - 140*	*08/19/19 08:06*	*09/04/19 05:18*	*1*
PCB-54L	*109*		*30 - 140*	*08/19/19 08:06*	*09/04/19 05:18*	*1*
PCB-77L	*91*		*30 - 140*	*08/19/19 08:06*	*09/04/19 05:18*	*1*
PCB-81L	*89*		*30 - 140*	*08/19/19 08:06*	*09/04/19 05:18*	*1*
PCB-104L	*81*		*30 - 140*	*08/19/19 08:06*	*09/04/19 05:18*	*1*
PCB-105L	*79*		*30 - 140*	*08/19/19 08:06*	*09/04/19 05:18*	*1*
PCB-114L	*79*		*30 - 140*	*08/19/19 08:06*	*09/04/19 05:18*	*1*
PCB-118L	*80*		*30 - 140*	*08/19/19 08:06*	*09/04/19 05:18*	*1*
PCB-123L	*80*		*30 - 140*	*08/19/19 08:06*	*09/04/19 05:18*	*1*
PCB-126L	*89*		*30 - 140*	*08/19/19 08:06*	*09/04/19 05:18*	*1*
PCB-155L	*87*		*30 - 140*	*08/19/19 08:06*	*09/04/19 05:18*	*1*
PCB-156L	*83*	*C*	*30 - 140*	*08/19/19 08:06*	*09/04/19 05:18*	*1*
PCB-157L	*83*	*C156*	*30 - 140*	*08/19/19 08:06*	*09/04/19 05:18*	*1*
PCB-167L	*82*		*30 - 140*	*08/19/19 08:06*	*09/04/19 05:18*	*1*
PCB-169L	*97*		*30 - 140*	*08/19/19 08:06*	*09/04/19 05:18*	*1*
PCB-170L	*75*		*30 - 140*	*08/19/19 08:06*	*09/04/19 05:18*	*1*
PCB-188L	*77*		*30 - 140*	*08/19/19 08:06*	*09/04/19 05:18*	*1*
PCB-189L	*89*		*30 - 140*	*08/19/19 08:06*	*09/04/19 05:18*	*1*
PCB-202L	*75*		*30 - 140*	*08/19/19 08:06*	*09/04/19 05:18*	*1*
PCB-205L	*77*		*30 - 140*	*08/19/19 08:06*	*09/04/19 05:18*	*1*

Client: Pacific Groundwater Group
Job ID: 580-88125-2
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: F2-0to19-101018
Lab Sample ID: 580-88125-10
Date Collected: 10/10/18 16:36
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 69.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-206L	67		30 - 140	08/19/19 08:06	09/04/19 05:18	1
PCB-208L	79		30 - 140	08/19/19 08:06	09/04/19 05:18	1
PCB-209L	57		30 - 140	08/19/19 08:06	09/04/19 05:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	82		40 - 125	08/19/19 08:06	09/04/19 05:18	1
PCB-111L	96		40 - 125	08/19/19 08:06	09/04/19 05:18	1
PCB-178L	90		40 - 125	08/19/19 08:06	09/04/19 05:18	1

Client Sample ID: G6-0to27-101818
Lab Sample ID: 580-88125-11

Date Collected: 10/18/18 14:12
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 32.7

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.89	B	0.015	0.0018	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-2	0.11	B	0.015	0.0018	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-3	0.40	B	0.015	0.0018	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-4	1.3		0.030	0.0016	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-5	0.030		0.015	0.00099	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-6	0.20		0.015	0.00099	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-7	0.058		0.015	0.00095	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-8	0.65	B	0.030	0.00097	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-9	0.078		0.015	0.0011	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-10	0.058		0.015	0.0010	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-11	0.13	B	0.030	0.00094	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-12	0.11	C	0.030	0.00094	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-13	0.11	C12	0.030	0.00094	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-14	ND		0.015	0.00082	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-15	0.38	B	0.015	0.00091	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-16	0.20		0.015	0.0015	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-17	3.2	B	0.015	0.0012	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-18	0.57	C B	0.030	0.0010	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-19	3.9		0.015	0.0014	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-20	1.8	C B	0.030	0.010	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-21	0.79	C B	0.030	0.0098	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-22	0.17	B	0.015	0.011	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-23	ND		0.015	0.011	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-24	0.0098	J q	0.015	0.00088	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-25	0.43		0.015	0.0099	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-26	0.18	C B	0.030	0.010	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-27	0.65		0.015	0.00086	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-28	1.8	C20 B	0.030	0.010	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-29	0.18	C26 B	0.030	0.010	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-30	0.57	C18 B	0.030	0.0010	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-31	0.68	B	0.030	0.0097	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-32	3.3	B	0.015	0.00079	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-33	0.79	C21 B	0.030	0.0098	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-34	0.016		0.015	0.011	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-35	0.021	B	0.015	0.011	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-36	ND		0.015	0.010	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-37	0.24	B	0.015	0.010	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-38	ND		0.015	0.010	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-39	0.022		0.015	0.0096	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-40	3.9	G C	0.10	0.10	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-41	3.9	G C40	0.10	0.10	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-42	0.85	G	0.11	0.11	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-43	0.90	G C	0.096	0.096	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-44	32	G C B	0.093	0.093	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-45	19	G C	0.11	0.11	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-46	0.58	G	0.13	0.13	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-47	32	G C44 B	0.093	0.093	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-48	0.18	G q	0.10	0.10	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-49	13	G C	0.084	0.084	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1

Client Sample ID: G6-0to27-101818
Lab Sample ID: 580-88125-11
Date Collected: 10/18/18 14:12
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 32.7

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	9.4	G C	0.10	0.10	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-51	19	G C45	0.11	0.11	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-52	11	G B	0.11	0.11	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-53	9.4	G C50	0.10	0.10	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-54	2.8		0.015	0.00068	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-55	ND	G	0.074	0.074	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-56	0.64	G	0.075	0.075	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-57	ND	G	0.075	0.075	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-58	ND	G	0.072	0.072	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-59	0.95	G C	0.070	0.070	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-60	ND	G	0.072	0.072	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-61	5.3	G C B	0.070	0.070	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-62	0.95	G C59	0.070	0.070	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-63	0.21	G	0.065	0.065	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-64	0.86	G	0.068	0.068	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-65	32	G C44 B	0.093	0.093	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-66	3.1	G	0.075	0.075	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-67	ND	G	0.069	0.069	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-68	0.39	G	0.065	0.065	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-69	13	G C49	0.084	0.084	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-70	5.3	G C61 B	0.070	0.070	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-71	3.9	G C40	0.10	0.10	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-72	0.23	G	0.073	0.073	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-73	0.90	G C43	0.096	0.096	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-74	5.3	G C61 B	0.070	0.070	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-75	0.95	G C59	0.070	0.070	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-76	5.3	G C61 B	0.070	0.070	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-77	0.23	G	0.071	0.071	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-78	ND	G	0.073	0.073	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-79	0.15	G	0.062	0.062	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-80	ND	G	0.065	0.065	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-81	ND	G	0.073	0.073	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-82	1.4		0.015	0.0025	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-83	14	C B	0.030	0.0023	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-84	4.6		0.015	0.0025	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-85	2.4	q C	0.045	0.0018	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-86	11	C B	0.089	0.0018	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-87	11	C86 B	0.089	0.0018	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-88	7.4	C	0.030	0.0021	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-89	0.14		0.015	0.0024	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-90	26	C B	0.045	0.0019	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-91	7.4	C88	0.030	0.0021	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-92	6.1		0.015	0.0022	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-93	4.9	C	0.030	0.0022	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-94	1.3		0.015	0.0024	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-95	18	B	0.015	0.0022	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-96	1.0		0.015	0.0017	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-97	11	C86 B	0.089	0.0018	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-98	2.0	C	0.030	0.0022	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1

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Matrix: Solid
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Percent Solids: 32.7

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	14	C83 B	0.030	0.0023	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-100	4.9	C93	0.030	0.0022	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-101	26	C90 B	0.045	0.0019	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-102	2.0	C98	0.030	0.0022	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-103	2.1		0.015	0.0021	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-104	0.47		0.015	0.0015	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-105	3.0	B	0.015	0.014	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-106	ND		0.015	0.014	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-107	1.1		0.015	0.013	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-108	0.40	C	0.030	0.014	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-109	11	C86 B	0.089	0.0018	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-110	20	C B	0.030	0.0016	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-111	0.12		0.015	0.0015	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-112	ND		0.015	0.0016	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-113	26	C90 B	0.045	0.0019	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-114	0.18	B	0.015	0.013	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-115	20	C110 B	0.030	0.0016	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-116	2.4	q C85	0.045	0.0018	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-117	2.4	q C85	0.045	0.0018	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-118	11	B	0.015	0.013	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-119	11	C86 B	0.089	0.0018	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-120	0.26		0.015	0.0014	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-121	0.13		0.015	0.0015	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-122	0.12		0.015	0.015	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-123	0.13		0.015	0.013	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-124	0.40	C108	0.030	0.014	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-125	11	C86 B	0.089	0.0018	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-126	0.031	B	0.015	0.013	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-127	ND		0.015	0.014	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-128	2.9	C	0.030	0.0054	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-129	25	C B	0.059	0.0056	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-130	1.5		0.015	0.0073	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-131	0.28		0.015	0.0070	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-132	8.5	B	0.015	0.0068	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-133	0.91		0.015	0.0067	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-134	1.7	C	0.030	0.0071	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-135	12	C B	0.030	0.0010	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-136	4.9	B	0.015	0.00076	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-137	0.67		0.015	0.0057	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-138	25	C129 B	0.059	0.0056	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-139	0.58	C	0.030	0.0060	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-140	0.58	C139	0.030	0.0060	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-141	4.3		0.015	0.0063	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-142	ND		0.015	0.0070	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-143	1.7	C134	0.030	0.0071	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-144	1.1		0.015	0.00095	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-145	0.021		0.015	0.00073	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-146	5.9	B	0.015	0.0060	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-147	28	C B	0.030	0.0062	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1

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Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	0.32		0.015	0.00097	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-149	28	C147 B	0.030	0.0062	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-150	0.39		0.015	0.00071	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-151	12	C135 B	0.030	0.0010	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-152	0.26		0.015	0.00070	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-153	24	C B	0.030	0.0049	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-154	1.6	B	0.015	0.00086	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-155	0.040		0.015	0.00067	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-156	2.1	C B	0.030	0.0055	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-157	2.1	C156 B	0.030	0.0055	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-158	2.1	B	0.015	0.0043	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-159	0.26		0.015	0.0046	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-160	25	C129 B	0.059	0.0056	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-161	ND		0.015	0.0045	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-162	ND		0.015	0.0044	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-163	25	C129 B	0.059	0.0056	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-164	1.9		0.015	0.0048	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-165	ND		0.015	0.0054	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-166	2.9	C128	0.030	0.0054	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-167	0.74		0.015	0.0039	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-168	24	C153 B	0.030	0.0049	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-169	ND		0.015	0.0042	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-170	8.1	B	0.015	0.00076	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-171	2.7	C	0.030	0.00077	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-172	1.3	B	0.015	0.00075	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-173	2.7	C171	0.030	0.00077	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-174	8.7	B	0.015	0.00078	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-175	0.36		0.015	0.00069	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-176	1.1	B	0.015	0.00049	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-177	5.6	B	0.015	0.00079	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-178	2.2		0.015	0.00072	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-179	4.3	B	0.015	0.00052	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-180	18	C B	0.030	0.00060	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-181	0.078		0.015	0.00067	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-182	0.14		0.015	0.00065	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-183	5.7	C B	0.030	0.00065	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-184	ND		0.015	0.00052	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-185	5.7	C183 B	0.030	0.00065	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-186	ND		0.015	0.00052	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-187	11		0.015	0.00067	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-188	0.078		0.015	0.00048	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-189	0.29	B	0.015	0.0022	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-190	1.6		0.015	0.00054	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-191	0.38		0.015	0.00054	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-192	ND		0.015	0.00057	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-193	18	C180 B	0.030	0.00060	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-194	3.6	B	0.015	0.0072	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-195	1.7		0.015	0.0086	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-196	1.8	B	0.015	0.0013	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1

Client Sample ID: G6-0to27-101818
Lab Sample ID: 580-88125-11

Date Collected: 10/18/18 14:12
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 32.7

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	**0.13**		0.015	0.00094	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-198	**3.5**	**C B**	0.030	0.0014	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-199	**3.5**	**C198 B**	0.030	0.0014	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-200	**0.45**		0.015	0.0010	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-201	**0.46**		0.015	0.00096	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-202	**0.73**		0.015	0.0011	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-203	**2.2**		0.015	0.0012	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-204	ND		0.015	0.0010	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-205	**0.18**		0.015	0.0054	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-206	**1.7**	**q**	0.015	0.0046	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-207	**0.15**		0.015	0.0033	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-208	**0.36**		0.015	0.0034	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
PCB-209	**0.46**	**B**	0.015	0.00068	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
Total Monochlorobiphenyls	**1.4**	**B**	0.015	0.0018	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
Total Dichlorobiphenyls	**3.0**	**B**	0.030	0.0010	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
Total Trichlorobiphenyls	**16**	**q B**	0.030	0.0071	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
Total Tetrachlorobiphenyls	**110**	**G q B**	0.079	0.079	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
Total Pentachlorobiphenyls	**140**	**q B**	0.089	0.0057	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
Total Hexachlorobiphenyls	**130**	**B**	0.059	0.0043	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
Total Heptachlorobiphenyls	**72**	**B**	0.030	0.00071	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
Total Octachlorobiphenyls	**15**	**B**	0.030	0.0027	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
Total Nonachlorobiphenyls	**2.2**	**q**	0.015	0.0038	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1
Polychlorinated biphenyls, Total	**490**	**q B**	0.089	0.012	ng/g	☼	08/19/19 08:06	09/04/19 06:20	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*84*		*30 - 140*	*08/19/19 08:06*	*09/04/19 06:20*	*1*
PCB-3L	*83*		*30 - 140*	*08/19/19 08:06*	*09/04/19 06:20*	*1*
PCB-4L	*72*		*30 - 140*	*08/19/19 08:06*	*09/04/19 06:20*	*1*
PCB-15L	*85*		*30 - 140*	*08/19/19 08:06*	*09/04/19 06:20*	*1*
PCB-19L	*73*		*30 - 140*	*08/19/19 08:06*	*09/04/19 06:20*	*1*
PCB-37L	*88*		*30 - 140*	*08/19/19 08:06*	*09/04/19 06:20*	*1*
PCB-54L	*104*		*30 - 140*	*08/19/19 08:06*	*09/04/19 06:20*	*1*
PCB-77L	*91*		*30 - 140*	*08/19/19 08:06*	*09/04/19 06:20*	*1*
PCB-81L	*88*		*30 - 140*	*08/19/19 08:06*	*09/04/19 06:20*	*1*
PCB-104L	*87*		*30 - 140*	*08/19/19 08:06*	*09/04/19 06:20*	*1*
PCB-105L	*82*		*30 - 140*	*08/19/19 08:06*	*09/04/19 06:20*	*1*
PCB-114L	*81*		*30 - 140*	*08/19/19 08:06*	*09/04/19 06:20*	*1*
PCB-118L	*82*		*30 - 140*	*08/19/19 08:06*	*09/04/19 06:20*	*1*
PCB-123L	*83*		*30 - 140*	*08/19/19 08:06*	*09/04/19 06:20*	*1*
PCB-126L	*91*		*30 - 140*	*08/19/19 08:06*	*09/04/19 06:20*	*1*
PCB-155L	*94*		*30 - 140*	*08/19/19 08:06*	*09/04/19 06:20*	*1*
PCB-156L	*82*	*C*	*30 - 140*	*08/19/19 08:06*	*09/04/19 06:20*	*1*
PCB-157L	*82*	*C156*	*30 - 140*	*08/19/19 08:06*	*09/04/19 06:20*	*1*
PCB-167L	*81*		*30 - 140*	*08/19/19 08:06*	*09/04/19 06:20*	*1*
PCB-169L	*93*		*30 - 140*	*08/19/19 08:06*	*09/04/19 06:20*	*1*
PCB-170L	*82*		*30 - 140*	*08/19/19 08:06*	*09/04/19 06:20*	*1*
PCB-188L	*83*		*30 - 140*	*08/19/19 08:06*	*09/04/19 06:20*	*1*
PCB-189L	*89*		*30 - 140*	*08/19/19 08:06*	*09/04/19 06:20*	*1*
PCB-202L	*79*		*30 - 140*	*08/19/19 08:06*	*09/04/19 06:20*	*1*
PCB-205L	*78*		*30 - 140*	*08/19/19 08:06*	*09/04/19 06:20*	*1*

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88125-2

Client Sample ID: G6-0to27-101818
Date Collected: 10/18/18 14:12
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-11
Matrix: Solid
Percent Solids: 32.7

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-206L	71		30 - 140	08/19/19 08:06	09/04/19 06:20	1
PCB-208L	74		30 - 140	08/19/19 08:06	09/04/19 06:20	1
PCB-209L	59		30 - 140	08/19/19 08:06	09/04/19 06:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	80		40 - 125	08/19/19 08:06	09/04/19 06:20	1
PCB-111L	95		40 - 125	08/19/19 08:06	09/04/19 06:20	1
PCB-178L	96		40 - 125	08/19/19 08:06	09/04/19 06:20	1

Client Sample ID: H2-0to30-101218
Lab Sample ID: 580-88125-12
Date Collected: 10/12/18 10:28
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 42.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.097	B	0.059	0.0011	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-2	0.052	J B	0.059	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-3	0.068	B	0.059	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-4	0.19		0.12	0.0029	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-5	0.0053	J q	0.059	0.0019	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-6	0.033	J	0.059	0.0019	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-7	0.011	J q	0.059	0.0018	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-8	0.12	B	0.12	0.0019	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-9	0.013	J	0.059	0.0021	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-10	0.0078	J q	0.059	0.0020	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-11	0.12	B	0.12	0.0018	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-12	0.025	J q C	0.12	0.0018	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-13	0.025	J q C12	0.12	0.0018	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-14	ND		0.059	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-15	0.098	B	0.059	0.0018	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-16	ND		0.059	0.0031	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-17	0.50	B	0.059	0.0025	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-18	0.13	C B	0.12	0.0021	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-19	0.62		0.059	0.0029	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-20	0.45	C B	0.12	0.0025	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-21	0.21	C B	0.12	0.0023	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-22	0.054	J B	0.059	0.0026	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-23	ND		0.059	0.0025	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-24	ND		0.059	0.0018	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-25	0.088		0.059	0.0024	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-26	0.050	J C B	0.12	0.0024	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-27	0.11		0.059	0.0018	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-28	0.45	C20 B	0.12	0.0025	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-29	0.050	J C26 B	0.12	0.0024	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-30	0.13	C18 B	0.12	0.0021	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-31	0.18	B	0.12	0.0023	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-32	0.51	B	0.059	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-33	0.21	C21 B	0.12	0.0023	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-34	0.0053	J	0.059	0.0026	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-35	0.012	J B	0.059	0.0026	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-36	ND		0.059	0.0024	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-37	0.10	B	0.059	0.0025	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-38	ND		0.059	0.0024	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-39	0.0067	J	0.059	0.0023	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-40	1.1	C	0.18	0.0067	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-41	1.1	C40	0.18	0.0067	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-42	0.21		0.059	0.0071	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-43	0.22	C	0.12	0.0062	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-44	7.5	C B	0.18	0.0060	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-45	3.6	C	0.12	0.0070	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-46	0.098		0.059	0.0081	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-47	7.5	C44 B	0.18	0.0060	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-48	0.070		0.059	0.0065	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-49	2.8	C	0.12	0.0054	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88125-2

Client Sample ID: H2-0to30-101218
Date Collected: 10/12/18 10:28
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-12
Matrix: Solid
Percent Solids: 42.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	1.6	C	0.12	0.0066	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-51	3.6	C45	0.12	0.0070	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-52	2.5	B	0.059	0.0069	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-53	1.6	C50	0.12	0.0066	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-54	0.55		0.059	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-55	ND		0.059	0.0048	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-56	0.23		0.059	0.0049	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-57	ND		0.059	0.0048	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-58	ND		0.059	0.0047	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-59	0.21	C	0.18	0.0045	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-60	0.059		0.059	0.0046	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-61	1.6	C B	0.24	0.0045	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-62	0.21	C59	0.18	0.0045	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-63	0.064		0.059	0.0042	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-64	0.26		0.059	0.0043	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-65	7.5	C44 B	0.18	0.0060	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-66	0.98		0.059	0.0048	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-67	0.055	J q	0.059	0.0044	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-68	0.11		0.059	0.0042	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-69	2.8	C49	0.12	0.0054	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-70	1.6	C61 B	0.24	0.0045	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-71	1.1	C40	0.18	0.0067	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-72	0.11		0.059	0.0047	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-73	0.22	C43	0.12	0.0062	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-74	1.6	C61 B	0.24	0.0045	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-75	0.21	C59	0.18	0.0045	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-76	1.6	C61 B	0.24	0.0045	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-77	0.090		0.059	0.0045	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-78	ND		0.059	0.0047	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-79	0.065		0.059	0.0040	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-80	ND		0.059	0.0042	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-81	ND		0.059	0.0048	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-82	0.51		0.059	0.0022	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-83	6.5	C B	0.12	0.0021	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-84	1.3		0.059	0.0022	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-85	0.89	C	0.18	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-86	4.0	C B	0.35	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-87	4.0	C86 B	0.35	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-88	2.3	C	0.12	0.0019	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-89	ND		0.059	0.0022	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-90	10	C B	0.18	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-91	2.3	C88	0.12	0.0019	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-92	2.7		0.059	0.0020	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-93	1.7	C	0.12	0.0020	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-94	0.45		0.059	0.0021	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-95	6.6	B	0.059	0.0020	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-96	0.26		0.059	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-97	4.0	C86 B	0.35	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-98	0.79	C	0.12	0.0020	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88125-2

Client Sample ID: H2-0to30-101218
Date Collected: 10/12/18 10:28
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-12
Matrix: Solid
Percent Solids: 42.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	6.5	C83 B	0.12	0.0021	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-100	1.7	C93	0.12	0.0020	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-101	10	C90 B	0.18	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-102	0.79	C98	0.12	0.0020	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-103	0.80		0.059	0.0019	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-104	0.13		0.059	0.0014	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-105	1.2	B	0.059	0.014	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-106	ND		0.059	0.014	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-107	0.51		0.059	0.013	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-108	0.14	C	0.12	0.014	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-109	4.0	C86 B	0.35	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-110	7.2	C B	0.12	0.0014	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-111	0.061		0.059	0.0014	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-112	ND		0.059	0.0014	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-113	10	C90 B	0.18	0.0017	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-114	0.056	J B	0.059	0.013	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-115	7.2	C110 B	0.12	0.0014	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-116	0.89	C85	0.18	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-117	0.89	C85	0.18	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-118	4.1	B	0.059	0.014	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-119	4.0	C86 B	0.35	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-120	0.19		0.059	0.0013	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-121	0.052	J	0.059	0.0014	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-122	0.041	J q	0.059	0.015	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-123	0.044	J q	0.059	0.014	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-124	0.14	C108	0.12	0.014	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-125	4.0	C86 B	0.35	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-126	0.017	J B	0.059	0.014	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-127	ND		0.059	0.014	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-128	1.8	C	0.12	0.0099	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-129	16	C B	0.24	0.010	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-130	0.96		0.059	0.013	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-131	0.11		0.059	0.013	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-132	4.3	B	0.059	0.013	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-133	0.55		0.059	0.012	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-134	0.81	C	0.12	0.013	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-135	8.2	C B	0.12	0.0015	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-136	2.6	B	0.059	0.0011	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-137	0.28		0.059	0.010	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-138	16	C129 B	0.24	0.010	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-139	0.39	C	0.12	0.011	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-140	0.39	C139	0.12	0.011	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-141	2.9		0.059	0.012	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-142	ND		0.059	0.013	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-143	0.81	C134	0.12	0.013	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-144	0.73		0.059	0.0014	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-145	ND		0.059	0.0011	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-146	4.8	B	0.059	0.011	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-147	15	C B	0.12	0.011	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1

Client Sample ID: H2-0to30-101218
Lab Sample ID: 580-88125-12

Date Collected: 10/12/18 10:28
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 42.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	0.21		0.059	0.0014	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-149	15	C147 B	0.12	0.011	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-150	0.18		0.059	0.0010	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-151	8.2	C135 B	0.12	0.0015	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-152	0.088		0.059	0.0010	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-153	18	C B	0.12	0.0091	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-154	1.2	B	0.059	0.0013	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-155	0.018	J	0.059	0.00098	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-156	1.6	C B	0.12	0.010	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-157	1.6	C156 B	0.12	0.010	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-158	1.4	B	0.059	0.0080	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-159	0.36		0.059	0.0084	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-160	16	C129 B	0.24	0.010	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-161	ND		0.059	0.0083	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-162	ND		0.059	0.0082	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-163	16	C129 B	0.24	0.010	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-164	1.2		0.059	0.0089	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-165	ND		0.059	0.0099	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-166	1.8	C128	0.12	0.0099	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-167	0.60		0.059	0.0070	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-168	18	C153 B	0.12	0.0091	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-169	ND		0.059	0.0076	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-170	13	B	0.059	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-171	3.9	C	0.12	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-172	2.1	B	0.059	0.0011	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-173	3.9	C171	0.12	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-174	12	B	0.059	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-175	0.48		0.059	0.0011	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-176	1.3	B	0.059	0.00074	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-177	7.5	B	0.059	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-178	2.3		0.059	0.0011	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-179	4.3	B	0.059	0.00080	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-180	29	C B	0.12	0.00092	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-181	ND		0.059	0.0010	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-182	0.14		0.059	0.00099	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-183	8.3	C B	0.12	0.0010	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-184	ND		0.059	0.00080	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-185	8.3	C183 B	0.12	0.0010	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-186	ND		0.059	0.00079	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-187	14		0.059	0.0010	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-188	ND		0.059	0.00074	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-189	0.52	B	0.059	0.0040	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-190	2.8		0.059	0.00082	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-191	0.61		0.059	0.00082	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-192	ND		0.059	0.00088	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-193	29	C180 B	0.12	0.00092	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-194	7.6	B	0.059	0.036	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-195	3.6		0.059	0.043	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-196	3.7	B	0.059	0.0015	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1

Client Sample ID: H2-0to30-101218
Lab Sample ID: 580-88125-12

Date Collected: 10/12/18 10:28
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 42.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	0.25		0.059	0.0011	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-198	6.6	C B	0.12	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-199	6.6	C198 B	0.12	0.0016	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-200	0.86		0.059	0.0011	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-201	0.82		0.059	0.0011	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-202	1.1		0.059	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-203	4.4		0.059	0.0014	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-204	ND		0.059	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-205	0.38		0.059	0.027	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-206	2.1	q	0.059	0.0072	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-207	0.23		0.059	0.0051	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-208	0.37		0.059	0.0053	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
PCB-209	0.35	B	0.059	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
Total Monochlorobiphenyls	0.22	B	0.059	0.0012	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
Total Dichlorobiphenyls	0.62	q B	0.12	0.0019	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
Total Trichlorobiphenyls	3.0	B	0.12	0.0024	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
Total Tetrachlorobiphenyls	24	q B	0.24	0.0052	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
Total Pentachlorobiphenyls	53	q B	0.35	0.0057	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
Total Hexachlorobiphenyls	84	B	0.24	0.0078	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
Total Heptachlorobiphenyls	100	B	0.12	0.0011	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
Total Octachlorobiphenyls	29	B	0.12	0.011	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
Total Nonachlorobiphenyls	2.7	q	0.059	0.0059	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1
Polychlorinated biphenyls, Total	300	q B	0.35	0.0046	ng/g	☼	08/19/19 08:06	08/27/19 23:37	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*73*		*30 - 140*	*08/19/19 08:06*	*08/27/19 23:37*	*1*
PCB-3L	*75*		*30 - 140*	*08/19/19 08:06*	*08/27/19 23:37*	*1*
PCB-4L	*71*		*30 - 140*	*08/19/19 08:06*	*08/27/19 23:37*	*1*
PCB-15L	*82*		*30 - 140*	*08/19/19 08:06*	*08/27/19 23:37*	*1*
PCB-19L	*70*		*30 - 140*	*08/19/19 08:06*	*08/27/19 23:37*	*1*
PCB-37L	*88*		*30 - 140*	*08/19/19 08:06*	*08/27/19 23:37*	*1*
PCB-54L	*81*		*30 - 140*	*08/19/19 08:06*	*08/27/19 23:37*	*1*
PCB-77L	*97*		*30 - 140*	*08/19/19 08:06*	*08/27/19 23:37*	*1*
PCB-81L	*95*		*30 - 140*	*08/19/19 08:06*	*08/27/19 23:37*	*1*
PCB-104L	*83*		*30 - 140*	*08/19/19 08:06*	*08/27/19 23:37*	*1*
PCB-105L	*83*		*30 - 140*	*08/19/19 08:06*	*08/27/19 23:37*	*1*
PCB-114L	*82*		*30 - 140*	*08/19/19 08:06*	*08/27/19 23:37*	*1*
PCB-118L	*83*		*30 - 140*	*08/19/19 08:06*	*08/27/19 23:37*	*1*
PCB-123L	*82*		*30 - 140*	*08/19/19 08:06*	*08/27/19 23:37*	*1*
PCB-126L	*94*		*30 - 140*	*08/19/19 08:06*	*08/27/19 23:37*	*1*
PCB-155L	*90*		*30 - 140*	*08/19/19 08:06*	*08/27/19 23:37*	*1*
PCB-156L	*86*	*C*	*30 - 140*	*08/19/19 08:06*	*08/27/19 23:37*	*1*
PCB-157L	*86*	*C156*	*30 - 140*	*08/19/19 08:06*	*08/27/19 23:37*	*1*
PCB-167L	*86*		*30 - 140*	*08/19/19 08:06*	*08/27/19 23:37*	*1*
PCB-169L	*98*		*30 - 140*	*08/19/19 08:06*	*08/27/19 23:37*	*1*
PCB-170L	*81*		*30 - 140*	*08/19/19 08:06*	*08/27/19 23:37*	*1*
PCB-188L	*80*		*30 - 140*	*08/19/19 08:06*	*08/27/19 23:37*	*1*
PCB-189L	*87*		*30 - 140*	*08/19/19 08:06*	*08/27/19 23:37*	*1*
PCB-202L	*85*		*30 - 140*	*08/19/19 08:06*	*08/27/19 23:37*	*1*
PCB-205L	*78*		*30 - 140*	*08/19/19 08:06*	*08/27/19 23:37*	*1*

Client: Pacific Groundwater Group
Job ID: 580-88125-2
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: H2-0to30-101218
Lab Sample ID: 580-88125-12
Date Collected: 10/12/18 10:28
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 42.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-206L	74		30 - 140	08/19/19 08:06	08/27/19 23:37	1
PCB-208L	82		30 - 140	08/19/19 08:06	08/27/19 23:37	1
PCB-209L	68		30 - 140	08/19/19 08:06	08/27/19 23:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	79		40 - 125	08/19/19 08:06	08/27/19 23:37	1
PCB-111L	97		40 - 125	08/19/19 08:06	08/27/19 23:37	1
PCB-178L	91		40 - 125	08/19/19 08:06	08/27/19 23:37	1

Client Sample ID: J2A3-0to18-101218
Lab Sample ID: 580-88125-13

Date Collected: 10/12/18 12:57
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 80.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.0098	B	0.0098	0.00030	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-2	0.012	B	0.0098	0.00032	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-3	0.0057	J q B	0.0098	0.00034	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-4	0.17		0.020	0.00070	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-5	0.00068	J q	0.0098	0.00045	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-6	0.0058	J	0.0098	0.00045	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-7	0.0022	J	0.0098	0.00043	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-8	0.064	B	0.020	0.00044	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-9	0.0020	J	0.0098	0.00049	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-10	0.0050	J	0.0098	0.00047	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-11	0.080	B	0.020	0.00043	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-12	0.0046	J C	0.020	0.00043	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-13	0.0046	J C12	0.020	0.00043	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-14	ND		0.0098	0.00037	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-15	0.030	B	0.0098	0.00042	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-16	0.020	q	0.0098	0.00064	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-17	0.13	B	0.0098	0.00050	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-18	0.066	C B	0.020	0.00043	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-19	0.28		0.0098	0.00060	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-20	0.097	C B	0.020	0.00067	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-21	0.038	C B	0.020	0.00063	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-22	0.021	B	0.0098	0.00070	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-23	ND		0.0098	0.00069	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-24	ND		0.0098	0.00037	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-25	0.017		0.0098	0.00064	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-26	0.015	J C B	0.020	0.00066	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-27	0.035		0.0098	0.00036	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-28	0.097	C20 B	0.020	0.00067	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-29	0.015	J C26 B	0.020	0.00066	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-30	0.066	C18 B	0.020	0.00043	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-31	0.055	B	0.020	0.00063	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-32	0.14	B	0.0098	0.00034	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-33	0.038	C21 B	0.020	0.00063	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-34	ND		0.0098	0.00072	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-35	0.0040	J B	0.0098	0.00072	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-36	0.00082	J	0.0098	0.00065	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-37	0.027	B	0.0098	0.00068	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-38	ND		0.0098	0.00066	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-39	ND		0.0098	0.00062	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-40	0.14	C	0.030	0.00076	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-41	0.14	C40	0.030	0.00076	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-42	0.043		0.0098	0.00080	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-43	0.026	C	0.020	0.00069	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-44	0.78	C B	0.030	0.00067	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-45	0.44	C	0.020	0.00078	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-46	0.019		0.0098	0.00091	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-47	0.78	C44 B	0.030	0.00067	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-48	0.019		0.0098	0.00073	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-49	0.37	C	0.020	0.00061	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1

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Lab Sample ID: 580-88125-13
Date Collected: 10/12/18 12:57
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 80.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	0.30	C	0.020	0.00074	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-51	0.44	C45	0.020	0.00078	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-52	0.40	B	0.0098	0.00077	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-53	0.30	C50	0.020	0.00074	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-54	0.084		0.0098	0.00034	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-55	0.00097	J q	0.0098	0.00054	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-56	0.046		0.0098	0.00055	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-57	ND		0.0098	0.00054	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-58	0.0013	J q	0.0098	0.00053	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-59	0.030	C	0.030	0.00051	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-60	0.017	q	0.0098	0.00052	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-61	0.22	C B	0.039	0.00051	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-62	0.030	C59	0.030	0.00051	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-63	ND		0.0098	0.00047	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-64	0.053		0.0098	0.00049	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-65	0.78	C44 B	0.030	0.00067	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-66	0.14		0.0098	0.00054	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-67	0.0055	J q	0.0098	0.00050	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-68	0.010	q	0.0098	0.00047	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-69	0.37	C49	0.020	0.00061	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-70	0.22	C61 B	0.039	0.00051	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-71	0.14	C40	0.030	0.00076	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-72	0.0066	J q	0.0098	0.00053	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-73	0.026	C43	0.020	0.00069	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-74	0.22	C61 B	0.039	0.00051	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-75	0.030	C59	0.030	0.00051	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-76	0.22	C61 B	0.039	0.00051	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-77	0.021		0.0098	0.00052	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-78	ND		0.0098	0.00053	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-79	0.0043	J q	0.0098	0.00045	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-80	ND		0.0098	0.00047	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-81	0.0015	J q	0.0098	0.00053	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-82	0.072		0.0098	0.00078	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-83	0.51	C B	0.020	0.00072	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-84	0.23		0.0098	0.00079	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-85	0.089	q C	0.030	0.00056	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-86	0.60	C B	0.059	0.00057	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-87	0.60	C86 B	0.059	0.00057	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-88	0.24	C	0.020	0.00067	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-89	0.0071	J q	0.0098	0.00076	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-90	0.95	C B	0.030	0.00060	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-91	0.24	C88	0.020	0.00067	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-92	0.0060	J q	0.0098	0.00071	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-93	0.12	C	0.020	0.00069	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-94	0.031		0.0098	0.00075	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-95	0.87	B	0.0098	0.00070	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-96	0.026		0.0098	0.00055	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-97	0.60	C86 B	0.059	0.00057	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-98	0.061	C	0.020	0.00069	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1

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Lab Sample ID: 580-88125-13

Date Collected: 10/12/18 12:57
Matrix: Solid
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Percent Solids: 80.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	0.51	C83 B	0.020	0.00072	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-100	0.12	C93	0.020	0.00069	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-101	0.95	C90 B	0.030	0.00060	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-102	0.061	C98	0.020	0.00069	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-103	0.063		0.0098	0.00066	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-104	0.010		0.0098	0.00049	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-105	0.16	B	0.0098	0.0016	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-106	ND		0.0098	0.0016	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-107	0.041		0.0098	0.0015	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-108	0.018	J C	0.020	0.0017	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-109	0.60	C86 B	0.059	0.00057	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-110	0.99	C B	0.020	0.00050	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-111	0.0055	J	0.0098	0.00048	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-112	ND		0.0098	0.00050	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-113	0.95	C90 B	0.030	0.00060	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-114	0.0088	J B	0.0098	0.0015	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-115	0.99	C110 B	0.020	0.00050	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-116	0.089	q C85	0.030	0.00056	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-117	0.089	q C85	0.030	0.00056	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-118	0.47	B	0.0098	0.0016	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-119	0.60	C86 B	0.059	0.00057	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-120	0.011		0.0098	0.00045	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-121	0.0052	J	0.0098	0.00049	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-122	0.0048	J q	0.0098	0.0018	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-123	0.0055	J q	0.0098	0.0016	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-124	0.018	J C108	0.020	0.0017	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-125	0.60	C86 B	0.059	0.00057	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-126	0.0030	J q B	0.0098	0.0016	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-127	ND		0.0098	0.0016	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-128	0.22	C	0.020	0.0010	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-129	1.8	C B	0.039	0.0011	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-130	0.11		0.0098	0.0014	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-131	0.023		0.0098	0.0013	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-132	0.63	B	0.0098	0.0013	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-133	0.037		0.0098	0.0013	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-134	0.11	C	0.020	0.0014	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-135	0.69	C B	0.020	0.00050	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-136	0.26	B	0.0098	0.00038	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-137	0.050		0.0098	0.0011	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-138	1.8	C129 B	0.039	0.0011	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-139	0.032	C	0.020	0.0012	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-140	0.032	C139	0.020	0.0012	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-141	0.37		0.0098	0.0012	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-142	ND		0.0098	0.0013	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-143	0.11	C134	0.020	0.0014	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-144	0.086		0.0098	0.00047	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-145	0.0010	J q	0.0098	0.00036	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-146	0.32	B	0.0098	0.0011	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-147	1.8	C B	0.020	0.0012	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1

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Date Collected: 10/12/18 12:57
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 80.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	0.0095	J	0.0098	0.00048	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-149	1.8	C147 B	0.020	0.0012	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-150	0.011		0.0098	0.00035	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-151	0.69	C135 B	0.020	0.00050	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-152	0.0061	J	0.0098	0.00035	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-153	1.6	C B	0.020	0.00094	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-154	0.047	B	0.0098	0.00043	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-155	0.00098	J q	0.0098	0.00033	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-156	0.14	C B	0.020	0.0011	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-157	0.14	C156 B	0.020	0.0011	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-158	0.17	B	0.0098	0.00083	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-159	0.017		0.0098	0.00087	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-160	1.8	C129 B	0.039	0.0011	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-161	ND		0.0098	0.00086	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-162	ND		0.0098	0.00085	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-163	1.8	C129 B	0.039	0.0011	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-164	0.15		0.0098	0.00092	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-165	ND		0.0098	0.0010	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-166	0.22	C128	0.020	0.0010	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-167	0.058		0.0098	0.00072	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-168	1.6	C153 B	0.020	0.00094	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-169	ND		0.0098	0.00082	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-170	0.56	B	0.0098	0.00046	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-171	0.18	C	0.020	0.00042	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-172	0.093	B	0.0098	0.00041	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-173	0.18	C171	0.020	0.00042	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-174	0.59	B	0.0098	0.00042	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-175	0.027		0.0098	0.00038	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-176	0.072	B	0.0098	0.00027	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-177	0.34	B	0.0098	0.00043	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-178	0.12		0.0098	0.00040	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-179	0.25	B	0.0098	0.00029	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-180	1.1	C B	0.020	0.00033	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-181	0.0061	J q	0.0098	0.00037	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-182	0.0071	J	0.0098	0.00035	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-183	0.39	C B	0.020	0.00036	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-184	ND		0.0098	0.00029	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-185	0.39	C183 B	0.020	0.00036	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-186	ND		0.0098	0.00028	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-187	0.67		0.0098	0.00036	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-188	ND		0.0098	0.00025	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-189	0.021	B	0.0098	0.00051	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-190	0.10		0.0098	0.00029	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-191	0.027		0.0098	0.00029	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-192	ND		0.0098	0.00031	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-193	1.1	C180 B	0.020	0.00033	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-194	0.23	B	0.0098	0.0017	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-195	0.10		0.0098	0.0020	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-196	0.11	B	0.0098	0.0012	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1

Client Sample ID: J2A3-0to18-101218
Lab Sample ID: 580-88125-13

Date Collected: 10/12/18 12:57
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 80.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	0.0057	J q	0.0098	0.00089	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-198	0.24	C B	0.020	0.0013	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-199	0.24	C198 B	0.020	0.0013	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-200	0.026	q	0.0098	0.00095	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-201	0.031		0.0098	0.00090	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-202	0.048		0.0098	0.0010	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-203	0.15		0.0098	0.0012	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-204	ND		0.0098	0.00097	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-205	0.011		0.0098	0.0012	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-206	0.19	q	0.0098	0.0018	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-207	0.015		0.0098	0.0012	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-208	0.038		0.0098	0.0012	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
PCB-209	0.064	B	0.0098	0.00058	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
Total Monochlorobiphenyls	0.028	q B	0.0098	0.00032	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
Total Dichlorobiphenyls	0.36	q B	0.020	0.00046	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
Total Trichlorobiphenyls	0.95	q B	0.020	0.00060	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
Total Tetrachlorobiphenyls	3.2	q B	0.039	0.00059	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
Total Pentachlorobiphenyls	5.6	q B	0.059	0.00094	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
Total Hexachlorobiphenyls	8.7	q B	0.039	0.00089	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
Total Heptachlorobiphenyls	4.6	q B	0.020	0.00036	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
Total Octachlorobiphenyls	0.95	q B	0.020	0.0012	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
Total Nonachlorobiphenyls	0.24	q	0.0098	0.0014	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1
Polychlorinated biphenyls, Total	25	q B	0.059	0.00078	ng/g	☼	08/19/19 08:06	09/04/19 07:22	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*78*		*30 - 140*	*08/19/19 08:06*	*09/04/19 07:22*	*1*
PCB-3L	*79*		*30 - 140*	*08/19/19 08:06*	*09/04/19 07:22*	*1*
PCB-4L	*72*		*30 - 140*	*08/19/19 08:06*	*09/04/19 07:22*	*1*
PCB-15L	*80*		*30 - 140*	*08/19/19 08:06*	*09/04/19 07:22*	*1*
PCB-19L	*72*		*30 - 140*	*08/19/19 08:06*	*09/04/19 07:22*	*1*
PCB-37L	*84*		*30 - 140*	*08/19/19 08:06*	*09/04/19 07:22*	*1*
PCB-54L	*103*		*30 - 140*	*08/19/19 08:06*	*09/04/19 07:22*	*1*
PCB-77L	*88*		*30 - 140*	*08/19/19 08:06*	*09/04/19 07:22*	*1*
PCB-81L	*86*		*30 - 140*	*08/19/19 08:06*	*09/04/19 07:22*	*1*
PCB-104L	*86*		*30 - 140*	*08/19/19 08:06*	*09/04/19 07:22*	*1*
PCB-105L	*81*		*30 - 140*	*08/19/19 08:06*	*09/04/19 07:22*	*1*
PCB-114L	*80*		*30 - 140*	*08/19/19 08:06*	*09/04/19 07:22*	*1*
PCB-118L	*81*		*30 - 140*	*08/19/19 08:06*	*09/04/19 07:22*	*1*
PCB-123L	*80*		*30 - 140*	*08/19/19 08:06*	*09/04/19 07:22*	*1*
PCB-126L	*88*		*30 - 140*	*08/19/19 08:06*	*09/04/19 07:22*	*1*
PCB-155L	*92*		*30 - 140*	*08/19/19 08:06*	*09/04/19 07:22*	*1*
PCB-156L	*77*	*C*	*30 - 140*	*08/19/19 08:06*	*09/04/19 07:22*	*1*
PCB-157L	*77*	*C156*	*30 - 140*	*08/19/19 08:06*	*09/04/19 07:22*	*1*
PCB-167L	*76*		*30 - 140*	*08/19/19 08:06*	*09/04/19 07:22*	*1*
PCB-169L	*81*		*30 - 140*	*08/19/19 08:06*	*09/04/19 07:22*	*1*
PCB-170L	*76*		*30 - 140*	*08/19/19 08:06*	*09/04/19 07:22*	*1*
PCB-188L	*86*		*30 - 140*	*08/19/19 08:06*	*09/04/19 07:22*	*1*
PCB-189L	*91*		*30 - 140*	*08/19/19 08:06*	*09/04/19 07:22*	*1*
PCB-202L	*79*		*30 - 140*	*08/19/19 08:06*	*09/04/19 07:22*	*1*
PCB-205L	*73*		*30 - 140*	*08/19/19 08:06*	*09/04/19 07:22*	*1*

Client: Pacific Groundwater Group
Job ID: 580-88125-2
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: J2A3-0to18-101218
Lab Sample ID: 580-88125-13
Date Collected: 10/12/18 12:57
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 80.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-206L	59		30 - 140	08/19/19 08:06	09/04/19 07:22	1
PCB-208L	74		30 - 140	08/19/19 08:06	09/04/19 07:22	1
PCB-209L	48		30 - 140	08/19/19 08:06	09/04/19 07:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	78		40 - 125	08/19/19 08:06	09/04/19 07:22	1
PCB-111L	90		40 - 125	08/19/19 08:06	09/04/19 07:22	1
PCB-178L	96		40 - 125	08/19/19 08:06	09/04/19 07:22	1

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88125-2

Client Sample ID: M4-0to26-101918
Date Collected: 10/19/18 13:11
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-14
Matrix: Solid
Percent Solids: 38.4

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.95	B	0.063	0.0024	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-2	0.15	B	0.063	0.0025	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-3	0.40	B	0.063	0.0026	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-4	0.91		0.13	0.0034	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-5	0.024	J	0.063	0.0022	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-6	0.19		0.063	0.0022	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-7	0.050	J	0.063	0.0021	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-8	0.58	B	0.13	0.0021	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-9	0.059	J	0.063	0.0024	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-10	0.043	J	0.063	0.0023	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-11	0.15	B	0.13	0.0021	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-12	0.11	J C	0.13	0.0021	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-13	0.11	J C12	0.13	0.0021	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-14	ND		0.063	0.0018	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-15	0.37	B	0.063	0.0020	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-16	0.24		0.063	0.0037	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-17	1.6	B	0.063	0.0029	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-18	0.57	C B	0.13	0.0025	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-19	2.2		0.063	0.0035	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-20	1.6	C B	0.13	0.0078	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-21	0.65	C B	0.13	0.0074	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-22	0.23	B	0.063	0.0082	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-23	ND		0.063	0.0080	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-24	ND		0.063	0.0022	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-25	0.23		0.063	0.0075	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-26	0.23	C B	0.13	0.0077	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-27	0.32		0.063	0.0021	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-28	1.6	C20 B	0.13	0.0078	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-29	0.23	C26 B	0.13	0.0077	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-30	0.57	C18 B	0.13	0.0025	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-31	0.82	B	0.13	0.0074	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-32	1.1	B	0.063	0.0019	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-33	0.65	C21 B	0.13	0.0074	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-34	0.015	J q	0.063	0.0084	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-35	0.033	J B	0.063	0.0084	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-36	ND		0.063	0.0076	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-37	0.38	B	0.063	0.0079	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-38	ND		0.063	0.0077	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-39	0.039	J	0.063	0.0073	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-40	2.4	C	0.19	0.0088	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-41	2.4	C40	0.19	0.0088	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-42	0.94		0.063	0.0093	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-43	0.45	C	0.13	0.0080	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-44	16	C B	0.19	0.0078	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-45	6.4	C	0.13	0.0091	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-46	0.26		0.063	0.011	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-47	16	C44 B	0.19	0.0078	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-48	0.28		0.063	0.0085	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-49	7.8	C	0.13	0.0071	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1

Client Sample ID: M4-0to26-101918
Lab Sample ID: 580-88125-14
Date Collected: 10/19/18 13:11
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 38.4

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	3.0	C	0.13	0.0086	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-51	6.4	C45	0.13	0.0091	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-52	12	B	0.063	0.0089	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-53	3.0	C50	0.13	0.0086	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-54	0.92		0.063	0.0017	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-55	ND		0.063	0.0062	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-56	1.1		0.063	0.0063	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-57	ND		0.063	0.0063	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-58	0.056	J	0.063	0.0061	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-59	0.49	C	0.19	0.0059	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-60	0.20		0.063	0.0061	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-61	8.1	C B	0.25	0.0059	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-62	0.49	C59	0.19	0.0059	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-63	0.20		0.063	0.0055	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-64	1.3		0.063	0.0057	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-65	16	C44 B	0.19	0.0078	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-66	4.1		0.063	0.0063	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-67	0.10		0.063	0.0058	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-68	0.34		0.063	0.0054	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-69	7.8	C49	0.13	0.0071	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-70	8.1	C61 B	0.25	0.0059	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-71	2.4	C40	0.19	0.0088	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-72	0.31		0.063	0.0061	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-73	0.45	C43	0.13	0.0080	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-74	8.1	C61 B	0.25	0.0059	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-75	0.49	C59	0.19	0.0059	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-76	8.1	C61 B	0.25	0.0059	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-77	0.40		0.063	0.0060	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-78	ND		0.063	0.0061	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-79	0.22		0.063	0.0052	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-80	ND		0.063	0.0055	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-81	0.020	J	0.063	0.0062	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-82	2.1		0.063	0.0030	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-83	17	C B	0.13	0.0028	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-84	5.7		0.063	0.0031	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-85	3.1	C	0.19	0.0022	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-86	13	C B	0.38	0.0022	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-87	13	C86 B	0.38	0.0022	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-88	5.3	C	0.13	0.0026	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-89	0.16		0.063	0.0030	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-90	28	C B	0.19	0.0023	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-91	5.3	C88	0.13	0.0026	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-92	6.9		0.063	0.0028	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-93	2.6	C	0.13	0.0027	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-94	0.66		0.063	0.0029	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-95	20	B	0.063	0.0027	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-96	0.45		0.063	0.0022	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-97	13	C86 B	0.38	0.0022	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-98	1.3	C	0.13	0.0027	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88125-2

Client Sample ID: M4-0to26-101918
Date Collected: 10/19/18 13:11
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-14
Matrix: Solid
Percent Solids: 38.4

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	17	C83 B	0.13	0.0028	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-100	2.6	C93	0.13	0.0027	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-101	28	C90 B	0.19	0.0023	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-102	1.3	C98	0.13	0.0027	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-103	1.3		0.063	0.0026	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-104	0.18		0.063	0.0019	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-105	4.5	B	0.063	0.018	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-106	ND		0.063	0.018	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-107	1.6		0.063	0.017	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-108	0.55	C	0.13	0.018	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-109	13	C86 B	0.38	0.0022	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-110	25	C B	0.13	0.0020	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-111	0.14		0.063	0.0019	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-112	ND		0.063	0.0019	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-113	28	C90 B	0.19	0.0023	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-114	0.24	B	0.063	0.016	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-115	25	C110 B	0.13	0.0020	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-116	3.1	C85	0.19	0.0022	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-117	3.1	C85	0.19	0.0022	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-118	15	B	0.063	0.017	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-119	13	C86 B	0.38	0.0022	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-120	0.34		0.063	0.0018	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-121	0.11		0.063	0.0019	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-122	0.18		0.063	0.020	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-123	0.18		0.063	0.017	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-124	0.55	C108	0.13	0.018	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-125	13	C86 B	0.38	0.0022	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-126	0.062	J B	0.063	0.018	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-127	ND		0.063	0.018	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-128	3.4	C	0.13	0.0050	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-129	25	C B	0.25	0.0051	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-130	1.8		0.063	0.0067	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-131	0.32		0.063	0.0065	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-132	9.0	B	0.063	0.0063	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-133	1.3		0.063	0.0061	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-134	1.7	C	0.13	0.0065	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-135	12	C B	0.13	0.0018	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-136	4.4	B	0.063	0.0014	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-137	0.89		0.063	0.0053	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-138	25	C129 B	0.25	0.0051	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-139	0.88	C	0.13	0.0056	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-140	0.88	C139	0.13	0.0056	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-141	4.0		0.063	0.0058	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-142	ND		0.063	0.0065	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-143	1.7	C134	0.13	0.0065	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-144	1.1		0.063	0.0017	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-145	0.010	J q	0.063	0.0013	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-146	8.4	B	0.063	0.0055	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-147	24	C B	0.13	0.0057	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1

Client Sample ID: M4-0to26-101918
Lab Sample ID: 580-88125-14

Date Collected: 10/19/18 13:11
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 38.4

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	0.51		0.063	0.0018	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-149	24	C147 B	0.13	0.0057	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-150	0.31		0.063	0.0013	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-151	12	C135 B	0.13	0.0018	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-152	0.15		0.063	0.0013	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-153	23	C B	0.13	0.0046	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-154	2.0	B	0.063	0.0016	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-155	0.029	J	0.063	0.0012	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-156	2.6	C B	0.13	0.0051	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-157	2.6	C156 B	0.13	0.0051	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-158	2.2	B	0.063	0.0040	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-159	0.24		0.063	0.0042	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-160	25	C129 B	0.25	0.0051	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-161	ND		0.063	0.0042	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-162	ND		0.063	0.0041	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-163	25	C129 B	0.25	0.0051	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-164	1.9		0.063	0.0044	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-165	ND		0.063	0.0050	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-166	3.4	C128	0.13	0.0050	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-167	0.89		0.063	0.0036	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-168	23	C153 B	0.13	0.0046	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-169	ND		0.063	0.0038	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-170	8.4	B	0.063	0.0026	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-171	2.7	C	0.13	0.0026	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-172	1.5	B	0.063	0.0025	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-173	2.7	C171	0.13	0.0026	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-174	8.1	B	0.063	0.0026	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-175	0.35		0.063	0.0024	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-176	1.2	B	0.063	0.0017	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-177	7.0	B	0.063	0.0027	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-178	2.8		0.063	0.0025	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-179	4.2	B	0.063	0.0018	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-180	19	C B	0.13	0.0021	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-181	0.098		0.063	0.0023	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-182	0.20		0.063	0.0022	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-183	5.4	C B	0.13	0.0022	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-184	ND		0.063	0.0018	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-185	5.4	C183 B	0.13	0.0022	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-186	ND		0.063	0.0018	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-187	13		0.063	0.0023	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-188	0.071		0.063	0.0016	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-189	0.36	B	0.063	0.0039	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-190	1.8		0.063	0.0018	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-191	0.39		0.063	0.0018	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-192	ND		0.063	0.0020	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-193	19	C180 B	0.13	0.0021	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-194	5.4	B	0.063	0.031	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-195	2.4		0.063	0.037	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-196	2.7	B	0.063	0.0030	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1

Client Sample ID: M4-0to26-101918
Lab Sample ID: 580-88125-14

Date Collected: 10/19/18 13:11
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 38.4

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	0.22		0.063	0.0022	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-198	5.3	C B	0.13	0.0032	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-199	5.3	C198 B	0.13	0.0032	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-200	0.61		0.063	0.0023	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-201	0.73		0.063	0.0022	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-202	1.0		0.063	0.0025	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-203	3.3		0.063	0.0029	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-204	ND		0.063	0.0024	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-205	0.28		0.063	0.023	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-206	2.0	q	0.063	0.0084	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-207	0.22		0.063	0.0060	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-208	0.40		0.063	0.0062	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
PCB-209	0.51	B	0.063	0.0017	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
Total Monochlorobiphenyls	1.5	B	0.063	0.0025	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
Total Dichlorobiphenyls	2.5	B	0.13	0.0022	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
Total Trichlorobiphenyls	10	q B	0.13	0.0060	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
Total Tetrachlorobiphenyls	67	B	0.25	0.0067	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
Total Pentachlorobiphenyls	160	B	0.38	0.0074	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
Total Hexachlorobiphenyls	130	q B	0.25	0.0042	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
Total Heptachlorobiphenyls	77	B	0.13	0.0022	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
Total Octachlorobiphenyls	22	B	0.13	0.010	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
Total Nonachlorobiphenyls	2.6	q	0.063	0.0069	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1
Polychlorinated biphenyls, Total	470	q B	0.38	0.0053	ng/g	☼	08/19/19 08:06	08/30/19 09:27	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*71*		*30 - 140*	*08/19/19 08:06*	*08/30/19 09:27*	*1*
PCB-3L	*75*		*30 - 140*	*08/19/19 08:06*	*08/30/19 09:27*	*1*
PCB-4L	*71*		*30 - 140*	*08/19/19 08:06*	*08/30/19 09:27*	*1*
PCB-15L	*79*		*30 - 140*	*08/19/19 08:06*	*08/30/19 09:27*	*1*
PCB-19L	*74*		*30 - 140*	*08/19/19 08:06*	*08/30/19 09:27*	*1*
PCB-37L	*86*		*30 - 140*	*08/19/19 08:06*	*08/30/19 09:27*	*1*
PCB-54L	*95*		*30 - 140*	*08/19/19 08:06*	*08/30/19 09:27*	*1*
PCB-77L	*91*		*30 - 140*	*08/19/19 08:06*	*08/30/19 09:27*	*1*
PCB-81L	*89*		*30 - 140*	*08/19/19 08:06*	*08/30/19 09:27*	*1*
PCB-104L	*84*		*30 - 140*	*08/19/19 08:06*	*08/30/19 09:27*	*1*
PCB-105L	*82*		*30 - 140*	*08/19/19 08:06*	*08/30/19 09:27*	*1*
PCB-114L	*82*		*30 - 140*	*08/19/19 08:06*	*08/30/19 09:27*	*1*
PCB-118L	*84*		*30 - 140*	*08/19/19 08:06*	*08/30/19 09:27*	*1*
PCB-123L	*83*		*30 - 140*	*08/19/19 08:06*	*08/30/19 09:27*	*1*
PCB-126L	*91*		*30 - 140*	*08/19/19 08:06*	*08/30/19 09:27*	*1*
PCB-155L	*97*		*30 - 140*	*08/19/19 08:06*	*08/30/19 09:27*	*1*
PCB-156L	*89*	*C*	*30 - 140*	*08/19/19 08:06*	*08/30/19 09:27*	*1*
PCB-157L	*89*	*C156*	*30 - 140*	*08/19/19 08:06*	*08/30/19 09:27*	*1*
PCB-167L	*86*		*30 - 140*	*08/19/19 08:06*	*08/30/19 09:27*	*1*
PCB-169L	*100*		*30 - 140*	*08/19/19 08:06*	*08/30/19 09:27*	*1*
PCB-170L	*81*		*30 - 140*	*08/19/19 08:06*	*08/30/19 09:27*	*1*
PCB-188L	*80*		*30 - 140*	*08/19/19 08:06*	*08/30/19 09:27*	*1*
PCB-189L	*86*		*30 - 140*	*08/19/19 08:06*	*08/30/19 09:27*	*1*
PCB-202L	*86*		*30 - 140*	*08/19/19 08:06*	*08/30/19 09:27*	*1*
PCB-205L	*78*		*30 - 140*	*08/19/19 08:06*	*08/30/19 09:27*	*1*

Client: Pacific Groundwater Group
Job ID: 580-88125-2
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: M4-0to26-101918
Lab Sample ID: 580-88125-14
Date Collected: 10/19/18 13:11
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 38.4

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-206L	73		30 - 140	08/19/19 08:06	08/30/19 09:27	1
PCB-208L	78		30 - 140	08/19/19 08:06	08/30/19 09:27	1
PCB-209L	64		30 - 140	08/19/19 08:06	08/30/19 09:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	78		40 - 125	08/19/19 08:06	08/30/19 09:27	1
PCB-111L	91		40 - 125	08/19/19 08:06	08/30/19 09:27	1
PCB-178L	88		40 - 125	08/19/19 08:06	08/30/19 09:27	1

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88125-2

Client Sample ID: 515-0to26-101918
Date Collected: 10/19/18 13:11
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-15
Matrix: Solid
Percent Solids: 38.4

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	1.0	B	0.064	0.0036	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-2	0.16	B	0.064	0.0038	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-3	0.55	B	0.064	0.0039	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-4	1.3		0.13	0.0061	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-5	0.053	J	0.064	0.0040	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-6	0.35		0.064	0.0040	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-7	0.10	B	0.064	0.0038	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-8	1.3	B	0.13	0.0039	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-9	0.12	q	0.064	0.0044	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-10	0.065		0.064	0.0042	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-11	0.35	B	0.13	0.0038	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-12	0.19	C B	0.13	0.0038	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-13	0.19	C12 B	0.13	0.0038	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-14	ND		0.064	0.0033	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-15	0.68	B	0.064	0.0037	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-16	0.48		0.064	0.0050	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-17	1.9	B	0.064	0.0039	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-18	1.2	C B	0.13	0.0034	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-19	2.4	B	0.064	0.0047	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-20	1.9	C B	0.13	0.011	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-21	0.90	C B	0.13	0.010	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-22	0.40	B	0.064	0.011	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-23	ND		0.064	0.011	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-24	0.017	J q B	0.064	0.0029	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-25	0.26	B	0.064	0.010	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-26	0.30	C B	0.13	0.010	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-27	0.36	B	0.064	0.0028	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-28	1.9	C20 B	0.13	0.011	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-29	0.30	C26 B	0.13	0.010	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-30	1.2	C18 B	0.13	0.0034	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-31	1.3	B	0.13	0.010	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-32	1.1	B	0.064	0.0026	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-33	0.90	C21 B	0.13	0.010	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-34	ND		0.064	0.011	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-35	0.058	J	0.064	0.011	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-36	ND		0.064	0.010	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-37	0.58	B	0.064	0.011	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-38	ND		0.064	0.010	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-39	0.041	J	0.064	0.0099	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-40	2.9	C	0.19	0.014	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-41	2.9	C40	0.19	0.014	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-42	1.2		0.064	0.015	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-43	0.44	C	0.13	0.013	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-44	19	C B	0.19	0.012	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-45	5.7	C B	0.13	0.015	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-46	0.28		0.064	0.017	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-47	19	C44 B	0.19	0.012	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-48	0.45		0.064	0.014	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-49	9.6	C B	0.13	0.011	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1

Client Sample ID: 515-0to26-101918
Lab Sample ID: 580-88125-15
Date Collected: 10/19/18 13:11
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 38.4

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	3.0	C B	0.13	0.014	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-51	5.7	C45 B	0.13	0.015	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-52	27	B	0.064	0.014	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-53	3.0	C50 B	0.13	0.014	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-54	0.91		0.064	0.0022	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-55	ND		0.064	0.0099	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-56	1.9		0.064	0.010	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-57	ND		0.064	0.010	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-58	ND		0.064	0.0097	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-59	0.52	C	0.19	0.0094	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-60	0.55		0.064	0.0097	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-61	18	C B	0.25	0.0095	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-62	0.52	C59	0.19	0.0094	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-63	0.26		0.064	0.0088	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-64	2.5		0.064	0.0091	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-65	19	C44 B	0.19	0.012	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-66	6.2		0.064	0.010	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-67	0.16		0.064	0.0092	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-68	0.29	B	0.064	0.0087	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-69	9.6	C49 B	0.13	0.011	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-70	18	C61 B	0.25	0.0095	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-71	2.9	C40	0.19	0.014	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-72	0.30		0.064	0.0098	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-73	0.44	C43	0.13	0.013	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-74	18	C61 B	0.25	0.0095	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-75	0.52	C59	0.19	0.0094	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-76	18	C61 B	0.25	0.0095	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-77	0.80	B	0.064	0.0094	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-78	ND		0.064	0.0098	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-79	0.40		0.064	0.0083	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-80	ND		0.064	0.0087	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-81	0.027	J q B	0.064	0.010	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-82	4.3		0.064	0.0066	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-83	26	C	0.13	0.0061	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-84	11		0.064	0.0066	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-85	6.1	C	0.19	0.0047	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-86	27	C B	0.38	0.0048	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-87	27	C86 B	0.38	0.0048	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-88	7.3	C	0.13	0.0057	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-89	0.29		0.064	0.0064	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-90	48	C B	0.19	0.0050	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-91	7.3	C88	0.13	0.0057	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-92	10		0.064	0.0060	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-93	2.4	C	0.13	0.0058	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-94	0.66		0.064	0.0063	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-95	38	B	0.064	0.0059	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-96	0.51		0.064	0.0046	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-97	27	C86 B	0.38	0.0048	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-98	1.7	C	0.13	0.0057	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1

Client Sample ID: 515-0to26-101918
Lab Sample ID: 580-88125-15
Date Collected: 10/19/18 13:11
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 38.4

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	26	C83	0.13	0.0061	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-100	2.4	C93	0.13	0.0058	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-101	48	C90 B	0.19	0.0050	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-102	1.7	C98	0.13	0.0057	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-103	1.3	B	0.064	0.0055	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-104	ND		0.064	0.0041	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-105	12	B	0.064	0.027	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-106	ND		0.064	0.028	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-107	2.5		0.064	0.026	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-108	1.3	C	0.13	0.028	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-109	27	C86 B	0.38	0.0048	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-110	48	C	0.13	0.0042	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-111	ND		0.064	0.0040	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-112	ND		0.064	0.0042	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-113	48	C90 B	0.19	0.0050	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-114	0.65	B	0.064	0.026	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-115	48	C110	0.13	0.0042	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-116	6.1	C85	0.19	0.0047	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-117	6.1	C85	0.19	0.0047	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-118	32	B	0.064	0.026	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-119	27	C86 B	0.38	0.0048	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-120	0.35		0.064	0.0038	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-121	ND		0.064	0.0041	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-122	0.38		0.064	0.030	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-123	0.43	B	0.064	0.027	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-124	1.3	C108	0.13	0.028	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-125	27	C86 B	0.38	0.0048	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-126	0.11	B	0.064	0.026	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-127	0.065		0.064	0.028	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-128	6.3	C B	0.13	0.010	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-129	40	C B	0.25	0.010	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-130	2.8		0.064	0.014	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-131	0.61		0.064	0.013	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-132	14		0.064	0.013	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-133	1.1		0.064	0.012	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-134	2.6	C	0.13	0.013	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-135	16	C B	0.13	0.0020	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-136	6.4	B	0.064	0.0015	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-137	1.7		0.064	0.011	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-138	40	C129 B	0.25	0.010	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-139	0.98	C B	0.13	0.011	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-140	0.98	C139 B	0.13	0.011	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-141	6.6		0.064	0.012	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-142	ND		0.064	0.013	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-143	2.6	C134	0.13	0.013	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-144	1.8		0.064	0.0019	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-145	ND		0.064	0.0015	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-146	8.3	B	0.064	0.011	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-147	34	C B	0.13	0.012	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1

Client Sample ID: 515-0to26-101918
Lab Sample ID: 580-88125-15
Date Collected: 10/19/18 13:11
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 38.4

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	0.34		0.064	0.0019	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-149	34	C147 B	0.13	0.012	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-150	0.30		0.064	0.0014	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-151	16	C135 B	0.13	0.0020	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-152	0.15		0.064	0.0014	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-153	33	C B	0.13	0.0092	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-154	1.7		0.064	0.0017	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-155	0.026	J B	0.064	0.0013	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-156	5.1	C B	0.13	0.010	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-157	5.1	C156 B	0.13	0.010	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-158	4.0		0.064	0.0081	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-159	0.33		0.064	0.0085	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-160	40	C129 B	0.25	0.010	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-161	ND		0.064	0.0084	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-162	ND		0.064	0.0083	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-163	40	C129 B	0.25	0.010	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-164	2.9		0.064	0.0090	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-165	ND		0.064	0.010	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-166	6.3	C128 B	0.13	0.010	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-167	1.7	B	0.064	0.0072	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-168	33	C153 B	0.13	0.0092	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-169	ND		0.064	0.0077	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-170	10	B	0.064	0.0021	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-171	3.4	C B	0.13	0.0021	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-172	1.7		0.064	0.0020	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-173	3.4	C171 B	0.13	0.0021	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-174	9.8	B	0.064	0.0021	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-175	0.42	B	0.064	0.0019	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-176	1.2	B	0.064	0.0013	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-177	6.8	B	0.064	0.0021	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-178	2.3		0.064	0.0020	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-179	4.4	B	0.064	0.0014	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-180	21	C B	0.13	0.0016	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-181	0.15		0.064	0.0018	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-182	0.18		0.064	0.0018	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-183	6.4	C B	0.13	0.0018	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-184	ND		0.064	0.0014	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-185	6.4	C183 B	0.13	0.0018	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-186	ND		0.064	0.0014	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-187	13	B	0.064	0.0018	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-188	0.066	B	0.064	0.0013	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-189	0.43	B	0.064	0.0046	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-190	2.1	B	0.064	0.0015	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-191	0.46		0.064	0.0015	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-192	ND		0.064	0.0016	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-193	21	C180 B	0.13	0.0016	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-194	5.9	B	0.064	0.014	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-195	2.7		0.064	0.017	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-196	2.7	B	0.064	0.0039	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1

Client Sample ID: 515-0to26-101918
Lab Sample ID: 580-88125-15

Date Collected: 10/19/18 13:11
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 38.4

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	0.20	B	0.064	0.0028	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-198	5.4	C B	0.13	0.0042	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-199	5.4	C198 B	0.13	0.0042	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-200	0.64		0.064	0.0030	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-201	0.66	B	0.064	0.0029	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-202	1.0	B	0.064	0.0033	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-203	3.4	B	0.064	0.0037	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-204	ND		0.064	0.0031	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-205	0.32	B	0.064	0.011	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-206	2.0	B	0.064	0.0088	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-207	0.23		0.064	0.0061	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-208	0.44		0.064	0.0062	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
PCB-209	0.58	B	0.064	0.0026	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
Total Monochlorobiphenyls	1.7	B	0.064	0.0038	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
Total Dichlorobiphenyls	4.5	q B	0.13	0.0041	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
Total Trichlorobiphenyls	13	q B	0.13	0.0081	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
Total Tetrachlorobiphenyls	100	q B	0.25	0.011	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
Total Pentachlorobiphenyls	280	B	0.38	0.012	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
Total Hexachlorobiphenyls	190	B	0.25	0.0080	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
Total Heptachlorobiphenyls	84	B	0.13	0.0019	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
Total Octachlorobiphenyls	23	B	0.13	0.0062	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
Total Nonachlorobiphenyls	2.7	B	0.064	0.0071	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1
Polychlorinated biphenyls, Total	710	q B	0.38	0.0068	ng/g	☼	08/20/19 08:01	08/29/19 06:01	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*61*		*30 - 140*	*08/20/19 08:01*	*08/29/19 06:01*	*1*
PCB-3L	*64*		*30 - 140*	*08/20/19 08:01*	*08/29/19 06:01*	*1*
PCB-4L	*67*		*30 - 140*	*08/20/19 08:01*	*08/29/19 06:01*	*1*
PCB-15L	*75*		*30 - 140*	*08/20/19 08:01*	*08/29/19 06:01*	*1*
PCB-19L	*82*		*30 - 140*	*08/20/19 08:01*	*08/29/19 06:01*	*1*
PCB-37L	*97*		*30 - 140*	*08/20/19 08:01*	*08/29/19 06:01*	*1*
PCB-54L	*92*		*30 - 140*	*08/20/19 08:01*	*08/29/19 06:01*	*1*
PCB-77L	*94*		*30 - 140*	*08/20/19 08:01*	*08/29/19 06:01*	*1*
PCB-81L	*90*		*30 - 140*	*08/20/19 08:01*	*08/29/19 06:01*	*1*
PCB-104L	*89*		*30 - 140*	*08/20/19 08:01*	*08/29/19 06:01*	*1*
PCB-105L	*83*		*30 - 140*	*08/20/19 08:01*	*08/29/19 06:01*	*1*
PCB-114L	*82*		*30 - 140*	*08/20/19 08:01*	*08/29/19 06:01*	*1*
PCB-118L	*84*		*30 - 140*	*08/20/19 08:01*	*08/29/19 06:01*	*1*
PCB-123L	*83*		*30 - 140*	*08/20/19 08:01*	*08/29/19 06:01*	*1*
PCB-126L	*93*		*30 - 140*	*08/20/19 08:01*	*08/29/19 06:01*	*1*
PCB-155L	*100*		*30 - 140*	*08/20/19 08:01*	*08/29/19 06:01*	*1*
PCB-156L	*86*	*C*	*30 - 140*	*08/20/19 08:01*	*08/29/19 06:01*	*1*
PCB-157L	*86*	*C156*	*30 - 140*	*08/20/19 08:01*	*08/29/19 06:01*	*1*
PCB-167L	*86*		*30 - 140*	*08/20/19 08:01*	*08/29/19 06:01*	*1*
PCB-169L	*100*		*30 - 140*	*08/20/19 08:01*	*08/29/19 06:01*	*1*
PCB-170L	*80*		*30 - 140*	*08/20/19 08:01*	*08/29/19 06:01*	*1*
PCB-188L	*82*		*30 - 140*	*08/20/19 08:01*	*08/29/19 06:01*	*1*
PCB-189L	*89*		*30 - 140*	*08/20/19 08:01*	*08/29/19 06:01*	*1*
PCB-202L	*88*		*30 - 140*	*08/20/19 08:01*	*08/29/19 06:01*	*1*
PCB-205L	*79*		*30 - 140*	*08/20/19 08:01*	*08/29/19 06:01*	*1*

Client: Pacific Groundwater Group
Job ID: 580-88125-2
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: 515-0to26-101918
Lab Sample ID: 580-88125-15
Date Collected: 10/19/18 13:11
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 38.4

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-206L	77		30 - 140	08/20/19 08:01	08/29/19 06:01	1
PCB-208L	85		30 - 140	08/20/19 08:01	08/29/19 06:01	1
PCB-209L	71		30 - 140	08/20/19 08:01	08/29/19 06:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	77		40 - 125	08/20/19 08:01	08/29/19 06:01	1
PCB-111L	90		40 - 125	08/20/19 08:01	08/29/19 06:01	1
PCB-178L	87		40 - 125	08/20/19 08:01	08/29/19 06:01	1

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88125-2

Client Sample ID: N5-0to28-101418
Date Collected: 10/14/18 16:46
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-16
Matrix: Solid
Percent Solids: 31.4

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.13	B	0.032	0.0010	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-2	0.051	B	0.032	0.0010	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-3	0.087	B	0.032	0.0011	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-4	0.52		0.064	0.0028	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-5	0.0087	J	0.032	0.0018	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-6	0.11		0.032	0.0018	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-7	0.020	J B	0.032	0.0017	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-8	0.52	B	0.064	0.0018	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-9	0.032		0.032	0.0020	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-10	0.015	J q	0.032	0.0019	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-11	0.10	B	0.064	0.0017	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-12	0.044	J C B	0.064	0.0017	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-13	0.044	J C12 B	0.064	0.0017	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-14	ND		0.032	0.0015	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-15	0.28	B	0.032	0.0017	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-16	0.55		0.032	0.0033	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-17	1.3	B	0.032	0.0026	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-18	1.2	C B	0.064	0.0022	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-19	1.2	B	0.032	0.0031	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-20	1.6	C B	0.064	0.011	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-21	0.83	C B	0.064	0.010	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-22	0.44	B	0.032	0.011	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-23	ND		0.032	0.011	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-24	0.014	J q B	0.032	0.0019	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-25	0.18	B	0.032	0.010	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-26	0.24	C B	0.064	0.011	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-27	0.24	B	0.032	0.0019	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-28	1.6	C20 B	0.064	0.011	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-29	0.24	C26 B	0.064	0.011	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-30	1.2	C18 B	0.064	0.0022	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-31	1.2	B	0.064	0.010	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-32	0.81	B	0.032	0.0017	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-33	0.83	C21 B	0.064	0.010	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-34	ND		0.032	0.012	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-35	0.020	J q	0.032	0.012	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-36	ND		0.032	0.010	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-37	0.45	B	0.032	0.011	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-38	ND		0.032	0.011	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-39	ND		0.032	0.010	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-40	2.0	C	0.095	0.0081	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-41	2.0	C40	0.095	0.0081	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-42	0.83		0.032	0.0086	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-43	0.22	C	0.064	0.0075	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-44	13	C B	0.095	0.0072	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-45	3.6	C B	0.064	0.0084	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-46	0.18		0.032	0.0098	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-47	13	C44 B	0.095	0.0072	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-48	0.43		0.032	0.0079	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-49	5.9	C B	0.064	0.0066	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2

Client Sample ID: N5-0to28-101418
Lab Sample ID: 580-88125-16
Date Collected: 10/14/18 16:46
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 31.4

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	2.0	C B	0.064	0.0080	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-51	3.6	C45 B	0.064	0.0084	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-52	20	B	0.032	0.0083	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-53	2.0	C50 B	0.064	0.0080	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-54	0.53		0.032	0.0016	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-55	0.037	q	0.032	0.0058	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-56	1.5		0.032	0.0059	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-57	ND		0.032	0.0058	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-58	ND		0.032	0.0056	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-59	0.33	C	0.095	0.0055	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-60	0.53		0.032	0.0056	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-61	14	C B	0.13	0.0055	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-62	0.33	C59	0.095	0.0055	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-63	0.18		0.032	0.0051	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-64	1.9		0.032	0.0053	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-65	13	C44 B	0.095	0.0072	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-66	4.3		0.032	0.0058	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-67	0.099		0.032	0.0053	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-68	0.13	B	0.032	0.0050	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-69	5.9	C49 B	0.064	0.0066	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-70	14	C61 B	0.13	0.0055	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-71	2.0	C40	0.095	0.0081	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-72	0.12		0.032	0.0057	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-73	0.22	C43	0.064	0.0075	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-74	14	C61 B	0.13	0.0055	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-75	0.33	C59	0.095	0.0055	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-76	14	C61 B	0.13	0.0055	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-77	0.32	B	0.032	0.0055	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-78	ND		0.032	0.0057	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-79	0.28		0.032	0.0048	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-80	ND		0.032	0.0051	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-81	0.039	B	0.032	0.0058	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-82	4.2		0.032	0.0024	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-83	22	C	0.064	0.0022	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-84	10		0.032	0.0024	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-85	5.7	C	0.095	0.0017	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-86	26	C B	0.19	0.0017	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-87	26	C86 B	0.19	0.0017	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-88	6.1	C	0.064	0.0021	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-89	0.29		0.032	0.0023	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-90	44	C B	0.095	0.0018	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-91	6.1	C88	0.064	0.0021	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-92	8.8		0.032	0.0022	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-93	1.8	C	0.064	0.0021	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-94	0.49		0.032	0.0023	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-95	34	B	0.032	0.0021	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-96	0.39		0.032	0.0017	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-97	26	C86 B	0.19	0.0017	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-98	1.4	C	0.064	0.0021	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2

Client Sample ID: N5-0to28-101418
Lab Sample ID: 580-88125-16
Date Collected: 10/14/18 16:46
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 31.4

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	22	C83	0.064	0.0022	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-100	1.8	C93	0.064	0.0021	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-101	44	C90 B	0.095	0.0018	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-102	1.4	C98	0.064	0.0021	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-103	0.86	B	0.032	0.0020	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-104	ND		0.032	0.0015	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-105	10	B	0.032	0.021	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-106	ND		0.032	0.021	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-107	2.0		0.032	0.020	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-108	1.2	C	0.064	0.021	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-109	26	C86 B	0.19	0.0017	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-110	45	C	0.064	0.0015	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-111	ND		0.032	0.0014	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-112	ND		0.032	0.0015	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-113	44	C90 B	0.095	0.0018	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-114	0.67	B	0.032	0.019	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-115	45	C110	0.064	0.0015	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-116	5.7	C85	0.095	0.0017	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-117	5.7	C85	0.095	0.0017	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-118	28	B	0.032	0.019	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-119	26	C86 B	0.19	0.0017	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-120	0.21		0.032	0.0014	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-121	ND		0.032	0.0015	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-122	0.34		0.032	0.023	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-123	0.38	B	0.032	0.020	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-124	1.2	C108	0.064	0.021	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-125	26	C86 B	0.19	0.0017	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-126	0.068	B	0.032	0.020	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-127	0.066		0.032	0.021	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-128	5.8	C B	0.064	0.0054	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-129	37	C B	0.13	0.0055	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-130	2.6		0.032	0.0072	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-131	0.63		0.032	0.0070	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-132	13		0.032	0.0068	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-133	0.73		0.032	0.0066	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-134	2.4	C	0.064	0.0070	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-135	13	C B	0.064	0.0023	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-136	5.5	B	0.032	0.0018	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-137	1.8		0.032	0.0057	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-138	37	C129 B	0.13	0.0055	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-139	0.82	C B	0.064	0.0060	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-140	0.82	C139 B	0.064	0.0060	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-141	6.5		0.032	0.0062	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-142	ND		0.032	0.0070	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-143	2.4	C134	0.064	0.0070	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-144	1.8		0.032	0.0022	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-145	0.034		0.032	0.0017	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-146	6.1	B	0.032	0.0059	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-147	29	C B	0.064	0.0061	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2

Client Sample ID: N5-0to28-101418
Lab Sample ID: 580-88125-16
Date Collected: 10/14/18 16:46
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 31.4

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	0.18		0.032	0.0023	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-149	29	C147 B	0.064	0.0061	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-150	0.20		0.032	0.0016	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-151	13	C135 B	0.064	0.0023	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-152	0.11		0.032	0.0016	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-153	29	C B	0.064	0.0049	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-154	1.0		0.032	0.0020	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-155	0.019	J B	0.032	0.0016	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-156	5.1	C B	0.064	0.0057	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-157	5.1	C156 B	0.064	0.0057	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-158	4.0		0.032	0.0043	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-159	0.26		0.032	0.0045	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-160	37	C129 B	0.13	0.0055	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-161	ND		0.032	0.0045	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-162	0.13		0.032	0.0044	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-163	37	C129 B	0.13	0.0055	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-164	2.7		0.032	0.0048	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-165	ND		0.032	0.0053	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-166	5.8	C128 B	0.064	0.0054	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-167	1.6	B	0.032	0.0038	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-168	29	C153 B	0.064	0.0049	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-169	ND		0.032	0.0040	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-170	8.1	B	0.032	0.0014	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-171	2.9	C B	0.064	0.0015	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-172	1.4		0.032	0.0015	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-173	2.9	C171 B	0.064	0.0015	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-174	8.2	B	0.032	0.0015	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-175	0.36	B	0.032	0.0013	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-176	1.0	B	0.032	0.00095	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-177	4.9	B	0.032	0.0015	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-178	1.7		0.032	0.0014	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-179	3.4	B	0.032	0.0010	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-180	17	C B	0.064	0.0012	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-181	0.14		0.032	0.0013	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-182	0.10		0.032	0.0013	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-183	5.4	C B	0.064	0.0013	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-184	ND		0.032	0.0010	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-185	5.4	C183 B	0.064	0.0013	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-186	ND		0.032	0.0010	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-187	9.4	B	0.032	0.0013	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-188	ND		0.032	0.00095	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-189	0.32	B	0.032	0.0024	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-190	1.7	B	0.032	0.0010	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-191	0.38		0.032	0.0010	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-192	ND		0.032	0.0011	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-193	17	C180 B	0.064	0.0012	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-194	3.2	B	0.032	0.0066	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-195	1.4		0.032	0.0078	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-196	1.8	B	0.032	0.0011	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2

Client Sample ID: N5-0to28-101418
Lab Sample ID: 580-88125-16

Date Collected: 10/14/18 16:46
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 31.4

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	0.13	B	0.032	0.00083	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-198	3.7	C B	0.064	0.0012	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-199	3.7	C198 B	0.064	0.0012	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-200	0.46		0.032	0.00089	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-201	0.47	B	0.032	0.00085	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-202	0.69	B	0.032	0.00095	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-203	2.4	B	0.032	0.0011	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-204	ND		0.032	0.00091	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-205	0.17	B	0.032	0.0050	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-206	1.3	B	0.032	0.0074	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-207	0.17		0.032	0.0054	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-208	0.38		0.032	0.0056	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
PCB-209	0.47	B	0.032	0.0012	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
Total Monochlorobiphenyls	0.27	B	0.032	0.0010	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
Total Dichlorobiphenyls	1.6	q B	0.064	0.0019	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
Total Trichlorobiphenyls	10	q B	0.064	0.0078	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
Total Tetrachlorobiphenyls	72	q B	0.13	0.0062	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
Total Pentachlorobiphenyls	250	B	0.19	0.0079	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
Total Hexachlorobiphenyls	170	B	0.13	0.0046	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
Total Heptachlorobiphenyls	66	B	0.064	0.0013	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
Total Octachlorobiphenyls	14	B	0.064	0.0025	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
Total Nonachlorobiphenyls	1.9	B	0.032	0.0061	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2
Polychlorinated biphenyls, Total	590	q B	0.19	0.0044	ng/g	☼	08/20/19 08:01	08/30/19 06:21	2

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*47*		*30 - 140*	*08/20/19 08:01*	*08/30/19 06:21*	*2*
PCB-3L	*51*		*30 - 140*	*08/20/19 08:01*	*08/30/19 06:21*	*2*
PCB-4L	*49*		*30 - 140*	*08/20/19 08:01*	*08/30/19 06:21*	*2*
PCB-15L	*56*		*30 - 140*	*08/20/19 08:01*	*08/30/19 06:21*	*2*
PCB-19L	*50*		*30 - 140*	*08/20/19 08:01*	*08/30/19 06:21*	*2*
PCB-37L	*63*		*30 - 140*	*08/20/19 08:01*	*08/30/19 06:21*	*2*
PCB-54L	*64*		*30 - 140*	*08/20/19 08:01*	*08/30/19 06:21*	*2*
PCB-77L	*68*		*30 - 140*	*08/20/19 08:01*	*08/30/19 06:21*	*2*
PCB-81L	*65*		*30 - 140*	*08/20/19 08:01*	*08/30/19 06:21*	*2*
PCB-104L	*58*		*30 - 140*	*08/20/19 08:01*	*08/30/19 06:21*	*2*
PCB-105L	*58*		*30 - 140*	*08/20/19 08:01*	*08/30/19 06:21*	*2*
PCB-114L	*58*		*30 - 140*	*08/20/19 08:01*	*08/30/19 06:21*	*2*
PCB-118L	*60*		*30 - 140*	*08/20/19 08:01*	*08/30/19 06:21*	*2*
PCB-123L	*59*		*30 - 140*	*08/20/19 08:01*	*08/30/19 06:21*	*2*
PCB-126L	*66*		*30 - 140*	*08/20/19 08:01*	*08/30/19 06:21*	*2*
PCB-155L	*69*		*30 - 140*	*08/20/19 08:01*	*08/30/19 06:21*	*2*
PCB-156L	*62*	*C*	*30 - 140*	*08/20/19 08:01*	*08/30/19 06:21*	*2*
PCB-157L	*62*	*C156*	*30 - 140*	*08/20/19 08:01*	*08/30/19 06:21*	*2*
PCB-167L	*62*		*30 - 140*	*08/20/19 08:01*	*08/30/19 06:21*	*2*
PCB-169L	*72*		*30 - 140*	*08/20/19 08:01*	*08/30/19 06:21*	*2*
PCB-170L	*59*		*30 - 140*	*08/20/19 08:01*	*08/30/19 06:21*	*2*
PCB-188L	*57*		*30 - 140*	*08/20/19 08:01*	*08/30/19 06:21*	*2*
PCB-189L	*63*		*30 - 140*	*08/20/19 08:01*	*08/30/19 06:21*	*2*
PCB-202L	*61*		*30 - 140*	*08/20/19 08:01*	*08/30/19 06:21*	*2*
PCB-205L	*58*		*30 - 140*	*08/20/19 08:01*	*08/30/19 06:21*	*2*

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88125-2

Client Sample ID: N5-0to28-101418
Date Collected: 10/14/18 16:46
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-16
Matrix: Solid
Percent Solids: 31.4

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-206L	57		30 - 140	08/20/19 08:01	08/30/19 06:21	2
PCB-208L	59		30 - 140	08/20/19 08:01	08/30/19 06:21	2
PCB-209L	48		30 - 140	08/20/19 08:01	08/30/19 06:21	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	79		40 - 125	08/20/19 08:01	08/30/19 06:21	2
PCB-111L	92		40 - 125	08/20/19 08:01	08/30/19 06:21	2
PCB-178L	88		40 - 125	08/20/19 08:01	08/30/19 06:21	2

Client Sample ID: N7-0to27-101418
Date Collected: 10/14/18 15:10
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-17
Matrix: Solid
Percent Solids: 34.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.062	B	0.014	0.00059	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-2	0.050	B	0.014	0.00061	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-3	0.051	B	0.014	0.00062	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-4	0.18		0.028	0.0025	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-5	ND		0.014	0.0016	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-6	0.031		0.014	0.0016	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-7	0.0055	J q B	0.014	0.0015	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-8	0.097	B	0.028	0.0016	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-9	0.0067	J q	0.014	0.0018	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-10	0.0072	J	0.014	0.0017	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-11	0.093	B	0.028	0.0015	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-12	0.025	J C B	0.028	0.0015	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-13	0.025	J C12 B	0.028	0.0015	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-14	ND		0.014	0.0013	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-15	0.11	B	0.014	0.0015	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-16	0.069		0.014	0.0019	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-17	0.76	B	0.014	0.0015	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-18	0.19	C B	0.028	0.0013	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-19	0.71	B	0.014	0.0017	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-20	0.53	C B	0.028	0.0025	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-21	0.22	C B	0.028	0.0024	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-22	0.070	B	0.014	0.0026	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-23	ND		0.014	0.0026	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-24	ND		0.014	0.0011	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-25	0.092	B	0.014	0.0024	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-26	0.065	C B	0.028	0.0025	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-27	0.14	B	0.014	0.0011	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-28	0.53	C20 B	0.028	0.0025	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-29	0.065	C26 B	0.028	0.0025	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-30	0.19	C18 B	0.028	0.0013	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-31	0.24	B	0.028	0.0024	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-32	0.62	B	0.014	0.00097	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-33	0.22	C21 B	0.028	0.0024	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-34	0.0055	J	0.014	0.0027	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-35	0.0088	J	0.014	0.0027	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-36	ND		0.014	0.0024	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-37	0.11	B	0.014	0.0025	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-38	ND		0.014	0.0025	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-39	ND		0.014	0.0023	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-40	1.1	C	0.043	0.0045	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-41	1.1	C40	0.043	0.0045	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-42	0.30		0.014	0.0048	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-43	0.21	C	0.028	0.0041	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-44	8.0	C B	0.043	0.0040	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-45	4.1	C B	0.028	0.0047	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-46	0.13		0.014	0.0054	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-47	8.0	C44 B	0.043	0.0040	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-48	0.11		0.014	0.0044	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-49	3.1	C B	0.028	0.0036	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1

Client Sample ID: N7-0to27-101418
Lab Sample ID: 580-88125-17
Date Collected: 10/14/18 15:10
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 34.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	1.6	C B	0.028	0.0044	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-51	4.1	C45 B	0.028	0.0047	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-52	3.7	B	0.014	0.0046	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-53	1.6	C50 B	0.028	0.0044	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-54	0.65		0.014	0.0012	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-55	ND		0.014	0.0032	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-56	0.35		0.014	0.0033	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-57	ND		0.014	0.0032	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-58	ND		0.014	0.0031	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-59	0.27	C	0.043	0.0030	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-60	0.10		0.014	0.0031	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-61	2.5	C B	0.057	0.0030	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-62	0.27	C59	0.043	0.0030	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-63	0.078		0.014	0.0028	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-64	0.42		0.014	0.0029	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-65	8.0	C44 B	0.043	0.0040	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-66	1.3		0.014	0.0032	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-67	0.060		0.014	0.0030	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-68	0.11	B	0.014	0.0028	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-69	3.1	C49 B	0.028	0.0036	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-70	2.5	C61 B	0.057	0.0030	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-71	1.1	C40	0.043	0.0045	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-72	0.066		0.014	0.0031	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-73	0.21	C43	0.028	0.0041	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-74	2.5	C61 B	0.057	0.0030	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-75	0.27	C59	0.043	0.0030	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-76	2.5	C61 B	0.057	0.0030	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-77	0.13	B	0.014	0.0030	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-78	ND		0.014	0.0031	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-79	0.073		0.014	0.0027	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-80	0.0035	J q	0.014	0.0028	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-81	0.0084	J q B	0.014	0.0032	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-82	0.85		0.014	0.0022	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-83	7.0	C	0.028	0.0020	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-84	2.3		0.014	0.0022	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-85	1.3	C	0.043	0.0016	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-86	5.5	C B	0.085	0.0016	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-87	5.5	C86 B	0.085	0.0016	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-88	2.8	C	0.028	0.0019	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-89	0.077		0.014	0.0021	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-90	13	C B	0.043	0.0017	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-91	2.8	C88	0.028	0.0019	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-92	2.9		0.014	0.0020	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-93	1.7	C	0.028	0.0020	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-94	0.40		0.014	0.0021	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-95	9.2	B	0.014	0.0020	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-96	0.27		0.014	0.0016	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-97	5.5	C86 B	0.085	0.0016	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-98	0.74	C	0.028	0.0019	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88125-2

Client Sample ID: N7-0to27-101418
Date Collected: 10/14/18 15:10
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-17
Matrix: Solid
Percent Solids: 34.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	7.0	C83	0.028	0.0020	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-100	1.7	C93	0.028	0.0020	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-101	13	C90 B	0.043	0.0017	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-102	0.74	C98	0.028	0.0019	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-103	0.71	B	0.014	0.0019	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-104	0.13		0.014	0.0014	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-105	1.9	B	0.014	0.014	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-106	ND		0.014	0.014	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-107	0.57		0.014	0.013	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-108	0.23	C	0.028	0.014	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-109	5.5	C86 B	0.085	0.0016	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-110	11	C	0.028	0.0014	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-111	0.055		0.014	0.0013	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-112	ND		0.014	0.0014	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-113	13	C90 B	0.043	0.0017	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-114	0.11	B	0.014	0.012	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-115	11	C110	0.028	0.0014	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-116	1.3	C85	0.043	0.0016	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-117	1.3	C85	0.043	0.0016	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-118	5.9	B	0.014	0.013	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-119	5.5	C86 B	0.085	0.0016	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-120	0.13		0.014	0.0013	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-121	0.050		0.014	0.0014	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-122	0.071	G	0.015	0.015	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-123	0.097	B	0.014	0.013	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-124	0.23	C108	0.028	0.014	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-125	5.5	C86 B	0.085	0.0016	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-126	0.029	B	0.014	0.013	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-127	ND		0.014	0.013	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-128	2.0	C B	0.028	0.0043	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-129	17	C B	0.057	0.0044	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-130	1.0		0.014	0.0057	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-131	0.18		0.014	0.0055	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-132	5.6		0.014	0.0054	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-133	0.47		0.014	0.0052	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-134	1.0	C	0.028	0.0056	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-135	8.5	C B	0.028	0.0014	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-136	2.9	B	0.014	0.0010	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-137	0.47		0.014	0.0045	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-138	17	C129 B	0.057	0.0044	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-139	0.35	C B	0.028	0.0047	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-140	0.35	C139 B	0.028	0.0047	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-141	3.4		0.014	0.0049	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-142	ND		0.014	0.0055	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-143	1.0	C134	0.028	0.0056	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-144	0.89		0.014	0.0013	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-145	ND		0.014	0.0010	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-146	3.9	B	0.014	0.0047	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-147	17	C B	0.028	0.0049	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1

Client Sample ID: N7-0to27-101418
Lab Sample ID: 580-88125-17
Date Collected: 10/14/18 15:10
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 34.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	0.14		0.014	0.0013	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-149	17	C147 B	0.028	0.0049	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-150	0.16		0.014	0.00097	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-151	8.5	C135 B	0.028	0.0014	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-152	0.082		0.014	0.00095	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-153	17	C B	0.028	0.0039	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-154	0.79		0.014	0.0012	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-155	0.015	B	0.014	0.00092	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-156	1.7	C B	0.028	0.0044	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-157	1.7	C156 B	0.028	0.0044	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-158	1.6		0.014	0.0034	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-159	0.23		0.014	0.0036	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-160	17	C129 B	0.057	0.0044	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-161	ND		0.014	0.0035	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-162	ND		0.014	0.0035	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-163	17	C129 B	0.057	0.0044	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-164	1.4		0.014	0.0038	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-165	ND		0.014	0.0042	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-166	2.0	C128 B	0.028	0.0043	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-167	0.62	B	0.014	0.0030	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-168	17	C153 B	0.028	0.0039	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-169	ND		0.014	0.0033	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-170	7.6	B	0.014	0.0011	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-171	2.6	C B	0.028	0.0011	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-172	1.3		0.014	0.0011	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-173	2.6	C171 B	0.028	0.0011	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-174	8.0	B	0.014	0.0011	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-175	0.33	B	0.014	0.0010	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-176	0.97	B	0.014	0.00070	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-177	5.0	B	0.014	0.0011	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-178	1.6		0.014	0.0010	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-179	3.4	B	0.014	0.00076	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-180	16	C B	0.028	0.00087	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-181	0.073		0.014	0.00097	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-182	0.10		0.014	0.00093	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-183	5.4	C B	0.028	0.00094	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-184	ND		0.014	0.00075	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-185	5.4	C183 B	0.028	0.00094	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-186	ND		0.014	0.00075	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-187	9.5	B	0.014	0.00096	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-188	ND		0.014	0.00068	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-189	0.28	B	0.014	0.0034	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-190	1.6	B	0.014	0.00078	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-191	0.36		0.014	0.00077	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-192	ND		0.014	0.00083	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-193	16	C180 B	0.028	0.00087	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-194	3.7	G B	0.019	0.019	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-195	1.8	G	0.023	0.023	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-196	1.8	B	0.014	0.0025	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1

Client Sample ID: N7-0to27-101418
Lab Sample ID: 580-88125-17
Date Collected: 10/14/18 15:10
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 34.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	0.10	q B	0.014	0.0018	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-198	3.6	C B	0.028	0.0027	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-199	3.6	C198 B	0.028	0.0027	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-200	0.48		0.014	0.0020	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-201	0.45	B	0.014	0.0019	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-202	0.67	B	0.014	0.0021	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-203	2.3	B	0.014	0.0024	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-204	ND		0.014	0.0020	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-205	0.20	G B	0.015	0.015	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-206	1.7	q B	0.014	0.0056	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-207	0.16		0.014	0.0039	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-208	0.30		0.014	0.0040	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
PCB-209	0.47	B	0.014	0.00093	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
Total Monochlorobiphenyls	0.16	B	0.014	0.00061	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
Total Dichlorobiphenyls	0.56	q B	0.028	0.0017	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
Total Trichlorobiphenyls	3.8	q B	0.028	0.0021	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
Total Tetrachlorobiphenyls	28	q B	0.057	0.0035	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
Total Pentachlorobiphenyls	69	B	0.085	0.0055	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
Total Hexachlorobiphenyls	88	B	0.057	0.0035	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
Total Heptachlorobiphenyls	64	B	0.028	0.0010	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
Total Octachlorobiphenyls	15	q B	0.028	0.0067	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
Total Nonachlorobiphenyls	2.2	q B	0.014	0.0045	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1
Polychlorinated biphenyls, Total	270	q B	0.085	0.0033	ng/g	☼	08/20/19 08:01	08/30/19 07:23	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*65*		*30 - 140*	*08/20/19 08:01*	*08/30/19 07:23*	*1*
PCB-3L	*67*		*30 - 140*	*08/20/19 08:01*	*08/30/19 07:23*	*1*
PCB-4L	*67*		*30 - 140*	*08/20/19 08:01*	*08/30/19 07:23*	*1*
PCB-15L	*76*		*30 - 140*	*08/20/19 08:01*	*08/30/19 07:23*	*1*
PCB-19L	*67*		*30 - 140*	*08/20/19 08:01*	*08/30/19 07:23*	*1*
PCB-37L	*89*		*30 - 140*	*08/20/19 08:01*	*08/30/19 07:23*	*1*
PCB-54L	*84*		*30 - 140*	*08/20/19 08:01*	*08/30/19 07:23*	*1*
PCB-77L	*90*		*30 - 140*	*08/20/19 08:01*	*08/30/19 07:23*	*1*
PCB-81L	*85*		*30 - 140*	*08/20/19 08:01*	*08/30/19 07:23*	*1*
PCB-104L	*80*		*30 - 140*	*08/20/19 08:01*	*08/30/19 07:23*	*1*
PCB-105L	*77*		*30 - 140*	*08/20/19 08:01*	*08/30/19 07:23*	*1*
PCB-114L	*78*		*30 - 140*	*08/20/19 08:01*	*08/30/19 07:23*	*1*
PCB-118L	*80*		*30 - 140*	*08/20/19 08:01*	*08/30/19 07:23*	*1*
PCB-123L	*78*		*30 - 140*	*08/20/19 08:01*	*08/30/19 07:23*	*1*
PCB-126L	*87*		*30 - 140*	*08/20/19 08:01*	*08/30/19 07:23*	*1*
PCB-155L	*91*		*30 - 140*	*08/20/19 08:01*	*08/30/19 07:23*	*1*
PCB-156L	*83*	*C*	*30 - 140*	*08/20/19 08:01*	*08/30/19 07:23*	*1*
PCB-157L	*83*	*C156*	*30 - 140*	*08/20/19 08:01*	*08/30/19 07:23*	*1*
PCB-167L	*81*		*30 - 140*	*08/20/19 08:01*	*08/30/19 07:23*	*1*
PCB-169L	*92*		*30 - 140*	*08/20/19 08:01*	*08/30/19 07:23*	*1*
PCB-170L	*75*		*30 - 140*	*08/20/19 08:01*	*08/30/19 07:23*	*1*
PCB-188L	*79*		*30 - 140*	*08/20/19 08:01*	*08/30/19 07:23*	*1*
PCB-189L	*85*		*30 - 140*	*08/20/19 08:01*	*08/30/19 07:23*	*1*
PCB-202L	*85*		*30 - 140*	*08/20/19 08:01*	*08/30/19 07:23*	*1*
PCB-205L	*73*		*30 - 140*	*08/20/19 08:01*	*08/30/19 07:23*	*1*

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88125-2

Client Sample ID: N7-0to27-101418
Date Collected: 10/14/18 15:10
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-17
Matrix: Solid
Percent Solids: 34.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-206L	71		30 - 140	08/20/19 08:01	08/30/19 07:23	1
PCB-208L	77		30 - 140	08/20/19 08:01	08/30/19 07:23	1
PCB-209L	61		30 - 140	08/20/19 08:01	08/30/19 07:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	83		40 - 125	08/20/19 08:01	08/30/19 07:23	1
PCB-111L	97		40 - 125	08/20/19 08:01	08/30/19 07:23	1
PCB-178L	93		40 - 125	08/20/19 08:01	08/30/19 07:23	1

Client Sample ID: O7-0to27-101918
Lab Sample ID: 580-88125-18

Date Collected: 10/19/18 15:36
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 33.9

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.057	B	0.014	0.00048	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-2	0.051	B	0.014	0.00050	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-3	0.044	B	0.014	0.00052	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-4	0.13		0.029	0.00089	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-5	0.0024	J q	0.014	0.00057	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-6	0.030		0.014	0.00057	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-7	0.0059	J B q	0.014	0.00055	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-8	0.10	B	0.029	0.00056	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-9	0.0081	J	0.014	0.00063	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-10	0.0065	J	0.014	0.00060	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-11	0.16	B	0.029	0.00054	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-12	0.028	J C B	0.029	0.00054	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-13	0.028	J C12 B	0.029	0.00054	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-14	0.00068	J q	0.014	0.00048	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-15	0.11	B	0.014	0.00053	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-16	0.071		0.014	0.00062	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-17	0.28	B	0.014	0.00049	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-18	0.17	C B	0.029	0.00042	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-19	0.34	B	0.014	0.00059	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-20	0.43	C B	0.029	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-21	0.18	C B	0.029	0.0022	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-22	0.074	B	0.014	0.0024	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-23	ND		0.014	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-24	0.0022	J B q	0.014	0.00036	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-25	0.072	B	0.014	0.0022	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-26	0.081	C B	0.029	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-27	0.066	B	0.014	0.00035	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-28	0.43	B C20	0.029	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-29	0.081	C26 B	0.029	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-30	0.17	C18 B	0.029	0.00042	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-31	0.23	B	0.029	0.0022	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-32	0.29	B	0.014	0.00033	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-33	0.18	B C21	0.029	0.0022	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-34	0.0035	J	0.014	0.0024	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-35	0.041		0.014	0.0024	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-36	0.0089	J q	0.014	0.0022	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-37	0.11	B	0.014	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-38	ND		0.014	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-39	ND		0.014	0.0021	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-40	0.80	C	0.043	0.0034	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-41	0.80	C40	0.043	0.0034	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-42	0.28		0.014	0.0036	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-43	0.11	C q	0.029	0.0031	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-44	5.0	C B	0.043	0.0030	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-45	2.1	C B	0.029	0.0035	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-46	0.095		0.014	0.0041	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-47	5.0	B C44	0.043	0.0030	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-48	0.095		0.014	0.0033	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-49	2.1	C B	0.029	0.0027	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1

Client Sample ID: O7-0to27-101918
Lab Sample ID: 580-88125-18
Date Collected: 10/19/18 15:36
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 33.9

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	0.99	C B	0.029	0.0033	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-51	2.1	C45 B	0.029	0.0035	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-52	3.5	B	0.014	0.0034	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-53	0.99	C50 B	0.029	0.0033	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-54	0.27		0.014	0.00046	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-55	ND		0.014	0.0024	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-56	0.32		0.014	0.0024	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-57	ND		0.014	0.0024	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-58	ND		0.014	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-59	0.16	C	0.043	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-60	0.093		0.014	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-61	2.4	C B	0.058	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-62	0.16	C59	0.043	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-63	0.055		0.014	0.0021	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-64	0.40		0.014	0.0022	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-65	5.0	B C44	0.043	0.0030	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-66	1.2		0.014	0.0024	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-67	0.046		0.014	0.0022	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-68	0.072	B	0.014	0.0021	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-69	2.1	B C49	0.029	0.0027	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-70	2.4	C61 B	0.058	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-71	0.80	C40	0.043	0.0034	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-72	0.054		0.014	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-73	0.11	C43 q	0.029	0.0031	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-74	2.4	C61 B	0.058	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-75	0.16	C59	0.043	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-76	2.4	C61 B	0.058	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-77	0.11	B	0.014	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-78	ND		0.014	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-79	0.052		0.014	0.0020	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-80	ND		0.014	0.0021	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-81	0.0040	J B q	0.014	0.0024	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-82	0.71		0.014	0.0010	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-83	5.1	C	0.029	0.00096	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-84	2.0		0.014	0.0010	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-85	1.0	C	0.043	0.00074	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-86	4.4	C B	0.087	0.00075	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-87	4.4	B C86	0.087	0.00075	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-88	1.8	C	0.029	0.00090	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-89	0.058		0.014	0.0010	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-90	9.5	C B	0.043	0.00079	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-91	1.8	C88	0.029	0.00090	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-92	2.0		0.014	0.00095	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-93	0.93	C	0.029	0.00092	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-94	0.24		0.014	0.0010	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-95	7.6	B	0.014	0.00094	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-96	0.17		0.014	0.00073	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-97	4.4	B C86	0.087	0.00075	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-98	0.51	C	0.029	0.00091	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1

Client Sample ID: O7-0to27-101918
Lab Sample ID: 580-88125-18
Date Collected: 10/19/18 15:36
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 33.9

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	5.1	C83	0.029	0.00096	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-100	0.93	C93	0.029	0.00092	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-101	9.5	B C90	0.043	0.00079	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-102	0.51	C98	0.029	0.00091	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-103	0.44	B	0.014	0.00087	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-104	0.069		0.014	0.00065	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-105	1.6	B	0.014	0.011	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-106	ND		0.014	0.012	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-107	0.45		0.014	0.011	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-108	0.19	C	0.029	0.012	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-109	4.4	B C86	0.087	0.00075	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-110	8.8	C	0.029	0.00067	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-111	ND		0.014	0.00063	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-112	ND		0.014	0.00066	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-113	9.5	B C90	0.043	0.00079	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-114	0.092	B	0.014	0.011	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-115	8.8	C110	0.029	0.00067	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-116	1.0	C85	0.043	0.00074	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-117	1.0	C85	0.043	0.00074	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-118	5.1	B	0.014	0.011	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-119	4.4	B C86	0.087	0.00075	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-120	0.089		0.014	0.00060	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-121	ND		0.014	0.00064	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-122	0.060		0.014	0.013	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-123	0.064	B	0.014	0.011	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-124	0.19	C108	0.029	0.012	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-125	4.4	B C86	0.087	0.00075	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-126	0.018	B	0.014	0.011	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-127	ND		0.014	0.012	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-128	1.7	C B	0.029	0.0028	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-129	14	C B	0.058	0.0029	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-130	0.85		0.014	0.0038	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-131	0.15		0.014	0.0036	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-132	4.6		0.014	0.0036	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-133	0.33		0.014	0.0034	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-134	0.83	C	0.029	0.0037	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-135	6.0	C B	0.029	0.00043	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-136	2.2	B	0.014	0.00032	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-137	0.36		0.014	0.0030	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-138	14	B C129	0.058	0.0029	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-139	0.25	C B	0.029	0.0031	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-140	0.25	B C139	0.029	0.0031	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-141	2.7		0.014	0.0033	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-142	ND		0.014	0.0036	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-143	0.83	C134	0.029	0.0037	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-144	0.68		0.014	0.00040	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-145	0.0095	J q	0.014	0.00031	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-146	2.8	B	0.014	0.0031	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-147	13	C B	0.029	0.0032	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88125-2

Client Sample ID: O7-0to27-101918
Date Collected: 10/19/18 15:36
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-18
Matrix: Solid
Percent Solids: 33.9

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	0.097		0.014	0.00041	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-149	13	B C147	0.029	0.0032	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-150	0.10		0.014	0.00030	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-151	6.0	C135 B	0.029	0.00043	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-152	0.054		0.014	0.00029	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-153	13	C B	0.029	0.0026	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-154	0.51		0.014	0.00036	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-155	0.011	J B	0.014	0.00028	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-156	1.3	C B	0.029	0.0028	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-157	1.3	C156 B	0.029	0.0028	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-158	1.3		0.014	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-159	0.18		0.014	0.0024	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-160	14	B C129	0.058	0.0029	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-161	ND		0.014	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-162	0.034		0.014	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-163	14	B C129	0.058	0.0029	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-164	1.1		0.014	0.0025	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-165	ND		0.014	0.0028	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-166	1.7	C128 B	0.029	0.0028	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-167	0.46	B	0.014	0.0020	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-168	13	B C153	0.029	0.0026	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-169	ND		0.014	0.0022	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-170	6.7	B	0.014	0.00066	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-171	2.0	C B	0.029	0.00065	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-172	1.1		0.014	0.00063	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-173	2.0	C171 B	0.029	0.00065	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-174	6.4	B	0.014	0.00065	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-175	0.26	B	0.014	0.00058	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-176	0.75	B	0.014	0.00041	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-177	3.8	B	0.014	0.00066	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-178	1.2		0.014	0.00061	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-179	2.5	B	0.014	0.00044	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-180	14	C B	0.029	0.00051	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-181	ND		0.014	0.00056	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-182	0.063		0.014	0.00054	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-183	4.3	C B	0.029	0.00055	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-184	ND		0.014	0.00044	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-185	4.3	B C183	0.029	0.00055	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-186	ND		0.014	0.00043	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-187	7.4	B	0.014	0.00056	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-188	ND		0.014	0.00040	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-189	0.24	B	0.014	0.0022	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-190	1.3	B	0.014	0.00045	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-191	0.28		0.014	0.00045	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-192	ND		0.014	0.00048	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-193	14	C180 B	0.029	0.00051	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-194	3.3	B	0.014	0.0095	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-195	1.6		0.014	0.011	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-196	1.6	B	0.014	0.00073	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1

Client Sample ID: O7-0to27-101918
Lab Sample ID: 580-88125-18

Date Collected: 10/19/18 15:36
Matrix: Solid

Date Received: 07/26/19 13:10
Percent Solids: 33.9

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	0.090	B q	0.014	0.00053	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-198	3.1	C B	0.029	0.00078	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-199	3.1	C198 B	0.029	0.00078	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-200	0.40		0.014	0.00056	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-201	0.38	B	0.014	0.00054	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-202	0.57	B	0.014	0.00060	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-203	2.1	B	0.014	0.00069	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-204	ND		0.014	0.00058	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-205	0.16	B	0.014	0.0071	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-206	1.5	B q	0.014	0.0033	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-207	0.14		0.014	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-208	0.32		0.014	0.0024	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
PCB-209	0.42	B	0.014	0.00074	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
Total Monochlorobiphenyls	0.15	B	0.014	0.00050	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
Total Dichlorobiphenyls	0.58	B q	0.029	0.00059	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
Total Trichlorobiphenyls	2.4	B q	0.029	0.0016	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
Total Tetrachlorobiphenyls	20	B q	0.058	0.0026	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
Total Pentachlorobiphenyls	53	B	0.087	0.0043	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
Total Hexachlorobiphenyls	69	B q	0.058	0.0022	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
Total Heptachlorobiphenyls	52	B	0.029	0.00061	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
Total Octachlorobiphenyls	13	B q	0.029	0.0030	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
Total Nonachlorobiphenyls	2.0	B q	0.014	0.0027	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1
Polychlorinated biphenyls, Total	210	B q	0.087	0.0020	ng/g	☼	08/20/19 08:01	08/29/19 21:02	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*82*		*30 - 140*	*08/20/19 08:01*	*08/29/19 21:02*	*1*
PCB-3L	*82*		*30 - 140*	*08/20/19 08:01*	*08/29/19 21:02*	*1*
PCB-4L	*77*		*30 - 140*	*08/20/19 08:01*	*08/29/19 21:02*	*1*
PCB-15L	*88*		*30 - 140*	*08/20/19 08:01*	*08/29/19 21:02*	*1*
PCB-19L	*81*		*30 - 140*	*08/20/19 08:01*	*08/29/19 21:02*	*1*
PCB-37L	*94*		*30 - 140*	*08/20/19 08:01*	*08/29/19 21:02*	*1*
PCB-54L	*103*		*30 - 140*	*08/20/19 08:01*	*08/29/19 21:02*	*1*
PCB-77L	*94*		*30 - 140*	*08/20/19 08:01*	*08/29/19 21:02*	*1*
PCB-81L	*91*		*30 - 140*	*08/20/19 08:01*	*08/29/19 21:02*	*1*
PCB-104L	*93*		*30 - 140*	*08/20/19 08:01*	*08/29/19 21:02*	*1*
PCB-105L	*87*		*30 - 140*	*08/20/19 08:01*	*08/29/19 21:02*	*1*
PCB-114L	*85*		*30 - 140*	*08/20/19 08:01*	*08/29/19 21:02*	*1*
PCB-118L	*86*		*30 - 140*	*08/20/19 08:01*	*08/29/19 21:02*	*1*
PCB-123L	*85*		*30 - 140*	*08/20/19 08:01*	*08/29/19 21:02*	*1*
PCB-126L	*97*		*30 - 140*	*08/20/19 08:01*	*08/29/19 21:02*	*1*
PCB-155L	*101*		*30 - 140*	*08/20/19 08:01*	*08/29/19 21:02*	*1*
PCB-156L	*87*	*C*	*30 - 140*	*08/20/19 08:01*	*08/29/19 21:02*	*1*
PCB-157L	*87*	*C156*	*30 - 140*	*08/20/19 08:01*	*08/29/19 21:02*	*1*
PCB-167L	*85*		*30 - 140*	*08/20/19 08:01*	*08/29/19 21:02*	*1*
PCB-169L	*95*		*30 - 140*	*08/20/19 08:01*	*08/29/19 21:02*	*1*
PCB-170L	*82*		*30 - 140*	*08/20/19 08:01*	*08/29/19 21:02*	*1*
PCB-188L	*87*		*30 - 140*	*08/20/19 08:01*	*08/29/19 21:02*	*1*
PCB-189L	*92*		*30 - 140*	*08/20/19 08:01*	*08/29/19 21:02*	*1*
PCB-202L	*88*		*30 - 140*	*08/20/19 08:01*	*08/29/19 21:02*	*1*
PCB-205L	*80*		*30 - 140*	*08/20/19 08:01*	*08/29/19 21:02*	*1*

Client: Pacific Groundwater Group
Job ID: 580-88125-2
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: O7-0to27-101918
Lab Sample ID: 580-88125-18
Date Collected: 10/19/18 15:36
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 33.9

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-206L	79		30 - 140	08/20/19 08:01	08/29/19 21:02	1
PCB-208L	82		30 - 140	08/20/19 08:01	08/29/19 21:02	1
PCB-209L	65		30 - 140	08/20/19 08:01	08/29/19 21:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	82		40 - 125	08/20/19 08:01	08/29/19 21:02	1
PCB-111L	94		40 - 125	08/20/19 08:01	08/29/19 21:02	1
PCB-178L	96		40 - 125	08/20/19 08:01	08/29/19 21:02	1

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88125-2

Client Sample ID: Q2-0to13-101818
Date Collected: 10/18/18 09:39
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-19
Matrix: Solid
Percent Solids: 68.4

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.0021	J B	0.0097	0.00053	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-2	0.0015	J B	0.0097	0.00056	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-3	ND		0.0097	0.00058	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-4	0.015	J	0.019	0.0012	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-5	ND		0.0097	0.00077	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-6	ND		0.0097	0.00078	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-7	ND		0.0097	0.00074	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-8	0.0037	J B q	0.019	0.00076	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-9	ND		0.0097	0.00085	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-10	ND		0.0097	0.00081	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-11	0.0082	J B	0.019	0.00074	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-12	ND	C	0.019	0.00074	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-13	ND	C12	0.019	0.00074	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-14	ND		0.0097	0.00064	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-15	0.0065	J B	0.0097	0.00073	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-16	ND		0.0097	0.0015	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-17	0.031	B	0.0097	0.0012	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-18	0.0088	J C B	0.019	0.0010	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-19	0.048	B q	0.0097	0.0014	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-20	0.015	J C B	0.019	0.00074	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-21	0.0057	J C B q	0.019	0.00070	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-22	0.0021	J B q	0.0097	0.00077	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-23	ND		0.0097	0.00076	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-24	ND		0.0097	0.00089	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-25	0.0041	J B	0.0097	0.00071	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-26	0.0021	J C B q	0.019	0.00073	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-27	0.0068	J B q	0.0097	0.00086	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-28	0.015	J B C20	0.019	0.00074	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-29	0.0021	J C26 B q	0.019	0.00073	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-30	0.0088	J C18 B	0.019	0.0010	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-31	0.0076	J B	0.019	0.00070	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-32	0.015	B	0.0097	0.00080	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-33	0.0057	J B C21 q	0.019	0.00070	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-34	ND		0.0097	0.00079	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-35	ND		0.0097	0.00079	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-36	ND		0.0097	0.00071	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-37	0.0045	J B	0.0097	0.00075	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-38	ND		0.0097	0.00073	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-39	ND		0.0097	0.00069	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-40	0.026	J C	0.029	0.0013	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-41	0.026	J C40	0.029	0.0013	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-42	0.0074	J	0.0097	0.0014	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-43	0.0052	J C	0.019	0.0012	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-44	0.21	C B	0.029	0.0012	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-45	0.10	C B	0.019	0.0014	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-46	ND		0.0097	0.0016	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-47	0.21	B C44	0.029	0.0012	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-48	ND		0.0097	0.0013	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-49	0.074	C B	0.019	0.0011	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1

Client Sample ID: Q2-0to13-101818
Lab Sample ID: 580-88125-19
Date Collected: 10/18/18 09:39
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 68.4

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	0.048	C B	0.019	0.0013	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-51	0.10	C45 B	0.019	0.0014	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-52	0.065	B	0.0097	0.0014	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-53	0.048	C50 B	0.019	0.0013	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-54	0.024		0.0097	0.00079	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-55	ND		0.0097	0.00094	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-56	0.0087	J	0.0097	0.00096	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-57	ND		0.0097	0.00095	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-58	ND		0.0097	0.00092	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-59	0.0082	J C	0.029	0.00089	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-60	0.0038	J	0.0097	0.00091	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-61	0.044	C B	0.039	0.00090	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-62	0.0082	J C59	0.029	0.00089	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-63	ND		0.0097	0.00083	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-64	0.010		0.0097	0.00086	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-65	0.21	B C44	0.029	0.0012	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-66	0.026		0.0097	0.00095	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-67	0.0012	J	0.0097	0.00087	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-68	0.0022	J B q	0.0097	0.00082	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-69	0.074	B C49	0.019	0.0011	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-70	0.044	C61 B	0.039	0.00090	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-71	0.026	J C40	0.029	0.0013	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-72	ND		0.0097	0.00092	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-73	0.0052	J C43	0.019	0.0012	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-74	0.044	C61 B	0.039	0.00090	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-75	0.0082	J C59	0.029	0.00089	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-76	0.044	C61 B	0.039	0.00090	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-77	0.0041	J B	0.0097	0.00089	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-78	ND		0.0097	0.00092	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-79	ND		0.0097	0.00079	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-80	ND		0.0097	0.00083	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-81	ND		0.0097	0.00095	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-82	0.019		0.0097	0.0016	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-83	0.11	C	0.019	0.0015	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-84	0.032		0.0097	0.0016	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-85	0.026	J C	0.029	0.0011	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-86	0.090	C B	0.058	0.0012	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-87	0.090	B C86	0.058	0.0012	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-88	0.042	C	0.019	0.0014	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-89	ND		0.0097	0.0016	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-90	0.19	C B	0.029	0.0012	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-91	0.042	C88	0.019	0.0014	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-92	0.042		0.0097	0.0015	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-93	0.041	C	0.019	0.0014	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-94	0.0085	J q	0.0097	0.0015	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-95	0.15	B	0.0097	0.0014	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-96	0.0041	J q	0.0097	0.0011	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-97	0.090	B C86	0.058	0.0012	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-98	0.013	J C q	0.019	0.0014	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1

Client Sample ID: Q2-0to13-101818
Lab Sample ID: 580-88125-19
Date Collected: 10/18/18 09:39
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 68.4

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	0.11	C83	0.019	0.0015	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-100	0.041	C93	0.019	0.0014	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-101	0.19	B C90	0.029	0.0012	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-102	0.013	J C98 q	0.019	0.0014	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-103	0.015	B	0.0097	0.0013	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-104	0.0044	J	0.0097	0.00099	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-105	0.035	B	0.0097	0.0011	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-106	ND		0.0097	0.0011	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-107	0.0094	J	0.0097	0.0010	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-108	0.0053	J C	0.019	0.0011	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-109	0.090	B C86	0.058	0.0012	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-110	0.18	C	0.019	0.0010	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-111	ND		0.0097	0.00097	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-112	ND		0.0097	0.0010	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-113	0.19	B C90	0.029	0.0012	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-114	0.0032	J B	0.0097	0.0010	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-115	0.18	C110	0.019	0.0010	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-116	0.026	J C85	0.029	0.0011	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-117	0.026	J C85	0.029	0.0011	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-118	0.095	B	0.0097	0.0011	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-119	0.090	B C86	0.058	0.0012	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-120	ND		0.0097	0.00093	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-121	0.0024	J q	0.0097	0.00099	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-122	0.0026	J q	0.0097	0.0012	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-123	0.0017	J B q	0.0097	0.0010	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-124	0.0053	J C108	0.019	0.0011	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-125	0.090	B C86	0.058	0.0012	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-126	ND		0.0097	0.0011	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-127	ND		0.0097	0.0011	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-128	0.036	C B	0.019	0.0013	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-129	0.27	C B	0.039	0.0013	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-130	0.018		0.0097	0.0017	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-131	0.0042	J q	0.0097	0.0017	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-132	0.083		0.0097	0.0016	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-133	0.0079	J	0.0097	0.0016	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-134	0.016	J C q	0.019	0.0017	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-135	0.13	C B	0.019	0.00094	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-136	0.046	B	0.0097	0.00071	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-137	0.0074	J q	0.0097	0.0014	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-138	0.27	B C129	0.039	0.0013	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-139	0.0049	J C B q	0.019	0.0014	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-140	0.0049	J B C139 q	0.019	0.0014	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-141	0.053		0.0097	0.0015	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-142	ND		0.0097	0.0017	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-143	0.016	J C134 q	0.019	0.0017	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-144	0.015		0.0097	0.00089	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-145	ND		0.0097	0.00069	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-146	0.051	B	0.0097	0.0014	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-147	0.25	C B	0.019	0.0015	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1

Client Sample ID: Q2-0to13-101818
Date Collected: 10/18/18 09:39
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-19
Matrix: Solid
Percent Solids: 68.4

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	ND		0.0097	0.00091	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-149	**0.25**	**B C147**	0.019	0.0015	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-150	**0.0048**	**J**	0.0097	0.00066	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-151	**0.13**	**C135 B**	0.019	0.00094	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-152	**0.0023**	**J**	0.0097	0.00065	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-153	**0.25**	**C B**	0.019	0.0012	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-154	**0.013**		0.0097	0.00080	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-155	**0.0024**	**J B q**	0.0097	0.00063	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-156	**0.023**	**C B q**	0.019	0.0014	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-157	**0.023**	**C156 B q**	0.019	0.0014	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-158	**0.028**		0.0097	0.0010	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-159	**0.0037**	**J**	0.0097	0.0011	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-160	**0.27**	**B C129**	0.039	0.0013	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-161	ND		0.0097	0.0011	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-162	ND		0.0097	0.0011	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-163	**0.27**	**B C129**	0.039	0.0013	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-164	**0.021**		0.0097	0.0011	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-165	ND		0.0097	0.0013	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-166	**0.036**	**C128 B**	0.019	0.0013	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-167	**0.011**	**B**	0.0097	0.00089	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-168	**0.25**	**B C153**	0.019	0.0012	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-169	ND		0.0097	0.00099	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-170	**0.087**	**B**	0.0097	0.0015	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-171	**0.038**	**C B**	0.019	0.0016	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-172	**0.018**		0.0097	0.0015	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-173	**0.038**	**C171 B**	0.019	0.0016	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-174	**0.10**	**B**	0.0097	0.0016	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-175	**0.0052**	**J B**	0.0097	0.0014	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-176	**0.014**	**B**	0.0097	0.00098	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-177	**0.062**	**B**	0.0097	0.0016	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-178	**0.023**		0.0097	0.0015	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-179	**0.043**	**B**	0.0097	0.0011	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-180	**0.20**	**C B**	0.019	0.0012	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-181	**0.0022**	**J q**	0.0097	0.0013	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-182	**0.0045**	**J**	0.0097	0.0013	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-183	**0.065**	**C B**	0.019	0.0013	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-184	ND		0.0097	0.0011	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-185	**0.065**	**B C183**	0.019	0.0013	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-186	ND		0.0097	0.0010	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-187	**0.12**	**B**	0.0097	0.0013	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-188	ND		0.0097	0.00099	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-189	ND		0.0097	0.0010	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-190	**0.019**	**B q**	0.0097	0.0011	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-191	**0.0056**	**J**	0.0097	0.0011	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-192	**0.0037**	**J B**	0.0097	0.0012	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-193	**0.20**	**C180 B**	0.019	0.0012	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-194	**0.038**	**B**	0.0097	0.0026	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-195	**0.015**	**q**	0.0097	0.0031	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-196	**0.021**	**B**	0.0097	0.0012	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1

Client Sample ID: Q2-0to13-101818
Date Collected: 10/18/18 09:39
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-19
Matrix: Solid
Percent Solids: 68.4

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	ND		0.0097	0.00089	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-198	**0.039**	**C B**	0.019	0.0013	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-199	**0.039**	**C198 B**	0.019	0.0013	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-200	ND		0.0097	0.00096	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-201	**0.0057**	**J B q**	0.0097	0.00091	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-202	**0.014**	**B**	0.0097	0.0010	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-203	**0.026**	**B**	0.0097	0.0012	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-204	ND		0.0097	0.00098	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-205	ND		0.0097	0.0020	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-206	**0.16**	**B q**	0.0097	0.0079	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-207	ND		0.0097	0.0056	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-208	ND		0.0097	0.0058	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
PCB-209	**0.012**	**B**	0.0097	0.0011	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
Total Monochlorobiphenyls	**0.0036**	**J B**	0.0097	0.00055	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
Total Dichlorobiphenyls	**0.033**	**B q**	0.019	0.00079	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
Total Trichlorobiphenyls	**0.15**	**B q**	0.019	0.00086	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
Total Tetrachlorobiphenyls	**0.67**	**B q**	0.039	0.0010	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
Total Pentachlorobiphenyls	**1.1**	**B q**	0.058	0.0012	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
Total Hexachlorobiphenyls	**1.4**	**B q**	0.039	0.0012	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
Total Heptachlorobiphenyls	**0.81**	**B q**	0.019	0.0013	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
Total Octachlorobiphenyls	**0.16**	**B q**	0.019	0.0015	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
Total Nonachlorobiphenyls	**0.16**	**B q**	0.0097	0.0064	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1
Polychlorinated biphenyls, Total	**4.5**	**B q**	0.058	0.0017	ng/g	☼	08/20/19 08:01	08/29/19 22:02	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*79*		*30 - 140*	*08/20/19 08:01*	*08/29/19 22:02*	*1*
PCB-3L	*77*		*30 - 140*	*08/20/19 08:01*	*08/29/19 22:02*	*1*
PCB-4L	*75*		*30 - 140*	*08/20/19 08:01*	*08/29/19 22:02*	*1*
PCB-15L	*84*		*30 - 140*	*08/20/19 08:01*	*08/29/19 22:02*	*1*
PCB-19L	*71*		*30 - 140*	*08/20/19 08:01*	*08/29/19 22:02*	*1*
PCB-37L	*93*		*30 - 140*	*08/20/19 08:01*	*08/29/19 22:02*	*1*
PCB-54L	*83*		*30 - 140*	*08/20/19 08:01*	*08/29/19 22:02*	*1*
PCB-77L	*97*		*30 - 140*	*08/20/19 08:01*	*08/29/19 22:02*	*1*
PCB-81L	*94*		*30 - 140*	*08/20/19 08:01*	*08/29/19 22:02*	*1*
PCB-104L	*89*		*30 - 140*	*08/20/19 08:01*	*08/29/19 22:02*	*1*
PCB-105L	*86*		*30 - 140*	*08/20/19 08:01*	*08/29/19 22:02*	*1*
PCB-114L	*83*		*30 - 140*	*08/20/19 08:01*	*08/29/19 22:02*	*1*
PCB-118L	*84*		*30 - 140*	*08/20/19 08:01*	*08/29/19 22:02*	*1*
PCB-123L	*83*		*30 - 140*	*08/20/19 08:01*	*08/29/19 22:02*	*1*
PCB-126L	*93*		*30 - 140*	*08/20/19 08:01*	*08/29/19 22:02*	*1*
PCB-155L	*101*		*30 - 140*	*08/20/19 08:01*	*08/29/19 22:02*	*1*
PCB-156L	*88*	*C*	*30 - 140*	*08/20/19 08:01*	*08/29/19 22:02*	*1*
PCB-157L	*88*	*C156*	*30 - 140*	*08/20/19 08:01*	*08/29/19 22:02*	*1*
PCB-167L	*88*		*30 - 140*	*08/20/19 08:01*	*08/29/19 22:02*	*1*
PCB-169L	*100*		*30 - 140*	*08/20/19 08:01*	*08/29/19 22:02*	*1*
PCB-170L	*87*		*30 - 140*	*08/20/19 08:01*	*08/29/19 22:02*	*1*
PCB-188L	*80*		*30 - 140*	*08/20/19 08:01*	*08/29/19 22:02*	*1*
PCB-189L	*84*		*30 - 140*	*08/20/19 08:01*	*08/29/19 22:02*	*1*
PCB-202L	*97*		*30 - 140*	*08/20/19 08:01*	*08/29/19 22:02*	*1*
PCB-205L	*80*		*30 - 140*	*08/20/19 08:01*	*08/29/19 22:02*	*1*

Client: Pacific Groundwater Group
Job ID: 580-88125-2
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: Q2-0to13-101818
Lab Sample ID: 580-88125-19
Date Collected: 10/18/18 09:39
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 68.4

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-206L	74		30 - 140	08/20/19 08:01	08/29/19 22:02	1
PCB-208L	82		30 - 140	08/20/19 08:01	08/29/19 22:02	1
PCB-209L	71		30 - 140	08/20/19 08:01	08/29/19 22:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	79		40 - 125	08/20/19 08:01	08/29/19 22:02	1
PCB-111L	96		40 - 125	08/20/19 08:01	08/29/19 22:02	1
PCB-178L	87		40 - 125	08/20/19 08:01	08/29/19 22:02	1

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88125-2

Client Sample ID: Q6-0to27-102018
Date Collected: 10/20/18 09:19
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-20
Matrix: Solid
Percent Solids: 30.5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.046	J B	0.079	0.0015	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-2	0.047	J B	0.079	0.0016	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-3	0.046	J B	0.079	0.0017	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-4	0.14	J	0.16	0.0035	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-5	ND		0.079	0.0023	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-6	0.018	J	0.079	0.0023	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-7	0.0076	J q B	0.079	0.0022	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-8	0.070	J B	0.16	0.0022	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-9	0.0073	J q	0.079	0.0025	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-10	0.0077	J	0.079	0.0024	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-11	0.11	J B	0.16	0.0022	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-12	0.021	J q C B	0.16	0.0022	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-13	0.021	J q C12 B	0.16	0.0022	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-14	ND		0.079	0.0019	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-15	0.098	B	0.079	0.0021	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-16	0.053	J	0.079	0.0037	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-17	0.37	B	0.079	0.0029	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-18	0.12	J C B	0.16	0.0025	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-19	0.39	B	0.079	0.0034	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-20	0.57	C B	0.16	0.0031	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-21	0.14	J C B	0.16	0.0029	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-22	0.062	J B	0.079	0.0032	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-23	ND		0.079	0.0032	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-24	ND		0.079	0.0021	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-25	0.057	J B	0.079	0.0030	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-26	0.044	J C B	0.16	0.0030	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-27	0.085	B	0.079	0.0021	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-28	0.57	C20 B	0.16	0.0031	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-29	0.044	J C26 B	0.16	0.0030	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-30	0.12	J C18 B	0.16	0.0025	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-31	0.22	B	0.16	0.0029	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-32	0.43	B	0.079	0.0019	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-33	0.14	J C21 B	0.16	0.0029	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-34	ND		0.079	0.0033	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-35	0.0096	J	0.079	0.0033	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-36	ND		0.079	0.0030	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-37	0.11	B	0.079	0.0031	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-38	ND		0.079	0.0030	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-39	ND		0.079	0.0029	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-40	0.85	C	0.24	0.0046	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-41	0.85	C40	0.24	0.0046	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-42	0.34		0.079	0.0049	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-43	0.088	J q C	0.16	0.0042	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-44	3.9	C B	0.24	0.0041	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-45	1.6	C B	0.16	0.0048	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-46	0.17		0.079	0.0055	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-47	3.9	C44 B	0.24	0.0041	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-48	0.077	J	0.079	0.0045	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-49	1.9	C B	0.16	0.0037	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1

Client Sample ID: Q6-0to27-102018
Lab Sample ID: 580-88125-20
Date Collected: 10/20/18 09:19
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 30.5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	1.0	C B	0.16	0.0045	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-51	1.6	C45 B	0.16	0.0048	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-52	1.9	B	0.079	0.0047	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-53	1.0	C50 B	0.16	0.0045	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-54	0.20		0.079	0.0025	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-55	ND		0.079	0.0033	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-56	0.23		0.079	0.0033	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-57	ND		0.079	0.0033	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-58	ND		0.079	0.0032	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-59	0.13	J C	0.24	0.0031	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-60	0.058	J	0.079	0.0032	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-61	1.3	C B	0.31	0.0031	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-62	0.13	J C59	0.24	0.0031	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-63	0.058	J	0.079	0.0029	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-64	0.27		0.079	0.0030	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-65	3.9	C44 B	0.24	0.0041	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-66	1.0		0.079	0.0033	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-67	0.024	J q	0.079	0.0030	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-68	0.063	J q B	0.079	0.0028	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-69	1.9	C49 B	0.16	0.0037	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-70	1.3	C61 B	0.31	0.0031	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-71	0.85	C40	0.24	0.0046	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-72	0.051	J	0.079	0.0032	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-73	0.088	J q C43	0.16	0.0042	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-74	1.3	C61 B	0.31	0.0031	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-75	0.13	J C59	0.24	0.0031	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-76	1.3	C61 B	0.31	0.0031	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-77	0.11	B	0.079	0.0031	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-78	ND		0.079	0.0032	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-79	0.026	J q	0.079	0.0027	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-80	ND		0.079	0.0029	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-81	0.0087	J q B	0.079	0.0033	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-82	0.33		0.079	0.0049	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-83	3.5	C	0.16	0.0045	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-84	0.97		0.079	0.0049	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-85	0.57	C	0.24	0.0035	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-86	2.4	C B	0.47	0.0036	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-87	2.4	C86 B	0.47	0.0036	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-88	1.4	C	0.16	0.0042	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-89	0.038	J	0.079	0.0048	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-90	6.0	C B	0.24	0.0037	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-91	1.4	C88	0.16	0.0042	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-92	1.4		0.079	0.0045	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-93	0.73	C	0.16	0.0043	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-94	0.20		0.079	0.0047	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-95	4.3	B	0.079	0.0044	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-96	0.13		0.079	0.0035	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-97	2.4	C86 B	0.47	0.0036	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-98	0.39	C	0.16	0.0043	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88125-2

Client Sample ID: Q6-0to27-102018
Date Collected: 10/20/18 09:19
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-20
Matrix: Solid
Percent Solids: 30.5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	3.5	C83	0.16	0.0045	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-100	0.73	C93	0.16	0.0043	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-101	6.0	C90 B	0.24	0.0037	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-102	0.39	C98	0.16	0.0043	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-103	0.35	B	0.079	0.0041	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-104	0.051	J	0.079	0.0031	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-105	0.74	B	0.079	0.0052	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-106	ND		0.079	0.0053	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-107	0.30		0.079	0.0050	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-108	0.083	J q C	0.16	0.0054	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-109	2.4	C86 B	0.47	0.0036	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-110	5.0	C	0.16	0.0031	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-111	0.033	J	0.079	0.0030	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-112	ND		0.079	0.0031	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-113	6.0	C90 B	0.24	0.0037	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-114	0.047	J B	0.079	0.0049	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-115	5.0	C110	0.16	0.0031	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-116	0.57	C85	0.24	0.0035	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-117	0.57	C85	0.24	0.0035	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-118	2.7	B	0.079	0.0050	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-119	2.4	C86 B	0.47	0.0036	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-120	0.076	J q	0.079	0.0029	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-121	0.028	J	0.079	0.0030	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-122	0.030	J	0.079	0.0058	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-123	0.049	J B	0.079	0.0052	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-124	0.083	J q C108	0.16	0.0054	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-125	2.4	C86 B	0.47	0.0036	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-126	0.026	J B	0.079	0.0050	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-127	ND		0.079	0.0052	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-128	0.98	C B	0.16	0.0050	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-129	9.4	C B	0.31	0.0051	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-130	0.53		0.079	0.0067	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-131	0.081		0.079	0.0065	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-132	2.8		0.079	0.0063	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-133	0.25		0.079	0.0061	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-134	0.50	C	0.16	0.0065	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-135	4.4	C B	0.16	0.0035	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-136	1.5	B	0.079	0.0026	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-137	0.17		0.079	0.0052	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-138	9.4	C129 B	0.31	0.0051	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-139	0.16	C B	0.16	0.0055	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-140	0.16	C139 B	0.16	0.0055	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-141	1.8		0.079	0.0058	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-142	ND		0.079	0.0065	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-143	0.50	C134	0.16	0.0065	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-144	0.48		0.079	0.0033	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-145	ND		0.079	0.0026	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-146	2.1	B	0.079	0.0055	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-147	9.1	C B	0.16	0.0057	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1

Client Sample ID: Q6-0to27-102018
Lab Sample ID: 580-88125-20
Date Collected: 10/20/18 09:19
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 30.5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	0.081		0.079	0.0034	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-149	9.1	C147 B	0.16	0.0057	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-150	0.085		0.079	0.0025	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-151	4.4	C135 B	0.16	0.0035	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-152	0.042	J	0.079	0.0024	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-153	9.6	C B	0.16	0.0045	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-154	0.43		0.079	0.0030	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-155	0.011	J B	0.079	0.0023	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-156	0.80	C B	0.16	0.0052	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-157	0.80	C156 B	0.16	0.0052	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-158	0.80		0.079	0.0040	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-159	0.14		0.079	0.0042	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-160	9.4	C129 B	0.31	0.0051	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-161	ND		0.079	0.0041	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-162	ND		0.079	0.0041	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-163	9.4	C129 B	0.31	0.0051	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-164	0.74		0.079	0.0044	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-165	ND		0.079	0.0049	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-166	0.98	C128 B	0.16	0.0050	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-167	0.32	B	0.079	0.0035	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-168	9.6	C153 B	0.16	0.0045	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-169	ND		0.079	0.0037	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-170	4.4	B	0.079	0.0037	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-171	1.4	C B	0.16	0.0038	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-172	0.69		0.079	0.0037	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-173	1.4	C171 B	0.16	0.0038	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-174	4.6	B	0.079	0.0038	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-175	0.17	B	0.079	0.0034	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-176	0.52	B	0.079	0.0024	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-177	2.8	B	0.079	0.0039	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-178	0.91		0.079	0.0035	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-179	1.9	B	0.079	0.0026	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-180	9.6	C B	0.16	0.0030	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-181	0.039	J	0.079	0.0033	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-182	0.047	J	0.079	0.0032	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-183	2.9	C B	0.16	0.0032	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-184	ND		0.079	0.0026	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-185	2.9	C183 B	0.16	0.0032	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-186	ND		0.079	0.0025	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-187	5.4	B	0.079	0.0033	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-188	ND		0.079	0.0024	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-189	0.17	B	0.079	0.0029	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-190	0.92	B	0.079	0.0026	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-191	0.19		0.079	0.0026	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-192	ND		0.079	0.0028	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-193	9.6	C180 B	0.16	0.0030	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-194	2.0	B	0.079	0.0078	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-195	0.97		0.079	0.0093	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-196	1.0	B	0.079	0.0075	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1

Client Sample ID: Q6-0to27-102018
Lab Sample ID: 580-88125-20

Date Collected: 10/20/18 09:19
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 30.5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	0.068	J B	0.079	0.0054	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-198	2.0	C B	0.16	0.0080	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-199	2.0	C198 B	0.16	0.0080	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-200	0.25		0.079	0.0058	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-201	0.23	B	0.079	0.0055	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-202	0.36	B	0.079	0.0062	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-203	1.2	B	0.079	0.0071	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-204	ND		0.079	0.0060	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-205	0.11	B	0.079	0.0059	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-206	15	q B	0.079	0.012	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-207	0.063	J	0.079	0.0084	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-208	0.14		0.079	0.0085	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
PCB-209	0.27	B	0.079	0.0020	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
Total Monochlorobiphenyls	0.14	B	0.079	0.0016	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
Total Dichlorobiphenyls	0.48	q B	0.16	0.0023	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
Total Trichlorobiphenyls	2.7	B	0.16	0.0029	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
Total Tetrachlorobiphenyls	15	q B	0.31	0.0036	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
Total Pentachlorobiphenyls	32	q B	0.47	0.0043	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
Total Hexachlorobiphenyls	47	B	0.31	0.0045	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
Total Heptachlorobiphenyls	37	B	0.16	0.0031	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
Total Octachlorobiphenyls	8.2	B	0.16	0.0068	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
Total Nonachlorobiphenyls	15	q B	0.079	0.0096	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1
Polychlorinated biphenyls, Total	160	q B	0.47	0.0044	ng/g	☼	08/20/19 08:01	08/30/19 08:25	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*73*		*30 - 140*	*08/20/19 08:01*	*08/30/19 08:25*	*1*
PCB-3L	*74*		*30 - 140*	*08/20/19 08:01*	*08/30/19 08:25*	*1*
PCB-4L	*73*		*30 - 140*	*08/20/19 08:01*	*08/30/19 08:25*	*1*
PCB-15L	*80*		*30 - 140*	*08/20/19 08:01*	*08/30/19 08:25*	*1*
PCB-19L	*78*		*30 - 140*	*08/20/19 08:01*	*08/30/19 08:25*	*1*
PCB-37L	*95*		*30 - 140*	*08/20/19 08:01*	*08/30/19 08:25*	*1*
PCB-54L	*101*		*30 - 140*	*08/20/19 08:01*	*08/30/19 08:25*	*1*
PCB-77L	*102*		*30 - 140*	*08/20/19 08:01*	*08/30/19 08:25*	*1*
PCB-81L	*98*		*30 - 140*	*08/20/19 08:01*	*08/30/19 08:25*	*1*
PCB-104L	*86*		*30 - 140*	*08/20/19 08:01*	*08/30/19 08:25*	*1*
PCB-105L	*86*		*30 - 140*	*08/20/19 08:01*	*08/30/19 08:25*	*1*
PCB-114L	*85*		*30 - 140*	*08/20/19 08:01*	*08/30/19 08:25*	*1*
PCB-118L	*86*		*30 - 140*	*08/20/19 08:01*	*08/30/19 08:25*	*1*
PCB-123L	*84*		*30 - 140*	*08/20/19 08:01*	*08/30/19 08:25*	*1*
PCB-126L	*96*		*30 - 140*	*08/20/19 08:01*	*08/30/19 08:25*	*1*
PCB-155L	*101*		*30 - 140*	*08/20/19 08:01*	*08/30/19 08:25*	*1*
PCB-156L	*89*	*C*	*30 - 140*	*08/20/19 08:01*	*08/30/19 08:25*	*1*
PCB-157L	*89*	*C156*	*30 - 140*	*08/20/19 08:01*	*08/30/19 08:25*	*1*
PCB-167L	*88*		*30 - 140*	*08/20/19 08:01*	*08/30/19 08:25*	*1*
PCB-169L	*103*		*30 - 140*	*08/20/19 08:01*	*08/30/19 08:25*	*1*
PCB-170L	*86*		*30 - 140*	*08/20/19 08:01*	*08/30/19 08:25*	*1*
PCB-188L	*85*		*30 - 140*	*08/20/19 08:01*	*08/30/19 08:25*	*1*
PCB-189L	*91*		*30 - 140*	*08/20/19 08:01*	*08/30/19 08:25*	*1*
PCB-202L	*91*		*30 - 140*	*08/20/19 08:01*	*08/30/19 08:25*	*1*
PCB-205L	*82*		*30 - 140*	*08/20/19 08:01*	*08/30/19 08:25*	*1*

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88125-2

Client Sample ID: Q6-0to27-102018
Date Collected: 10/20/18 09:19
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-20
Matrix: Solid
Percent Solids: 30.5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-206L	77		30 - 140	08/20/19 08:01	08/30/19 08:25	1
PCB-208L	86		30 - 140	08/20/19 08:01	08/30/19 08:25	1
PCB-209L	69		30 - 140	08/20/19 08:01	08/30/19 08:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	79		40 - 125	08/20/19 08:01	08/30/19 08:25	1
PCB-111L	94		40 - 125	08/20/19 08:01	08/30/19 08:25	1
PCB-178L	91		40 - 125	08/20/19 08:01	08/30/19 08:25	1

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88125-2

Client Sample ID: T6-0to29-101618
Date Collected: 10/16/18 14:38
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-21
Matrix: Solid
Percent Solids: 32.5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.087	B	0.015	0.00037	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-2	0.053	B	0.015	0.00040	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-3	0.057	B	0.015	0.00042	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-4	0.21		0.030	0.00097	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-5	0.0036	J	0.015	0.00061	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-6	0.051		0.015	0.00061	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-7	0.0098	J B	0.015	0.00058	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-8	0.17	B	0.030	0.00060	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-9	0.012	J	0.015	0.00067	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-10	0.0060	J q	0.015	0.00064	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-11	0.098	B	0.030	0.00058	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-12	0.039	C B	0.030	0.00058	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-13	0.039	C12 B	0.030	0.00058	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-14	ND		0.015	0.00051	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-15	0.12	B	0.015	0.00056	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-16	0.069	q	0.015	0.0010	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-17	0.26	B	0.015	0.00081	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-18	0.18	C B	0.030	0.00069	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-19	0.24	B	0.015	0.00097	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-20	0.41	C B	0.030	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-21	0.16	C B	0.030	0.0022	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-22	0.076	B	0.015	0.0025	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-23	ND		0.015	0.0024	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-24	0.0027	J B	0.015	0.00060	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-25	0.052	B	0.015	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-26	0.065	C B	0.030	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-27	0.058	B	0.015	0.00058	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-28	0.41	C20 B	0.030	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-29	0.065	C26 B	0.030	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-30	0.18	C18 B	0.030	0.00069	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-31	0.25	B	0.030	0.0022	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-32	0.19	B	0.015	0.00054	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-33	0.16	C21 B	0.030	0.0022	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-34	0.0046	J	0.015	0.0025	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-35	0.0083	J	0.015	0.0025	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-36	ND		0.015	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-37	0.13	B	0.015	0.0024	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-38	ND		0.015	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-39	ND		0.015	0.0022	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-40	0.61	C	0.046	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-41	0.61	C40	0.046	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-42	0.23		0.015	0.0024	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-43	0.077	C	0.030	0.0021	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-44	2.9	C B	0.046	0.0020	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-45	1.0	C B	0.030	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-46	0.061		0.015	0.0027	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-47	2.9	C44 B	0.046	0.0020	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-48	0.098		0.015	0.0022	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-49	1.4	C B	0.030	0.0018	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88125-2

Client Sample ID: T6-0to29-101618
Date Collected: 10/16/18 14:38
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-21
Matrix: Solid
Percent Solids: 32.5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	0.53	C B	0.030	0.0022	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-51	1.0	C45 B	0.030	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-52	2.3	B	0.015	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-53	0.53	C50 B	0.030	0.0022	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-54	0.12		0.015	0.00045	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-55	ND		0.015	0.0016	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-56	0.33		0.015	0.0016	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-57	ND		0.015	0.0016	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-58	ND		0.015	0.0016	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-59	0.10	C	0.046	0.0015	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-60	0.090		0.015	0.0016	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-61	1.9	C B	0.061	0.0015	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-62	0.10	C59	0.046	0.0015	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-63	0.044		0.015	0.0014	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-64	0.34		0.015	0.0015	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-65	2.9	C44 B	0.046	0.0020	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-66	1.1		0.015	0.0016	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-67	0.029		0.015	0.0015	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-68	0.046	B	0.015	0.0014	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-69	1.4	C49 B	0.030	0.0018	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-70	1.9	C61 B	0.061	0.0015	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-71	0.61	C40	0.046	0.0023	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-72	0.046		0.015	0.0016	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-73	0.077	C43	0.030	0.0021	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-74	1.9	C61 B	0.061	0.0015	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-75	0.10	C59	0.046	0.0015	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-76	1.9	C61 B	0.061	0.0015	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-77	0.097	B	0.015	0.0016	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-78	ND		0.015	0.0016	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-79	0.038		0.015	0.0013	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-80	ND		0.015	0.0014	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-81	ND		0.015	0.0016	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-82	0.43		0.015	0.0010	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-83	3.6	C	0.030	0.00095	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-84	1.1		0.015	0.0010	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-85	0.66	C	0.046	0.00074	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-86	2.8	C B	0.091	0.00075	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-87	2.8	C86 B	0.091	0.00075	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-88	1.2	C	0.030	0.00089	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-89	0.043		0.015	0.0010	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-90	6.4	C B	0.046	0.00079	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-91	1.2	C88	0.030	0.00089	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-92	1.4		0.015	0.00094	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-93	0.54	C	0.030	0.00091	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-94	0.14		0.015	0.00099	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-95	4.7	B	0.015	0.00093	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-96	0.098		0.015	0.00073	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-97	2.8	C86 B	0.091	0.00075	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-98	0.34	C	0.030	0.00091	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88125-2

Client Sample ID: T6-0to29-101618
Date Collected: 10/16/18 14:38
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-21
Matrix: Solid
Percent Solids: 32.5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	3.6	C83	0.030	0.00095	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-100	0.54	C93	0.030	0.00091	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-101	6.4	C90 B	0.046	0.00079	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-102	0.34	C98	0.030	0.00091	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-103	0.29	B	0.015	0.00087	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-104	0.035		0.015	0.00064	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-105	1.1	B	0.015	0.0035	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-106	ND		0.015	0.0035	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-107	0.33		0.015	0.0033	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-108	0.12	C	0.030	0.0035	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-109	2.8	C86 B	0.091	0.00075	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-110	5.6	C	0.030	0.00066	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-111	0.024	q	0.015	0.00063	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-112	ND		0.015	0.00066	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-113	6.4	C90 B	0.046	0.00079	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-114	0.065	B	0.015	0.0031	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-115	5.6	C110	0.030	0.00066	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-116	0.66	C85	0.046	0.00074	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-117	0.66	C85	0.046	0.00074	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-118	3.4	B	0.015	0.0034	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-119	2.8	C86 B	0.091	0.00075	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-120	0.070		0.015	0.00060	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-121	ND		0.015	0.00064	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-122	0.039		0.015	0.0038	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-123	0.045	B	0.015	0.0033	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-124	0.12	C108	0.030	0.0035	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-125	2.8	C86 B	0.091	0.00075	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-126	0.013	J B	0.015	0.0034	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-127	ND		0.015	0.0035	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-128	1.1	C B	0.030	0.0024	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-129	10	C B	0.061	0.0025	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-130	0.60		0.015	0.0033	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-131	0.094		0.015	0.0032	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-132	3.2		0.015	0.0031	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-133	0.27		0.015	0.0030	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-134	0.57	C	0.030	0.0032	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-135	4.5	C B	0.030	0.00037	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-136	1.6	B	0.015	0.00028	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-137	0.22		0.015	0.0026	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-138	10	C129 B	0.061	0.0025	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-139	0.18	C B	0.030	0.0027	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-140	0.18	C139 B	0.030	0.0027	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-141	2.1		0.015	0.0028	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-142	ND		0.015	0.0032	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-143	0.57	C134	0.030	0.0032	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-144	0.48		0.015	0.00035	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-145	0.0033	J q	0.015	0.00027	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-146	2.2	B	0.015	0.0027	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-147	10	C B	0.030	0.0028	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88125-2

Client Sample ID: T6-0to29-101618
Date Collected: 10/16/18 14:38
Date Received: 07/26/19 13:10

Lab Sample ID: 580-88125-21
Matrix: Solid
Percent Solids: 32.5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	0.077		0.015	0.00036	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-149	10	C147 B	0.030	0.0028	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-150	0.075		0.015	0.00026	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-151	4.5	C135 B	0.030	0.00037	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-152	0.034		0.015	0.00026	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-153	10	C B	0.030	0.0022	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-154	0.42		0.015	0.00032	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-155	0.0070	J B	0.015	0.00025	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-156	0.87	C B	0.030	0.0025	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-157	0.87	C156 B	0.030	0.0025	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-158	0.88		0.015	0.0020	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-159	0.14		0.015	0.0021	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-160	10	C129 B	0.061	0.0025	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-161	ND		0.015	0.0020	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-162	0.019		0.015	0.0020	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-163	10	C129 B	0.061	0.0025	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-164	0.80		0.015	0.0022	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-165	ND		0.015	0.0024	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-166	1.1	C128 B	0.030	0.0024	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-167	0.31	B	0.015	0.0017	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-168	10	C153 B	0.030	0.0022	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-169	ND		0.015	0.0019	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-170	4.5	B	0.015	0.00047	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-171	1.5	C B	0.030	0.00047	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-172	0.75		0.015	0.00046	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-173	1.5	C171 B	0.030	0.00047	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-174	4.9	B	0.015	0.00048	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-175	0.19	B	0.015	0.00042	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-176	0.56	B	0.015	0.00030	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-177	3.0	B	0.015	0.00048	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-178	1.0		0.015	0.00044	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-179	2.0	B	0.015	0.00032	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-180	10	C B	0.030	0.00037	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-181	ND		0.015	0.00041	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-182	0.055		0.015	0.00040	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-183	3.1	C B	0.030	0.00040	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-184	ND		0.015	0.00032	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-185	3.1	C183 B	0.030	0.00040	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-186	ND		0.015	0.00032	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-187	5.8	B	0.015	0.00041	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-188	ND		0.015	0.00029	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-189	0.15	B	0.015	0.0015	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-190	0.92	B	0.015	0.00033	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-191	0.20		0.015	0.00033	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-192	ND		0.015	0.00035	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-193	10	C180 B	0.030	0.00037	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-194	2.1	B	0.015	0.0055	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-195	1.0		0.015	0.0066	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-196	0.98	B	0.015	0.00090	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1

Client Sample ID: T6-0to29-101618
Lab Sample ID: 580-88125-21

Date Collected: 10/16/18 14:38
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 32.5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	0.051	q B	0.015	0.00065	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-198	2.0	C B	0.030	0.00096	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-199	2.0	C198 B	0.030	0.00096	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-200	0.26		0.015	0.00070	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-201	0.24	B	0.015	0.00066	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-202	0.39	B	0.015	0.00075	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-203	1.2	B	0.015	0.00085	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-204	ND		0.015	0.00072	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-205	0.10	B	0.015	0.0042	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-206	0.67	B	0.015	0.0026	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-207	0.074		0.015	0.0018	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-208	0.18		0.015	0.0019	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
PCB-209	0.29	B	0.015	0.00081	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
Total Monochlorobiphenyls	0.20	B	0.015	0.00040	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
Total Dichlorobiphenyls	0.72	q B	0.030	0.00063	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
Total Trichlorobiphenyls	2.2	q B	0.030	0.0018	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
Total Tetrachlorobiphenyls	13	B	0.061	0.0017	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
Total Pentachlorobiphenyls	35	q B	0.091	0.0017	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
Total Hexachlorobiphenyls	51	q B	0.061	0.0019	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
Total Heptachlorobiphenyls	39	B	0.030	0.00044	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
Total Octachlorobiphenyls	8.3	q B	0.030	0.0020	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
Total Nonachlorobiphenyls	0.92	B	0.015	0.0021	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1
Polychlorinated biphenyls, Total	150	q B	0.091	0.0015	ng/g	☼	08/20/19 08:01	08/29/19 23:04	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*76*		*30 - 140*	*08/20/19 08:01*	*08/29/19 23:04*	*1*
PCB-3L	*79*		*30 - 140*	*08/20/19 08:01*	*08/29/19 23:04*	*1*
PCB-4L	*77*		*30 - 140*	*08/20/19 08:01*	*08/29/19 23:04*	*1*
PCB-15L	*88*		*30 - 140*	*08/20/19 08:01*	*08/29/19 23:04*	*1*
PCB-19L	*82*		*30 - 140*	*08/20/19 08:01*	*08/29/19 23:04*	*1*
PCB-37L	*98*		*30 - 140*	*08/20/19 08:01*	*08/29/19 23:04*	*1*
PCB-54L	*104*		*30 - 140*	*08/20/19 08:01*	*08/29/19 23:04*	*1*
PCB-77L	*97*		*30 - 140*	*08/20/19 08:01*	*08/29/19 23:04*	*1*
PCB-81L	*95*		*30 - 140*	*08/20/19 08:01*	*08/29/19 23:04*	*1*
PCB-104L	*95*		*30 - 140*	*08/20/19 08:01*	*08/29/19 23:04*	*1*
PCB-105L	*87*		*30 - 140*	*08/20/19 08:01*	*08/29/19 23:04*	*1*
PCB-114L	*87*		*30 - 140*	*08/20/19 08:01*	*08/29/19 23:04*	*1*
PCB-118L	*88*		*30 - 140*	*08/20/19 08:01*	*08/29/19 23:04*	*1*
PCB-123L	*88*		*30 - 140*	*08/20/19 08:01*	*08/29/19 23:04*	*1*
PCB-126L	*97*		*30 - 140*	*08/20/19 08:01*	*08/29/19 23:04*	*1*
PCB-155L	*102*		*30 - 140*	*08/20/19 08:01*	*08/29/19 23:04*	*1*
PCB-156L	*85*	*C*	*30 - 140*	*08/20/19 08:01*	*08/29/19 23:04*	*1*
PCB-157L	*85*	*C156*	*30 - 140*	*08/20/19 08:01*	*08/29/19 23:04*	*1*
PCB-167L	*86*		*30 - 140*	*08/20/19 08:01*	*08/29/19 23:04*	*1*
PCB-169L	*96*		*30 - 140*	*08/20/19 08:01*	*08/29/19 23:04*	*1*
PCB-170L	*85*		*30 - 140*	*08/20/19 08:01*	*08/29/19 23:04*	*1*
PCB-188L	*86*		*30 - 140*	*08/20/19 08:01*	*08/29/19 23:04*	*1*
PCB-189L	*94*		*30 - 140*	*08/20/19 08:01*	*08/29/19 23:04*	*1*
PCB-202L	*90*		*30 - 140*	*08/20/19 08:01*	*08/29/19 23:04*	*1*
PCB-205L	*81*		*30 - 140*	*08/20/19 08:01*	*08/29/19 23:04*	*1*

Client: Pacific Groundwater Group
Job ID: 580-88125-2
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: T6-0to29-101618
Lab Sample ID: 580-88125-21
Date Collected: 10/16/18 14:38
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 32.5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-206L	78		30 - 140	08/20/19 08:01	08/29/19 23:04	1
PCB-208L	84		30 - 140	08/20/19 08:01	08/29/19 23:04	1
PCB-209L	67		30 - 140	08/20/19 08:01	08/29/19 23:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	82		40 - 125	08/20/19 08:01	08/29/19 23:04	1
PCB-111L	95		40 - 125	08/20/19 08:01	08/29/19 23:04	1
PCB-178L	96		40 - 125	08/20/19 08:01	08/29/19 23:04	1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Lab Sample ID: MB 140-32775/15-B
Matrix: Solid
Analysis Batch: 33063

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 32775

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.000300	J q	0.010	0.000088	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-2	0.000581	J	0.010	0.000094	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-3	0.000417	J q	0.010	0.00010	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-4	ND		0.020	0.00034	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-5	ND		0.010	0.00023	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-6	ND		0.010	0.00023	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-7	ND		0.010	0.00022	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-8	0.000754	J	0.020	0.00022	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-9	ND		0.010	0.00025	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-10	ND		0.010	0.00024	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-11	0.00453	J	0.020	0.00022	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-12	ND	C	0.020	0.00022	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-13	ND	C12	0.020	0.00022	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-14	ND		0.010	0.00019	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-15	0.000424	J q	0.010	0.00022	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-16	ND		0.010	0.00017	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-17	0.000673	J	0.010	0.00013	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-18	0.000696	J q C	0.020	0.00011	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-19	ND		0.010	0.00016	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-20	0.00117	J C	0.020	0.00011	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-21	0.000613	J C	0.020	0.00010	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-22	0.000312	J q	0.010	0.00011	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-23	ND		0.010	0.00011	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-24	ND		0.010	0.000096	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-25	ND		0.010	0.00010	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-26	0.000240	J q C	0.020	0.00011	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-27	ND		0.010	0.000093	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-28	0.00117	J C20	0.020	0.00011	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-29	0.000240	J q C26	0.020	0.00011	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-30	0.000696	J q C18	0.020	0.00011	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-31	0.000828	J q	0.020	0.00010	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-32	0.000488	J q	0.010	0.000087	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-33	0.000613	J C21	0.020	0.00010	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-34	ND		0.010	0.00012	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-35	0.000325	J	0.010	0.00012	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-36	ND		0.010	0.00010	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-37	0.000536	J	0.010	0.00011	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-38	ND		0.010	0.00011	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-39	ND		0.010	0.00010	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-40	ND	C	0.030	0.00030	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-41	ND	C40	0.030	0.00030	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-42	ND		0.010	0.00032	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-43	ND	C	0.020	0.00027	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-44	0.00386	J C	0.030	0.00027	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-45	ND	C	0.020	0.00031	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-46	ND		0.010	0.00036	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-47	0.00386	J C44	0.030	0.00027	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-48	ND		0.010	0.00029	ng/g		08/19/19 08:06	08/27/19 18:11	1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 140-32775/15-B
Matrix: Solid
Analysis Batch: 33063

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 32775

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-49	ND	C	0.020	0.00024	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-50	ND	C	0.020	0.00029	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-51	ND	C45	0.020	0.00031	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-52	0.00127	J	0.010	0.00031	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-53	ND	C50	0.020	0.00029	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-54	ND		0.010	0.00014	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-55	ND		0.010	0.00021	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-56	ND		0.010	0.00022	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-57	ND		0.010	0.00021	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-58	ND		0.010	0.00021	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-59	ND	C	0.030	0.00020	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-60	ND		0.010	0.00021	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-61	0.00127	J C	0.040	0.00020	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-62	ND	C59	0.030	0.00020	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-63	ND		0.010	0.00019	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-64	ND		0.010	0.00019	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-65	0.00386	J C44	0.030	0.00027	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-66	ND		0.010	0.00021	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-67	ND		0.010	0.00020	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-68	ND		0.010	0.00019	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-69	ND	C49	0.020	0.00024	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-70	0.00127	J C61	0.040	0.00020	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-71	ND	C40	0.030	0.00030	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-72	ND		0.010	0.00021	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-73	ND	C43	0.020	0.00027	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-74	0.00127	J C61	0.040	0.00020	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-75	ND	C59	0.030	0.00020	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-76	0.00127	J C61	0.040	0.00020	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-77	ND		0.010	0.00020	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-78	ND		0.010	0.00021	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-79	ND		0.010	0.00018	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-80	ND		0.010	0.00019	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-81	ND		0.010	0.00021	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-82	ND		0.010	0.00035	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-83	0.00147	J C	0.020	0.00033	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-84	ND		0.010	0.00036	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-85	ND	C	0.030	0.00025	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-86	0.00121	J q C	0.060	0.00026	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-87	0.00121	J q C86	0.060	0.00026	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-88	ND	C	0.020	0.00030	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-89	ND		0.010	0.00034	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-90	0.00212	J C	0.030	0.00027	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-91	ND	C88	0.020	0.00030	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-92	ND		0.010	0.00032	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-93	ND	C	0.020	0.00031	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-94	ND		0.010	0.00034	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-95	0.00170	J	0.010	0.00032	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-96	ND		0.010	0.00025	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-97	0.00121	J q C86	0.060	0.00026	ng/g		08/19/19 08:06	08/27/19 18:11	1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 140-32775/15-B
Matrix: Solid
Analysis Batch: 33063

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 32775

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-98	ND	C	0.020	0.00031	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-99	0.00147	J C83	0.020	0.00033	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-100	ND	C93	0.020	0.00031	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-101	0.00212	J C90	0.030	0.00027	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-102	ND	C98	0.020	0.00031	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-103	ND		0.010	0.00030	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-104	ND		0.010	0.00022	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-105	0.000748	J	0.010	0.00019	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-106	ND		0.010	0.00019	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-107	ND		0.010	0.00018	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-108	ND	C	0.020	0.00020	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-109	0.00121	J q C86	0.060	0.00026	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-110	0.00165	J q C	0.020	0.00023	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-111	ND		0.010	0.00021	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-112	ND		0.010	0.00022	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-113	0.00212	J C90	0.030	0.00027	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-114	0.000293	J q	0.010	0.00017	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-115	0.00165	J q C110	0.020	0.00023	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-116	ND	C85	0.030	0.00025	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-117	ND	C85	0.030	0.00025	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-118	0.00133	J	0.010	0.00018	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-119	0.00121	J q C86	0.060	0.00026	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-120	ND		0.010	0.00021	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-121	ND		0.010	0.00022	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-122	ND		0.010	0.00021	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-123	ND		0.010	0.00019	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-124	ND	C108	0.020	0.00020	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-125	0.00121	J q C86	0.060	0.00026	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-126	0.000344	J	0.010	0.00020	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-127	ND		0.010	0.00019	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-128	ND	C	0.020	0.00018	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-129	0.00243	J C	0.040	0.00018	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-130	ND		0.010	0.00024	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-131	ND		0.010	0.00023	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-132	0.000799	J	0.010	0.00023	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-133	ND		0.010	0.00022	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-134	ND	C	0.020	0.00023	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-135	0.00111	J C	0.020	0.00021	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-136	0.000210	J q	0.010	0.00016	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-137	ND		0.010	0.00019	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-138	0.00243	J C129	0.040	0.00018	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-139	ND	C	0.020	0.00020	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-140	ND	C139	0.020	0.00020	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-141	ND		0.010	0.00021	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-142	ND		0.010	0.00023	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-143	ND	C134	0.020	0.00023	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-144	ND		0.010	0.00020	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-145	ND		0.010	0.00015	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-146	0.000702	J	0.010	0.00020	ng/g		08/19/19 08:06	08/27/19 18:11	1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 140-32775/15-B
Matrix: Solid
Analysis Batch: 33063

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 32775

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-147	0.00194	J C	0.020	0.00020	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-148	ND		0.010	0.00020	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-149	0.00194	J C147	0.020	0.00020	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-150	ND		0.010	0.00015	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-151	0.00111	J C135	0.020	0.00021	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-152	ND		0.010	0.00014	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-153	0.00198	J C	0.020	0.00016	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-154	0.000216	J q	0.010	0.00018	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-155	ND		0.010	0.00014	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-156	0.000314	J q C	0.020	0.00018	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-157	0.000314	J q C156	0.020	0.00018	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-158	0.000284	J q	0.010	0.00014	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-159	ND		0.010	0.00015	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-160	0.00243	J C129	0.040	0.00018	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-161	ND		0.010	0.00015	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-162	ND		0.010	0.00015	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-163	0.00243	J C129	0.040	0.00018	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-164	ND		0.010	0.00016	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-165	ND		0.010	0.00018	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-166	ND	C128	0.020	0.00018	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-167	ND		0.010	0.00012	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-168	0.00198	J C153	0.020	0.00016	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-169	ND		0.010	0.00014	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-170	0.000874	J	0.010	0.00015	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-171	ND	C	0.020	0.00015	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-172	0.000190	J q	0.010	0.00015	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-173	ND	C171	0.020	0.00015	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-174	0.000725	J	0.010	0.00015	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-175	ND		0.010	0.00014	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-176	0.000157	J q	0.010	0.000095	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-177	0.000557	J q	0.010	0.00015	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-178	ND		0.010	0.00014	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-179	0.000282	J q	0.010	0.00010	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-180	0.00151	J C	0.020	0.00012	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-181	ND		0.010	0.00013	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-182	ND		0.010	0.00013	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-183	0.00115	J C	0.020	0.00013	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-184	ND		0.010	0.00010	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-185	0.00115	J C183	0.020	0.00013	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-186	0.000146	J	0.010	0.00010	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-187	ND		0.010	0.00013	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-188	ND		0.010	0.000093	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-189	0.000292	J	0.010	0.00011	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-190	ND		0.010	0.00011	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-191	ND		0.010	0.00010	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-192	0.000293	J q	0.010	0.00011	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-193	0.00151	J C180	0.020	0.00012	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-194	0.000548	J q	0.010	0.00014	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-195	ND		0.010	0.00016	ng/g		08/19/19 08:06	08/27/19 18:11	1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 140-32775/15-B
Matrix: Solid
Analysis Batch: 33063

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 32775

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-196	0.000331	J	0.010	0.00015	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-197	ND		0.010	0.00011	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-198	0.000742	J C	0.020	0.00016	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-199	0.000742	J C198	0.020	0.00016	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-200	ND		0.010	0.00012	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-201	ND		0.010	0.00011	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-202	ND		0.010	0.00013	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-203	ND		0.010	0.00014	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-204	ND		0.010	0.00012	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-205	ND		0.010	0.00010	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-206	ND		0.010	0.0010	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-207	ND		0.010	0.00070	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-208	ND		0.010	0.00072	ng/g		08/19/19 08:06	08/27/19 18:11	1
PCB-209	0.000412	J	0.010	0.00013	ng/g		08/19/19 08:06	08/27/19 18:11	1
Total Monochlorobiphenyls	0.00130	J q	0.010	0.000094	ng/g		08/19/19 08:06	08/27/19 18:11	1
Total Dichlorobiphenyls	0.00571	J q	0.020	0.00023	ng/g		08/19/19 08:06	08/27/19 18:11	1
Total Trichlorobiphenyls	0.00588	J q	0.020	0.00011	ng/g		08/19/19 08:06	08/27/19 18:11	1
Total Tetrachlorobiphenyls	0.00640	J	0.040	0.00023	ng/g		08/19/19 08:06	08/27/19 18:11	1
Total Pentachlorobiphenyls	0.0109	J q	0.060	0.00025	ng/g		08/19/19 08:06	08/27/19 18:11	1
Total Hexachlorobiphenyls	0.00999	J q	0.040	0.00018	ng/g		08/19/19 08:06	08/27/19 18:11	1
Total Heptachlorobiphenyls	0.00618	J q	0.020	0.00012	ng/g		08/19/19 08:06	08/27/19 18:11	1
Total Octachlorobiphenyls	0.00162	J q	0.020	0.00013	ng/g		08/19/19 08:06	08/27/19 18:11	1
Total Nonachlorobiphenyls	ND		0.010	0.0010	ng/g		08/19/19 08:06	08/27/19 18:11	1
Polychlorinated biphenyls, Total	0.0483	J q	0.060	0.00027	ng/g		08/19/19 08:06	08/27/19 18:11	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*76*		*30 - 140*	*08/19/19 08:06*	*08/27/19 18:11*	*1*
PCB-3L	*76*		*30 - 140*	*08/19/19 08:06*	*08/27/19 18:11*	*1*
PCB-4L	*70*		*30 - 140*	*08/19/19 08:06*	*08/27/19 18:11*	*1*
PCB-15L	*76*		*30 - 140*	*08/19/19 08:06*	*08/27/19 18:11*	*1*
PCB-19L	*68*		*30 - 140*	*08/19/19 08:06*	*08/27/19 18:11*	*1*
PCB-37L	*74*		*30 - 140*	*08/19/19 08:06*	*08/27/19 18:11*	*1*
PCB-54L	*74*		*30 - 140*	*08/19/19 08:06*	*08/27/19 18:11*	*1*
PCB-77L	*80*		*30 - 140*	*08/19/19 08:06*	*08/27/19 18:11*	*1*
PCB-81L	*77*		*30 - 140*	*08/19/19 08:06*	*08/27/19 18:11*	*1*
PCB-104L	*84*		*30 - 140*	*08/19/19 08:06*	*08/27/19 18:11*	*1*
PCB-105L	*81*		*30 - 140*	*08/19/19 08:06*	*08/27/19 18:11*	*1*
PCB-114L	*80*		*30 - 140*	*08/19/19 08:06*	*08/27/19 18:11*	*1*
PCB-118L	*82*		*30 - 140*	*08/19/19 08:06*	*08/27/19 18:11*	*1*
PCB-123L	*79*		*30 - 140*	*08/19/19 08:06*	*08/27/19 18:11*	*1*
PCB-126L	*85*		*30 - 140*	*08/19/19 08:06*	*08/27/19 18:11*	*1*
PCB-155L	*83*		*30 - 140*	*08/19/19 08:06*	*08/27/19 18:11*	*1*
PCB-156L	*80*	*C*	*30 - 140*	*08/19/19 08:06*	*08/27/19 18:11*	*1*
PCB-157L	*80*	*C156*	*30 - 140*	*08/19/19 08:06*	*08/27/19 18:11*	*1*
PCB-167L	*79*		*30 - 140*	*08/19/19 08:06*	*08/27/19 18:11*	*1*
PCB-169L	*85*		*30 - 140*	*08/19/19 08:06*	*08/27/19 18:11*	*1*
PCB-170L	*79*		*30 - 140*	*08/19/19 08:06*	*08/27/19 18:11*	*1*
PCB-188L	*80*		*30 - 140*	*08/19/19 08:06*	*08/27/19 18:11*	*1*
PCB-189L	*81*		*30 - 140*	*08/19/19 08:06*	*08/27/19 18:11*	*1*

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 140-32775/15-B
Matrix: Solid
Analysis Batch: 33063

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 32775

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-202L	83		30 - 140	08/19/19 08:06	08/27/19 18:11	1
PCB-205L	76		30 - 140	08/19/19 08:06	08/27/19 18:11	1
PCB-206L	74		30 - 140	08/19/19 08:06	08/27/19 18:11	1
PCB-208L	78		30 - 140	08/19/19 08:06	08/27/19 18:11	1
PCB-209L	70		30 - 140	08/19/19 08:06	08/27/19 18:11	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	72		40 - 125	08/19/19 08:06	08/27/19 18:11	1
PCB-111L	89		40 - 125	08/19/19 08:06	08/27/19 18:11	1
PCB-178L	91		40 - 125	08/19/19 08:06	08/27/19 18:11	1

Lab Sample ID: LCS 140-32775/16-B
Matrix: Solid
Analysis Batch: 33063

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 32775

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1	0.500	0.526		ng/g		105	50 - 150
PCB-3	0.500	0.497		ng/g		99	50 - 150
PCB-4	0.500	0.539		ng/g		108	50 - 150
PCB-15	0.500	0.489		ng/g		98	50 - 150
PCB-19	0.500	0.530		ng/g		106	50 - 150
PCB-37	0.500	0.491		ng/g		98	50 - 150
PCB-54	0.500	0.507		ng/g		101	50 - 150
PCB-77	0.500	0.501		ng/g		100	50 - 150
PCB-81	0.500	0.505		ng/g		101	50 - 150
PCB-104	0.500	0.506		ng/g		101	50 - 150
PCB-105	0.500	0.496		ng/g		99	50 - 150
PCB-114	0.500	0.490		ng/g		98	50 - 150
PCB-118	0.500	0.513		ng/g		103	50 - 150
PCB-123	0.500	0.508		ng/g		102	50 - 150
PCB-126	0.500	0.496		ng/g		99	50 - 150
PCB-155	0.500	0.500		ng/g		100	50 - 150
PCB-156	1.00	1.02	C	ng/g		102	50 - 150
PCB-157	1.00	1.02	C156	ng/g		102	50 - 150
PCB-167	0.500	0.501		ng/g		100	50 - 150
PCB-169	0.500	0.502		ng/g		100	50 - 150
PCB-188	0.500	0.501		ng/g		100	50 - 150
PCB-189	0.500	0.502		ng/g		100	50 - 150
PCB-202	0.500	0.501		ng/g		100	50 - 150
PCB-205	0.500	0.515		ng/g		103	50 - 150
PCB-206	0.500	0.508		ng/g		102	50 - 150
PCB-208	0.500	0.504		ng/g		101	50 - 150
PCB-209	0.500	0.504		ng/g		101	50 - 150

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
PCB-1L	60		30 - 140
PCB-3L	63		30 - 140
PCB-4L	57		30 - 140

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 140-32775/16-B
Matrix: Solid
Analysis Batch: 33063

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 32775

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
PCB-15L	63		30 - 140
PCB-19L	58		30 - 140
PCB-37L	67		30 - 140
PCB-54L	62		30 - 140
PCB-77L	64		30 - 140
PCB-81L	63		30 - 140
PCB-104L	69		30 - 140
PCB-105L	67		30 - 140
PCB-114L	67		30 - 140
PCB-118L	67		30 - 140
PCB-123L	66		30 - 140
PCB-126L	67		30 - 140
PCB-155L	70		30 - 140
PCB-156L	66	C	30 - 140
PCB-157L	66	C156	30 - 140
PCB-167L	67		30 - 140
PCB-169L	69		30 - 140
PCB-170L	64		30 - 140
PCB-188L	68		30 - 140
PCB-189L	66		30 - 140
PCB-202L	70		30 - 140
PCB-205L	63		30 - 140
PCB-206L	62		30 - 140
PCB-208L	64		30 - 140
PCB-209L	61		30 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
PCB-28L	61		40 - 125
PCB-111L	73		40 - 125
PCB-178L	76		40 - 125

Lab Sample ID: MB 140-32817/16-B
Matrix: Solid
Analysis Batch: 33110

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 32817

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.000817	J q	0.010	0.00015	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-2	0.00111	J q	0.010	0.00016	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-3	0.00120	J	0.010	0.00017	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-4	ND		0.020	0.00035	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-5	ND		0.010	0.00023	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-6	ND		0.010	0.00023	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-7	0.000516	J q	0.010	0.00022	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-8	0.00148	J q	0.020	0.00023	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-9	ND		0.010	0.00025	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-10	ND		0.010	0.00024	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-11	0.00374	J q	0.020	0.00022	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-12	0.00103	J C	0.020	0.00022	ng/g		08/20/19 08:01	08/29/19 01:33	1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 140-32817/16-B
Matrix: Solid
Analysis Batch: 33110

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 32817

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-13	0.00103	J C12	0.020	0.00022	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-14	ND		0.010	0.00019	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-15	0.000987	J q	0.010	0.00022	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-16	ND		0.010	0.00027	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-17	0.00105	J	0.010	0.00021	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-18	0.00172	J C	0.020	0.00018	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-19	0.000606	J q	0.010	0.00026	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-20	0.00338	J C	0.020	0.00022	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-21	0.000882	J q C	0.020	0.00021	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-22	0.000597	J	0.010	0.00024	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-23	ND		0.010	0.00023	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-24	0.000485	J q	0.010	0.00016	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-25	0.000311	J q	0.010	0.00022	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-26	0.000676	J q C	0.020	0.00022	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-27	0.000484	J	0.010	0.00015	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-28	0.00338	J C20	0.020	0.00022	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-29	0.000676	J q C26	0.020	0.00022	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-30	0.00172	J C18	0.020	0.00018	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-31	0.000913	J q	0.020	0.00021	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-32	0.000907	J q	0.010	0.00014	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-33	0.000882	J q C21	0.020	0.00021	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-34	ND		0.010	0.00024	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-35	ND		0.010	0.00024	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-36	ND		0.010	0.00022	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-37	0.000487	J q	0.010	0.00023	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-38	ND		0.010	0.00022	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-39	ND		0.010	0.00021	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-40	ND	C	0.030	0.00041	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-41	ND	C40	0.030	0.00041	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-42	ND		0.010	0.00044	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-43	ND	C	0.020	0.00038	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-44	0.00321	J C	0.030	0.00037	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-45	0.00117	J q C	0.020	0.00043	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-46	ND		0.010	0.00050	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-47	0.00321	J C44	0.030	0.00037	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-48	ND		0.010	0.00040	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-49	0.000840	J q C	0.020	0.00033	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-50	0.000774	J q C	0.020	0.00040	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-51	0.00117	J q C45	0.020	0.00043	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-52	0.00627	J q	0.010	0.00042	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-53	0.000774	J q C50	0.020	0.00040	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-54	ND		0.010	0.00023	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-55	ND		0.010	0.00029	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-56	ND		0.010	0.00030	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-57	ND		0.010	0.00029	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-58	ND		0.010	0.00029	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-59	ND	C	0.030	0.00028	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-60	ND		0.010	0.00028	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-61	0.00139	J C	0.040	0.00028	ng/g		08/20/19 08:01	08/29/19 01:33	1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 140-32817/16-B
Matrix: Solid
Analysis Batch: 33110

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 32817

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-62	ND	C59	0.030	0.00028	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-63	ND		0.010	0.00026	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-64	ND		0.010	0.00027	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-65	0.00321	J C44	0.030	0.00037	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-66	ND		0.010	0.00030	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-67	ND		0.010	0.00027	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-68	0.000621	J	0.010	0.00026	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-69	0.000840	J q C49	0.020	0.00033	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-70	0.00139	J C61	0.040	0.00028	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-71	ND	C40	0.030	0.00041	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-72	ND		0.010	0.00029	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-73	ND	C43	0.020	0.00038	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-74	0.00139	J C61	0.040	0.00028	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-75	ND	C59	0.030	0.00028	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-76	0.00139	J C61	0.040	0.00028	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-77	0.00587	J	0.010	0.00028	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-78	ND		0.010	0.00029	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-79	ND		0.010	0.00025	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-80	ND		0.010	0.00026	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-81	0.00210	J q	0.010	0.00029	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-82	ND		0.010	0.00040	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-83	ND	C	0.020	0.00037	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-84	ND		0.010	0.00041	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-85	ND	C	0.030	0.00029	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-86	0.00272	J C	0.060	0.00029	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-87	0.00272	J C86	0.060	0.00029	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-88	ND	C	0.020	0.00035	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-89	ND		0.010	0.00039	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-90	0.00305	J q C	0.030	0.00031	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-91	ND	C88	0.020	0.00035	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-92	ND		0.010	0.00037	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-93	ND	C	0.020	0.00036	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-94	ND		0.010	0.00039	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-95	0.000746	J	0.010	0.00036	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-96	ND		0.010	0.00028	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-97	0.00272	J C86	0.060	0.00029	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-98	ND	C	0.020	0.00035	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-99	ND	C83	0.020	0.00037	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-100	ND	C93	0.020	0.00036	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-101	0.00305	J q C90	0.030	0.00031	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-102	ND	C98	0.020	0.00035	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-103	0.000681	J q	0.010	0.00034	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-104	ND		0.010	0.00025	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-105	0.00133	J	0.010	0.00033	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-106	ND		0.010	0.00033	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-107	ND		0.010	0.00031	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-108	ND	C	0.020	0.00034	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-109	0.00272	J C86	0.060	0.00029	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-110	ND	C	0.020	0.00026	ng/g		08/20/19 08:01	08/29/19 01:33	1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 140-32817/16-B
Matrix: Solid
Analysis Batch: 33110

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 32817

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-111	ND		0.010	0.00024	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-112	ND		0.010	0.00026	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-113	0.00305	J q C90	0.030	0.00031	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-114	0.00256	J	0.010	0.00030	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-115	ND	C110	0.020	0.00026	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-116	ND	C85	0.030	0.00029	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-117	ND	C85	0.030	0.00029	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-118	0.00229	J	0.010	0.00032	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-119	0.00272	J C86	0.060	0.00029	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-120	ND		0.010	0.00023	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-121	ND		0.010	0.00025	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-122	ND		0.010	0.00036	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-123	0.00253	J	0.010	0.00031	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-124	ND	C108	0.020	0.00034	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-125	0.00272	J C86	0.060	0.00029	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-126	0.00372	J	0.010	0.00033	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-127	ND		0.010	0.00033	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-128	0.000438	J q C	0.020	0.00026	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-129	0.00212	J q C	0.040	0.00027	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-130	ND		0.010	0.00035	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-131	ND		0.010	0.00034	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-132	ND		0.010	0.00033	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-133	ND		0.010	0.00032	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-134	ND	C	0.020	0.00034	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-135	0.000521	J q C	0.020	0.00028	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-136	0.000616	J	0.010	0.00021	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-137	ND		0.010	0.00027	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-138	0.00212	J q C129	0.040	0.00027	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-139	0.000574	J C	0.020	0.00029	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-140	0.000574	J C139	0.020	0.00029	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-141	ND		0.010	0.00030	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-142	ND		0.010	0.00034	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-143	ND	C134	0.020	0.00034	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-144	ND		0.010	0.00027	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-145	ND		0.010	0.00021	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-146	0.000322	J q	0.010	0.00029	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-147	0.000988	J q C	0.020	0.00030	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-148	ND		0.010	0.00027	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-149	0.000988	J q C147	0.020	0.00030	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-150	ND		0.010	0.00020	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-151	0.000521	J q C135	0.020	0.00028	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-152	ND		0.010	0.00019	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-153	0.00521	J C	0.020	0.00024	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-154	ND		0.010	0.00024	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-155	0.000427	J q	0.010	0.00019	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-156	0.00996	J C	0.020	0.00027	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-157	0.00996	J C156	0.020	0.00027	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-158	ND		0.010	0.00021	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-159	ND		0.010	0.00022	ng/g		08/20/19 08:01	08/29/19 01:33	1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 140-32817/16-B
Matrix: Solid
Analysis Batch: 33110

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 32817

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-160	0.00212	J q C129	0.040	0.00027	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-161	ND		0.010	0.00022	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-162	ND		0.010	0.00021	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-163	0.00212	J q C129	0.040	0.00027	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-164	ND		0.010	0.00023	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-165	ND		0.010	0.00026	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-166	0.000438	J q C128	0.020	0.00026	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-167	0.00702	J	0.010	0.00018	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-168	0.00521	J C153	0.020	0.00024	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-169	0.00446	J	0.010	0.00020	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-170	0.000404	J	0.010	0.00022	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-171	0.000776	J C	0.020	0.00022	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-172	ND		0.010	0.00022	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-173	0.000776	J C171	0.020	0.00022	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-174	0.000460	J q	0.010	0.00023	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-175	0.000505	J	0.010	0.00020	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-176	0.000270	J q	0.010	0.00014	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-177	0.000647	J	0.010	0.00023	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-178	ND		0.010	0.00021	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-179	0.000377	J	0.010	0.00015	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-180	0.00245	J C	0.020	0.00018	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-181	ND		0.010	0.00019	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-182	ND		0.010	0.00019	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-183	0.00127	J C	0.020	0.00019	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-184	0.000414	J q	0.010	0.00015	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-185	0.00127	J C183	0.020	0.00019	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-186	0.000321	J	0.010	0.00015	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-187	0.000619	J q	0.010	0.00019	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-188	0.000407	J	0.010	0.00014	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-189	0.00349	J	0.010	0.00018	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-190	0.000238	J q	0.010	0.00016	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-191	ND		0.010	0.00016	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-192	0.000316	J	0.010	0.00017	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-193	0.00245	J C180	0.020	0.00018	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-194	0.000517	J q	0.010	0.00025	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-195	ND		0.010	0.00030	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-196	0.000335	J q	0.010	0.00016	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-197	0.000335	J q	0.010	0.00011	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-198	0.00114	J q C	0.020	0.00017	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-199	0.00114	J q C198	0.020	0.00017	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-200	ND		0.010	0.00012	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-201	0.000326	J q	0.010	0.00011	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-202	0.000338	J	0.010	0.00013	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-203	0.000411	J q	0.010	0.00015	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-204	0.000207	J q	0.010	0.00012	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-205	0.000254	J	0.010	0.00019	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-206	0.00148	J q	0.010	0.00070	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-207	ND		0.010	0.00051	ng/g		08/20/19 08:01	08/29/19 01:33	1
PCB-208	ND		0.010	0.00054	ng/g		08/20/19 08:01	08/29/19 01:33	1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 140-32817/16-B
Matrix: Solid
Analysis Batch: 33110

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 32817

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-209	0.00151	J q	0.010	0.00023	ng/g		08/20/19 08:01	08/29/19 01:33	1
Total Monochlorobiphenyls	0.00313	J q	0.010	0.00016	ng/g		08/20/19 08:01	08/29/19 01:33	1
Total Dichlorobiphenyls	0.00775	J q	0.020	0.00024	ng/g		08/20/19 08:01	08/29/19 01:33	1
Total Trichlorobiphenyls	0.0125	J q	0.020	0.00022	ng/g		08/20/19 08:01	08/29/19 01:33	1
Total Tetrachlorobiphenyls	0.0222	J q	0.040	0.00032	ng/g		08/20/19 08:01	08/29/19 01:33	1
Total Pentachlorobiphenyls	0.0196	J q	0.060	0.00032	ng/g		08/20/19 08:01	08/29/19 01:33	1
Total Hexachlorobiphenyls	0.0327	J q	0.040	0.00026	ng/g		08/20/19 08:01	08/29/19 01:33	1
Total Heptachlorobiphenyls	0.0130	J q	0.020	0.00018	ng/g		08/20/19 08:01	08/29/19 01:33	1
Total Octachlorobiphenyls	0.00386	J q	0.020	0.00016	ng/g		08/20/19 08:01	08/29/19 01:33	1
Total Nonachlorobiphenyls	0.00148	J q	0.010	0.00058	ng/g		08/20/19 08:01	08/29/19 01:33	1
Polychlorinated biphenyls, Total	0.118	q	0.060	0.00028	ng/g		08/20/19 08:01	08/29/19 01:33	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*65*		*30 - 140*	*08/20/19 08:01*	*08/29/19 01:33*	*1*
PCB-3L	*70*		*30 - 140*	*08/20/19 08:01*	*08/29/19 01:33*	*1*
PCB-4L	*67*		*30 - 140*	*08/20/19 08:01*	*08/29/19 01:33*	*1*
PCB-15L	*72*		*30 - 140*	*08/20/19 08:01*	*08/29/19 01:33*	*1*
PCB-19L	*65*		*30 - 140*	*08/20/19 08:01*	*08/29/19 01:33*	*1*
PCB-37L	*77*		*30 - 140*	*08/20/19 08:01*	*08/29/19 01:33*	*1*
PCB-54L	*74*		*30 - 140*	*08/20/19 08:01*	*08/29/19 01:33*	*1*
PCB-77L	*80*		*30 - 140*	*08/20/19 08:01*	*08/29/19 01:33*	*1*
PCB-81L	*78*		*30 - 140*	*08/20/19 08:01*	*08/29/19 01:33*	*1*
PCB-104L	*84*		*30 - 140*	*08/20/19 08:01*	*08/29/19 01:33*	*1*
PCB-105L	*80*		*30 - 140*	*08/20/19 08:01*	*08/29/19 01:33*	*1*
PCB-114L	*78*		*30 - 140*	*08/20/19 08:01*	*08/29/19 01:33*	*1*
PCB-118L	*80*		*30 - 140*	*08/20/19 08:01*	*08/29/19 01:33*	*1*
PCB-123L	*80*		*30 - 140*	*08/20/19 08:01*	*08/29/19 01:33*	*1*
PCB-126L	*86*		*30 - 140*	*08/20/19 08:01*	*08/29/19 01:33*	*1*
PCB-155L	*89*		*30 - 140*	*08/20/19 08:01*	*08/29/19 01:33*	*1*
PCB-156L	*83*	*C*	*30 - 140*	*08/20/19 08:01*	*08/29/19 01:33*	*1*
PCB-157L	*83*	*C156*	*30 - 140*	*08/20/19 08:01*	*08/29/19 01:33*	*1*
PCB-167L	*84*		*30 - 140*	*08/20/19 08:01*	*08/29/19 01:33*	*1*
PCB-169L	*93*		*30 - 140*	*08/20/19 08:01*	*08/29/19 01:33*	*1*
PCB-170L	*81*		*30 - 140*	*08/20/19 08:01*	*08/29/19 01:33*	*1*
PCB-188L	*79*		*30 - 140*	*08/20/19 08:01*	*08/29/19 01:33*	*1*
PCB-189L	*84*		*30 - 140*	*08/20/19 08:01*	*08/29/19 01:33*	*1*
PCB-202L	*87*		*30 - 140*	*08/20/19 08:01*	*08/29/19 01:33*	*1*
PCB-205L	*79*		*30 - 140*	*08/20/19 08:01*	*08/29/19 01:33*	*1*
PCB-206L	*77*		*30 - 140*	*08/20/19 08:01*	*08/29/19 01:33*	*1*
PCB-208L	*80*		*30 - 140*	*08/20/19 08:01*	*08/29/19 01:33*	*1*
PCB-209L	*73*		*30 - 140*	*08/20/19 08:01*	*08/29/19 01:33*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-28L	*76*		*40 - 125*	*08/20/19 08:01*	*08/29/19 01:33*	*1*
PCB-111L	*94*		*40 - 125*	*08/20/19 08:01*	*08/29/19 01:33*	*1*
PCB-178L	*91*		*40 - 125*	*08/20/19 08:01*	*08/29/19 01:33*	*1*

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 140-32817/17-B
Matrix: Solid
Analysis Batch: 33110

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 32817

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
PCB-1			0.500	0.506		ng/g		101	50 - 150		
PCB-3			0.500	0.498		ng/g		100	50 - 150		
PCB-4			0.500	0.512		ng/g		102	50 - 150		
PCB-15			0.500	0.475		ng/g		95	50 - 150		
PCB-19			0.500	0.537		ng/g		107	50 - 150		
PCB-37			0.500	0.484		ng/g		97	50 - 150		
PCB-54			0.500	0.503		ng/g		101	50 - 150		
PCB-77			0.500	0.486		ng/g		97	50 - 150		
PCB-81			0.500	0.509		ng/g		102	50 - 150		
PCB-104			0.500	0.509		ng/g		102	50 - 150		
PCB-105			0.500	0.508		ng/g		102	50 - 150		
PCB-114			0.500	0.489		ng/g		98	50 - 150		
PCB-118			0.500	0.511		ng/g		102	50 - 150		
PCB-123			0.500	0.507		ng/g		101	50 - 150		
PCB-126			0.500	0.492		ng/g		98	50 - 150		
PCB-155			0.500	0.505		ng/g		101	50 - 150		
PCB-156			1.00	1.02	C	ng/g		102	50 - 150		
PCB-157			1.00	1.02	C156	ng/g		102	50 - 150		
PCB-167			0.500	0.503		ng/g		101	50 - 150		
PCB-169			0.500	0.498		ng/g		100	50 - 150		
PCB-188			0.500	0.510		ng/g		102	50 - 150		
PCB-189			0.500	0.513		ng/g		103	50 - 150		
PCB-202			0.500	0.505		ng/g		101	50 - 150		
PCB-205			0.500	0.508		ng/g		102	50 - 150		
PCB-206			0.500	0.507		ng/g		101	50 - 150		
PCB-208			0.500	0.496		ng/g		99	50 - 150		
PCB-209			0.500	0.518		ng/g		104	50 - 150		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
PCB-1L	*66*		*30 - 140*
PCB-3L	*64*		*30 - 140*
PCB-4L	*61*		*30 - 140*
PCB-15L	*70*		*30 - 140*
PCB-19L	*60*		*30 - 140*
PCB-37L	*81*		*30 - 140*
PCB-54L	*73*		*30 - 140*
PCB-77L	*87*		*30 - 140*
PCB-81L	*82*		*30 - 140*
PCB-104L	*78*		*30 - 140*
PCB-105L	*81*		*30 - 140*
PCB-114L	*81*		*30 - 140*
PCB-118L	*81*		*30 - 140*
PCB-123L	*80*		*30 - 140*
PCB-126L	*89*		*30 - 140*
PCB-155L	*87*		*30 - 140*
PCB-156L	*85*	*C*	*30 - 140*
PCB-157L	*85*	*C156*	*30 - 140*
PCB-167L	*86*		*30 - 140*

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 140-32817/17-B
Matrix: Solid
Analysis Batch: 33110

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 32817

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
PCB-169L	96		30 - 140
PCB-170L	79		30 - 140
PCB-188L	79		30 - 140
PCB-189L	85		30 - 140
PCB-202L	86		30 - 140
PCB-205L	80		30 - 140
PCB-206L	77		30 - 140
PCB-208L	84		30 - 140
PCB-209L	76		30 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
PCB-28L	76		40 - 125
PCB-111L	92		40 - 125
PCB-178L	93		40 - 125

Lab Chronicle

Client: Pacific Groundwater Group
Job ID: 580-88125-2
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: A1-0to30-102018
Lab Sample ID: 580-88125-1
Date Collected: 10/20/18 12:05
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 55.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			32775	08/19/19 08:06	BRS	TAL KNX
Total/NA	Cleanup	Split			32843	08/20/19 13:28	EBS	TAL KNX
Total/NA	Analysis	1668A		1	33148	08/30/19 10:29	LKM	TAL KNX

Client Sample ID: A2-0to26-100818
Lab Sample ID: 580-88125-2
Date Collected: 10/08/18 14:04
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 31.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			32775	08/19/19 08:06	BRS	TAL KNX
Total/NA	Cleanup	Split			32843	08/20/19 13:28	EBS	TAL KNX
Total/NA	Analysis	1668A		1	33205	09/03/19 12:52	KBL	TAL KNX

Client Sample ID: A3-0to31-100818
Lab Sample ID: 580-88125-3
Date Collected: 10/08/18 11:14
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 33.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			32775	08/19/19 08:06	BRS	TAL KNX
Total/NA	Cleanup	Split			32843	08/20/19 13:28	EBS	TAL KNX
Total/NA	Analysis	1668A		1	33205	09/03/19 13:54	KBL	TAL KNX

Client Sample ID: A4-0to25-100818
Lab Sample ID: 580-88125-4
Date Collected: 10/08/18 13:26
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 38.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			32775	08/19/19 08:06	BRS	TAL KNX
Total/NA	Cleanup	Split			32843	08/20/19 13:28	EBS	TAL KNX
Total/NA	Analysis	1668A		1	33063	08/27/19 21:33	MSD	TAL KNX

Client Sample ID: A5-0to25-100818
Lab Sample ID: 580-88125-5
Date Collected: 10/08/18 14:38
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 33.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			32775	08/19/19 08:06	BRS	TAL KNX
Total/NA	Cleanup	Split			32843	08/20/19 13:28	EBS	TAL KNX
Total/NA	Analysis	1668A		2	33231	09/04/19 03:14	LKM	TAL KNX

Lab Chronicle

Client: Pacific Groundwater Group
Job ID: 580-88125-2
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: A6-0to23-100818
Lab Sample ID: 580-88125-6
Date Collected: 10/08/18 16:08
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 39.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			32775	08/19/19 08:06	BRS	TAL KNX
Total/NA	Cleanup	Split			32843	08/20/19 13:28	EBS	TAL KNX
Total/NA	Analysis	1668A		1	33205	09/03/19 15:58	KBL	TAL KNX

Client Sample ID: A7-0to26-100918
Lab Sample ID: 580-88125-7
Date Collected: 10/09/18 13:23
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 37.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			32775	08/19/19 08:06	BRS	TAL KNX
Total/NA	Cleanup	Split			32843	08/20/19 13:28	EBS	TAL KNX
Total/NA	Analysis	1668A		5	33248	09/04/19 14:27	KBL	TAL KNX

Client Sample ID: C4-0to27-100918
Lab Sample ID: 580-88125-8
Date Collected: 10/09/18 08:28
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 37.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			32775	08/19/19 08:06	BRS	TAL KNX
Total/NA	Cleanup	Split			32843	08/20/19 13:28	EBS	TAL KNX
Total/NA	Analysis	1668A		1	33205	09/03/19 18:02	KBL	TAL KNX

Client Sample ID: D2-0to19-101018
Lab Sample ID: 580-88125-9
Date Collected: 10/10/18 15:21
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 70.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			32775	08/19/19 08:06	BRS	TAL KNX
Total/NA	Cleanup	Split			32843	08/20/19 13:28	EBS	TAL KNX
Total/NA	Analysis	1668A		1	33063	08/27/19 22:35	MSD	TAL KNX

Client Sample ID: F2-0to19-101018
Lab Sample ID: 580-88125-10
Date Collected: 10/10/18 16:36
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 69.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			32775	08/19/19 08:06	BRS	TAL KNX
Total/NA	Cleanup	Split			32843	08/20/19 13:28	EBS	TAL KNX
Total/NA	Analysis	1668A		1	33231	09/04/19 05:18	LKM	TAL KNX

Lab Chronicle

Client: Pacific Groundwater Group
Job ID: 580-88125-2
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: G6-0to27-101818
Lab Sample ID: 580-88125-11
Date Collected: 10/18/18 14:12
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 32.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			32775	08/19/19 08:06	BRS	TAL KNX
Total/NA	Cleanup	Split			32843	08/20/19 13:28	EBS	TAL KNX
Total/NA	Analysis	1668A		1	33231	09/04/19 06:20	LKM	TAL KNX

Client Sample ID: H2-0to30-101218
Lab Sample ID: 580-88125-12
Date Collected: 10/12/18 10:28
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 42.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			32775	08/19/19 08:06	BRS	TAL KNX
Total/NA	Cleanup	Split			32843	08/20/19 13:28	EBS	TAL KNX
Total/NA	Analysis	1668A		1	33063	08/27/19 23:37	MSD	TAL KNX

Client Sample ID: J2A3-0to18-101218
Lab Sample ID: 580-88125-13
Date Collected: 10/12/18 12:57
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 80.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			32775	08/19/19 08:06	BRS	TAL KNX
Total/NA	Cleanup	Split			32843	08/20/19 13:28	EBS	TAL KNX
Total/NA	Analysis	1668A		1	33231	09/04/19 07:22	LKM	TAL KNX

Client Sample ID: M4-0to26-101918
Lab Sample ID: 580-88125-14
Date Collected: 10/19/18 13:11
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 38.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			32775	08/19/19 08:06	BRS	TAL KNX
Total/NA	Cleanup	Split			32843	08/20/19 13:28	EBS	TAL KNX
Total/NA	Analysis	1668A		1	33148	08/30/19 09:27	LKM	TAL KNX

Client Sample ID: 515-0to26-101918
Lab Sample ID: 580-88125-15
Date Collected: 10/19/18 13:11
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 38.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			32817	08/20/19 08:01	BRS	TAL KNX
Total/NA	Cleanup	Split			32914	08/22/19 09:25	ALS	TAL KNX
Total/NA	Analysis	1668A		1	33110	08/29/19 06:01	LKM	TAL KNX

Lab Chronicle

Client: Pacific Groundwater Group
Job ID: 580-88125-2
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: N5-0to28-101418
Lab Sample ID: 580-88125-16
Date Collected: 10/14/18 16:46
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 31.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			32817	08/20/19 08:01	BRS	TAL KNX
Total/NA	Cleanup	Split			32914	08/22/19 09:25	ALS	TAL KNX
Total/NA	Analysis	1668A		2	33148	08/30/19 06:21	LKM	TAL KNX

Client Sample ID: N7-0to27-101418
Lab Sample ID: 580-88125-17
Date Collected: 10/14/18 15:10
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 34.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			32817	08/20/19 08:01	BRS	TAL KNX
Total/NA	Cleanup	Split			32914	08/22/19 09:25	ALS	TAL KNX
Total/NA	Analysis	1668A		1	33148	08/30/19 07:23	LKM	TAL KNX

Client Sample ID: O7-0to27-101918
Lab Sample ID: 580-88125-18
Date Collected: 10/19/18 15:36
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 33.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			32817	08/20/19 08:01	BRS	TAL KNX
Total/NA	Cleanup	Split			32914	08/22/19 09:25	ALS	TAL KNX
Total/NA	Analysis	1668A		1	33136	08/29/19 21:02	MSD	TAL KNX

Client Sample ID: Q2-0to13-101818
Lab Sample ID: 580-88125-19
Date Collected: 10/18/18 09:39
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 68.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			32817	08/20/19 08:01	BRS	TAL KNX
Total/NA	Cleanup	Split			32914	08/22/19 09:25	ALS	TAL KNX
Total/NA	Analysis	1668A		1	33136	08/29/19 22:02	MSD	TAL KNX

Client Sample ID: Q6-0to27-102018
Lab Sample ID: 580-88125-20
Date Collected: 10/20/18 09:19
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 30.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			32817	08/20/19 08:01	BRS	TAL KNX
Total/NA	Cleanup	Split			32914	08/22/19 09:25	ALS	TAL KNX
Total/NA	Analysis	1668A		1	33148	08/30/19 08:25	LKM	TAL KNX

Lab Chronicle

Client: Pacific Groundwater Group
Job ID: 580-88125-2
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: T6-0to29-101618
Lab Sample ID: 580-88125-21
Date Collected: 10/16/18 14:38
Matrix: Solid
Date Received: 07/26/19 13:10
Percent Solids: 32.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			32817	08/20/19 08:01	BRS	TAL KNX
Total/NA	Cleanup	Split			32914	08/22/19 09:25	ALS	TAL KNX
Total/NA	Analysis	1668A		1	33136	08/29/19 23:04	MSD	TAL KNX

Laboratory References:

TAL KNX = Eurofins TestAmerica, Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

Accreditation/Certification Summary

Client: Pacific Groundwater Group
Job ID: 580-88125-2
Project/Site: Swan Island Lagoon Sediment Investigatio

Laboratory: Eurofins TestAmerica, Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-024	01-19-22
Alaska (UST)	State Program	17-024	01-19-20
ANAB	Dept. of Defense ELAP	L2236	01-19-22
ANAB	DoD	L2236	01-19-22
ANAB	ISO/IEC 17025	L2236	01-19-22
ANAB	ISO/IEC 17025	L2236	01-19-22
California	State	2901	11-05-19
California	State Program	2901	11-05-19
Montana (UST)	State	NA	04-13-21
Montana (UST)	State Program	N/A	04-30-20
Oregon	NELAP	WA100007	11-05-19
Oregon	NELAP	WA100007	11-05-19
US Fish & Wildlife	Federal	LE058448-0	07-31-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	Federal	P330-14-00126	02-10-20
USDA	US Federal Programs	P330-17-00039	02-10-20
Washington	State	C553	02-17-20
Washington	State Program	C553	02-17-20

Laboratory: Eurofins TestAmerica, Knoxville

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
	AFCEE	N/A	
ANAB	Dept. of Defense ELAP	L2311	02-14-22
ANAB	Dept. of Energy	L2311.01	02-14-22
ANAB	DoD	L2311	02-13-22
ANAB	DOE	L2311.01	02-13-22
ANAB	ISO/IEC 17025	L2311	02-13-22
Arkansas DEQ	State	2423	06-16-20
Arkansas DEQ	State Program	88-0688	06-16-20
California	State	2423	06-30-20
California	State Program	2423	06-30-20
Colorado	State	TN00009	02-29-20
Colorado	State Program	TN00009	02-28-20
Connecticut	State	PH-0223	09-30-19
Connecticut	State Program	PH-0223	09-30-21
Florida	NELAP	E87177	06-30-20
Florida	NELAP	E87177	06-30-20
Georgia	State Program	906	04-13-20
Georgia (DW)	State	906	04-13-20
Hawaii	State	NA	04-13-20
Hawaii	State Program	N/A	04-13-20
Kansas	NELAP	E-10349	10-31-19
Kansas	NELAP	E-10349	10-31-19
Kentucky (DW)	State	90101	12-31-19
Kentucky (DW)	State Program	90101	12-31-19
Louisiana	NELAP	83979	06-30-20
Louisiana (DW)	NELAP	LA160005	12-31-19
Louisiana (DW)	State	LA019	12-31-19

Accreditation/Certification Summary

Client: Pacific Groundwater Group
Job ID: 580-88125-2
Project/Site: Swan Island Lagoon Sediment Investigatio

Laboratory: Eurofins TestAmerica, Knoxville (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Maryland	State	277	03-31-20
Maryland	State Program	277	03-31-20
Michigan	State	9933	04-13-20
Michigan	State Program	9933	04-13-20
Nevada	State	TN00009	07-31-20
Nevada	State Program	TN00009	07-31-20
New Hampshire	NELAP	2999	01-17-20
New Jersey	NELAP	TN001	06-30-20
New Jersey	NELAP	TN001	06-30-20
New York	NELAP	10781	03-31-20
New York	NELAP	10781	03-31-20
North Carolina (DW)	State	21705	07-31-20
North Carolina (DW)	State Program	21705	07-31-20
North Carolina (WW/SW)	State Program	64	12-31-19
Ohio VAP	State	CL0059	08-28-20
Ohio VAP	State Program	CL0059	08-28-20
Oklahoma	State	9415	09-01-20
Oklahoma	State Program	9415	08-31-20
Oregon	NELAP	TNI0189	01-01-20
Oregon	NELAP	TNI0189	01-01-20
Pennsylvania	NELAP	68-00576	12-31-19
Pennsylvania	NELAP	68-00576	12-31-19
Tennessee	State	02014	04-13-20
Tennessee	State Program	2014	04-13-20
Texas	NELAP	T104704380-16-9	08-31-20
Texas	NELAP	T104704380-18-12	08-31-20
US Fish & Wildlife	Federal	LE-058448-0	07-31-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	Federal	P330-16-00262	08-20-22
USDA	US Federal Programs	P330-19-00236	08-20-22
Utah	NELAP	TN00009	07-31-20
Virginia	NELAP	460176	09-14-19
Virginia	NELAP	460176	09-14-19
Washington	State	C593	01-19-20
Washington	State Program	C593	01-19-20
West Virginia (DW)	State	9955C	12-31-19
West Virginia (DW)	State Program	9955C	12-31-19
West Virginia DEP	State	345	04-30-20
West Virginia DEP	State Program	345	04-30-20
Wisconsin	State	998044300	08-31-20
Wisconsin	State Program	998044300	08-31-20

Sample Summary

Client: Pacific Groundwater Group
Job ID: 580-88125-2
Project/Site: Swan Island Lagoon Sediment Investigatio

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
580-88125-1	A1-0to30-102018	Solid	10/20/18 12:05	07/26/19 13:10	
580-88125-2	A2-0to26-100818	Solid	10/08/18 14:04	07/26/19 13:10	
580-88125-3	A3-0to31-100818	Solid	10/08/18 11:14	07/26/19 13:10	
580-88125-4	A4-0to25-100818	Solid	10/08/18 13:26	07/26/19 13:10	
580-88125-5	A5-0to25-100818	Solid	10/08/18 14:38	07/26/19 13:10	
580-88125-6	A6-0to23-100818	Solid	10/08/18 16:08	07/26/19 13:10	
580-88125-7	A7-0to26-100918	Solid	10/09/18 13:23	07/26/19 13:10	
580-88125-8	C4-0to27-100918	Solid	10/09/18 08:28	07/26/19 13:10	
580-88125-9	D2-0to19-101018	Solid	10/10/18 15:21	07/26/19 13:10	
580-88125-10	F2-0to19-101018	Solid	10/10/18 16:36	07/26/19 13:10	
580-88125-11	G6-0to27-101818	Solid	10/18/18 14:12	07/26/19 13:10	
580-88125-12	H2-0to30-101218	Solid	10/12/18 10:28	07/26/19 13:10	
580-88125-13	J2A3-0to18-101218	Solid	10/12/18 12:57	07/26/19 13:10	
580-88125-14	M4-0to26-101918	Solid	10/19/18 13:11	07/26/19 13:10	
580-88125-15	515-0to26-101918	Solid	10/19/18 13:11	07/26/19 13:10	
580-88125-16	N5-0to28-101418	Solid	10/14/18 16:46	07/26/19 13:10	
580-88125-17	N7-0to27-101418	Solid	10/14/18 15:10	07/26/19 13:10	
580-88125-18	O7-0to27-101918	Solid	10/19/18 15:36	07/26/19 13:10	
580-88125-19	Q2-0to13-101818	Solid	10/18/18 09:39	07/26/19 13:10	
580-88125-20	Q6-0to27-102018	Solid	10/20/18 09:19	07/26/19 13:10	
580-88125-21	T6-0to29-101618	Solid	10/16/18 14:38	07/26/19 13:10	

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Janet Know	Site Contact/Sampler: Jeff Parker	Date:7/25/2019	COC No:
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:Elaine Walker	Carrier:	1 of 2 COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115 88125
2377 Eastlake Ave E, Seattle WA 98102	standard			SDG No.
206 329 0141 Phone	TAT if different from Below			
206 329 6968 FAX	[x] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	1668A - PCB Congeners	8082A - PCB Aroclors	1613B - Dioxin/Furans	6020B Metals - As, Cd, Cu, Pb, Zn	7471A - Mercury	ASTM D7928/D6913 - Grain Size	D854 - Specific Gravity	NWTPH-Diesel Extended	SM9060 - TOC	Total Solids	Moisture @70 C	Sample Specific Notes:
A1-0to30-102018	10/20/2018	12:05:00 PM		S		x	x	x	x	x	x	x	x	x	x	x	580-81257-5
-2 A2-0to26-100818	10/8/2018	2:04:00 PM		S		x	x	x	x	x	x	x	x	x	x	x	580-81041-5
A3-0to31-100818	10/8/2018	11:14:00 AM		S		x	x	x	x	x	x	x	x	x	x	x	580-81041-2
-4 A4-0to25-100818	10/8/2018	1:26:00 PM		S		x	x	x	x	x	x	x	x	x	x	x	580-81041-3
A5-0to25-100818	10/8/2018	2:38:00 PM		S		x	x	x	x	x	x	x	x	x	x	x	580-81041-4
-6 A6-0to23-100818	10/8/2018	4:08:00 PM		S		x	x	x	x	x	x	x	x	x	x	x	580-81041-6
A7-0to26-100918	10/9/2018	1:23:00 PM		S		x	x	x	x	x	x	x	x	x	x	x	580-81041-10
-8 C4-0to27-100918	10/9/2018	8:28:00 AM		S		x	x	x	x	x	x	x	x	x	x	x	580-81041-12
D2-0to19-101018	10/10/2018	3:21:00 PM		S		x	x	x	x	x	x	x	x	x	x	x	580-81041-28
-10 F2-0to19-101018	10/10/2018	4:36:00 PM		S		x	x	x	x	x	x	x	x	x	x	x	580-81041-29
G6-0to27-101818	10/18/2018	2:12:00 PM		S		x	x	x	x	x	x	x	x	x	x	x	580-81213-8
-12 H2-0to30-101218	10/12/2018	10:28:00 AM		S		x	x	x	x	x	x	x	x	x	x	x	580-81081-32

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] Return To Client _____ Months

Archive remaining samples

530-88125 Chain of Custody

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	PGG	7/26/19 1310	M. Elaine Walker	Eurofins TestAmerica	07/26/2019 @ 1310
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Form No. CA-C-WI-002, dated 04/07/2011

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Janet Know	Site Contact/Sampler: Jeff Parker	Date:7/25/2019	COC No:
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:Elaine Walker	Carrier:	2 of 2 COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	standard			98125
206 329 0141 Phone	TAT if different from Below ____			SDG No.
206 329 6968 FAX	☒ standard			
Swan Island Lagoon Sediment Investigation	☐ 1 week			
Site:	☐ 2 days			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	1668A - PCB Congeners	8082A - PCB Aroclors	1613B - Dioxin/Furans	6020B Metals - As, Cd, Cu, Pb, Zn	7471A - Mercury	ASTM D7928/D6913 - Grain Size	D854 - Specific Gravity	NWTPH-Diesel Extended	SM9060 - TOC	Total Solids	Moisture @70 C	Sample Specific Notes:
J2A3-0to18-101218	10/12/2018	12:57:00 PM		S		x	x	x	x	x	x	x	x	x	x	x	580-81081-29
-14 M4-0to26-101918	10/19/2018	1:11:00 PM		S		x	x	x	x	x	x	x	x	x	x	x	580-81257-42
515-0to26-101918	10/19/2018	1:11:00 PM		S		x	x	x	x	x	x	x	x	x	x	x	580-81257-44
-16 N5-0to28-101418	10/14/2018	4:46:00 PM		S		x	x	x	x	x	x	x	x	x	x	x	580-81081-10
N7-0to27-101418	10/14/2018	3:10:00 PM		S		x	x	x	x	x	x	x	x	x	x	x	580-81081-8
-18 O7-0to27-101918	10/19/2018	3:36:00 PM		S		x	x	x	x	x	x	x	x	x	x	x	580-81257-39
Q2-0to13-101818	10/18/2018	9:39:00 AM		S		x	x	x	x	x	x	x	x	x	x	x	580-81213-4
-20 Q6-0to27-102018	10/20/2018	9:19:00 AM		S		x	x	x	x	x	x	x	x	x	x	x	580-81257-23
T6-0to29-101618	10/16/2018	2:38:00 PM		S		x	x	x	x	x	x	x	x	x	x	x	580-81156-24

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant Poison B ☐ Unknown ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☒ Archive For _____ Months

Archive remaining samples

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Jeff Parker	PGG	7/26/19 1310	M. Elaine Walker	Eurofins TestAmerica	07/26/2019 @ 1310
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Form No. CA-C-WI-002, dated 04/07/2011

Eurofins TestAmerica, Seattle
5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310 Fax: 253-922-5047

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Walker, Elaine M	Carrier Tracking No(s):	COC No: 580-68736.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: elaine.walker@testamericainc.com	State of Origin: Oregon	Page: Page 1 of 3
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 580-88125-1
Address: 5815 Middlebrook Pike, ,	Due Date Requested: 8/14/2019			
City: Knoxville	TAT Requested (days):			
State, Zip: TN, 37921				
Phone: 865-291-3000(Tel) 865-584-4315(Fax)	PO #:			
Email:	WO #:			
Project Name: Swan Island Lagoon Sediment Investigatio	Project #: 58013007			
Site:	SSOW#:			

Analysis Requested

580-88125 Chain of Custody

Preservation Codes:
A - HCL
- Hexane
None
AsNaO2
Na2O4S
Na2SO3
Na2S2O3
I2SO4
SP Dodecahydrate
cetone
ICAA
w - pH 4-5
Z - other (specify)
L - EDA
Other:

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	D854/ Specific Gravity	1668B/1668_P_Sox 209 PCBs plus Totals	Screen_1668/Screen_PCB_P_S	Total Number of contai	Special Instructions/Note:
			Preservation Code								
A1-0to30-102018	10/20/18	12:05 Pacific		Solid			X	X	X	1	580-81257-5
A2-0to26-100818	10/8/18	14:04 Pacific		Solid			X	X	X	1	580-81041-5
A3-0to31-100818	10/8/18	11:14 Pacific		Solid			X	X	X	1	580-81041-2
A4-0to25-100818	10/8/18	13:26 Pacific		Solid			X	X	X	1	580-81041-3
A5-0to25-100818	10/8/18	14:38 Pacific		Solid			X	X	X	1	580-81041-4
A6-0to23-100818	10/8/18	16:08 Pacific		Solid			X	X	X	1	580-81041-6
A7-0to26-100918	10/9/18	13:23 Pacific		Solid			X	X	X	1	580-81041-10
C4-0to27-100918	10/9/18	08:28 Pacific		Solid			X	X	X	1	580-81041-12
D2-0to19-101018	10/10/18	15:21 Pacific		Solid			X	X	X	1	580-81041-28

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: K Presley	Date/Time: 8/8/19 1045	Company: TA Euro	Received by: [signature]	Date/Time: 8-8-19 13:30	Company: ETA KNX
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks

Ver: 01/16/2019

Eurofins TestAmerica, Seattle
5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310 Fax: 253-922-5047

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Walker, Elaine M	Carrier Tracking No(s):	COC No: 580-68736.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: elaine.walker@testamericainc.com	State of Origin: Oregon	Page: Page 2 of 3
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 580-88125-1
Address: 5815 Middlebrook Pike,	Due Date Requested: 8/14/2019			
City: Knoxville	TAT Requested (days):			
State, Zip: TN, 37921				
Phone: 865-291-3000(Tel) 865-584-4315(Fax)	PO #:			
Email:	WO #:			
Project Name: Swan Island Lagoon Sediment Investigatio	Project #: 58013007			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	D854/ Specific Gravity	1668B/1668_P_Sox 209 PCBs plus Totals	Screen_1668/Screen_PCB_P_S	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
F2-0to19-101018	10/10/18	16:36 Pacific		Solid			X	X	X	1	580-81041-29
G6-0to27-101818	10/18/18	14:12 Pacific		Solid			X	X	X	1	580-81213-8
H2-0to30-101218	10/12/18	10:28 Pacific		Solid			X	X	X	1	580-81081-32
J2A3-0to18-101218	10/12/18	12:57 Pacific		Solid			X	X	X	1	580-81081-29
M4-0to26-101918	10/19/18	13:11 Pacific		Solid			X	X	X	1	580-81257-42
515-0to26-101918	10/19/18	13:11 Pacific		Solid			X	X	X	1	580-81257-44
N5-0to28-101418	10/14/18	16:46 Pacific		Solid			X	X	X	1	580-81081-10
N7-0to27-101418	10/14/18	15:10 Pacific		Solid			X	X	X	1	580-81081-8
O7-0to27-101918	10/19/18	15:36 Pacific		Solid			X	X	X	1	580-81257-39

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon cut subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: K Preste	Date/Time: 8/8/19 1045	Company: Tacoma	Received by: [signature]	Date/Time: 8-8-19 15:30	Company: BTA KW X
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

Eurofins TestAmerica, Seattle
5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310 Fax 253-922-5047

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Walker, Elaine M	Carrier Tracking No(s):	COC No: 580-68736.3
Client Contact: Shipping/Receiving	Phone:	E-Mail: elaine.walker@testamericainc.com	State of Origin: Oregon	Page: Page 3 of 3
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 580-88125-1
Address: 5815 Middlebrook Pike, ,	Due Date Requested: 8/14/2019			
City: Knoxville	TAT Requested (days):			
State, Zip: TN, 37921				
Phone: 865-291-3000(Tel) 865-584-4315(Fax)	PO #:			
Email:	WO #:			
Project Name: Swan Island Lagoon Sediment Investigatio	Project #: 58013007			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	D854/ Specific Gravity	1668B/1668B_P_Sox_209 PCBs plus Totals	Screen_1668/Screen_PCB_P_S	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
Q2-0to13-101818	10/18/18	09:39 Pacific		Solid			X	X	X	1	580-81213-4
Q6-0to27-102018	10/20/18	09:19 Pacific		Solid			X	X	X	1	580-81257-23
T6-0to29-101618	10/16/18	14:38 Pacific		Solid			X	X	X	1	580-81156-24

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	8/13/19 1045	ETA	[signature]	8-8-19 10:30	ETA KNX
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

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Sacramento
Sample Receiving Notes


580-88125 Field Sheet

Tracking # :_____

SO / PO / FO / SAT / 2-Day / Ground / UPS / CDO / Courier

GSO / OnTrac / Goldstreak / USPS / Other_____

Job:_____

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations.
File in the job folder with the COC.

Notes:_____

Therm. ID: IR/Stem Corr. Factor:_____

Ice_____ Wet_____ Gel_____ Other none

Cooler Custody Seal: —

Sample Custody Seal: —

Cooler ID: —

Temp Observed: 26.4 Corrected: 26.4

From: Temp Blank ☐ Sample ☑

NCM Filed: Yes ☐ No ☐

	Yes	No	NA
Perchlorate has headspace? (Methods 314, 331, 6850)	☐	☐	☑
Alkalinity has no headspace?	☐	☐	☑
CoC is complete w/o discrepancies?	☑	☐	☐
Samples received within holding time?	☑	☐	☐
Sample preservatives verified?	☐	☐	☑
Cooler compromised/tampered with?	☐	☑	☐
Samples compromised/tampered with?	☐	☑	☐
Samples w/o discrepancies?	☑	☐	☐
Sample containers have legible labels?	☑	☐	☐
Containers are not broken or leaking?	☑	☐	☐
Sample date/times are provided.	☑	☐	☐
Appropriate containers are used?	☑	☐	☐
Sample bottles are completely filled?	☑	☐	☐
Zero headspace?*	☐	☐	☑
Multiphasic samples are not present?	☐	☑ PR 08/12/19	☐
Sample temp OK?	☐	☐	☐
Sample out of temp?	☐	☐	☐

Initials: PR Date: 08/12/19

*Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")

Isotope Dilution Summary

Client: Pacific Groundwater Group
Job ID: 580-88125-2
Project/Site: Swan Island Lagoon Sediment Investigatio

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Matrix: Solid **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PCB1L (30-140)	PCB3L (30-140)	PCB4L (30-140)	PCB15L (30-140)	PCB19L (30-140)	PCB37L (30-140)	PCB54L (30-140)	PCB77L (30-140)
580-88125-1	A1-0to30-102018	79	81	78	81	72	83	90	90
580-88125-2	A2-0to26-100818	63	67	60	71	58	74	78	83
580-88125-3	A3-0to31-100818	70	71	67	75	69	83	88	88
580-88125-4	A4-0to25-100818	70	73	70	79	71	86	82	93
580-88125-5	A5-0to25-100818	67	70	64	76	68	81	93	88
580-88125-6	A6-0to23-100818	65	68	62	72	67	81	84	86
580-88125-7	A7-0to26-100918	69	72	61	78	64	87	88	104
580-88125-8	C4-0to27-100918	65	71	65	76	68	81	90	85
580-88125-9	D2-0to19-101018	73	75	72	82	74	88	82	94
580-88125-10	F2-0to19-101018	79	82	68	80	73	84	109	91
580-88125-11	G6-0to27-101818	84	83	72	85	73	88	104	91
580-88125-12	H2-0to30-101218	73	75	71	82	70	88	81	97
580-88125-13	J2A3-0to18-101218	78	79	72	80	72	84	103	88
580-88125-14	M4-0to26-101918	71	75	71	79	74	86	95	91
580-88125-15	515-0to26-101918	61	64	67	75	82	97	92	94
580-88125-16	N5-0to28-101418	47	51	49	56	50	63	64	68
580-88125-17	N7-0to27-101418	65	67	67	76	67	89	84	90
580-88125-18	O7-0to27-101918	82	82	77	88	81	94	103	94
580-88125-19	Q2-0to13-101818	79	77	75	84	71	93	83	97
580-88125-20	Q6-0to27-102018	73	74	73	80	78	95	101	102
580-88125-21	T6-0to29-101618	76	79	77	88	82	98	104	97
LCS 140-32775/16-B	Lab Control Sample	60	63	57	63	58	67	62	64
LCS 140-32817/17-B	Lab Control Sample	66	64	61	70	60	81	73	87
MB 140-32775/15-B	Method Blank	76	76	70	76	68	74	74	80
MB 140-32817/16-B	Method Blank	65	70	67	72	65	77	74	80

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PCB81L (30-140)	PCB104L (30-140)	PCB105L (30-140)	P114L (30-140)	PCB118L (30-140)	PCB123L (30-140)	PCB126L (30-140)	PCB155L (30-140)
580-88125-1	A1-0to30-102018	89	82	80	78	79	78	88	94
580-88125-2	A2-0to26-100818	81	75	72	72	73	70	79	82
580-88125-3	A3-0to31-100818	87	78	81	79	80	79	88	91
580-88125-4	A4-0to25-100818	89	82	82	81	83	80	90	86
580-88125-5	A5-0to25-100818	87	80	79	79	79	78	85	87
580-88125-6	A6-0to23-100818	84	82	77	77	80	77	86	92
580-88125-7	A7-0to26-100918	101	91	86	88	89	88	95	107
580-88125-8	C4-0to27-100918	83	87	80	82	84	83	94	98
580-88125-9	D2-0to19-101018	91	86	85	84	84	83	95	91
580-88125-10	F2-0to19-101018	89	81	79	79	80	80	89	87
580-88125-11	G6-0to27-101818	88	87	82	81	82	83	91	94
580-88125-12	H2-0to30-101218	95	83	83	82	83	82	94	90
580-88125-13	J2A3-0to18-101218	86	86	81	80	81	80	88	92
580-88125-14	M4-0to26-101918	89	84	82	82	84	83	91	97
580-88125-15	515-0to26-101918	90	89	83	82	84	83	93	100
580-88125-16	N5-0to28-101418	65	58	58	58	60	59	66	69
580-88125-17	N7-0to27-101418	85	80	77	78	80	78	87	91
580-88125-18	O7-0to27-101918	91	93	87	85	86	85	97	101
580-88125-19	Q2-0to13-101818	94	89	86	83	84	83	93	101
580-88125-20	Q6-0to27-102018	98	86	86	85	86	84	96	101
580-88125-21	T6-0to29-101618	95	95	87	87	88	88	97	102

Isotope Dilution Summary

Client: Pacific Groundwater Group
Job ID: 580-88125-2
Project/Site: Swan Island Lagoon Sediment Investigatio

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Matrix: Solid **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PCB81L	PCB104L	PCB105L	P114L	PCB118L	PCB123L	PCB126L	PCB155L
Lab Sample ID	Client Sample ID	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)
LCS 140-32775/16-B	Lab Control Sample	63	69	67	67	67	66	67	70
LCS 140-32817/17-B	Lab Control Sample	82	78	81	81	81	80	89	87
MB 140-32775/15-B	Method Blank	77	84	81	80	82	79	85	83
MB 140-32817/16-B	Method Blank	78	84	80	78	80	80	86	89

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PCB156L	PCB157L	PCB167L	PCB169L	PCB170L	PCB188L	PCB189L	PCB202L
Lab Sample ID	Client Sample ID	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)
580-88125-1	A1-0to30-102018	85 C	85 C156	84	96	81	78	87	89
580-88125-2	A2-0to26-100818	77 C	77 C156	79	88	73	71	77	79
580-88125-3	A3-0to31-100818	82 C	82 C156	80	95	78	76	87	82
580-88125-4	A4-0to25-100818	84 C	84 C156	82	94	79	77	86	83
580-88125-5	A5-0to25-100818	83 C	83 C156	80	92	79	81	79	78
580-88125-6	A6-0to23-100818	82 C	82 C156	79	89	75	78	84	80
580-88125-7	A7-0to26-100918	96 C	96 C156	95	107	96	86	96	96
580-88125-8	C4-0to27-100918	84 C	84 C156	85	88	82	80	98	83
580-88125-9	D2-0to19-101018	90 C	90 C156	90	102	83	82	89	88
580-88125-10	F2-0to19-101018	83 C	83 C156	82	97	75	77	89	75
580-88125-11	G6-0to27-101818	82 C	82 C156	81	93	82	83	89	79
580-88125-12	H2-0to30-101218	86 C	86 C156	86	98	81	80	87	85
580-88125-13	J2A3-0to18-101218	77 C	77 C156	76	81	76	86	91	79
580-88125-14	M4-0to26-101918	89 C	89 C156	86	100	81	80	86	86
580-88125-15	515-0to26-101918	86 C	86 C156	86	100	80	82	89	88
580-88125-16	N5-0to28-101418	62 C	62 C156	62	72	59	57	63	61
580-88125-17	N7-0to27-101418	83 C	83 C156	81	92	75	79	85	85
580-88125-18	O7-0to27-101918	87 C	87 C156	85	95	82	87	92	88
580-88125-19	Q2-0to13-101818	88 C	88 C156	88	100	87	80	84	97
580-88125-20	Q6-0to27-102018	89 C	89 C156	88	103	86	85	91	91
580-88125-21	T6-0to29-101618	85 C	85 C156	86	96	85	86	94	90
LCS 140-32775/16-B	Lab Control Sample	66 C	66 C156	67	69	64	68	66	70
LCS 140-32817/17-B	Lab Control Sample	85 C	85 C156	86	96	79	79	85	86
MB 140-32775/15-B	Method Blank	80 C	80 C156	79	85	79	80	81	83
MB 140-32817/16-B	Method Blank	83 C	83 C156	84	93	81	79	84	87

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PCB205L	PCB206L	PCB208L	PCB209L				
Lab Sample ID	Client Sample ID	(30-140)	(30-140)	(30-140)	(30-140)				
580-88125-1	A1-0to30-102018	78	72	81	66				
580-88125-2	A2-0to26-100818	68	61	70	54				
580-88125-3	A3-0to31-100818	78	70	77	62				
580-88125-4	A4-0to25-100818	77	71	80	65				
580-88125-5	A5-0to25-100818	71	67	70	57				
580-88125-6	A6-0to23-100818	72	66	72	60				
580-88125-7	A7-0to26-100918	86	81	94	73				
580-88125-8	C4-0to27-100918	78	67	77	59				
580-88125-9	D2-0to19-101018	82	77	86	71				
580-88125-10	F2-0to19-101018	77	67	79	57				
580-88125-11	G6-0to27-101818	78	71	74	59				
580-88125-12	H2-0to30-101218	78	74	82	68				
580-88125-13	J2A3-0to18-101218	73	59	74	48				
580-88125-14	M4-0to26-101918	78	73	78	64				

Isotope Dilution Summary

Client: Pacific Groundwater Group
Job ID: 580-88125-2
Project/Site: Swan Island Lagoon Sediment Investigatio

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Matrix: Solid
Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	PCB205L (30-140)	PCB206L (30-140)	PCB208L (30-140)	PCB209L (30-140)
580-88125-15	515-0to26-101918	79	77	85	71
580-88125-16	N5-0to28-101418	58	57	59	48
580-88125-17	N7-0to27-101418	73	71	77	61
580-88125-18	O7-0to27-101918	80	79	82	65
580-88125-19	Q2-0to13-101818	80	74	82	71
580-88125-20	Q6-0to27-102018	82	77	86	69
580-88125-21	T6-0to29-101618	81	78	84	67
LCS 140-32775/16-B	Lab Control Sample	63	62	64	61
LCS 140-32817/17-B	Lab Control Sample	80	77	84	76
MB 140-32775/15-B	Method Blank	76	74	78	70
MB 140-32817/16-B	Method Blank	79	77	80	73

Surrogate Legend

PCB1L = PCB-1L
PCB3L = PCB-3L
PCB4L = PCB-4L
PCB15L = PCB-15L
PCB19L = PCB-19L
PCB37L = PCB-37L
PCB54L = PCB-54L
PCB77L = PCB-77L
PCB81L = PCB-81L
PCB104L = PCB-104L
PCB105L = PCB-105L
P114L = PCB-114L
PCB118L = PCB-118L
PCB123L = PCB-123L
PCB126L = PCB-126L
PCB155L = PCB-155L
PCB156L = PCB-156L
PCB157L = PCB-157L
PCB167L = PCB-167L
PCB169L = PCB-169L
PCB170L = PCB-170L
PCB188L = PCB-188L
PCB189L = PCB-189L
PCB202L = PCB-202L
PCB205L = PCB-205L
PCB206L = PCB-206L
PCB208L = PCB-208L
PCB209L = PCB-209L

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ANALYTICAL REPORT

Eurofins TestAmerica, Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

Laboratory Job ID: 580-88908-1
Client Project/Site: Swan Island Lagoon Sediment Investigatio

For:
Pacific Groundwater Group
2377 Eastlake Avenue E
Seattle, Washington 98102

Attn: Ms. Inger Jackson

M. Elaine Walker

Authorized for release by:
10/14/2019 3:02:15 PM

Elaine Walker, Project Manager II
(253)248-4972
elaine.walker@testamericainc.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 580-88908-1

Laboratory: Eurofins TestAmerica, Seattle

Narrative

CASE NARRATIVE
Client: Pacific Groundwater Group
Project: Swan Island Lagoon Sediment Investigation
Report Number: 580-88908-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) resulting from a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are an unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes within the calibration range of the instrument or that reduces the interferences thereby enabling the quantification of target analytes.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 9/3/2019 3:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 3.3º C and 5.2º C.

Receipt Exceptions

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): 712-82819 (580-88908-75). The container labels list the sampling date 8/28/19, while the COC lists 8/27/19 even though the ID incorporates the correct date (8/28/19). The sample is logged in per container labels.

The Client requested that we relinquish the archive container for the following samples to ARI: H3-SC1b-20to30-82819 (580-88908-1), J3-SC1b-30to40-82719 (580-88908-38) and J3-SC1b-40to50-82719 (580-88908-39). These were picked up by the ARI courier on 9/12 and a copy of the COC was attached to the job for reference.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

POLYCHLORINATED BIPHENYLS CONGENERS (PCBS)
Samples J5-SC1b-20to30-82719 (580-88908-26), J5-SC1b-30to40-82719 (580-88908-27), J5-SC1b-40to50-82719 (580-88908-28), J5-SC1b-50to60-82719 (580-88908-29), J5-SC1b-60to70-82719 (580-88908-30), J5-SC1b-70to80-82719 (580-88908-31), J5-SC1b-80to90-82719 (580-88908-32), J5-SC1b-90to100-82719 (580-88908-33), J5-SC1b-100to110-82719 (580-88908-34), J5-SC1b-00to10-82719 (580-88908-35) and J5-SC1b-10to20-82719 (580-88908-36) were analyzed for polychlorinated biphenyls congeners (PCBs) in accordance with EPA Method 1668A. The samples were prepared on 09/17/2019 and 10/03/2019 and analyzed on 09/26/2019, 10/03/2019, 10/04/2019, 10/09/2019, 10/10/2019 and 10/11/2019.

The following samples went through Gel-Permeation Cleanup procedure, based on EPA method 3640A: J5-SC1b-20to30-82719 (580-88908-26), J5-SC1b-30to40-82719 (580-88908-27), J5-SC1b-40to50-82719 (580-88908-28), J5-SC1b-50to60-82719 (580-88908-29), J5-SC1b-60to70-82719 (580-88908-30), J5-SC1b-70to80-82719 (580-88908-31), J5-SC1b-80to90-82719 (580-88908-32), J5-SC1b-90to100-82719 (580-88908-33), J5-SC1b-100to110-82719 (580-88908-34), J5-SC1b-00to10-82719 (580-88908-35), and J5-SC1b-10to20-82719 (580-88908-36).

Several analytes were detected in method blank MB 140-33628/12-B at levels that were above the method detection limit but below the

Job ID: 580-88908-1 (Continued)

Laboratory: Eurofins TestAmerica, Seattle (Continued)

reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Polychlorinated biphenyls, Total was detected in method blank MB 140-34150/12-B at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Several analytes were detected in method blank MB 140-34150/12-B at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

The Method Blank and Laboratory Control samples (LCS 140-33628/13-B) and (MB 140-33628/12-B) were analyzed at a 5-fold dilution due to matrix interferences which prevented the instrumentation from locking. The samples were re-extracted in a different batch.

One or more ion abundance ratios are outside criteria for the Isotope Dilution Analyte (IDA) associated with the following samples: J5-SC1b-30to40-82719 (580-88908-27), J5-SC1b-40to50-82719 (580-88908-28), and J5-SC1b-70to80-82719 (580-88908-31).

The following samples exhibited elevated noise or matrix interferences for one or more analytes causing elevation of the detection limit (EDL): J5-SC1b-30to40-82719 (580-88908-27), J5-SC1b-70to80-82719 (580-88908-31), and J5-SC1b-00to10-82719 (580-88908-35). The reporting limit (RL) for the affected analytes has been raised to be equal to the EDL, and a "G" qualifier applied.

Samples J5-SC1b-20to30-82719 (580-88908-26)[5X], J5-SC1b-60to70-82719 (580-88908-30)[5X] and J5-SC1b-00to10-82719 (580-88908-35)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PCB CONGENERS - WATER

Sample 711-82719 (580-88908-74) was analyzed for PCB Congeners in accordance with 1668A. The samples was prepared on 09/16/2019 and analyzed on 09/24/2019.

The following sample went through Gel-Permeation Cleanup procedure, based on EPA method 3640A: 711-82719 (580-88908-74).

Several analytes were detected in method blank MB 140-33603/10-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

One or more ion abundance ratios are outside criteria for the Isotope Dilution Analyte (IDA) associated with the following samples: (LCS 140-33603/11-A) and (MB 140-33603/10-A).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS

Samples J5-SC1b-20to30-82719 (580-88908-26), J5-SC1b-30to40-82719 (580-88908-27), J5-SC1b-40to50-82719 (580-88908-28), J5-SC1b-50to60-82719 (580-88908-29), J5-SC1b-60to70-82719 (580-88908-30), J5-SC1b-70to80-82719 (580-88908-31), J5-SC1b-80to90-82719 (580-88908-32), J5-SC1b-90to100-82719 (580-88908-33), J5-SC1b-100to110-82719 (580-88908-34), J5-SC1b-00to10-82719 (580-88908-35) and J5-SC1b-10to20-82719 (580-88908-36) were analyzed for percent solids in accordance with ASTM D2216. The samples were analyzed on 09/11/2019.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Qualifiers

Dioxin

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
C	The compound co-eluted with other compounds
C108	The compound co-eluted with PCB-108
C110	The compound co-eluted with PCB-110
C12	The compound co-eluted with PCB-12
C128	The compound co-eluted with PCB-128
C129	The compound co-eluted with PCB-129
C134	The compound co-eluted with PCB-134
C135	The compound co-eluted with PCB-135
C139	The compound co-eluted with PCB-139
C147	The compound co-eluted with PCB-147
C153	The compound co-eluted with PCB-153
C156	The compound co-eluted with PCB-156
C171	The compound co-eluted with PCB-171
C18	The compound co-eluted with PCB-18
C180	The compound co-eluted with PCB-180
C183	The compound co-eluted with PCB-183
C198	The compound co-eluted with PCB-198
C20	The compound co-eluted with PCB-20
C21	The compound co-eluted with PCB-21
C26	The compound co-eluted with PCB-26
C40	The compound co-eluted with PCB-40
C43	The compound co-eluted with PCB-43
C44	The compound co-eluted with PCB-44
C45	The compound co-eluted with PCB-45
C49	The compound co-eluted with PCB-49
C50	The compound co-eluted with PCB-50
C59	The compound co-eluted with PCB-59
C61	The compound co-eluted with PCB-61
C83	The compound co-eluted with PCB-83
C85	The compound co-eluted with PCB-85
C86	The compound co-eluted with PCB-86
C88	The compound co-eluted with PCB-88
C90	The compound co-eluted with PCB-90
C93	The compound co-eluted with PCB-93
C98	The compound co-eluted with PCB-98
G	The reported quantitation limit has been raised due to an exhibited elevated noise or matrix interference
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample ID: J5-SC1b-20to30-82719
Lab Sample ID: 580-88908-26

Date Collected: 08/27/19 14:55
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 50.5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	1.1		0.050	0.0045	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-2	0.12	q	0.050	0.0045	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-3	0.54		0.050	0.0044	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-4	0.64		0.099	0.0059	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-5	0.12		0.050	0.0027	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-6	0.54		0.050	0.0027	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-7	0.13		0.050	0.0026	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-8	1.9		0.099	0.0027	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-9	0.17		0.050	0.0030	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-10	0.033	J q	0.050	0.0029	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-11	0.047	J B	0.099	0.0026	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-12	0.18	C	0.099	0.0026	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-13	0.18	C12	0.099	0.0026	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-14	ND		0.050	0.0023	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-15	0.59		0.050	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-16	1.0		0.050	0.0035	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-17	1.6		0.050	0.0027	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-18	2.5	C	0.099	0.0024	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-19	0.26		0.050	0.0033	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-20	4.8	C	0.099	0.024	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-21	2.1	C	0.099	0.023	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-22	1.1		0.050	0.026	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-23	ND		0.050	0.025	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-24	0.026	J	0.050	0.0020	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-25	0.58		0.050	0.024	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-26	0.98	C	0.099	0.024	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-27	0.18		0.050	0.0020	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-28	4.8	C20	0.099	0.024	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-29	0.98	C26	0.099	0.024	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-30	2.5	C18	0.099	0.0024	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-31	3.5		0.099	0.023	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-32	1.3		0.050	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-33	2.1	C21	0.099	0.023	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-34	0.067		0.050	0.026	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-35	0.066		0.050	0.026	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-36	ND		0.050	0.024	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-37	0.87		0.050	0.025	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-38	ND		0.050	0.024	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-39	0.095		0.050	0.023	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-40	6.0	C	0.15	0.021	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-41	6.0	C40	0.15	0.021	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-42	2.5		0.050	0.022	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-43	0.36	q C	0.099	0.019	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-44	23	C B	0.15	0.018	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-45	5.1	C B	0.099	0.021	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-46	0.46		0.050	0.025	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-47	23	C44 B	0.15	0.018	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-48	1.0		0.050	0.020	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-49	15	C B	0.099	0.017	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5

Client Sample ID: J5-SC1b-20to30-82719
Lab Sample ID: 580-88908-26

Date Collected: 08/27/19 14:55
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 50.5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	2.9	C	0.099	0.020	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-51	5.1	C45 B	0.099	0.021	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-52	33	B	0.050	0.021	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-53	2.9	C50	0.099	0.020	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-54	0.35		0.050	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-55	0.096		0.050	0.015	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-56	3.1		0.050	0.015	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-57	0.064		0.050	0.015	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-58	0.095		0.050	0.014	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-59	0.68	C	0.15	0.014	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-60	0.58		0.050	0.014	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-61	21	C B	0.20	0.014	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-62	0.68	C59	0.15	0.014	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-63	0.38		0.050	0.013	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-64	3.3		0.050	0.013	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-65	23	C44 B	0.15	0.018	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-66	9.9		0.050	0.015	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-67	0.35		0.050	0.013	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-68	0.49		0.050	0.013	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-69	15	C49 B	0.099	0.017	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-70	21	C61 B	0.20	0.014	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-71	6.0	C40	0.15	0.021	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-72	0.78		0.050	0.014	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-73	0.36	q C43	0.099	0.019	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-74	21	C61 B	0.20	0.014	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-75	0.68	C59	0.15	0.014	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-76	21	C61 B	0.20	0.014	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-77	0.47		0.050	0.014	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-78	ND		0.050	0.014	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-79	0.57		0.050	0.012	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-80	0.071		0.050	0.013	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-81	0.047	J q	0.050	0.014	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-82	3.9		0.050	0.0029	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-83	34	C	0.099	0.0026	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-84	11	B	0.050	0.0029	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-85	5.7	C B	0.15	0.0020	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-86	26	C	0.30	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-87	26	C86	0.30	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-88	8.9	C	0.099	0.0025	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-89	0.25		0.050	0.0028	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-90	53	C B	0.15	0.0022	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-91	8.9	C88	0.099	0.0025	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-92	15		0.050	0.0026	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-93	2.4	C	0.099	0.0025	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-94	0.84		0.050	0.0027	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-95	41		0.050	0.0026	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-96	0.56		0.050	0.0020	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-97	26	C86	0.30	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-98	3.1	C	0.099	0.0025	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5

Client Sample ID: J5-SC1b-20to30-82719
Lab Sample ID: 580-88908-26

Date Collected: 08/27/19 14:55
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 50.5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	34	C83	0.099	0.0026	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-100	2.4	C93	0.099	0.0025	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-101	53	C90 B	0.15	0.0022	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-102	3.1	C98	0.099	0.0025	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-103	2.5		0.050	0.0024	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-104	0.087		0.050	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-105	11		0.050	0.036	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-106	ND		0.050	0.037	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-107	3.3		0.050	0.034	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-108	1.2	C	0.099	0.037	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-109	26	C86	0.30	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-110	47	C	0.099	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-111	0.24		0.050	0.0017	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-112	ND		0.050	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-113	53	C90 B	0.15	0.0022	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-114	0.67		0.050	0.034	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-115	47	C110	0.099	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-116	5.7	C85 B	0.15	0.0020	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-117	5.7	C85 B	0.15	0.0020	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-118	31	B	0.050	0.034	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-119	26	C86	0.30	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-120	0.83		0.050	0.0017	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-121	0.10		0.050	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-122	0.39		0.050	0.040	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-123	0.40		0.050	0.035	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-124	1.2	C108	0.099	0.037	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-125	26	C86	0.30	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-126	0.038	J q	0.050	0.036	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-127	0.086		0.050	0.036	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-128	6.6	C B	0.099	0.012	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-129	47	C B	0.20	0.013	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-130	3.5		0.050	0.017	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-131	0.63		0.050	0.016	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-132	18		0.050	0.016	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-133	2.0		0.050	0.015	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-134	3.5	C	0.099	0.016	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-135	27	C B	0.099	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-136	11	B	0.050	0.00098	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-137	1.8		0.050	0.013	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-138	47	C129 B	0.20	0.013	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-139	1.6	C	0.099	0.014	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-140	1.6	C139	0.099	0.014	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-141	7.8		0.050	0.014	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-142	0.024	J q	0.050	0.016	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-143	3.5	C134	0.099	0.016	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-144	2.2		0.050	0.0012	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-145	0.067		0.050	0.00096	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-146	16	B	0.050	0.014	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-147	53	C B	0.099	0.014	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88908-1

Client Sample ID: J5-SC1b-20to30-82719
Date Collected: 08/27/19 14:55
Date Received: 09/03/19 15:00

Lab Sample ID: 580-88908-26
Matrix: Solid
Percent Solids: 50.5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	0.74		0.050	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-149	53	C147 B	0.099	0.014	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-150	0.70		0.050	0.00092	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-151	27	C135 B	0.099	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-152	0.13		0.050	0.00091	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-153	47	C B	0.099	0.011	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-154	4.1		0.050	0.0011	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-155	0.031	J	0.050	0.00087	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-156	5.0	C	0.099	0.013	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-157	5.0	C156	0.099	0.013	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-158	4.2		0.050	0.0099	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-159	0.58		0.050	0.010	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-160	47	C129 B	0.20	0.013	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-161	0.016	J q	0.050	0.010	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-162	0.13		0.050	0.010	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-163	47	C129 B	0.20	0.013	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-164	3.7		0.050	0.011	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-165	0.11		0.050	0.012	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-166	6.6	C128 B	0.099	0.012	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-167	1.5		0.050	0.0085	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-168	47	C153 B	0.099	0.011	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-169	0.085		0.050	0.0095	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-170	12	B	0.050	0.00084	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-171	4.2	C	0.099	0.00086	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-172	2.3		0.050	0.00083	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-173	4.2	C171	0.099	0.00086	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-174	14	B	0.050	0.00087	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-175	0.58		0.050	0.00077	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-176	1.9		0.050	0.00054	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-177	9.8	B	0.050	0.00088	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-178	3.7		0.050	0.00081	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-179	7.8		0.050	0.00058	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-180	29	C B	0.099	0.00067	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-181	0.14		0.050	0.00075	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-182	0.24		0.050	0.00072	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-183	9.1	C B	0.099	0.00073	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-184	0.021	J	0.050	0.00058	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-185	9.1	C183 B	0.099	0.00073	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-186	ND		0.050	0.00058	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-187	20	B	0.050	0.00074	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-188	0.11		0.050	0.00054	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-189	0.46		0.050	0.0041	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-190	2.6	B	0.050	0.00060	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-191	0.58		0.050	0.00060	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-192	ND		0.050	0.00064	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-193	29	C180 B	0.099	0.00067	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-194	6.6		0.050	0.015	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-195	3.0		0.050	0.018	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-196	3.5		0.050	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5

Client Sample ID: J5-SC1b-20to30-82719
Lab Sample ID: 580-88908-26
Date Collected: 08/27/19 14:55
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 50.5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	0.25	q	0.050	0.00092	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-198	7.6	C B	0.099	0.0014	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-199	7.6	C198 B	0.099	0.0014	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-200	0.98		0.050	0.00098	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-201	0.96		0.050	0.00093	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-202	1.5		0.050	0.0011	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-203	4.4		0.050	0.0012	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-204	ND		0.050	0.0010	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-205	0.34		0.050	0.011	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-206	2.6		0.050	0.0088	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-207	0.33		0.050	0.0062	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-208	0.62		0.050	0.0064	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
PCB-209	1.2		0.050	0.0017	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
Total Monochlorobiphenyls	1.8	q	0.050	0.0045	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
Total Dichlorobiphenyls	4.4	q B	0.099	0.0029	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
Total Trichlorobiphenyls	21		0.099	0.017	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
Total Tetrachlorobiphenyls	130	q B	0.20	0.016	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
Total Pentachlorobiphenyls	300	q B	0.30	0.013	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
Total Hexachlorobiphenyls	270	q B	0.20	0.0095	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
Total Heptachlorobiphenyls	120	B	0.099	0.00087	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
Total Octachlorobiphenyls	29	q B	0.099	0.0048	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
Total Nonachlorobiphenyls	3.6		0.050	0.0071	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5
Polychlorinated biphenyls, Total	890	q B	0.30	0.0081	ng/g	☼	09/17/19 12:25	10/03/19 15:41	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*39*		*30 - 140*	*09/17/19 12:25*	*10/03/19 15:41*	*5*
PCB-3L	*53*		*30 - 140*	*09/17/19 12:25*	*10/03/19 15:41*	*5*
PCB-4L	*54*		*30 - 140*	*09/17/19 12:25*	*10/03/19 15:41*	*5*
PCB-15L	*79*		*30 - 140*	*09/17/19 12:25*	*10/03/19 15:41*	*5*
PCB-19L	*64*		*30 - 140*	*09/17/19 12:25*	*10/03/19 15:41*	*5*
PCB-37L	*82*		*30 - 140*	*09/17/19 12:25*	*10/03/19 15:41*	*5*
PCB-54L	*65*		*30 - 140*	*09/17/19 12:25*	*10/03/19 15:41*	*5*
PCB-77L	*84*		*30 - 140*	*09/17/19 12:25*	*10/03/19 15:41*	*5*
PCB-81L	*82*		*30 - 140*	*09/17/19 12:25*	*10/03/19 15:41*	*5*
PCB-104L	*86*		*30 - 140*	*09/17/19 12:25*	*10/03/19 15:41*	*5*
PCB-105L	*78*		*30 - 140*	*09/17/19 12:25*	*10/03/19 15:41*	*5*
PCB-114L	*77*		*30 - 140*	*09/17/19 12:25*	*10/03/19 15:41*	*5*
PCB-118L	*80*		*30 - 140*	*09/17/19 12:25*	*10/03/19 15:41*	*5*
PCB-123L	*79*		*30 - 140*	*09/17/19 12:25*	*10/03/19 15:41*	*5*
PCB-126L	*86*		*30 - 140*	*09/17/19 12:25*	*10/03/19 15:41*	*5*
PCB-155L	*93*		*30 - 140*	*09/17/19 12:25*	*10/03/19 15:41*	*5*
PCB-156L	*82*	*C*	*30 - 140*	*09/17/19 12:25*	*10/03/19 15:41*	*5*
PCB-157L	*82*	*C156*	*30 - 140*	*09/17/19 12:25*	*10/03/19 15:41*	*5*
PCB-167L	*83*		*30 - 140*	*09/17/19 12:25*	*10/03/19 15:41*	*5*
PCB-169L	*97*		*30 - 140*	*09/17/19 12:25*	*10/03/19 15:41*	*5*
PCB-170L	*77*		*30 - 140*	*09/17/19 12:25*	*10/03/19 15:41*	*5*
PCB-188L	*75*		*30 - 140*	*09/17/19 12:25*	*10/03/19 15:41*	*5*
PCB-189L	*86*		*30 - 140*	*09/17/19 12:25*	*10/03/19 15:41*	*5*
PCB-202L	*82*		*30 - 140*	*09/17/19 12:25*	*10/03/19 15:41*	*5*
PCB-205L	*76*		*30 - 140*	*09/17/19 12:25*	*10/03/19 15:41*	*5*

Client Sample ID: J5-SC1b-20to30-82719
Lab Sample ID: 580-88908-26

Date Collected: 08/27/19 14:55
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 50.5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-206L	70		30 - 140	09/17/19 12:25	10/03/19 15:41	5
PCB-208L	78		30 - 140	09/17/19 12:25	10/03/19 15:41	5
PCB-209L	71		30 - 140	09/17/19 12:25	10/03/19 15:41	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	75		40 - 125	09/17/19 12:25	10/03/19 15:41	5
PCB-111L	86		40 - 125	09/17/19 12:25	10/03/19 15:41	5
PCB-178L	80		40 - 125	09/17/19 12:25	10/03/19 15:41	5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.83		0.049	0.0046	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-2	0.082		0.049	0.0046	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-3	0.36		0.049	0.0046	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-4	0.58		0.099	0.0032	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-5	0.044	J	0.049	0.0021	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-6	0.43		0.049	0.0021	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-7	0.10		0.049	0.0020	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-8	1.6		0.099	0.0021	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-9	0.14		0.049	0.0023	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-10	0.036	J	0.049	0.0022	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-11	0.036	J q B	0.099	0.0020	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-12	0.16	C	0.099	0.0020	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-13	0.16	C12	0.099	0.0020	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-14	ND		0.049	0.0017	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-15	0.56		0.049	0.0020	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-16	1.2		0.049	0.0023	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-17	1.8	B	0.049	0.0018	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-18	2.8	C B	0.099	0.0015	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-19	0.25		0.049	0.0021	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-20	4.8	C B	0.099	0.028	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-21	2.1	C B	0.099	0.027	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-22	1.1	B	0.049	0.030	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-23	ND		0.049	0.029	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-24	0.032	J	0.049	0.0013	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-25	0.54		0.049	0.027	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-26	0.94	C B	0.099	0.028	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-27	0.22		0.049	0.0013	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-28	4.8	C20 B	0.099	0.028	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-29	0.94	C26 B	0.099	0.028	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-30	2.8	C18 B	0.099	0.0015	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-31	3.5	B	0.099	0.027	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-32	1.3		0.049	0.0012	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-33	2.1	C21 B	0.099	0.027	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-34	0.064		0.049	0.030	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-35	0.064		0.049	0.030	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-36	ND		0.049	0.027	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-37	0.90	B	0.049	0.029	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-38	ND		0.049	0.028	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-39	0.084		0.049	0.026	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5

Client Sample ID: J5-SC1b-20to30-82719
Lab Sample ID: 580-88908-26

Date Collected: 08/27/19 14:55
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 50.5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-40	5.7	C	0.15	0.016	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-41	5.7	C40	0.15	0.016	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-42	2.4		0.049	0.017	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-43	0.36	q C	0.099	0.015	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-44	21	C B	0.15	0.014	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-45	4.4	C B	0.099	0.017	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-46	0.45		0.049	0.019	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-47	21	C44 B	0.15	0.014	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-48	1.0		0.049	0.015	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-49	14	C B	0.099	0.013	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-50	2.6	C	0.099	0.016	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-51	4.4	C45 B	0.099	0.017	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-52	30	B	0.049	0.016	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-53	2.6	C50	0.099	0.016	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-54	0.31		0.049	0.0012	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-55	ND		0.049	0.011	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-56	3.0		0.049	0.012	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-57	ND		0.049	0.011	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-58	0.097		0.049	0.011	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-59	0.66	C	0.15	0.011	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-60	0.58		0.049	0.011	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-61	19	C B	0.20	0.011	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-62	0.66	C59	0.15	0.011	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-63	0.36		0.049	0.010	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-64	3.2		0.049	0.010	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-65	21	C44 B	0.15	0.014	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-66	9.2	B	0.049	0.011	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-67	0.051		0.049	0.010	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-68	0.51	B	0.049	0.0099	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-69	14	C49 B	0.099	0.013	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-70	19	C61 B	0.20	0.011	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-71	5.7	C40	0.15	0.016	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-72	0.84		0.049	0.011	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-73	0.36	q C43	0.099	0.015	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-74	19	C61 B	0.20	0.011	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-75	0.66	C59	0.15	0.011	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-76	19	C61 B	0.20	0.011	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-77	0.52		0.049	0.011	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-78	ND		0.049	0.011	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-79	0.50		0.049	0.0095	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-80	ND		0.049	0.0099	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-81	0.021	J	0.049	0.011	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-82	3.6	B	0.049	0.0018	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-83	33	C B	0.099	0.0017	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-84	9.4	B	0.049	0.0018	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-85	5.3	C	0.15	0.0013	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-86	25	C B	0.30	0.0013	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-87	25	C86 B	0.30	0.0013	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-88	8.2	C B	0.099	0.0016	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5

Client Sample ID: J5-SC1b-20to30-82719
Lab Sample ID: 580-88908-26

Date Collected: 08/27/19 14:55
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 50.5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-89	ND		0.049	0.0018	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-90	**48**	**C B**	0.15	0.0014	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-91	**8.2**	**C88 B**	0.099	0.0016	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-92	**14**	**B**	0.049	0.0017	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-93	**2.2**	**C**	0.099	0.0016	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-94	**0.81**		0.049	0.0017	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-95	**37**	**B**	0.049	0.0016	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-96	**0.48**		0.049	0.0013	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-97	**25**	**C86 B**	0.30	0.0013	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-98	**2.7**	**C**	0.099	0.0016	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-99	**33**	**C83 B**	0.099	0.0017	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-100	**2.2**	**C93**	0.099	0.0016	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-101	**48**	**C90 B**	0.15	0.0014	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-102	**2.7**	**C98**	0.099	0.0016	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-103	**2.6**		0.049	0.0015	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-104	ND		0.049	0.0011	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-105	**9.6**	**B**	0.049	0.028	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-106	ND		0.049	0.028	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-107	**3.2**	**B**	0.049	0.026	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-108	**1.1**	**C**	0.099	0.029	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-109	**25**	**C86 B**	0.30	0.0013	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-110	**43**	**C B**	0.099	0.0012	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-111	**0.26**		0.049	0.0011	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-112	ND		0.049	0.0012	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-113	**48**	**C90 B**	0.15	0.0014	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-114	**0.52**		0.049	0.025	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-115	**43**	**C110 B**	0.099	0.0012	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-116	**5.3**	**C85**	0.15	0.0013	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-117	**5.3**	**C85**	0.15	0.0013	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-118	**28**	**B**	0.049	0.027	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-119	**25**	**C86 B**	0.30	0.0013	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-120	**0.95**		0.049	0.0011	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-121	ND		0.049	0.0011	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-122	**0.35**	**B**	0.049	0.031	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-123	**0.35**		0.049	0.027	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-124	**1.1**	**C108**	0.099	0.029	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-125	**25**	**C86 B**	0.30	0.0013	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-126	**0.053**		0.049	0.027	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-127	**0.061**		0.049	0.028	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-128	**6.1**	**C B**	0.099	0.0076	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-129	**46**	**C B**	0.20	0.0079	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-130	**3.5**	**B**	0.049	0.010	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-131	**0.60**		0.049	0.0099	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-132	**18**	**B**	0.049	0.0097	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-133	**2.2**		0.049	0.0094	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-134	**3.5**	**C**	0.099	0.010	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-135	**31**	**C B**	0.099	0.0010	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-136	**11**	**B**	0.049	0.00076	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-137	**1.6**		0.049	0.0081	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5

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Lab Sample ID: 580-88908-26

Date Collected: 08/27/19 14:55
Matrix: Solid
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Percent Solids: 50.5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-138	46	C129 B	0.20	0.0079	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-139	1.7	C	0.099	0.0085	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-140	1.7	C139	0.099	0.0085	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-141	7.7	B	0.049	0.0089	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-142	ND		0.049	0.0099	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-143	3.5	C134	0.099	0.010	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-144	2.4		0.049	0.00096	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-145	0.044	J	0.049	0.00074	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-146	17	B	0.049	0.0085	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-147	57	C B	0.099	0.0088	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-148	0.90		0.049	0.00098	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-149	57	C147 B	0.099	0.0088	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-150	0.77		0.049	0.00071	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-151	31	C135 B	0.099	0.0010	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-152	0.11		0.049	0.00070	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-153	49	C B	0.099	0.0070	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-154	5.2		0.049	0.00086	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-155	0.035	J	0.049	0.00067	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-156	4.8	C B	0.099	0.0083	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-157	4.8	C156 B	0.099	0.0083	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-158	4.1	B	0.049	0.0062	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-159	0.49		0.049	0.0065	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-160	46	C129 B	0.20	0.0079	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-161	ND		0.049	0.0064	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-162	ND		0.049	0.0063	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-163	46	C129 B	0.20	0.0079	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-164	3.6	B	0.049	0.0068	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-165	ND		0.049	0.0076	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-166	6.1	C128 B	0.099	0.0076	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-167	1.4	B	0.049	0.0053	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-168	49	C153 B	0.099	0.0070	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-169	ND		0.049	0.0056	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-170	13	B	0.049	0.00082	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-171	4.8	C B	0.099	0.00079	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-172	2.5	B	0.049	0.00077	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-173	4.8	C171 B	0.099	0.00079	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-174	16	B	0.049	0.00080	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-175	0.68		0.049	0.00071	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-176	2.2	B	0.049	0.00050	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-177	11	B	0.049	0.00081	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-178	4.3	B	0.049	0.00074	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-179	8.9	B	0.049	0.00054	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-180	30	C B	0.099	0.00062	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-181	ND		0.049	0.00069	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-182	0.26		0.049	0.00066	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-183	10	C B	0.099	0.00067	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-184	ND		0.049	0.00054	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-185	10	C183 B	0.099	0.00067	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-186	ND		0.049	0.00053	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5

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Percent Solids: 50.5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-187	23	B	0.049	0.00069	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-188	0.12		0.049	0.00048	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-189	0.49	B	0.049	0.0062	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-190	2.8	B	0.049	0.00055	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-191	0.62		0.049	0.00055	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-192	ND		0.049	0.00059	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-193	30	C180 B	0.099	0.00062	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-194	6.7	B	0.049	0.0053	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-195	3.0	B	0.049	0.0063	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-196	3.6	B	0.049	0.00097	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-197	0.29	B	0.049	0.00071	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-198	7.4	C B	0.099	0.0010	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-199	7.4	C198 B	0.099	0.0010	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-200	0.92		0.049	0.00076	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-201	0.99	B	0.049	0.00072	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-202	1.5	B	0.049	0.00081	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-203	4.5		0.049	0.00092	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-204	ND		0.049	0.00077	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-205	0.34		0.049	0.0040	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-206	2.5		0.049	0.010	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-207	0.31		0.049	0.0075	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-208	0.61		0.049	0.0080	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
PCB-209	1.2		0.049	0.0019	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
Total Monochlorobiphenyls	1.3		0.049	0.0046	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
Total Dichlorobiphenyls	3.7	q B	0.099	0.0022	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
Total Trichlorobiphenyls	22	B	0.099	0.019	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
Total Tetrachlorobiphenyls	120	q B	0.20	0.012	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
Total Pentachlorobiphenyls	280	B	0.30	0.0099	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
Total Hexachlorobiphenyls	280	B	0.20	0.0060	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
Total Heptachlorobiphenyls	130	B	0.099	0.00092	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
Total Octachlorobiphenyls	29	B	0.099	0.0020	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
Total Nonachlorobiphenyls	3.4		0.049	0.0085	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5
Polychlorinated biphenyls, Total	870	q B	0.30	0.0069	ng/g	☼	10/03/19 11:21	10/10/19 04:06	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*67*		*30 - 140*	*10/03/19 11:21*	*10/10/19 04:06*	*5*
PCB-3L	*73*		*30 - 140*	*10/03/19 11:21*	*10/10/19 04:06*	*5*
PCB-4L	*81*		*30 - 140*	*10/03/19 11:21*	*10/10/19 04:06*	*5*
PCB-15L	*92*		*30 - 140*	*10/03/19 11:21*	*10/10/19 04:06*	*5*
PCB-19L	*66*		*30 - 140*	*10/03/19 11:21*	*10/10/19 04:06*	*5*
PCB-37L	*89*		*30 - 140*	*10/03/19 11:21*	*10/10/19 04:06*	*5*
PCB-54L	*71*		*30 - 140*	*10/03/19 11:21*	*10/10/19 04:06*	*5*
PCB-77L	*95*		*30 - 140*	*10/03/19 11:21*	*10/10/19 04:06*	*5*
PCB-81L	*88*		*30 - 140*	*10/03/19 11:21*	*10/10/19 04:06*	*5*
PCB-104L	*101*		*30 - 140*	*10/03/19 11:21*	*10/10/19 04:06*	*5*
PCB-105L	*85*		*30 - 140*	*10/03/19 11:21*	*10/10/19 04:06*	*5*
PCB-114L	*85*		*30 - 140*	*10/03/19 11:21*	*10/10/19 04:06*	*5*
PCB-118L	*88*		*30 - 140*	*10/03/19 11:21*	*10/10/19 04:06*	*5*
PCB-123L	*86*		*30 - 140*	*10/03/19 11:21*	*10/10/19 04:06*	*5*
PCB-126L	*97*		*30 - 140*	*10/03/19 11:21*	*10/10/19 04:06*	*5*

Client: Pacific Groundwater Group
Job ID: 580-88908-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: J5-SC1b-20to30-82719
Lab Sample ID: 580-88908-26

Date Collected: 08/27/19 14:55
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 50.5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-155L	102		30 - 140	10/03/19 11:21	10/10/19 04:06	5
PCB-156L	85	C	30 - 140	10/03/19 11:21	10/10/19 04:06	5
PCB-157L	85	C156	30 - 140	10/03/19 11:21	10/10/19 04:06	5
PCB-167L	86		30 - 140	10/03/19 11:21	10/10/19 04:06	5
PCB-169L	100		30 - 140	10/03/19 11:21	10/10/19 04:06	5
PCB-170L	82		30 - 140	10/03/19 11:21	10/10/19 04:06	5
PCB-188L	83		30 - 140	10/03/19 11:21	10/10/19 04:06	5
PCB-189L	81		30 - 140	10/03/19 11:21	10/10/19 04:06	5
PCB-202L	91		30 - 140	10/03/19 11:21	10/10/19 04:06	5
PCB-205L	79		30 - 140	10/03/19 11:21	10/10/19 04:06	5
PCB-206L	71		30 - 140	10/03/19 11:21	10/10/19 04:06	5
PCB-208L	77		30 - 140	10/03/19 11:21	10/10/19 04:06	5
PCB-209L	70		30 - 140	10/03/19 11:21	10/10/19 04:06	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	82		40 - 125	10/03/19 11:21	10/10/19 04:06	5
PCB-111L	106		40 - 125	10/03/19 11:21	10/10/19 04:06	5
PCB-178L	94		40 - 125	10/03/19 11:21	10/10/19 04:06	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	49.5		0.1		%			09/11/19 15:55	1
Percent Solids	50.5		0.1		%			09/11/19 15:55	1

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88908-1

Client Sample ID: J5-SC1b-30to40-82719
Date Collected: 08/27/19 15:00
Date Received: 09/03/19 15:00

Lab Sample ID: 580-88908-27
Matrix: Solid
Percent Solids: 52.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.10		0.049	0.0017	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-2	0.025	J	0.049	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-3	0.059		0.049	0.0019	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-4	0.15		0.097	0.0068	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-5	0.0080	J	0.049	0.0030	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-6	0.13		0.049	0.0030	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-7	0.026	J	0.049	0.0029	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-8	0.41		0.097	0.0030	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-9	0.025	J	0.049	0.0033	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-10	0.0078	J	0.049	0.0032	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-11	0.052	J B	0.097	0.0029	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-12	0.051	J C	0.097	0.0029	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-13	0.051	J C12	0.097	0.0029	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-14	ND		0.049	0.0025	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-15	0.22		0.049	0.0023	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-16	0.54		0.049	0.0046	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-17	0.87		0.049	0.0036	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-18	1.4	C	0.097	0.0031	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-19	0.12		0.049	0.0044	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-20	2.4	C	0.097	0.0090	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-21	0.99	C	0.097	0.0085	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-22	0.59		0.049	0.0095	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-23	ND		0.049	0.0093	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-24	0.015	J	0.049	0.0027	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-25	0.20		0.049	0.0087	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-26	0.32	C	0.097	0.0089	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-27	0.093		0.049	0.0026	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-28	2.4	C20	0.097	0.0090	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-29	0.32	C26	0.097	0.0089	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-30	1.4	C18	0.097	0.0031	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-31	1.8		0.097	0.0085	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-32	0.48		0.049	0.0024	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-33	0.99	C21	0.097	0.0085	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-34	0.035	J	0.049	0.0097	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-35	0.037	J	0.049	0.0097	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-36	ND		0.049	0.0087	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-37	0.51		0.049	0.0091	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-38	ND		0.049	0.0089	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-39	0.040	J	0.049	0.0084	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-40	2.0	C	0.15	0.0059	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-41	2.0	C40	0.15	0.0059	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-42	ND		0.049	0.0063	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-43	0.088	J C	0.097	0.0054	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-44	4.7	C B	0.15	0.0053	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-45	0.84	C B	0.097	0.0061	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-46	0.20		0.049	0.0072	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-47	4.7	C44 B	0.15	0.0053	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-48	0.63		0.049	0.0057	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-49	3.6	C B	0.097	0.0048	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5

Client Sample ID: J5-SC1b-30to40-82719
Lab Sample ID: 580-88908-27

Date Collected: 08/27/19 15:00
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 52.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	0.59	C	0.097	0.0058	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-51	0.84	C45 B	0.097	0.0061	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-52	6.1	B	0.049	0.0060	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-53	0.59	C50	0.097	0.0058	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-54	0.049		0.049	0.00087	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-55	0.027	J	0.049	0.0042	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-56	1.6		0.049	0.0043	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-57	0.013	J	0.049	0.0042	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-58	0.048	J	0.049	0.0041	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-59	0.31	C	0.15	0.0040	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-60	0.27		0.049	0.0041	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-61	6.8	C B	0.19	0.0040	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-62	0.31	C59	0.15	0.0040	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-63	0.16		0.049	0.0037	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-64	1.4		0.049	0.0038	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-65	4.7	C44 B	0.15	0.0053	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-66	4.2		0.049	0.0042	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-67	0.088	q	0.049	0.0039	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-68	0.098		0.049	0.0037	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-69	3.6	C49 B	0.097	0.0048	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-70	6.8	C61 B	0.19	0.0040	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-71	2.0	C40	0.15	0.0059	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-72	0.22		0.049	0.0041	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-73	0.088	J C43	0.097	0.0054	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-74	6.8	C61 B	0.19	0.0040	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-75	0.31	C59	0.15	0.0040	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-76	6.8	C61 B	0.19	0.0040	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-77	0.27		0.049	0.0040	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-78	ND		0.049	0.0041	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-79	0.14		0.049	0.0035	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-80	ND		0.049	0.0037	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-81	ND		0.049	0.0042	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-82	0.87		0.049	0.0032	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-83	7.2	C	0.097	0.0030	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-84	2.3	B	0.049	0.0033	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-85	1.3	C B	0.15	0.0023	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-86	4.9	C	0.29	0.0024	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-87	4.9	C86	0.29	0.0024	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-88	1.8	C	0.097	0.0028	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-89	0.094		0.049	0.0032	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-90	11	C B	0.15	0.0025	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-91	1.8	C88	0.097	0.0028	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-92	2.6		0.049	0.0030	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-93	0.29	C	0.097	0.0029	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-94	0.086		0.049	0.0031	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-95	8.0		0.049	0.0029	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-96	0.080		0.049	0.0023	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-97	4.9	C86	0.29	0.0024	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-98	0.52	C	0.097	0.0028	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5

Client Sample ID: J5-SC1b-30to40-82719
Lab Sample ID: 580-88908-27

Date Collected: 08/27/19 15:00
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 52.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	7.2	C83	0.097	0.0030	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-100	0.29	C93	0.097	0.0029	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-101	11	C90 B	0.15	0.0025	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-102	0.52	C98	0.097	0.0028	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-103	0.37		0.049	0.0027	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-104	ND		0.049	0.0020	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-105	1.6		0.049	0.011	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-106	ND		0.049	0.010	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-107	0.72		0.049	0.0098	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-108	0.19	C	0.097	0.011	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-109	4.9	C86	0.29	0.0024	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-110	9.9	C	0.097	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-111	ND		0.049	0.0020	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-112	ND		0.049	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-113	11	C90 B	0.15	0.0025	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-114	0.082		0.049	0.0094	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-115	9.9	C110	0.097	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-116	1.3	C85 B	0.15	0.0023	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-117	1.3	C85 B	0.15	0.0023	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-118	6.0	B	0.049	0.0098	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-119	4.9	C86	0.29	0.0024	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-120	0.17		0.049	0.0019	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-121	ND		0.049	0.0020	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-122	0.082		0.049	0.012	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-123	0.070		0.049	0.010	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-124	0.19	C108	0.097	0.011	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-125	4.9	C86	0.29	0.0024	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-126	0.019	J	0.049	0.010	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-127	ND		0.049	0.010	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-128	1.2	C B	0.097	0.0061	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-129	9.9	C B	0.19	0.0063	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-130	0.83		0.049	0.0083	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-131	0.11		0.049	0.0080	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-132	3.6		0.049	0.0078	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-133	0.33		0.049	0.0075	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-134	0.59	C	0.097	0.0080	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-135	4.6	C B	0.097	0.0017	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-136	1.8	B	0.049	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-137	0.28		0.049	0.0065	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-138	9.9	C129 B	0.19	0.0063	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-139	0.23	C	0.097	0.0068	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-140	0.23	C139	0.097	0.0068	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-141	1.6		0.049	0.0071	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-142	ND		0.049	0.0080	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-143	0.59	C134	0.097	0.0080	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-144	0.45		0.049	0.0016	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-145	0.0040	J	0.049	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-146	2.9	B	0.049	0.0068	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-147	11	C B	0.097	0.0070	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5

Client Sample ID: J5-SC1b-30to40-82719
Lab Sample ID: 580-88908-27
Date Collected: 08/27/19 15:00
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 52.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	0.077		0.049	0.0017	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-149	11	C147 B	0.097	0.0070	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-150	0.084		0.049	0.0012	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-151	4.6	C135 B	0.097	0.0017	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-152	0.010	J	0.049	0.0012	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-153	11	C B	0.097	0.0056	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-154	0.51		0.049	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-155	ND		0.049	0.0011	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-156	0.83	C	0.097	0.0064	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-157	0.83	C156	0.097	0.0064	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-158	0.70		0.049	0.0049	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-159	0.17		0.049	0.0052	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-160	9.9	C129 B	0.19	0.0063	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-161	ND		0.049	0.0051	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-162	ND		0.049	0.0050	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-163	9.9	C129 B	0.19	0.0063	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-164	0.79		0.049	0.0055	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-165	ND		0.049	0.0061	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-166	1.2	C128 B	0.097	0.0061	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-167	0.28		0.049	0.0044	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-168	11	C153 B	0.097	0.0056	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-169	ND		0.049	0.0047	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-170	3.4	B	0.049	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-171	1.1	C	0.097	0.0014	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-172	0.64		0.049	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-173	1.1	C171	0.097	0.0014	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-174	4.4	B	0.049	0.0014	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-175	0.17		0.049	0.0012	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-176	0.50		0.049	0.00087	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-177	2.6	B	0.049	0.0014	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-178	0.92		0.049	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-179	2.0		0.049	0.00093	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-180	7.8	C B	0.097	0.0011	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-181	ND		0.049	0.0012	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-182	0.044	J	0.049	0.0011	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-183	2.6	C B	0.097	0.0012	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-184	ND		0.049	0.00093	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-185	2.6	C183 B	0.097	0.0012	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-186	ND		0.049	0.00092	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-187	5.3	B	0.049	0.0012	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-188	ND		0.049	0.00081	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-189	0.11		0.049	0.0055	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-190	0.64	B	0.049	0.00096	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-191	0.14		0.049	0.00095	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-192	ND		0.049	0.0010	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-193	7.8	C180 B	0.097	0.0011	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-194	2.0		0.049	0.012	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-195	0.86		0.049	0.014	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-196	1.0		0.049	0.0025	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5

Client Sample ID: J5-SC1b-30to40-82719
Lab Sample ID: 580-88908-27

Date Collected: 08/27/19 15:00
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 52.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	0.066	q	0.049	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-198	2.4	C B	0.097	0.0027	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-199	2.4	C198 B	0.097	0.0027	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-200	0.31		0.049	0.0019	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-201	0.30		0.049	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-202	0.48		0.049	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-203	1.3		0.049	0.0024	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-204	ND		0.049	0.0020	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-205	0.094		0.049	0.0090	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-206	1.1	q	0.049	0.0088	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-207	0.11		0.049	0.0061	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-208	0.22		0.049	0.0061	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
PCB-209	0.83		0.049	0.0014	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
Total Monochlorobiphenyls	0.18		0.049	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
Total Dichlorobiphenyls	1.1	q B	0.097	0.0033	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
Total Trichlorobiphenyls	10	q	0.097	0.0070	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
Total Tetrachlorobiphenyls	34	q B	0.19	0.0045	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
Total Pentachlorobiphenyls	60	B	0.29	0.0051	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
Total Hexachlorobiphenyls	54	q B	0.19	0.0050	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
Total Heptachlorobiphenyls	32	q B	0.097	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
Total Octachlorobiphenyls	8.8	q B	0.097	0.0048	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
Total Nonachlorobiphenyls	1.4	q	0.049	0.0070	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5
Polychlorinated biphenyls, Total	200	q B	0.29	0.0044	ng/g	☼	09/17/19 12:25	10/03/19 16:43	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*45*	*q*	*30 - 140*	*09/17/19 12:25*	*10/03/19 16:43*	*5*
PCB-3L	*56*		*30 - 140*	*09/17/19 12:25*	*10/03/19 16:43*	*5*
PCB-4L	*60*		*30 - 140*	*09/17/19 12:25*	*10/03/19 16:43*	*5*
PCB-15L	*84*		*30 - 140*	*09/17/19 12:25*	*10/03/19 16:43*	*5*
PCB-19L	*65*		*30 - 140*	*09/17/19 12:25*	*10/03/19 16:43*	*5*
PCB-37L	*82*		*30 - 140*	*09/17/19 12:25*	*10/03/19 16:43*	*5*
PCB-54L	*64*		*30 - 140*	*09/17/19 12:25*	*10/03/19 16:43*	*5*
PCB-77L	*90*		*30 - 140*	*09/17/19 12:25*	*10/03/19 16:43*	*5*
PCB-81L	*86*		*30 - 140*	*09/17/19 12:25*	*10/03/19 16:43*	*5*
PCB-104L	*80*		*30 - 140*	*09/17/19 12:25*	*10/03/19 16:43*	*5*
PCB-105L	*79*		*30 - 140*	*09/17/19 12:25*	*10/03/19 16:43*	*5*
PCB-114L	*79*		*30 - 140*	*09/17/19 12:25*	*10/03/19 16:43*	*5*
PCB-118L	*81*		*30 - 140*	*09/17/19 12:25*	*10/03/19 16:43*	*5*
PCB-123L	*79*		*30 - 140*	*09/17/19 12:25*	*10/03/19 16:43*	*5*
PCB-126L	*87*		*30 - 140*	*09/17/19 12:25*	*10/03/19 16:43*	*5*
PCB-155L	*101*		*30 - 140*	*09/17/19 12:25*	*10/03/19 16:43*	*5*
PCB-156L	*80*	*C*	*30 - 140*	*09/17/19 12:25*	*10/03/19 16:43*	*5*
PCB-157L	*80*	*C156*	*30 - 140*	*09/17/19 12:25*	*10/03/19 16:43*	*5*
PCB-167L	*80*		*30 - 140*	*09/17/19 12:25*	*10/03/19 16:43*	*5*
PCB-169L	*90*		*30 - 140*	*09/17/19 12:25*	*10/03/19 16:43*	*5*
PCB-170L	*76*		*30 - 140*	*09/17/19 12:25*	*10/03/19 16:43*	*5*
PCB-188L	*85*		*30 - 140*	*09/17/19 12:25*	*10/03/19 16:43*	*5*
PCB-189L	*84*		*30 - 140*	*09/17/19 12:25*	*10/03/19 16:43*	*5*
PCB-202L	*89*		*30 - 140*	*09/17/19 12:25*	*10/03/19 16:43*	*5*
PCB-205L	*73*		*30 - 140*	*09/17/19 12:25*	*10/03/19 16:43*	*5*

Client Sample ID: J5-SC1b-30to40-82719
Lab Sample ID: 580-88908-27

Date Collected: 08/27/19 15:00
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 52.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-206L	69		30 - 140	09/17/19 12:25	10/03/19 16:43	5
PCB-208L	81		30 - 140	09/17/19 12:25	10/03/19 16:43	5
PCB-209L	76		30 - 140	09/17/19 12:25	10/03/19 16:43	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	76		40 - 125	09/17/19 12:25	10/03/19 16:43	5
PCB-111L	88		40 - 125	09/17/19 12:25	10/03/19 16:43	5
PCB-178L	86		40 - 125	09/17/19 12:25	10/03/19 16:43	5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.12		0.0099	0.00097	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-2	0.025		0.0099	0.00098	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-3	0.076		0.0099	0.00099	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-4	0.18		0.020	0.0010	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-5	0.012		0.0099	0.00066	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-6	0.15		0.0099	0.00067	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-7	0.031		0.0099	0.00064	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-8	0.51		0.020	0.00065	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-9	0.040		0.0099	0.00073	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-10	0.011		0.0099	0.00070	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-11	0.058	B	0.020	0.00063	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-12	0.062	C	0.020	0.00063	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-13	0.062	C12	0.020	0.00063	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-14	ND		0.0099	0.00055	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-15	0.29		0.0099	0.00063	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-16	0.60		0.0099	0.00067	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-17	0.84	B	0.0099	0.00053	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-18	1.4	C B	0.020	0.00045	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-19	0.11		0.0099	0.00063	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-20	2.8	C B	0.020	0.013	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-21	1.1	C B	0.020	0.013	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-22	0.71	G B	0.014	0.014	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-23	ND	G	0.014	0.014	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-24	0.018		0.0099	0.00039	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-25	0.23	G	0.013	0.013	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-26	0.38	C B	0.020	0.013	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-27	0.10		0.0099	0.00038	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-28	2.8	C20 B	0.020	0.013	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-29	0.38	C26 B	0.020	0.013	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-30	1.4	C18 B	0.020	0.00045	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-31	2.0	B	0.020	0.013	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-32	0.47		0.0099	0.00035	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-33	1.1	C21 B	0.020	0.013	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-34	0.043	G	0.014	0.014	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-35	0.044	G	0.014	0.014	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-36	ND	G	0.013	0.013	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-37	0.63	G B	0.014	0.014	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-38	ND	G	0.013	0.013	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-39	0.040	G	0.013	0.013	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1

Client Sample ID: J5-SC1b-30to40-82719
Lab Sample ID: 580-88908-27
Date Collected: 08/27/19 15:00
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 52.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-40	2.3	C	0.030	0.0044	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-41	2.3	C40	0.030	0.0044	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-42	1.4		0.0099	0.0046	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-43	0.16	C	0.020	0.0040	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-44	5.8	C B	0.030	0.0039	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-45	1.1	C B	0.020	0.0045	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-46	0.23		0.0099	0.0053	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-47	5.8	C44 B	0.030	0.0039	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-48	0.74		0.0099	0.0043	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-49	4.1	C B	0.020	0.0035	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-50	0.73	C	0.020	0.0043	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-51	1.1	C45 B	0.020	0.0045	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-52	7.2	B	0.0099	0.0045	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-53	0.73	C50	0.020	0.0043	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-54	0.056		0.0099	0.00056	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-55	0.033		0.0099	0.0031	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-56	1.8		0.0099	0.0032	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-57	0.011	q	0.0099	0.0031	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-58	0.059		0.0099	0.0030	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-59	0.38	C	0.030	0.0030	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-60	0.33		0.0099	0.0030	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-61	7.7	C B	0.039	0.0030	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-62	0.38	C59	0.030	0.0030	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-63	0.19		0.0099	0.0027	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-64	1.6		0.0099	0.0028	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-65	5.8	C44 B	0.030	0.0039	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-66	4.7	B	0.0099	0.0031	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-67	0.11		0.0099	0.0029	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-68	0.12	B	0.0099	0.0027	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-69	4.1	C49 B	0.020	0.0035	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-70	7.7	C61 B	0.039	0.0030	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-71	2.3	C40	0.030	0.0044	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-72	0.22		0.0099	0.0031	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-73	0.16	C43	0.020	0.0040	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-74	7.7	C61 B	0.039	0.0030	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-75	0.38	C59	0.030	0.0030	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-76	7.7	C61 B	0.039	0.0030	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-77	0.32		0.0099	0.0030	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-78	ND		0.0099	0.0031	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-79	0.11		0.0099	0.0026	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-80	ND		0.0099	0.0027	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-81	0.0082	J	0.0099	0.0031	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-82	0.76	B	0.0099	0.00083	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-83	6.3	C B	0.020	0.00077	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-84	2.3	B	0.0099	0.00084	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-85	1.1	C	0.030	0.00060	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-86	4.6	C B	0.059	0.00061	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-87	4.6	C86 B	0.059	0.00061	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-88	1.7	C B	0.020	0.00072	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1

Client Sample ID: J5-SC1b-30to40-82719
Lab Sample ID: 580-88908-27

Date Collected: 08/27/19 15:00
Matrix: Solid
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Percent Solids: 52.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-89	0.086		0.0099	0.00081	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-90	9.8	C B	0.030	0.00064	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-91	1.7	C88 B	0.020	0.00072	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-92	2.5	B	0.0099	0.00076	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-93	0.28	C	0.020	0.00074	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-94	0.093		0.0099	0.00080	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-95	7.7	B	0.0099	0.00075	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-96	0.096		0.0099	0.00059	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-97	4.6	C86 B	0.059	0.00061	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-98	0.44	C	0.020	0.00073	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-99	6.3	C83 B	0.020	0.00077	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-100	0.28	C93	0.020	0.00074	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-101	9.8	C90 B	0.030	0.00064	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-102	0.44	C98	0.020	0.00073	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-103	0.37		0.0099	0.00070	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-104	ND		0.0099	0.00052	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-105	1.7	B	0.0099	0.0085	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-106	ND		0.0099	0.0085	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-107	0.76	B	0.0099	0.0080	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-108	0.21	C	0.020	0.0086	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-109	4.6	C86 B	0.059	0.00061	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-110	8.4	C B	0.020	0.00054	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-111	0.035		0.0099	0.00051	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-112	ND		0.0099	0.00053	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-113	9.8	C90 B	0.030	0.00064	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-114	0.10		0.0099	0.0077	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-115	8.4	C110 B	0.020	0.00054	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-116	1.1	C85	0.030	0.00060	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-117	1.1	C85	0.030	0.00060	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-118	6.0	B	0.0099	0.0079	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-119	4.6	C86 B	0.059	0.00061	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-120	0.10		0.0099	0.00049	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-121	ND		0.0099	0.00052	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-122	0.083	B	0.0099	0.0093	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-123	0.072	q	0.0099	0.0080	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-124	0.21	C108	0.020	0.0086	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-125	4.6	C86 B	0.059	0.00061	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-126	0.015	q	0.0099	0.0086	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-127	ND		0.0099	0.0084	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-128	1.6	C B	0.020	0.0036	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-129	11	C B	0.039	0.0037	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-130	0.91	B	0.0099	0.0049	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-131	0.13		0.0099	0.0047	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-132	4.3	B	0.0099	0.0046	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-133	0.37		0.0099	0.0045	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-134	0.76	C	0.020	0.0048	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-135	4.9	C B	0.020	0.00092	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-136	2.0	B	0.0099	0.00069	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-137	0.29		0.0099	0.0038	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1

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Matrix: Solid
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Percent Solids: 52.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-138	11	C129 B	0.039	0.0037	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-139	0.26	C	0.020	0.0041	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-140	0.26	C139	0.020	0.0041	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-141	2.0	B	0.0099	0.0042	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-142	ND		0.0099	0.0047	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-143	0.76	C134	0.020	0.0048	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-144	0.45		0.0099	0.00087	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-145	0.0065	J	0.0099	0.00067	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-146	2.9	B	0.0099	0.0040	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-147	13	C B	0.020	0.0042	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-148	0.076		0.0099	0.00089	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-149	13	C147 B	0.020	0.0042	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-150	0.071		0.0099	0.00065	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-151	4.9	C135 B	0.020	0.00092	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-152	0.013		0.0099	0.00064	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-153	11	C B	0.020	0.0033	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-154	0.46		0.0099	0.00079	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-155	ND		0.0099	0.00062	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-156	0.90	C B	0.020	0.0038	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-157	0.90	C156 B	0.020	0.0038	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-158	0.79	B	0.0099	0.0029	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-159	0.15		0.0099	0.0031	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-160	11	C129 B	0.039	0.0037	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-161	ND		0.0099	0.0030	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-162	ND		0.0099	0.0030	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-163	11	C129 B	0.039	0.0037	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-164	0.86	B	0.0099	0.0032	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-165	ND		0.0099	0.0036	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-166	1.6	C128 B	0.020	0.0036	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-167	0.31	B	0.0099	0.0026	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-168	11	C153 B	0.020	0.0033	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-169	ND		0.0099	0.0027	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-170	3.5	B	0.0099	0.00095	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-171	1.1	C B	0.020	0.00096	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-172	0.65	B	0.0099	0.00093	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-173	1.1	C171 B	0.020	0.00096	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-174	4.1	B	0.0099	0.00097	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-175	0.17		0.0099	0.00087	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-176	0.53	B	0.0099	0.00061	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-177	2.4	B	0.0099	0.00098	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-178	0.90	B	0.0099	0.00090	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-179	2.1	B	0.0099	0.00065	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-180	7.7	C B	0.020	0.00075	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-181	ND		0.0099	0.00083	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-182	0.051		0.0099	0.00081	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-183	2.5	C B	0.020	0.00081	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-184	ND		0.0099	0.00065	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-185	2.5	C183 B	0.020	0.00081	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-186	ND		0.0099	0.00064	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1

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Percent Solids: 52.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-187	**5.2**	**B**	0.0099	0.00083	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-188	ND		0.0099	0.00060	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-189	**0.12**	**B**	0.0099	0.0017	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-190	**0.63**	**B**	0.0099	0.00067	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-191	**0.14**		0.0099	0.00067	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-192	ND		0.0099	0.00072	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-193	**7.7**	**C180 B**	0.020	0.00075	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-194	**2.2**	**G B**	0.010	0.010	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-195	**0.98**	**G B**	0.012	0.012	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-196	**1.0**	**B**	0.0099	0.0016	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-197	**0.069**	**B**	0.0099	0.0012	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-198	**2.3**	**C B**	0.020	0.0018	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-199	**2.3**	**C198 B**	0.020	0.0018	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-200	**0.26**		0.0099	0.0013	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-201	**0.23**	**B**	0.0099	0.0012	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-202	**0.46**	**B**	0.0099	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-203	**1.3**		0.0099	0.0016	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-204	ND		0.0099	0.0013	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-205	**0.099**		0.0099	0.0076	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-206	**1.0**		0.0099	0.0064	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-207	**0.12**		0.0099	0.0044	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-208	**0.23**		0.0099	0.0044	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
PCB-209	**0.88**		0.0099	0.00089	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
Total Monochlorobiphenyls	**0.22**		0.0099	0.00098	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
Total Dichlorobiphenyls	**1.3**	**B**	0.020	0.00068	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
Total Trichlorobiphenyls	**12**	**B**	0.020	0.0089	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
Total Tetrachlorobiphenyls	**42**	**q B**	0.039	0.0033	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
Total Pentachlorobiphenyls	**56**	**q B**	0.059	0.0031	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
Total Hexachlorobiphenyls	**60**	**B**	0.039	0.0029	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
Total Heptachlorobiphenyls	**32**	**B**	0.020	0.00083	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
Total Octachlorobiphenyls	**8.9**	**B**	0.020	0.0037	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
Total Nonachlorobiphenyls	**1.4**		0.0099	0.0051	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1
Polychlorinated biphenyls, Total	**210**	**q B**	0.059	0.0033	ng/g	☼	10/03/19 11:21	10/09/19 21:54	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*61*		*30 - 140*	*10/03/19 11:21*	*10/09/19 21:54*	*1*
PCB-3L	*66*		*30 - 140*	*10/03/19 11:21*	*10/09/19 21:54*	*1*
PCB-4L	*68*		*30 - 140*	*10/03/19 11:21*	*10/09/19 21:54*	*1*
PCB-15L	*77*		*30 - 140*	*10/03/19 11:21*	*10/09/19 21:54*	*1*
PCB-19L	*72*		*30 - 140*	*10/03/19 11:21*	*10/09/19 21:54*	*1*
PCB-37L	*83*		*30 - 140*	*10/03/19 11:21*	*10/09/19 21:54*	*1*
PCB-54L	*72*		*30 - 140*	*10/03/19 11:21*	*10/09/19 21:54*	*1*
PCB-77L	*78*		*30 - 140*	*10/03/19 11:21*	*10/09/19 21:54*	*1*
PCB-81L	*77*		*30 - 140*	*10/03/19 11:21*	*10/09/19 21:54*	*1*
PCB-104L	*92*		*30 - 140*	*10/03/19 11:21*	*10/09/19 21:54*	*1*
PCB-105L	*85*		*30 - 140*	*10/03/19 11:21*	*10/09/19 21:54*	*1*
PCB-114L	*84*		*30 - 140*	*10/03/19 11:21*	*10/09/19 21:54*	*1*
PCB-118L	*88*		*30 - 140*	*10/03/19 11:21*	*10/09/19 21:54*	*1*
PCB-123L	*86*		*30 - 140*	*10/03/19 11:21*	*10/09/19 21:54*	*1*
PCB-126L	*89*		*30 - 140*	*10/03/19 11:21*	*10/09/19 21:54*	*1*

Client: Pacific Groundwater Group
Job ID: 580-88908-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: J5-SC1b-30to40-82719
Lab Sample ID: 580-88908-27
Date Collected: 08/27/19 15:00
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 52.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-155L	94		30 - 140	10/03/19 11:21	10/09/19 21:54	1
PCB-156L	78	C	30 - 140	10/03/19 11:21	10/09/19 21:54	1
PCB-157L	78	C156	30 - 140	10/03/19 11:21	10/09/19 21:54	1
PCB-167L	77		30 - 140	10/03/19 11:21	10/09/19 21:54	1
PCB-169L	90		30 - 140	10/03/19 11:21	10/09/19 21:54	1
PCB-170L	82		30 - 140	10/03/19 11:21	10/09/19 21:54	1
PCB-188L	85		30 - 140	10/03/19 11:21	10/09/19 21:54	1
PCB-189L	96		30 - 140	10/03/19 11:21	10/09/19 21:54	1
PCB-202L	81		30 - 140	10/03/19 11:21	10/09/19 21:54	1
PCB-205L	74		30 - 140	10/03/19 11:21	10/09/19 21:54	1
PCB-206L	63		30 - 140	10/03/19 11:21	10/09/19 21:54	1
PCB-208L	71		30 - 140	10/03/19 11:21	10/09/19 21:54	1
PCB-209L	62		30 - 140	10/03/19 11:21	10/09/19 21:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	77		40 - 125	10/03/19 11:21	10/09/19 21:54	1
PCB-111L	87		40 - 125	10/03/19 11:21	10/09/19 21:54	1
PCB-178L	86		40 - 125	10/03/19 11:21	10/09/19 21:54	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	47.9		0.1		%			09/11/19 15:55	1
Percent Solids	52.1		0.1		%			09/11/19 15:55	1

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88908-1

Client Sample ID: J5-SC1b-40to50-82719
Date Collected: 08/27/19 16:10
Date Received: 09/03/19 15:00

Lab Sample ID: 580-88908-28
Matrix: Solid
Percent Solids: 54.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	1.3		0.24	0.013	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-2	0.051	J q	0.24	0.015	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-3	0.31		0.24	0.017	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-4	1.6		0.49	0.075	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-5	0.058	J	0.24	0.038	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-6	0.41		0.24	0.039	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-7	0.061	J q	0.24	0.037	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-8	1.2		0.49	0.038	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-9	0.090	J q	0.24	0.042	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-10	ND		0.24	0.040	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-11	0.077	J B	0.49	0.037	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-12	0.19	J C	0.49	0.037	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-13	0.19	J C12	0.49	0.037	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-14	ND		0.24	0.032	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-15	0.55		0.24	0.031	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-16	0.81		0.24	0.031	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-17	1.2		0.24	0.024	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-18	1.8	C	0.49	0.021	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-19	0.35		0.24	0.029	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-20	3.7	C	0.49	0.025	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-21	1.5	C	0.49	0.024	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-22	0.71		0.24	0.026	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-23	ND		0.24	0.026	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-24	0.025	J q	0.24	0.018	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-25	0.45		0.24	0.024	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-26	0.75	C	0.49	0.025	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-27	0.13	J q	0.24	0.017	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-28	3.7	C20	0.49	0.025	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-29	0.75	C26	0.49	0.025	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-30	1.8	C18	0.49	0.021	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-31	2.5		0.49	0.024	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-32	0.65		0.24	0.016	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-33	1.5	C21	0.49	0.024	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-34	0.062	J	0.24	0.027	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-35	0.083	J q	0.24	0.027	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-36	ND		0.24	0.024	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-37	0.86		0.24	0.025	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-38	ND		0.24	0.025	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-39	0.097	J	0.24	0.023	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-40	3.6	C	0.73	0.030	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-41	3.6	C40	0.73	0.030	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-42	2.6		0.24	0.032	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-43	0.19	J q C	0.49	0.028	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-44	12	C B	0.73	0.027	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-45	1.1	C B	0.49	0.031	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-46	0.32		0.24	0.036	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-47	12	C44 B	0.73	0.027	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-48	0.98		0.24	0.029	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-49	10	C B	0.49	0.024	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5

Client Sample ID: J5-SC1b-40to50-82719
Lab Sample ID: 580-88908-28
Date Collected: 08/27/19 16:10
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 54.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	1.1	C	0.49	0.030	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-51	1.1	C45 B	0.49	0.031	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-52	26	B	0.24	0.031	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-53	1.1	C50	0.49	0.030	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-54	0.031	J q	0.24	0.017	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-55	0.13	J	0.24	0.021	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-56	3.6		0.24	0.022	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-57	0.065	J	0.24	0.022	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-58	0.16	J	0.24	0.021	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-59	0.73	C	0.73	0.020	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-60	0.65		0.24	0.021	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-61	23	C B	0.97	0.020	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-62	0.73	C59	0.73	0.020	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-63	0.47		0.24	0.019	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-64	3.3		0.24	0.020	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-65	12	C44 B	0.73	0.027	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-66	14		0.24	0.022	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-67	0.27		0.24	0.020	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-68	0.37		0.24	0.019	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-69	10	C49 B	0.49	0.024	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-70	23	C61 B	0.97	0.020	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-71	3.6	C40	0.73	0.030	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-72	0.68		0.24	0.021	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-73	0.19	J q C43	0.49	0.028	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-74	23	C61 B	0.97	0.020	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-75	0.73	C59	0.73	0.020	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-76	23	C61 B	0.97	0.020	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-77	1.1		0.24	0.020	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-78	ND		0.24	0.021	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-79	0.45		0.24	0.018	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-80	0.054	J q	0.24	0.019	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-81	0.034	J q	0.24	0.022	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-82	4.6		0.24	0.054	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-83	29	C	0.49	0.049	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-84	11	B	0.24	0.054	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-85	6.7	C B	0.73	0.038	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-86	26	C	1.5	0.039	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-87	26	C86	1.5	0.039	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-88	6.2	C	0.49	0.046	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-89	0.30		0.24	0.052	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-90	47	C B	0.73	0.041	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-91	6.2	C88	0.49	0.046	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-92	10		0.24	0.049	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-93	0.60	C	0.49	0.047	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-94	0.20	J q	0.24	0.051	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-95	35		0.24	0.048	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-96	0.22	J q	0.24	0.038	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-97	26	C86	1.5	0.039	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-98	1.2	C	0.49	0.047	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5

Client Sample ID: J5-SC1b-40to50-82719
Lab Sample ID: 580-88908-28

Date Collected: 08/27/19 16:10
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 54.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	29	C83	0.49	0.049	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-100	0.60	C93	0.49	0.047	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-101	47	C90 B	0.73	0.041	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-102	1.2	C98	0.49	0.047	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-103	0.97		0.24	0.045	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-104	ND		0.24	0.033	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-105	11		0.24	0.094	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-106	ND		0.24	0.096	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-107	3.2		0.24	0.090	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-108	1.3	C	0.49	0.097	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-109	26	C86	1.5	0.039	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-110	51	C	0.49	0.034	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-111	0.085	J q	0.24	0.033	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-112	ND		0.24	0.034	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-113	47	C90 B	0.73	0.041	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-114	0.70		0.24	0.086	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-115	51	C110	0.49	0.034	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-116	6.7	C85 B	0.73	0.038	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-117	6.7	C85 B	0.73	0.038	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-118	36	B	0.24	0.092	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-119	26	C86	1.5	0.039	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-120	0.52		0.24	0.031	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-121	0.062	J	0.24	0.033	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-122	0.51		0.24	0.11	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-123	0.54		0.24	0.088	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-124	1.3	C108	0.49	0.097	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-125	26	C86	1.5	0.039	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-126	0.12	J	0.24	0.10	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-127	ND		0.24	0.095	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-128	7.6	C B	0.49	0.015	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-129	47	C B	0.97	0.015	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-130	3.7		0.24	0.020	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-131	0.73		0.24	0.019	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-132	17		0.24	0.019	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-133	1.1		0.24	0.018	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-134	2.9	C	0.49	0.019	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-135	16	C B	0.49	0.012	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-136	6.1	B	0.24	0.0091	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-137	2.1		0.24	0.015	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-138	47	C129 B	0.97	0.015	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-139	1.0	C	0.49	0.016	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-140	1.0	C139	0.49	0.016	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-141	7.4		0.24	0.017	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-142	ND		0.24	0.019	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-143	2.9	C134	0.49	0.019	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-144	1.7		0.24	0.011	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-145	0.038	J q	0.24	0.0088	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-146	9.5	B	0.24	0.016	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-147	41	C B	0.49	0.017	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5

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Date Received: 09/03/19 15:00

Lab Sample ID: 580-88908-28
Matrix: Solid
Percent Solids: 54.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	0.22	J q	0.24	0.012	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-149	41	C147 B	0.49	0.017	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-150	0.17	J	0.24	0.0085	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-151	16	C135 B	0.49	0.012	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-152	0.049	J q	0.24	0.0084	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-153	40	C B	0.49	0.013	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-154	1.3		0.24	0.010	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-155	0.014	J q	0.24	0.0081	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-156	5.5	C	0.49	0.015	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-157	5.5	C156	0.49	0.015	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-158	4.4		0.24	0.012	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-159	0.43		0.24	0.012	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-160	47	C129 B	0.97	0.015	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-161	ND		0.24	0.012	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-162	0.16	J q	0.24	0.012	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-163	47	C129 B	0.97	0.015	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-164	3.4		0.24	0.013	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-165	ND		0.24	0.015	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-166	7.6	C128 B	0.49	0.015	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-167	1.7		0.24	0.010	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-168	40	C153 B	0.49	0.013	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-169	ND		0.24	0.012	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-170	11	B	0.24	0.014	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-171	3.7	C	0.49	0.013	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-172	1.9		0.24	0.013	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-173	3.7	C171	0.49	0.013	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-174	13	B	0.24	0.013	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-175	0.54		0.24	0.012	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-176	1.6		0.24	0.0085	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-177	7.4	B	0.24	0.014	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-178	2.7		0.24	0.013	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-179	5.5		0.24	0.0091	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-180	24	C B	0.49	0.010	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-181	0.15	J	0.24	0.012	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-182	0.14	J	0.24	0.011	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-183	7.9	C B	0.49	0.011	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-184	ND		0.24	0.0091	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-185	7.9	C183 B	0.49	0.011	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-186	ND		0.24	0.0090	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-187	15	B	0.24	0.012	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-188	0.057	J	0.24	0.0082	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-189	0.37		0.24	0.013	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-190	2.1	B	0.24	0.0094	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-191	0.50		0.24	0.0093	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-192	ND		0.24	0.010	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-193	24	C180 B	0.49	0.010	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-194	5.3		0.24	0.025	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-195	2.3		0.24	0.029	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-196	2.5		0.24	0.014	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5

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Percent Solids: 54.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	0.18	J q	0.24	0.010	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-198	5.8	C B	0.49	0.015	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-199	5.8	C198 B	0.49	0.015	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-200	0.73		0.24	0.011	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-201	0.73		0.24	0.010	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-202	1.2		0.24	0.012	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-203	3.5		0.24	0.013	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-204	ND		0.24	0.011	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-205	0.27		0.24	0.019	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-206	2.6		0.24	0.042	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-207	0.29		0.24	0.029	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-208	0.68		0.24	0.029	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
PCB-209	1.5		0.24	0.017	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
Total Monochlorobiphenyls	1.7	q	0.24	0.015	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
Total Dichlorobiphenyls	4.2	q B	0.49	0.040	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
Total Trichlorobiphenyls	16	q	0.49	0.024	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
Total Tetrachlorobiphenyls	110	q B	0.97	0.024	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
Total Pentachlorobiphenyls	280	q B	1.5	0.059	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
Total Hexachlorobiphenyls	220	q B	0.97	0.014	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
Total Heptachlorobiphenyls	98	B	0.49	0.011	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
Total Octachlorobiphenyls	23	q B	0.49	0.015	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
Total Nonachlorobiphenyls	3.6		0.24	0.033	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5
Polychlorinated biphenyls, Total	760	q B	1.5	0.026	ng/g	☼	09/17/19 12:25	09/26/19 04:52	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*83*		*30 - 140*	*09/17/19 12:25*	*09/26/19 04:52*	*5*
PCB-3L	*89*		*30 - 140*	*09/17/19 12:25*	*09/26/19 04:52*	*5*
PCB-4L	*77*		*30 - 140*	*09/17/19 12:25*	*09/26/19 04:52*	*5*
PCB-15L	*82*		*30 - 140*	*09/17/19 12:25*	*09/26/19 04:52*	*5*
PCB-19L	*77*		*30 - 140*	*09/17/19 12:25*	*09/26/19 04:52*	*5*
PCB-37L	*87*		*30 - 140*	*09/17/19 12:25*	*09/26/19 04:52*	*5*
PCB-54L	*101*		*30 - 140*	*09/17/19 12:25*	*09/26/19 04:52*	*5*
PCB-77L	*93*		*30 - 140*	*09/17/19 12:25*	*09/26/19 04:52*	*5*
PCB-81L	*90*		*30 - 140*	*09/17/19 12:25*	*09/26/19 04:52*	*5*
PCB-104L	*89*		*30 - 140*	*09/17/19 12:25*	*09/26/19 04:52*	*5*
PCB-105L	*86*		*30 - 140*	*09/17/19 12:25*	*09/26/19 04:52*	*5*
PCB-114L	*85*		*30 - 140*	*09/17/19 12:25*	*09/26/19 04:52*	*5*
PCB-118L	*85*		*30 - 140*	*09/17/19 12:25*	*09/26/19 04:52*	*5*
PCB-123L	*85*		*30 - 140*	*09/17/19 12:25*	*09/26/19 04:52*	*5*
PCB-126L	*88*		*30 - 140*	*09/17/19 12:25*	*09/26/19 04:52*	*5*
PCB-155L	*103*		*30 - 140*	*09/17/19 12:25*	*09/26/19 04:52*	*5*
PCB-156L	*84*	*C*	*30 - 140*	*09/17/19 12:25*	*09/26/19 04:52*	*5*
PCB-157L	*84*	*C156*	*30 - 140*	*09/17/19 12:25*	*09/26/19 04:52*	*5*
PCB-167L	*81*		*30 - 140*	*09/17/19 12:25*	*09/26/19 04:52*	*5*
PCB-169L	*86*		*30 - 140*	*09/17/19 12:25*	*09/26/19 04:52*	*5*
PCB-170L	*81*		*30 - 140*	*09/17/19 12:25*	*09/26/19 04:52*	*5*
PCB-188L	*87*		*30 - 140*	*09/17/19 12:25*	*09/26/19 04:52*	*5*
PCB-189L	*89*		*30 - 140*	*09/17/19 12:25*	*09/26/19 04:52*	*5*
PCB-202L	*93*		*30 - 140*	*09/17/19 12:25*	*09/26/19 04:52*	*5*
PCB-205L	*83*		*30 - 140*	*09/17/19 12:25*	*09/26/19 04:52*	*5*

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Date Collected: 08/27/19 16:10
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 54.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-206L	69		30 - 140	09/17/19 12:25	09/26/19 04:52	5
PCB-208L	82		30 - 140	09/17/19 12:25	09/26/19 04:52	5
PCB-209L	50	q	30 - 140	09/17/19 12:25	09/26/19 04:52	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	78		40 - 125	09/17/19 12:25	09/26/19 04:52	5
PCB-111L	93		40 - 125	09/17/19 12:25	09/26/19 04:52	5
PCB-178L	95		40 - 125	09/17/19 12:25	09/26/19 04:52	5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.61		0.049	0.0033	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-2	0.063		0.049	0.0034	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-3	0.26		0.049	0.0035	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-4	0.31		0.098	0.0033	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-5	0.020	J	0.049	0.0020	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-6	0.24		0.049	0.0020	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-7	0.053		0.049	0.0019	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-8	0.78		0.098	0.0020	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-9	0.069		0.049	0.0022	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-10	0.020	J q	0.049	0.0021	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-11	0.059	J B	0.098	0.0019	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-12	0.12	C	0.098	0.0019	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-13	0.12	C12	0.098	0.0019	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-14	ND		0.049	0.0017	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-15	0.47		0.049	0.0018	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-16	0.64		0.049	0.0031	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-17	0.92	B	0.049	0.0024	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-18	1.5	C B	0.098	0.0021	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-19	0.13		0.049	0.0029	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-20	3.5	C B	0.098	0.016	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-21	1.4	C B	0.098	0.015	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-22	0.64	B	0.049	0.016	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-23	ND		0.049	0.016	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-24	0.017	J q	0.049	0.0018	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-25	0.43		0.049	0.015	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-26	0.69	C B	0.098	0.015	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-27	0.11		0.049	0.0018	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-28	3.5	C20 B	0.098	0.016	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-29	0.69	C26 B	0.098	0.015	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-30	1.5	C18 B	0.098	0.0021	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-31	2.2	B	0.098	0.015	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-32	0.55		0.049	0.0016	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-33	1.4	C21 B	0.098	0.015	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-34	0.054		0.049	0.017	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-35	0.068		0.049	0.017	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-36	0.016	J	0.049	0.015	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-37	0.86	B	0.049	0.016	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-38	ND		0.049	0.015	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-39	0.086		0.049	0.015	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88908-1

Client Sample ID: J5-SC1b-40to50-82719
Date Collected: 08/27/19 16:10
Date Received: 09/03/19 15:00

Lab Sample ID: 580-88908-28
Matrix: Solid
Percent Solids: 54.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-40	2.6	C	0.15	0.0098	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-41	2.6	C40	0.15	0.0098	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-42	2.1		0.049	0.010	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-43	0.12	q C	0.098	0.0090	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-44	8.1	C B	0.15	0.0087	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-45	0.76	C B	0.098	0.010	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-46	0.23		0.049	0.012	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-47	8.1	C44 B	0.15	0.0087	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-48	0.71		0.049	0.0095	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-49	7.5	C B	0.098	0.0079	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-50	0.64	C	0.098	0.0096	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-51	0.76	C45 B	0.098	0.010	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-52	13	B	0.049	0.010	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-53	0.64	C50	0.098	0.0096	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-54	0.026	J	0.049	0.00035	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-55	0.049	q	0.049	0.0069	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-56	2.7		0.049	0.0071	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-57	ND		0.049	0.0070	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-58	0.14		0.049	0.0068	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-59	0.55	C	0.15	0.0066	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-60	0.32		0.049	0.0068	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-61	15	C B	0.20	0.0066	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-62	0.55	C59	0.15	0.0066	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-63	0.36		0.049	0.0061	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-64	2.1		0.049	0.0063	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-65	8.1	C44 B	0.15	0.0087	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-66	10	B	0.049	0.0070	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-67	0.20		0.049	0.0064	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-68	0.32	B	0.049	0.0061	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-69	7.5	C49 B	0.098	0.0079	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-70	15	C61 B	0.20	0.0066	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-71	2.6	C40	0.15	0.0098	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-72	0.58		0.049	0.0068	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-73	0.12	q C43	0.098	0.0090	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-74	15	C61 B	0.20	0.0066	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-75	0.55	C59	0.15	0.0066	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-76	15	C61 B	0.20	0.0066	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-77	0.82		0.049	0.0067	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-78	ND		0.049	0.0068	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-79	0.35		0.049	0.0058	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-80	ND		0.049	0.0061	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-81	ND		0.049	0.0068	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-82	2.4	B	0.049	0.0016	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-83	19	C B	0.098	0.0015	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-84	6.1	B	0.049	0.0017	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-85	3.7	C	0.15	0.0012	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-86	15	C B	0.29	0.0012	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-87	15	C86 B	0.29	0.0012	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-88	3.9	C B	0.098	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1

Client Sample ID: J5-SC1b-40to50-82719
Lab Sample ID: 580-88908-28

Date Collected: 08/27/19 16:10
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 54.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-89	0.18		0.049	0.0016	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-90	27	C B	0.15	0.0013	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-91	3.9	C88 B	0.098	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-92	6.7	B	0.049	0.0015	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-93	0.45	C	0.098	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-94	ND		0.049	0.0016	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-95	19	B	0.049	0.0015	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-96	0.14		0.049	0.0012	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-97	15	C86 B	0.29	0.0012	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-98	0.78	C	0.098	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-99	19	C83 B	0.098	0.0015	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-100	0.45	C93	0.098	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-101	27	C90 B	0.15	0.0013	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-102	0.78	C98	0.098	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-103	0.75		0.049	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-104	ND		0.049	0.0010	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-105	5.9	B	0.049	0.020	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-106	ND		0.049	0.020	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-107	2.3	B	0.049	0.019	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-108	0.68	C	0.098	0.021	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-109	15	C86 B	0.29	0.0012	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-110	28	C B	0.098	0.0011	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-111	ND		0.049	0.0010	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-112	ND		0.049	0.0010	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-113	27	C90 B	0.15	0.0013	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-114	0.38		0.049	0.019	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-115	28	C110 B	0.098	0.0011	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-116	3.7	C85	0.15	0.0012	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-117	3.7	C85	0.15	0.0012	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-118	22	B	0.049	0.019	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-119	15	C86 B	0.29	0.0012	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-120	0.39		0.049	0.00095	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-121	ND		0.049	0.0010	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-122	0.27	B	0.049	0.022	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-123	0.29		0.049	0.020	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-124	0.68	C108	0.098	0.021	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-125	15	C86 B	0.29	0.0012	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-126	0.088		0.049	0.019	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-127	ND		0.049	0.020	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-128	4.2	C B	0.098	0.0084	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-129	26	C B	0.20	0.0086	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-130	2.2	B	0.049	0.011	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-131	0.32		0.049	0.011	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-132	8.9	B	0.049	0.011	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-133	0.71		0.049	0.010	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-134	1.6	C	0.098	0.011	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-135	12	C B	0.098	0.00099	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-136	4.3	B	0.049	0.00075	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-137	1.0		0.049	0.0088	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88908-1

Client Sample ID: J5-SC1b-40to50-82719
Date Collected: 08/27/19 16:10
Date Received: 09/03/19 15:00

Lab Sample ID: 580-88908-28
Matrix: Solid
Percent Solids: 54.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-138	26	C129 B	0.20	0.0086	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-139	0.62	C	0.098	0.0093	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-140	0.62	C139	0.098	0.0093	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-141	4.2	B	0.049	0.0097	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-142	ND		0.049	0.011	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-143	1.6	C134	0.098	0.011	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-144	1.2		0.049	0.00094	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-145	ND		0.049	0.00073	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-146	6.3	B	0.049	0.0093	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-147	23	C B	0.098	0.0096	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-148	0.17	q	0.049	0.00096	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-149	23	C147 B	0.098	0.0096	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-150	0.14		0.049	0.00070	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-151	12	C135 B	0.098	0.00099	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-152	0.020	J	0.049	0.00069	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-153	24	C B	0.098	0.0076	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-154	1.2		0.049	0.00085	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-155	ND		0.049	0.00066	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-156	3.2	C B	0.098	0.0089	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-157	3.2	C156 B	0.098	0.0089	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-158	2.3	B	0.049	0.0067	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-159	0.32		0.049	0.0071	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-160	26	C129 B	0.20	0.0086	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-161	ND		0.049	0.0070	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-162	0.11	B	0.049	0.0069	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-163	26	C129 B	0.20	0.0086	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-164	2.0	B	0.049	0.0075	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-165	ND		0.049	0.0083	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-166	4.2	C128 B	0.098	0.0084	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-167	1.0	B	0.049	0.0059	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-168	24	C153 B	0.098	0.0076	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-169	ND		0.049	0.0063	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-170	7.7	B	0.049	0.00049	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-171	2.9	C B	0.098	0.00054	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-172	1.5	B	0.049	0.00052	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-173	2.9	C171 B	0.098	0.00054	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-174	10	B	0.049	0.00054	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-175	0.39		0.049	0.00049	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-176	1.1	B	0.049	0.00034	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-177	6.2	B	0.049	0.00055	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-178	2.1	B	0.049	0.00051	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-179	4.1	B	0.049	0.00037	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-180	18	C B	0.098	0.00042	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-181	0.092		0.049	0.00047	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-182	0.12		0.049	0.00045	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-183	6.1	C B	0.098	0.00046	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-184	ND		0.049	0.00037	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-185	6.1	C183 B	0.098	0.00046	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-186	ND		0.049	0.00036	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1

Client Sample ID: J5-SC1b-40to50-82719
Lab Sample ID: 580-88908-28

Date Collected: 08/27/19 16:10
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 54.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-187	**12**	**B**	0.049	0.00047	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-188	ND		0.049	0.00036	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-189	**0.29**	**B**	0.049	0.0050	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-190	**1.7**	**B**	0.049	0.00038	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-191	**0.36**		0.049	0.00038	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-192	ND		0.049	0.00040	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-193	**18**	**C180 B**	0.098	0.00042	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-194	**4.3**	**B**	0.049	0.012	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-195	**1.9**	**B**	0.049	0.014	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-196	**2.1**	**B**	0.049	0.00081	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-197	**0.15**	**B**	0.049	0.00059	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-198	**4.8**	**C B**	0.098	0.00086	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-199	**4.8**	**C198 B**	0.098	0.00086	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-200	**0.57**		0.049	0.00063	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-201	**0.60**	**B**	0.049	0.00060	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-202	**0.96**	**B**	0.049	0.00067	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-203	**2.7**		0.049	0.00077	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-204	ND		0.049	0.00064	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-205	**0.21**		0.049	0.0091	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-206	**1.8**		0.049	0.013	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-207	**0.22**		0.049	0.0094	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-208	**0.49**		0.049	0.0097	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
PCB-209	**1.1**		0.049	0.00098	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
Total Monochlorobiphenyls	**0.93**		0.049	0.0034	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
Total Dichlorobiphenyls	**2.1**	**q B**	0.098	0.0021	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
Total Trichlorobiphenyls	**14**	**q B**	0.098	0.011	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
Total Tetrachlorobiphenyls	**69**	**q B**	0.20	0.0074	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
Total Pentachlorobiphenyls	**170**	**B**	0.29	0.0073	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
Total Hexachlorobiphenyls	**130**	**q B**	0.20	0.0065	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
Total Heptachlorobiphenyls	**75**	**B**	0.098	0.00066	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
Total Octachlorobiphenyls	**18**	**B**	0.098	0.0037	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
Total Nonachlorobiphenyls	**2.5**		0.049	0.011	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1
Polychlorinated biphenyls, Total	**480**	**q B**	0.29	0.0056	ng/g	☼	10/03/19 11:21	10/09/19 17:46	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*60*		*30 - 140*	*10/03/19 11:21*	*10/09/19 17:46*	*1*
PCB-3L	*63*		*30 - 140*	*10/03/19 11:21*	*10/09/19 17:46*	*1*
PCB-4L	*64*		*30 - 140*	*10/03/19 11:21*	*10/09/19 17:46*	*1*
PCB-15L	*84*		*30 - 140*	*10/03/19 11:21*	*10/09/19 17:46*	*1*
PCB-19L	*70*		*30 - 140*	*10/03/19 11:21*	*10/09/19 17:46*	*1*
PCB-37L	*91*		*30 - 140*	*10/03/19 11:21*	*10/09/19 17:46*	*1*
PCB-54L	*68*		*30 - 140*	*10/03/19 11:21*	*10/09/19 17:46*	*1*
PCB-77L	*95*		*30 - 140*	*10/03/19 11:21*	*10/09/19 17:46*	*1*
PCB-81L	*92*		*30 - 140*	*10/03/19 11:21*	*10/09/19 17:46*	*1*
PCB-104L	*90*		*30 - 140*	*10/03/19 11:21*	*10/09/19 17:46*	*1*
PCB-105L	*84*		*30 - 140*	*10/03/19 11:21*	*10/09/19 17:46*	*1*
PCB-114L	*81*		*30 - 140*	*10/03/19 11:21*	*10/09/19 17:46*	*1*
PCB-118L	*84*		*30 - 140*	*10/03/19 11:21*	*10/09/19 17:46*	*1*
PCB-123L	*82*		*30 - 140*	*10/03/19 11:21*	*10/09/19 17:46*	*1*
PCB-126L	*95*		*30 - 140*	*10/03/19 11:21*	*10/09/19 17:46*	*1*

Client: Pacific Groundwater Group
Job ID: 580-88908-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: J5-SC1b-40to50-82719
Lab Sample ID: 580-88908-28

Date Collected: 08/27/19 16:10
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 54.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-155L	99		30 - 140	10/03/19 11:21	10/09/19 17:46	1
PCB-156L	89	C	30 - 140	10/03/19 11:21	10/09/19 17:46	1
PCB-157L	89	C156	30 - 140	10/03/19 11:21	10/09/19 17:46	1
PCB-167L	91		30 - 140	10/03/19 11:21	10/09/19 17:46	1
PCB-169L	104		30 - 140	10/03/19 11:21	10/09/19 17:46	1
PCB-170L	88		30 - 140	10/03/19 11:21	10/09/19 17:46	1
PCB-188L	79		30 - 140	10/03/19 11:21	10/09/19 17:46	1
PCB-189L	95		30 - 140	10/03/19 11:21	10/09/19 17:46	1
PCB-202L	95		30 - 140	10/03/19 11:21	10/09/19 17:46	1
PCB-205L	80		30 - 140	10/03/19 11:21	10/09/19 17:46	1
PCB-206L	72		30 - 140	10/03/19 11:21	10/09/19 17:46	1
PCB-208L	81		30 - 140	10/03/19 11:21	10/09/19 17:46	1
PCB-209L	66		30 - 140	10/03/19 11:21	10/09/19 17:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	81		40 - 125	10/03/19 11:21	10/09/19 17:46	1
PCB-111L	95		40 - 125	10/03/19 11:21	10/09/19 17:46	1
PCB-178L	92		40 - 125	10/03/19 11:21	10/09/19 17:46	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	45.2		0.1		%			09/11/19 15:55	1
Percent Solids	54.8		0.1		%			09/11/19 15:55	1

Client Sample ID: J5-SC1b-50to60-82719
Lab Sample ID: 580-88908-29

Date Collected: 08/27/19 16:15
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 55.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.18	J	0.24	0.0071	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-2	0.028	J	0.24	0.0074	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-3	0.15	J	0.24	0.0076	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-4	0.44	J	0.48	0.041	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-5	ND		0.24	0.017	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-6	0.33		0.24	0.017	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-7	0.074	J	0.24	0.017	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-8	1.2		0.48	0.017	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-9	0.11	J	0.24	0.019	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-10	ND		0.24	0.018	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-11	ND		0.48	0.017	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-12	0.13	J C	0.48	0.016	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-13	0.13	J C12	0.48	0.016	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-14	ND		0.24	0.014	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-15	0.71		0.24	0.013	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-16	1.3		0.24	0.024	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-17	1.8		0.24	0.019	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-18	2.7	C	0.48	0.016	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-19	0.24		0.24	0.022	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-20	6.5	C	0.48	0.036	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-21	2.4	C	0.48	0.034	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-22	1.1		0.24	0.038	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-23	ND		0.24	0.037	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-24	0.035	J	0.24	0.014	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-25	0.72		0.24	0.035	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-26	1.4	C	0.48	0.035	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-27	0.22	J	0.24	0.013	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-28	6.5	C20	0.48	0.036	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-29	1.4	C26	0.48	0.035	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-30	2.7	C18	0.48	0.016	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-31	4.1		0.48	0.034	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-32	1.1		0.24	0.012	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-33	2.4	C21	0.48	0.034	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-34	0.085	J	0.24	0.038	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-35	0.064	J	0.24	0.038	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-36	ND		0.24	0.035	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-37	1.5		0.24	0.036	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-38	ND		0.24	0.035	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-39	0.13	J	0.24	0.033	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-40	5.2	C	0.72	0.035	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-41	5.2	C40	0.72	0.035	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-42	3.8		0.24	0.037	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-43	0.23	J C	0.48	0.032	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-44	17	C B	0.72	0.031	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-45	1.4	C B	0.48	0.036	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-46	0.52		0.24	0.042	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-47	17	C44 B	0.72	0.031	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-48	1.6		0.24	0.034	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-49	16	C B	0.48	0.028	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5

Client Sample ID: J5-SC1b-50to60-82719
Lab Sample ID: 580-88908-29
Date Collected: 08/27/19 16:15
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 55.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	1.3	C	0.48	0.034	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-51	1.4	C45 B	0.48	0.036	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-52	35	B	0.24	0.035	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-53	1.3	C50	0.48	0.034	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-54	0.029	J	0.24	0.0045	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-55	0.083	J	0.24	0.025	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-56	5.2		0.24	0.025	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-57	0.15	J	0.24	0.025	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-58	0.17	J	0.24	0.024	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-59	1.0	C	0.72	0.023	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-60	0.75		0.24	0.024	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-61	31	C B	0.96	0.023	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-62	1.0	C59	0.72	0.023	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-63	0.60		0.24	0.022	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-64	4.6		0.24	0.022	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-65	17	C44 B	0.72	0.031	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-66	18		0.24	0.025	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-67	0.38		0.24	0.023	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-68	0.54		0.24	0.022	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-69	16	C49 B	0.48	0.028	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-70	31	C61 B	0.96	0.023	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-71	5.2	C40	0.72	0.035	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-72	1.1		0.24	0.024	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-73	0.23	J C43	0.48	0.032	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-74	31	C61 B	0.96	0.023	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-75	1.0	C59	0.72	0.023	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-76	31	C61 B	0.96	0.023	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-77	1.2		0.24	0.023	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-78	ND		0.24	0.024	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-79	0.74		0.24	0.021	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-80	ND		0.24	0.022	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-81	0.067	J	0.24	0.025	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-82	5.6		0.24	0.022	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-83	40	C	0.48	0.020	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-84	14	B	0.24	0.022	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-85	7.9	C B	0.72	0.016	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-86	34	C	1.4	0.016	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-87	34	C86	1.4	0.016	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-88	8.7	C	0.48	0.019	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-89	0.44		0.24	0.021	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-90	63	C B	0.72	0.017	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-91	8.7	C88	0.48	0.019	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-92	16		0.24	0.020	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-93	0.99	C	0.48	0.020	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-94	ND		0.24	0.021	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-95	47		0.24	0.020	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-96	ND		0.24	0.016	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-97	34	C86	1.4	0.016	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-98	1.6	C	0.48	0.019	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88908-1

Client Sample ID: J5-SC1b-50to60-82719
Date Collected: 08/27/19 16:15
Date Received: 09/03/19 15:00

Lab Sample ID: 580-88908-29
Matrix: Solid
Percent Solids: 55.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	40	C83	0.48	0.020	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-100	0.99	C93	0.48	0.020	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-101	63	C90 B	0.72	0.017	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-102	1.6	C98	0.48	0.019	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-103	1.6		0.24	0.019	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-104	ND		0.24	0.014	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-105	14		0.24	0.074	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-106	ND		0.24	0.075	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-107	4.5		0.24	0.070	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-108	1.7	C	0.48	0.076	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-109	34	C86	1.4	0.016	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-110	64	C	0.48	0.014	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-111	ND		0.24	0.013	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-112	ND		0.24	0.014	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-113	63	C90 B	0.72	0.017	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-114	0.83		0.24	0.070	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-115	64	C110	0.48	0.014	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-116	7.9	C85 B	0.72	0.016	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-117	7.9	C85 B	0.72	0.016	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-118	47	B	0.24	0.070	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-119	34	C86	1.4	0.016	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-120	0.67		0.24	0.013	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-121	ND		0.24	0.014	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-122	0.67		0.24	0.082	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-123	0.67		0.24	0.069	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-124	1.7	C108	0.48	0.076	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-125	34	C86	1.4	0.016	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-126	0.13	J	0.24	0.076	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-127	ND		0.24	0.074	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-128	9.6	C B	0.48	0.030	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-129	61	C B	0.96	0.031	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-130	4.6		0.24	0.040	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-131	0.91		0.24	0.039	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-132	22		0.24	0.038	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-133	1.7		0.24	0.037	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-134	3.9	C	0.48	0.039	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-135	26	C B	0.48	0.012	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-136	9.1	B	0.24	0.0091	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-137	2.7		0.24	0.032	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-138	61	C129 B	0.96	0.031	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-139	1.5	C	0.48	0.033	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-140	1.5	C139	0.48	0.033	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-141	10		0.24	0.035	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-142	ND		0.24	0.039	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-143	3.9	C134	0.48	0.039	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-144	2.7		0.24	0.011	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-145	0.046	J	0.24	0.0088	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-146	14	B	0.24	0.033	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-147	55	C B	0.48	0.034	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88908-1

Client Sample ID: J5-SC1b-50to60-82719
Date Collected: 08/27/19 16:15
Date Received: 09/03/19 15:00

Lab Sample ID: 580-88908-29
Matrix: Solid
Percent Solids: 55.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	0.48		0.24	0.012	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-149	55	C147 B	0.48	0.034	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-150	0.35		0.24	0.0085	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-151	26	C135 B	0.48	0.012	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-152	0.037	J	0.24	0.0084	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-153	55	C B	0.48	0.027	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-154	2.5		0.24	0.010	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-155	ND		0.24	0.0081	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-156	7.6	C	0.48	0.032	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-157	7.6	C156	0.48	0.032	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-158	5.6		0.24	0.024	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-159	0.69		0.24	0.025	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-160	61	C129 B	0.96	0.031	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-161	ND		0.24	0.025	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-162	0.24		0.24	0.025	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-163	61	C129 B	0.96	0.031	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-164	4.5		0.24	0.027	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-165	ND		0.24	0.030	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-166	9.6	C128 B	0.48	0.030	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-167	2.3		0.24	0.021	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-168	55	C153 B	0.48	0.027	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-169	ND		0.24	0.022	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-170	16	B	0.24	0.011	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-171	5.6	C	0.48	0.011	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-172	3.1		0.24	0.011	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-173	5.6	C171	0.48	0.011	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-174	19	B	0.24	0.011	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-175	0.77		0.24	0.010	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-176	2.3		0.24	0.0071	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-177	11	B	0.24	0.011	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-178	4.2		0.24	0.011	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-179	8.4		0.24	0.0076	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-180	36	C B	0.48	0.0088	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-181	0.20	J	0.24	0.0098	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-182	0.21	J	0.24	0.0094	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-183	12	C B	0.48	0.0095	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-184	ND		0.24	0.0076	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-185	12	C183 B	0.48	0.0095	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-186	ND		0.24	0.0075	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-187	23	B	0.24	0.0097	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-188	ND		0.24	0.0071	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-189	0.60		0.24	0.016	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-190	3.3	B	0.24	0.0078	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-191	0.75		0.24	0.0078	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-192	ND		0.24	0.0084	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-193	36	C180 B	0.48	0.0088	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-194	8.0		0.24	0.11	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-195	3.6		0.24	0.13	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-196	4.0		0.24	0.019	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5

Client Sample ID: J5-SC1b-50to60-82719
Lab Sample ID: 580-88908-29
Date Collected: 08/27/19 16:15
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 55.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	0.34		0.24	0.014	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-198	8.6	C B	0.48	0.020	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-199	8.6	C198 B	0.48	0.020	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-200	1.1		0.24	0.015	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-201	1.1		0.24	0.014	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-202	1.7		0.24	0.016	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-203	5.0		0.24	0.018	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-204	ND		0.24	0.015	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-205	0.41		0.24	0.080	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-206	6.0	q	0.24	0.053	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-207	0.41		0.24	0.037	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-208	0.95		0.24	0.038	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
PCB-209	2.3		0.24	0.0095	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
Total Monochlorobiphenyls	0.36		0.24	0.0074	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
Total Dichlorobiphenyls	3.0	q B	0.48	0.019	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
Total Trichlorobiphenyls	25		0.48	0.029	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
Total Tetrachlorobiphenyls	150	q B	0.96	0.026	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
Total Pentachlorobiphenyls	380	B	1.4	0.036	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
Total Hexachlorobiphenyls	300	q B	0.96	0.025	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
Total Heptachlorobiphenyls	150	q B	0.48	0.0096	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
Total Octachlorobiphenyls	34	B	0.48	0.040	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
Total Nonachlorobiphenyls	7.4	q	0.24	0.043	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5
Polychlorinated biphenyls, Total	1000	q B	1.4	0.026	ng/g	☼	09/17/19 12:25	10/03/19 17:45	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*54*		*30 - 140*	*09/17/19 12:25*	*10/03/19 17:45*	*5*
PCB-3L	*62*		*30 - 140*	*09/17/19 12:25*	*10/03/19 17:45*	*5*
PCB-4L	*64*		*30 - 140*	*09/17/19 12:25*	*10/03/19 17:45*	*5*
PCB-15L	*81*		*30 - 140*	*09/17/19 12:25*	*10/03/19 17:45*	*5*
PCB-19L	*77*		*30 - 140*	*09/17/19 12:25*	*10/03/19 17:45*	*5*
PCB-37L	*87*		*30 - 140*	*09/17/19 12:25*	*10/03/19 17:45*	*5*
PCB-54L	*75*		*30 - 140*	*09/17/19 12:25*	*10/03/19 17:45*	*5*
PCB-77L	*92*		*30 - 140*	*09/17/19 12:25*	*10/03/19 17:45*	*5*
PCB-81L	*89*		*30 - 140*	*09/17/19 12:25*	*10/03/19 17:45*	*5*
PCB-104L	*86*		*30 - 140*	*09/17/19 12:25*	*10/03/19 17:45*	*5*
PCB-105L	*82*		*30 - 140*	*09/17/19 12:25*	*10/03/19 17:45*	*5*
PCB-114L	*80*		*30 - 140*	*09/17/19 12:25*	*10/03/19 17:45*	*5*
PCB-118L	*83*		*30 - 140*	*09/17/19 12:25*	*10/03/19 17:45*	*5*
PCB-123L	*80*		*30 - 140*	*09/17/19 12:25*	*10/03/19 17:45*	*5*
PCB-126L	*87*		*30 - 140*	*09/17/19 12:25*	*10/03/19 17:45*	*5*
PCB-155L	*103*		*30 - 140*	*09/17/19 12:25*	*10/03/19 17:45*	*5*
PCB-156L	*79*	*C*	*30 - 140*	*09/17/19 12:25*	*10/03/19 17:45*	*5*
PCB-157L	*79*	*C156*	*30 - 140*	*09/17/19 12:25*	*10/03/19 17:45*	*5*
PCB-167L	*80*		*30 - 140*	*09/17/19 12:25*	*10/03/19 17:45*	*5*
PCB-169L	*95*		*30 - 140*	*09/17/19 12:25*	*10/03/19 17:45*	*5*
PCB-170L	*80*		*30 - 140*	*09/17/19 12:25*	*10/03/19 17:45*	*5*
PCB-188L	*78*		*30 - 140*	*09/17/19 12:25*	*10/03/19 17:45*	*5*
PCB-189L	*83*		*30 - 140*	*09/17/19 12:25*	*10/03/19 17:45*	*5*
PCB-202L	*93*		*30 - 140*	*09/17/19 12:25*	*10/03/19 17:45*	*5*
PCB-205L	*75*		*30 - 140*	*09/17/19 12:25*	*10/03/19 17:45*	*5*

Client Sample ID: J5-SC1b-50to60-82719
Lab Sample ID: 580-88908-29

Date Collected: 08/27/19 16:15
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 55.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-206L	71		30 - 140	09/17/19 12:25	10/03/19 17:45	5
PCB-208L	80		30 - 140	09/17/19 12:25	10/03/19 17:45	5
PCB-209L	70		30 - 140	09/17/19 12:25	10/03/19 17:45	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	79		40 - 125	09/17/19 12:25	10/03/19 17:45	5
PCB-111L	93		40 - 125	09/17/19 12:25	10/03/19 17:45	5
PCB-178L	89		40 - 125	09/17/19 12:25	10/03/19 17:45	5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.31		0.049	0.0024	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-2	0.038	J	0.049	0.0024	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-3	0.22		0.049	0.0023	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-4	0.51		0.099	0.0051	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-5	0.024	J	0.049	0.0032	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-6	0.36		0.049	0.0033	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-7	0.068		0.049	0.0031	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-8	1.4		0.099	0.0032	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-9	0.10		0.049	0.0036	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-10	0.030	J	0.049	0.0034	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-11	0.026	J B	0.099	0.0031	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-12	0.15	C	0.099	0.0031	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-13	0.15	C12	0.099	0.0031	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-14	ND		0.049	0.0027	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-15	0.79		0.049	0.0030	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-16	1.4		0.049	0.0023	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-17	1.9	B	0.049	0.0018	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-18	3.1	C B	0.099	0.0016	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-19	0.29		0.049	0.0022	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-20	6.9	C B	0.099	0.031	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-21	2.7	C B	0.099	0.030	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-22	1.2	B	0.049	0.033	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-23	ND		0.049	0.032	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-24	0.048	J	0.049	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-25	0.78		0.049	0.030	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-26	1.5	C B	0.099	0.031	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-27	0.25		0.049	0.0013	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-28	6.9	C20 B	0.099	0.031	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-29	1.5	C26 B	0.099	0.031	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-30	3.1	C18 B	0.099	0.0016	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-31	4.4	B	0.099	0.030	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-32	1.2		0.049	0.0012	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-33	2.7	C21 B	0.099	0.030	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-34	0.099		0.049	0.034	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-35	0.088		0.049	0.034	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-36	ND		0.049	0.030	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-37	1.8	B	0.049	0.032	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-38	ND		0.049	0.031	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-39	0.13		0.049	0.029	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1

Client Sample ID: J5-SC1b-50to60-82719
Lab Sample ID: 580-88908-29

Date Collected: 08/27/19 16:15
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 55.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-40	5.5	C	0.15	0.017	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-41	5.5	C40	0.15	0.017	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-42	3.9		0.049	0.018	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-43	0.33	C	0.099	0.015	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-44	17	C B	0.15	0.015	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-45	1.4	C B	0.099	0.017	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-46	0.49		0.049	0.020	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-47	17	C44 B	0.15	0.015	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-48	1.7		0.049	0.016	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-49	15	C B	0.099	0.014	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-50	1.3	C	0.099	0.016	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-51	1.4	C45 B	0.099	0.017	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-52	36	B	0.049	0.017	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-53	1.3	C50	0.099	0.016	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-54	0.027	J	0.049	0.00057	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-55	0.078	q	0.049	0.012	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-56	5.5		0.049	0.012	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-57	0.16		0.049	0.012	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-58	0.21		0.049	0.012	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-59	1.1	C	0.15	0.011	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-60	0.87		0.049	0.012	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-61	33	C B	0.20	0.011	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-62	1.1	C59	0.15	0.011	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-63	0.70		0.049	0.010	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-64	4.9		0.049	0.011	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-65	17	C44 B	0.15	0.015	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-66	18	B	0.049	0.012	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-67	0.41		0.049	0.011	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-68	0.51	B	0.049	0.010	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-69	15	C49 B	0.099	0.014	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-70	33	C61 B	0.20	0.011	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-71	5.5	C40	0.15	0.017	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-72	1.2		0.049	0.012	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-73	0.33	C43	0.099	0.015	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-74	33	C61 B	0.20	0.011	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-75	1.1	C59	0.15	0.011	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-76	33	C61 B	0.20	0.011	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-77	1.4		0.049	0.012	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-78	ND		0.049	0.012	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-79	0.67		0.049	0.010	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-80	ND		0.049	0.010	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-81	0.040	J	0.049	0.012	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-82	6.1	B	0.049	0.0019	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-83	46	C B	0.099	0.0018	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-84	16	B	0.049	0.0020	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-85	9.3	C	0.15	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-86	38	C B	0.30	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-87	38	C86 B	0.30	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-88	9.7	C B	0.099	0.0017	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1

Client Sample ID: J5-SC1b-50to60-82719
Lab Sample ID: 580-88908-29

Date Collected: 08/27/19 16:15
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 55.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-89	0.48		0.049	0.0019	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-90	73	C B	0.15	0.0015	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-91	9.7	C88 B	0.099	0.0017	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-92	18	B	0.049	0.0018	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-93	1.1	C	0.099	0.0017	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-94	ND		0.049	0.0019	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-95	51	B	0.049	0.0018	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-96	ND		0.049	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-97	38	C86 B	0.30	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-98	1.8	C	0.099	0.0017	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-99	46	C83 B	0.099	0.0018	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-100	1.1	C93	0.099	0.0017	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-101	73	C90 B	0.15	0.0015	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-102	1.8	C98	0.099	0.0017	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-103	1.7		0.049	0.0016	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-104	ND		0.049	0.0012	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-105	15	B	0.049	0.044	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-106	ND		0.049	0.044	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-107	4.9	B	0.049	0.041	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-108	1.9	C	0.099	0.044	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-109	38	C86 B	0.30	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-110	70	C B	0.099	0.0012	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-111	ND		0.049	0.0012	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-112	ND		0.049	0.0012	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-113	73	C90 B	0.15	0.0015	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-114	1.0		0.049	0.039	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-115	70	C110 B	0.099	0.0012	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-116	9.3	C85	0.15	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-117	9.3	C85	0.15	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-118	51	B	0.049	0.041	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-119	38	C86 B	0.30	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-120	0.65		0.049	0.0011	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-121	ND		0.049	0.0012	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-122	0.67	B	0.049	0.048	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-123	0.70		0.049	0.042	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-124	1.9	C108	0.099	0.044	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-125	38	C86 B	0.30	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-126	0.16		0.049	0.043	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-127	ND		0.049	0.043	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-128	11	C B	0.099	0.015	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-129	68	C B	0.20	0.016	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-130	5.4	B	0.049	0.021	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-131	1.0		0.049	0.020	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-132	25	B	0.049	0.019	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-133	2.0		0.049	0.019	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-134	4.7	C	0.099	0.020	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-135	26	C B	0.099	0.0016	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-136	11	B	0.049	0.0012	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-137	3.0		0.049	0.016	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1

Client Sample ID: J5-SC1b-50to60-82719
Lab Sample ID: 580-88908-29
Date Collected: 08/27/19 16:15
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 55.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-138	68	C129 B	0.20	0.016	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-139	1.9	C	0.099	0.017	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-140	1.9	C139	0.099	0.017	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-141	12	B	0.049	0.018	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-142	ND		0.049	0.020	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-143	4.7	C134	0.099	0.020	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-144	2.8		0.049	0.0015	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-145	0.038	J	0.049	0.0012	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-146	15	B	0.049	0.017	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-147	61	C B	0.099	0.017	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-148	0.47		0.049	0.0015	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-149	61	C147 B	0.099	0.017	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-150	0.37		0.049	0.0011	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-151	26	C135 B	0.099	0.0016	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-152	0.054		0.049	0.0011	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-153	61	C B	0.099	0.014	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-154	2.4		0.049	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-155	ND		0.049	0.0011	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-156	8.3	C B	0.099	0.016	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-157	8.3	C156 B	0.099	0.016	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-158	6.4	B	0.049	0.012	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-159	0.62		0.049	0.013	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-160	68	C129 B	0.20	0.016	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-161	ND		0.049	0.013	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-162	0.22	B	0.049	0.012	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-163	68	C129 B	0.20	0.016	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-164	5.0	B	0.049	0.014	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-165	ND		0.049	0.015	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-166	11	C128 B	0.099	0.015	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-167	2.5	B	0.049	0.011	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-168	61	C153 B	0.099	0.014	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-169	ND		0.049	0.011	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-170	17	B	0.049	0.0015	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-171	5.4	C B	0.099	0.0015	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-172	3.0	B	0.049	0.0015	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-173	5.4	C171 B	0.099	0.0015	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-174	18	B	0.049	0.0015	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-175	0.82		0.049	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-176	2.4	B	0.049	0.00097	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-177	11	B	0.049	0.0016	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-178	4.2	B	0.049	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-179	8.6	B	0.049	0.0010	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-180	35	C B	0.099	0.0012	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-181	0.19		0.049	0.0013	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-182	0.21		0.049	0.0013	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-183	11	C B	0.099	0.0013	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-184	ND		0.049	0.0010	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-185	11	C183 B	0.099	0.0013	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-186	ND		0.049	0.0010	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1

Client Sample ID: J5-SC1b-50to60-82719
Lab Sample ID: 580-88908-29

Date Collected: 08/27/19 16:15
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 55.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-187	**23**	**B**	0.049	0.0013	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-188	ND		0.049	0.00096	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-189	**0.64**	**B**	0.049	0.0054	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-190	**3.3**	**B**	0.049	0.0011	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-191	**0.74**		0.049	0.0011	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-192	ND		0.049	0.0011	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-193	**35**	**C180 B**	0.099	0.0012	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-194	**8.5**	**B**	0.049	0.016	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-195	**3.7**	**B**	0.049	0.019	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-196	**4.3**	**B**	0.049	0.0039	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-197	**0.31**	**B**	0.049	0.0028	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-198	**9.6**	**C B**	0.099	0.0042	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-199	**9.6**	**C198 B**	0.099	0.0042	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-200	**1.2**		0.049	0.0030	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-201	**1.1**	**B**	0.049	0.0029	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-202	**1.8**	**B**	0.049	0.0033	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-203	**5.8**		0.049	0.0037	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-204	ND		0.049	0.0031	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-205	**0.42**		0.049	0.012	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-206	**5.2**	**q**	0.049	0.014	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-207	**0.41**		0.049	0.010	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-208	**0.82**		0.049	0.011	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
PCB-209	**1.5**		0.049	0.0011	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
Total Monochlorobiphenyls	**0.57**		0.049	0.0024	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
Total Dichlorobiphenyls	**3.5**	**B**	0.099	0.0033	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
Total Trichlorobiphenyls	**28**	**B**	0.099	0.021	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
Total Tetrachlorobiphenyls	**150**	**q B**	0.20	0.013	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
Total Pentachlorobiphenyls	**420**	**B**	0.30	0.015	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
Total Hexachlorobiphenyls	**340**	**B**	0.20	0.012	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
Total Heptachlorobiphenyls	**140**	**B**	0.099	0.0015	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
Total Octachlorobiphenyls	**37**	**B**	0.099	0.0067	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
Total Nonachlorobiphenyls	**6.4**	**q**	0.049	0.012	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1
Polychlorinated biphenyls, Total	**1100**	**q B**	0.30	0.0094	ng/g	☼	10/03/19 11:21	10/09/19 18:48	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*64*		*30 - 140*	*10/03/19 11:21*	*10/09/19 18:48*	*1*
PCB-3L	*69*		*30 - 140*	*10/03/19 11:21*	*10/09/19 18:48*	*1*
PCB-4L	*68*		*30 - 140*	*10/03/19 11:21*	*10/09/19 18:48*	*1*
PCB-15L	*81*		*30 - 140*	*10/03/19 11:21*	*10/09/19 18:48*	*1*
PCB-19L	*73*		*30 - 140*	*10/03/19 11:21*	*10/09/19 18:48*	*1*
PCB-37L	*92*		*30 - 140*	*10/03/19 11:21*	*10/09/19 18:48*	*1*
PCB-54L	*77*		*30 - 140*	*10/03/19 11:21*	*10/09/19 18:48*	*1*
PCB-77L	*94*		*30 - 140*	*10/03/19 11:21*	*10/09/19 18:48*	*1*
PCB-81L	*91*		*30 - 140*	*10/03/19 11:21*	*10/09/19 18:48*	*1*
PCB-104L	*85*		*30 - 140*	*10/03/19 11:21*	*10/09/19 18:48*	*1*
PCB-105L	*84*		*30 - 140*	*10/03/19 11:21*	*10/09/19 18:48*	*1*
PCB-114L	*86*		*30 - 140*	*10/03/19 11:21*	*10/09/19 18:48*	*1*
PCB-118L	*88*		*30 - 140*	*10/03/19 11:21*	*10/09/19 18:48*	*1*
PCB-123L	*85*		*30 - 140*	*10/03/19 11:21*	*10/09/19 18:48*	*1*
PCB-126L	*95*		*30 - 140*	*10/03/19 11:21*	*10/09/19 18:48*	*1*

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88908-1

Client Sample ID: J5-SC1b-50to60-82719
Date Collected: 08/27/19 16:15
Date Received: 09/03/19 15:00

Lab Sample ID: 580-88908-29
Matrix: Solid
Percent Solids: 55.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-155L	100		30 - 140	10/03/19 11:21	10/09/19 18:48	1
PCB-156L	83	C	30 - 140	10/03/19 11:21	10/09/19 18:48	1
PCB-157L	83	C156	30 - 140	10/03/19 11:21	10/09/19 18:48	1
PCB-167L	83		30 - 140	10/03/19 11:21	10/09/19 18:48	1
PCB-169L	97		30 - 140	10/03/19 11:21	10/09/19 18:48	1
PCB-170L	83		30 - 140	10/03/19 11:21	10/09/19 18:48	1
PCB-188L	84		30 - 140	10/03/19 11:21	10/09/19 18:48	1
PCB-189L	99		30 - 140	10/03/19 11:21	10/09/19 18:48	1
PCB-202L	84		30 - 140	10/03/19 11:21	10/09/19 18:48	1
PCB-205L	81		30 - 140	10/03/19 11:21	10/09/19 18:48	1
PCB-206L	73		30 - 140	10/03/19 11:21	10/09/19 18:48	1
PCB-208L	78		30 - 140	10/03/19 11:21	10/09/19 18:48	1
PCB-209L	64		30 - 140	10/03/19 11:21	10/09/19 18:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	80		40 - 125	10/03/19 11:21	10/09/19 18:48	1
PCB-111L	91		40 - 125	10/03/19 11:21	10/09/19 18:48	1
PCB-178L	90		40 - 125	10/03/19 11:21	10/09/19 18:48	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	44.2		0.1		%			09/11/19 15:55	1
Percent Solids	55.8		0.1		%			09/11/19 15:55	1

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88908-1

Client Sample ID: J5-SC1b-60to70-82719
Date Collected: 08/27/19 16:20
Date Received: 09/03/19 15:00

Lab Sample ID: 580-88908-30
Matrix: Solid
Percent Solids: 56.2

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.088		0.049	0.0017	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-2	0.012	J	0.049	0.0019	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-3	0.071		0.049	0.0020	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-4	0.21		0.099	0.0049	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-5	0.010	J	0.049	0.0022	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-6	0.16		0.049	0.0022	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-7	0.028	J	0.049	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-8	0.65		0.099	0.0022	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-9	0.031	J	0.049	0.0024	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-10	0.010	J	0.049	0.0023	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-11	0.014	J B	0.099	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-12	0.063	J C	0.099	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-13	0.063	J C12	0.099	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-14	ND		0.049	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-15	0.26		0.049	0.0017	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-16	0.53		0.049	0.0027	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-17	0.78		0.049	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-18	1.2	C	0.099	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-19	0.12		0.049	0.0026	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-20	2.6	C	0.099	0.014	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-21	1.1	C	0.099	0.013	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-22	0.48		0.049	0.015	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-23	ND		0.049	0.014	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-24	0.011	J	0.049	0.0016	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-25	0.24		0.049	0.013	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-26	0.35	C	0.099	0.014	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-27	0.094		0.049	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-28	2.6	C20	0.099	0.014	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-29	0.35	C26	0.099	0.014	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-30	1.2	C18	0.099	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-31	1.8		0.099	0.013	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-32	0.47		0.049	0.0014	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-33	1.1	C21	0.099	0.013	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-34	0.042	J	0.049	0.015	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-35	0.026	J	0.049	0.015	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-36	ND		0.049	0.013	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-37	0.54		0.049	0.014	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-38	ND		0.049	0.014	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-39	0.042	J	0.049	0.013	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-40	2.2	C	0.15	0.010	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-41	2.2	C40	0.15	0.010	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-42	1.5		0.049	0.011	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-43	0.091	J C	0.099	0.0092	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-44	7.4	C B	0.15	0.0089	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-45	0.70	C B	0.099	0.010	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-46	0.23		0.049	0.012	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-47	7.4	C44 B	0.15	0.0089	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-48	0.65		0.049	0.0097	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-49	6.0	C B	0.099	0.0081	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5

Client Sample ID: J5-SC1b-60to70-82719
Lab Sample ID: 580-88908-30
Date Collected: 08/27/19 16:20
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 56.2

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	0.63	C	0.099	0.0098	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-51	0.70	C45 B	0.099	0.010	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-52	14	B	0.049	0.010	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-53	0.63	C50	0.099	0.0098	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-54	0.024	J	0.049	0.00070	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-55	ND		0.049	0.0071	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-56	1.7		0.049	0.0073	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-57	0.0086	J	0.049	0.0072	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-58	0.054	q	0.049	0.0070	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-59	0.35	C	0.15	0.0068	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-60	0.27		0.049	0.0069	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-61	12	C B	0.20	0.0068	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-62	0.35	C59	0.15	0.0068	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-63	0.18		0.049	0.0063	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-64	1.9		0.049	0.0065	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-65	7.4	C44 B	0.15	0.0089	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-66	6.1		0.049	0.0072	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-67	0.099		0.049	0.0066	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-68	0.18		0.049	0.0062	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-69	6.0	C49 B	0.099	0.0081	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-70	12	C61 B	0.20	0.0068	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-71	2.2	C40	0.15	0.010	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-72	0.33		0.049	0.0070	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-73	0.091	J C43	0.099	0.0092	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-74	12	C61 B	0.20	0.0068	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-75	0.35	C59	0.15	0.0068	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-76	12	C61 B	0.20	0.0068	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-77	0.28		0.049	0.0068	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-78	ND		0.049	0.0070	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-79	0.26		0.049	0.0060	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-80	ND		0.049	0.0063	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-81	ND		0.049	0.0071	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-82	2.1		0.049	0.0029	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-83	16	C	0.099	0.0027	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-84	6.4	B	0.049	0.0029	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-85	2.9	C B	0.15	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-86	13	C	0.30	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-87	13	C86	0.30	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-88	4.2	C	0.099	0.0025	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-89	0.14	q	0.049	0.0028	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-90	26	C B	0.15	0.0022	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-91	4.2	C88	0.099	0.0025	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-92	6.0		0.049	0.0027	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-93	0.50	C	0.099	0.0026	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-94	0.11		0.049	0.0028	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-95	22		0.049	0.0026	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-96	0.15		0.049	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-97	13	C86	0.30	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-98	0.75	C	0.099	0.0026	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88908-1

Client Sample ID: J5-SC1b-60to70-82719
Date Collected: 08/27/19 16:20
Date Received: 09/03/19 15:00

Lab Sample ID: 580-88908-30
Matrix: Solid
Percent Solids: 56.2

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	16	C83	0.099	0.0027	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-100	0.50	C93	0.099	0.0026	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-101	26	C90 B	0.15	0.0022	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-102	0.75	C98	0.099	0.0026	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-103	0.76		0.049	0.0024	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-104	ND		0.049	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-105	5.0		0.049	0.023	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-106	ND		0.049	0.024	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-107	1.4		0.049	0.022	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-108	0.58	C	0.099	0.024	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-109	13	C86	0.30	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-110	26	C	0.099	0.0019	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-111	ND		0.049	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-112	ND		0.049	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-113	26	C90 B	0.15	0.0022	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-114	0.28		0.049	0.021	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-115	26	C110	0.099	0.0019	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-116	2.9	C85 B	0.15	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-117	2.9	C85 B	0.15	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-118	16	B	0.049	0.023	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-119	13	C86	0.30	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-120	0.25		0.049	0.0017	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-121	ND		0.049	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-122	0.20		0.049	0.026	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-123	0.20		0.049	0.023	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-124	0.58	C108	0.099	0.024	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-125	13	C86	0.30	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-126	ND		0.049	0.024	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-127	ND		0.049	0.023	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-128	3.4	C B	0.099	0.0075	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-129	22	C B	0.20	0.0077	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-130	1.7		0.049	0.010	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-131	0.31		0.049	0.0097	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-132	8.1		0.049	0.0095	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-133	0.67		0.049	0.0092	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-134	1.4	C	0.099	0.0098	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-135	9.7	C B	0.099	0.0014	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-136	4.1	B	0.049	0.0011	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-137	0.86		0.049	0.0079	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-138	22	C129 B	0.20	0.0077	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-139	0.56	C	0.099	0.0083	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-140	0.56	C139	0.099	0.0083	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-141	3.7		0.049	0.0087	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-142	ND		0.049	0.0097	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-143	1.4	C134	0.099	0.0098	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-144	0.98		0.049	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-145	0.011	J	0.049	0.0010	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-146	5.8	B	0.049	0.0083	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-147	23	C B	0.099	0.0085	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5

Client Sample ID: J5-SC1b-60to70-82719
Lab Sample ID: 580-88908-30
Date Collected: 08/27/19 16:20
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 56.2

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	0.20		0.049	0.0014	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-149	23	C147 B	0.099	0.0085	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-150	0.17		0.049	0.0010	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-151	9.7	C135 B	0.099	0.0014	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-152	0.021	J	0.049	0.00098	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-153	22	C B	0.099	0.0068	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-154	1.1		0.049	0.0012	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-155	ND		0.049	0.00095	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-156	2.4	C	0.099	0.0080	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-157	2.4	C156	0.099	0.0080	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-158	2.0		0.049	0.0060	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-159	0.28		0.049	0.0063	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-160	22	C129 B	0.20	0.0077	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-161	ND		0.049	0.0062	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-162	0.066		0.049	0.0061	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-163	22	C129 B	0.20	0.0077	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-164	1.7		0.049	0.0067	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-165	ND		0.049	0.0074	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-166	3.4	C128 B	0.099	0.0075	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-167	0.71		0.049	0.0053	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-168	22	C153 B	0.099	0.0068	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-169	ND		0.049	0.0055	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-170	6.0	B	0.049	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-171	2.2	C	0.099	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-172	1.1		0.049	0.0014	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-173	2.2	C171	0.099	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-174	7.2	B	0.049	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-175	0.30		0.049	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-176	0.91		0.049	0.00093	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-177	4.4	B	0.049	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-178	1.7		0.049	0.0014	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-179	3.3		0.049	0.0010	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-180	14	C B	0.099	0.0011	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-181	0.066		0.049	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-182	0.091		0.049	0.0012	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-183	4.6	C B	0.099	0.0012	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-184	ND		0.049	0.00099	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-185	4.6	C183 B	0.099	0.0012	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-186	ND		0.049	0.00098	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-187	9.2	B	0.049	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-188	ND		0.049	0.00091	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-189	0.22		0.049	0.0031	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-190	1.3	B	0.049	0.0010	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-191	0.28		0.049	0.0010	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-192	ND		0.049	0.0011	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-193	14	C180 B	0.099	0.0011	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-194	3.3		0.049	0.013	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-195	1.5		0.049	0.015	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-196	1.8		0.049	0.0020	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5

Client Sample ID: J5-SC1b-60to70-82719
Lab Sample ID: 580-88908-30

Date Collected: 08/27/19 16:20
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 56.2

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	0.13		0.049	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-198	3.7	C B	0.099	0.0022	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-199	3.7	C198 B	0.099	0.0022	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-200	0.49		0.049	0.0016	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-201	0.48		0.049	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-202	0.75		0.049	0.0017	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-203	2.3		0.049	0.0019	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-204	ND		0.049	0.0016	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-205	0.17		0.049	0.0094	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-206	1.7		0.049	0.0085	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-207	0.18		0.049	0.0061	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-208	0.40		0.049	0.0064	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
PCB-209	1.4		0.049	0.0016	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
Total Monochlorobiphenyls	0.17		0.049	0.0019	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
Total Dichlorobiphenyls	1.4	q B	0.099	0.0024	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
Total Trichlorobiphenyls	10	q	0.099	0.0097	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
Total Tetrachlorobiphenyls	57	q B	0.20	0.0077	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
Total Pentachlorobiphenyls	150	q B	0.30	0.0091	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
Total Hexachlorobiphenyls	120	q B	0.20	0.0059	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
Total Heptachlorobiphenyls	57	B	0.099	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
Total Octachlorobiphenyls	15	B	0.099	0.0046	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
Total Nonachlorobiphenyls	2.3		0.049	0.0070	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5
Polychlorinated biphenyls, Total	410	q B	0.30	0.0055	ng/g	☼	09/17/19 12:25	10/03/19 18:47	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*53*		*30 - 140*	*09/17/19 12:25*	*10/03/19 18:47*	*5*
PCB-3L	*58*		*30 - 140*	*09/17/19 12:25*	*10/03/19 18:47*	*5*
PCB-4L	*65*		*30 - 140*	*09/17/19 12:25*	*10/03/19 18:47*	*5*
PCB-15L	*77*		*30 - 140*	*09/17/19 12:25*	*10/03/19 18:47*	*5*
PCB-19L	*75*		*30 - 140*	*09/17/19 12:25*	*10/03/19 18:47*	*5*
PCB-37L	*88*		*30 - 140*	*09/17/19 12:25*	*10/03/19 18:47*	*5*
PCB-54L	*69*		*30 - 140*	*09/17/19 12:25*	*10/03/19 18:47*	*5*
PCB-77L	*86*		*30 - 140*	*09/17/19 12:25*	*10/03/19 18:47*	*5*
PCB-81L	*85*		*30 - 140*	*09/17/19 12:25*	*10/03/19 18:47*	*5*
PCB-104L	*83*		*30 - 140*	*09/17/19 12:25*	*10/03/19 18:47*	*5*
PCB-105L	*80*		*30 - 140*	*09/17/19 12:25*	*10/03/19 18:47*	*5*
PCB-114L	*79*		*30 - 140*	*09/17/19 12:25*	*10/03/19 18:47*	*5*
PCB-118L	*79*		*30 - 140*	*09/17/19 12:25*	*10/03/19 18:47*	*5*
PCB-123L	*77*		*30 - 140*	*09/17/19 12:25*	*10/03/19 18:47*	*5*
PCB-126L	*85*		*30 - 140*	*09/17/19 12:25*	*10/03/19 18:47*	*5*
PCB-155L	*102*		*30 - 140*	*09/17/19 12:25*	*10/03/19 18:47*	*5*
PCB-156L	*76*	*C*	*30 - 140*	*09/17/19 12:25*	*10/03/19 18:47*	*5*
PCB-157L	*76*	*C156*	*30 - 140*	*09/17/19 12:25*	*10/03/19 18:47*	*5*
PCB-167L	*79*		*30 - 140*	*09/17/19 12:25*	*10/03/19 18:47*	*5*
PCB-169L	*90*		*30 - 140*	*09/17/19 12:25*	*10/03/19 18:47*	*5*
PCB-170L	*83*		*30 - 140*	*09/17/19 12:25*	*10/03/19 18:47*	*5*
PCB-188L	*82*		*30 - 140*	*09/17/19 12:25*	*10/03/19 18:47*	*5*
PCB-189L	*83*		*30 - 140*	*09/17/19 12:25*	*10/03/19 18:47*	*5*
PCB-202L	*86*		*30 - 140*	*09/17/19 12:25*	*10/03/19 18:47*	*5*
PCB-205L	*72*		*30 - 140*	*09/17/19 12:25*	*10/03/19 18:47*	*5*

Client Sample ID: J5-SC1b-60to70-82719
Lab Sample ID: 580-88908-30

Date Collected: 08/27/19 16:20
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 56.2

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-206L	69		30 - 140	09/17/19 12:25	10/03/19 18:47	5
PCB-208L	76		30 - 140	09/17/19 12:25	10/03/19 18:47	5
PCB-209L	70		30 - 140	09/17/19 12:25	10/03/19 18:47	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	80		40 - 125	09/17/19 12:25	10/03/19 18:47	5
PCB-111L	91		40 - 125	09/17/19 12:25	10/03/19 18:47	5
PCB-178L	90		40 - 125	09/17/19 12:25	10/03/19 18:47	5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.097		0.049	0.0016	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-2	0.015	J	0.049	0.0016	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-3	0.071		0.049	0.0016	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-4	0.19		0.099	0.0041	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-5	0.0076	J q	0.049	0.0023	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-6	0.15		0.049	0.0023	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-7	0.028	J	0.049	0.0022	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-8	0.58		0.099	0.0023	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-9	0.035	J	0.049	0.0025	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-10	0.0096	J q	0.049	0.0024	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-11	0.0098	J q B	0.099	0.0022	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-12	0.060	J C	0.099	0.0022	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-13	0.060	J C12	0.099	0.0022	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-14	ND		0.049	0.0019	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-15	0.23		0.049	0.0020	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-16	0.57		0.049	0.0016	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-17	0.84	B	0.049	0.0013	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-18	1.2	C B	0.099	0.0011	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-19	0.11		0.049	0.0015	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-20	2.0	C B	0.099	0.0064	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-21	0.82	C B	0.099	0.0060	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-22	0.36	B	0.049	0.0067	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-23	ND		0.049	0.0065	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-24	0.015	J	0.049	0.00096	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-25	0.18		0.049	0.0061	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-26	0.27	C B	0.099	0.0063	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-27	0.10		0.049	0.00093	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-28	2.0	C20 B	0.099	0.0064	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-29	0.27	C26 B	0.099	0.0063	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-30	1.2	C18 B	0.099	0.0011	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-31	1.4	B	0.099	0.0060	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-32	0.48		0.049	0.00086	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-33	0.82	C21 B	0.099	0.0060	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-34	0.033	J	0.049	0.0068	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-35	0.022	J	0.049	0.0068	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-36	ND		0.049	0.0062	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-37	0.55	B	0.049	0.0064	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-38	ND		0.049	0.0063	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-39	0.037	J	0.049	0.0059	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5

Client Sample ID: J5-SC1b-60to70-82719
Lab Sample ID: 580-88908-30
Date Collected: 08/27/19 16:20
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 56.2

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-40	2.3	C	0.15	0.0068	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-41	2.3	C40	0.15	0.0068	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-42	1.5		0.049	0.0072	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-43	0.15	C	0.099	0.0063	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-44	7.1	C B	0.15	0.0061	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-45	0.71	C B	0.099	0.0071	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-46	0.21		0.049	0.0083	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-47	7.1	C44 B	0.15	0.0061	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-48	0.66		0.049	0.0066	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-49	5.6	C B	0.099	0.0055	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-50	0.63	C	0.099	0.0067	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-51	0.71	C45 B	0.099	0.0071	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-52	13	B	0.049	0.0070	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-53	0.63	C50	0.099	0.0067	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-54	0.022	J	0.049	0.00027	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-55	ND		0.049	0.0048	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-56	1.8		0.049	0.0049	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-57	ND		0.049	0.0049	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-58	0.058		0.049	0.0047	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-59	0.36	C	0.15	0.0046	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-60	0.26		0.049	0.0047	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-61	12	C B	0.20	0.0046	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-62	0.36	C59	0.15	0.0046	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-63	0.18		0.049	0.0043	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-64	2.0		0.049	0.0044	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-65	7.1	C44 B	0.15	0.0061	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-66	6.4	B	0.049	0.0049	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-67	0.10		0.049	0.0045	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-68	0.21	B	0.049	0.0042	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-69	5.6	C49 B	0.099	0.0055	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-70	12	C61 B	0.20	0.0046	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-71	2.3	C40	0.15	0.0068	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-72	0.38		0.049	0.0048	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-73	0.15	C43	0.099	0.0063	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-74	12	C61 B	0.20	0.0046	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-75	0.36	C59	0.15	0.0046	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-76	12	C61 B	0.20	0.0046	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-77	0.26		0.049	0.0044	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-78	ND		0.049	0.0048	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-79	0.22		0.049	0.0041	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-80	ND		0.049	0.0043	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-81	0.0055	J q	0.049	0.0051	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-82	1.6	B	0.049	0.0019	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-83	15	C B	0.099	0.0018	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-84	5.4	B	0.049	0.0020	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-85	2.5	C	0.15	0.0014	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-86	12	C B	0.30	0.0014	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-87	12	C86 B	0.30	0.0014	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-88	3.9	C B	0.099	0.0017	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5

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Percent Solids: 56.2

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-89	ND		0.049	0.0019	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-90	**23**	**C B**	0.15	0.0015	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-91	**3.9**	**C88 B**	0.099	0.0017	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-92	**5.7**	**B**	0.049	0.0018	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-93	**0.48**	**C**	0.099	0.0017	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-94	ND		0.049	0.0019	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-95	**17**	**B**	0.049	0.0017	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-96	**0.13**		0.049	0.0014	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-97	**12**	**C86 B**	0.30	0.0014	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-98	**0.65**	**C**	0.099	0.0017	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-99	**15**	**C83 B**	0.099	0.0018	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-100	**0.48**	**C93**	0.099	0.0017	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-101	**23**	**C90 B**	0.15	0.0015	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-102	**0.65**	**C98**	0.099	0.0017	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-103	**0.74**		0.049	0.0016	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-104	ND		0.049	0.0012	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-105	**4.5**	**B**	0.049	0.014	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-106	ND		0.049	0.014	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-107	**1.5**	**B**	0.049	0.013	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-108	**0.55**	**C**	0.099	0.014	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-109	**12**	**C86 B**	0.30	0.0014	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-110	**21**	**C B**	0.099	0.0012	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-111	ND		0.049	0.0012	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-112	ND		0.049	0.0012	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-113	**23**	**C90 B**	0.15	0.0015	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-114	**0.25**		0.049	0.012	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-115	**21**	**C110 B**	0.099	0.0012	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-116	**2.5**	**C85**	0.15	0.0014	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-117	**2.5**	**C85**	0.15	0.0014	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-118	**15**	**B**	0.049	0.013	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-119	**12**	**C86 B**	0.30	0.0014	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-120	**0.24**		0.049	0.0011	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-121	ND		0.049	0.0012	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-122	**0.18**	**B**	0.049	0.015	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-123	**0.18**		0.049	0.014	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-124	**0.55**	**C108**	0.099	0.014	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-125	**12**	**C86 B**	0.30	0.0014	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-126	**0.019**	**J**	0.049	0.013	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-127	ND		0.049	0.014	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-128	**3.5**	**C B**	0.099	0.0049	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-129	**23**	**C B**	0.20	0.0050	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-130	**1.9**	**B**	0.049	0.0066	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-131	**0.31**		0.049	0.0064	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-132	**8.6**	**B**	0.049	0.0062	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-133	**0.79**		0.049	0.0060	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-134	**1.3**	**C**	0.099	0.0064	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-135	**11**	**C B**	0.099	0.0017	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-136	**4.3**	**B**	0.049	0.0013	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-137	**0.87**		0.049	0.0052	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5

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Percent Solids: 56.2

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-138	23	C129 B	0.20	0.0050	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-139	0.60	C	0.099	0.0055	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-140	0.60	C139	0.099	0.0055	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-141	4.0	B	0.049	0.0057	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-142	ND		0.049	0.0063	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-143	1.3	C134	0.099	0.0064	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-144	1.1		0.049	0.0016	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-145	0.011	J q	0.049	0.0012	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-146	6.5	B	0.049	0.0054	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-147	22	C B	0.099	0.0056	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-148	0.24		0.049	0.0016	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-149	22	C147 B	0.099	0.0056	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-150	0.20		0.049	0.0012	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-151	11	C135 B	0.099	0.0017	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-152	0.023	J	0.049	0.0012	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-153	24	C B	0.099	0.0045	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-154	1.4		0.049	0.0014	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-155	ND		0.049	0.0011	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-156	2.5	C B	0.099	0.0052	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-157	2.5	C156 B	0.099	0.0052	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-158	2.2	B	0.049	0.0039	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-159	0.28		0.049	0.0041	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-160	23	C129 B	0.20	0.0050	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-161	ND		0.049	0.0041	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-162	ND		0.049	0.0040	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-163	23	C129 B	0.20	0.0050	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-164	1.9	B	0.049	0.0044	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-165	ND		0.049	0.0049	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-166	3.5	C128 B	0.099	0.0049	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-167	0.77	B	0.049	0.0034	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-168	24	C153 B	0.099	0.0045	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-169	ND		0.049	0.0038	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-170	7.5	B	0.049	0.0018	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-171	2.5	C B	0.099	0.0017	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-172	1.3	B	0.049	0.0016	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-173	2.5	C171 B	0.099	0.0017	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-174	8.5	B	0.049	0.0017	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-175	0.36		0.049	0.0015	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-176	1.1	B	0.049	0.0011	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-177	5.4	B	0.049	0.0017	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-178	2.0	B	0.049	0.0016	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-179	3.8	B	0.049	0.0011	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-180	16	C B	0.099	0.0013	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-181	0.079		0.049	0.0015	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-182	0.11		0.049	0.0014	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-183	5.5	C B	0.099	0.0014	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-184	ND		0.049	0.0011	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-185	5.5	C183 B	0.099	0.0014	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-186	ND		0.049	0.0011	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5

Client Sample ID: J5-SC1b-60to70-82719
Lab Sample ID: 580-88908-30

Date Collected: 08/27/19 16:20
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 56.2

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-187	**11**	**B**	0.049	0.0015	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-188	ND		0.049	0.0010	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-189	**0.28**	**B**	0.049	0.0048	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-190	**1.5**	**B**	0.049	0.0012	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-191	**0.35**		0.049	0.0012	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-192	ND		0.049	0.0013	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-193	**16**	**C180 B**	0.099	0.0013	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-194	**4.0**	**B**	0.049	0.0055	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-195	**1.3**	**B**	0.049	0.0065	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-196	**2.0**	**B**	0.049	0.0032	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-197	**0.14**	**B**	0.049	0.0023	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-198	**4.2**	**C B**	0.099	0.0034	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-199	**4.2**	**C198 B**	0.099	0.0034	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-200	**0.54**		0.049	0.0025	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-201	**0.52**	**B**	0.049	0.0023	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-202	**0.78**	**B**	0.049	0.0026	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-203	**2.6**		0.049	0.0030	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-204	ND		0.049	0.0025	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-205	**0.21**		0.049	0.0041	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-206	**2.6**	**q**	0.049	0.0074	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-207	**0.17**		0.049	0.0055	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-208	**0.43**		0.049	0.0059	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
PCB-209	**1.6**		0.049	0.0018	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
Total Monochlorobiphenyls	**0.18**		0.049	0.0016	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
Total Dichlorobiphenyls	**1.3**	**q B**	0.099	0.0024	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
Total Trichlorobiphenyls	**9.0**	**B**	0.099	0.0045	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
Total Tetrachlorobiphenyls	**56**	**q B**	0.20	0.0052	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
Total Pentachlorobiphenyls	**130**	**B**	0.30	0.0054	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
Total Hexachlorobiphenyls	**120**	**q B**	0.20	0.0040	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
Total Heptachlorobiphenyls	**67**	**B**	0.099	0.0016	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
Total Octachlorobiphenyls	**16**	**B**	0.099	0.0034	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
Total Nonachlorobiphenyls	**3.2**	**q**	0.049	0.0063	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5
Polychlorinated biphenyls, Total	**410**	**q B**	0.30	0.0039	ng/g	☼	10/03/19 11:21	10/10/19 05:07	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*55*		*30 - 140*	*10/03/19 11:21*	*10/10/19 05:07*	*5*
PCB-3L	*58*		*30 - 140*	*10/03/19 11:21*	*10/10/19 05:07*	*5*
PCB-4L	*60*		*30 - 140*	*10/03/19 11:21*	*10/10/19 05:07*	*5*
PCB-15L	*86*		*30 - 140*	*10/03/19 11:21*	*10/10/19 05:07*	*5*
PCB-19L	*70*		*30 - 140*	*10/03/19 11:21*	*10/10/19 05:07*	*5*
PCB-37L	*118*		*30 - 140*	*10/03/19 11:21*	*10/10/19 05:07*	*5*
PCB-54L	*69*		*30 - 140*	*10/03/19 11:21*	*10/10/19 05:07*	*5*
PCB-77L	*99*		*30 - 140*	*10/03/19 11:21*	*10/10/19 05:07*	*5*
PCB-81L	*89*		*30 - 140*	*10/03/19 11:21*	*10/10/19 05:07*	*5*
PCB-104L	*88*		*30 - 140*	*10/03/19 11:21*	*10/10/19 05:07*	*5*
PCB-105L	*83*		*30 - 140*	*10/03/19 11:21*	*10/10/19 05:07*	*5*
PCB-114L	*88*		*30 - 140*	*10/03/19 11:21*	*10/10/19 05:07*	*5*
PCB-118L	*90*		*30 - 140*	*10/03/19 11:21*	*10/10/19 05:07*	*5*
PCB-123L	*85*		*30 - 140*	*10/03/19 11:21*	*10/10/19 05:07*	*5*
PCB-126L	*96*		*30 - 140*	*10/03/19 11:21*	*10/10/19 05:07*	*5*

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88908-1

Client Sample ID: J5-SC1b-60to70-82719
Date Collected: 08/27/19 16:20
Date Received: 09/03/19 15:00

Lab Sample ID: 580-88908-30
Matrix: Solid
Percent Solids: 56.2

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-155L	92		30 - 140	10/03/19 11:21	10/10/19 05:07	5
PCB-156L	81	C	30 - 140	10/03/19 11:21	10/10/19 05:07	5
PCB-157L	81	C156	30 - 140	10/03/19 11:21	10/10/19 05:07	5
PCB-167L	85		30 - 140	10/03/19 11:21	10/10/19 05:07	5
PCB-169L	92		30 - 140	10/03/19 11:21	10/10/19 05:07	5
PCB-170L	80		30 - 140	10/03/19 11:21	10/10/19 05:07	5
PCB-188L	84		30 - 140	10/03/19 11:21	10/10/19 05:07	5
PCB-189L	52		30 - 140	10/03/19 11:21	10/10/19 05:07	5
PCB-202L	92		30 - 140	10/03/19 11:21	10/10/19 05:07	5
PCB-205L	76		30 - 140	10/03/19 11:21	10/10/19 05:07	5
PCB-206L	72		30 - 140	10/03/19 11:21	10/10/19 05:07	5
PCB-208L	71		30 - 140	10/03/19 11:21	10/10/19 05:07	5
PCB-209L	70		30 - 140	10/03/19 11:21	10/10/19 05:07	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	82		40 - 125	10/03/19 11:21	10/10/19 05:07	5
PCB-111L	90		40 - 125	10/03/19 11:21	10/10/19 05:07	5
PCB-178L	95		40 - 125	10/03/19 11:21	10/10/19 05:07	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	43.8		0.1		%			09/11/19 15:55	1
Percent Solids	56.2		0.1		%			09/11/19 15:55	1

Client Sample ID: J5-SC1b-70to80-82719
Lab Sample ID: 580-88908-31

Date Collected: 08/27/19 16:25
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 65.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.036	J	0.049	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-2	0.0079	J	0.049	0.0019	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-3	0.020	J	0.049	0.0019	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-4	0.068	J	0.098	0.0054	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-5	ND		0.049	0.0024	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-6	0.064		0.049	0.0024	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-7	0.010	J	0.049	0.0023	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-8	0.17		0.098	0.0023	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-9	0.011	J	0.049	0.0026	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-10	ND		0.049	0.0025	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-11	0.016	J q B	0.098	0.0023	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-12	0.029	J C	0.098	0.0022	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-13	0.029	J C12	0.098	0.0022	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-14	ND		0.049	0.0020	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-15	0.068		0.049	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-16	0.17		0.049	0.0030	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-17	0.27		0.049	0.0024	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-18	0.43	C	0.098	0.0020	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-19	0.038	J	0.049	0.0028	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-20	0.79	C	0.098	0.0055	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-21	0.33	C	0.098	0.0052	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-22	0.14		0.049	0.0057	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-23	ND		0.049	0.0056	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-24	0.0037	J	0.049	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-25	0.15		0.049	0.0053	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-26	0.23	C	0.098	0.0054	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-27	0.034	J	0.049	0.0017	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-28	0.79	C20	0.098	0.0055	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-29	0.23	C26	0.098	0.0054	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-30	0.43	C18	0.098	0.0020	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-31	0.58		0.098	0.0052	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-32	0.16		0.049	0.0016	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-33	0.33	C21	0.098	0.0052	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-34	0.014	J	0.049	0.0059	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-35	0.033	J	0.049	0.0059	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-36	0.013	J	0.049	0.0053	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-37	0.15		0.049	0.0055	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-38	ND		0.049	0.0054	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-39	0.030	J	0.049	0.0051	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-40	0.94	C	0.15	0.047	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-41	0.94	C40	0.15	0.047	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-42	0.59		0.049	0.049	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-43	0.080	J C	0.098	0.043	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-44	4.0	C B	0.15	0.041	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-45	0.22	C B	0.098	0.048	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-46	0.074	G	0.056	0.056	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-47	4.0	C44 B	0.15	0.041	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-48	0.16		0.049	0.045	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-49	4.0	C B	0.098	0.038	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5

Client Sample ID: J5-SC1b-70to80-82719
Lab Sample ID: 580-88908-31
Date Collected: 08/27/19 16:25
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 65.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	0.24	C	0.098	0.046	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-51	0.22	C45 B	0.098	0.048	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-52	7.7	B	0.049	0.048	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-53	0.24	C50	0.098	0.046	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-54	0.0062	J	0.049	0.00086	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-55	ND		0.049	0.033	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-56	0.67		0.049	0.034	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-57	ND		0.049	0.033	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-58	ND		0.049	0.032	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-59	0.12	J C	0.15	0.031	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-60	0.12		0.049	0.032	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-61	5.5	C B	0.20	0.032	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-62	0.12	J C59	0.15	0.031	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-63	0.072		0.049	0.029	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-64	0.71		0.049	0.030	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-65	4.0	C44 B	0.15	0.041	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-66	2.7		0.049	0.033	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-67	0.039	J	0.049	0.031	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-68	0.38		0.049	0.029	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-69	4.0	C49 B	0.098	0.038	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-70	5.5	C61 B	0.20	0.032	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-71	0.94	C40	0.15	0.047	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-72	0.39		0.049	0.033	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-73	0.080	J C43	0.098	0.043	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-74	5.5	C61 B	0.20	0.032	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-75	0.12	J C59	0.15	0.031	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-76	5.5	C61 B	0.20	0.032	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-77	0.083		0.049	0.032	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-78	ND		0.049	0.033	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-79	0.30		0.049	0.028	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-80	ND		0.049	0.029	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-81	ND		0.049	0.033	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-82	0.98		0.049	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-83	12	C	0.098	0.0019	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-84	2.8	B	0.049	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-85	1.4	C B	0.15	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-86	6.9	C	0.29	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-87	6.9	C86	0.29	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-88	2.8	C	0.098	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-89	ND		0.049	0.0020	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-90	17	C B	0.15	0.0016	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-91	2.8	C88	0.098	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-92	4.8		0.049	0.0019	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-93	0.63	C	0.098	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-94	0.054		0.049	0.0020	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-95	12		0.049	0.0019	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-96	0.068		0.049	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-97	6.9	C86	0.29	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-98	0.41	C	0.098	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5

Client Sample ID: J5-SC1b-70to80-82719
Lab Sample ID: 580-88908-31

Date Collected: 08/27/19 16:25
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 65.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	12	C83	0.098	0.0019	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-100	0.63	C93	0.098	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-101	17	C90 B	0.15	0.0016	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-102	0.41	C98	0.098	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-103	0.77		0.049	0.0017	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-104	ND		0.049	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-105	2.6		0.049	0.016	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-106	ND		0.049	0.016	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-107	1.1		0.049	0.015	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-108	0.30	C	0.098	0.017	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-109	6.9	C86	0.29	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-110	13	C	0.098	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-111	0.13		0.049	0.0012	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-112	ND		0.049	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-113	17	C90 B	0.15	0.0016	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-114	0.13		0.049	0.015	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-115	13	C110	0.098	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-116	1.4	C85 B	0.15	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-117	1.4	C85 B	0.15	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-118	8.6	B	0.049	0.016	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-119	6.9	C86	0.29	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-120	0.37		0.049	0.0012	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-121	0.073		0.049	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-122	0.10		0.049	0.018	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-123	0.10		0.049	0.015	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-124	0.30	C108	0.098	0.017	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-125	6.9	C86	0.29	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-126	ND		0.049	0.016	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-127	ND		0.049	0.016	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-128	1.7	C B	0.098	0.0074	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-129	16	C B	0.20	0.0076	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-130	1.2		0.049	0.010	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-131	0.18		0.049	0.0096	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-132	5.4		0.049	0.0094	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-133	1.1		0.049	0.0091	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-134	1.0	C	0.098	0.0097	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-135	10	C B	0.098	0.0020	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-136	3.4	B	0.049	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-137	0.45		0.049	0.0078	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-138	16	C129 B	0.20	0.0076	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-139	0.62	C	0.098	0.0083	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-140	0.62	C139	0.098	0.0083	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-141	2.6		0.049	0.0086	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-142	ND		0.049	0.0096	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-143	1.0	C134	0.098	0.0097	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-144	0.71		0.049	0.0019	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-145	0.0087	J	0.049	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-146	8.0	B	0.049	0.0082	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-147	20	C B	0.098	0.0085	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88908-1

Client Sample ID: J5-SC1b-70to80-82719
Date Collected: 08/27/19 16:25
Date Received: 09/03/19 15:00

Lab Sample ID: 580-88908-31
Matrix: Solid
Percent Solids: 65.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	0.47		0.049	0.0019	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-149	20	C147 B	0.098	0.0085	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-150	0.34		0.049	0.0014	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-151	10	C135 B	0.098	0.0020	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-152	0.0088	J	0.049	0.0014	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-153	19	C B	0.098	0.0068	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-154	2.1		0.049	0.0017	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-155	0.019	J	0.049	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-156	1.5	C	0.098	0.0077	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-157	1.5	C156	0.098	0.0077	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-158	1.2		0.049	0.0060	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-159	0.23		0.049	0.0063	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-160	16	C129 B	0.20	0.0076	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-161	ND		0.049	0.0062	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-162	0.048	J	0.049	0.0061	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-163	16	C129 B	0.20	0.0076	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-164	1.3		0.049	0.0066	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-165	0.084		0.049	0.0074	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-166	1.7	C128 B	0.098	0.0074	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-167	0.47		0.049	0.0051	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-168	19	C153 B	0.098	0.0068	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-169	0.037	J	0.049	0.0059	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-170	5.5	B	0.049	0.0016	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-171	1.9	C	0.098	0.0016	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-172	0.99		0.049	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-173	1.9	C171	0.098	0.0016	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-174	6.1	B	0.049	0.0016	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-175	0.25		0.049	0.0014	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-176	0.78		0.049	0.00098	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-177	4.6	B	0.049	0.0016	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-178	2.0		0.049	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-179	3.4		0.049	0.0011	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-180	13	C B	0.098	0.0012	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-181	0.055		0.049	0.0014	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-182	0.12		0.049	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-183	4.0	C B	0.098	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-184	ND		0.049	0.0011	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-185	4.0	C183 B	0.098	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-186	ND		0.049	0.0010	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-187	10	B	0.049	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-188	0.069		0.049	0.00096	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-189	0.21		0.049	0.0024	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-190	1.2	B	0.049	0.0011	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-191	0.24		0.049	0.0011	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-192	ND		0.049	0.0012	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-193	13	C180 B	0.098	0.0012	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-194	3.1		0.049	0.0048	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-195	1.4		0.049	0.0057	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-196	1.6		0.049	0.0025	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5

Client Sample ID: J5-SC1b-70to80-82719
Lab Sample ID: 580-88908-31
Date Collected: 08/27/19 16:25
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 65.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	**0.11**	**q**	0.049	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-198	**3.2**	**C B**	0.098	0.0027	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-199	**3.2**	**C198 B**	0.098	0.0027	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-200	**0.40**		0.049	0.0019	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-201	**0.42**		0.049	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-202	**0.68**		0.049	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-203	**1.9**		0.049	0.0024	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-204	ND		0.049	0.0020	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-205	**0.16**		0.049	0.0036	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-206	**2.1**		0.049	0.0099	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-207	**0.19**		0.049	0.0069	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-208	**0.58**		0.049	0.0070	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
PCB-209	**2.2**		0.049	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
Total Monochlorobiphenyls	**0.064**		0.049	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
Total Dichlorobiphenyls	**0.44**	**q B**	0.098	0.0026	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
Total Trichlorobiphenyls	**3.6**	**q**	0.098	0.0043	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
Total Tetrachlorobiphenyls	**29**	**q B**	0.20	0.035	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
Total Pentachlorobiphenyls	**89**	**B**	0.29	0.0063	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
Total Hexachlorobiphenyls	**99**	**q B**	0.20	0.0060	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
Total Heptachlorobiphenyls	**54**	**B**	0.098	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
Total Octachlorobiphenyls	**13**	**q B**	0.098	0.0028	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
Total Nonachlorobiphenyls	**2.9**		0.049	0.0079	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5
Polychlorinated biphenyls, Total	**290**	**q B**	0.29	0.0076	ng/g	☼	09/17/19 12:25	10/03/19 19:49	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*50*		*30 - 140*	*09/17/19 12:25*	*10/03/19 19:49*	*5*
PCB-3L	*62*		*30 - 140*	*09/17/19 12:25*	*10/03/19 19:49*	*5*
PCB-4L	*64*		*30 - 140*	*09/17/19 12:25*	*10/03/19 19:49*	*5*
PCB-15L	*83*		*30 - 140*	*09/17/19 12:25*	*10/03/19 19:49*	*5*
PCB-19L	*57*	*q*	*30 - 140*	*09/17/19 12:25*	*10/03/19 19:49*	*5*
PCB-37L	*90*		*30 - 140*	*09/17/19 12:25*	*10/03/19 19:49*	*5*
PCB-54L	*71*		*30 - 140*	*09/17/19 12:25*	*10/03/19 19:49*	*5*
PCB-77L	*95*		*30 - 140*	*09/17/19 12:25*	*10/03/19 19:49*	*5*
PCB-81L	*89*		*30 - 140*	*09/17/19 12:25*	*10/03/19 19:49*	*5*
PCB-104L	*86*		*30 - 140*	*09/17/19 12:25*	*10/03/19 19:49*	*5*
PCB-105L	*83*		*30 - 140*	*09/17/19 12:25*	*10/03/19 19:49*	*5*
PCB-114L	*80*		*30 - 140*	*09/17/19 12:25*	*10/03/19 19:49*	*5*
PCB-118L	*82*		*30 - 140*	*09/17/19 12:25*	*10/03/19 19:49*	*5*
PCB-123L	*82*		*30 - 140*	*09/17/19 12:25*	*10/03/19 19:49*	*5*
PCB-126L	*89*		*30 - 140*	*09/17/19 12:25*	*10/03/19 19:49*	*5*
PCB-155L	*99*		*30 - 140*	*09/17/19 12:25*	*10/03/19 19:49*	*5*
PCB-156L	*84*	*C*	*30 - 140*	*09/17/19 12:25*	*10/03/19 19:49*	*5*
PCB-157L	*84*	*C156*	*30 - 140*	*09/17/19 12:25*	*10/03/19 19:49*	*5*
PCB-167L	*83*		*30 - 140*	*09/17/19 12:25*	*10/03/19 19:49*	*5*
PCB-169L	*94*		*30 - 140*	*09/17/19 12:25*	*10/03/19 19:49*	*5*
PCB-170L	*78*		*30 - 140*	*09/17/19 12:25*	*10/03/19 19:49*	*5*
PCB-188L	*80*		*30 - 140*	*09/17/19 12:25*	*10/03/19 19:49*	*5*
PCB-189L	*87*		*30 - 140*	*09/17/19 12:25*	*10/03/19 19:49*	*5*
PCB-202L	*93*		*30 - 140*	*09/17/19 12:25*	*10/03/19 19:49*	*5*
PCB-205L	*77*		*30 - 140*	*09/17/19 12:25*	*10/03/19 19:49*	*5*

Client Sample ID: J5-SC1b-70to80-82719
Lab Sample ID: 580-88908-31

Date Collected: 08/27/19 16:25
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 65.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-206L	72		30 - 140	09/17/19 12:25	10/03/19 19:49	5
PCB-208L	82		30 - 140	09/17/19 12:25	10/03/19 19:49	5
PCB-209L	78		30 - 140	09/17/19 12:25	10/03/19 19:49	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	78		40 - 125	09/17/19 12:25	10/03/19 19:49	5
PCB-111L	89		40 - 125	09/17/19 12:25	10/03/19 19:49	5
PCB-178L	87		40 - 125	09/17/19 12:25	10/03/19 19:49	5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.033		0.0098	0.00043	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-2	0.0075	J	0.0098	0.00045	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-3	0.020		0.0098	0.00047	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-4	0.095		0.020	0.0012	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-5	0.0019	J q	0.0098	0.00086	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-6	0.081		0.0098	0.00087	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-7	0.0094	J q	0.0098	0.00083	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-8	0.24		0.020	0.00085	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-9	0.017		0.0098	0.00095	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-10	0.0032	J q	0.0098	0.00091	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-11	0.012	J B	0.020	0.00082	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-12	0.028	C	0.020	0.00082	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-13	0.028	C12	0.020	0.00082	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-14	0.00090	J q	0.0098	0.00072	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-15	0.086		0.0098	0.00089	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-16	0.23		0.0098	0.00052	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-17	0.28	B	0.0098	0.00041	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-18	0.51	C B	0.020	0.00035	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-19	0.056		0.0098	0.00049	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-20	0.95	C B	0.020	0.0057	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-21	0.43	C B	0.020	0.0054	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-22	0.19	B	0.0098	0.0060	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-23	ND		0.0098	0.0058	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-24	0.0030	J q	0.0098	0.00030	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-25	0.17		0.0098	0.0055	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-26	0.26	C B	0.020	0.0056	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-27	0.038		0.0098	0.00029	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-28	0.95	B C20	0.020	0.0057	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-29	0.26	C26 B	0.020	0.0056	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-30	0.51	C18 B	0.020	0.00035	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-31	0.74	B	0.020	0.0054	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-32	0.20		0.0098	0.00027	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-33	0.43	B C21	0.020	0.0054	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-34	0.016		0.0098	0.0061	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-35	0.036		0.0098	0.0061	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-36	0.012		0.0098	0.0055	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-37	0.20	B	0.0098	0.0058	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-38	ND		0.0098	0.0056	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-39	0.031		0.0098	0.0053	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1

Client Sample ID: J5-SC1b-70to80-82719
Lab Sample ID: 580-88908-31

Date Collected: 08/27/19 16:25
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 65.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-40	1.2	C G	0.058	0.058	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-41	1.2	G C40	0.058	0.058	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-42	0.73	G	0.062	0.062	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-43	0.11	C G	0.053	0.053	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-44	5.7	C B G	0.052	0.052	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-45	0.21	C B q G	0.060	0.060	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-46	ND	G	0.070	0.070	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-47	5.7	B C44 G	0.052	0.052	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-48	0.24	G	0.056	0.056	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-49	4.4	C B G	0.047	0.047	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-50	0.37	C G	0.057	0.057	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-51	0.21	C45 B q G	0.060	0.060	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-52	11	B G	0.059	0.059	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-53	0.37	C50 G	0.057	0.057	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-54	0.011	q	0.0098	0.00018	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-55	ND	G	0.041	0.041	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-56	0.95	G	0.042	0.042	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-57	ND	G	0.042	0.042	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-58	ND	G	0.040	0.040	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-59	0.15	C G	0.039	0.039	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-60	0.23	G	0.040	0.040	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-61	8.0	C B	0.039	0.039	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-62	0.15	C59 G	0.039	0.039	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-63	0.096	G	0.036	0.036	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-64	1.0	G	0.038	0.038	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-65	5.7	B C44 G	0.052	0.052	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-66	3.2	B G	0.042	0.042	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-67	ND	G	0.038	0.038	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-68	0.42	B G	0.036	0.036	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-69	4.4	B C49 G	0.047	0.047	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-70	8.0	C61 B	0.039	0.039	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-71	1.2	G C40	0.058	0.058	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-72	0.40	G	0.041	0.041	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-73	0.11	C43 G	0.053	0.053	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-74	8.0	C61 B	0.039	0.039	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-75	0.15	C59 G	0.039	0.039	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-76	8.0	C61 B	0.039	0.039	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-77	0.13	G	0.038	0.038	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-78	ND	G	0.041	0.041	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-79	0.24	G	0.035	0.035	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-80	ND	G	0.036	0.036	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-81	ND	G	0.042	0.042	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-82	1.5	B	0.0098	0.00053	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-83	13	C B	0.020	0.00049	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-84	4.4	B	0.0098	0.00054	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-85	2.0	C	0.029	0.00038	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-86	9.7	C B	0.059	0.00039	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-87	9.7	B C86	0.059	0.00039	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-88	3.6	C B	0.020	0.00046	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1

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Date Collected: 08/27/19 16:25
Matrix: Solid
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Percent Solids: 65.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-89	0.10		0.0098	0.00052	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-90	21	C B	0.029	0.00041	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-91	3.6	C88 B	0.020	0.00046	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-92	5.7	B	0.0098	0.00048	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-93	0.67	C	0.020	0.00047	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-94	0.10		0.0098	0.00051	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-95	16	B	0.0098	0.00048	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-96	0.11		0.0098	0.00038	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-97	9.7	B C86	0.059	0.00039	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-98	0.57	C	0.020	0.00047	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-99	13	C83 B	0.020	0.00049	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-100	0.67	C93	0.020	0.00047	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-101	21	B C90	0.029	0.00041	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-102	0.57	C98	0.020	0.00047	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-103	0.80		0.0098	0.00045	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-104	ND		0.0098	0.00033	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-105	4.3	B G	0.011	0.011	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-106	ND	G	0.012	0.012	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-107	1.4	B G	0.011	0.011	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-108	0.52	C	0.020	0.012	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-109	9.7	B C86	0.059	0.00039	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-110	15	C B	0.020	0.00034	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-111	0.10		0.0098	0.00032	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-112	ND		0.0098	0.00034	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-113	21	B C90	0.029	0.00041	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-114	0.24	G	0.011	0.011	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-115	15	B C110	0.020	0.00034	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-116	2.0	C85	0.029	0.00038	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-117	2.0	C85	0.029	0.00038	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-118	12	B G	0.011	0.011	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-119	9.7	B C86	0.059	0.00039	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-120	0.26		0.0098	0.00031	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-121	ND		0.0098	0.00033	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-122	0.15	B G	0.013	0.013	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-123	0.17	G	0.011	0.011	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-124	0.52	C108	0.020	0.012	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-125	9.7	B C86	0.059	0.00039	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-126	0.015	G	0.011	0.011	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-127	ND	G	0.012	0.012	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-128	2.8	C B	0.020	0.0034	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-129	20	C B	0.039	0.0035	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-130	1.4	B	0.0098	0.0046	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-131	0.27		0.0098	0.0045	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-132	6.9	B	0.0098	0.0044	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-133	1.1		0.0098	0.0042	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-134	1.4	C	0.020	0.0045	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-135	9.6	C B	0.020	0.00060	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-136	3.8	B	0.0098	0.00045	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-137	0.64		0.0098	0.0036	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1

Client Sample ID: J5-SC1b-70to80-82719
Lab Sample ID: 580-88908-31

Date Collected: 08/27/19 16:25
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 65.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-138	20	B C129	0.039	0.0035	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-139	0.68	C	0.020	0.0038	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-140	0.68	C139	0.020	0.0038	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-141	3.4	B	0.0098	0.0040	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-142	ND		0.0098	0.0045	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-143	1.4	C134	0.020	0.0045	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-144	0.64		0.0098	0.00057	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-145	0.0053	J q	0.0098	0.00044	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-146	6.9	B	0.0098	0.0038	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-147	22	C B	0.020	0.0039	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-148	0.41		0.0098	0.00058	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-149	22	B C147	0.020	0.0039	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-150	0.32		0.0098	0.00042	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-151	9.6	C135 B	0.020	0.00060	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-152	0.021		0.0098	0.00042	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-153	20	C B	0.020	0.0031	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-154	1.6		0.0098	0.00051	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-155	0.018		0.0098	0.00040	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-156	2.1	C B	0.020	0.0034	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-157	2.1	C156 B	0.020	0.0034	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-158	1.8	B	0.0098	0.0028	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-159	0.19		0.0098	0.0029	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-160	20	B C129	0.039	0.0035	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-161	ND		0.0098	0.0029	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-162	ND		0.0098	0.0028	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-163	20	B C129	0.039	0.0035	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-164	1.4	B	0.0098	0.0031	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-165	ND		0.0098	0.0034	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-166	2.8	C128 B	0.020	0.0034	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-167	0.65	B	0.0098	0.0025	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-168	20	B C153	0.020	0.0031	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-169	ND		0.0098	0.0028	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-170	5.7	B	0.0098	0.00043	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-171	2.0	C B	0.020	0.00047	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-172	1.1	B	0.0098	0.00046	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-173	2.0	C171 B	0.020	0.00047	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-174	6.6	B	0.0098	0.00048	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-175	0.28		0.0098	0.00043	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-176	0.83	B	0.0098	0.00030	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-177	4.8	B	0.0098	0.00048	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-178	1.9	B	0.0098	0.00044	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-179	3.6	B	0.0098	0.00032	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-180	13	C B	0.020	0.00037	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-181	0.063		0.0098	0.00041	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-182	0.11		0.0098	0.00040	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-183	4.3	C B	0.020	0.00040	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-184	ND		0.0098	0.00032	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-185	4.3	B C183	0.020	0.00040	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-186	ND		0.0098	0.00032	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1

Client Sample ID: J5-SC1b-70to80-82719
Date Collected: 08/27/19 16:25
Date Received: 09/03/19 15:00

Lab Sample ID: 580-88908-31
Matrix: Solid
Percent Solids: 65.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-187	9.0	B	0.0098	0.00041	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-188	0.063		0.0098	0.00031	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-189	0.21	B	0.0098	0.0016	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-190	1.2	B	0.0098	0.00033	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-191	0.26		0.0098	0.00033	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-192	ND		0.0098	0.00035	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-193	13	C180 B	0.020	0.00037	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-194	3.1	B	0.0098	0.0060	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-195	1.5	B	0.0098	0.0071	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-196	1.8	B	0.0098	0.00089	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-197	0.12	B	0.0098	0.00065	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-198	3.5	C B	0.020	0.00096	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-199	3.5	C198 B	0.020	0.00096	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-200	0.42		0.0098	0.00069	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-201	0.45	B	0.0098	0.00066	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-202	0.72	B	0.0098	0.00074	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-203	2.2		0.0098	0.00085	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-204	ND		0.0098	0.00071	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-205	0.16		0.0098	0.0045	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-206	2.0		0.0098	0.0022	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-207	0.20		0.0098	0.0016	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-208	0.59		0.0098	0.0016	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
PCB-209	2.2		0.0098	0.00065	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
Total Monochlorobiphenyls	0.061		0.0098	0.00045	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
Total Dichlorobiphenyls	0.57	B q	0.020	0.00088	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
Total Trichlorobiphenyls	4.4	B q	0.020	0.0038	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
Total Tetrachlorobiphenyls	39	B q G	0.044	0.044	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
Total Pentachlorobiphenyls	110	B	0.059	0.0040	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
Total Hexachlorobiphenyls	110	B q	0.039	0.0027	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
Total Heptachlorobiphenyls	55	B	0.020	0.00045	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
Total Octachlorobiphenyls	14	B	0.020	0.0022	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
Total Nonachlorobiphenyls	2.8		0.0098	0.0018	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1
Polychlorinated biphenyls, Total	340	B q	0.059	0.0067	ng/g	☼	10/03/19 11:21	10/10/19 06:10	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*71*		*30 - 140*	*10/03/19 11:21*	*10/10/19 06:10*	*1*
PCB-3L	*72*		*30 - 140*	*10/03/19 11:21*	*10/10/19 06:10*	*1*
PCB-4L	*68*		*30 - 140*	*10/03/19 11:21*	*10/10/19 06:10*	*1*
PCB-15L	*67*		*30 - 140*	*10/03/19 11:21*	*10/10/19 06:10*	*1*
PCB-19L	*70*		*30 - 140*	*10/03/19 11:21*	*10/10/19 06:10*	*1*
PCB-37L	*91*		*30 - 140*	*10/03/19 11:21*	*10/10/19 06:10*	*1*
PCB-54L	*73*		*30 - 140*	*10/03/19 11:21*	*10/10/19 06:10*	*1*
PCB-77L	*85*		*30 - 140*	*10/03/19 11:21*	*10/10/19 06:10*	*1*
PCB-81L	*79*		*30 - 140*	*10/03/19 11:21*	*10/10/19 06:10*	*1*
PCB-104L	*94*		*30 - 140*	*10/03/19 11:21*	*10/10/19 06:10*	*1*
PCB-105L	*88*		*30 - 140*	*10/03/19 11:21*	*10/10/19 06:10*	*1*
PCB-114L	*86*		*30 - 140*	*10/03/19 11:21*	*10/10/19 06:10*	*1*
PCB-118L	*90*		*30 - 140*	*10/03/19 11:21*	*10/10/19 06:10*	*1*
PCB-123L	*90*		*30 - 140*	*10/03/19 11:21*	*10/10/19 06:10*	*1*
PCB-126L	*100*		*30 - 140*	*10/03/19 11:21*	*10/10/19 06:10*	*1*

Client Sample ID: J5-SC1b-70to80-82719
Lab Sample ID: 580-88908-31

Date Collected: 08/27/19 16:25
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 65.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-155L	96		30 - 140	10/03/19 11:21	10/10/19 06:10	1
PCB-156L	86	C	30 - 140	10/03/19 11:21	10/10/19 06:10	1
PCB-157L	86	C156	30 - 140	10/03/19 11:21	10/10/19 06:10	1
PCB-167L	86		30 - 140	10/03/19 11:21	10/10/19 06:10	1
PCB-169L	94		30 - 140	10/03/19 11:21	10/10/19 06:10	1
PCB-170L	85		30 - 140	10/03/19 11:21	10/10/19 06:10	1
PCB-188L	77		30 - 140	10/03/19 11:21	10/10/19 06:10	1
PCB-189L	105		30 - 140	10/03/19 11:21	10/10/19 06:10	1
PCB-202L	83		30 - 140	10/03/19 11:21	10/10/19 06:10	1
PCB-205L	81		30 - 140	10/03/19 11:21	10/10/19 06:10	1
PCB-206L	78		30 - 140	10/03/19 11:21	10/10/19 06:10	1
PCB-208L	84		30 - 140	10/03/19 11:21	10/10/19 06:10	1
PCB-209L	69		30 - 140	10/03/19 11:21	10/10/19 06:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	81		40 - 125	10/03/19 11:21	10/10/19 06:10	1
PCB-111L	90		40 - 125	10/03/19 11:21	10/10/19 06:10	1
PCB-178L	86		40 - 125	10/03/19 11:21	10/10/19 06:10	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	34.9		0.1		%			09/11/19 15:55	1
Percent Solids	65.1		0.1		%			09/11/19 15:55	1

Client Sample ID: J5-SC1b-80to90-82719
Lab Sample ID: 580-88908-32

Date Collected: 08/27/19 17:25
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 70.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	**0.0032**	**J q**	0.049	0.00080	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-2	ND		0.049	0.00091	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-3	ND		0.049	0.0011	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-4	ND		0.098	0.0029	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-5	ND		0.049	0.0014	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-6	ND		0.049	0.0014	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-7	ND		0.049	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-8	**0.0029**	**J q**	0.098	0.0014	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-9	ND		0.049	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-10	ND		0.049	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-11	**0.0063**	**J B**	0.098	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-12	ND	C	0.098	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-13	ND	C12	0.098	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-14	ND		0.049	0.0012	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-15	ND		0.049	0.0011	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-16	**0.0079**	**J**	0.049	0.0010	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-17	**0.0032**	**J q**	0.049	0.00080	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-18	**0.0062**	**J q C**	0.098	0.00068	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-19	ND		0.049	0.00095	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-20	**0.012**	**J C**	0.098	0.0010	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-21	**0.0045**	**J q C**	0.098	0.00097	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-22	**0.0025**	**J**	0.049	0.0011	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-23	ND		0.049	0.0011	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-24	ND		0.049	0.00059	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-25	**0.0033**	**J**	0.049	0.00099	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-26	**0.0020**	**J q C**	0.098	0.0010	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-27	ND		0.049	0.00057	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-28	**0.012**	**J C20**	0.098	0.0010	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-29	**0.0020**	**J q C26**	0.098	0.0010	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-30	**0.0062**	**J q C18**	0.098	0.00068	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-31	**0.0082**	**J**	0.098	0.00096	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-32	**0.0031**	**J q**	0.049	0.00053	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-33	**0.0045**	**J q C21**	0.098	0.00097	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-34	ND		0.049	0.0011	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-35	ND		0.049	0.0011	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-36	ND		0.049	0.00099	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-37	**0.0021**	**J q**	0.049	0.0010	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-38	ND		0.049	0.0010	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-39	ND		0.049	0.00095	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-40	**0.014**	**J C**	0.15	0.0019	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-41	**0.014**	**J C40**	0.15	0.0019	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-42	**0.0072**	**J q**	0.049	0.0020	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-43	ND	C	0.098	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-44	**0.045**	**J C B**	0.15	0.0017	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-45	ND	C	0.098	0.0020	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-46	ND		0.049	0.0023	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-47	**0.045**	**J C44 B**	0.15	0.0017	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-48	ND		0.049	0.0019	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-49	**0.045**	**J C B**	0.098	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88908-1

Client Sample ID: J5-SC1b-80to90-82719
Date Collected: 08/27/19 17:25
Date Received: 09/03/19 15:00

Lab Sample ID: 580-88908-32
Matrix: Solid
Percent Solids: 70.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	ND	C	0.098	0.0019	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-51	ND	C45	0.098	0.0020	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-52	**0.066**	**B**	0.049	0.0020	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-53	ND	C50	0.098	0.0019	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-54	ND		0.049	0.00071	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-55	ND		0.049	0.0014	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-56	**0.0086**	**J**	0.049	0.0014	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-57	ND		0.049	0.0014	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-58	ND		0.049	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-59	ND	C	0.15	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-60	ND		0.049	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-61	**0.053**	**J C B**	0.20	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-62	ND	C59	0.15	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-63	ND		0.049	0.0012	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-64	**0.0081**	**J**	0.049	0.0012	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-65	**0.045**	**J C44 B**	0.15	0.0017	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-66	**0.029**	**J**	0.049	0.0014	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-67	ND		0.049	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-68	**0.0037**	**J q**	0.049	0.0012	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-69	**0.045**	**J C49 B**	0.098	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-70	**0.053**	**J C61 B**	0.20	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-71	**0.014**	**J C40**	0.15	0.0019	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-72	**0.0055**	**J**	0.049	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-73	ND	C43	0.098	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-74	**0.053**	**J C61 B**	0.20	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-75	ND	C59	0.15	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-76	**0.053**	**J C61 B**	0.20	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-77	ND		0.049	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-78	ND		0.049	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-79	ND		0.049	0.0011	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-80	ND		0.049	0.0012	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-81	ND		0.049	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-82	ND		0.049	0.0025	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-83	**0.10**	**C**	0.098	0.0023	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-84	**0.022**	**J B**	0.049	0.0025	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-85	**0.0092**	**J C B**	0.15	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-86	**0.052**	**J C**	0.29	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-87	**0.052**	**J C86**	0.29	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-88	**0.027**	**J C**	0.098	0.0022	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-89	ND		0.049	0.0024	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-90	**0.13**	**J C B**	0.15	0.0019	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-91	**0.027**	**J C88**	0.098	0.0022	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-92	**0.037**	**J**	0.049	0.0023	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-93	**0.0057**	**J q C**	0.098	0.0022	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-94	ND		0.049	0.0024	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-95	**0.10**		0.049	0.0023	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-96	ND		0.049	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-97	**0.052**	**J C86**	0.29	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-98	ND	C	0.098	0.0022	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5

Client Sample ID: J5-SC1b-80to90-82719
Lab Sample ID: 580-88908-32

Date Collected: 08/27/19 17:25
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 70.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	0.10	C83	0.098	0.0023	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-100	0.0057	J q C93	0.098	0.0022	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-101	0.13	J C90 B	0.15	0.0019	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-102	ND	C98	0.098	0.0022	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-103	0.0080	J	0.049	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-104	ND		0.049	0.0016	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-105	0.016	J	0.049	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-106	ND		0.049	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-107	0.0094	J	0.049	0.0014	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-108	ND	C	0.098	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-109	0.052	J C86	0.29	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-110	0.11	C	0.098	0.0016	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-111	ND		0.049	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-112	ND		0.049	0.0016	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-113	0.13	J C90 B	0.15	0.0019	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-114	ND		0.049	0.0014	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-115	0.11	C110	0.098	0.0016	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-116	0.0092	J C85 B	0.15	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-117	0.0092	J C85 B	0.15	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-118	0.067	B	0.049	0.0014	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-119	0.052	J C86	0.29	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-120	0.0035	J q	0.049	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-121	ND		0.049	0.0016	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-122	ND		0.049	0.0017	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-123	ND		0.049	0.0014	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-124	ND	C108	0.098	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-125	0.052	J C86	0.29	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-126	ND		0.049	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-127	ND		0.049	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-128	0.015	J q C B	0.098	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-129	0.13	J C B	0.20	0.0019	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-130	0.0090	J	0.049	0.0025	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-131	ND		0.049	0.0024	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-132	0.044	J	0.049	0.0023	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-133	0.0083	J	0.049	0.0023	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-134	0.0074	J q C	0.098	0.0024	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-135	0.078	J C B	0.098	0.00081	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-136	0.032	J B	0.049	0.00061	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-137	0.0028	J q	0.049	0.0019	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-138	0.13	J C129 B	0.20	0.0019	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-139	0.0042	J q C	0.098	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-140	0.0042	J q C139	0.098	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-141	0.022	J	0.049	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-142	ND		0.049	0.0024	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-143	0.0074	J q C134	0.098	0.0024	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-144	0.0069	J q	0.049	0.00077	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-145	ND		0.049	0.00059	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-146	0.059	B	0.049	0.0020	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-147	0.17	C B	0.098	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88908-1

Client Sample ID: J5-SC1b-80to90-82719
Date Collected: 08/27/19 17:25
Date Received: 09/03/19 15:00

Lab Sample ID: 580-88908-32
Matrix: Solid
Percent Solids: 70.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	ND		0.049	0.00079	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-149	0.17	C147 B	0.098	0.0021	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-150	0.0032	J	0.049	0.00057	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-151	0.078	J C135 B	0.098	0.00081	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-152	ND		0.049	0.00056	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-153	0.16	C B	0.098	0.0017	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-154	0.015	J q	0.049	0.00069	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-155	ND		0.049	0.00054	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-156	0.012	J q C	0.098	0.0019	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-157	0.012	J q C156	0.098	0.0019	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-158	0.012	J	0.049	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-159	0.0030	J	0.049	0.0016	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-160	0.13	J C129 B	0.20	0.0019	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-161	ND		0.049	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-162	ND		0.049	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-163	0.13	J C129 B	0.20	0.0019	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-164	0.010	J	0.049	0.0016	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-165	ND		0.049	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-166	0.015	J q C128 B	0.098	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-167	0.0044	J q	0.049	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-168	0.16	C153 B	0.098	0.0017	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-169	ND		0.049	0.0014	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-170	0.052	B	0.049	0.0016	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-171	0.019	J q C	0.098	0.0016	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-172	0.010	J q	0.049	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-173	0.019	J q C171	0.098	0.0016	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-174	0.060	B	0.049	0.0016	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-175	ND		0.049	0.0014	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-176	0.0070	J q	0.049	0.0010	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-177	0.043	J B	0.049	0.0016	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-178	0.018	J	0.049	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-179	0.029	J	0.049	0.0011	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-180	0.12	C B	0.098	0.0012	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-181	0.0030	J q	0.049	0.0014	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-182	ND		0.049	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-183	0.038	J C B	0.098	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-184	ND		0.049	0.0011	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-185	0.038	J C183 B	0.098	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-186	ND		0.049	0.0011	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-187	0.087	B	0.049	0.0014	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-188	ND		0.049	0.00097	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-189	ND		0.049	0.0012	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-190	0.012	J q B	0.049	0.0011	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-191	ND		0.049	0.0011	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-192	ND		0.049	0.0012	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-193	0.12	C180 B	0.098	0.0012	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-194	0.025	J	0.049	0.0024	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-195	0.0073	J q	0.049	0.0029	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-196	0.017	J q	0.049	0.0014	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5

Client Sample ID: J5-SC1b-80to90-82719
Lab Sample ID: 580-88908-32

Date Collected: 08/27/19 17:25
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 70.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	ND		0.049	0.0010	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-198	**0.033**	**J q C B**	0.098	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-199	**0.033**	**J q C198 B**	0.098	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-200	**0.0059**	**J q**	0.049	0.0011	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-201	ND		0.049	0.0010	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-202	**0.0075**	**J**	0.049	0.0011	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-203	**0.020**	**J q**	0.049	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-204	ND		0.049	0.0011	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-205	ND		0.049	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-206	**0.22**	**q**	0.049	0.0058	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-207	ND		0.049	0.0042	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-208	ND		0.049	0.0045	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
PCB-209	**0.028**	**J**	0.049	0.00044	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
Total Monochlorobiphenyls	**0.0032**	**J**	0.049	0.00092	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
Total Dichlorobiphenyls	**0.0092**	**J B**	0.098	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
Total Trichlorobiphenyls	**0.055**	**J**	0.098	0.00092	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
Total Tetrachlorobiphenyls	**0.29**	**q B**	0.20	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
Total Pentachlorobiphenyls	**0.70**	**q B**	0.29	0.0018	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
Total Hexachlorobiphenyls	**0.81**	**q B**	0.20	0.0016	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
Total Heptachlorobiphenyls	**0.50**	**q B**	0.098	0.0013	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
Total Octachlorobiphenyls	**0.12**	**B**	0.098	0.0015	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
Total Nonachlorobiphenyls	**0.22**	**q**	0.049	0.0048	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5
Polychlorinated biphenyls, Total	**2.7**	**q B**	0.29	0.0017	ng/g	☼	09/17/19 12:25	10/03/19 20:51	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*63*		*30 - 140*	*09/17/19 12:25*	*10/03/19 20:51*	*5*
PCB-3L	*64*		*30 - 140*	*09/17/19 12:25*	*10/03/19 20:51*	*5*
PCB-4L	*69*		*30 - 140*	*09/17/19 12:25*	*10/03/19 20:51*	*5*
PCB-15L	*83*		*30 - 140*	*09/17/19 12:25*	*10/03/19 20:51*	*5*
PCB-19L	*72*		*30 - 140*	*09/17/19 12:25*	*10/03/19 20:51*	*5*
PCB-37L	*88*		*30 - 140*	*09/17/19 12:25*	*10/03/19 20:51*	*5*
PCB-54L	*70*		*30 - 140*	*09/17/19 12:25*	*10/03/19 20:51*	*5*
PCB-77L	*87*		*30 - 140*	*09/17/19 12:25*	*10/03/19 20:51*	*5*
PCB-81L	*87*		*30 - 140*	*09/17/19 12:25*	*10/03/19 20:51*	*5*
PCB-104L	*91*		*30 - 140*	*09/17/19 12:25*	*10/03/19 20:51*	*5*
PCB-105L	*81*		*30 - 140*	*09/17/19 12:25*	*10/03/19 20:51*	*5*
PCB-114L	*81*		*30 - 140*	*09/17/19 12:25*	*10/03/19 20:51*	*5*
PCB-118L	*79*		*30 - 140*	*09/17/19 12:25*	*10/03/19 20:51*	*5*
PCB-123L	*79*		*30 - 140*	*09/17/19 12:25*	*10/03/19 20:51*	*5*
PCB-126L	*88*		*30 - 140*	*09/17/19 12:25*	*10/03/19 20:51*	*5*
PCB-155L	*102*		*30 - 140*	*09/17/19 12:25*	*10/03/19 20:51*	*5*
PCB-156L	*86*	*C*	*30 - 140*	*09/17/19 12:25*	*10/03/19 20:51*	*5*
PCB-157L	*86*	*C156*	*30 - 140*	*09/17/19 12:25*	*10/03/19 20:51*	*5*
PCB-167L	*84*		*30 - 140*	*09/17/19 12:25*	*10/03/19 20:51*	*5*
PCB-169L	*99*		*30 - 140*	*09/17/19 12:25*	*10/03/19 20:51*	*5*
PCB-170L	*78*		*30 - 140*	*09/17/19 12:25*	*10/03/19 20:51*	*5*
PCB-188L	*76*		*30 - 140*	*09/17/19 12:25*	*10/03/19 20:51*	*5*
PCB-189L	*85*		*30 - 140*	*09/17/19 12:25*	*10/03/19 20:51*	*5*
PCB-202L	*89*		*30 - 140*	*09/17/19 12:25*	*10/03/19 20:51*	*5*
PCB-205L	*81*		*30 - 140*	*09/17/19 12:25*	*10/03/19 20:51*	*5*

Client Sample ID: J5-SC1b-80to90-82719
Lab Sample ID: 580-88908-32

Date Collected: 08/27/19 17:25
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 70.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-206L	79		30 - 140	09/17/19 12:25	10/03/19 20:51	5
PCB-208L	86		30 - 140	09/17/19 12:25	10/03/19 20:51	5
PCB-209L	78		30 - 140	09/17/19 12:25	10/03/19 20:51	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	80		40 - 125	09/17/19 12:25	10/03/19 20:51	5
PCB-111L	91		40 - 125	09/17/19 12:25	10/03/19 20:51	5
PCB-178L	84		40 - 125	09/17/19 12:25	10/03/19 20:51	5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	ND		0.0096	0.00014	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-2	**0.00083**	**J**	0.0096	0.00014	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-3	**0.00092**	**J**	0.0096	0.00015	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-4	**0.0016**	**J**	0.019	0.00029	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-5	ND		0.0096	0.00019	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-6	**0.0017**	**J**	0.0096	0.00019	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-7	ND		0.0096	0.00018	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-8	**0.0024**	**J q**	0.019	0.00019	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-9	**0.00062**	**J q**	0.0096	0.00021	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-10	ND		0.0096	0.00020	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-11	**0.0047**	**J B**	0.019	0.00018	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-12	ND	C	0.019	0.00018	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-13	ND	C12	0.019	0.00018	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-14	ND		0.0096	0.00016	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-15	**0.0015**	**J**	0.0096	0.00018	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-16	**0.0035**	**J**	0.0096	0.00036	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-17	**0.0040**	**J B**	0.0096	0.00028	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-18	**0.0058**	**J C B**	0.019	0.00024	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-19	**0.0011**	**J q**	0.0096	0.00034	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-20	**0.011**	**J C B**	0.019	0.00026	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-21	**0.0049**	**J C B**	0.019	0.00024	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-22	**0.0021**	**J B**	0.0096	0.00027	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-23	ND		0.0096	0.00026	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-24	ND		0.0096	0.00021	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-25	**0.0023**	**J**	0.0096	0.00025	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-26	**0.0036**	**J C B**	0.019	0.00025	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-27	ND		0.0096	0.00020	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-28	**0.011**	**J B C20**	0.019	0.00026	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-29	**0.0036**	**J C26 B**	0.019	0.00025	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-30	**0.0058**	**J C18 B**	0.019	0.00024	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-31	**0.0077**	**J B**	0.019	0.00024	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-32	**0.0024**	**J q**	0.0096	0.00019	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-33	**0.0049**	**J B C21**	0.019	0.00024	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-34	ND		0.0096	0.00028	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-35	**0.00030**	**J q**	0.0096	0.00028	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-36	ND		0.0096	0.00025	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-37	**0.0020**	**J B**	0.0096	0.00026	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-38	ND		0.0096	0.00025	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-39	**0.00042**	**J q**	0.0096	0.00024	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1

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Lab Sample ID: 580-88908-32

Date Collected: 08/27/19 17:25
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 70.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-40	0.012	J C	0.029	0.00054	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-41	0.012	J C40	0.029	0.00054	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-42	0.0087	J	0.0096	0.00057	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-43	ND	C	0.019	0.00049	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-44	0.044	C B	0.029	0.00048	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-45	ND	C	0.019	0.00056	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-46	ND		0.0096	0.00065	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-47	0.044	B C44	0.029	0.00048	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-48	0.0025	J	0.0096	0.00052	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-49	0.045	C B	0.019	0.00043	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-50	0.0029	J C q	0.019	0.00053	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-51	ND	C45	0.019	0.00056	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-52	0.072	B	0.0096	0.00055	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-53	0.0029	J C50 q	0.019	0.00053	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-54	0.00056	J q	0.0096	0.00012	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-55	ND		0.0096	0.00038	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-56	0.0086	J	0.0096	0.00039	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-57	ND		0.0096	0.00038	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-58	0.00069	J	0.0096	0.00037	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-59	0.0019	J C	0.029	0.00036	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-60	ND		0.0096	0.00037	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-61	0.053	C B	0.038	0.00036	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-62	0.0019	J C59	0.029	0.00036	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-63	0.00089	J	0.0096	0.00034	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-64	0.0069	J q	0.0096	0.00035	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-65	0.044	B C44	0.029	0.00048	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-66	0.033	B	0.0096	0.00039	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-67	ND		0.0096	0.00035	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-68	0.0040	J B	0.0096	0.00033	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-69	0.045	B C49	0.019	0.00043	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-70	0.053	C61 B	0.038	0.00036	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-71	0.012	J C40	0.029	0.00054	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-72	0.0038	J q	0.0096	0.00037	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-73	ND	C43	0.019	0.00049	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-74	0.053	C61 B	0.038	0.00036	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-75	0.0019	J C59	0.029	0.00036	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-76	0.053	C61 B	0.038	0.00036	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-77	0.0013	J q	0.0096	0.00036	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-78	ND		0.0096	0.00038	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-79	0.0020	J	0.0096	0.00032	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-80	ND		0.0096	0.00034	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-81	ND		0.0096	0.00039	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-82	0.0089	J B q	0.0096	0.00055	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-83	0.11	C B	0.019	0.00051	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-84	0.025	B	0.0096	0.00056	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-85	0.012	J C	0.029	0.00040	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-86	0.055	J C B	0.057	0.00040	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-87	0.055	J B C86	0.057	0.00040	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-88	0.029	C B	0.019	0.00048	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1

Client Sample ID: J5-SC1b-80to90-82719
Lab Sample ID: 580-88908-32

Date Collected: 08/27/19 17:25
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 70.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-89	ND		0.0096	0.00054	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-90	**0.15**	**C B**	0.029	0.00042	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-91	**0.029**	**C88 B**	0.019	0.00048	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-92	**0.041**	**B**	0.0096	0.00050	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-93	**0.0051**	**J C**	0.019	0.00049	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-94	ND		0.0096	0.00053	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-95	**0.11**	**B**	0.0096	0.00050	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-96	**0.00075**	**J q**	0.0096	0.00039	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-97	**0.055**	**J B C86**	0.057	0.00040	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-98	**0.0053**	**J C**	0.019	0.00049	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-99	**0.11**	**C83 B**	0.019	0.00051	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-100	**0.0051**	**J C93**	0.019	0.00049	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-101	**0.15**	**B C90**	0.029	0.00042	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-102	**0.0053**	**J C98**	0.019	0.00049	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-103	**0.0078**	**J**	0.0096	0.00046	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-104	ND		0.0096	0.00034	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-105	**0.017**	**B**	0.0096	0.00061	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-106	ND		0.0096	0.00060	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-107	**0.010**	**B**	0.0096	0.00057	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-108	**0.0020**	**J C q**	0.019	0.00061	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-109	**0.055**	**J B C86**	0.057	0.00040	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-110	**0.12**	**C B**	0.019	0.00036	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-111	ND		0.0096	0.00034	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-112	ND		0.0096	0.00035	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-113	**0.15**	**B C90**	0.029	0.00042	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-114	**0.0011**	**J q**	0.0096	0.00056	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-115	**0.12**	**B C110**	0.019	0.00036	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-116	**0.012**	**J C85**	0.029	0.00040	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-117	**0.012**	**J C85**	0.029	0.00040	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-118	**0.067**	**B**	0.0096	0.00058	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-119	**0.055**	**J B C86**	0.057	0.00040	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-120	**0.0039**	**J**	0.0096	0.00032	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-121	ND		0.0096	0.00034	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-122	ND		0.0096	0.00066	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-123	**0.0013**	**J**	0.0096	0.00053	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-124	**0.0020**	**J q C108**	0.019	0.00061	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-125	**0.055**	**J B C86**	0.057	0.00040	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-126	ND		0.0096	0.00061	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-127	ND		0.0096	0.00060	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-128	**0.019**	**C B**	0.019	0.00067	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-129	**0.14**	**C B**	0.038	0.00069	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-130	**0.012**	**B**	0.0096	0.00091	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-131	**0.0023**	**J**	0.0096	0.00088	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-132	**0.048**	**B**	0.0096	0.00085	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-133	**0.0092**	**J**	0.0096	0.00083	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-134	**0.0082**	**J C q**	0.019	0.00088	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-135	**0.085**	**C B**	0.019	0.00061	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-136	**0.033**	**B**	0.0096	0.00046	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-137	**0.0038**	**J**	0.0096	0.00071	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1

Client Sample ID: J5-SC1b-80to90-82719
Lab Sample ID: 580-88908-32

Date Collected: 08/27/19 17:25
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 70.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-138	0.14	B C129	0.038	0.00069	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-139	0.0046	J C q	0.019	0.00075	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-140	0.0046	J C139 q	0.019	0.00075	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-141	0.024	B	0.0096	0.00078	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-142	ND		0.0096	0.00088	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-143	0.0082	J C134 q	0.019	0.00088	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-144	0.0080	J	0.0096	0.00057	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-145	ND		0.0096	0.00044	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-146	0.060	B	0.0096	0.00075	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-147	0.18	C B	0.019	0.00077	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-148	0.0040	J	0.0096	0.00059	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-149	0.18	B C147	0.019	0.00077	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-150	0.0034	J	0.0096	0.00043	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-151	0.085	C135 B	0.019	0.00061	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-152	ND		0.0096	0.00042	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-153	0.17	C B	0.019	0.00062	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-154	0.017		0.0096	0.00052	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-155	ND		0.0096	0.00040	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-156	0.011	J C B	0.019	0.00072	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-157	0.011	J C156 B	0.019	0.00072	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-158	0.012	B	0.0096	0.00054	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-159	0.0018	J q	0.0096	0.00057	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-160	0.14	B C129	0.038	0.00069	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-161	ND		0.0096	0.00056	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-162	ND		0.0096	0.00055	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-163	0.14	B C129	0.038	0.00069	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-164	0.013	B	0.0096	0.00060	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-165	ND		0.0096	0.00067	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-166	0.019	C128 B	0.019	0.00067	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-167	0.0038	J B	0.0096	0.00046	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-168	0.17	B C153	0.019	0.00062	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-169	ND		0.0096	0.00051	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-170	0.049	B	0.0096	0.00059	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-171	0.017	J C B	0.019	0.00059	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-172	0.011	B	0.0096	0.00057	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-173	0.017	J C171 B	0.019	0.00059	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-174	0.057	B	0.0096	0.00060	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-175	0.0041	J	0.0096	0.00053	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-176	0.0074	J B	0.0096	0.00037	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-177	0.040	B	0.0096	0.00060	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-178	0.017	B	0.0096	0.00056	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-179	0.029	B	0.0096	0.00040	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-180	0.11	C B	0.019	0.00046	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-181	ND		0.0096	0.00051	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-182	0.0017	J	0.0096	0.00050	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-183	0.037	C B	0.019	0.00050	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-184	ND		0.0096	0.00040	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-185	0.037	B C183	0.019	0.00050	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-186	ND		0.0096	0.00040	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1

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Lab Sample ID: 580-88908-32

Date Collected: 08/27/19 17:25
Matrix: Solid
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Percent Solids: 70.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-187	**0.082**	**B**	0.0096	0.00051	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-188	**0.00082**	**J**	0.0096	0.00037	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-189	**0.0019**	**J B q**	0.0096	0.00057	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-190	**0.012**	**B**	0.0096	0.00041	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-191	**0.0039**	**J**	0.0096	0.00041	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-192	ND		0.0096	0.00044	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-193	**0.11**	**C180 B**	0.019	0.00046	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-194	**0.021**	**B**	0.0096	0.0015	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-195	**0.0084**	**J B**	0.0096	0.0017	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-196	**0.014**	**B q**	0.0096	0.00075	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-197	**0.0016**	**J B q**	0.0096	0.00055	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-198	**0.034**	**C B**	0.019	0.00080	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-199	**0.034**	**C198 B**	0.019	0.00080	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-200	**0.0051**	**J**	0.0096	0.00058	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-201	**0.0037**	**J B q**	0.0096	0.00055	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-202	**0.0075**	**J B q**	0.0096	0.00062	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-203	**0.020**		0.0096	0.00071	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-204	ND		0.0096	0.00060	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-205	ND		0.0096	0.0011	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-206	**0.016**		0.0096	0.0021	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-207	ND		0.0096	0.0014	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-208	**0.0055**	**J**	0.0096	0.0014	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
PCB-209	**0.025**		0.0096	0.00036	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
Total Monochlorobiphenyls	**0.0018**	**J**	0.0096	0.00014	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
Total Dichlorobiphenyls	**0.013**	**J B q**	0.019	0.00019	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
Total Trichlorobiphenyls	**0.051**	**B q**	0.019	0.00026	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
Total Tetrachlorobiphenyls	**0.30**	**B q**	0.038	0.00041	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
Total Pentachlorobiphenyls	**0.78**	**B q**	0.057	0.00049	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
Total Hexachlorobiphenyls	**0.87**	**B q**	0.038	0.00064	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
Total Heptachlorobiphenyls	**0.48**	**B q**	0.019	0.00049	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
Total Octachlorobiphenyls	**0.12**	**B q**	0.019	0.00086	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
Total Nonachlorobiphenyls	**0.022**		0.0096	0.0016	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1
Polychlorinated biphenyls, Total	**2.7**	**B q**	0.057	0.00059	ng/g	☼	10/03/19 11:21	10/10/19 07:11	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*67*		*30 - 140*	*10/03/19 11:21*	*10/10/19 07:11*	*1*
PCB-3L	*68*		*30 - 140*	*10/03/19 11:21*	*10/10/19 07:11*	*1*
PCB-4L	*69*		*30 - 140*	*10/03/19 11:21*	*10/10/19 07:11*	*1*
PCB-15L	*76*		*30 - 140*	*10/03/19 11:21*	*10/10/19 07:11*	*1*
PCB-19L	*67*		*30 - 140*	*10/03/19 11:21*	*10/10/19 07:11*	*1*
PCB-37L	*83*		*30 - 140*	*10/03/19 11:21*	*10/10/19 07:11*	*1*
PCB-54L	*64*		*30 - 140*	*10/03/19 11:21*	*10/10/19 07:11*	*1*
PCB-77L	*84*		*30 - 140*	*10/03/19 11:21*	*10/10/19 07:11*	*1*
PCB-81L	*80*		*30 - 140*	*10/03/19 11:21*	*10/10/19 07:11*	*1*
PCB-104L	*77*		*30 - 140*	*10/03/19 11:21*	*10/10/19 07:11*	*1*
PCB-105L	*80*		*30 - 140*	*10/03/19 11:21*	*10/10/19 07:11*	*1*
PCB-114L	*79*		*30 - 140*	*10/03/19 11:21*	*10/10/19 07:11*	*1*
PCB-118L	*81*		*30 - 140*	*10/03/19 11:21*	*10/10/19 07:11*	*1*
PCB-123L	*87*		*30 - 140*	*10/03/19 11:21*	*10/10/19 07:11*	*1*
PCB-126L	*87*		*30 - 140*	*10/03/19 11:21*	*10/10/19 07:11*	*1*

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88908-1

Client Sample ID: J5-SC1b-80to90-82719
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Lab Sample ID: 580-88908-32
Matrix: Solid
Percent Solids: 70.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-155L	87		30 - 140	10/03/19 11:21	10/10/19 07:11	1
PCB-156L	79	C	30 - 140	10/03/19 11:21	10/10/19 07:11	1
PCB-157L	79	C156	30 - 140	10/03/19 11:21	10/10/19 07:11	1
PCB-167L	79		30 - 140	10/03/19 11:21	10/10/19 07:11	1
PCB-169L	90		30 - 140	10/03/19 11:21	10/10/19 07:11	1
PCB-170L	83		30 - 140	10/03/19 11:21	10/10/19 07:11	1
PCB-188L	83		30 - 140	10/03/19 11:21	10/10/19 07:11	1
PCB-189L	75		30 - 140	10/03/19 11:21	10/10/19 07:11	1
PCB-202L	94		30 - 140	10/03/19 11:21	10/10/19 07:11	1
PCB-205L	89		30 - 140	10/03/19 11:21	10/10/19 07:11	1
PCB-206L	79		30 - 140	10/03/19 11:21	10/10/19 07:11	1
PCB-208L	89		30 - 140	10/03/19 11:21	10/10/19 07:11	1
PCB-209L	88		30 - 140	10/03/19 11:21	10/10/19 07:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	71		40 - 125	10/03/19 11:21	10/10/19 07:11	1
PCB-111L	88		40 - 125	10/03/19 11:21	10/10/19 07:11	1
PCB-178L	95		40 - 125	10/03/19 11:21	10/10/19 07:11	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	29.9		0.1		%			09/11/19 15:55	1
Percent Solids	70.1		0.1		%			09/11/19 15:55	1

Client Sample ID: J5-SC1b-90to100-82719
Lab Sample ID: 580-88908-33

Date Collected: 08/27/19 17:30
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 71.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	ND		0.049	0.0016	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-2	ND		0.049	0.0017	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-3	ND		0.049	0.0018	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-4	ND		0.099	0.0026	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-5	ND		0.049	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-6	ND		0.049	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-7	ND		0.049	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-8	ND		0.099	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-9	ND		0.049	0.0013	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-10	ND		0.049	0.0013	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-11	**0.0050**	**J q B**	0.099	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-12	ND	C	0.099	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-13	ND	C12	0.099	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-14	ND		0.049	0.0010	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-15	ND		0.049	0.00097	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-16	**0.0036**	**J q**	0.049	0.0018	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-17	**0.0049**	**J**	0.049	0.0014	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-18	**0.0063**	**J q C**	0.099	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-19	ND		0.049	0.0017	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-20	**0.016**	**J C**	0.099	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-21	**0.0062**	**J q C**	0.099	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-22	ND		0.049	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-23	ND		0.049	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-24	ND		0.049	0.0010	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-25	**0.0032**	**J q**	0.049	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-26	**0.0023**	**J q C**	0.099	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-27	ND		0.049	0.0010	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-28	**0.016**	**J C20**	0.099	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-29	**0.0023**	**J q C26**	0.099	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-30	**0.0063**	**J q C18**	0.099	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-31	**0.0097**	**J**	0.099	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-32	**0.0042**	**J q**	0.049	0.00094	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-33	**0.0062**	**J q C21**	0.099	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-34	ND		0.049	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-35	ND		0.049	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-36	ND		0.049	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-37	**0.0023**	**J q**	0.049	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-38	ND		0.049	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-39	ND		0.049	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-40	**0.015**	**J q C**	0.15	0.0017	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-41	**0.015**	**J q C40**	0.15	0.0017	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-42	**0.011**	**J q**	0.049	0.0018	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-43	ND	C	0.099	0.0015	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-44	**0.058**	**J C B**	0.15	0.0015	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-45	ND	C	0.099	0.0017	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-46	ND		0.049	0.0020	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-47	**0.058**	**J C44 B**	0.15	0.0015	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-48	ND		0.049	0.0016	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-49	**0.056**	**J C B**	0.099	0.0014	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5

Client Sample ID: J5-SC1b-90to100-82719
Lab Sample ID: 580-88908-33

Date Collected: 08/27/19 17:30
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 71.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	ND	C	0.099	0.0017	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-51	ND	C45	0.099	0.0017	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-52	**0.086**	**B**	0.049	0.0017	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-53	ND	C50	0.099	0.0017	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-54	ND		0.049	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-55	ND		0.049	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-56	**0.0077**	**J**	0.049	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-57	ND		0.049	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-58	ND		0.049	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-59	**0.0030**	**J q C**	0.15	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-60	ND		0.049	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-61	**0.056**	**J C B**	0.20	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-62	**0.0030**	**J q C59**	0.15	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-63	ND		0.049	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-64	**0.0094**	**J**	0.049	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-65	**0.058**	**J C44 B**	0.15	0.0015	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-66	**0.039**	**J**	0.049	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-67	ND		0.049	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-68	**0.0048**	**J q**	0.049	0.0010	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-69	**0.056**	**J C49 B**	0.099	0.0014	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-70	**0.056**	**J C61 B**	0.20	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-71	**0.015**	**J q C40**	0.15	0.0017	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-72	**0.0056**	**J q**	0.049	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-73	ND	C43	0.099	0.0015	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-74	**0.056**	**J C61 B**	0.20	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-75	**0.0030**	**J q C59**	0.15	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-76	**0.056**	**J C61 B**	0.20	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-77	ND		0.049	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-78	ND		0.049	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-79	ND		0.049	0.0010	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-80	ND		0.049	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-81	ND		0.049	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-82	ND		0.049	0.0031	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-83	**0.12**	**C**	0.099	0.0029	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-84	**0.023**	**J q B**	0.049	0.0032	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-85	**0.0096**	**J q C B**	0.15	0.0022	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-86	**0.057**	**J C**	0.30	0.0023	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-87	**0.057**	**J C86**	0.30	0.0023	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-88	**0.034**	**J C**	0.099	0.0027	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-89	ND		0.049	0.0030	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-90	**0.15**	**C B**	0.15	0.0024	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-91	**0.034**	**J C88**	0.099	0.0027	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-92	**0.047**	**J**	0.049	0.0029	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-93	**0.0041**	**J q C**	0.099	0.0028	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-94	ND		0.049	0.0030	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-95	**0.12**		0.049	0.0028	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-96	ND		0.049	0.0022	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-97	**0.057**	**J C86**	0.30	0.0023	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-98	**0.0047**	**J q C**	0.099	0.0028	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5

Client Sample ID: J5-SC1b-90to100-82719
Lab Sample ID: 580-88908-33

Date Collected: 08/27/19 17:30
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 71.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	0.12	C83	0.099	0.0029	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-100	0.0041	J q C93	0.099	0.0028	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-101	0.15	C90 B	0.15	0.0024	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-102	0.0047	J q C98	0.099	0.0028	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-103	0.0095	J	0.049	0.0026	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-104	ND		0.049	0.0020	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-105	0.017	J	0.049	0.0017	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-106	ND		0.049	0.0017	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-107	0.010	J q	0.049	0.0016	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-108	0.0023	J q C	0.099	0.0017	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-109	0.057	J C86	0.30	0.0023	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-110	0.12	C	0.099	0.0020	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-111	ND		0.049	0.0019	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-112	ND		0.049	0.0020	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-113	0.15	C90 B	0.15	0.0024	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-114	ND		0.049	0.0015	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-115	0.12	C110	0.099	0.0020	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-116	0.0096	J q C85 B	0.15	0.0022	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-117	0.0096	J q C85 B	0.15	0.0022	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-118	0.069	B	0.049	0.0016	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-119	0.057	J C86	0.30	0.0023	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-120	0.0071	J	0.049	0.0018	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-121	ND		0.049	0.0019	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-122	ND		0.049	0.0019	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-123	ND		0.049	0.0017	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-124	0.0023	J q C108	0.099	0.0017	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-125	0.057	J C86	0.30	0.0023	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-126	ND		0.049	0.0017	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-127	ND		0.049	0.0017	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-128	0.019	J C B	0.099	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-129	0.14	J C B	0.20	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-130	0.0085	J q	0.049	0.0016	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-131	ND		0.049	0.0016	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-132	0.048	J	0.049	0.0015	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-133	0.0071	J q	0.049	0.0015	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-134	0.0074	J C	0.099	0.0016	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-135	0.082	J C B	0.099	0.00089	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-136	0.039	J B	0.049	0.00067	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-137	0.0040	J	0.049	0.0013	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-138	0.14	J C129 B	0.20	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-139	0.0055	J C	0.099	0.0013	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-140	0.0055	J C139	0.099	0.0013	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-141	0.024	J	0.049	0.0014	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-142	ND		0.049	0.0016	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-143	0.0074	J C134	0.099	0.0016	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-144	0.0047	J q	0.049	0.00084	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-145	ND		0.049	0.00065	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-146	0.067	B	0.049	0.0013	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-147	0.20	C B	0.099	0.0014	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88908-1

Client Sample ID: J5-SC1b-90to100-82719
Date Collected: 08/27/19 17:30
Date Received: 09/03/19 15:00

Lab Sample ID: 580-88908-33
Matrix: Solid
Percent Solids: 71.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	0.0043	J	0.049	0.00086	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-149	0.20	C147 B	0.099	0.0014	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-150	ND		0.049	0.00063	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-151	0.082	J C135 B	0.099	0.00089	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-152	ND		0.049	0.00062	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-153	0.19	C B	0.099	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-154	0.020	J	0.049	0.00076	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-155	ND		0.049	0.00060	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-156	0.014	J q C	0.099	0.0013	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-157	0.014	J q C156	0.099	0.0013	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-158	0.012	J	0.049	0.00097	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-159	0.0033	J q	0.049	0.0010	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-160	0.14	J C129 B	0.20	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-161	ND		0.049	0.0010	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-162	0.0013	J q	0.049	0.00099	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-163	0.14	J C129 B	0.20	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-164	0.014	J	0.049	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-165	ND		0.049	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-166	0.019	J C128 B	0.099	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-167	0.0045	J q	0.049	0.00083	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-168	0.19	C153 B	0.099	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-169	0.0022	J	0.049	0.00089	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-170	0.056	B	0.049	0.00092	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-171	0.018	J q C	0.099	0.00097	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-172	0.015	J	0.049	0.00094	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-173	0.018	J q C171	0.099	0.00097	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-174	0.067	B	0.049	0.00098	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-175	0.0052	J	0.049	0.00087	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-176	0.0085	J	0.049	0.00061	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-177	0.048	J B	0.049	0.00099	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-178	0.016	J	0.049	0.00091	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-179	0.032	J	0.049	0.00066	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-180	0.13	C B	0.099	0.00076	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-181	0.0023	J q	0.049	0.00084	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-182	0.0033	J	0.049	0.00081	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-183	0.039	J C B	0.099	0.00082	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-184	ND		0.049	0.00066	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-185	0.039	J C183 B	0.099	0.00082	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-186	ND		0.049	0.00065	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-187	0.092	B	0.049	0.00084	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-188	ND		0.049	0.00062	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-189	0.0057	J	0.049	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-190	0.014	J B	0.049	0.00068	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-191	0.0050	J	0.049	0.00067	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-192	0.0013	J q	0.049	0.00072	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-193	0.13	C180 B	0.099	0.00076	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-194	0.034	J	0.049	0.0010	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-195	0.018	J	0.049	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-196	0.019	J	0.049	0.00090	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5

Client Sample ID: J5-SC1b-90to100-82719
Lab Sample ID: 580-88908-33

Date Collected: 08/27/19 17:30
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 71.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	**0.0020**	**J q**	0.049	0.00066	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-198	**0.038**	**J C B**	0.099	0.00096	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-199	**0.038**	**J C198 B**	0.099	0.00096	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-200	**0.0041**	**J q**	0.049	0.00070	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-201	**0.0032**	**J q**	0.049	0.00067	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-202	**0.0047**	**J q**	0.049	0.00075	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-203	**0.023**	**J**	0.049	0.00086	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-204	**0.0012**	**J q**	0.049	0.00072	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-205	**0.0040**	**J q**	0.049	0.00079	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-206	**0.024**	**J**	0.049	0.0036	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-207	ND		0.049	0.0026	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-208	ND		0.049	0.0028	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
PCB-209	**0.021**	**J**	0.049	0.00083	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
Total Monochlorobiphenyls	ND		0.049	0.0018	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
Total Dichlorobiphenyls	**0.0050**	**J q B**	0.099	0.0013	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
Total Trichlorobiphenyls	**0.059**	**J q**	0.099	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
Total Tetrachlorobiphenyls	**0.35**	**q B**	0.20	0.0013	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
Total Pentachlorobiphenyls	**0.80**	**q B**	0.30	0.0022	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
Total Hexachlorobiphenyls	**0.92**	**q B**	0.20	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
Total Heptachlorobiphenyls	**0.56**	**q B**	0.099	0.00082	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
Total Octachlorobiphenyls	**0.15**	**q B**	0.099	0.00084	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
Total Nonachlorobiphenyls	**0.024**	**J**	0.049	0.0030	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5
Polychlorinated biphenyls, Total	**2.9**	**q B**	0.30	0.0014	ng/g	☼	09/17/19 12:25	10/04/19 02:55	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*55*		*30 - 140*	*09/17/19 12:25*	*10/04/19 02:55*	*5*
PCB-3L	*62*		*30 - 140*	*09/17/19 12:25*	*10/04/19 02:55*	*5*
PCB-4L	*66*		*30 - 140*	*09/17/19 12:25*	*10/04/19 02:55*	*5*
PCB-15L	*83*		*30 - 140*	*09/17/19 12:25*	*10/04/19 02:55*	*5*
PCB-19L	*73*		*30 - 140*	*09/17/19 12:25*	*10/04/19 02:55*	*5*
PCB-37L	*80*		*30 - 140*	*09/17/19 12:25*	*10/04/19 02:55*	*5*
PCB-54L	*75*		*30 - 140*	*09/17/19 12:25*	*10/04/19 02:55*	*5*
PCB-77L	*84*		*30 - 140*	*09/17/19 12:25*	*10/04/19 02:55*	*5*
PCB-81L	*80*		*30 - 140*	*09/17/19 12:25*	*10/04/19 02:55*	*5*
PCB-104L	*90*		*30 - 140*	*09/17/19 12:25*	*10/04/19 02:55*	*5*
PCB-105L	*75*		*30 - 140*	*09/17/19 12:25*	*10/04/19 02:55*	*5*
PCB-114L	*77*		*30 - 140*	*09/17/19 12:25*	*10/04/19 02:55*	*5*
PCB-118L	*78*		*30 - 140*	*09/17/19 12:25*	*10/04/19 02:55*	*5*
PCB-123L	*79*		*30 - 140*	*09/17/19 12:25*	*10/04/19 02:55*	*5*
PCB-126L	*83*		*30 - 140*	*09/17/19 12:25*	*10/04/19 02:55*	*5*
PCB-155L	*101*		*30 - 140*	*09/17/19 12:25*	*10/04/19 02:55*	*5*
PCB-156L	*81*	*C*	*30 - 140*	*09/17/19 12:25*	*10/04/19 02:55*	*5*
PCB-157L	*81*	*C156*	*30 - 140*	*09/17/19 12:25*	*10/04/19 02:55*	*5*
PCB-167L	*80*		*30 - 140*	*09/17/19 12:25*	*10/04/19 02:55*	*5*
PCB-169L	*93*		*30 - 140*	*09/17/19 12:25*	*10/04/19 02:55*	*5*
PCB-170L	*84*		*30 - 140*	*09/17/19 12:25*	*10/04/19 02:55*	*5*
PCB-188L	*82*		*30 - 140*	*09/17/19 12:25*	*10/04/19 02:55*	*5*
PCB-189L	*74*		*30 - 140*	*09/17/19 12:25*	*10/04/19 02:55*	*5*
PCB-202L	*95*		*30 - 140*	*09/17/19 12:25*	*10/04/19 02:55*	*5*
PCB-205L	*79*		*30 - 140*	*09/17/19 12:25*	*10/04/19 02:55*	*5*

Client Sample ID: J5-SC1b-90to100-82719
Lab Sample ID: 580-88908-33

Date Collected: 08/27/19 17:30
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 71.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-206L	78		30 - 140	09/17/19 12:25	10/04/19 02:55	5
PCB-208L	82		30 - 140	09/17/19 12:25	10/04/19 02:55	5
PCB-209L	80		30 - 140	09/17/19 12:25	10/04/19 02:55	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	76		40 - 125	09/17/19 12:25	10/04/19 02:55	5
PCB-111L	88		40 - 125	09/17/19 12:25	10/04/19 02:55	5
PCB-178L	88		40 - 125	09/17/19 12:25	10/04/19 02:55	5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.0051	J	0.0096	0.00013	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-2	0.0014	J	0.0096	0.00014	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-3	0.0021	J	0.0096	0.00015	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-4	0.022		0.019	0.00064	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-5	0.0011	J q	0.0096	0.00042	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-6	0.010		0.0096	0.00042	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-7	0.0020	J q	0.0096	0.00040	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-8	0.034		0.019	0.00041	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-9	0.0040	J q	0.0096	0.00046	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-10	0.0015	J	0.0096	0.00044	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-11	0.0096	J q B	0.019	0.00040	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-12	0.0068	J C	0.019	0.00040	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-13	0.0068	J C12	0.019	0.00040	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-14	ND		0.0096	0.00035	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-15	0.0093	J	0.0096	0.00040	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-16	0.021		0.0096	0.00066	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-17	0.022	B	0.0096	0.00051	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-18	0.048	C B	0.019	0.00044	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-19	0.0064	J	0.0096	0.00062	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-20	0.054	C B	0.019	0.00074	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-21	0.029	C B	0.019	0.00070	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-22	0.018	B	0.0096	0.00078	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-23	ND		0.0096	0.00076	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-24	ND		0.0096	0.00038	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-25	0.011		0.0096	0.00071	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-26	0.050	C B	0.019	0.00073	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-27	0.0034	J q	0.0096	0.00037	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-28	0.054	C20 B	0.019	0.00074	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-29	0.050	C26 B	0.019	0.00073	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-30	0.048	C18 B	0.019	0.00044	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-31	0.065	B	0.019	0.00070	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-32	0.013		0.0096	0.00034	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-33	0.029	C21 B	0.019	0.00070	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-34	ND		0.0096	0.00080	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-35	0.032		0.0096	0.00079	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-36	0.0015	J q	0.0096	0.00072	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-37	0.021	B	0.0096	0.00075	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-38	ND		0.0096	0.00073	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-39	0.0016	J	0.0096	0.00069	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1

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Lab Sample ID: 580-88908-33
Date Collected: 08/27/19 17:30
Matrix: Solid
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Percent Solids: 71.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-40	0.080	C	0.029	0.00073	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-41	0.080	C40	0.029	0.00073	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-42	0.042		0.0096	0.00078	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-43	0.0051	J C	0.019	0.00067	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-44	0.35	C B	0.029	0.00065	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-45	0.021	C B	0.019	0.00076	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-46	0.0072	J	0.0096	0.00089	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-47	0.35	C44 B	0.029	0.00065	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-48	0.024		0.0096	0.00071	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-49	0.21	C B	0.019	0.00059	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-50	0.030	C	0.019	0.00072	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-51	0.021	C45 B	0.019	0.00076	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-52	0.88	B	0.0096	0.00075	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-53	0.030	C50	0.019	0.00072	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-54	0.00081	J q	0.0096	0.00011	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-55	0.0056	J q	0.0096	0.00052	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-56	0.089		0.0096	0.00053	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-57	ND		0.0096	0.00052	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-58	0.0019	J q	0.0096	0.00051	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-59	0.013	J C	0.029	0.00049	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-60	0.028		0.0096	0.00051	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-61	0.64	C B	0.038	0.00050	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-62	0.013	J C59	0.029	0.00049	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-63	0.0082	J	0.0096	0.00046	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-64	0.095		0.0096	0.00047	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-65	0.35	C44 B	0.029	0.00065	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-66	0.18	B	0.0096	0.00053	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-67	0.016		0.0096	0.00048	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-68	0.0052	J B	0.0096	0.00045	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-69	0.21	C49 B	0.019	0.00059	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-70	0.64	C61 B	0.038	0.00050	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-71	0.080	C40	0.029	0.00073	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-72	0.011		0.0096	0.00051	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-73	0.0051	J C43	0.019	0.00067	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-74	0.64	C61 B	0.038	0.00050	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-75	0.013	J C59	0.029	0.00049	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-76	0.64	C61 B	0.038	0.00050	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-77	0.043		0.0096	0.00052	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-78	ND		0.0096	0.00051	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-79	0.014		0.0096	0.00044	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-80	ND		0.0096	0.00046	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-81	0.0013	J q	0.0096	0.00049	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-82	0.16	B	0.0096	0.00063	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-83	0.73	C B	0.019	0.00058	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-84	0.38	B	0.0096	0.00064	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-85	0.21	C	0.029	0.00045	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-86	0.90	C B	0.058	0.00046	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-87	0.90	C86 B	0.058	0.00046	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-88	0.19	C B	0.019	0.00054	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1

Client Sample ID: J5-SC1b-90to100-82719
Lab Sample ID: 580-88908-33

Date Collected: 08/27/19 17:30
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 71.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-89	0.015		0.0096	0.00061	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-90	1.4	C B	0.029	0.00048	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-91	0.19	C88 B	0.019	0.00054	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-92	0.29	B	0.0096	0.00057	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-93	0.015	J q C	0.019	0.00056	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-94	ND		0.0096	0.00061	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-95	1.2	B	0.0096	0.00057	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-96	0.0092	J	0.0096	0.00045	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-97	0.90	C86 B	0.058	0.00046	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-98	0.041	C	0.019	0.00055	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-99	0.73	C83 B	0.019	0.00058	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-100	0.015	J q C93	0.019	0.00056	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-101	1.4	C90 B	0.029	0.00048	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-102	0.041	C98	0.019	0.00055	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-103	0.016		0.0096	0.00053	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-104	ND		0.0096	0.00039	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-105	0.37	B	0.0096	0.00078	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-106	ND		0.0096	0.00083	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-107	0.081	B	0.0096	0.00078	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-108	0.047	C	0.019	0.00085	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-109	0.90	C86 B	0.058	0.00046	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-110	1.5	C B	0.019	0.00040	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-111	ND		0.0096	0.00038	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-112	ND		0.0096	0.00040	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-113	1.4	C90 B	0.029	0.00048	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-114	0.021		0.0096	0.00072	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-115	1.5	C110 B	0.019	0.00040	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-116	0.21	C85	0.029	0.00045	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-117	0.21	C85	0.029	0.00045	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-118	0.91	B	0.0096	0.00078	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-119	0.90	C86 B	0.058	0.00046	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-120	0.0084	J q	0.0096	0.00037	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-121	ND		0.0096	0.00039	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-122	0.017	B	0.0096	0.00091	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-123	0.016		0.0096	0.00076	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-124	0.047	C108	0.019	0.00085	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-125	0.90	C86 B	0.058	0.00046	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-126	0.0068	J q	0.0096	0.00099	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-127	ND		0.0096	0.00083	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-128	0.17	C B	0.019	0.00069	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-129	0.90	C B	0.038	0.00071	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-130	0.072	B	0.0096	0.00094	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-131	0.022		0.0096	0.00090	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-132	0.41	B	0.0096	0.00088	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-133	0.024		0.0096	0.00085	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-134	0.069	C	0.019	0.00091	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-135	0.33	C B	0.019	0.00054	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-136	0.16	B	0.0096	0.00040	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-137	0.046		0.0096	0.00073	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1

Client Sample ID: J5-SC1b-90to100-82719
Lab Sample ID: 580-88908-33

Date Collected: 08/27/19 17:30
Matrix: Solid
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Percent Solids: 71.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-138	0.90	C129 B	0.038	0.00071	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-139	0.028	C	0.019	0.00077	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-140	0.028	C139	0.019	0.00077	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-141	0.13	B	0.0096	0.00081	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-142	ND		0.0096	0.00090	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-143	0.069	C134	0.019	0.00091	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-144	0.049		0.0096	0.00051	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-145	0.0018	J	0.0096	0.00039	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-146	0.16	B	0.0096	0.00077	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-147	0.79	C B	0.019	0.00079	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-148	0.0037	J q	0.0096	0.00052	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-149	0.79	C147 B	0.019	0.00079	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-150	0.0050	J	0.0096	0.00038	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-151	0.33	C135 B	0.019	0.00054	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-152	0.0012	J q	0.0096	0.00037	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-153	0.62	C B	0.019	0.00063	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-154	0.029		0.0096	0.00046	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-155	ND		0.0096	0.00036	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-156	0.12	C B	0.019	0.00075	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-157	0.12	C156 B	0.019	0.00075	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-158	0.10	B	0.0096	0.00056	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-159	ND		0.0096	0.00059	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-160	0.90	C129 B	0.038	0.00071	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-161	ND		0.0096	0.00058	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-162	0.0042	J B	0.0096	0.00057	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-163	0.90	C129 B	0.038	0.00071	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-164	0.059	B	0.0096	0.00062	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-165	ND		0.0096	0.00069	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-166	0.17	C128 B	0.019	0.00069	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-167	0.041	B	0.0096	0.00047	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-168	0.62	C153 B	0.019	0.00063	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-169	ND		0.0096	0.00054	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-170	0.13	B	0.0096	0.00052	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-171	0.057	C B	0.019	0.00052	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-172	0.022	B	0.0096	0.00051	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-173	0.057	C171 B	0.019	0.00052	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-174	0.12	B	0.0096	0.00053	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-175	0.0059	J q	0.0096	0.00047	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-176	0.016	B	0.0096	0.00033	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-177	0.092	B	0.0096	0.00053	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-178	0.030	B	0.0096	0.00049	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-179	0.057	B	0.0096	0.00036	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-180	0.22	C B	0.019	0.00041	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-181	ND		0.0096	0.00045	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-182	0.0018	J q	0.0096	0.00044	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-183	0.081	C B	0.019	0.00044	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-184	ND		0.0096	0.00035	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-185	0.081	C183 B	0.019	0.00044	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-186	ND		0.0096	0.00035	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1

Client Sample ID: J5-SC1b-90to100-82719
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Matrix: Solid
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Percent Solids: 71.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-187	**0.15**	**B**	0.0096	0.00045	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-188	ND		0.0096	0.00033	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-189	**0.0060**	**J B**	0.0096	0.00037	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-190	**0.019**	**B**	0.0096	0.00037	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-191	**0.0062**	**J q**	0.0096	0.00036	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-192	ND		0.0096	0.00039	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-193	**0.22**	**C180 B**	0.019	0.00041	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-194	**0.036**	**B**	0.0096	0.0011	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-195	**0.016**	**B**	0.0096	0.0013	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-196	**0.022**	**B**	0.0096	0.00073	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-197	**0.0018**	**J q B**	0.0096	0.00053	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-198	**0.046**	**C B**	0.019	0.00078	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-199	**0.046**	**C198 B**	0.019	0.00078	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-200	**0.0057**	**J**	0.0096	0.00057	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-201	**0.0071**	**J B**	0.0096	0.00054	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-202	**0.011**	**q B**	0.0096	0.00061	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-203	**0.026**		0.0096	0.00069	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-204	ND		0.0096	0.00058	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-205	ND		0.0096	0.00080	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-206	**0.021**	**q**	0.0096	0.0012	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-207	**0.0031**	**J**	0.0096	0.00086	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-208	**0.0052**	**J q**	0.0096	0.00089	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
PCB-209	**0.016**		0.0096	0.00033	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
Total Monochlorobiphenyls	**0.0086**	**J**	0.0096	0.00014	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
Total Dichlorobiphenyls	**0.10**	**q B**	0.019	0.00043	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
Total Trichlorobiphenyls	**0.40**	**q B**	0.019	0.00065	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
Total Tetrachlorobiphenyls	**2.8**	**q B**	0.038	0.00056	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
Total Pentachlorobiphenyls	**8.5**	**q B**	0.058	0.00061	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
Total Hexachlorobiphenyls	**4.3**	**q B**	0.038	0.00064	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
Total Heptachlorobiphenyls	**1.0**	**q B**	0.019	0.00043	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
Total Octachlorobiphenyls	**0.17**	**q B**	0.019	0.00074	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
Total Nonachlorobiphenyls	**0.029**	**q**	0.0096	0.00099	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1
Polychlorinated biphenyls, Total	**17**	**q B**	0.058	0.00060	ng/g	☼	10/03/19 11:21	10/10/19 08:13	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*66*		*30 - 140*	*10/03/19 11:21*	*10/10/19 08:13*	*1*
PCB-3L	*64*		*30 - 140*	*10/03/19 11:21*	*10/10/19 08:13*	*1*
PCB-4L	*64*		*30 - 140*	*10/03/19 11:21*	*10/10/19 08:13*	*1*
PCB-15L	*71*		*30 - 140*	*10/03/19 11:21*	*10/10/19 08:13*	*1*
PCB-19L	*64*		*30 - 140*	*10/03/19 11:21*	*10/10/19 08:13*	*1*
PCB-37L	*70*		*30 - 140*	*10/03/19 11:21*	*10/10/19 08:13*	*1*
PCB-54L	*60*		*30 - 140*	*10/03/19 11:21*	*10/10/19 08:13*	*1*
PCB-77L	*78*		*30 - 140*	*10/03/19 11:21*	*10/10/19 08:13*	*1*
PCB-81L	*82*		*30 - 140*	*10/03/19 11:21*	*10/10/19 08:13*	*1*
PCB-104L	*79*		*30 - 140*	*10/03/19 11:21*	*10/10/19 08:13*	*1*
PCB-105L	*114*		*30 - 140*	*10/03/19 11:21*	*10/10/19 08:13*	*1*
PCB-114L	*112*		*30 - 140*	*10/03/19 11:21*	*10/10/19 08:13*	*1*
PCB-118L	*115*		*30 - 140*	*10/03/19 11:21*	*10/10/19 08:13*	*1*
PCB-123L	*112*		*30 - 140*	*10/03/19 11:21*	*10/10/19 08:13*	*1*
PCB-126L	*100*		*30 - 140*	*10/03/19 11:21*	*10/10/19 08:13*	*1*

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88908-1

Client Sample ID: J5-SC1b-90to100-82719
Date Collected: 08/27/19 17:30
Date Received: 09/03/19 15:00

Lab Sample ID: 580-88908-33
Matrix: Solid
Percent Solids: 71.8

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-155L	94		30 - 140	10/03/19 11:21	10/10/19 08:13	1
PCB-156L	91	C	30 - 140	10/03/19 11:21	10/10/19 08:13	1
PCB-157L	91	C156	30 - 140	10/03/19 11:21	10/10/19 08:13	1
PCB-167L	96		30 - 140	10/03/19 11:21	10/10/19 08:13	1
PCB-169L	103		30 - 140	10/03/19 11:21	10/10/19 08:13	1
PCB-170L	81		30 - 140	10/03/19 11:21	10/10/19 08:13	1
PCB-188L	82		30 - 140	10/03/19 11:21	10/10/19 08:13	1
PCB-189L	75		30 - 140	10/03/19 11:21	10/10/19 08:13	1
PCB-202L	93		30 - 140	10/03/19 11:21	10/10/19 08:13	1
PCB-205L	83		30 - 140	10/03/19 11:21	10/10/19 08:13	1
PCB-206L	90		30 - 140	10/03/19 11:21	10/10/19 08:13	1
PCB-208L	101		30 - 140	10/03/19 11:21	10/10/19 08:13	1
PCB-209L	103		30 - 140	10/03/19 11:21	10/10/19 08:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	71		40 - 125	10/03/19 11:21	10/10/19 08:13	1
PCB-111L	89		40 - 125	10/03/19 11:21	10/10/19 08:13	1
PCB-178L	89		40 - 125	10/03/19 11:21	10/10/19 08:13	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	28.2		0.1		%			09/11/19 15:55	1
Percent Solids	71.8		0.1		%			09/11/19 15:55	1

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88908-1

Client Sample ID: J5-SC1b-100to110-82719
Date Collected: 08/27/19 17:35
Date Received: 09/03/19 15:00

Lab Sample ID: 580-88908-34
Matrix: Solid
Percent Solids: 70.9

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	**0.0058**	**J**	0.049	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-2	ND		0.049	0.0013	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-3	ND		0.049	0.0013	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-4	**0.011**	**J q**	0.099	0.0034	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-5	ND		0.049	0.0017	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-6	ND		0.049	0.0017	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-7	ND		0.049	0.0016	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-8	**0.020**	**J q**	0.099	0.0017	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-9	ND		0.049	0.0019	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-10	ND		0.049	0.0018	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-11	**0.0068**	**J q B**	0.099	0.0016	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-12	ND	C	0.099	0.0016	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-13	ND	C12	0.099	0.0016	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-14	ND		0.049	0.0014	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-15	**0.0084**	**J**	0.049	0.0014	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-16	**0.016**	**J**	0.049	0.0022	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-17	**0.016**	**J**	0.049	0.0017	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-18	**0.033**	**J q C**	0.099	0.0015	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-19	**0.0062**	**J**	0.049	0.0020	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-20	**0.036**	**J C**	0.099	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-21	**0.022**	**J C**	0.099	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-22	**0.016**	**J**	0.049	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-23	ND		0.049	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-24	ND		0.049	0.0013	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-25	**0.0046**	**J**	0.049	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-26	**0.0076**	**J C**	0.099	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-27	**0.0023**	**J q**	0.049	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-28	**0.036**	**J C20**	0.099	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-29	**0.0076**	**J C26**	0.099	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-30	**0.033**	**J q C18**	0.099	0.0015	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-31	**0.045**	**J**	0.099	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-32	**0.0085**	**J q**	0.049	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-33	**0.022**	**J C21**	0.099	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-34	ND		0.049	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-35	ND		0.049	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-36	**0.0085**	**J**	0.049	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-37	**0.012**	**J**	0.049	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-38	ND		0.049	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-39	ND		0.049	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-40	**0.069**	**J C**	0.15	0.0083	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-41	**0.069**	**J C40**	0.15	0.0083	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-42	**0.036**	**J**	0.049	0.0087	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-43	ND	C	0.099	0.0076	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-44	**0.52**	**C B**	0.15	0.0073	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-45	ND	C	0.099	0.0086	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-46	ND		0.049	0.010	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-47	**0.52**	**C44 B**	0.15	0.0073	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-48	**0.016**	**J q**	0.049	0.0080	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-49	**0.25**	**C B**	0.099	0.0067	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5

Client Sample ID: J5-SC1b-100to110-82719
Lab Sample ID: 580-88908-34
Date Collected: 08/27/19 17:35
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 70.9

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	**0.030**	**J C**	0.099	0.0081	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-51	ND	C45	0.099	0.0086	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-52	**1.6**	**B**	0.049	0.0084	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-53	**0.030**	**J C50**	0.099	0.0081	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-54	ND		0.049	0.00040	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-55	ND		0.049	0.0059	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-56	**0.098**		0.049	0.0060	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-57	ND		0.049	0.0059	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-58	ND		0.049	0.0057	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-59	ND	C	0.15	0.0056	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-60	**0.037**	**J**	0.049	0.0057	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-61	**0.99**	**C B**	0.20	0.0056	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-62	ND	C59	0.15	0.0056	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-63	**0.0096**	**J**	0.049	0.0052	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-64	**0.12**		0.049	0.0053	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-65	**0.52**	**C44 B**	0.15	0.0073	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-66	**0.22**		0.049	0.0059	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-67	ND		0.049	0.0054	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-68	ND		0.049	0.0051	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-69	**0.25**	**C49 B**	0.099	0.0067	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-70	**0.99**	**C61 B**	0.20	0.0056	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-71	**0.069**	**J C40**	0.15	0.0083	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-72	ND		0.049	0.0058	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-73	ND	C43	0.099	0.0076	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-74	**0.99**	**C61 B**	0.20	0.0056	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-75	ND	C59	0.15	0.0056	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-76	**0.99**	**C61 B**	0.20	0.0056	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-77	**0.0087**	**J q**	0.049	0.0055	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-78	ND		0.049	0.0058	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-79	**0.011**	**J q**	0.049	0.0049	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-80	ND		0.049	0.0052	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-81	ND		0.049	0.0059	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-82	**0.37**		0.049	0.0032	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-83	**1.5**	**C**	0.099	0.0030	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-84	**0.88**	**B**	0.049	0.0032	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-85	**0.43**	**C B**	0.15	0.0023	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-86	**2.1**	**C**	0.30	0.0023	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-87	**2.1**	**C86**	0.30	0.0023	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-88	**0.34**	**C**	0.099	0.0028	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-89	**0.027**	**J**	0.049	0.0031	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-90	**3.0**	**C B**	0.15	0.0024	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-91	**0.34**	**C88**	0.099	0.0028	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-92	**0.59**		0.049	0.0029	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-93	**0.029**	**J C**	0.099	0.0028	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-94	**0.0082**	**J**	0.049	0.0031	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-95	**2.7**		0.049	0.0029	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-96	**0.013**	**J q**	0.049	0.0023	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-97	**2.1**	**C86**	0.30	0.0023	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-98	**0.070**	**J C**	0.099	0.0028	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88908-1

Client Sample ID: J5-SC1b-100to110-82719
Date Collected: 08/27/19 17:35
Date Received: 09/03/19 15:00

Lab Sample ID: 580-88908-34
Matrix: Solid
Percent Solids: 70.9

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	1.5	C83	0.099	0.0030	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-100	0.029	J C93	0.099	0.0028	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-101	3.0	C90 B	0.15	0.0024	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-102	0.070	J C98	0.099	0.0028	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-103	0.013	J q	0.049	0.0027	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-104	ND		0.049	0.0020	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-105	0.91		0.049	0.0034	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-106	ND		0.049	0.0035	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-107	0.15		0.049	0.0033	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-108	0.11	C	0.099	0.0036	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-109	2.1	C86	0.30	0.0023	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-110	3.4	C	0.099	0.0021	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-111	ND		0.049	0.0020	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-112	0.0032	J q	0.049	0.0020	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-113	3.0	C90 B	0.15	0.0024	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-114	0.066		0.049	0.0033	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-115	3.4	C110	0.099	0.0021	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-116	0.43	C85 B	0.15	0.0023	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-117	0.43	C85 B	0.15	0.0023	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-118	2.2	B	0.049	0.0032	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-119	2.1	C86	0.30	0.0023	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-120	ND		0.049	0.0019	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-121	ND		0.049	0.0020	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-122	0.035	J	0.049	0.0038	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-123	0.034	J	0.049	0.0033	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-124	0.11	C108	0.099	0.0036	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-125	2.1	C86	0.30	0.0023	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-126	ND		0.049	0.0035	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-127	0.0085	J	0.049	0.0035	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-128	0.52	C B	0.099	0.0020	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-129	2.8	C B	0.20	0.0020	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-130	0.20		0.049	0.0027	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-131	0.055		0.049	0.0026	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-132	1.1		0.049	0.0025	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-133	0.039	J	0.049	0.0024	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-134	0.19	C	0.099	0.0026	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-135	0.83	C B	0.099	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-136	0.41	B	0.049	0.00082	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-137	0.17		0.049	0.0021	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-138	2.8	C129 B	0.20	0.0020	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-139	0.061	J C	0.099	0.0022	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-140	0.061	J C139	0.099	0.0022	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-141	0.46		0.049	0.0023	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-142	ND		0.049	0.0026	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-143	0.19	C134	0.099	0.0026	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-144	0.13		0.049	0.0010	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-145	0.0037	J q	0.049	0.00079	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-146	0.35	B	0.049	0.0022	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-147	1.9	C B	0.099	0.0023	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88908-1

Client Sample ID: J5-SC1b-100to110-82719
Date Collected: 08/27/19 17:35
Date Received: 09/03/19 15:00

Lab Sample ID: 580-88908-34
Matrix: Solid
Percent Solids: 70.9

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	ND		0.049	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-149	**1.9**	**C147 B**	0.099	0.0023	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-150	**0.0033**	**J q**	0.049	0.00076	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-151	**0.83**	**C135 B**	0.099	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-152	**0.0036**	**J**	0.049	0.00075	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-153	**1.8**	**C B**	0.099	0.0018	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-154	**0.028**	**J q**	0.049	0.00093	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-155	ND		0.049	0.00072	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-156	**0.41**	**C**	0.099	0.0021	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-157	**0.41**	**C156**	0.099	0.0021	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-158	**0.32**		0.049	0.0016	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-159	**0.014**	**J**	0.049	0.0017	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-160	**2.8**	**C129 B**	0.20	0.0020	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-161	ND		0.049	0.0016	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-162	**0.012**	**J**	0.049	0.0016	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-163	**2.8**	**C129 B**	0.20	0.0020	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-164	**0.19**		0.049	0.0018	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-165	ND		0.049	0.0020	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-166	**0.52**	**C128 B**	0.099	0.0020	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-167	**0.11**		0.049	0.0014	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-168	**1.8**	**C153 B**	0.099	0.0018	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-169	ND		0.049	0.0015	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-170	**0.35**	**B**	0.049	0.0014	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-171	**0.13**	**C**	0.099	0.0014	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-172	**0.061**		0.049	0.0013	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-173	**0.13**	**C171**	0.099	0.0014	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-174	**0.31**	**B**	0.049	0.0014	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-175	**0.014**	**J q**	0.049	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-176	**0.044**	**J**	0.049	0.00087	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-177	**0.19**	**B**	0.049	0.0014	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-178	**0.057**		0.049	0.0013	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-179	**0.12**		0.049	0.00094	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-180	**0.59**	**C B**	0.099	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-181	**0.0086**	**J q**	0.049	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-182	**0.0044**	**J**	0.049	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-183	**0.22**	**C B**	0.099	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-184	ND		0.049	0.00094	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-185	**0.22**	**C183 B**	0.099	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-186	ND		0.049	0.00092	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-187	**0.30**	**B**	0.049	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-188	ND		0.049	0.00083	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-189	**0.014**	**J q**	0.049	0.00095	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-190	**0.071**	**B**	0.049	0.00096	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-191	**0.018**	**J**	0.049	0.00096	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-192	ND		0.049	0.0010	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-193	**0.59**	**C180 B**	0.099	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-194	**0.11**		0.049	0.0017	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-195	**0.047**	**J**	0.049	0.0020	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-196	**0.065**		0.049	0.0010	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5

Client Sample ID: J5-SC1b-100to110-82719
Lab Sample ID: 580-88908-34

Date Collected: 08/27/19 17:35
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 70.9

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	**0.0019**	**J q**	0.049	0.00074	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-198	**0.12**	**C B**	0.099	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-199	**0.12**	**C198 B**	0.099	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-200	**0.020**	**J**	0.049	0.00079	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-201	**0.015**	**J q**	0.049	0.00075	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-202	**0.027**	**J**	0.049	0.00084	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-203	**0.086**		0.049	0.00096	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-204	ND		0.049	0.00080	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-205	**0.0060**	**J q**	0.049	0.0013	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-206	**0.077**		0.049	0.0038	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-207	ND		0.049	0.0029	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-208	ND		0.049	0.0032	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
PCB-209	**0.0091**	**J q**	0.049	0.00068	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
Total Monochlorobiphenyls	**0.0058**	**J**	0.049	0.0013	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
Total Dichlorobiphenyls	**0.046**	**J q B**	0.099	0.0018	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
Total Trichlorobiphenyls	**0.23**	**q**	0.099	0.0013	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
Total Tetrachlorobiphenyls	**4.0**	**q B**	0.20	0.0063	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
Total Pentachlorobiphenyls	**19**	**q B**	0.30	0.0028	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
Total Hexachlorobiphenyls	**12**	**q B**	0.20	0.0017	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
Total Heptachlorobiphenyls	**2.5**	**q B**	0.099	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
Total Octachlorobiphenyls	**0.50**	**q B**	0.099	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
Total Nonachlorobiphenyls	**0.077**		0.049	0.0033	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5
Polychlorinated biphenyls, Total	**38**	**q B**	0.30	0.0022	ng/g	☼	09/17/19 12:25	10/04/19 03:57	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*59*		*30 - 140*	*09/17/19 12:25*	*10/04/19 03:57*	*5*
PCB-3L	*69*		*30 - 140*	*09/17/19 12:25*	*10/04/19 03:57*	*5*
PCB-4L	*71*		*30 - 140*	*09/17/19 12:25*	*10/04/19 03:57*	*5*
PCB-15L	*78*		*30 - 140*	*09/17/19 12:25*	*10/04/19 03:57*	*5*
PCB-19L	*68*		*30 - 140*	*09/17/19 12:25*	*10/04/19 03:57*	*5*
PCB-37L	*87*		*30 - 140*	*09/17/19 12:25*	*10/04/19 03:57*	*5*
PCB-54L	*74*		*30 - 140*	*09/17/19 12:25*	*10/04/19 03:57*	*5*
PCB-77L	*90*		*30 - 140*	*09/17/19 12:25*	*10/04/19 03:57*	*5*
PCB-81L	*85*		*30 - 140*	*09/17/19 12:25*	*10/04/19 03:57*	*5*
PCB-104L	*90*		*30 - 140*	*09/17/19 12:25*	*10/04/19 03:57*	*5*
PCB-105L	*82*		*30 - 140*	*09/17/19 12:25*	*10/04/19 03:57*	*5*
PCB-114L	*79*		*30 - 140*	*09/17/19 12:25*	*10/04/19 03:57*	*5*
PCB-118L	*85*		*30 - 140*	*09/17/19 12:25*	*10/04/19 03:57*	*5*
PCB-123L	*81*		*30 - 140*	*09/17/19 12:25*	*10/04/19 03:57*	*5*
PCB-126L	*89*		*30 - 140*	*09/17/19 12:25*	*10/04/19 03:57*	*5*
PCB-155L	*97*		*30 - 140*	*09/17/19 12:25*	*10/04/19 03:57*	*5*
PCB-156L	*82*	*C*	*30 - 140*	*09/17/19 12:25*	*10/04/19 03:57*	*5*
PCB-157L	*82*	*C156*	*30 - 140*	*09/17/19 12:25*	*10/04/19 03:57*	*5*
PCB-167L	*82*		*30 - 140*	*09/17/19 12:25*	*10/04/19 03:57*	*5*
PCB-169L	*94*		*30 - 140*	*09/17/19 12:25*	*10/04/19 03:57*	*5*
PCB-170L	*80*		*30 - 140*	*09/17/19 12:25*	*10/04/19 03:57*	*5*
PCB-188L	*84*		*30 - 140*	*09/17/19 12:25*	*10/04/19 03:57*	*5*
PCB-189L	*82*		*30 - 140*	*09/17/19 12:25*	*10/04/19 03:57*	*5*
PCB-202L	*99*		*30 - 140*	*09/17/19 12:25*	*10/04/19 03:57*	*5*
PCB-205L	*81*		*30 - 140*	*09/17/19 12:25*	*10/04/19 03:57*	*5*

Client Sample ID: J5-SC1b-100to110-82719
Lab Sample ID: 580-88908-34

Date Collected: 08/27/19 17:35
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 70.9

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-206L	84		30 - 140	09/17/19 12:25	10/04/19 03:57	5
PCB-208L	84		30 - 140	09/17/19 12:25	10/04/19 03:57	5
PCB-209L	87		30 - 140	09/17/19 12:25	10/04/19 03:57	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	81		40 - 125	09/17/19 12:25	10/04/19 03:57	5
PCB-111L	93		40 - 125	09/17/19 12:25	10/04/19 03:57	5
PCB-178L	93		40 - 125	09/17/19 12:25	10/04/19 03:57	5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	**0.00074**	**J q**	0.0097	0.00018	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-2	ND		0.0097	0.00019	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-3	ND		0.0097	0.00021	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-4	ND		0.019	0.00055	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-5	ND		0.0097	0.00039	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-6	ND		0.0097	0.00039	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-7	ND		0.0097	0.00038	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-8	**0.0017**	**J q**	0.019	0.00038	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-9	ND		0.0097	0.00043	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-10	ND		0.0097	0.00041	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-11	**0.0038**	**J B**	0.019	0.00037	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-12	ND	C	0.019	0.00037	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-13	ND	C12	0.019	0.00037	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-14	ND		0.0097	0.00033	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-15	ND		0.0097	0.00039	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-16	ND		0.0097	0.00030	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-17	**0.0016**	**J B q**	0.0097	0.00024	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-18	**0.0024**	**J C B**	0.019	0.00020	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-19	ND		0.0097	0.00028	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-20	**0.0051**	**J C B**	0.019	0.00038	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-21	**0.0021**	**J C B**	0.019	0.00036	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-22	ND		0.0097	0.00040	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-23	ND		0.0097	0.00039	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-24	ND		0.0097	0.00018	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-25	**0.00072**	**J q**	0.0097	0.00037	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-26	**0.0011**	**J C B q**	0.019	0.00038	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-27	ND		0.0097	0.00017	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-28	**0.0051**	**J B C20**	0.019	0.00038	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-29	**0.0011**	**J C26 B q**	0.019	0.00038	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-30	**0.0024**	**J C18 B**	0.019	0.00020	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-31	**0.0029**	**J B q**	0.019	0.00036	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-32	**0.0018**	**J q**	0.0097	0.00016	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-33	**0.0021**	**J B C21**	0.019	0.00036	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-34	ND		0.0097	0.00041	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-35	ND		0.0097	0.00041	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-36	ND		0.0097	0.00037	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-37	ND		0.0097	0.00039	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-38	ND		0.0097	0.00038	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-39	ND		0.0097	0.00036	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1

Client Sample ID: J5-SC1b-100to110-82719
Lab Sample ID: 580-88908-34

Date Collected: 08/27/19 17:35
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 70.9

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-40	**0.012**	**J C**	0.029	0.00062	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-41	**0.012**	**J C40**	0.029	0.00062	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-42	**0.0028**	**J q**	0.0097	0.00066	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-43	ND	C	0.019	0.00057	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-44	**0.036**	**C B**	0.029	0.00055	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-45	**0.015**	**J C B**	0.019	0.00064	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-46	ND		0.0097	0.00075	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-47	**0.036**	**B C44**	0.029	0.00055	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-48	ND		0.0097	0.00060	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-49	**0.025**	**C B**	0.019	0.00050	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-50	**0.0092**	**J C**	0.019	0.00061	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-51	**0.015**	**J C45 B**	0.019	0.00064	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-52	**0.032**	**B**	0.0097	0.00063	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-53	**0.0092**	**J C50**	0.019	0.00061	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-54	**0.0030**	**J q**	0.0097	0.00026	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-55	ND		0.0097	0.00044	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-56	**0.0025**	**J q**	0.0097	0.00045	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-57	ND		0.0097	0.00044	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-58	ND		0.0097	0.00043	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-59	ND	C	0.029	0.00042	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-60	ND		0.0097	0.00043	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-61	**0.016**	**J C B**	0.039	0.00042	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-62	ND	C59	0.029	0.00042	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-63	ND		0.0097	0.00039	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-64	**0.0014**	**J q**	0.0097	0.00040	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-65	**0.036**	**B C44**	0.029	0.00055	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-66	**0.0066**	**J B q**	0.0097	0.00044	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-67	ND		0.0097	0.00041	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-68	**0.0015**	**J B q**	0.0097	0.00039	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-69	**0.025**	**B C49**	0.019	0.00050	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-70	**0.016**	**J C61 B**	0.039	0.00042	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-71	**0.012**	**J C40**	0.029	0.00062	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-72	ND		0.0097	0.00043	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-73	ND	C43	0.019	0.00057	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-74	**0.016**	**J C61 B**	0.039	0.00042	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-75	ND	C59	0.029	0.00042	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-76	**0.016**	**J C61 B**	0.039	0.00042	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-77	ND		0.0097	0.00042	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-78	ND		0.0097	0.00043	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-79	ND		0.0097	0.00037	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-80	ND		0.0097	0.00039	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-81	ND		0.0097	0.00044	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-82	**0.0035**	**J B q**	0.0097	0.0012	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-83	**0.037**	**C B q**	0.019	0.0011	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-84	**0.0073**	**J B q**	0.0097	0.0012	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-85	ND	C	0.029	0.00085	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-86	**0.024**	**J C B**	0.058	0.00086	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-87	**0.024**	**J B C86**	0.058	0.00086	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-88	**0.012**	**J C B**	0.019	0.0010	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1

Client Sample ID: J5-SC1b-100to110-82719
Lab Sample ID: 580-88908-34

Date Collected: 08/27/19 17:35
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 70.9

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-89	ND		0.0097	0.0012	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-90	**0.060**	**C B**	0.029	0.00091	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-91	**0.012**	**J C88 B**	0.019	0.0010	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-92	**0.017**	**B**	0.0097	0.0011	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-93	**0.0037**	**J C q**	0.019	0.0011	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-94	ND		0.0097	0.0011	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-95	**0.050**	**B**	0.0097	0.0011	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-96	ND		0.0097	0.00084	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-97	**0.024**	**J B C86**	0.058	0.00086	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-98	**0.0084**	**J C**	0.019	0.0010	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-99	**0.037**	**C83 B q**	0.019	0.0011	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-100	**0.0037**	**J C93 q**	0.019	0.0011	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-101	**0.060**	**B C90**	0.029	0.00091	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-102	**0.0084**	**J C98**	0.019	0.0010	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-103	**0.0044**	**J**	0.0097	0.0010	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-104	ND		0.0097	0.00074	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-105	**0.0059**	**J B q**	0.0097	0.00052	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-106	ND		0.0097	0.00052	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-107	**0.0030**	**J B q**	0.0097	0.00049	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-108	ND	C	0.019	0.00053	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-109	**0.024**	**J B C86**	0.058	0.00086	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-110	**0.044**	**C B**	0.019	0.00077	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-111	ND		0.0097	0.00072	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-112	ND		0.0097	0.00076	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-113	**0.060**	**B C90**	0.029	0.00091	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-114	ND		0.0097	0.00048	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-115	**0.044**	**B C110**	0.019	0.00077	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-116	ND	C85	0.029	0.00085	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-117	ND	C85	0.029	0.00085	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-118	**0.022**	**B**	0.0097	0.00048	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-119	**0.024**	**J B C86**	0.058	0.00086	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-120	ND		0.0097	0.00069	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-121	ND		0.0097	0.00074	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-122	ND		0.0097	0.00057	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-123	ND		0.0097	0.00050	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-124	ND	C108	0.019	0.00053	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-125	**0.024**	**J B C86**	0.058	0.00086	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-126	ND		0.0097	0.00051	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-127	ND		0.0097	0.00052	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-128	**0.0065**	**J C B**	0.019	0.00083	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-129	**0.047**	**C B**	0.039	0.00085	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-130	**0.0039**	**J B q**	0.0097	0.0011	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-131	ND		0.0097	0.0011	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-132	**0.016**	**B**	0.0097	0.0011	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-133	**0.0013**	**J q**	0.0097	0.0010	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-134	**0.0032**	**J C**	0.019	0.0011	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-135	**0.035**	**C B**	0.019	0.00041	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-136	**0.015**	**B**	0.0097	0.00031	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-137	**0.0012**	**J q**	0.0097	0.00087	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1

Client Sample ID: J5-SC1b-100to110-82719
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Matrix: Solid
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Percent Solids: 70.9

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-138	**0.047**	**B C129**	0.039	0.00085	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-139	ND	C	0.019	0.00093	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-140	ND	C139	0.019	0.00093	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-141	**0.0088**	**J B**	0.0097	0.00096	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-142	ND		0.0097	0.0011	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-143	**0.0032**	**J C134**	0.019	0.0011	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-144	**0.0027**	**J q**	0.0097	0.00039	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-145	ND		0.0097	0.00030	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-146	**0.019**	**B**	0.0097	0.00092	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-147	**0.061**	**C B**	0.019	0.00095	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-148	**0.0016**	**J**	0.0097	0.00040	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-149	**0.061**	**B C147**	0.019	0.00095	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-150	**0.00094**	**J q**	0.0097	0.00029	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-151	**0.035**	**C135 B**	0.019	0.00041	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-152	ND		0.0097	0.00029	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-153	**0.057**	**C B**	0.019	0.00076	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-154	**0.0055**	**J q**	0.0097	0.00035	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-155	ND		0.0097	0.00028	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-156	**0.0039**	**J C B q**	0.019	0.00091	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-157	**0.0039**	**J C156 B q**	0.019	0.00091	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-158	**0.0051**	**J B**	0.0097	0.00067	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-159	ND		0.0097	0.00070	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-160	**0.047**	**B C129**	0.039	0.00085	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-161	ND		0.0097	0.00069	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-162	ND		0.0097	0.00068	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-163	**0.047**	**B C129**	0.039	0.00085	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-164	**0.0042**	**J B q**	0.0097	0.00074	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-165	ND		0.0097	0.00083	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-166	**0.0065**	**J C128 B**	0.019	0.00083	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-167	ND		0.0097	0.00057	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-168	**0.057**	**B C153**	0.019	0.00076	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-169	ND		0.0097	0.00060	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-170	**0.018**	**B**	0.0097	0.00062	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-171	**0.0064**	**J C B**	0.019	0.00064	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-172	**0.0038**	**J B**	0.0097	0.00062	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-173	**0.0064**	**J C171 B**	0.019	0.00064	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-174	**0.019**	**B**	0.0097	0.00064	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-175	**0.0014**	**J q**	0.0097	0.00057	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-176	**0.0025**	**J B**	0.0097	0.00040	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-177	**0.016**	**B**	0.0097	0.00065	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-178	**0.0047**	**J B q**	0.0097	0.00060	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-179	**0.0097**	**B**	0.0097	0.00043	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-180	**0.039**	**C B**	0.019	0.00050	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-181	ND		0.0097	0.00055	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-182	ND		0.0097	0.00053	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-183	**0.015**	**J C B**	0.019	0.00054	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-184	ND		0.0097	0.00043	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-185	**0.015**	**J B C183**	0.019	0.00054	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-186	ND		0.0097	0.00043	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1

Client Sample ID: J5-SC1b-100to110-82719
Lab Sample ID: 580-88908-34

Date Collected: 08/27/19 17:35
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 70.9

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-187	**0.028**	**B**	0.0097	0.00055	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-188	ND		0.0097	0.00040	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-189	ND		0.0097	0.00067	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-190	**0.0042**	**J B**	0.0097	0.00044	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-191	ND		0.0097	0.00044	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-192	ND		0.0097	0.00047	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-193	**0.039**	**C180 B**	0.019	0.00050	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-194	**0.0095**	**J B**	0.0097	0.00067	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-195	**0.0047**	**J B**	0.0097	0.00079	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-196	**0.0054**	**J B**	0.0097	0.00035	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-197	ND		0.0097	0.00026	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-198	**0.012**	**J C B**	0.019	0.00038	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-199	**0.012**	**J C198 B**	0.019	0.00038	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-200	**0.0024**	**J**	0.0097	0.00028	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-201	**0.0017**	**J B**	0.0097	0.00026	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-202	**0.0023**	**J B**	0.0097	0.00029	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-203	**0.0071**	**J q**	0.0097	0.00034	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-204	ND		0.0097	0.00028	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-205	ND		0.0097	0.00050	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-206	**0.038**	**q**	0.0097	0.0013	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-207	ND		0.0097	0.00095	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-208	ND		0.0097	0.00099	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
PCB-209	**0.024**		0.0097	0.00053	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
Total Monochlorobiphenyls	**0.00074**	**J q**	0.0097	0.00019	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
Total Dichlorobiphenyls	**0.0055**	**J B q**	0.019	0.00040	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
Total Trichlorobiphenyls	**0.018**	**J B q**	0.019	0.00032	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
Total Tetrachlorobiphenyls	**0.16**	**B q**	0.039	0.00048	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
Total Pentachlorobiphenyls	**0.30**	**B q**	0.058	0.00081	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
Total Hexachlorobiphenyls	**0.30**	**B q**	0.039	0.00072	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
Total Heptachlorobiphenyls	**0.17**	**B q**	0.019	0.00053	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
Total Octachlorobiphenyls	**0.045**	**B q**	0.019	0.00040	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
Total Nonachlorobiphenyls	**0.038**	**q**	0.0097	0.0011	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1
Polychlorinated biphenyls, Total	**1.1**	**B q**	0.058	0.00059	ng/g	☼	10/03/19 11:21	10/10/19 09:14	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*77*		*30 - 140*	*10/03/19 11:21*	*10/10/19 09:14*	*1*
PCB-3L	*72*		*30 - 140*	*10/03/19 11:21*	*10/10/19 09:14*	*1*
PCB-4L	*74*		*30 - 140*	*10/03/19 11:21*	*10/10/19 09:14*	*1*
PCB-15L	*77*		*30 - 140*	*10/03/19 11:21*	*10/10/19 09:14*	*1*
PCB-19L	*75*		*30 - 140*	*10/03/19 11:21*	*10/10/19 09:14*	*1*
PCB-37L	*77*		*30 - 140*	*10/03/19 11:21*	*10/10/19 09:14*	*1*
PCB-54L	*65*		*30 - 140*	*10/03/19 11:21*	*10/10/19 09:14*	*1*
PCB-77L	*84*		*30 - 140*	*10/03/19 11:21*	*10/10/19 09:14*	*1*
PCB-81L	*80*		*30 - 140*	*10/03/19 11:21*	*10/10/19 09:14*	*1*
PCB-104L	*75*		*30 - 140*	*10/03/19 11:21*	*10/10/19 09:14*	*1*
PCB-105L	*79*		*30 - 140*	*10/03/19 11:21*	*10/10/19 09:14*	*1*
PCB-114L	*77*		*30 - 140*	*10/03/19 11:21*	*10/10/19 09:14*	*1*
PCB-118L	*81*		*30 - 140*	*10/03/19 11:21*	*10/10/19 09:14*	*1*
PCB-123L	*77*		*30 - 140*	*10/03/19 11:21*	*10/10/19 09:14*	*1*
PCB-126L	*87*		*30 - 140*	*10/03/19 11:21*	*10/10/19 09:14*	*1*

Client: Pacific Groundwater Group
Job ID: 580-88908-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: J5-SC1b-100to110-82719
Lab Sample ID: 580-88908-34
Date Collected: 08/27/19 17:35
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 70.9

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-155L	86		30 - 140	10/03/19 11:21	10/10/19 09:14	1
PCB-156L	83	C	30 - 140	10/03/19 11:21	10/10/19 09:14	1
PCB-157L	83	C156	30 - 140	10/03/19 11:21	10/10/19 09:14	1
PCB-167L	83		30 - 140	10/03/19 11:21	10/10/19 09:14	1
PCB-169L	100		30 - 140	10/03/19 11:21	10/10/19 09:14	1
PCB-170L	77		30 - 140	10/03/19 11:21	10/10/19 09:14	1
PCB-188L	73		30 - 140	10/03/19 11:21	10/10/19 09:14	1
PCB-189L	72		30 - 140	10/03/19 11:21	10/10/19 09:14	1
PCB-202L	84		30 - 140	10/03/19 11:21	10/10/19 09:14	1
PCB-205L	79		30 - 140	10/03/19 11:21	10/10/19 09:14	1
PCB-206L	77		30 - 140	10/03/19 11:21	10/10/19 09:14	1
PCB-208L	82		30 - 140	10/03/19 11:21	10/10/19 09:14	1
PCB-209L	78		30 - 140	10/03/19 11:21	10/10/19 09:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	72		40 - 125	10/03/19 11:21	10/10/19 09:14	1
PCB-111L	87		40 - 125	10/03/19 11:21	10/10/19 09:14	1
PCB-178L	84		40 - 125	10/03/19 11:21	10/10/19 09:14	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	29.1		0.1		%			09/11/19 15:55	1
Percent Solids	70.9		0.1		%			09/11/19 15:55	1

Client Sample ID: J5-SC1b-00to10-82719
Lab Sample ID: 580-88908-35

Date Collected: 08/27/19 14:45
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 45.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.44		0.054	0.0026	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-2	0.12		0.054	0.0028	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-3	0.22		0.054	0.0031	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-4	0.50		0.11	0.0074	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-5	0.014	J	0.054	0.0032	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-6	0.14		0.054	0.0032	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-7	0.035	J	0.054	0.0031	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-8	0.44		0.11	0.0031	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-9	0.047	J	0.054	0.0035	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-10	0.014	J q	0.054	0.0033	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-11	0.13	B	0.11	0.0030	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-12	0.075	J C	0.11	0.0030	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-13	0.075	J C12	0.11	0.0030	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-14	ND		0.054	0.0026	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-15	0.29		0.054	0.0024	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-16	0.20		0.054	0.0040	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-17	1.1		0.054	0.0031	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-18	0.53	C	0.11	0.0027	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-19	0.97		0.054	0.0038	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-20	1.9	C	0.11	0.0086	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-21	1.0	C	0.11	0.0081	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-22	0.20		0.054	0.0090	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-23	ND		0.054	0.0088	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-24	ND		0.054	0.0023	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-25	0.44		0.054	0.0083	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-26	0.22	C	0.11	0.0085	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-27	0.20		0.054	0.0023	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-28	1.9	C20	0.11	0.0086	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-29	0.22	C26	0.11	0.0085	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-30	0.53	C18	0.11	0.0027	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-31	0.94		0.11	0.0081	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-32	2.6		0.054	0.0021	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-33	1.0	C21	0.11	0.0081	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-34	0.012	J q	0.054	0.0092	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-35	0.024	J	0.054	0.0092	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-36	ND		0.054	0.0083	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-37	0.30		0.054	0.0087	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-38	0.018	J	0.054	0.0085	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-39	0.028	J	0.054	0.0080	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-40	4.2	C	0.16	0.15	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-41	4.2	C40	0.16	0.15	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-42	0.81	G	0.16	0.16	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-43	1.3	G C	0.14	0.14	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-44	41	C B	0.16	0.14	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-45	22	G C B	0.16	0.16	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-46	0.52	G	0.19	0.19	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-47	41	C44 B	0.16	0.14	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-48	0.20	q G	0.15	0.15	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-49	16	G C B	0.12	0.12	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5

Client Sample ID: J5-SC1b-00to10-82719
Lab Sample ID: 580-88908-35

Date Collected: 08/27/19 14:45
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 45.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	8.3	G C	0.15	0.15	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-51	22	G C45 B	0.16	0.16	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-52	14	G B	0.16	0.16	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-53	8.3	G C50	0.15	0.15	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-54	2.7		0.054	0.0021	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-55	ND	G	0.11	0.11	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-56	0.87	G	0.11	0.11	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-57	ND	G	0.11	0.11	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-58	ND	G	0.11	0.11	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-59	1.2	C	0.16	0.10	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-60	0.19	G	0.11	0.11	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-61	7.4	C B	0.22	0.10	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-62	1.2	C59	0.16	0.10	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-63	0.33	G	0.097	0.097	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-64	1.1	G	0.10	0.10	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-65	41	C44 B	0.16	0.14	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-66	3.6	G	0.11	0.11	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-67	0.18	G	0.10	0.10	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-68	0.65	G	0.096	0.096	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-69	16	G C49 B	0.12	0.12	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-70	7.4	C61 B	0.22	0.10	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-71	4.2	C40	0.16	0.15	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-72	0.24	G	0.11	0.11	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-73	1.3	G C43	0.14	0.14	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-74	7.4	C61 B	0.22	0.10	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-75	1.2	C59	0.16	0.10	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-76	7.4	C61 B	0.22	0.10	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-77	0.27	G	0.10	0.10	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-78	ND	G	0.11	0.11	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-79	0.22	G	0.092	0.092	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-80	ND	G	0.096	0.096	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-81	ND	G	0.11	0.11	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-82	2.1		0.054	0.0032	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-83	18	C	0.11	0.0029	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-84	5.8	B	0.054	0.0032	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-85	4.3	C B	0.16	0.0023	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-86	15	C	0.32	0.0023	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-87	15	C86	0.32	0.0023	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-88	11	C	0.11	0.0027	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-89	ND		0.054	0.0031	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-90	36	C B	0.16	0.0024	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-91	11	C88	0.11	0.0027	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-92	8.8		0.054	0.0029	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-93	9.0	C	0.11	0.0028	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-94	2.5		0.054	0.0030	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-95	23		0.054	0.0028	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-96	1.5		0.054	0.0022	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-97	15	C86	0.32	0.0023	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-98	2.3	C	0.11	0.0028	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5

Client Sample ID: J5-SC1b-00to10-82719
Lab Sample ID: 580-88908-35
Date Collected: 08/27/19 14:45
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 45.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	18	C83	0.11	0.0029	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-100	9.0	C93	0.11	0.0028	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-101	36	C90 B	0.16	0.0024	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-102	2.3	C98	0.11	0.0028	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-103	3.1		0.054	0.0026	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-104	0.62		0.054	0.0020	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-105	4.9		0.054	0.020	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-106	ND		0.054	0.021	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-107	1.7		0.054	0.020	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-108	0.58	C	0.11	0.021	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-109	15	C86	0.32	0.0023	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-110	25	C	0.11	0.0020	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-111	0.21		0.054	0.0019	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-112	ND		0.054	0.0020	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-113	36	C90 B	0.16	0.0024	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-114	0.34		0.054	0.020	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-115	25	C110	0.11	0.0020	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-116	4.3	C85 B	0.16	0.0023	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-117	4.3	C85 B	0.16	0.0023	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-118	15	B	0.054	0.020	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-119	15	C86	0.32	0.0023	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-120	0.40		0.054	0.0018	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-121	0.27		0.054	0.0020	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-122	0.18		0.054	0.023	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-123	0.16	q	0.054	0.020	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-124	0.58	C108	0.11	0.021	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-125	15	C86	0.32	0.0023	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-126	0.046	J	0.054	0.021	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-127	0.046	J	0.054	0.021	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-128	3.3	C B	0.11	0.016	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-129	31	C B	0.22	0.016	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-130	2.1		0.054	0.021	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-131	0.36		0.054	0.021	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-132	10		0.054	0.020	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-133	1.8		0.054	0.019	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-134	2.4	C	0.11	0.021	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-135	18	C B	0.11	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-136	6.2	B	0.054	0.00086	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-137	0.95		0.054	0.017	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-138	31	C129 B	0.22	0.016	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-139	0.85	C	0.11	0.018	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-140	0.85	C139	0.11	0.018	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-141	5.1		0.054	0.018	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-142	ND		0.054	0.021	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-143	2.4	C134	0.11	0.021	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-144	1.4		0.054	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-145	ND		0.054	0.00083	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-146	9.0	B	0.054	0.018	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-147	37	C B	0.11	0.018	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5

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Matrix: Solid
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Percent Solids: 45.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	0.74		0.054	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-149	37	C147 B	0.11	0.018	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-150	0.85		0.054	0.00080	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-151	18	C135 B	0.11	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-152	0.83		0.054	0.00079	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-153	29	C B	0.11	0.014	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-154	2.7		0.054	0.00098	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-155	0.081		0.054	0.00076	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-156	2.8	C	0.11	0.016	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-157	2.8	C156	0.11	0.016	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-158	2.6		0.054	0.013	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-159	0.40		0.054	0.013	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-160	31	C129 B	0.22	0.016	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-161	0.018	J q	0.054	0.013	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-162	0.083		0.054	0.013	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-163	31	C129 B	0.22	0.016	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-164	2.4		0.054	0.014	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-165	0.26		0.054	0.016	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-166	3.3	C128 B	0.11	0.016	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-167	0.98		0.054	0.012	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-168	29	C153 B	0.11	0.014	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-169	ND		0.054	0.012	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-170	11	B	0.054	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-171	3.4	C	0.11	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-172	1.9		0.054	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-173	3.4	C171	0.11	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-174	10	B	0.054	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-175	0.44		0.054	0.0010	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-176	1.4		0.054	0.00071	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-177	7.3	B	0.054	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-178	3.3		0.054	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-179	5.9		0.054	0.00077	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-180	23	C B	0.11	0.00088	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-181	0.12		0.054	0.00098	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-182	0.21		0.054	0.00095	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-183	6.9	C B	0.11	0.00096	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-184	ND		0.054	0.00077	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-185	6.9	C183 B	0.11	0.00096	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-186	ND		0.054	0.00076	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-187	15	B	0.054	0.00098	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-188	0.20		0.054	0.00070	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-189	0.44		0.054	0.0039	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-190	2.2	B	0.054	0.00079	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-191	0.49		0.054	0.00078	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-192	ND		0.054	0.00084	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-193	23	C180 B	0.11	0.00088	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-194	6.1		0.054	0.012	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-195	2.8		0.054	0.015	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-196	3.1		0.054	0.00092	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5

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Lab Sample ID: 580-88908-35

Date Collected: 08/27/19 14:45
Matrix: Solid
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Percent Solids: 45.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	0.24		0.054	0.00067	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-198	5.9	C B	0.11	0.00098	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-199	5.9	C198 B	0.11	0.00098	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-200	0.75		0.054	0.00072	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-201	0.76		0.054	0.00068	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-202	1.2		0.054	0.00077	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-203	3.8		0.054	0.00087	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-204	ND		0.054	0.00073	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-205	0.31		0.054	0.0094	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-206	1.9		0.054	0.0084	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-207	0.23		0.054	0.0060	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-208	0.44		0.054	0.0061	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
PCB-209	0.51		0.054	0.0012	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
Total Monochlorobiphenyls	0.78		0.054	0.0028	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
Total Dichlorobiphenyls	1.7	q B	0.11	0.0034	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
Total Trichlorobiphenyls	11	q	0.11	0.0066	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
Total Tetrachlorobiphenyls	130	q B	0.22	0.12	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
Total Pentachlorobiphenyls	190	q B	0.32	0.0084	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
Total Hexachlorobiphenyls	170	q B	0.22	0.012	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
Total Heptachlorobiphenyls	93	B	0.11	0.0011	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
Total Octachlorobiphenyls	25	B	0.11	0.0039	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
Total Nonachlorobiphenyls	2.6		0.054	0.0068	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5
Polychlorinated biphenyls, Total	630	q B	0.32	0.018	ng/g	☼	09/17/19 12:25	10/04/19 04:59	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*57*		*30 - 140*	*09/17/19 12:25*	*10/04/19 04:59*	*5*
PCB-3L	*63*		*30 - 140*	*09/17/19 12:25*	*10/04/19 04:59*	*5*
PCB-4L	*70*		*30 - 140*	*09/17/19 12:25*	*10/04/19 04:59*	*5*
PCB-15L	*96*		*30 - 140*	*09/17/19 12:25*	*10/04/19 04:59*	*5*
PCB-19L	*75*		*30 - 140*	*09/17/19 12:25*	*10/04/19 04:59*	*5*
PCB-37L	*95*		*30 - 140*	*09/17/19 12:25*	*10/04/19 04:59*	*5*
PCB-54L	*73*		*30 - 140*	*09/17/19 12:25*	*10/04/19 04:59*	*5*
PCB-77L	*99*		*30 - 140*	*09/17/19 12:25*	*10/04/19 04:59*	*5*
PCB-81L	*93*		*30 - 140*	*09/17/19 12:25*	*10/04/19 04:59*	*5*
PCB-104L	*89*		*30 - 140*	*09/17/19 12:25*	*10/04/19 04:59*	*5*
PCB-105L	*83*		*30 - 140*	*09/17/19 12:25*	*10/04/19 04:59*	*5*
PCB-114L	*80*		*30 - 140*	*09/17/19 12:25*	*10/04/19 04:59*	*5*
PCB-118L	*86*		*30 - 140*	*09/17/19 12:25*	*10/04/19 04:59*	*5*
PCB-123L	*82*		*30 - 140*	*09/17/19 12:25*	*10/04/19 04:59*	*5*
PCB-126L	*92*		*30 - 140*	*09/17/19 12:25*	*10/04/19 04:59*	*5*
PCB-155L	*107*		*30 - 140*	*09/17/19 12:25*	*10/04/19 04:59*	*5*
PCB-156L	*88*	*C*	*30 - 140*	*09/17/19 12:25*	*10/04/19 04:59*	*5*
PCB-157L	*88*	*C156*	*30 - 140*	*09/17/19 12:25*	*10/04/19 04:59*	*5*
PCB-167L	*83*		*30 - 140*	*09/17/19 12:25*	*10/04/19 04:59*	*5*
PCB-169L	*99*		*30 - 140*	*09/17/19 12:25*	*10/04/19 04:59*	*5*
PCB-170L	*79*		*30 - 140*	*09/17/19 12:25*	*10/04/19 04:59*	*5*
PCB-188L	*87*		*30 - 140*	*09/17/19 12:25*	*10/04/19 04:59*	*5*
PCB-189L	*89*		*30 - 140*	*09/17/19 12:25*	*10/04/19 04:59*	*5*
PCB-202L	*90*		*30 - 140*	*09/17/19 12:25*	*10/04/19 04:59*	*5*
PCB-205L	*82*		*30 - 140*	*09/17/19 12:25*	*10/04/19 04:59*	*5*

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Percent Solids: 45.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-206L	79		30 - 140	09/17/19 12:25	10/04/19 04:59	5
PCB-208L	88		30 - 140	09/17/19 12:25	10/04/19 04:59	5
PCB-209L	81		30 - 140	09/17/19 12:25	10/04/19 04:59	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	81		40 - 125	09/17/19 12:25	10/04/19 04:59	5
PCB-111L	98		40 - 125	09/17/19 12:25	10/04/19 04:59	5
PCB-178L	87		40 - 125	09/17/19 12:25	10/04/19 04:59	5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	1.6		0.053	0.0025	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-2	0.22		0.053	0.0026	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-3	0.68		0.053	0.0026	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-4	0.86		0.11	0.0020	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-5	0.039	J	0.053	0.0014	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-6	0.31		0.053	0.0014	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-7	0.083		0.053	0.0013	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-8	1.1		0.11	0.0013	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-9	0.12		0.053	0.0015	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-10	0.048	J	0.053	0.0014	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-11	0.15	B	0.11	0.0013	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-12	0.14	C	0.11	0.0013	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-13	0.14	C12	0.11	0.0013	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-14	ND		0.053	0.0011	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-15	0.56		0.053	0.0013	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-16	0.46		0.053	0.0022	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-17	1.4	B	0.053	0.0017	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-18	1.1	C B	0.11	0.0015	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-19	1.1		0.053	0.0021	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-20	3.2	C B	0.11	0.017	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-21	1.4	C B	0.11	0.016	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-22	0.48	B	0.053	0.018	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-23	ND		0.053	0.018	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-24	0.016	J	0.053	0.0013	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-25	0.52		0.053	0.017	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-26	0.39	C B	0.11	0.017	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-27	0.26		0.053	0.0012	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-28	3.2	B C20	0.11	0.017	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-29	0.39	C26 B	0.11	0.017	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-30	1.1	C18 B	0.11	0.0015	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-31	1.9	B	0.11	0.016	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-32	3.0		0.053	0.0011	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-33	1.4	B C21	0.11	0.016	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-34	0.021	J	0.053	0.019	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-35	0.085		0.053	0.019	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-36	ND		0.053	0.017	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-37	0.82	B	0.053	0.018	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-38	ND		0.053	0.017	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-39	0.036	J	0.053	0.016	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88908-1

Client Sample ID: J5-SC1b-00to10-82719
Date Collected: 08/27/19 14:45
Date Received: 09/03/19 15:00

Lab Sample ID: 580-88908-35
Matrix: Solid
Percent Solids: 45.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-40	6.0	C	0.16	0.013	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-41	6.0	C40	0.16	0.013	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-42	1.5		0.053	0.013	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-43	1.7	C	0.11	0.012	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-44	56	C B	0.16	0.011	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-45	27	C B	0.11	0.013	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-46	0.72		0.053	0.015	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-47	56	B C44	0.16	0.011	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-48	0.55		0.053	0.012	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-49	22	C B	0.11	0.010	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-50	11	C	0.11	0.012	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-51	27	C45 B	0.11	0.013	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-52	35	B	0.053	0.013	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-53	11	C50	0.11	0.012	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-54	3.2		0.053	0.0015	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-55	0.042	J	0.053	0.0090	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-56	2.0		0.053	0.0092	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-57	ND		0.053	0.0091	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-58	ND		0.053	0.0088	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-59	1.5	C	0.16	0.0086	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-60	0.64		0.053	0.0088	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-61	21	C B	0.21	0.0086	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-62	1.5	C59	0.16	0.0086	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-63	0.50		0.053	0.0080	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-64	2.9		0.053	0.0082	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-65	56	B C44	0.16	0.011	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-66	6.8	B	0.053	0.0091	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-67	0.30		0.053	0.0084	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-68	0.67	B	0.053	0.0079	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-69	22	B C49	0.11	0.010	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-70	21	C61 B	0.21	0.0086	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-71	6.0	C40	0.16	0.013	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-72	0.30		0.053	0.0089	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-73	1.7	C43	0.11	0.012	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-74	21	C61 B	0.21	0.0086	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-75	1.5	C59	0.16	0.0086	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-76	21	C61 B	0.21	0.0086	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-77	1.4		0.053	0.0086	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-78	ND		0.053	0.0089	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-79	0.39		0.053	0.0076	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-80	ND		0.053	0.0080	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-81	0.046	J q	0.053	0.0091	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-82	5.8	B	0.053	0.0017	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-83	34	C B	0.11	0.0015	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-84	16	B	0.053	0.0017	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-85	9.1	C	0.16	0.0012	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-86	38	C B	0.32	0.0012	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-87	38	B C86	0.32	0.0012	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-88	16	C B	0.11	0.0014	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5

Client Sample ID: J5-SC1b-00to10-82719
Lab Sample ID: 580-88908-35

Date Collected: 08/27/19 14:45
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 45.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-89	0.41		0.053	0.0016	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-90	69	C B	0.16	0.0013	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-91	16	C88 B	0.11	0.0014	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-92	15	B	0.053	0.0015	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-93	11	C	0.11	0.0015	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-94	2.9		0.053	0.0016	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-95	51	B	0.053	0.0015	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-96	1.9		0.053	0.0012	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-97	38	B C86	0.32	0.0012	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-98	3.2	C	0.11	0.0015	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-99	34	C83 B	0.11	0.0015	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-100	11	C93	0.11	0.0015	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-101	69	B C90	0.16	0.0013	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-102	3.2	C98	0.11	0.0015	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-103	3.6		0.053	0.0014	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-104	0.74		0.053	0.0010	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-105	16	B	0.053	0.044	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-106	ND		0.053	0.046	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-107	3.7	B	0.053	0.043	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-108	2.0	C	0.11	0.047	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-109	38	B C86	0.32	0.0012	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-110	59	C B	0.11	0.0011	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-111	0.25		0.053	0.0010	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-112	ND		0.053	0.0011	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-113	69	B C90	0.16	0.0013	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-114	0.95		0.053	0.044	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-115	59	B C110	0.11	0.0011	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-116	9.1	C85	0.16	0.0012	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-117	9.1	C85	0.16	0.0012	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-118	43	B	0.053	0.044	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-119	38	B C86	0.32	0.0012	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-120	0.40		0.053	0.00097	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-121	0.30		0.053	0.0010	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-122	0.54	B	0.053	0.050	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-123	0.62		0.053	0.043	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-124	2.0	C108	0.11	0.047	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-125	38	B C86	0.32	0.0012	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-126	0.25		0.053	0.045	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-127	ND		0.053	0.045	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-128	9.2	C B	0.11	0.0096	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-129	58	C B	0.21	0.0099	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-130	4.3	B	0.053	0.013	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-131	0.95		0.053	0.012	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-132	21	B	0.053	0.012	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-133	2.4		0.053	0.012	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-134	4.4	C	0.11	0.013	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-135	26	C B	0.11	0.0010	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-136	10	B	0.053	0.00075	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-137	2.7		0.053	0.010	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5

Client Sample ID: J5-SC1b-00to10-82719
Lab Sample ID: 580-88908-35

Date Collected: 08/27/19 14:45
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 45.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-138	58	B C129	0.21	0.0099	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-139	1.5	C	0.11	0.011	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-140	1.5	C139	0.11	0.011	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-141	9.9	B	0.053	0.011	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-142	ND		0.053	0.012	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-143	4.4	C134	0.11	0.013	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-144	2.6		0.053	0.00095	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-145	0.037	J q	0.053	0.00073	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-146	12	B	0.053	0.011	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-147	55	C B	0.11	0.011	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-148	0.85		0.053	0.00097	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-149	55	B C147	0.11	0.011	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-150	1.0		0.053	0.00071	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-151	26	C135 B	0.11	0.0010	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-152	1.0		0.053	0.00069	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-153	45	C B	0.11	0.0088	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-154	3.0		0.053	0.00086	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-155	0.096		0.053	0.00067	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-156	7.1	C B	0.11	0.0098	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-157	7.1	C156 B	0.11	0.0098	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-158	6.0	B	0.053	0.0077	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-159	0.42		0.053	0.0081	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-160	58	B C129	0.21	0.0099	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-161	ND		0.053	0.0080	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-162	ND		0.053	0.0079	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-163	58	B C129	0.21	0.0099	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-164	4.2	B	0.053	0.0086	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-165	0.32		0.053	0.0096	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-166	9.2	C128 B	0.11	0.0096	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-167	2.2	B	0.053	0.0071	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-168	45	B C153	0.11	0.0088	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-169	ND		0.053	0.0072	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-170	14	B	0.053	0.00046	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-171	4.9	C B	0.11	0.00047	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-172	2.4	B	0.053	0.00046	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-173	4.9	C171 B	0.11	0.00047	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-174	14	B	0.053	0.00048	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-175	0.60		0.053	0.00043	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-176	1.8	B	0.053	0.00030	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-177	9.7	B	0.053	0.00048	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-178	4.2	B	0.053	0.00044	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-179	7.2	B	0.053	0.00032	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-180	29	C B	0.11	0.00037	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-181	0.20		0.053	0.00041	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-182	0.27		0.053	0.00040	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-183	9.0	C B	0.11	0.00040	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-184	ND		0.053	0.00032	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-185	9.0	B C183	0.11	0.00040	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-186	ND		0.053	0.00032	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5

Client Sample ID: J5-SC1b-00to10-82719
Lab Sample ID: 580-88908-35

Date Collected: 08/27/19 14:45
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 45.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-187	18	B	0.053	0.00041	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-188	0.29		0.053	0.00030	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-189	0.61	B	0.053	0.0040	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-190	2.8	B	0.053	0.00033	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-191	0.65		0.053	0.00033	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-192	ND		0.053	0.00035	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-193	29	C180 B	0.11	0.00037	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-194	7.1	B	0.053	0.0054	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-195	3.3	B	0.053	0.0064	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-196	3.4	B	0.053	0.00038	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-197	0.25	B	0.053	0.00027	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-198	6.4	C B	0.11	0.00040	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-199	6.4	C198 B	0.11	0.00040	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-200	0.81		0.053	0.00029	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-201	0.83	B	0.053	0.00028	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-202	1.4	B	0.053	0.00031	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-203	4.2		0.053	0.00036	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-204	ND		0.053	0.00030	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-205	0.37		0.053	0.0041	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-206	2.0		0.053	0.0093	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-207	0.28		0.053	0.0065	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-208	0.48		0.053	0.0067	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
PCB-209	0.50		0.053	0.00085	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
Total Monochlorobiphenyls	2.5		0.053	0.0026	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
Total Dichlorobiphenyls	3.4	B	0.11	0.0014	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
Total Trichlorobiphenyls	16	B	0.11	0.012	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
Total Tetrachlorobiphenyls	200	B q	0.21	0.0097	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
Total Pentachlorobiphenyls	400	B	0.32	0.015	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
Total Hexachlorobiphenyls	290	B q	0.21	0.0074	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
Total Heptachlorobiphenyls	120	B	0.11	0.00056	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
Total Octachlorobiphenyls	28	B	0.11	0.0017	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
Total Nonachlorobiphenyls	2.8		0.053	0.0075	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5
Polychlorinated biphenyls, Total	1100	B q	0.32	0.0063	ng/g	☼	10/03/19 11:21	10/11/19 16:00	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*64*		*30 - 140*	*10/03/19 11:21*	*10/11/19 16:00*	*5*
PCB-3L	*67*		*30 - 140*	*10/03/19 11:21*	*10/11/19 16:00*	*5*
PCB-4L	*74*		*30 - 140*	*10/03/19 11:21*	*10/11/19 16:00*	*5*
PCB-15L	*80*		*30 - 140*	*10/03/19 11:21*	*10/11/19 16:00*	*5*
PCB-19L	*79*		*30 - 140*	*10/03/19 11:21*	*10/11/19 16:00*	*5*
PCB-37L	*91*		*30 - 140*	*10/03/19 11:21*	*10/11/19 16:00*	*5*
PCB-54L	*80*		*30 - 140*	*10/03/19 11:21*	*10/11/19 16:00*	*5*
PCB-77L	*92*		*30 - 140*	*10/03/19 11:21*	*10/11/19 16:00*	*5*
PCB-81L	*88*		*30 - 140*	*10/03/19 11:21*	*10/11/19 16:00*	*5*
PCB-104L	*90*		*30 - 140*	*10/03/19 11:21*	*10/11/19 16:00*	*5*
PCB-105L	*85*		*30 - 140*	*10/03/19 11:21*	*10/11/19 16:00*	*5*
PCB-114L	*81*		*30 - 140*	*10/03/19 11:21*	*10/11/19 16:00*	*5*
PCB-118L	*83*		*30 - 140*	*10/03/19 11:21*	*10/11/19 16:00*	*5*
PCB-123L	*83*		*30 - 140*	*10/03/19 11:21*	*10/11/19 16:00*	*5*
PCB-126L	*93*		*30 - 140*	*10/03/19 11:21*	*10/11/19 16:00*	*5*

Client: Pacific Groundwater Group
Job ID: 580-88908-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: J5-SC1b-00to10-82719
Lab Sample ID: 580-88908-35

Date Collected: 08/27/19 14:45
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 45.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-155L	102		30 - 140	10/03/19 11:21	10/11/19 16:00	5
PCB-156L	85	C	30 - 140	10/03/19 11:21	10/11/19 16:00	5
PCB-157L	85	C156	30 - 140	10/03/19 11:21	10/11/19 16:00	5
PCB-167L	83		30 - 140	10/03/19 11:21	10/11/19 16:00	5
PCB-169L	98		30 - 140	10/03/19 11:21	10/11/19 16:00	5
PCB-170L	82		30 - 140	10/03/19 11:21	10/11/19 16:00	5
PCB-188L	80		30 - 140	10/03/19 11:21	10/11/19 16:00	5
PCB-189L	101		30 - 140	10/03/19 11:21	10/11/19 16:00	5
PCB-202L	89		30 - 140	10/03/19 11:21	10/11/19 16:00	5
PCB-205L	82		30 - 140	10/03/19 11:21	10/11/19 16:00	5
PCB-206L	79		30 - 140	10/03/19 11:21	10/11/19 16:00	5
PCB-208L	80		30 - 140	10/03/19 11:21	10/11/19 16:00	5
PCB-209L	69		30 - 140	10/03/19 11:21	10/11/19 16:00	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	82		40 - 125	10/03/19 11:21	10/11/19 16:00	5
PCB-111L	94		40 - 125	10/03/19 11:21	10/11/19 16:00	5
PCB-178L	91		40 - 125	10/03/19 11:21	10/11/19 16:00	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	54.7		0.1		%			09/11/19 15:55	1
Percent Solids	45.3		0.1		%			09/11/19 15:55	1

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88908-1

Client Sample ID: J5-SC1b-10to20-82719
Date Collected: 08/27/19 14:50
Date Received: 09/03/19 15:00

Lab Sample ID: 580-88908-36
Matrix: Solid
Percent Solids: 49.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	1.5		0.25	0.012	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-2	0.097	J q	0.25	0.013	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-3	0.66		0.25	0.014	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-4	0.87		0.50	0.033	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-5	ND		0.25	0.015	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-6	0.57		0.25	0.015	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-7	0.17	J	0.25	0.015	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-8	1.9		0.50	0.015	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-9	0.21	J	0.25	0.017	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-10	0.058	J q	0.25	0.016	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-11	0.18	J B	0.50	0.015	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-12	0.23	J C	0.50	0.015	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-13	0.23	J C12	0.50	0.015	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-14	ND		0.25	0.013	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-15	0.81		0.25	0.012	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-16	0.96		0.25	0.020	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-17	1.5		0.25	0.015	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-18	2.2	C	0.50	0.013	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-19	0.24	J q	0.25	0.019	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-20	4.9	C	0.50	0.025	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-21	2.1	C	0.50	0.024	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-22	0.94		0.25	0.026	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-23	ND		0.25	0.026	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-24	0.044	J	0.25	0.012	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-25	0.57		0.25	0.024	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-26	0.82	C	0.50	0.025	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-27	0.20	J	0.25	0.011	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-28	4.9	C20	0.50	0.025	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-29	0.82	C26	0.50	0.025	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-30	2.2	C18	0.50	0.013	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-31	3.3		0.50	0.024	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-32	1.1		0.25	0.010	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-33	2.1	C21	0.50	0.024	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-34	0.065	J	0.25	0.027	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-35	0.11	J	0.25	0.027	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-36	ND		0.25	0.024	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-37	1.1		0.25	0.025	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-38	ND		0.25	0.025	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-39	0.16	J	0.25	0.023	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-40	5.7	C	0.75	0.026	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-41	5.7	C40	0.75	0.026	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-42	3.8		0.25	0.027	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-43	ND	C	0.50	0.024	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-44	24	C B	0.75	0.023	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-45	2.2	C B	0.50	0.027	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-46	0.53		0.25	0.031	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-47	24	C44 B	0.75	0.023	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-48	1.1		0.25	0.025	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-49	18	C B	0.50	0.021	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88908-1

Client Sample ID: J5-SC1b-10to20-82719
Date Collected: 08/27/19 14:50
Date Received: 09/03/19 15:00

Lab Sample ID: 580-88908-36
Matrix: Solid
Percent Solids: 49.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	2.4	C	0.50	0.025	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-51	2.2	C45 B	0.50	0.027	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-52	46	B	0.25	0.026	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-53	2.4	C50	0.50	0.025	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-54	0.12	J	0.25	0.0037	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-55	ND		0.25	0.018	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-56	4.2		0.25	0.019	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-57	ND		0.25	0.018	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-58	0.15	J q	0.25	0.018	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-59	0.91	C	0.75	0.017	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-60	0.81		0.25	0.018	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-61	35	C B	1.0	0.017	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-62	0.91	C59	0.75	0.017	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-63	0.57		0.25	0.016	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-64	5.6		0.25	0.017	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-65	24	C44 B	0.75	0.023	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-66	16		0.25	0.019	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-67	0.24	J q	0.25	0.017	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-68	0.57		0.25	0.016	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-69	18	C49 B	0.50	0.021	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-70	35	C61 B	1.0	0.017	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-71	5.7	C40	0.75	0.026	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-72	1.1		0.25	0.018	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-73	ND	C43	0.50	0.024	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-74	35	C61 B	1.0	0.017	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-75	0.91	C59	0.75	0.017	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-76	35	C61 B	1.0	0.017	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-77	1.3		0.25	0.018	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-78	ND		0.25	0.018	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-79	1.1		0.25	0.015	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-80	ND		0.25	0.016	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-81	1.2		0.25	0.018	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-82	8.0		0.25	0.015	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-83	50	C	0.50	0.014	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-84	22	B	0.25	0.015	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-85	11	C B	0.75	0.010	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-86	49	C	1.5	0.011	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-87	49	C86	1.5	0.011	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-88	12	C	0.50	0.013	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-89	0.58		0.25	0.014	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-90	86	C B	0.75	0.011	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-91	12	C88	0.50	0.013	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-92	18		0.25	0.013	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-93	1.5	C	0.50	0.013	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-94	0.39	q	0.25	0.014	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-95	69		0.25	0.013	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-96	0.53		0.25	0.010	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-97	49	C86	1.5	0.011	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-98	2.9	C	0.50	0.013	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88908-1

Client Sample ID: J5-SC1b-10to20-82719
Date Collected: 08/27/19 14:50
Date Received: 09/03/19 15:00

Lab Sample ID: 580-88908-36
Matrix: Solid
Percent Solids: 49.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	50	C83	0.50	0.014	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-100	1.5	C93	0.50	0.013	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-101	86	C90 B	0.75	0.011	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-102	2.9	C98	0.50	0.013	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-103	1.7		0.25	0.012	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-104	ND		0.25	0.0091	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-105	19		0.25	0.057	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-106	ND		0.25	0.056	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-107	5.1		0.25	0.052	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-108	2.3	C	0.50	0.056	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-109	49	C86	1.5	0.011	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-110	92	C	0.50	0.0094	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-111	ND		0.25	0.0089	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-112	ND		0.25	0.0093	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-113	86	C90 B	0.75	0.011	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-114	1.2		0.25	0.050	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-115	92	C110	0.50	0.0094	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-116	11	C85 B	0.75	0.010	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-117	11	C85 B	0.75	0.010	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-118	60	B	0.25	0.051	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-119	49	C86	1.5	0.011	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-120	0.81		0.25	0.0085	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-121	ND		0.25	0.0091	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-122	0.77		0.25	0.061	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-123	0.79		0.25	0.054	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-124	2.3	C108	0.50	0.056	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-125	49	C86	1.5	0.011	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-126	0.067	J	0.25	0.054	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-127	0.16	J	0.25	0.055	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-128	12	C B	0.50	0.024	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-129	69	C B	1.0	0.025	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-130	5.3		0.25	0.032	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-131	1.1		0.25	0.031	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-132	25		0.25	0.030	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-133	1.5		0.25	0.029	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-134	4.6	C	0.50	0.031	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-135	24	C B	0.50	0.0080	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-136	11	B	0.25	0.0060	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-137	3.4		0.25	0.025	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-138	69	C129 B	1.0	0.025	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-139	1.7	C	0.50	0.027	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-140	1.7	C139	0.50	0.027	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-141	11		0.25	0.028	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-142	ND		0.25	0.031	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-143	4.6	C134	0.50	0.031	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-144	2.9		0.25	0.0076	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-145	0.071	J q	0.25	0.0058	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-146	13	B	0.25	0.026	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-147	58	C B	0.50	0.027	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5

Client Sample ID: J5-SC1b-10to20-82719
Lab Sample ID: 580-88908-36

Date Collected: 08/27/19 14:50
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 49.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	0.36		0.25	0.0077	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-149	58	C147 B	0.50	0.027	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-150	0.36		0.25	0.0056	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-151	24	C135 B	0.50	0.0080	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-152	0.089	J	0.25	0.0055	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-153	55	C B	0.50	0.022	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-154	2.3		0.25	0.0068	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-155	0.018	J	0.25	0.0053	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-156	9.0	C	0.50	0.025	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-157	9.0	C156	0.50	0.025	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-158	6.9		0.25	0.019	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-159	0.53		0.25	0.020	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-160	69	C129 B	1.0	0.025	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-161	ND		0.25	0.020	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-162	0.27		0.25	0.020	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-163	69	C129 B	1.0	0.025	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-164	5.1		0.25	0.021	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-165	ND		0.25	0.024	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-166	12	C128 B	0.50	0.024	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-167	2.8		0.25	0.017	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-168	55	C153 B	0.50	0.022	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-169	0.073	J	0.25	0.018	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-170	13	B	0.25	0.0063	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-171	4.7	C	0.50	0.0063	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-172	2.4		0.25	0.0061	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-173	4.7	C171	0.50	0.0063	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-174	14	B	0.25	0.0063	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-175	0.62		0.25	0.0056	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-176	1.7		0.25	0.0040	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-177	8.6	B	0.25	0.0064	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-178	3.0		0.25	0.0059	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-179	5.8		0.25	0.0043	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-180	27	C B	0.50	0.0049	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-181	0.18	J q	0.25	0.0054	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-182	0.18	J	0.25	0.0052	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-183	8.7	C B	0.50	0.0053	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-184	ND		0.25	0.0042	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-185	8.7	C183 B	0.50	0.0053	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-186	ND		0.25	0.0042	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-187	16	B	0.25	0.0054	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-188	0.067	J	0.25	0.0038	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-189	0.51		0.25	0.0096	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-190	2.6	B	0.25	0.0044	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-191	0.61		0.25	0.0043	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-192	ND		0.25	0.0047	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-193	27	C180 B	0.50	0.0049	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-194	5.2		0.25	0.047	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-195	2.3		0.25	0.056	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-196	2.8		0.25	0.013	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5

Client Sample ID: J5-SC1b-10to20-82719
Lab Sample ID: 580-88908-36

Date Collected: 08/27/19 14:50
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 49.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	0.15	J q	0.25	0.0094	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-198	6.0	C B	0.50	0.014	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-199	6.0	C198 B	0.50	0.014	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-200	0.79		0.25	0.010	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-201	0.75		0.25	0.0095	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-202	1.2		0.25	0.011	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-203	3.6		0.25	0.012	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-204	ND		0.25	0.010	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-205	0.25	q	0.25	0.035	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-206	2.9	q	0.25	0.041	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-207	0.28		0.25	0.030	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-208	0.63		0.25	0.032	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
PCB-209	1.6		0.25	0.0060	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
Total Monochlorobiphenyls	2.3	q	0.25	0.013	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
Total Dichlorobiphenyls	5.0	q B	0.50	0.016	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
Total Trichlorobiphenyls	20	q	0.50	0.021	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
Total Tetrachlorobiphenyls	170	q B	1.0	0.020	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
Total Pentachlorobiphenyls	510	q B	1.5	0.026	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
Total Hexachlorobiphenyls	330	q B	1.0	0.020	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
Total Heptachlorobiphenyls	110	q B	0.50	0.0054	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
Total Octachlorobiphenyls	23	q B	0.50	0.021	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
Total Nonachlorobiphenyls	3.8	q	0.25	0.034	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5
Polychlorinated biphenyls, Total	1200	q B	1.5	0.019	ng/g	☼	09/17/19 12:25	10/04/19 06:01	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*58*		*30 - 140*	*09/17/19 12:25*	*10/04/19 06:01*	*5*
PCB-3L	*62*		*30 - 140*	*09/17/19 12:25*	*10/04/19 06:01*	*5*
PCB-4L	*73*		*30 - 140*	*09/17/19 12:25*	*10/04/19 06:01*	*5*
PCB-15L	*82*		*30 - 140*	*09/17/19 12:25*	*10/04/19 06:01*	*5*
PCB-19L	*71*		*30 - 140*	*09/17/19 12:25*	*10/04/19 06:01*	*5*
PCB-37L	*89*		*30 - 140*	*09/17/19 12:25*	*10/04/19 06:01*	*5*
PCB-54L	*74*		*30 - 140*	*09/17/19 12:25*	*10/04/19 06:01*	*5*
PCB-77L	*88*		*30 - 140*	*09/17/19 12:25*	*10/04/19 06:01*	*5*
PCB-81L	*85*		*30 - 140*	*09/17/19 12:25*	*10/04/19 06:01*	*5*
PCB-104L	*83*		*30 - 140*	*09/17/19 12:25*	*10/04/19 06:01*	*5*
PCB-105L	*79*		*30 - 140*	*09/17/19 12:25*	*10/04/19 06:01*	*5*
PCB-114L	*79*		*30 - 140*	*09/17/19 12:25*	*10/04/19 06:01*	*5*
PCB-118L	*82*		*30 - 140*	*09/17/19 12:25*	*10/04/19 06:01*	*5*
PCB-123L	*80*		*30 - 140*	*09/17/19 12:25*	*10/04/19 06:01*	*5*
PCB-126L	*88*		*30 - 140*	*09/17/19 12:25*	*10/04/19 06:01*	*5*
PCB-155L	*96*		*30 - 140*	*09/17/19 12:25*	*10/04/19 06:01*	*5*
PCB-156L	*84*	*C*	*30 - 140*	*09/17/19 12:25*	*10/04/19 06:01*	*5*
PCB-157L	*84*	*C156*	*30 - 140*	*09/17/19 12:25*	*10/04/19 06:01*	*5*
PCB-167L	*82*		*30 - 140*	*09/17/19 12:25*	*10/04/19 06:01*	*5*
PCB-169L	*96*		*30 - 140*	*09/17/19 12:25*	*10/04/19 06:01*	*5*
PCB-170L	*77*		*30 - 140*	*09/17/19 12:25*	*10/04/19 06:01*	*5*
PCB-188L	*77*		*30 - 140*	*09/17/19 12:25*	*10/04/19 06:01*	*5*
PCB-189L	*83*		*30 - 140*	*09/17/19 12:25*	*10/04/19 06:01*	*5*
PCB-202L	*89*		*30 - 140*	*09/17/19 12:25*	*10/04/19 06:01*	*5*
PCB-205L	*77*		*30 - 140*	*09/17/19 12:25*	*10/04/19 06:01*	*5*

Client Sample ID: J5-SC1b-10to20-82719
Lab Sample ID: 580-88908-36

Date Collected: 08/27/19 14:50
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 49.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-206L	76		30 - 140	09/17/19 12:25	10/04/19 06:01	5
PCB-208L	82		30 - 140	09/17/19 12:25	10/04/19 06:01	5
PCB-209L	75		30 - 140	09/17/19 12:25	10/04/19 06:01	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	79		40 - 125	09/17/19 12:25	10/04/19 06:01	5
PCB-111L	91		40 - 125	09/17/19 12:25	10/04/19 06:01	5
PCB-178L	87		40 - 125	09/17/19 12:25	10/04/19 06:01	5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	2.0		0.049	0.0053	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-2	0.18		0.049	0.0055	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-3	0.89		0.049	0.0057	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-4	0.81		0.097	0.0035	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-5	0.067		0.049	0.0022	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-6	0.56		0.049	0.0022	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-7	0.16		0.049	0.0021	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-8	1.8		0.097	0.0022	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-9	0.20		0.049	0.0024	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-10	0.056		0.049	0.0023	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-11	0.13	B	0.097	0.0021	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-12	0.26	C	0.097	0.0021	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-13	0.26	C12	0.097	0.0021	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-14	ND		0.049	0.0018	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-15	0.83		0.049	0.0020	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-16	0.91		0.049	0.0025	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-17	1.4	B	0.049	0.0020	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-18	2.0	C B	0.097	0.0017	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-19	0.25		0.049	0.0023	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-20	5.0	C B	0.097	0.028	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-21	2.0	C B	0.097	0.026	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-22	0.93	B	0.049	0.029	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-23	ND		0.049	0.029	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-24	0.028	J	0.049	0.0015	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-25	0.57		0.049	0.027	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-26	0.83	C B	0.097	0.028	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-27	0.18		0.049	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-28	5.0	C20 B	0.097	0.028	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-29	0.83	C26 B	0.097	0.028	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-30	2.0	C18 B	0.097	0.0017	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-31	3.3	B	0.097	0.026	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-32	1.0		0.049	0.0013	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-33	2.0	C21 B	0.097	0.026	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-34	0.074		0.049	0.030	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-35	0.11		0.049	0.030	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-36	ND		0.049	0.027	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-37	1.2	B	0.049	0.028	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-38	ND		0.049	0.028	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-39	0.16		0.049	0.026	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88908-1

Client Sample ID: J5-SC1b-10to20-82719
Date Collected: 08/27/19 14:50
Date Received: 09/03/19 15:00

Lab Sample ID: 580-88908-36
Matrix: Solid
Percent Solids: 49.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-40	5.8	C	0.15	0.012	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-41	5.8	C40	0.15	0.012	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-42	3.9		0.049	0.013	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-43	0.42	C	0.097	0.011	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-44	21	C B	0.15	0.011	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-45	2.1	C B	0.097	0.012	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-46	0.53		0.049	0.014	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-47	21	C44 B	0.15	0.011	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-48	1.1		0.049	0.012	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-49	17	C B	0.097	0.0096	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-50	2.3	C	0.097	0.012	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-51	2.1	C45 B	0.097	0.012	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-52	37	B	0.049	0.012	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-53	2.3	C50	0.097	0.012	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-54	0.12		0.049	0.0010	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-55	0.11		0.049	0.0085	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-56	4.0		0.049	0.0087	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-57	ND		0.049	0.0086	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-58	0.22		0.049	0.0083	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-59	0.94	C	0.15	0.0081	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-60	0.59		0.049	0.0083	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-61	29	C B	0.19	0.0081	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-62	0.94	C59	0.15	0.0081	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-63	0.58		0.049	0.0075	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-64	5.1		0.049	0.0077	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-65	21	C44 B	0.15	0.011	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-66	16	B	0.049	0.0086	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-67	0.27		0.049	0.0079	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-68	0.59	B	0.049	0.0074	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-69	17	C49 B	0.097	0.0096	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-70	29	C61 B	0.19	0.0081	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-71	5.8	C40	0.15	0.012	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-72	1.1		0.049	0.0083	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-73	0.42	C43	0.097	0.011	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-74	29	C61 B	0.19	0.0081	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-75	0.94	C59	0.15	0.0081	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-76	29	C61 B	0.19	0.0081	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-77	1.3		0.049	0.0080	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-78	ND		0.049	0.0083	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-79	0.77		0.049	0.0071	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-80	ND		0.049	0.0075	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-81	0.044	J	0.049	0.0085	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-82	5.0	B	0.049	0.0019	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-83	36	C B	0.097	0.0017	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-84	17	B	0.049	0.0019	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-85	7.3	C	0.15	0.0013	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-86	33	C B	0.29	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-87	33	C86 B	0.29	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-88	10	C B	0.097	0.0016	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1

Client Sample ID: J5-SC1b-10to20-82719
Lab Sample ID: 580-88908-36

Date Collected: 08/27/19 14:50
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 49.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-89	0.44		0.049	0.0018	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-90	61	C B	0.15	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-91	10	C88 B	0.097	0.0016	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-92	14	B	0.049	0.0017	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-93	1.3	C	0.097	0.0017	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-94	0.40		0.049	0.0018	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-95	52	B	0.049	0.0017	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-96	0.42		0.049	0.0013	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-97	33	C86 B	0.29	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-98	2.4	C	0.097	0.0016	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-99	36	C83 B	0.097	0.0017	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-100	1.3	C93	0.097	0.0017	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-101	61	C90 B	0.15	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-102	2.4	C98	0.097	0.0016	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-103	1.5		0.049	0.0016	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-104	ND		0.049	0.0012	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-105	12	B	0.049	0.030	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-106	ND		0.049	0.030	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-107	4.0	B	0.049	0.029	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-108	1.6	C	0.097	0.031	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-109	33	C86 B	0.29	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-110	61	C B	0.097	0.0012	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-111	ND		0.049	0.0011	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-112	ND		0.049	0.0012	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-113	61	C90 B	0.15	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-114	0.77		0.049	0.027	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-115	61	C110 B	0.097	0.0012	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-116	7.3	C85	0.15	0.0013	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-117	7.3	C85	0.15	0.0013	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-118	43	B	0.049	0.029	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-119	33	C86 B	0.29	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-120	0.62		0.049	0.0011	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-121	ND		0.049	0.0012	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-122	0.51	B	0.049	0.033	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-123	0.52		0.049	0.030	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-124	1.6	C108	0.097	0.031	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-125	33	C86 B	0.29	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-126	0.18		0.049	0.030	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-127	ND		0.049	0.030	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-128	8.7	C B	0.097	0.0085	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-129	51	C B	0.19	0.0088	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-130	4.2	B	0.049	0.011	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-131	0.85		0.049	0.011	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-132	20	B	0.049	0.011	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-133	1.3		0.049	0.010	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-134	3.7	C	0.097	0.011	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-135	17	C B	0.097	0.0029	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-136	7.8	B	0.049	0.0022	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-137	2.4		0.049	0.0090	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88908-1

Client Sample ID: J5-SC1b-10to20-82719
Date Collected: 08/27/19 14:50
Date Received: 09/03/19 15:00

Lab Sample ID: 580-88908-36
Matrix: Solid
Percent Solids: 49.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-138	51	C129 B	0.19	0.0088	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-139	1.3	C	0.097	0.0095	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-140	1.3	C139	0.097	0.0095	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-141	8.2	B	0.049	0.0099	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-142	ND		0.049	0.011	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-143	3.7	C134	0.097	0.011	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-144	1.9		0.049	0.0027	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-145	0.035	J	0.049	0.0021	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-146	11	B	0.049	0.0094	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-147	44	C B	0.097	0.0098	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-148	0.26		0.049	0.0028	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-149	44	C147 B	0.097	0.0098	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-150	0.28		0.049	0.0020	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-151	17	C135 B	0.097	0.0029	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-152	0.064		0.049	0.0020	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-153	42	C B	0.097	0.0078	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-154	1.6		0.049	0.0025	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-155	ND		0.049	0.0019	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-156	6.4	C B	0.097	0.0090	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-157	6.4	C156 B	0.097	0.0090	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-158	4.9	B	0.049	0.0069	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-159	0.36		0.049	0.0072	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-160	51	C129 B	0.19	0.0088	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-161	ND		0.049	0.0071	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-162	ND		0.049	0.0070	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-163	51	C129 B	0.19	0.0088	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-164	3.9	B	0.049	0.0076	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-165	ND		0.049	0.0085	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-166	8.7	C128 B	0.097	0.0085	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-167	2.0	B	0.049	0.0059	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-168	42	C153 B	0.097	0.0078	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-169	ND		0.049	0.0065	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-170	9.9	B	0.049	0.0020	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-171	3.4	C B	0.097	0.0020	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-172	1.8	B	0.049	0.0019	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-173	3.4	C171 B	0.097	0.0020	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-174	11	B	0.049	0.0020	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-175	0.47		0.049	0.0018	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-176	1.3	B	0.049	0.0012	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-177	6.5	B	0.049	0.0020	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-178	2.3	B	0.049	0.0019	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-179	4.7	B	0.049	0.0013	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-180	20	C B	0.097	0.0015	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-181	0.14		0.049	0.0017	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-182	0.15		0.049	0.0017	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-183	6.7	C B	0.097	0.0017	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-184	ND		0.049	0.0013	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-185	6.7	C183 B	0.097	0.0017	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-186	ND		0.049	0.0013	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1

Client Sample ID: J5-SC1b-10to20-82719
Lab Sample ID: 580-88908-36
Date Collected: 08/27/19 14:50
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 49.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-187	**13**	**B**	0.049	0.0017	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-188	ND		0.049	0.0012	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-189	**0.40**	**B**	0.049	0.0046	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-190	**1.8**	**B**	0.049	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-191	**0.45**		0.049	0.0014	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-192	ND		0.049	0.0015	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-193	**20**	**C180 B**	0.097	0.0015	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-194	**4.7**	**B**	0.049	0.020	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-195	**2.0**	**B**	0.049	0.024	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-196	**2.3**	**B**	0.049	0.0046	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-197	**0.18**	**B**	0.049	0.0034	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-198	**5.0**	**C B**	0.097	0.0049	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-199	**5.0**	**C198 B**	0.097	0.0049	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-200	**0.60**		0.049	0.0036	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-201	**0.64**	**B**	0.049	0.0034	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-202	**1.0**	**B**	0.049	0.0038	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-203	**3.0**		0.049	0.0044	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-204	ND		0.049	0.0037	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-205	**0.22**		0.049	0.015	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-206	**5.3**	**q**	0.049	0.0081	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-207	**0.24**		0.049	0.0056	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-208	**0.61**		0.049	0.0057	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
PCB-209	**1.2**		0.049	0.0026	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
Total Monochlorobiphenyls	**3.1**		0.049	0.0055	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
Total Dichlorobiphenyls	**4.9**	**B**	0.097	0.0023	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
Total Trichlorobiphenyls	**20**	**q B**	0.097	0.019	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
Total Tetrachlorobiphenyls	**150**	**B**	0.19	0.0091	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
Total Pentachlorobiphenyls	**370**	**B**	0.29	0.011	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
Total Hexachlorobiphenyls	**250**	**B**	0.19	0.0070	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
Total Heptachlorobiphenyls	**84**	**B**	0.097	0.0018	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
Total Octachlorobiphenyls	**20**	**B**	0.097	0.0083	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
Total Nonachlorobiphenyls	**6.2**	**q**	0.049	0.0065	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1
Polychlorinated biphenyls, Total	**900**	**q B**	0.29	0.0074	ng/g	☼	10/03/19 11:21	10/09/19 19:50	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*64*		*30 - 140*	*10/03/19 11:21*	*10/09/19 19:50*	*1*
PCB-3L	*67*		*30 - 140*	*10/03/19 11:21*	*10/09/19 19:50*	*1*
PCB-4L	*69*		*30 - 140*	*10/03/19 11:21*	*10/09/19 19:50*	*1*
PCB-15L	*84*		*30 - 140*	*10/03/19 11:21*	*10/09/19 19:50*	*1*
PCB-19L	*73*		*30 - 140*	*10/03/19 11:21*	*10/09/19 19:50*	*1*
PCB-37L	*90*		*30 - 140*	*10/03/19 11:21*	*10/09/19 19:50*	*1*
PCB-54L	*75*		*30 - 140*	*10/03/19 11:21*	*10/09/19 19:50*	*1*
PCB-77L	*90*		*30 - 140*	*10/03/19 11:21*	*10/09/19 19:50*	*1*
PCB-81L	*86*		*30 - 140*	*10/03/19 11:21*	*10/09/19 19:50*	*1*
PCB-104L	*90*		*30 - 140*	*10/03/19 11:21*	*10/09/19 19:50*	*1*
PCB-105L	*87*		*30 - 140*	*10/03/19 11:21*	*10/09/19 19:50*	*1*
PCB-114L	*86*		*30 - 140*	*10/03/19 11:21*	*10/09/19 19:50*	*1*
PCB-118L	*88*		*30 - 140*	*10/03/19 11:21*	*10/09/19 19:50*	*1*
PCB-123L	*87*		*30 - 140*	*10/03/19 11:21*	*10/09/19 19:50*	*1*
PCB-126L	*97*		*30 - 140*	*10/03/19 11:21*	*10/09/19 19:50*	*1*

Client: Pacific Groundwater Group
Job ID: 580-88908-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: J5-SC1b-10to20-82719
Lab Sample ID: 580-88908-36
Date Collected: 08/27/19 14:50
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 49.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) - RE (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-155L	104		30 - 140	10/03/19 11:21	10/09/19 19:50	1
PCB-156L	83	C	30 - 140	10/03/19 11:21	10/09/19 19:50	1
PCB-157L	83	C156	30 - 140	10/03/19 11:21	10/09/19 19:50	1
PCB-167L	84		30 - 140	10/03/19 11:21	10/09/19 19:50	1
PCB-169L	96		30 - 140	10/03/19 11:21	10/09/19 19:50	1
PCB-170L	83		30 - 140	10/03/19 11:21	10/09/19 19:50	1
PCB-188L	84		30 - 140	10/03/19 11:21	10/09/19 19:50	1
PCB-189L	99		30 - 140	10/03/19 11:21	10/09/19 19:50	1
PCB-202L	86		30 - 140	10/03/19 11:21	10/09/19 19:50	1
PCB-205L	79		30 - 140	10/03/19 11:21	10/09/19 19:50	1
PCB-206L	73		30 - 140	10/03/19 11:21	10/09/19 19:50	1
PCB-208L	80		30 - 140	10/03/19 11:21	10/09/19 19:50	1
PCB-209L	69		30 - 140	10/03/19 11:21	10/09/19 19:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	79		40 - 125	10/03/19 11:21	10/09/19 19:50	1
PCB-111L	90		40 - 125	10/03/19 11:21	10/09/19 19:50	1
PCB-178L	92		40 - 125	10/03/19 11:21	10/09/19 19:50	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	50.7		0.1		%			09/11/19 15:55	1
Percent Solids	49.3		0.1		%			09/11/19 15:55	1

Client Sample ID: 711-82719
Lab Sample ID: 580-88908-74
Date Collected: 08/27/19 08:40
Matrix: Water
Date Received: 09/03/19 15:00

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	**0.0030**	**J B**	0.040	0.00057	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-2	ND		0.040	0.00059	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-3	**0.0025**	**J q B**	0.040	0.00061	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-4	ND		0.060	0.0020	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-5	**0.0023**	**J q**	0.040	0.0014	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-6	ND		0.040	0.0014	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-7	ND		0.040	0.0013	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-8	**0.0046**	**J q B**	0.060	0.0013	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-9	ND		0.040	0.0015	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-10	ND		0.040	0.0014	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-11	**0.025**	**J B**	0.060	0.0013	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-12	**0.0045**	**J q C B**	0.080	0.0013	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-13	**0.0045**	**J q C12 B**	0.080	0.0013	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-14	**0.0038**	**J**	0.040	0.0011	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-15	**0.0040**	**J q B**	0.040	0.0013	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-16	ND		0.040	0.0013	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-17	**0.0036**	**J q B**	0.040	0.0010	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-18	**0.0077**	**J C B**	0.080	0.00090	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-19	ND		0.040	0.0013	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-20	**0.0067**	**J C B**	0.080	0.00078	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-21	**0.0052**	**J C B**	0.080	0.00074	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-22	**0.0029**	**J q B**	0.040	0.00082	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-23	ND		0.040	0.00080	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-24	ND		0.040	0.00078	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-25	**0.00089**	**J q B**	0.040	0.00075	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-26	**0.0029**	**J q C B**	0.080	0.00077	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-27	**0.0021**	**J q B**	0.040	0.00076	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-28	**0.0067**	**J C20 B**	0.080	0.00078	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-29	**0.0029**	**J q C26 B**	0.080	0.00077	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-30	**0.0077**	**J C18 B**	0.080	0.00090	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-31	**0.0046**	**J B**	0.040	0.00074	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-32	**0.0047**	**J B**	0.040	0.00070	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-33	**0.0052**	**J C21 B**	0.080	0.00074	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-34	ND		0.040	0.00084	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-35	ND		0.040	0.00083	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-36	ND		0.040	0.00075	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-37	**0.0016**	**J q B**	0.040	0.00079	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-38	ND		0.040	0.00077	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-39	ND		0.040	0.00073	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-40	ND	C	0.12	0.0013	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-41	ND	C40	0.12	0.0013	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-42	ND		0.040	0.0014	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-43	ND	C	0.080	0.0012	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-44	**0.018**	**J C B**	0.12	0.0012	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-45	ND	C	0.080	0.0013	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-46	ND		0.040	0.0016	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-47	**0.018**	**J C44 B**	0.12	0.0012	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-48	ND		0.040	0.0013	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-49	**0.0067**	**J C B**	0.080	0.0010	ng/L		09/16/19 12:34	09/24/19 17:59	1

Client Sample ID: 711-82719
Lab Sample ID: 580-88908-74
Date Collected: 08/27/19 08:40
Matrix: Water
Date Received: 09/03/19 15:00

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	**0.0038**	**J C B**	0.080	0.0013	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-51	ND	C45	0.080	0.0013	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-52	**0.0086**	**J B**	0.040	0.0013	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-53	**0.0038**	**J C50 B**	0.080	0.0013	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-54	ND		0.040	0.0011	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-55	ND		0.040	0.00092	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-56	**0.0022**	**J q B**	0.040	0.00094	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-57	ND		0.040	0.00093	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-58	ND		0.040	0.00090	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-59	ND	C	0.12	0.00088	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-60	ND		0.040	0.00090	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-61	**0.0094**	**J C B**	0.16	0.00088	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-62	ND	C59	0.12	0.00088	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-63	ND		0.040	0.00081	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-64	**0.0031**	**J B**	0.040	0.00084	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-65	**0.018**	**J C44 B**	0.12	0.0012	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-66	**0.0047**	**J B**	0.040	0.00093	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-67	ND		0.040	0.00085	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-68	**0.0019**	**J q B**	0.040	0.00081	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-69	**0.0067**	**J C49 B**	0.080	0.0010	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-70	**0.0094**	**J C61 B**	0.16	0.00088	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-71	ND	C40	0.12	0.0013	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-72	ND		0.040	0.00091	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-73	ND	C43	0.080	0.0012	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-74	**0.0094**	**J C61 B**	0.16	0.00088	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-75	ND	C59	0.12	0.00088	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-76	**0.0094**	**J C61 B**	0.16	0.00088	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-77	ND		0.040	0.00090	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-78	ND		0.040	0.00091	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-79	ND		0.040	0.00077	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-80	ND		0.040	0.00081	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-81	ND		0.040	0.00090	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-82	ND		0.040	0.0025	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-83	**0.0068**	**J q C**	0.080	0.0024	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-84	ND		0.040	0.0026	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-85	ND	C	0.12	0.0018	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-86	ND	C	0.24	0.0018	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-87	ND	C86	0.24	0.0018	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-88	ND	C	0.080	0.0022	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-89	ND		0.040	0.0025	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-90	**0.011**	**J q C B**	0.12	0.0019	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-91	ND	C88	0.080	0.0022	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-92	ND		0.040	0.0023	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-93	ND	C	0.080	0.0023	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-94	ND		0.040	0.0024	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-95	**0.011**	**J**	0.040	0.0023	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-96	ND		0.040	0.0018	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-97	ND	C86	0.24	0.0018	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-98	ND	C	0.080	0.0022	ng/L		09/16/19 12:34	09/24/19 17:59	1

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88908-1

Client Sample ID: 711-82719
Date Collected: 08/27/19 08:40
Date Received: 09/03/19 15:00

Lab Sample ID: 580-88908-74
Matrix: Water

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	**0.0068**	**J q C83**	0.080	0.0024	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-100	ND	C93	0.080	0.0023	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-101	**0.011**	**J q C90 B**	0.12	0.0019	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-102	ND	C98	0.080	0.0022	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-103	ND		0.040	0.0021	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-104	ND		0.040	0.0016	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-105	**0.0031**	**J B**	0.040	0.0014	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-106	ND		0.040	0.0014	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-107	ND		0.040	0.0013	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-108	ND	C	0.080	0.0014	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-109	ND	C86	0.24	0.0018	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-110	ND	C	0.080	0.0016	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-111	ND		0.040	0.0015	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-112	ND		0.040	0.0016	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-113	**0.011**	**J q C90 B**	0.12	0.0019	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-114	ND		0.040	0.0013	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-115	ND	C110	0.080	0.0016	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-116	ND	C85	0.12	0.0018	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-117	ND	C85	0.12	0.0018	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-118	**0.0062**	**J B**	0.040	0.0013	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-119	ND	C86	0.24	0.0018	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-120	ND		0.040	0.0015	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-121	ND		0.040	0.0016	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-122	ND		0.040	0.0016	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-123	ND		0.040	0.0013	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-124	ND	C108	0.080	0.0014	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-125	ND	C86	0.24	0.0018	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-126	ND		0.040	0.0014	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-127	ND		0.040	0.0014	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-128	**0.0018**	**J C B**	0.080	0.00050	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-129	**0.011**	**J C B**	0.16	0.00052	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-130	**0.0011**	**J**	0.040	0.00068	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-131	ND		0.040	0.00066	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-132	**0.0038**	**J B**	0.040	0.00064	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-133	ND		0.040	0.00062	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-134	**0.0011**	**J q C**	0.080	0.00066	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-135	**0.0056**	**J C B**	0.080	0.00073	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-136	**0.0026**	**J B**	0.040	0.00055	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-137	ND		0.040	0.00053	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-138	**0.011**	**J C129 B**	0.16	0.00052	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-139	ND	C	0.080	0.00056	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-140	ND	C139	0.080	0.00056	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-141	**0.0025**	**J B**	0.040	0.00059	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-142	ND		0.040	0.00065	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-143	**0.0011**	**J q C134**	0.080	0.00066	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-144	**0.0011**	**J q**	0.040	0.00069	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-145	ND		0.040	0.00054	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-146	**0.0017**	**J q**	0.040	0.00056	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-147	**0.010**	**J C B**	0.080	0.00058	ng/L		09/16/19 12:34	09/24/19 17:59	1

Client Sample ID: 711-82719
Lab Sample ID: 580-88908-74
Date Collected: 08/27/19 08:40
Matrix: Water
Date Received: 09/03/19 15:00

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	ND		0.040	0.00071	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-149	**0.010**	**J C147 B**	0.080	0.00058	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-150	**0.00083**	**J q**	0.040	0.00052	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-151	**0.0056**	**J C135 B**	0.080	0.00073	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-152	ND		0.040	0.00051	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-153	**0.0091**	**J q C B**	0.080	0.00046	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-154	**0.0011**	**J q**	0.040	0.00063	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-155	ND		0.040	0.00049	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-156	**0.0013**	**J q C**	0.080	0.00052	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-157	**0.0013**	**J q C156**	0.080	0.00052	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-158	**0.0010**	**J q B**	0.040	0.00041	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-159	ND		0.040	0.00043	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-160	**0.011**	**J C129 B**	0.16	0.00052	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-161	ND		0.040	0.00042	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-162	ND		0.040	0.00041	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-163	**0.011**	**J C129 B**	0.16	0.00052	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-164	ND		0.040	0.00045	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-165	ND		0.040	0.00050	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-166	**0.0018**	**J C128 B**	0.080	0.00050	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-167	ND		0.040	0.00034	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-168	**0.0091**	**J q C153 B**	0.080	0.00046	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-169	ND		0.040	0.00041	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-170	**0.0058**	**J q B**	0.040	0.00093	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-171	**0.0028**	**J C**	0.080	0.00093	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-172	ND		0.040	0.00090	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-173	**0.0028**	**J C171**	0.080	0.00093	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-174	**0.0052**	**J q B**	0.040	0.00093	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-175	ND		0.040	0.00083	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-176	ND		0.040	0.00058	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-177	**0.0042**	**J q**	0.040	0.00094	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-178	ND		0.040	0.00087	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-179	**0.0026**	**J B**	0.040	0.00063	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-180	**0.0091**	**J q C B**	0.080	0.00072	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-181	ND		0.040	0.00080	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-182	ND		0.040	0.00077	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-183	**0.0037**	**J q C B**	0.080	0.00078	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-184	ND		0.040	0.00063	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-185	**0.0037**	**J q C183 B**	0.080	0.00078	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-186	ND		0.040	0.00062	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-187	**0.0060**	**J B**	0.040	0.00080	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-188	ND		0.040	0.00057	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-189	ND		0.040	0.00073	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-190	ND		0.040	0.00065	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-191	ND		0.040	0.00064	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-192	ND		0.040	0.00069	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-193	**0.0091**	**J q C180 B**	0.080	0.00072	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-194	**0.0024**	**J B**	0.040	0.00094	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-195	ND		0.040	0.0011	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-196	ND		0.040	0.00066	ng/L		09/16/19 12:34	09/24/19 17:59	1

Client Sample ID: 711-82719
Lab Sample ID: 580-88908-74
Date Collected: 08/27/19 08:40
Matrix: Water
Date Received: 09/03/19 15:00

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	ND		0.040	0.00048	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-198	**0.0023**	**J q C B**	0.080	0.00070	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-199	**0.0023**	**J q C198 B**	0.080	0.00070	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-200	ND		0.040	0.00051	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-201	ND		0.040	0.00048	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-202	**0.00091**	**J q**	0.040	0.00055	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-203	**0.0017**	**J q B**	0.040	0.00062	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-204	ND		0.040	0.00052	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-205	ND		0.040	0.00071	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-206	ND		0.040	0.0025	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-207	ND		0.040	0.0018	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-208	ND		0.040	0.0019	ng/L		09/16/19 12:34	09/24/19 17:59	1
PCB-209	**0.0044**	**J B**	0.040	0.00068	ng/L		09/16/19 12:34	09/24/19 17:59	1
Total Monochlorobiphenyls	**0.0055**	**J B**	0.040	0.00059	ng/L		09/16/19 12:34	09/24/19 17:59	1
Total Dichlorobiphenyls	**0.044**	**J B**	0.080	0.0014	ng/L		09/16/19 12:34	09/24/19 17:59	1
Total Trichlorobiphenyls	**0.043**	**J B**	0.080	0.00084	ng/L		09/16/19 12:34	09/24/19 17:59	1
Total Tetrachlorobiphenyls	**0.058**	**J B**	0.16	0.0010	ng/L		09/16/19 12:34	09/24/19 17:59	1
Total Pentachlorobiphenyls	**0.038**	**J B**	0.24	0.0018	ng/L		09/16/19 12:34	09/24/19 17:59	1
Total Hexachlorobiphenyls	**0.056**	**J B**	0.16	0.00055	ng/L		09/16/19 12:34	09/24/19 17:59	1
Total Heptachlorobiphenyls	**0.039**	**J B**	0.080	0.00076	ng/L		09/16/19 12:34	09/24/19 17:59	1
Total Octachlorobiphenyls	**0.0073**	**J B**	0.080	0.00066	ng/L		09/16/19 12:34	09/24/19 17:59	1
Total Nonachlorobiphenyls	ND		0.040	0.0025	ng/L		09/16/19 12:34	09/24/19 17:59	1
Polychlorinated biphenyls, Total	**0.30**	**B**	0.24	0.0011	ng/L		09/16/19 12:34	09/24/19 17:59	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*94*		*30 - 140*	*09/16/19 12:34*	*09/24/19 17:59*	*1*
PCB-3L	*96*		*30 - 140*	*09/16/19 12:34*	*09/24/19 17:59*	*1*
PCB-4L	*86*		*30 - 140*	*09/16/19 12:34*	*09/24/19 17:59*	*1*
PCB-15L	*88*		*30 - 140*	*09/16/19 12:34*	*09/24/19 17:59*	*1*
PCB-19L	*86*		*30 - 140*	*09/16/19 12:34*	*09/24/19 17:59*	*1*
PCB-37L	*93*		*30 - 140*	*09/16/19 12:34*	*09/24/19 17:59*	*1*
PCB-54L	*103*		*30 - 140*	*09/16/19 12:34*	*09/24/19 17:59*	*1*
PCB-77L	*89*		*30 - 140*	*09/16/19 12:34*	*09/24/19 17:59*	*1*
PCB-81L	*87*		*30 - 140*	*09/16/19 12:34*	*09/24/19 17:59*	*1*
PCB-104L	*88*		*30 - 140*	*09/16/19 12:34*	*09/24/19 17:59*	*1*
PCB-105L	*86*		*30 - 140*	*09/16/19 12:34*	*09/24/19 17:59*	*1*
PCB-114L	*86*		*30 - 140*	*09/16/19 12:34*	*09/24/19 17:59*	*1*
PCB-118L	*88*		*30 - 140*	*09/16/19 12:34*	*09/24/19 17:59*	*1*
PCB-123L	*86*		*30 - 140*	*09/16/19 12:34*	*09/24/19 17:59*	*1*
PCB-126L	*95*		*30 - 140*	*09/16/19 12:34*	*09/24/19 17:59*	*1*
PCB-155L	*102*		*30 - 140*	*09/16/19 12:34*	*09/24/19 17:59*	*1*
PCB-156L	*91*	*C*	*30 - 140*	*09/16/19 12:34*	*09/24/19 17:59*	*1*
PCB-157L	*91*	*C156*	*30 - 140*	*09/16/19 12:34*	*09/24/19 17:59*	*1*
PCB-167L	*90*		*30 - 140*	*09/16/19 12:34*	*09/24/19 17:59*	*1*
PCB-169L	*93*		*30 - 140*	*09/16/19 12:34*	*09/24/19 17:59*	*1*
PCB-170L	*78*		*30 - 140*	*09/16/19 12:34*	*09/24/19 17:59*	*1*
PCB-188L	*81*		*30 - 140*	*09/16/19 12:34*	*09/24/19 17:59*	*1*
PCB-189L	*92*		*30 - 140*	*09/16/19 12:34*	*09/24/19 17:59*	*1*
PCB-202L	*92*		*30 - 140*	*09/16/19 12:34*	*09/24/19 17:59*	*1*
PCB-205L	*81*		*30 - 140*	*09/16/19 12:34*	*09/24/19 17:59*	*1*

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88908-1

Client Sample ID: 711-82719
Date Collected: 08/27/19 08:40
Date Received: 09/03/19 15:00

Lab Sample ID: 580-88908-74
Matrix: Water

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-206L	75		30 - 140	09/16/19 12:34	09/24/19 17:59	1
PCB-208L	81		30 - 140	09/16/19 12:34	09/24/19 17:59	1
PCB-209L	62		30 - 140	09/16/19 12:34	09/24/19 17:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	81		40 - 125	09/16/19 12:34	09/24/19 17:59	1
PCB-111L	89		40 - 125	09/16/19 12:34	09/24/19 17:59	1
PCB-178L	90		40 - 125	09/16/19 12:34	09/24/19 17:59	1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Lab Sample ID: MB 140-33603/10-A
Matrix: Water
Analysis Batch: 33865

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 33603

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.00485	J	0.040	0.00045	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-2	0.00370	J	0.040	0.00045	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-3	0.00316	J	0.040	0.00045	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-4	0.00463	J q	0.060	0.0016	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-5	ND		0.040	0.0011	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-6	0.00302	J q	0.040	0.0011	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-7	ND		0.040	0.0010	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-8	0.00535	J	0.060	0.0010	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-9	ND		0.040	0.0012	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-10	ND		0.040	0.0011	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-11	0.0230	J	0.060	0.0010	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-12	0.00325	J q C	0.080	0.0010	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-13	0.00325	J q C12	0.080	0.0010	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-14	ND		0.040	0.00088	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-15	0.00355	J	0.040	0.00099	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-16	0.00306	J q	0.040	0.0010	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-17	0.00382	J	0.040	0.00081	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-18	0.00652	J C	0.080	0.00069	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-19	ND		0.040	0.00097	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-20	0.00441	J C	0.080	0.00036	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-21	0.00338	J C	0.080	0.00034	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-22	0.00169	J	0.040	0.00038	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-23	ND		0.040	0.00037	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-24	0.00169	J q	0.040	0.00060	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-25	0.00102	J q	0.040	0.00035	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-26	0.00190	J q C	0.080	0.00036	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-27	0.00134	J q	0.040	0.00058	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-28	0.00441	J C20	0.080	0.00036	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-29	0.00190	J q C26	0.080	0.00036	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-30	0.00652	J C18	0.080	0.00069	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-31	0.00328	J	0.040	0.00034	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-32	0.00385	J	0.040	0.00054	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-33	0.00338	J C21	0.080	0.00034	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-34	0.000666	J q	0.040	0.00039	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-35	0.000885	J	0.040	0.00039	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-36	ND		0.040	0.00035	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-37	0.00242	J	0.040	0.00036	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-38	0.000741	J	0.040	0.00036	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-39	0.000499	J q	0.040	0.00034	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-40	0.00419	J C	0.12	0.00055	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-41	0.00419	J C40	0.12	0.00055	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-42	ND		0.040	0.00058	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-43	0.00214	J q C	0.080	0.00050	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-44	0.0257	J C	0.12	0.00049	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-45	ND	C	0.080	0.00057	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-46	ND		0.040	0.00066	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-47	0.0257	J C44	0.12	0.00049	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-48	ND		0.040	0.00053	ng/L		09/16/19 12:34	09/24/19 15:55	1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 140-33603/10-A
Matrix: Water
Analysis Batch: 33865

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 33603

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-49	0.00268	J q C	0.080	0.00044	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-50	0.00304	J C	0.080	0.00053	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-51	ND	C45	0.080	0.00057	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-52	0.00407	J	0.040	0.00056	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-53	0.00304	J C50	0.080	0.00053	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-54	0.000898	J q	0.040	0.00052	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-55	ND		0.040	0.00039	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-56	0.00185	J q	0.040	0.00040	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-57	ND		0.040	0.00039	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-58	ND		0.040	0.00038	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-59	0.00199	J q C	0.12	0.00037	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-60	ND		0.040	0.00038	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-61	0.00539	J C	0.16	0.00037	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-62	0.00199	J q C59	0.12	0.00037	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-63	ND		0.040	0.00034	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-64	0.00208	J	0.040	0.00035	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-65	0.0257	J C44	0.12	0.00049	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-66	0.00162	J q	0.040	0.00039	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-67	ND		0.040	0.00036	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-68	0.00504	J	0.040	0.00034	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-69	0.00268	J q C49	0.080	0.00044	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-70	0.00539	J C61	0.16	0.00037	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-71	0.00419	J C40	0.12	0.00055	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-72	ND		0.040	0.00038	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-73	0.00214	J q C43	0.080	0.00050	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-74	0.00539	J C61	0.16	0.00037	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-75	0.00199	J q C59	0.12	0.00037	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-76	0.00539	J C61	0.16	0.00037	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-77	0.000782	J q	0.040	0.00038	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-78	ND		0.040	0.00038	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-79	ND		0.040	0.00032	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-80	ND		0.040	0.00034	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-81	ND		0.040	0.00038	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-82	ND		0.040	0.0013	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-83	ND	C	0.080	0.0012	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-84	ND		0.040	0.0013	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-85	ND	C	0.12	0.00093	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-86	0.00709	J C	0.24	0.00095	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-87	0.00709	J C86	0.24	0.00095	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-88	ND	C	0.080	0.0011	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-89	ND		0.040	0.0013	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-90	0.00493	J q C	0.12	0.0010	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-91	ND	C88	0.080	0.0011	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-92	ND		0.040	0.0012	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-93	ND	C	0.080	0.0012	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-94	ND		0.040	0.0013	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-95	ND		0.040	0.0012	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-96	ND		0.040	0.00092	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-97	0.00709	J C86	0.24	0.00095	ng/L		09/16/19 12:34	09/24/19 15:55	1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 140-33603/10-A
Matrix: Water
Analysis Batch: 33865

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 33603

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-98	ND	C	0.080	0.0011	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-99	ND	C83	0.080	0.0012	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-100	ND	C93	0.080	0.0012	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-101	0.00493	J q C90	0.12	0.0010	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-102	ND	C98	0.080	0.0011	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-103	ND		0.040	0.0011	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-104	ND		0.040	0.00081	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-105	0.00181	J	0.040	0.00080	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-106	ND		0.040	0.00080	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-107	ND		0.040	0.00075	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-108	ND	C	0.080	0.00081	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-109	0.00709	J C86	0.24	0.00095	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-110	0.00567	J C	0.080	0.00084	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-111	ND		0.040	0.00079	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-112	ND		0.040	0.00083	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-113	0.00493	J q C90	0.12	0.0010	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-114	ND		0.040	0.00073	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-115	0.00567	J C110	0.080	0.00084	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-116	ND	C85	0.12	0.00093	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-117	ND	C85	0.12	0.00093	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-118	0.00347	J	0.040	0.00074	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-119	0.00709	J C86	0.24	0.00095	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-120	ND		0.040	0.00076	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-121	ND		0.040	0.00081	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-122	ND		0.040	0.00088	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-123	ND		0.040	0.00076	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-124	ND	C108	0.080	0.00081	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-125	0.00709	J C86	0.24	0.00095	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-126	ND		0.040	0.00080	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-127	ND		0.040	0.00079	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-128	0.000965	J q C	0.080	0.00037	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-129	0.00449	J C	0.16	0.00038	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-130	ND		0.040	0.00049	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-131	ND		0.040	0.00048	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-132	0.00158	J	0.040	0.00046	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-133	ND		0.040	0.00045	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-134	ND	C	0.080	0.00048	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-135	0.00221	J q C	0.080	0.00047	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-136	0.000644	J q	0.040	0.00035	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-137	0.000508	J q	0.040	0.00039	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-138	0.00449	J C129	0.16	0.00038	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-139	ND	C	0.080	0.00041	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-140	ND	C139	0.080	0.00041	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-141	0.00109	J	0.040	0.00043	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-142	ND		0.040	0.00048	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-143	ND	C134	0.080	0.00048	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-144	ND		0.040	0.00044	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-145	ND		0.040	0.00034	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-146	ND		0.040	0.00041	ng/L		09/16/19 12:34	09/24/19 15:55	1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 140-33603/10-A
Matrix: Water
Analysis Batch: 33865

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 33603

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-147	0.00336	J C	0.080	0.00042	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-148	ND		0.040	0.00045	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-149	0.00336	J C147	0.080	0.00042	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-150	ND		0.040	0.00033	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-151	0.00221	J q C135	0.080	0.00047	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-152	0.000704	J	0.040	0.00032	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-153	0.00357	J C	0.080	0.00033	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-154	ND		0.040	0.00040	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-155	ND		0.040	0.00031	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-156	ND	C	0.080	0.00037	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-157	ND	C156	0.080	0.00037	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-158	0.000791	J	0.040	0.00029	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-159	ND		0.040	0.00031	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-160	0.00449	J C129	0.16	0.00038	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-161	ND		0.040	0.00031	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-162	ND		0.040	0.00030	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-163	0.00449	J C129	0.16	0.00038	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-164	0.000633	J	0.040	0.00033	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-165	ND		0.040	0.00036	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-166	0.000965	J q C128	0.080	0.00037	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-167	0.000526	J	0.040	0.00027	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-168	0.00357	J C153	0.080	0.00033	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-169	0.000949	J q	0.040	0.00028	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-170	0.00118	J q	0.040	0.00072	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-171	ND	C	0.080	0.00072	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-172	ND		0.040	0.00069	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-173	ND	C171	0.080	0.00072	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-174	0.00126	J q	0.040	0.00072	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-175	ND		0.040	0.00064	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-176	ND		0.040	0.00045	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-177	ND		0.040	0.00073	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-178	ND		0.040	0.00067	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-179	0.000913	J q	0.040	0.00049	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-180	0.00302	J C	0.080	0.00056	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-181	ND		0.040	0.00062	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-182	ND		0.040	0.00060	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-183	0.00233	J C	0.080	0.00061	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-184	ND		0.040	0.00049	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-185	0.00233	J C183	0.080	0.00061	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-186	ND		0.040	0.00048	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-187	0.00216	J	0.040	0.00062	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-188	ND		0.040	0.00044	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-189	ND		0.040	0.00042	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-190	ND		0.040	0.00050	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-191	ND		0.040	0.00050	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-192	ND		0.040	0.00053	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-193	0.00302	J C180	0.080	0.00056	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-194	0.000720	J q	0.040	0.00039	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-195	ND		0.040	0.00046	ng/L		09/16/19 12:34	09/24/19 15:55	1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 140-33603/10-A
Matrix: Water
Analysis Batch: 33865

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 33603

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-196	0.000621	J q	0.040	0.00046	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-197	ND		0.040	0.00033	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-198	0.000870	J q C	0.080	0.00049	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-199	0.000870	J q C198	0.080	0.00049	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-200	ND		0.040	0.00035	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-201	ND		0.040	0.00034	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-202	ND		0.040	0.00038	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-203	0.000917	J	0.040	0.00043	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-204	ND		0.040	0.00036	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-205	ND		0.040	0.00029	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-206	ND		0.040	0.00090	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-207	ND		0.040	0.00064	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-208	ND		0.040	0.00066	ng/L		09/16/19 12:34	09/24/19 15:55	1
PCB-209	0.00547	J	0.040	0.00038	ng/L		09/16/19 12:34	09/24/19 15:55	1
Total Monochlorobiphenyls	0.0117	J	0.040	0.00045	ng/L		09/16/19 12:34	09/24/19 15:55	1
Total Dichlorobiphenyls	0.0428	J q	0.080	0.0011	ng/L		09/16/19 12:34	09/24/19 15:55	1
Total Trichlorobiphenyls	0.0412	J q	0.080	0.00049	ng/L		09/16/19 12:34	09/24/19 15:55	1
Total Tetrachlorobiphenyls	0.0615	J q	0.16	0.00043	ng/L		09/16/19 12:34	09/24/19 15:55	1
Total Pentachlorobiphenyls	0.0230	J q	0.24	0.00096	ng/L		09/16/19 12:34	09/24/19 15:55	1
Total Hexachlorobiphenyls	0.0220	J q	0.16	0.00038	ng/L		09/16/19 12:34	09/24/19 15:55	1
Total Heptachlorobiphenyls	0.0109	J q	0.080	0.00058	ng/L		09/16/19 12:34	09/24/19 15:55	1
Total Octachlorobiphenyls	0.00313	J q	0.080	0.00039	ng/L		09/16/19 12:34	09/24/19 15:55	1
Total Nonachlorobiphenyls	ND		0.040	0.00090	ng/L		09/16/19 12:34	09/24/19 15:55	1
Polychlorinated biphenyls, Total	0.222	J q	0.24	0.00062	ng/L		09/16/19 12:34	09/24/19 15:55	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*92*		*30 - 140*	*09/16/19 12:34*	*09/24/19 15:55*	*1*
PCB-3L	*96*		*30 - 140*	*09/16/19 12:34*	*09/24/19 15:55*	*1*
PCB-4L	*80*		*30 - 140*	*09/16/19 12:34*	*09/24/19 15:55*	*1*
PCB-15L	*92*		*30 - 140*	*09/16/19 12:34*	*09/24/19 15:55*	*1*
PCB-19L	*76*		*30 - 140*	*09/16/19 12:34*	*09/24/19 15:55*	*1*
PCB-37L	*100*	*q*	*30 - 140*	*09/16/19 12:34*	*09/24/19 15:55*	*1*
PCB-54L	*99*		*30 - 140*	*09/16/19 12:34*	*09/24/19 15:55*	*1*
PCB-77L	*99*		*30 - 140*	*09/16/19 12:34*	*09/24/19 15:55*	*1*
PCB-81L	*98*		*30 - 140*	*09/16/19 12:34*	*09/24/19 15:55*	*1*
PCB-104L	*86*		*30 - 140*	*09/16/19 12:34*	*09/24/19 15:55*	*1*
PCB-105L	*89*		*30 - 140*	*09/16/19 12:34*	*09/24/19 15:55*	*1*
PCB-114L	*89*		*30 - 140*	*09/16/19 12:34*	*09/24/19 15:55*	*1*
PCB-118L	*91*		*30 - 140*	*09/16/19 12:34*	*09/24/19 15:55*	*1*
PCB-123L	*89*		*30 - 140*	*09/16/19 12:34*	*09/24/19 15:55*	*1*
PCB-126L	*98*		*30 - 140*	*09/16/19 12:34*	*09/24/19 15:55*	*1*
PCB-155L	*98*		*30 - 140*	*09/16/19 12:34*	*09/24/19 15:55*	*1*
PCB-156L	*92*	*C*	*30 - 140*	*09/16/19 12:34*	*09/24/19 15:55*	*1*
PCB-157L	*92*	*C156*	*30 - 140*	*09/16/19 12:34*	*09/24/19 15:55*	*1*
PCB-167L	*88*		*30 - 140*	*09/16/19 12:34*	*09/24/19 15:55*	*1*
PCB-169L	*98*		*30 - 140*	*09/16/19 12:34*	*09/24/19 15:55*	*1*
PCB-170L	*88*		*30 - 140*	*09/16/19 12:34*	*09/24/19 15:55*	*1*
PCB-188L	*88*		*30 - 140*	*09/16/19 12:34*	*09/24/19 15:55*	*1*
PCB-189L	*97*		*30 - 140*	*09/16/19 12:34*	*09/24/19 15:55*	*1*

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 140-33603/10-A
Matrix: Water
Analysis Batch: 33865

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 33603

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-202L	98		30 - 140	09/16/19 12:34	09/24/19 15:55	1
PCB-205L	87		30 - 140	09/16/19 12:34	09/24/19 15:55	1
PCB-206L	79		30 - 140	09/16/19 12:34	09/24/19 15:55	1
PCB-208L	87		30 - 140	09/16/19 12:34	09/24/19 15:55	1
PCB-209L	68		30 - 140	09/16/19 12:34	09/24/19 15:55	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	86		40 - 125	09/16/19 12:34	09/24/19 15:55	1
PCB-111L	99		40 - 125	09/16/19 12:34	09/24/19 15:55	1
PCB-178L	100		40 - 125	09/16/19 12:34	09/24/19 15:55	1

Lab Sample ID: LCS 140-33603/11-A
Matrix: Water
Analysis Batch: 33865

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 33603

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1	1.00	1.01		ng/L		101	50 - 150
PCB-3	1.00	0.997		ng/L		100	50 - 150
PCB-4	1.00	0.985		ng/L		99	50 - 150
PCB-15	1.00	0.905		ng/L		90	50 - 150
PCB-19	1.00	1.03		ng/L		103	50 - 150
PCB-37	1.00	0.770		ng/L		77	50 - 150
PCB-54	1.00	0.877		ng/L		88	50 - 150
PCB-77	1.00	0.915		ng/L		91	50 - 150
PCB-81	1.00	0.943		ng/L		94	50 - 150
PCB-104	1.00	0.999		ng/L		100	50 - 150
PCB-105	1.00	0.917		ng/L		92	50 - 150
PCB-114	1.00	0.887		ng/L		89	50 - 150
PCB-118	1.00	0.905		ng/L		90	50 - 150
PCB-123	1.00	0.921		ng/L		92	50 - 150
PCB-126	1.00	0.887		ng/L		89	50 - 150
PCB-155	1.00	0.919		ng/L		92	50 - 150
PCB-156	2.00	1.86	C	ng/L		93	50 - 150
PCB-157	2.00	1.86	C156	ng/L		93	50 - 150
PCB-167	1.00	0.922		ng/L		92	50 - 150
PCB-169	1.00	0.919		ng/L		92	50 - 150
PCB-188	1.00	0.956		ng/L		96	50 - 150
PCB-189	1.00	0.910		ng/L		91	50 - 150
PCB-202	1.00	0.878		ng/L		88	50 - 150
PCB-205	1.00	0.905		ng/L		91	50 - 150
PCB-206	1.00	0.875		ng/L		88	50 - 150
PCB-208	1.00	0.890		ng/L		89	50 - 150
PCB-209	1.00	0.881		ng/L		88	50 - 150

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
PCB-1L	93		30 - 140
PCB-3L	94		30 - 140
PCB-4L	80		30 - 140

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 140-33603/11-A
Matrix: Water
Analysis Batch: 33865

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 33603

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
PCB-15L	90		30 - 140
PCB-19L	76		30 - 140
PCB-37L	93	q	30 - 140
PCB-54L	99		30 - 140
PCB-77L	96		30 - 140
PCB-81L	93		30 - 140
PCB-104L	81		30 - 140
PCB-105L	85		30 - 140
PCB-114L	85		30 - 140
PCB-118L	88		30 - 140
PCB-123L	85		30 - 140
PCB-126L	93		30 - 140
PCB-155L	90		30 - 140
PCB-156L	86	C	30 - 140
PCB-157L	86	C156	30 - 140
PCB-167L	88		30 - 140
PCB-169L	96		30 - 140
PCB-170L	83		30 - 140
PCB-188L	83		30 - 140
PCB-189L	91		30 - 140
PCB-202L	92		30 - 140
PCB-205L	82		30 - 140
PCB-206L	72		30 - 140
PCB-208L	81		30 - 140
PCB-209L	61		30 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
PCB-28L	80		40 - 125
PCB-111L	93		40 - 125
PCB-178L	93		40 - 125

Lab Sample ID: MB 140-33628/12-B
Matrix: Solid
Analysis Batch: 34146

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 33628

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	ND		0.050	0.0011	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-2	ND		0.050	0.0012	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-3	ND		0.050	0.0013	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-4	ND		0.10	0.0046	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-5	ND		0.050	0.0024	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-6	ND		0.050	0.0025	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-7	ND		0.050	0.0023	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-8	ND		0.10	0.0024	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-9	ND		0.050	0.0027	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-10	ND		0.050	0.0026	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-11	0.00944	J q	0.10	0.0023	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-12	ND	C	0.10	0.0023	ng/g		09/17/19 12:25	10/03/19 14:39	5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 140-33628/12-B
Matrix: Solid
Analysis Batch: 34146

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 33628

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-13	ND	C12	0.10	0.0023	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-14	ND		0.050	0.0020	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-15	ND		0.050	0.0020	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-16	ND		0.050	0.0026	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-17	ND		0.050	0.0021	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-18	ND	C	0.10	0.0018	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-19	ND		0.050	0.0025	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-20	ND	C	0.10	0.0011	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-21	ND	C	0.10	0.0010	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-22	ND		0.050	0.0012	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-23	ND		0.050	0.0011	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-24	ND		0.050	0.0015	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-25	ND		0.050	0.0011	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-26	ND	C	0.10	0.0011	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-27	ND		0.050	0.0015	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-28	ND	C20	0.10	0.0011	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-29	ND	C26	0.10	0.0011	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-30	ND	C18	0.10	0.0018	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-31	ND		0.10	0.0010	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-32	ND		0.050	0.0014	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-33	ND	C21	0.10	0.0010	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-34	ND		0.050	0.0012	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-35	ND		0.050	0.0012	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-36	ND		0.050	0.0011	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-37	ND		0.050	0.0011	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-38	ND		0.050	0.0011	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-39	ND		0.050	0.0010	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-40	ND	C	0.15	0.00081	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-41	ND	C40	0.15	0.00081	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-42	ND		0.050	0.00086	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-43	ND	C	0.10	0.00075	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-44	0.00788	J q C	0.15	0.00072	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-45	0.00392	J q C	0.10	0.00084	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-46	ND		0.050	0.00098	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-47	0.00788	J q C44	0.15	0.00072	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-48	ND		0.050	0.00079	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-49	0.00296	J q C	0.10	0.00066	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-50	ND	C	0.10	0.00080	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-51	0.00392	J q C45	0.10	0.00084	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-52	0.00422	J q	0.050	0.00083	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-53	ND	C50	0.10	0.00080	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-54	ND		0.050	0.00077	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-55	ND		0.050	0.00058	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-56	ND		0.050	0.00059	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-57	ND		0.050	0.00058	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-58	ND		0.050	0.00056	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-59	ND	C	0.15	0.00055	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-60	ND		0.050	0.00056	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-61	0.00503	J C	0.20	0.00055	ng/g		09/17/19 12:25	10/03/19 14:39	5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 140-33628/12-B
Matrix: Solid
Analysis Batch: 34146

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 33628

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-62	ND	C59	0.15	0.00055	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-63	ND		0.050	0.00051	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-64	ND		0.050	0.00053	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-65	0.00788	J q C44	0.15	0.00072	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-66	ND		0.050	0.00058	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-67	ND		0.050	0.00054	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-68	ND		0.050	0.00050	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-69	0.00296	J q C49	0.10	0.00066	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-70	0.00503	J C61	0.20	0.00055	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-71	ND	C40	0.15	0.00081	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-72	ND		0.050	0.00057	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-73	ND	C43	0.10	0.00075	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-74	0.00503	J C61	0.20	0.00055	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-75	ND	C59	0.15	0.00055	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-76	0.00503	J C61	0.20	0.00055	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-77	ND		0.050	0.00054	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-78	ND		0.050	0.00057	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-79	ND		0.050	0.00048	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-80	ND		0.050	0.00051	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-81	ND		0.050	0.00059	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-82	ND		0.050	0.0016	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-83	ND	C	0.10	0.0015	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-84	0.00264	J q	0.050	0.0016	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-85	0.00888	J q C	0.15	0.0012	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-86	ND	C	0.30	0.0012	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-87	ND	C86	0.30	0.0012	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-88	ND	C	0.10	0.0014	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-89	ND		0.050	0.0016	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-90	0.0113	J C	0.15	0.0012	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-91	ND	C88	0.10	0.0014	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-92	ND		0.050	0.0015	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-93	ND	C	0.10	0.0014	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-94	ND		0.050	0.0016	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-95	ND		0.050	0.0015	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-96	ND		0.050	0.0012	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-97	ND	C86	0.30	0.0012	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-98	ND	C	0.10	0.0014	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-99	ND	C83	0.10	0.0015	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-100	ND	C93	0.10	0.0014	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-101	0.0113	J C90	0.15	0.0012	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-102	ND	C98	0.10	0.0014	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-103	ND		0.050	0.0014	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-104	ND		0.050	0.0010	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-105	ND		0.050	0.0016	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-106	ND		0.050	0.0015	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-107	ND		0.050	0.0015	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-108	ND	C	0.10	0.0016	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-109	ND	C86	0.30	0.0012	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-110	ND	C	0.10	0.0010	ng/g		09/17/19 12:25	10/03/19 14:39	5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 140-33628/12-B
Matrix: Solid
Analysis Batch: 34146

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 33628

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-111	ND		0.050	0.00099	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-112	ND		0.050	0.0010	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-113	0.0113	J C90	0.15	0.0012	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-114	ND		0.050	0.0013	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-115	ND	C110	0.10	0.0010	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-116	0.00888	J q C85	0.15	0.0012	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-117	0.00888	J q C85	0.15	0.0012	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-118	0.00647	J	0.050	0.0015	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-119	ND	C86	0.30	0.0012	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-120	ND		0.050	0.00095	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-121	ND		0.050	0.0010	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-122	ND		0.050	0.0017	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-123	ND		0.050	0.0015	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-124	ND	C108	0.10	0.0016	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-125	ND	C86	0.30	0.0012	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-126	ND		0.050	0.0016	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-127	ND		0.050	0.0015	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-128	0.00195	J q C	0.10	0.0012	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-129	0.00830	J q C	0.20	0.0013	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-130	ND		0.050	0.0017	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-131	ND		0.050	0.0016	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-132	ND		0.050	0.0016	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-133	ND		0.050	0.0015	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-134	ND	C	0.10	0.0016	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-135	0.00245	J q C	0.10	0.00081	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-136	0.00186	J	0.050	0.00061	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-137	ND		0.050	0.0013	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-138	0.00830	J q C129	0.20	0.0013	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-139	ND	C	0.10	0.0014	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-140	ND	C139	0.10	0.0014	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-141	ND		0.050	0.0014	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-142	ND		0.050	0.0016	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-143	ND	C134	0.10	0.0016	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-144	ND		0.050	0.00077	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-145	ND		0.050	0.00059	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-146	0.00208	J	0.050	0.0014	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-147	0.00448	J q C	0.10	0.0014	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-148	ND		0.050	0.00078	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-149	0.00448	J q C147	0.10	0.0014	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-150	ND		0.050	0.00057	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-151	0.00245	J q C135	0.10	0.00081	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-152	ND		0.050	0.00056	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-153	0.00601	J q C	0.10	0.0011	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-154	ND		0.050	0.00069	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-155	ND		0.050	0.00054	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-156	ND	C	0.10	0.0013	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-157	ND	C156	0.10	0.0013	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-158	ND		0.050	0.00099	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-159	ND		0.050	0.0010	ng/g		09/17/19 12:25	10/03/19 14:39	5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 140-33628/12-B
Matrix: Solid
Analysis Batch: 34146

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 33628

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-160	0.00830	J q C129	0.20	0.0013	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-161	ND		0.050	0.0010	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-162	ND		0.050	0.0010	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-163	0.00830	J q C129	0.20	0.0013	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-164	ND		0.050	0.0011	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-165	ND		0.050	0.0012	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-166	0.00195	J q C128	0.10	0.0012	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-167	ND		0.050	0.00087	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-168	0.00601	J q C153	0.10	0.0011	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-169	ND		0.050	0.00098	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-170	0.00137	J q	0.050	0.00079	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-171	ND	C	0.10	0.00076	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-172	ND		0.050	0.00074	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-173	ND	C171	0.10	0.00076	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-174	0.00169	J	0.050	0.00077	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-175	ND		0.050	0.00069	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-176	ND		0.050	0.00048	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-177	0.00137	J q	0.050	0.00078	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-178	ND		0.050	0.00072	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-179	ND		0.050	0.00052	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-180	0.00438	J C	0.10	0.00060	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-181	ND		0.050	0.00066	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-182	ND		0.050	0.00064	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-183	0.00287	J q C	0.10	0.00065	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-184	ND		0.050	0.00052	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-185	0.00287	J q C183	0.10	0.00065	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-186	ND		0.050	0.00051	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-187	0.00228	J q	0.050	0.00066	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-188	ND		0.050	0.00046	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-189	ND		0.050	0.00080	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-190	0.000538	J q	0.050	0.00053	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-191	ND		0.050	0.00053	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-192	ND		0.050	0.00057	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-193	0.00438	J C180	0.10	0.00060	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-194	ND		0.050	0.00081	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-195	ND		0.050	0.00096	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-196	ND		0.050	0.00084	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-197	ND		0.050	0.00061	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-198	0.00120	J q C	0.10	0.00090	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-199	0.00120	J q C198	0.10	0.00090	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-200	ND		0.050	0.00065	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-201	ND		0.050	0.00062	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-202	ND		0.050	0.00070	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-203	ND		0.050	0.00080	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-204	ND		0.050	0.00067	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-205	ND		0.050	0.00061	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-206	ND		0.050	0.0036	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-207	ND		0.050	0.0026	ng/g		09/17/19 12:25	10/03/19 14:39	5
PCB-208	ND		0.050	0.0028	ng/g		09/17/19 12:25	10/03/19 14:39	5

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 140-33628/12-B
Matrix: Solid
Analysis Batch: 34146

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 33628

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-209	ND		0.050	0.0010	ng/g		09/17/19 12:25	10/03/19 14:39	5
Total Monochlorobiphenyls	ND		0.050	0.0013	ng/g		09/17/19 12:25	10/03/19 14:39	5
Total Dichlorobiphenyls	0.00944	J	0.10	0.0026	ng/g		09/17/19 12:25	10/03/19 14:39	5
Total Trichlorobiphenyls	ND		0.10	0.0026	ng/g		09/17/19 12:25	10/03/19 14:39	5
Total Tetrachlorobiphenyls	0.0240	J	0.20	0.00064	ng/g		09/17/19 12:25	10/03/19 14:39	5
Total Pentachlorobiphenyls	0.0293	J	0.30	0.0014	ng/g		09/17/19 12:25	10/03/19 14:39	5
Total Hexachlorobiphenyls	0.0271	J	0.20	0.0011	ng/g		09/17/19 12:25	10/03/19 14:39	5
Total Heptachlorobiphenyls	0.0145	J	0.10	0.00064	ng/g		09/17/19 12:25	10/03/19 14:39	5
Total Octachlorobiphenyls	0.00120	J	0.10	0.00074	ng/g		09/17/19 12:25	10/03/19 14:39	5
Total Nonachlorobiphenyls	ND		0.050	0.0036	ng/g		09/17/19 12:25	10/03/19 14:39	5
Polychlorinated biphenyls, Total	0.106	J	0.30	0.0016	ng/g		09/17/19 12:25	10/03/19 14:39	5

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*59*		*30 - 140*	*09/17/19 12:25*	*10/03/19 14:39*	*5*
PCB-3L	*66*		*30 - 140*	*09/17/19 12:25*	*10/03/19 14:39*	*5*
PCB-4L	*70*		*30 - 140*	*09/17/19 12:25*	*10/03/19 14:39*	*5*
PCB-15L	*77*		*30 - 140*	*09/17/19 12:25*	*10/03/19 14:39*	*5*
PCB-19L	*73*		*30 - 140*	*09/17/19 12:25*	*10/03/19 14:39*	*5*
PCB-37L	*75*		*30 - 140*	*09/17/19 12:25*	*10/03/19 14:39*	*5*
PCB-54L	*63*		*30 - 140*	*09/17/19 12:25*	*10/03/19 14:39*	*5*
PCB-77L	*83*		*30 - 140*	*09/17/19 12:25*	*10/03/19 14:39*	*5*
PCB-81L	*78*		*30 - 140*	*09/17/19 12:25*	*10/03/19 14:39*	*5*
PCB-104L	*93*		*30 - 140*	*09/17/19 12:25*	*10/03/19 14:39*	*5*
PCB-105L	*77*		*30 - 140*	*09/17/19 12:25*	*10/03/19 14:39*	*5*
PCB-114L	*78*		*30 - 140*	*09/17/19 12:25*	*10/03/19 14:39*	*5*
PCB-118L	*79*		*30 - 140*	*09/17/19 12:25*	*10/03/19 14:39*	*5*
PCB-123L	*76*		*30 - 140*	*09/17/19 12:25*	*10/03/19 14:39*	*5*
PCB-126L	*82*		*30 - 140*	*09/17/19 12:25*	*10/03/19 14:39*	*5*
PCB-155L	*105*		*30 - 140*	*09/17/19 12:25*	*10/03/19 14:39*	*5*
PCB-156L	*82*	*C*	*30 - 140*	*09/17/19 12:25*	*10/03/19 14:39*	*5*
PCB-157L	*82*	*C156*	*30 - 140*	*09/17/19 12:25*	*10/03/19 14:39*	*5*
PCB-167L	*80*		*30 - 140*	*09/17/19 12:25*	*10/03/19 14:39*	*5*
PCB-169L	*92*		*30 - 140*	*09/17/19 12:25*	*10/03/19 14:39*	*5*
PCB-170L	*75*		*30 - 140*	*09/17/19 12:25*	*10/03/19 14:39*	*5*
PCB-188L	*80*		*30 - 140*	*09/17/19 12:25*	*10/03/19 14:39*	*5*
PCB-189L	*83*		*30 - 140*	*09/17/19 12:25*	*10/03/19 14:39*	*5*
PCB-202L	*90*		*30 - 140*	*09/17/19 12:25*	*10/03/19 14:39*	*5*
PCB-205L	*76*		*30 - 140*	*09/17/19 12:25*	*10/03/19 14:39*	*5*
PCB-206L	*74*		*30 - 140*	*09/17/19 12:25*	*10/03/19 14:39*	*5*
PCB-208L	*77*		*30 - 140*	*09/17/19 12:25*	*10/03/19 14:39*	*5*
PCB-209L	*73*		*30 - 140*	*09/17/19 12:25*	*10/03/19 14:39*	*5*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-28L	*78*		*40 - 125*	*09/17/19 12:25*	*10/03/19 14:39*	*5*
PCB-111L	*94*		*40 - 125*	*09/17/19 12:25*	*10/03/19 14:39*	*5*
PCB-178L	*94*		*40 - 125*	*09/17/19 12:25*	*10/03/19 14:39*	*5*

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 140-33628/13-B
Matrix: Solid
Analysis Batch: 34146

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 33628

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
PCB-1			0.500	0.461		ng/g		92	50 - 150		
PCB-3			0.500	0.483		ng/g		97	50 - 150		
PCB-4			0.500	0.477		ng/g		95	50 - 150		
PCB-15			0.500	0.439		ng/g		88	50 - 150		
PCB-19			0.500	0.440		ng/g		88	50 - 150		
PCB-37			0.500	0.470		ng/g		94	50 - 150		
PCB-54			0.500	0.458		ng/g		92	50 - 150		
PCB-77			0.500	0.466		ng/g		93	50 - 150		
PCB-81			0.500	0.495		ng/g		99	50 - 150		
PCB-104			0.500	0.480		ng/g		96	50 - 150		
PCB-105			0.500	0.482		ng/g		96	50 - 150		
PCB-114			0.500	0.489		ng/g		98	50 - 150		
PCB-118			0.500	0.465		ng/g		93	50 - 150		
PCB-123			0.500	0.462		ng/g		92	50 - 150		
PCB-126			0.500	0.463		ng/g		93	50 - 150		
PCB-155			0.500	0.439		ng/g		88	50 - 150		
PCB-156			1.00	0.924	C	ng/g		92	50 - 150		
PCB-157			1.00	0.924	C156	ng/g		92	50 - 150		
PCB-167			0.500	0.473		ng/g		95	50 - 150		
PCB-169			0.500	0.460		ng/g		92	50 - 150		
PCB-188			0.500	0.442		ng/g		88	50 - 150		
PCB-189			0.500	0.496		ng/g		99	50 - 150		
PCB-202			0.500	0.456		ng/g		91	50 - 150		
PCB-205			0.500	0.461		ng/g		92	50 - 150		
PCB-206			0.500	0.463		ng/g		93	50 - 150		
PCB-208			0.500	0.436		ng/g		87	50 - 150		
PCB-209			0.500	0.471		ng/g		94	50 - 150		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
PCB-1L	*59*		*30 - 140*
PCB-3L	*61*		*30 - 140*
PCB-4L	*64*		*30 - 140*
PCB-15L	*73*		*30 - 140*
PCB-19L	*64*		*30 - 140*
PCB-37L	*76*		*30 - 140*
PCB-54L	*63*		*30 - 140*
PCB-77L	*79*		*30 - 140*
PCB-81L	*77*		*30 - 140*
PCB-104L	*82*		*30 - 140*
PCB-105L	*72*		*30 - 140*
PCB-114L	*70*		*30 - 140*
PCB-118L	*74*		*30 - 140*
PCB-123L	*75*		*30 - 140*
PCB-126L	*82*		*30 - 140*
PCB-155L	*96*		*30 - 140*
PCB-156L	*82*	*C*	*30 - 140*
PCB-157L	*82*	*C156*	*30 - 140*
PCB-167L	*80*		*30 - 140*

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 140-33628/13-B
Matrix: Solid
Analysis Batch: 34146

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 33628

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
PCB-169L	97		30 - 140
PCB-170L	72		30 - 140
PCB-188L	76		30 - 140
PCB-189L	71		30 - 140
PCB-202L	83		30 - 140
PCB-205L	70		30 - 140
PCB-206L	69		30 - 140
PCB-208L	73		30 - 140
PCB-209L	73		30 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
PCB-28L	77		40 - 125
PCB-111L	89		40 - 125
PCB-178L	84		40 - 125

Lab Sample ID: MB 140-34150/12-B
Matrix: Solid
Analysis Batch: 34298

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 34150

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	ND		0.010	0.00015	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-2	ND		0.010	0.00015	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-3	ND		0.010	0.00015	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-4	ND		0.020	0.00048	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-5	ND		0.010	0.00032	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-6	ND		0.010	0.00032	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-7	ND		0.010	0.00031	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-8	ND		0.020	0.00032	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-9	ND		0.010	0.00035	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-10	ND		0.010	0.00034	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-11	0.00284	J q	0.020	0.00031	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-12	ND	C	0.020	0.00031	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-13	ND	C12	0.020	0.00031	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-14	ND		0.010	0.00027	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-15	ND		0.010	0.00031	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-16	ND		0.010	0.00033	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-17	0.000590	J q	0.010	0.00026	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-18	0.000818	J C q	0.020	0.00022	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-19	ND		0.010	0.00031	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-20	0.000973	J C q	0.020	0.00016	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-21	0.000521	J C q	0.020	0.00016	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-22	0.000526	J	0.010	0.00017	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-23	ND		0.010	0.00017	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-24	ND		0.010	0.00019	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-25	ND		0.010	0.00016	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-26	0.000251	J C	0.020	0.00016	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-27	ND		0.010	0.00019	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-28	0.000973	J C20 q	0.020	0.00016	ng/g		10/03/19 11:21	10/09/19 16:44	1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 140-34150/12-B
Matrix: Solid
Analysis Batch: 34298

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 34150

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-29	0.000251	J C26	0.020	0.00016	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-30	0.000818	J C18 q	0.020	0.00022	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-31	0.000485	J q	0.020	0.00016	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-32	ND		0.010	0.00017	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-33	0.000521	J C21 q	0.020	0.00016	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-34	ND		0.010	0.00018	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-35	ND		0.010	0.00018	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-36	ND		0.010	0.00016	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-37	0.000354	J q	0.010	0.00017	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-38	ND		0.010	0.00016	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-39	ND		0.010	0.00015	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-40	ND	C	0.030	0.00018	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-41	ND	C40	0.030	0.00018	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-42	ND		0.010	0.00019	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-43	ND	C	0.020	0.00017	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-44	0.00405	J C	0.030	0.00016	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-45	0.000984	J C q	0.020	0.00019	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-46	ND		0.010	0.00022	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-47	0.00405	J C44	0.030	0.00016	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-48	ND		0.010	0.00018	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-49	0.00140	J C	0.020	0.00015	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-50	ND	C	0.020	0.00018	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-51	0.000984	J C45 q	0.020	0.00019	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-52	0.00240	J q	0.010	0.00019	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-53	ND	C50	0.020	0.00018	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-54	ND		0.010	0.000086	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-55	ND		0.010	0.00013	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-56	ND		0.010	0.00013	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-57	ND		0.010	0.00013	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-58	ND		0.010	0.00013	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-59	ND	C	0.030	0.00012	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-60	ND		0.010	0.00013	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-61	0.00257	J C	0.040	0.00012	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-62	ND	C59	0.030	0.00012	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-63	ND		0.010	0.00011	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-64	ND		0.010	0.00012	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-65	0.00405	J C44	0.030	0.00016	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-66	0.00129	J q	0.010	0.00013	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-67	ND		0.010	0.00012	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-68	0.000264	J q	0.010	0.00011	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-69	0.00140	J C49	0.020	0.00015	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-70	0.00257	J C61	0.040	0.00012	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-71	ND	C40	0.030	0.00018	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-72	ND		0.010	0.00013	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-73	ND	C43	0.020	0.00017	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-74	0.00257	J C61	0.040	0.00012	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-75	ND	C59	0.030	0.00012	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-76	0.00257	J C61	0.040	0.00012	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-77	ND		0.010	0.00012	ng/g		10/03/19 11:21	10/09/19 16:44	1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 140-34150/12-B
Matrix: Solid
Analysis Batch: 34298

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 34150

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-78	ND		0.010	0.00013	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-79	ND		0.010	0.00011	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-80	ND		0.010	0.00011	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-81	ND		0.010	0.00013	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-82	0.000720	J	0.010	0.00027	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-83	0.00292	J C q	0.020	0.00025	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-84	0.00137	J q	0.010	0.00028	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-85	ND	C	0.030	0.00020	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-86	0.00303	J C q	0.060	0.00020	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-87	0.00303	J C86 q	0.060	0.00020	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-88	0.000989	J C q	0.020	0.00024	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-89	ND		0.010	0.00027	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-90	0.00493	J C q	0.030	0.00021	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-91	0.000989	J C88 q	0.020	0.00024	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-92	0.00109	J	0.010	0.00025	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-93	ND	C	0.020	0.00024	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-94	ND		0.010	0.00026	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-95	0.00462	J	0.010	0.00025	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-96	ND		0.010	0.00019	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-97	0.00303	J C86 q	0.060	0.00020	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-98	ND	C	0.020	0.00024	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-99	0.00292	J C83 q	0.020	0.00025	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-100	ND	C93	0.020	0.00024	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-101	0.00493	J C90 q	0.030	0.00021	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-102	ND	C98	0.020	0.00024	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-103	ND		0.010	0.00023	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-104	ND		0.010	0.00017	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-105	0.00134	J	0.010	0.00017	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-106	ND		0.010	0.00017	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-107	0.000250	J q	0.010	0.00016	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-108	ND	C	0.020	0.00018	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-109	0.00303	J C86 q	0.060	0.00020	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-110	0.00562	J C	0.020	0.00018	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-111	ND		0.010	0.00017	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-112	ND		0.010	0.00017	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-113	0.00493	J C90 q	0.030	0.00021	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-114	ND		0.010	0.00016	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-115	0.00562	J C110	0.020	0.00018	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-116	ND	C85	0.030	0.00020	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-117	ND	C85	0.030	0.00020	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-118	0.00410	J	0.010	0.00017	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-119	0.00303	J C86 q	0.060	0.00020	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-120	ND		0.010	0.00016	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-121	ND		0.010	0.00017	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-122	0.000231	J q	0.010	0.00019	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-123	ND		0.010	0.00017	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-124	ND	C108	0.020	0.00018	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-125	0.00303	J C86 q	0.060	0.00020	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-126	ND		0.010	0.00017	ng/g		10/03/19 11:21	10/09/19 16:44	1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 140-34150/12-B
Matrix: Solid
Analysis Batch: 34298

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 34150

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-127	ND		0.010	0.00017	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-128	0.00106	J C	0.020	0.00018	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-129	0.00442	J C	0.040	0.00019	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-130	0.000426	J	0.010	0.00025	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-131	ND		0.010	0.00024	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-132	0.00157	J	0.010	0.00023	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-133	ND		0.010	0.00022	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-134	ND	C	0.020	0.00024	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-135	0.00198	J C	0.020	0.00016	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-136	0.000627	J q	0.010	0.00012	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-137	ND		0.010	0.00019	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-138	0.00442	J C129	0.040	0.00019	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-139	ND	C	0.020	0.00020	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-140	ND	C139	0.020	0.00020	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-141	0.000814	J q	0.010	0.00021	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-142	ND		0.010	0.00024	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-143	ND	C134	0.020	0.00024	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-144	ND		0.010	0.00015	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-145	ND		0.010	0.00012	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-146	0.00114	J	0.010	0.00020	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-147	0.00430	J C	0.020	0.00021	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-148	ND		0.010	0.00016	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-149	0.00430	J C147	0.020	0.00021	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-150	ND		0.010	0.00011	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-151	0.00198	J C135	0.020	0.00016	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-152	ND		0.010	0.00011	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-153	0.00389	J C	0.020	0.00017	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-154	ND		0.010	0.00014	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-155	ND		0.010	0.00011	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-156	0.000994	J C q	0.020	0.00019	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-157	0.000994	J C156 q	0.020	0.00019	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-158	0.000576	J q	0.010	0.00015	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-159	ND		0.010	0.00015	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-160	0.00442	J C129	0.040	0.00019	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-161	ND		0.010	0.00015	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-162	0.000223	J q	0.010	0.00015	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-163	0.00442	J C129	0.040	0.00019	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-164	0.000539	J	0.010	0.00016	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-165	ND		0.010	0.00018	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-166	0.00106	J C128	0.020	0.00018	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-167	0.000365	J q	0.010	0.00012	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-168	0.00389	J C153	0.020	0.00017	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-169	0.000274	J	0.010	0.00014	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-170	0.00106	J	0.010	0.000086	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-171	0.000912	J C q	0.020	0.000085	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-172	0.000153	J q	0.010	0.000082	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-173	0.000912	J C171 q	0.020	0.000085	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-174	0.000966	J q	0.010	0.000085	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-175	ND		0.010	0.000076	ng/g		10/03/19 11:21	10/09/19 16:44	1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 140-34150/12-B
Matrix: Solid
Analysis Batch: 34298

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 34150

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-176	0.000204	J q	0.010	0.000054	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-177	0.000831	J q	0.010	0.000087	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-178	0.000239	J q	0.010	0.000080	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-179	0.000526	J q	0.010	0.000058	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-180	0.00223	J C q	0.020	0.000066	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-181	ND		0.010	0.000074	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-182	ND		0.010	0.000071	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-183	0.00146	J C	0.020	0.000072	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-184	ND		0.010	0.000057	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-185	0.00146	J C183	0.020	0.000072	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-186	ND		0.010	0.000057	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-187	0.00159	J	0.010	0.000073	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-188	ND		0.010	0.000052	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-189	0.000215	J q	0.010	0.000083	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-190	0.000447	J	0.010	0.000059	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-191	ND		0.010	0.000059	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-192	ND		0.010	0.000063	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-193	0.00223	J C180 q	0.020	0.000066	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-194	0.000634	J	0.010	0.000086	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-195	0.000380	J q	0.010	0.00010	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-196	0.000412	J	0.010	0.00013	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-197	0.000341	J q	0.010	0.000092	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-198	0.000721	J C q	0.020	0.00014	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-199	0.000721	J C198 q	0.020	0.00014	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-200	ND		0.010	0.000099	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-201	0.000294	J q	0.010	0.000094	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-202	0.000377	J	0.010	0.00011	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-203	ND		0.010	0.00012	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-204	ND		0.010	0.00010	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-205	ND		0.010	0.000065	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-206	ND		0.010	0.00066	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-207	ND		0.010	0.00047	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-208	ND		0.010	0.00048	ng/g		10/03/19 11:21	10/09/19 16:44	1
PCB-209	ND		0.010	0.000077	ng/g		10/03/19 11:21	10/09/19 16:44	1
Total Monochlorobiphenyls	ND		0.010	0.00015	ng/g		10/03/19 11:21	10/09/19 16:44	1
Total Dichlorobiphenyls	0.00284	J q	0.020	0.00033	ng/g		10/03/19 11:21	10/09/19 16:44	1
Total Trichlorobiphenyls	0.00452	J q	0.020	0.00019	ng/g		10/03/19 11:21	10/09/19 16:44	1
Total Tetrachlorobiphenyls	0.0130	J q	0.040	0.00014	ng/g		10/03/19 11:21	10/09/19 16:44	1
Total Pentachlorobiphenyls	0.0312	J q	0.060	0.00020	ng/g		10/03/19 11:21	10/09/19 16:44	1
Total Hexachlorobiphenyls	0.0232	J q	0.040	0.00017	ng/g		10/03/19 11:21	10/09/19 16:44	1
Total Heptachlorobiphenyls	0.0108	J q	0.020	0.000070	ng/g		10/03/19 11:21	10/09/19 16:44	1
Total Octachlorobiphenyls	0.00316	J q	0.020	0.00010	ng/g		10/03/19 11:21	10/09/19 16:44	1
Total Nonachlorobiphenyls	ND		0.010	0.00066	ng/g		10/03/19 11:21	10/09/19 16:44	1
Polychlorinated biphenyls, Total	0.0887	q	0.060	0.00022	ng/g		10/03/19 11:21	10/09/19 16:44	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*67*		*30 - 140*	*10/03/19 11:21*	*10/09/19 16:44*	*1*
PCB-3L	*70*		*30 - 140*	*10/03/19 11:21*	*10/09/19 16:44*	*1*
PCB-4L	*66*		*30 - 140*	*10/03/19 11:21*	*10/09/19 16:44*	*1*

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 140-34150/12-B
Matrix: Solid
Analysis Batch: 34298

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 34150

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-15L	74		30 - 140	10/03/19 11:21	10/09/19 16:44	1
PCB-19L	64		30 - 140	10/03/19 11:21	10/09/19 16:44	1
PCB-37L	76		30 - 140	10/03/19 11:21	10/09/19 16:44	1
PCB-54L	63		30 - 140	10/03/19 11:21	10/09/19 16:44	1
PCB-77L	80		30 - 140	10/03/19 11:21	10/09/19 16:44	1
PCB-81L	76		30 - 140	10/03/19 11:21	10/09/19 16:44	1
PCB-104L	77		30 - 140	10/03/19 11:21	10/09/19 16:44	1
PCB-105L	76		30 - 140	10/03/19 11:21	10/09/19 16:44	1
PCB-114L	75		30 - 140	10/03/19 11:21	10/09/19 16:44	1
PCB-118L	78		30 - 140	10/03/19 11:21	10/09/19 16:44	1
PCB-123L	75		30 - 140	10/03/19 11:21	10/09/19 16:44	1
PCB-126L	85		30 - 140	10/03/19 11:21	10/09/19 16:44	1
PCB-155L	87		30 - 140	10/03/19 11:21	10/09/19 16:44	1
PCB-156L	82	C	30 - 140	10/03/19 11:21	10/09/19 16:44	1
PCB-157L	82	C156	30 - 140	10/03/19 11:21	10/09/19 16:44	1
PCB-167L	82		30 - 140	10/03/19 11:21	10/09/19 16:44	1
PCB-169L	91		30 - 140	10/03/19 11:21	10/09/19 16:44	1
PCB-170L	74		30 - 140	10/03/19 11:21	10/09/19 16:44	1
PCB-188L	74		30 - 140	10/03/19 11:21	10/09/19 16:44	1
PCB-189L	88		30 - 140	10/03/19 11:21	10/09/19 16:44	1
PCB-202L	82		30 - 140	10/03/19 11:21	10/09/19 16:44	1
PCB-205L	75		30 - 140	10/03/19 11:21	10/09/19 16:44	1
PCB-206L	69		30 - 140	10/03/19 11:21	10/09/19 16:44	1
PCB-208L	74		30 - 140	10/03/19 11:21	10/09/19 16:44	1
PCB-209L	65		30 - 140	10/03/19 11:21	10/09/19 16:44	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	71		40 - 125	10/03/19 11:21	10/09/19 16:44	1
PCB-111L	85		40 - 125	10/03/19 11:21	10/09/19 16:44	1
PCB-178L	84		40 - 125	10/03/19 11:21	10/09/19 16:44	1

Lab Sample ID: LCS 140-34150/13-B
Matrix: Solid
Analysis Batch: 34298

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 34150

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1	0.500	0.492		ng/g		98	50 - 150
PCB-3	0.500	0.493		ng/g		99	50 - 150
PCB-4	0.500	0.493		ng/g		99	50 - 150
PCB-15	0.500	0.472		ng/g		94	50 - 150
PCB-19	0.500	0.473		ng/g		95	50 - 150
PCB-37	0.500	0.514		ng/g		103	50 - 150
PCB-54	0.500	0.495		ng/g		99	50 - 150
PCB-77	0.500	0.474		ng/g		95	50 - 150
PCB-81	0.500	0.489		ng/g		98	50 - 150
PCB-104	0.500	0.472		ng/g		94	50 - 150
PCB-105	0.500	0.501		ng/g		100	50 - 150
PCB-114	0.500	0.482		ng/g		96	50 - 150

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 140-34150/13-B
Matrix: Solid
Analysis Batch: 34298

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 34150

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
PCB-118			0.500	0.492		ng/g		98	50 - 150		
PCB-123			0.500	0.492		ng/g		98	50 - 150		
PCB-126			0.500	0.479		ng/g		96	50 - 150		
PCB-155			0.500	0.458		ng/g		92	50 - 150		
PCB-156			1.00	0.962	C	ng/g		96	50 - 150		
PCB-157			1.00	0.962	C156	ng/g		96	50 - 150		
PCB-167			0.500	0.480		ng/g		96	50 - 150		
PCB-169			0.500	0.477		ng/g		95	50 - 150		
PCB-188			0.500	0.475		ng/g		95	50 - 150		
PCB-189			0.500	0.498		ng/g		100	50 - 150		
PCB-202			0.500	0.467		ng/g		93	50 - 150		
PCB-205			0.500	0.480		ng/g		96	50 - 150		
PCB-206			0.500	0.468		ng/g		94	50 - 150		
PCB-208			0.500	0.477		ng/g		95	50 - 150		
PCB-209			0.500	0.467		ng/g		93	50 - 150		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
PCB-1L	*77*		*30 - 140*
PCB-3L	*74*		*30 - 140*
PCB-4L	*71*		*30 - 140*
PCB-15L	*76*		*30 - 140*
PCB-19L	*71*		*30 - 140*
PCB-37L	*78*		*30 - 140*
PCB-54L	*68*		*30 - 140*
PCB-77L	*82*		*30 - 140*
PCB-81L	*78*		*30 - 140*
PCB-104L	*83*		*30 - 140*
PCB-105L	*76*		*30 - 140*
PCB-114L	*76*		*30 - 140*
PCB-118L	*78*		*30 - 140*
PCB-123L	*76*		*30 - 140*
PCB-126L	*87*		*30 - 140*
PCB-155L	*90*		*30 - 140*
PCB-156L	*83*	*C*	*30 - 140*
PCB-157L	*83*	*C156*	*30 - 140*
PCB-167L	*82*		*30 - 140*
PCB-169L	*93*		*30 - 140*
PCB-170L	*78*		*30 - 140*
PCB-188L	*78*		*30 - 140*
PCB-189L	*93*		*30 - 140*
PCB-202L	*86*		*30 - 140*
PCB-205L	*79*		*30 - 140*
PCB-206L	*70*		*30 - 140*
PCB-208L	*77*		*30 - 140*
PCB-209L	*68*		*30 - 140*

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
PCB-28L	*74*		*40 - 125*

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 140-34150/13-B
Matrix: Solid
Analysis Batch: 34298

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 34150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
PCB-111L	*88*		*40 - 125*
PCB-178L	*93*		*40 - 125*

Method: Moisture - Percent Moisture

Lab Sample ID: 580-88908-26 DU
Matrix: Solid
Analysis Batch: 33470

Client Sample ID: J5-SC1b-20to30-82719
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Moisture	49.5			48.4		%				2	
Percent Solids	50.5			51.6		%				2	

Lab Chronicle

Client: Pacific Groundwater Group
Project/Site: Swan Island Lagoon Sediment Investigatio

Job ID: 580-88908-1

Client Sample ID: J5-SC1b-20to30-82719
Lab Sample ID: 580-88908-26
Date Collected: 08/27/19 14:55
Matrix: Solid
Date Received: 09/03/19 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	33470	09/11/19 15:55	KW1	TAL KNX

Client Sample ID: J5-SC1b-20to30-82719
Lab Sample ID: 580-88908-26
Date Collected: 08/27/19 14:55
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 50.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			33628	09/17/19 12:25	SSS	TAL KNX
Total/NA	Cleanup	Split			33702	09/19/19 06:45	EBS	TAL KNX
Total/NA	Analysis	1668A		5	34146	10/03/19 15:41	JMN	TAL KNX
Total/NA	Prep	HRMS-Sox	RE		34150	10/03/19 11:21	SSS	TAL KNX
Total/NA	Cleanup	Split	RE		34179	10/04/19 10:40	ALS	TAL KNX
Total/NA	Analysis	1668A	RE	5	34314	10/10/19 04:06	LKM	TAL KNX

Client Sample ID: J5-SC1b-30to40-82719
Lab Sample ID: 580-88908-27
Date Collected: 08/27/19 15:00
Matrix: Solid
Date Received: 09/03/19 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	33470	09/11/19 15:55	KW1	TAL KNX

Client Sample ID: J5-SC1b-30to40-82719
Lab Sample ID: 580-88908-27
Date Collected: 08/27/19 15:00
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 52.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			33628	09/17/19 12:25	SSS	TAL KNX
Total/NA	Cleanup	Split			33702	09/19/19 06:45	EBS	TAL KNX
Total/NA	Analysis	1668A		5	34146	10/03/19 16:43	JMN	TAL KNX
Total/NA	Prep	HRMS-Sox	RE		34150	10/03/19 11:21	SSS	TAL KNX
Total/NA	Cleanup	Split	RE		34179	10/04/19 10:40	ALS	TAL KNX
Total/NA	Analysis	1668A	RE	1	34298	10/09/19 21:54	MSD	TAL KNX

Client Sample ID: J5-SC1b-40to50-82719
Lab Sample ID: 580-88908-28
Date Collected: 08/27/19 16:10
Matrix: Solid
Date Received: 09/03/19 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	33470	09/11/19 15:55	KW1	TAL KNX

Lab Chronicle

Client: Pacific Groundwater Group
Job ID: 580-88908-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: J5-SC1b-40to50-82719
Lab Sample ID: 580-88908-28
Date Collected: 08/27/19 16:10
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 54.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			33628	09/17/19 12:25	SSS	TAL KNX
Total/NA	Cleanup	Split			33702	09/19/19 06:45	EBS	TAL KNX
Total/NA	Analysis	1668A		5	33925	09/26/19 04:52	PMP	TAL KNX
Total/NA	Prep	HRMS-Sox	RE		34150	10/03/19 11:21	SSS	TAL KNX
Total/NA	Cleanup	Split	RE		34179	10/04/19 10:40	ALS	TAL KNX
Total/NA	Analysis	1668A	RE	1	34298	10/09/19 17:46	MSD	TAL KNX

Client Sample ID: J5-SC1b-50to60-82719
Lab Sample ID: 580-88908-29
Date Collected: 08/27/19 16:15
Matrix: Solid
Date Received: 09/03/19 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	33470	09/11/19 15:55	KW1	TAL KNX

Client Sample ID: J5-SC1b-50to60-82719
Lab Sample ID: 580-88908-29
Date Collected: 08/27/19 16:15
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 55.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			33628	09/17/19 12:25	SSS	TAL KNX
Total/NA	Cleanup	Split			33702	09/19/19 06:45	EBS	TAL KNX
Total/NA	Analysis	1668A		5	34146	10/03/19 17:45	JMN	TAL KNX
Total/NA	Prep	HRMS-Sox	RE		34150	10/03/19 11:21	SSS	TAL KNX
Total/NA	Cleanup	Split	RE		34179	10/04/19 10:40	ALS	TAL KNX
Total/NA	Analysis	1668A	RE	1	34298	10/09/19 18:48	MSD	TAL KNX

Client Sample ID: J5-SC1b-60to70-82719
Lab Sample ID: 580-88908-30
Date Collected: 08/27/19 16:20
Matrix: Solid
Date Received: 09/03/19 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	33470	09/11/19 15:55	KW1	TAL KNX

Client Sample ID: J5-SC1b-60to70-82719
Lab Sample ID: 580-88908-30
Date Collected: 08/27/19 16:20
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 56.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			33628	09/17/19 12:25	SSS	TAL KNX
Total/NA	Cleanup	Split			33702	09/19/19 06:45	EBS	TAL KNX
Total/NA	Analysis	1668A		5	34146	10/03/19 18:47	JMN	TAL KNX
Total/NA	Prep	HRMS-Sox	RE		34150	10/03/19 11:21	SSS	TAL KNX
Total/NA	Cleanup	Split	RE		34179	10/04/19 10:40	ALS	TAL KNX
Total/NA	Analysis	1668A	RE	5	34314	10/10/19 05:07	LKM	TAL KNX

Lab Chronicle

Client: Pacific Groundwater Group
Job ID: 580-88908-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: J5-SC1b-70to80-82719
Lab Sample ID: 580-88908-31
Date Collected: 08/27/19 16:25
Matrix: Solid
Date Received: 09/03/19 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	33470	09/11/19 15:55	KW1	TAL KNX

Client Sample ID: J5-SC1b-70to80-82719
Lab Sample ID: 580-88908-31
Date Collected: 08/27/19 16:25
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 65.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			33628	09/17/19 12:25	SSS	TAL KNX
Total/NA	Cleanup	Split			33702	09/19/19 06:45	EBS	TAL KNX
Total/NA	Analysis	1668A		5	34146	10/03/19 19:49	JMN	TAL KNX
Total/NA	Prep	HRMS-Sox	RE		34150	10/03/19 11:21	SSS	TAL KNX
Total/NA	Cleanup	Split	RE		34179	10/04/19 10:40	ALS	TAL KNX
Total/NA	Analysis	1668A	RE	1	34314	10/10/19 06:10	LKM	TAL KNX

Client Sample ID: J5-SC1b-80to90-82719
Lab Sample ID: 580-88908-32
Date Collected: 08/27/19 17:25
Matrix: Solid
Date Received: 09/03/19 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	33470	09/11/19 15:55	KW1	TAL KNX

Client Sample ID: J5-SC1b-80to90-82719
Lab Sample ID: 580-88908-32
Date Collected: 08/27/19 17:25
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 70.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			33628	09/17/19 12:25	SSS	TAL KNX
Total/NA	Cleanup	Split			33702	09/19/19 06:45	EBS	TAL KNX
Total/NA	Analysis	1668A		5	34146	10/03/19 20:51	JMN	TAL KNX
Total/NA	Prep	HRMS-Sox	RE		34150	10/03/19 11:21	SSS	TAL KNX
Total/NA	Cleanup	Split	RE		34179	10/04/19 10:40	ALS	TAL KNX
Total/NA	Analysis	1668A	RE	1	34314	10/10/19 07:11	LKM	TAL KNX

Client Sample ID: J5-SC1b-90to100-82719
Lab Sample ID: 580-88908-33
Date Collected: 08/27/19 17:30
Matrix: Solid
Date Received: 09/03/19 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	33470	09/11/19 15:55	KW1	TAL KNX

Client Sample ID: J5-SC1b-90to100-82719

Lab Sample ID: 580-88908-33
Date Collected: 08/27/19 17:30
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 71.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			33628	09/17/19 12:25	SSS	TAL KNX
Total/NA	Cleanup	Split			33702	09/19/19 06:45	EBS	TAL KNX
Total/NA	Analysis	1668A		5	34168	10/04/19 02:55	LKM	TAL KNX
Total/NA	Prep	HRMS-Sox	RE		34150	10/03/19 11:21	SSS	TAL KNX
Total/NA	Cleanup	Split	RE		34179	10/04/19 10:40	ALS	TAL KNX
Total/NA	Analysis	1668A	RE	1	34314	10/10/19 08:13	LKM	TAL KNX

Client Sample ID: J5-SC1b-100to110-82719

Lab Sample ID: 580-88908-34
Date Collected: 08/27/19 17:35
Matrix: Solid
Date Received: 09/03/19 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	33470	09/11/19 15:55	KW1	TAL KNX

Client Sample ID: J5-SC1b-100to110-82719

Lab Sample ID: 580-88908-34
Date Collected: 08/27/19 17:35
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 70.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			33628	09/17/19 12:25	SSS	TAL KNX
Total/NA	Cleanup	Split			33702	09/19/19 06:45	EBS	TAL KNX
Total/NA	Analysis	1668A		5	34168	10/04/19 03:57	LKM	TAL KNX
Total/NA	Prep	HRMS-Sox	RE		34150	10/03/19 11:21	SSS	TAL KNX
Total/NA	Cleanup	Split	RE		34179	10/04/19 10:40	ALS	TAL KNX
Total/NA	Analysis	1668A	RE	1	34314	10/10/19 09:14	LKM	TAL KNX

Client Sample ID: J5-SC1b-00to10-82719

Lab Sample ID: 580-88908-35
Date Collected: 08/27/19 14:45
Matrix: Solid
Date Received: 09/03/19 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	33470	09/11/19 15:55	KW1	TAL KNX

Client Sample ID: J5-SC1b-00to10-82719

Lab Sample ID: 580-88908-35
Date Collected: 08/27/19 14:45
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 45.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			33628	09/17/19 12:25	SSS	TAL KNX
Total/NA	Cleanup	Split			33702	09/19/19 06:45	EBS	TAL KNX
Total/NA	Analysis	1668A		5	34168	10/04/19 04:59	LKM	TAL KNX
Total/NA	Prep	HRMS-Sox	RE		34150	10/03/19 11:21	SSS	TAL KNX
Total/NA	Cleanup	Split	RE		34179	10/04/19 10:40	ALS	TAL KNX
Total/NA	Analysis	1668A	RE	5	34365	10/11/19 16:00	JMN	TAL KNX

Lab Chronicle

Client: Pacific Groundwater Group
Job ID: 580-88908-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Client Sample ID: J5-SC1b-10to20-82719
Lab Sample ID: 580-88908-36
Date Collected: 08/27/19 14:50
Matrix: Solid
Date Received: 09/03/19 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	33470	09/11/19 15:55	KW1	TAL KNX

Client Sample ID: J5-SC1b-10to20-82719
Lab Sample ID: 580-88908-36
Date Collected: 08/27/19 14:50
Matrix: Solid
Date Received: 09/03/19 15:00
Percent Solids: 49.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			33628	09/17/19 12:25	SSS	TAL KNX
Total/NA	Cleanup	Split			33702	09/19/19 06:45	EBS	TAL KNX
Total/NA	Analysis	1668A		5	34168	10/04/19 06:01	LKM	TAL KNX
Total/NA	Prep	HRMS-Sox	RE		34150	10/03/19 11:21	SSS	TAL KNX
Total/NA	Cleanup	Split	RE		34179	10/04/19 10:40	ALS	TAL KNX
Total/NA	Analysis	1668A	RE	1	34298	10/09/19 19:50	MSD	TAL KNX

Client Sample ID: 711-82719
Lab Sample ID: 580-88908-74
Date Collected: 08/27/19 08:40
Matrix: Water
Date Received: 09/03/19 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sepf			33603	09/16/19 12:34	SMA	TAL KNX
Total/NA	Analysis	1668A		1	33865	09/24/19 17:59	KBL	TAL KNX

Laboratory References:

TAL KNX = Eurofins TestAmerica, Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

Accreditation/Certification Summary

Client: Pacific Groundwater Group
Job ID: 580-88908-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Laboratory: Eurofins TestAmerica, Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-024	01-19-22
ANAB	Dept. of Defense ELAP	L2236	01-19-22
ANAB	ISO/IEC 17025	L2236	01-19-22
California	State	2901	11-05-19
Montana (UST)	State	NA	04-13-21
Oregon	NELAP	WA100007	11-05-19
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	US Federal Programs	P330-17-00039	02-10-20
Washington	State	C553	02-17-20

Laboratory: Eurofins TestAmerica, Knoxville

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
	AFCEE	N/A	
ANAB	Dept. of Defense ELAP	L2311	02-14-22
ANAB	Dept. of Energy	L2311.01	02-14-22
ANAB	ISO/IEC 17025	L2311	02-13-22
Arkansas DEQ	State	2423	06-16-20
California	State	2423	06-30-20
Colorado	State	TN00009	02-29-20
Connecticut	State	PH-0223	09-30-21
Florida	NELAP	E87177	06-30-20
Georgia (DW)	State	906	04-13-20
Hawaii	State	NA	04-13-20
Kansas	NELAP	E-10349	10-31-19
Kentucky (DW)	State	90101	12-31-19
Louisiana	NELAP	83979	06-30-20
Louisiana	NELAP	83979	06-30-20
Louisiana (DW)	State	LA019	12-31-19
Maryland	State	277	03-31-20
Michigan	State	9933	04-13-20
Nevada	State	TN00009	07-31-20
New Hampshire	NELAP	2999	01-17-20
New Hampshire	NELAP	299919	01-17-20
New Jersey	NELAP	TN001	06-30-20
New York	NELAP	10781	03-31-20
North Carolina (DW)	State	21705	07-31-20
North Carolina (WW/SW)	State	64	12-31-19
North Carolina (WW/SW)	State Program	64	12-31-19
Ohio VAP	State	CL0059	08-28-20
Oklahoma	State	9415	09-01-20
Oregon	NELAP	TNI0189	01-01-20
Pennsylvania	NELAP	68-00576	12-31-19
Tennessee	State	02014	04-13-20
Texas	NELAP	T104704380-18-12	08-31-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	US Federal Programs	P330-19-00236	08-20-22
Utah	NELAP	TN00009	07-31-20
Virginia	NELAP	460176	09-15-20

Accreditation/Certification Summary

Client: Pacific Groundwater Group
Job ID: 580-88908-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Laboratory: Eurofins TestAmerica, Knoxville (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C593	01-19-20
West Virginia (DW)	State	9955C	12-31-19
West Virginia DEP	State	345	04-30-20
Wisconsin	State	998044300	08-31-20

Sample Summary

Client: Pacific Groundwater Group
Job ID: 580-88908-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
580-88908-26	J5-SC1b-20to30-82719	Solid	08/27/19 14:55	09/03/19 15:00	
580-88908-27	J5-SC1b-30to40-82719	Solid	08/27/19 15:00	09/03/19 15:00	
580-88908-28	J5-SC1b-40to50-82719	Solid	08/27/19 16:10	09/03/19 15:00	
580-88908-29	J5-SC1b-50to60-82719	Solid	08/27/19 16:15	09/03/19 15:00	
580-88908-30	J5-SC1b-60to70-82719	Solid	08/27/19 16:20	09/03/19 15:00	
580-88908-31	J5-SC1b-70to80-82719	Solid	08/27/19 16:25	09/03/19 15:00	
580-88908-32	J5-SC1b-80to90-82719	Solid	08/27/19 17:25	09/03/19 15:00	
580-88908-33	J5-SC1b-90to100-82719	Solid	08/27/19 17:30	09/03/19 15:00	
580-88908-34	J5-SC1b-100to110-82719	Solid	08/27/19 17:35	09/03/19 15:00	
580-88908-35	J5-SC1b-00to10-82719	Solid	08/27/19 14:45	09/03/19 15:00	
580-88908-36	J5-SC1b-10to20-82719	Solid	08/27/19 14:50	09/03/19 15:00	
580-88908-74	711-82719	Water	08/27/19 08:40	09/03/19 15:00	

Other TA

Chain of Custody Record

88908

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 8/28/2019	COC No:
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	1 of 5 COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	standard			SDG No.
206 329 0141 Phone	TAT if different from Below			
206 329 6968 FAX	[x] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

	Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Sample Specific Notes:
-1	H3-SC1b-20to30-8Z819	8/28/19	2015		S	1	
	H3-SC1b-30to40-8Z919	8/29/19	[redacted]	0825	S	1	
-3	H3-SC1b-40to50-8Z919	8/29/19	0830		S	1	
	H3-SC1b-50to60-8Z919	8/29/19	0835		S	1	
-5	H3-SC1b-60to70-8Z919	8/29/19	0900		S	1	
	H3-SC1b-70to80-8Z919	8/29/19	0905		S	1	
-7	H3-SC1b-80to90-8Z919	8/29/19	0930		S	1	
	H3-SC1b-90to100-8Z919	8/29/19	0935		S	1	
-9	H3-SC1b-100to110-8Z919	8/29/19	0950		S	1	
	~~H3-SC1b-00to10-82819~~	~~8/28/19~~	~~2005~~		S	1	
	~~H3-SC1b-10-20-82819~~	~~8/28/19~~	~~2010~~		S	1	
		8/ /19			S	1	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification

[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

[ ] Return To Client [ ] Disposal By Lab [x] Archive For _____ Months

Therm. ID: IR4 Cor: 5.2 ° Unc: 5.5 °
Cooler Dsc: Lrg Blue
Packing: Bubble
Cust. Seal: Yes X No
Blue Ice, Dry, None
FedEx:
UPS:
Lab Cour:
Other: pri cour

Therm. ID: IR4 Cor: 3.3 ° Unc: 3.6 °
Cooler Dsc: Lrg Blue
Packing: Bub
Cust. Seal: Yes X No
Blue Ice, Dry, None
FedEx:
UPS:
Lab Cour:
Other: pri cour

530-88908 Chain of Custody

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PGG	9/3/2019 1210	B. Zell	SEA TA	9.3.19 1500
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

other TA

Chain of Custody Record

88908

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date:8/__/2019	COC No: 8 of 8 COCs
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	Job No. 2006-00115
Pacific Groundwater Group	Analysis Turnaround Time			SDG No.
2377 Eastlake Ave E, Seattle WA 98102	*standard*			
206 329 0141 Phone	TAT if different from Below ____			
206 329 6968 FAX	[x] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	PCB congeners 1668A	ARCHIVE	Sample Specific Notes:
L3-SC1b-20to30-826 19	8/26/19	1030		S	1		✓	
-11 L3-SC1b-30to40-826 19	8/26/19	1035		S	1		✓	
L3-SC1b-00to10-82619	8/26/19	1006		S	1		✓	
-13 L3-SC1b-10to20-82619	8/26/19	1007		S	1		✓	
	8/ /19			S	1			
	8/ /19			S	1			
	8/ /19			S	1			
	8/ /19			S	1			
	8/ /19			S	1			
	8/ /19			S	1			
	8/ /19			S	1			
	8/ /19			S	1			
	8/ /19			S	1			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] Return To Client [ ] Disposal By Lab [x] Archive For _____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PGG	9/3/2019 1210	B. Hall	SEA TA	9.3.19 1500
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

other TA

Chain of Custody Record

88908

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 8/26/2019	COC No: 2 of 8 COCs
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	Job No. 2006-00115
Pacific Groundwater Group	Analysis Turnaround Time			
2377 Eastlake Ave E, Seattle WA 98102	standard			SDG No.
206 329 0141 Phone	TAT if different from Below			
206 329 6968 FAX	[x] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

	Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Sample Specific Notes:
	D6-SC1b-20to30-826 19	8/26/19	1245		S	1	
-15	D6-SC1b-30to40-826 19	8/26/19	1300		S	1	
	D6-SC1b-40to50-826 19	8/26/19	1445		S	1	
-17	D6-SC1b-50to60-826 19	8/26/19	1450		S	1	
	D6-SC1b-60to70-826 19	8/26/19	1530		S	1	
-19	D6-SC1b-70to80-826 19	8/26/19	1540		S	1	
	D6-SC1b-80to90-826 19	8/26/19	1655		S	1	
-21	D6-SC1b-90to100-826 19	8/26/19	1700		S	1	
	D6-SC1b-100to110-826 19	8/26/19	1740		S	1	
-23	D6-SC1b-110to120-826 19	8/26/19	1750		S	1	
	D6-SC1b-10to20-82619	8/26/19	1210		S	1	
-25	411-SC1b-50to60-82619	8/26/19	1500		S	1	

PCB Congeners 1668A

Archive

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification

[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

[ ] Return To Client [ ] Disposal By Lab [x] Archive For _____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PGG	9/3/2019 1210	B. Hall	SEA TA	9.3.19 1500
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Other
TA

Chain of Custody Record

88908

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date:8/27/2019	COC No: 6
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	3 of 6 COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	*standard*			
206 329 0141 Phone	TAT if different from Below			SDG No.
206 329 6968 FAX	[x] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	PCB Congeners 1668A	Archive	Sample Specific Notes:
J5-SC1b-20to30-827 19	8/27/19	1455		S	1	X		
-27 J5-SC1b-30to40-827 19	8/27/19	1500		S	1	X		
J5-SC1b-40to50-827 19	8/27/19	1610		S	1	X		
-29 J5-SC1b-50to60-827 19	8/27/19	1615		S	1	X		
J5-SC1b-60to70-827 19	8/27/19	1620		S	1	X		
-31 J5-SC1b-70to80-827 19	8/27/19	1625		S	1	X		
J5-SC1b-80to90-827 19	8/27/19	1725		S	1	X		
-33 J5-SC1b-90to100-827 19	8/27/19	1730		S	1	X		
J5-SC1b-100to110-827 19	8/27/19	1735		S	1	X		
[redacted]								
-35 J5-SC1b-00to10-82719	8/27/19	1445		S	1	X		
J5-SC1b-10to20-82719	8/27/19	1450		S	1			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] Return To Client [ ] Disposal By Lab [x] Archive For _____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PGG	9/3/2019 1210	B. Hall	SEA TA	9.3.19 1500
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Other TA

Chain of Custody Record

88908

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date:8/__/2019	COC No: 4 of 8 COCs
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	Job No. 2006-00115
Pacific Groundwater Group	Analysis Turnaround Time			SDG No.
2377 Eastlake Ave E, Seattle WA 98102	*standard*			
206 329 0141 Phone	TAT if different from Below ____			
206 329 6968 FAX	[x] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

	Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	PCB congeners 1668A	Archive	Sample Specific Notes:
-37	J3-SC1b-20to30-827 19	8/27/19	1000		S	1		✓	
	J3-SC1b-30to40-827 19	8/27/19	1005		S	1		✓	
-39	J3-SC1b-40to50-827 19	8/27/19	1120		S	1		✓	
	J3-SC1b-50to60-827 19	8/27/19	1125		S	1		✓	
-41	J3-SC1b-60to70-827 19	8/27/19	1130		S	1		✓	
	J3-SC1b-70to80-827 19	8/27/19	1135		S	1		✓	
-43	J3-SC1b-80to90-827 19	8/27/19	1220		S	1		✓	
	J3-SC1b-90to100-827 19	8/27/19	1225		S	1		✓	
-45	J3-SC1b-10to20-827 19	8/27/19	0955		S	1		✓	
	[redacted]	8/ /19			S	1		[redacted]	
	412-SC1b-80to90-827 19	8/27/19	1235		S	1		✓	
		8/ /19			S	1			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification

[ ] *Non-Hazard* [ ] *Flammable* [ ] *Skin Irritant* *Poison B* [ ] *Unknown* [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

[ ] *Return To Client* [ ] *Disposal By Lab* [x] *Archive For* ____ *Months*

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PGG	9/3/2019 1210	B. Bell	SEA TA	9.3.19 1501
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Other TA

Chain of Custody Record

88908

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 8/27/2019 - 8/28/2019	COC No: 5 of 8 COCs
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	*standard*			
206 329 0141 Phone	TAT if different from Below _____			SDG No.
206 329 6968 FAX	[x] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	PCB Congeners 1668A	Archive	Sample Specific Notes:
-47 J6-SC1b-20to30-8 28 19	8/28/19	0920		S	1			
J6-SC1b-30to40-8 28 19	8/28/19	0925		S	1			
-49 J6-SC1b-40to50-8 28 19	8/28/19	1025		S	1			
J6-SC1b-50to60-8 28 19	8/28/19	1030		S	1			
-51 J6-SC1b-60to70-8 28 19	8/28/19	1035		S	1			
J6-SC1b-70to80-8 28 19	8/28/19	1040		S	1			
-53 J6-SC1b-80to90-8 28 19	8/28/19	1155		S	1			
J6-SC1b-90to100-8 28 19	8/28/19	1200		S	1			
-55 J6-SC1b-100to110-8 28 19	8/28/19	1205		S	1			
J6-SC1b-110to120-8 28 19	8/28/19	1210		S	1			
-57 J6-SC1b-00to10-82719	8/27/19	1930		S	1			
J6-SC1b-10to20-82719	8/27/19	1935		S	1			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] Return To Client [ ] Disposal By Lab [x] Archive For _____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PGG	9/3/2019 1210	B. Hall	SEATTA	9.3.19 1500
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

[redacted] Other TA

Chain of Custody Record

88908

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 8/28/2019	COC No: 6 of 8 COCs
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	standard			
206 329 0141 Phone	TAT if different from Below			SDG No.
206 329 6968 FAX	[x] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
PO#	[ ] 1 day			

	Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	PCB congeners (1668A)	Archive	Sample Specific Notes:
-59	R4-SC1b-20to30-8 28 19	8/28/19	1400		S	1			
	R4-SC1b-30to40-8 28 19	8/28/19	1405		S	1			
-61	R4-SC1b-40to50-8 28 19	8/28/19	1510		S	1			
	R4-SC1b-50to60-8 28 19	8/28/19	1520		S	1			
-63	R4-SC1b-60to70-8 28 19	8/28/19	1550		S	1			
	R4-SC1b-70to80-8 28 19	8/28/19	1555		S	1			
-65	R4-SC1b-80to90-8 28 19	8/28/19	1630		S	1			
	R4-SC1b-90to100-8 28 19	8/28/19	1640		S	1			
	[redacted]								
-67	R4-SC1b-10to20-8 28 19	8/28/19	1355		S	1			
		8/ /19			S	1			
		8/ /19			S	1			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification

[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

[ ] Return To Client [ ] Disposal By Lab [x] Archive For _____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[redacted]	PGG	9/3/2019 1210	B. Hall	SEA TA	9.3.19 1500
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Other TA

Chain of Custody Record

88908

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date:8/__/2019	COC No: 7 of 8 COCs
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	Job No. 2006-00115
Pacific Groundwater Group	Analysis Turnaround Time			
2377 Eastlake Ave E, Seattle WA 98102	standard			SDG No.
206 329 0141 Phone	TAT if different from Below			
206 329 6968 FAX	[x] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	PCB Congeners 1668A	Archive	Sample Specific Notes:
R4-SC1b-100to110-828 19	8/28/19	1700		S	1		X	
-69 R4-SC1b-110to120-828 19	8/28/19	1710		S	1		X	
R4-SC1b-120to130-828 19	8/28/19	1820		S	1		X	
[illegible]	[illegible]	[illegible]		S	1			
[illegible]	[illegible]	[illegible]		S	1			
-71 413-SC1b-40to50-82819	8/28/19	1045		S	1		X	
[illegible]	[illegible]	[illegible]		S	1			
[illegible]	[illegible]	[illegible]		S	1			
R4-SC1b-130to140-82819	8/28/19	1825		S	1		X	
-73 R4-SC1b-140to150-82819	8/28/19	1830		S	1		X	
	8/ /19			S	1			
	8/ /19			S	1			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification

[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

[ ] Return To Client [ ] Disposal By Lab [x] Archive For _____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	PGG	9/3/2019 1210	B. Hall	SEA TN	9.3.19 1500
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

ALS Environmental

TA

CHAIN OF CUSTODY

Sediment and Tissue Chemistry

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • FAX (360) 636-1068

PAGE 8 OF 8 SR#: 88908 COC#

PROJECT NAME
PROJECT NUMBER
PROJECT MANAGER
COMPANY NAME
ADDRESS
CITY/STATE/ZIP
E-MAIL ADDRESS
PHONE # FAX #
SAMPLER'S SIGNATURE

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	☐ Total Volatile Solids ☐ Total Solids	TOC ☐ (ASTM D4129M) ☐ PSEP	Grain Size ☐ PSEP ☐ ASTMD422	Sulfide ☐ Total (9030M) ☐ PSEP ☐ AVS ☐ Water Soluble ☐ SEM (metals list below)	Ammonia ☐ Total (350.1M) ☐ Plumb ☐ Pore Water	Metals (list below)	Pesticides (8081)	PCBs (8082) ☐ Aroclors X Congeners 1668A	Semivolatiles ☐ GC/MS SIM (PAH) ☐ 8270-L	Organotins ☐ Bulk ☐ Pore Water ☐ TBT only	Volatiles (8260)	Dioxins ☐ 1613 ☐ 8290	TPH ☐ GRO ☐ DRO ☐ RRO	☐ Lipids	Tissue Sample Preparations (Instructions below)	Archive / Hold	REMARKS
711-82719	8/27/19	0840		A								X										
75 712-82819	8/27/19	0820		A																	X	

REPORT REQUIREMENTS

- ___ I. Routine Report: Method Blank, Surrogate, as required
- ___ II. Report Dup., MS, MSD as required
- ___ III. CLP Like Summary (no raw data)
- ___ IV. Data Validation Report
- ___ V. EDD

INVOICE INFORMATION

P.O. #
Bill To:

TURNAROUND REQUIREMENTS

___ 24 hr. ___ 48 hr.
___ 5 day
___ Standard (15 working days)

Requested Report Date

Circle which metals are to be analyzed:

SMS Metals: As Cd Cr Cu Pb Hg Ag Zn
CA Metals: Ag As Cd Cr Cu Hg Ni Pb Se Zn
SEM Metals: Cd Cu Pb Hg Ni Zn
Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

SPECIAL INSTRUCTIONS/COMMENTS:

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature	B. Green	Signature	Signature
9/3/2019 1210 Date/Time	9.3.19 1500 Date/Time	Date/Time	Date/Time
David Wampler Printed Name	B. Green Printed Name	Printed Name	Printed Name
PGG Firm	SEA TV Firm	Firm	Firm

10/14/2019

Other ANI 19I0008 COPY

Chain of Custody Record

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 8/__/2019	COC No: 7 of 8 COCs
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	Job No. 2006-00115
Pacific Groundwater Group	Analysis Turnaround Time			
2377 Eastlake Ave E, Seattle WA 98102	standard			SDG No.
206 329 0141 Phone	TAT if different from Below ____			
206 329 6968 FAX	[X] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8082A Aroclor	TOC SW9060	Archive	Sample Specific Notes:
R4-SC1b-100to110-828 19	8/28/19	1700		S	1	X	X		
R4-SC1b-110to120-828 19	8/28/19	1710		S	1	X	X		
R4-SC1b-120to130-828 19	8/28/19	1820		S	1	X	X		
[illegible]									
[illegible]									
413-SC1b-40to50-82819	8/28/19	1045		S	1	X	X		
[illegible]									
[illegible]									
R4-SC1b-130to140-82819	8/28/19	1825		S	1	X	X		
R4-SC1b-140to150-82819	8/28/19	1830		S	1	X	X		
	8/ /19			S	1				
	8/ /19			S	1				

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification

[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

[ ] Return To Client [ ] Disposal By Lab [X] Archive For ____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	PGG	9/3/2019 1210	[signature]	ARI	9/3/19 1430
Relinquished by: [signature]	Company: ARI	Date/Time: 9/5/19 1002	Received by: M. Elaine Walker	Company: ETA	Date/Time: 9/5/19 1070
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Other ARI 19I0008

COPY

Chain of Custody Record

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 8/29/2019	COC No: 9 of 9 COCs
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	Job No. 2006-00115
Pacific Groundwater Group	Analysis Turnaround Time			
2377 Eastlake Ave E, Seattle WA 98102	standard			SDG No.
206 329 0141 Phone	TAT if different from Below			
206 329 6968 FAX	[X] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Aroclor 8082A	TOC SW9060	Archive	Sample Specific Notes:
H3-SC1b-20to30-8[illegible]19	8/[illegible]/19	2015		S	1	X	X		
H3-SC1b-30to40-8[illegible]19	8/[illegible]/19	[illegible] 0825		S	1	X	X		
H3-SC1b-40to50-8[illegible]19	8/29/19	0830		S	1	X	X		
H3-SC1b-50to60-8[illegible]19	8/29/19	0835		S	1	X	X		
H3-SC1b-60to70-8[illegible]19	8/29/19	0900		S	1	X	X		
H3-SC1b-70to80-8[illegible]19	8/29/19	0905		S	1	X	X		
H3-SC1b-80to90-8[illegible]19	8/29/19	0930		S	1	X	X		
H3-SC1b-90to100-8[illegible]19	8/29/19	0935		S	1	X	X		
H3-SC1b-100to110-8[illegible]19	8/29/19	0950		S	1	X	X		
H3-SC1b-00to10-8[illegible]19	8/28/19	2005		S	1	[illegible]		X	
H3-SC1b-10-20-8[illegible]19	8/28/19	2010		S	1			X	
	8/ /19			S	1				

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification

[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

[ ] Return To Client [ ] Disposal By Lab [X] Archive For _____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PGG	9/3/2019 1210		ARI	9/3/19 1430
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	ARI	9/5/19 1002	M. Elaine Walker	ESA	9/5/19 1010
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Other ARI 19I0008

COPY

Chain of Custody Record

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 8/27/2019 - 8/28/2019	COC No:
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	1 of 1 COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	standard			
206 329 0141 Phone	TAT if different from Below			SDG No.
206 329 6968 FAX	[X] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8032A Aroclor	TOC SW9060	Archive	Sample Specific Notes:
J6-SC1b-20to30-8Z819	8/28/19	0920		S	1	X	X		
J6-SC1b-30to40-8Z819	8/28/19	0925		S	1	X	X		
J6-SC1b-40to50-8Z819	8/28/19	1025		S	1	X	X		
J6-SC1b-50to60-8Z819	8/28/19	1030		S	1	X	X		
J6-SC1b-60to70-8Z819	8/28/19	1035		S	1	X	X		
J6-SC1b-70to80-8Z819	8/28/19	1040		S	1	X	X		
J6-SC1b-80to90-8Z819	8/28/19	1155		S	1	X	X		
J6-SC1b-90to100-8Z819	8/28/19	1200		S	1	X	X		
J6-SC1b-100to110-8Z819	8/28/19	1205		S	1	X	X		
J6-SC1b-110to120-8Z819	8/28/19	1210		S	1	X	X		
J6-SC1b-00to10-82719	8/27/19	1930		S	1			X	
J6-SC1b-10to20-82719	8/27/19	1935		S	1			X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification

[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

[ ] Return To Client [ ] Disposal By Lab [X] Archive For _____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PGG	9/3/2019 1210		ARI	9/3/19 1430
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	ARI	9/5/19 1002	M. Elaine Walker	LJA	9/5/19 1070
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Eurofins TestAmerica, Seattle
5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310 Fax: 253-922-5047

Chain of Custody Record

580-88908 Chain of Custody

Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Walker, Elaine M		3.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: elaine.walker@testamericainc.com	State of Origin: Washington	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 580-88908-1
Address: 5815 Middlebrook Pike, ,	Due Date Requested: 9/10/2019			
City: Knoxville	TAT Requested (days):			
State, Zip: TN, 37921				
Phone: 865-291-3000(Tel) 865-584-4315(Fax)	PO #:			
Email:	WO #:			
Project Name: Swan Island Lagoon Sediment Investigatio	Project #: 58013007			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1668A/1668_P_Sox (MOD) 209 PCBs plus Totals	Screen_1668/Screen_PCB_P_S	Moisture	1668A/1668_P_Sep 209 PCBs plus Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
J5-SC1b-20to30-82719 (580-88908-26)	8/27/19	14:55 Pacific		Solid			X	X	X		1	
J5-SC1b-30to40-82719 (580-88908-27)	8/27/19	15:00 Pacific		Solid			X	X	X		1	
J5-SC1b-40to50-82719 (580-88908-28)	8/27/19	16:10 Pacific		Solid			X	X	X		1	
J5-SC1b-50to60-82719 (580-88908-29)	8/27/19	16:15 Pacific		Solid			X	X	X		1	
J5-SC1b-60to70-82719 (580-88908-30)	8/27/19	16:20 Pacific		Solid			X	X	X		1	
J5-SC1b-70to80-82719 (580-88908-31)	8/27/19	16:25 Pacific		Solid			X	X	X		1	
J5-SC1b-80to90-82719 (580-88908-32)	8/27/19	17:25 Pacific		Solid			X	X	X		1	
J5-SC1b-90to100-82719 (580-88908-33)	8/27/19	17:30 Pacific		Solid			X	X	X		1	
J5-SC1b-100to110-82719 (580-88908-34)	8/27/19	17:35 Pacific		Solid			X	X	X		1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by: Tom Blankenship	Date/Time: 9/6/19	Company TA-Sea	Received by:	Date/Time: 9/7/19 0920	Company GTA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

10/14/2019

Eurofins TestAmerica, Seattle
5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310 Fax: 253-922-5047

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Walker, Elaine M	Carrier Tracking No(s):	COC No: 580-69668.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: elaine.walker@testamericainc.com	State of Origin: Washington	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 580-88908-1
Address: 5815 Middlebrook Pike, ,	Due Date Requested: 9/10/2019			
City: Knoxville	TAT Requested (days):			
State, Zip: TN, 37921				
Phone: 865-291-3000(Tel) 865-584-4315(Fax)	PO #:			
Email:	WO #:			
Project Name: Swan Island Lagoon Sediment Investigatio	Project #: 58013007			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1668A/1668_P_Sox (MOD) 209 PCBs plus Totals	Screen_1668/Screen_PCB_P_S	Moisture	1668A/1668_P_Sep 209 PCBs plus Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
J5-SC1b-00to10-82719 (580-88908-35)	8/27/19	14:45 Pacific		Solid			X	X	X		1	
J5-SC1b-10to20-82719 (580-88908-36)	8/27/19	14:50 Pacific		Solid			X	X	X		1	
711-82719 (580-88908-74)	8/27/19	08:40 Pacific		Water						X	2	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. I

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	Tom Blount	9/6/19				
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

Loc: 580
88908

EUROFINS/TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

Log In Number:

Review Items	Yes	No	NA	If No, what was the problem?
1. Are the shipping containers intact?	✓			☐ **Containers, Broken**
2. Were ambient air containers received intact?			✓	☐ Checked in lab
3. The coolers/containers custody seal if present, is it intact?	✓			☐ Yes ☐ NA
4. Is the cooler temperature within limits? (> freezing temp. of water to 6 °C, VOST: 10°C) Thermometer ID : SC68 Correction factor: 0.9	✓			☐ **Cooler Out of Temp, Client Contacted, Proceed/Cancel** ☐ **Cooler Out of Temp, Same Day Receipt**
5. Were all of the sample containers received intact?	✓			☐ **Containers, Broken**
6. Were samples received in appropriate containers?	✓			☐ **Containers, Improper; Client Contacted; Proceed/Cancel**
7. Do sample container labels match COC? (IDs, Dates, Times)	✓			☐ **COC & Samples Do Not Match** ☐ **COC Incorrect/Incomplete** ☐ **COC Not Received**
8. Were all of the samples listed on the COC received?	✓			☐ **Sample Received, Not on COC** ☐ **Sample on COC, Not Received**
9. Is the date/time of sample collection noted?	✓			☐ **COC; No Date/Time; Client Contacted**
10. Was the sampler identified on the COC?			✓	☐ **Sampler Not Listed on COC**
11. Is the client and project name/# identified?	✓			☐ **COC Incorrect/Incomplete**
12. Are tests/parameters listed for each sample?	✓			☐ **COC No tests on COC**
13. Is the matrix of the samples noted?	✓			☐ **COC Incorrect/Incomplete**
14. Was COC relinquished? (Signed/Dated/Timed)	✓			☐ **COC Incorrect/Incomplete**
15. Were samples received within holding time?	✓			☐ **Holding Time - Receipt**
16. Were samples received with correct chemical preservative (excluding Encore)?			✓	☐ **pH Adjusted, pH Included (See box 16A)** ☐ **Incorrect Preservative**
17. Were VOA samples received without headspace?			✓	☐ **Headspace (VOA only)**
18. Did you check for residual chlorine, if necessary? (e.g. 1613B, 1668) Chlorine test strip lot number: 7/94 2020/04	✓			☐ **Residual Chlorine**
19. For 1613B water samples is pH<9?			✓	☐ If no, notify lab to adjust
20. For rad samples was sample activity info. Provided?			✓	☐ Project missing info

Comments/Actions Taken

RT: 0.9°c CT: 0.9°c
1 cooler, Fedex Po
trk# 1184 0794 7311
Custody seal intact
RC-ND, KW 9/7/19

Labeling Verified by: **Date:**

pH test strip lot number:

	Box 16A: pH Preservation	Box 18A: Residual Chlorine
Preservative:		
Lot Number:		
Exp Date:		
Analyst:		
Date:		
Time:		

Project #: _____ PM Instructions: _____

Sample Receiving Associate: KW Date: 9/7/19

QA026R32.doc, 062719

Login Sample Receipt Checklist

Client: Pacific Groundwater Group

Job Number: 580-88908-1

Login Number: 88908
List Number: 1
Creator: Blankinship, Tom X

List Source: Eurofins TestAmerica, Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Isotope Dilution Summary

Client: Pacific Groundwater Group
Job ID: 580-88908-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Matrix: Solid **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PCB1L (30-140)	PCB3L (30-140)	PCB4L (30-140)	PCB15L (30-140)	PCB19L (30-140)	PCB37L (30-140)	PCB54L (30-140)	PCB77L (30-140)
580-88908-26	J5-SC1b-20to30-82719	39	53	54	79	64	82	65	84
580-88908-26 - RE	J5-SC1b-20to30-82719	67	73	81	92	66	89	71	95
580-88908-27	J5-SC1b-30to40-82719	45 q	56	60	84	65	82	64	90
580-88908-27 - RE	J5-SC1b-30to40-82719	61	66	68	77	72	83	72	78
580-88908-28	J5-SC1b-40to50-82719	83	89	77	82	77	87	101	93
580-88908-28 - RE	J5-SC1b-40to50-82719	60	63	64	84	70	91	68	95
580-88908-29	J5-SC1b-50to60-82719	54	62	64	81	77	87	75	92
580-88908-29 - RE	J5-SC1b-50to60-82719	64	69	68	81	73	92	77	94
580-88908-30	J5-SC1b-60to70-82719	53	58	65	77	75	88	69	86
580-88908-30 - RE	J5-SC1b-60to70-82719	55	58	60	86	70	118	69	99
580-88908-31	J5-SC1b-70to80-82719	50	62	64	83	57 q	90	71	95
580-88908-31 - RE	J5-SC1b-70to80-82719	71	72	68	67	70	91	73	85
580-88908-32	J5-SC1b-80to90-82719	63	64	69	83	72	88	70	87
580-88908-32 - RE	J5-SC1b-80to90-82719	67	68	69	76	67	83	64	84
580-88908-33	J5-SC1b-90to100-82719	55	62	66	83	73	80	75	84
580-88908-33 - RE	J5-SC1b-90to100-82719	66	64	64	71	64	70	60	78
580-88908-34	J5-SC1b-100to110-82719	59	69	71	78	68	87	74	90
580-88908-34 - RE	J5-SC1b-100to110-82719	77	72	74	77	75	77	65	84
580-88908-35	J5-SC1b-00to10-82719	57	63	70	96	75	95	73	99
580-88908-35 - RE	J5-SC1b-00to10-82719	64	67	74	80	79	91	80	92
580-88908-36	J5-SC1b-10to20-82719	58	62	73	82	71	89	74	88
580-88908-36 - RE	J5-SC1b-10to20-82719	64	67	69	84	73	90	75	90
LCS 140-33628/13-B	Lab Control Sample	59	61	64	73	64	76	63	79
LCS 140-34150/13-B	Lab Control Sample	77	74	71	76	71	78	68	82
MB 140-33628/12-B	Method Blank	59	66	70	77	73	75	63	83
MB 140-34150/12-B	Method Blank	67	70	66	74	64	76	63	80

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PCB81L (30-140)	PCB104L (30-140)	PCB105L (30-140)	P114L (30-140)	PCB118L (30-140)	PCB123L (30-140)	PCB126L (30-140)	PCB155L (30-140)
580-88908-26	J5-SC1b-20to30-82719	82	86	78	77	80	79	86	93
580-88908-26 - RE	J5-SC1b-20to30-82719	88	101	85	85	88	86	97	102
580-88908-27	J5-SC1b-30to40-82719	86	80	79	79	81	79	87	101
580-88908-27 - RE	J5-SC1b-30to40-82719	77	92	85	84	88	86	89	94
580-88908-28	J5-SC1b-40to50-82719	90	89	86	85	85	85	88	103
580-88908-28 - RE	J5-SC1b-40to50-82719	92	90	84	81	84	82	95	99
580-88908-29	J5-SC1b-50to60-82719	89	86	82	80	83	80	87	103
580-88908-29 - RE	J5-SC1b-50to60-82719	91	85	84	86	88	85	95	100
580-88908-30	J5-SC1b-60to70-82719	85	83	80	79	79	77	85	102
580-88908-30 - RE	J5-SC1b-60to70-82719	89	88	83	88	90	85	96	92
580-88908-31	J5-SC1b-70to80-82719	89	86	83	80	82	82	89	99
580-88908-31 - RE	J5-SC1b-70to80-82719	79	94	88	86	90	90	100	96
580-88908-32	J5-SC1b-80to90-82719	87	91	81	81	79	79	88	102
580-88908-32 - RE	J5-SC1b-80to90-82719	80	77	80	79	81	87	87	87
580-88908-33	J5-SC1b-90to100-82719	80	90	75	77	78	79	83	101
580-88908-33 - RE	J5-SC1b-90to100-82719	82	79	114	112	115	112	100	94
580-88908-34	J5-SC1b-100to110-82719	85	90	82	79	85	81	89	97
580-88908-34 - RE	J5-SC1b-100to110-82719	80	75	79	77	81	77	87	86
580-88908-35	J5-SC1b-00to10-82719	93	89	83	80	86	82	92	107
580-88908-35 - RE	J5-SC1b-00to10-82719	88	90	85	81	83	83	93	102

Isotope Dilution Summary

Client: Pacific Groundwater Group
Job ID: 580-88908-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Matrix: Solid
Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PCB81L (30-140)	PCB104L (30-140)	PCB105L (30-140)	P114L (30-140)	PCB118L (30-140)	PCB123L (30-140)	PCB126L (30-140)	PCB155L (30-140)
580-88908-36	J5-SC1b-10to20-82719	85	83	79	79	82	80	88	96
580-88908-36 - RE	J5-SC1b-10to20-82719	86	90	87	86	88	87	97	104
LCS 140-33628/13-B	Lab Control Sample	77	82	72	70	74	75	82	96
LCS 140-34150/13-B	Lab Control Sample	78	83	76	76	78	76	87	90
MB 140-33628/12-B	Method Blank	78	93	77	78	79	76	82	105
MB 140-34150/12-B	Method Blank	76	77	76	75	78	75	85	87

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PCB156L (30-140)	PCB157L (30-140)	PCB167L (30-140)	PCB169L (30-140)	PCB170L (30-140)	PCB188L (30-140)	PCB189L (30-140)	PCB202L (30-140)
580-88908-26	J5-SC1b-20to30-82719	82 C	82 C156	83	97	77	75	86	82
580-88908-26 - RE	J5-SC1b-20to30-82719	85 C	85 C156	86	100	82	83	81	91
580-88908-27	J5-SC1b-30to40-82719	80 C	80 C156	80	90	76	85	84	89
580-88908-27 - RE	J5-SC1b-30to40-82719	78 C	78 C156	77	90	82	85	96	81
580-88908-28	J5-SC1b-40to50-82719	84 C	84 C156	81	86	81	87	89	93
580-88908-28 - RE	J5-SC1b-40to50-82719	89 C	89 C156	91	104	88	79	95	95
580-88908-29	J5-SC1b-50to60-82719	79 C	79 C156	80	95	80	78	83	93
580-88908-29 - RE	J5-SC1b-50to60-82719	83 C	83 C156	83	97	83	84	99	84
580-88908-30	J5-SC1b-60to70-82719	76 C	76 C156	79	90	83	82	83	86
580-88908-30 - RE	J5-SC1b-60to70-82719	81 C	81 C156	85	92	80	84	52	92
580-88908-31	J5-SC1b-70to80-82719	84 C	84 C156	83	94	78	80	87	93
580-88908-31 - RE	J5-SC1b-70to80-82719	86 C	86 C156	86	94	85	77	105	83
580-88908-32	J5-SC1b-80to90-82719	86 C	86 C156	84	99	78	76	85	89
580-88908-32 - RE	J5-SC1b-80to90-82719	79 C	79 C156	79	90	83	83	75	94
580-88908-33	J5-SC1b-90to100-82719	81 C	81 C156	80	93	84	82	74	95
580-88908-33 - RE	J5-SC1b-90to100-82719	91 C	91 C156	96	103	81	82	75	93
580-88908-34	J5-SC1b-100to110-82719	82 C	82 C156	82	94	80	84	82	99
580-88908-34 - RE	J5-SC1b-100to110-82719	83 C	83 C156	83	100	77	73	72	84
580-88908-35	J5-SC1b-00to10-82719	88 C	88 C156	83	99	79	87	89	90
580-88908-35 - RE	J5-SC1b-00to10-82719	85 C	85 C156	83	98	82	80	101	89
580-88908-36	J5-SC1b-10to20-82719	84 C	84 C156	82	96	77	77	83	89
580-88908-36 - RE	J5-SC1b-10to20-82719	83 C	83 C156	84	96	83	84	99	86
LCS 140-33628/13-B	Lab Control Sample	82 C	82 C156	80	97	72	76	71	83
LCS 140-34150/13-B	Lab Control Sample	83 C	83 C156	82	93	78	78	93	86
MB 140-33628/12-B	Method Blank	82 C	82 C156	80	92	75	80	83	90
MB 140-34150/12-B	Method Blank	82 C	82 C156	82	91	74	74	88	82

		Percent Isotope Dilution Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	PCB205L (30-140)	PCB206L (30-140)	PCB208L (30-140)	PCB209L (30-140)
580-88908-26	J5-SC1b-20to30-82719	76	70	78	71
580-88908-26 - RE	J5-SC1b-20to30-82719	79	71	77	70
580-88908-27	J5-SC1b-30to40-82719	73	69	81	76
580-88908-27 - RE	J5-SC1b-30to40-82719	74	63	71	62
580-88908-28	J5-SC1b-40to50-82719	83	69	82	50 q
580-88908-28 - RE	J5-SC1b-40to50-82719	80	72	81	66
580-88908-29	J5-SC1b-50to60-82719	75	71	80	70
580-88908-29 - RE	J5-SC1b-50to60-82719	81	73	78	64
580-88908-30	J5-SC1b-60to70-82719	72	69	76	70
580-88908-30 - RE	J5-SC1b-60to70-82719	76	72	71	70
580-88908-31	J5-SC1b-70to80-82719	77	72	82	78

Isotope Dilution Summary

Client: Pacific Groundwater Group
Job ID: 580-88908-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Matrix: Solid
Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	PCB205L (30-140)	PCB206L (30-140)	PCB208L (30-140)	PCB209L (30-140)
580-88908-31 - RE	J5-SC1b-70to80-82719	81	78	84	69
580-88908-32	J5-SC1b-80to90-82719	81	79	86	78
580-88908-32 - RE	J5-SC1b-80to90-82719	89	79	89	88
580-88908-33	J5-SC1b-90to100-82719	79	78	82	80
580-88908-33 - RE	J5-SC1b-90to100-82719	83	90	101	103
580-88908-34	J5-SC1b-100to110-82719	81	84	84	87
580-88908-34 - RE	J5-SC1b-100to110-82719	79	77	82	78
580-88908-35	J5-SC1b-00to10-82719	82	79	88	81
580-88908-35 - RE	J5-SC1b-00to10-82719	82	79	80	69
580-88908-36	J5-SC1b-10to20-82719	77	76	82	75
580-88908-36 - RE	J5-SC1b-10to20-82719	79	73	80	69
LCS 140-33628/13-B	Lab Control Sample	70	69	73	73
LCS 140-34150/13-B	Lab Control Sample	79	70	77	68
MB 140-33628/12-B	Method Blank	76	74	77	73
MB 140-34150/12-B	Method Blank	75	69	74	65

Surrogate Legend

PCB1L = PCB-1L
PCB3L = PCB-3L
PCB4L = PCB-4L
PCB15L = PCB-15L
PCB19L = PCB-19L
PCB37L = PCB-37L
PCB54L = PCB-54L
PCB77L = PCB-77L
PCB81L = PCB-81L
PCB104L = PCB-104L
PCB105L = PCB-105L
P114L = PCB-114L
PCB118L = PCB-118L
PCB123L = PCB-123L
PCB126L = PCB-126L
PCB155L = PCB-155L
PCB156L = PCB-156L
PCB157L = PCB-157L
PCB167L = PCB-167L
PCB169L = PCB-169L
PCB170L = PCB-170L
PCB188L = PCB-188L
PCB189L = PCB-189L
PCB202L = PCB-202L
PCB205L = PCB-205L
PCB206L = PCB-206L
PCB208L = PCB-208L
PCB209L = PCB-209L

Isotope Dilution Summary

Client: Pacific Groundwater Group
Job ID: 580-88908-1
Project/Site: Swan Island Lagoon Sediment Investigatio

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Matrix: Water
Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PCB1L (30-140)	PCB3L (30-140)	PCB4L (30-140)	PCB15L (30-140)	PCB19L (30-140)	PCB37L (30-140)	PCB54L (30-140)	PCB77L (30-140)
580-88908-74	711-82719	94	96	86	88	86	93	103	89
LCS 140-33603/11-A	Lab Control Sample	93	94	80	90	76	93 q	99	96
MB 140-33603/10-A	Method Blank	92	96	80	92	76	100 q	99	99

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PCB81L (30-140)	PCB104L (30-140)	PCB105L (30-140)	P114L (30-140)	PCB118L (30-140)	PCB123L (30-140)	PCB126L (30-140)	PCB155L (30-140)
580-88908-74	711-82719	87	88	86	86	88	86	95	102
LCS 140-33603/11-A	Lab Control Sample	93	81	85	85	88	85	93	90
MB 140-33603/10-A	Method Blank	98	86	89	89	91	89	98	98

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PCB156L (30-140)	PCB157L (30-140)	PCB167L (30-140)	PCB169L (30-140)	PCB170L (30-140)	PCB188L (30-140)	PCB189L (30-140)	PCB202L (30-140)
580-88908-74	711-82719	91 C	91 C156	90	93	78	81	92	92
LCS 140-33603/11-A	Lab Control Sample	86 C	86 C156	88	96	83	83	91	92
MB 140-33603/10-A	Method Blank	92 C	92 C156	88	98	88	88	97	98

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PCB205L (30-140)	PCB206L (30-140)	PCB208L (30-140)	PCB209L (30-140)				
580-88908-74	711-82719	81	75	81	62				
LCS 140-33603/11-A	Lab Control Sample	82	72	81	61				
MB 140-33603/10-A	Method Blank	87	79	87	68				

Surrogate Legend

PCB1L = PCB-1L
PCB3L = PCB-3L
PCB4L = PCB-4L
PCB15L = PCB-15L
PCB19L = PCB-19L
PCB37L = PCB-37L
PCB54L = PCB-54L
PCB77L = PCB-77L
PCB81L = PCB-81L
PCB104L = PCB-104L
PCB105L = PCB-105L
P114L = PCB-114L
PCB118L = PCB-118L
PCB123L = PCB-123L
PCB126L = PCB-126L
PCB155L = PCB-155L
PCB156L = PCB-156L
PCB157L = PCB-157L
PCB167L = PCB-167L
PCB169L = PCB-169L
PCB170L = PCB-170L
PCB188L = PCB-188L
PCB189L = PCB-189L
PCB202L = PCB-202L
PCB205L = PCB-205L
PCB206L = PCB-206L
PCB208L = PCB-208L

Isotope Dilution Summary

Client: Pacific Groundwater Group
Job ID: 580-88908-1
Project/Site: Swan Island Lagoon Sediment Investigatio

PCB209L = PCB-209L

APPENDIX D3
ANALYTICAL LABORATORY DATA SUMMARY REPORTS
ARI

Analytical Resources, Incorporated
Analytical Chemists and Consultants

18 September 2019

Janet Knox
Pacific Groundwater Group
2377 Eastlake Ave. E. Suite 200
Seattle, WA 98102

RE: Swan Island Lagoon Sediment Investigation

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
19I0008	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006

PJLA Testing
Accreditation # 66169

other ARI 19I0008

Chain of Custody Record

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date:8/__/2019	COC No:
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	1 of 8 COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	standard			
206 329 0141 Phone	TAT if different from Below _____			
206 329 6968 FAX	[X] standard			SDG No.
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Aroclors 8082A	TOC SW9060	ARCHIVE	Sample Specific Notes:
L3-SC1b-20to30-8 26 19	8/26/19	1030		S	1	X	X		
L3-SC1b-30to40-8 26 19	8/26/19	1035		S	1	X	X		
L3-SC1b-00to10-82619	8/26/19	1006		S	1			✓	
L3-SC1b-10to20-82619	8/26/19	1007		S	1			✓	
	8/ /19			S	1				
	8/ /19			S	1				
	8/ /19			S	1				
	8/ /19			S	1				
	8/ /19			S	1				
	8/ /19			S	1				
	8/ /19			S	1				
	8/ /19			S	1				

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
[ ] *Non-Hazard* [ ] *Flammable* [ ] *Skin Irritant* *Poison B* [ ] *Unknown* [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] *Return To Client* [ ] *Disposal By Lab* [X] *Archive For* _____ *Months*

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	PGG	9/3/2019 1210	[signature]	ARI	9/3/19 1430
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Other ARI 19I0008

Chain of Custody Record

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 8/26/2019	COC No:
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	2 of 8 COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	standard			
206 329 0141 Phone	TAT if different from Below			SDG No.
206 329 6968 FAX	[X] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Aroclors 8082A TOC SN19060	Archive	Sample Specific Notes:
D6-SC1b-20to30-826 19	8/26/19	1245		S	1	X		
D6-SC1b-30to40-826 19	8/26/19	1300		S	1	X		
D6-SC1b-40to50-826 19	8/26/19	1445		S	1	X		
D6-SC1b-50to60-826 19	8/26/19	1450		S	1	X		
D6-SC1b-60to70-826 19	8/26/19	1530		S	1	X		
D6-SC1b-70to80-826 19	8/26/19	1540		S	1	X		
D6-SC1b-80to90-826 19	8/26/19	1655		S	1	X		
D6-SC1b-90to100-826 19	8/26/19	1700		S	1	X		
D6-SC1b-100to110-826 19	8/26/19	1740		S	1	X		
D6-SC1b-110to120-826 19	8/26/19	1750		S	1	X		
D6-SC1b-10to20-82619	8/26/19	1210		S	1		X	
D11-SC1b-50to60-82619	8/26/19	1500		S	1	X		

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____

Possible Hazard Identification

[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

[ ] Return To Client [ ] Disposal By Lab [X] Archive For _____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PGG	9/3/2019 1210		ARI	9/3/19 1430
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Other ARI 19I0008

Chain of Custody Record

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date:8/__/2019	COC No: 4 of 5 COCs
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	*standard*			
206 329 0141 Phone	TAT if different from Below ____			
206 329 6968 FAX	[X] standard			SDG No.
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	~~Sample Comments~~	PCBs 8082A	TOC SW9060	Sample Specific Notes:
J3-SC1b-20to30-827 19	8/27/19	1000		S	1		X	X	
J3-SC1b-30to40-827 19	8/27/19	1005		S	1		X	X	
J3-SC1b-40to50-827 19	8/27/19	1120		S	1		X	X	
J3-SC1b-50to60-827 19	8/27/19	1125		S	1		X	X	
J3-SC1b-60to70-827 19	8/27/19	1130		S	1		X	X	
J3-SC1b-70to80-827 19	8/27/19	1135		S	1		X	X	
J3-SC1b-80to90-827 19	8/27/19	1220		S	1		X	X	
J3-SC1b-90to100-827 19	8/27/19	1225		S	1		X	X	
J3-SC1b-10to20-82719	8/27/19	0955		S	1		X	X	
[redacted]	8/ /19			S	1				
412-SC1b-80to90-82719	8/27/19	1235		S	1		X	X	
	8/ /19			S	1				

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] Return To Client [ ] Disposal By Lab [X] Archive For _____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PGG	9/3/2019 1210		ARI	9/3/19 1430
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Other ARI 19I0008

Chain of Custody Record

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 8/27/2019	COC No:
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	4 of 8 COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	standard			
206 329 0141 Phone	TAT if different from Below			SDG No.
206 329 6968 FAX	[X] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Analytical Containers 8082A	Archive	Sample Specific Notes:
J5-SC1b-20to30-827 19	8/27/19	1455		S	1	X		
J5-SC1b-30to40-827 19	8/27/19	1500		S	1	X		
J5-SC1b-40to50-827 19	8/27/19	1610		S	1	X		
J5-SC1b-50to60-827 19	8/27/19	1615		S	1	X		
J5-SC1b-60to70-827 19	8/27/19	1620		S	1	X		
J5-SC1b-70to80-827 19	8/27/19	1625		S	1	X		
J5-SC1b-80to90-827 19	8/27/19	1725		S	1	X		
J5-SC1b-90to100-827 19	8/27/19	1730		S	1	X		
J5-SC1b-100to110-827 19	8/27/19	1735		S	1	X		
[redacted]								
J5-SC1b-00to10-82719	8/27/19	1445		S	1	[redacted]	X	
J5-SC1b-10to20-82719	8/27/19	1450		S	1	[redacted]	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] Return To Client [ ] Disposal By Lab [X] Archive For _____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	PGG	9/3/2019 1210	[signature]	ARI	9/3/19 1430
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Other ARI 19I0008

Chain of Custody Record

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 8/27/2019 - 8/28/2019	COC No:
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	5 of 8 COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	standard			
206 329 0141 Phone	TAT if different from Below			SDG No.
206 329 6968 FAX	[x] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8082A Aroclor	TOC Sw9060	Archive	Sample Specific Notes:
J6-SC1b-20to30-8Z819	8/28/19	0920		S	1	X	X		
J6-SC1b-30to40-8Z819	8/28/19	0925		S	1	X	X		
J6-SC1b-40to50-8Z819	8/28/19	1025		S	1	X	X		
J6-SC1b-50to60-8Z819	8/28/19	1030		S	1	X	X		
J6-SC1b-60to70-8Z819	8/28/19	1035		S	1	X	X		
J6-SC1b-70to80-8Z819	8/28/19	1040		S	1	X	X		
J6-SC1b-80to90-8Z819	8/28/19	1155		S	1	X	X		
J6-SC1b-90to100-8Z819	8/28/19	1200		S	1	X	X		
J6-SC1b-100to110-8Z819	8/28/19	1205		S	1	X	X		
J6-SC1b-110to120-8Z819	8/28/19	1210		S	1	X	X		
J6-SC1b-00to10-82719	8/27/19	1930		S	1			X	
J6-SC1b-10to20-82719	8/27/19	1935		S	1			X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] Return To Client [ ] Disposal By Lab [x] Archive For _____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PGG	9/3/2019 1210		ARI	9/3/19 1430
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Other ARI 19I0008

Chain of Custody Record

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 8/28/2019	COC No: 7 of 8 COCs
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	Job No. 2006-00115
Pacific Groundwater Group	Analysis Turnaround Time			
2377 Eastlake Ave E, Seattle WA 98102	standard			SDG No.
206 329 0141 Phone	TAT if different from Below			
206 329 6968 FAX	[X] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8082A Aroclor TOC Sum100	Archive	Sample Specific Notes:
R4-SC1b-20to30-8 28 19	8/28/19	1400		S	1	X		
R4-SC1b-30to40-8 28 19	8/28/19	1405		S	1	X		
R4-SC1b-40to50-8 28 19	8/28/19	1510		S	1	X		
R4-SC1b-50to60-8 28 19	8/28/19	1520		S	1	X		
R4-SC1b-60to70-8 28 19	8/28/19	1550		S	1	X		
R4-SC1b-70to80-8 28 19	8/28/19	1555		S	1	X		
R4-SC1b-80to90-8 28 19	8/28/19	1630		S	1	X		
R4-SC1b-90to100-8 28 19	8/28/19	1640		S	1	X		
~~R4-SC1b-90to100-8 28 19~~	8/ /19			S	1			
R4-SC1b-10to20-8 28 19	8/28/19	1355		S	1	X	X	
	8/ /19			S	1			
	8/ /19			S	1			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification

[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

[ ] Return To Client [ ] Disposal By Lab [X] Archive For _____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PGG	9/3/2019 1210		ARI	9/3/19 1430
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Other AM 19I0008

Chain of Custody Record

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date:8/__/2019	COC No: 8
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	~~7~~ of 8 COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	*standard*			
206 329 0141 Phone	TAT if different from Below ____			SDG No.
206 329 6968 FAX	[X] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8082A Aroclor	TOC SW9060	Archive	Sample Specific Notes:
R4-SC1b-100to110-828 19	8/28/19	1700		S	1	X	X		
R4-SC1b-110to120-828 19	8/28/19	1710		S	1	X	X		
R4-SC1b-120to130-828 19	8/28/19	1820		S	1	X	X		
[illegible]									
[illegible]									
413-SC1b-40to50-82819	8/28/19	1045		S	1	X			
[illegible]									
[illegible]									
R4-SC1b-130to140-82819	8/28/19	1825		S	1	X	X		
R4-SC1b-140to150-82819	8/28/19	1830		S	1	X	X		
	8/ /19			S	1				
	8/ /19			S	1				

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____

Possible Hazard Identification
[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] Return To Client [ ] Disposal By Lab [X] Archive For _____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PGG	9/3/2019 1210		ARI	9/3/19 1430
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Other ARI 19I0008

Chain of Custody Record

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 8/28/2019	COC No:
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	9 of 8 COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	*standard*			
206 329 0141 Phone	TAT if different from Below ____			SDG No.
206 329 6968 FAX	[X] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Aroclor 8082A	TOC SW9060	Archive	Sample Specific Notes:
H3-SC1b-20to30-828 19	8/28/19	2015		S	1	X	X		
H3-SC1b-30to40-829 19	8/29/19	0825		S	1	X	X		
H3-SC1b-40to50-829 19	8/29/19	0830		S	1	X	X		
H3-SC1b-50to60-829 19	8/29/19	0835		S	1	X	X		
H3-SC1b-60to70-829 19	8/29/19	0900		S	1	X	X		
H3-SC1b-70to80-829 19	8/29/19	0905		S	1	X	X		
H3-SC1b-80to90-829 19	8/29/19	0930		S	1	X	X		
H3-SC1b-90to100-829 19	8/29/19	0935		S	1	X	X		
H3-SC1b-100to110-829 19	8/29/19	0950		S	1	X	X		
H3-SC1b-00to10-828 19	8/28/19	2005		S	1	X		X	
H3-SC1b-10-20-828 19	8/28/19	2010		S	1	X		X	
	8/ /19			S	1				

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification

[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

[ ] Return To Client [ ] Disposal By Lab [X] Archive For _____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PGG	9/3/2019 1210		ARI	9/3/19 1430
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

ALS Environmental

AM

CHAIN OF CUSTODY 19I0008

Sediment and Tissue Chemistry

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • FAX (360) 636-1068

SR#: _____ PAGE _____ OF _____ COC# _____

PROJECT NAME

PROJECT NUMBER

PROJECT MANAGER

COMPANY NAME

ADDRESS

CITY/STATE/ZIP

E-MAIL ADDRESS

PHONE # FAX #

SAMPLER'S SIGNATURE

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	☐ Total Volatile Solids ☐ Total Solids TOC ☐ (ASTM D4129M) ☐ PSEP ASW 9060	Grain Size ☐PSEP ☐ASTMD422	Sulfide ☐ Total (9030M) ☐PSEP ☐ Water Soluble	☐ AVS ☐ SEM (metals list below)	Ammonia ☐ Total (350.1M) ☐ Plumb ☐ Pore Water	Metals (list below)	Pesticides (8081)	PCBs (8082) ☐Aroclors ☐Congeners	Semivolatiles ☐ GC/MS SIM (PAH) ☐8270-L	Organotins ☐Bulk ☐ Pore Water ☐ TBT only	Volatiles (8260)	Dioxins ☐1613 ☐8290	TPH ☐GRO ☐ DRO ☐ RRO	☐Lipids	Tissue Sample Preparations (Instructions below)	REMARKS
711-82719	8/27/19	0840		A		X							X								
712-82819	8/27/19	0820		A		X							X								

REPORT REQUIREMENTS

— I. Routine Report: Method Blank, Surrogate, as required

— II. Report Dup., MS, MSD as required

— III. CLP Like Summary (no raw data)

— IV. Data Validation Report

— V. EDD

INVOICE INFORMATION

P.O. # _____

Bill To: _____

TURNAROUND REQUIREMENTS

____ 24 hr. ____ 48 hr.

____ 5 day

____ Standard (15 working days)

Requested Report Date

Circle which metals are to be analyzed:

SMS Metals: As Cd Cr Cu Pb Hg Ag Zn

CA Metals: Ag As Cd Cr Cu Hg Ni Pb Se Zn

SEM Metals: Cd Cu Pb Hg Ni Zn

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

SPECIAL INSTRUCTIONS/COMMENTS:

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature]	Signature: [signature]	Signature	Signature
Date/Time: 9/3/2019 1210	Date/Time: 9/3/19 1430	Date/Time	Date/Time
Printed Name: David Wampler	Printed Name: Kenny Dang	Printed Name	Printed Name
Firm: PGG	Firm: ART	Firm	Firm

Chain of Custody Record

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date:9/12/2019	COC No:
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	____ of ____ COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	*standard*			
206 329 0141 Phone	TAT if different from Below ____			SDG No.
206 329 6968 FAX	[X] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Reliquish to ARI	Sample Specific Notes:
H3-SC1b-20to30-82819	8/28/2019	20:15:00		S	1	x	
J3-SC1b-30to40-82719	8/27/2019	10:15:00		S	1	x	
J3-SC1b-40to50-82719	8/27/2019	11:20:00		S	1	x	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification

[ ] *Non-Hazard* [ ] *Flammable* [ ] *Skin Irritant* *Poison B* [ ] *Unknown* [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

[ ] *Return To Client* [ ] *Disposal By Lab* [X] *Archive For* ____ *Months*

TA to relinquish 3 samples to ARI.

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PGG	9/12/2019 8:45			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	TA	9/12/19 1322		ART	9/12/19 1322
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
L3-SC1b-20to30-82619	19I0008-01	Solid	26-Aug-2019 10:30	03-Sep-2019 14:30
L3-SC1b-30to40-82619	19I0008-02	Solid	26-Aug-2019 10:35	03-Sep-2019 14:30
D6-SC1b-20to30-82619	19I0008-05	Solid	26-Aug-2019 12:45	03-Sep-2019 14:30
D6-SC1b-30to40-82619	19I0008-06	Solid	26-Aug-2019 13:00	03-Sep-2019 14:30
D6-SC1b-40to50-82619	19I0008-07	Solid	26-Aug-2019 14:45	03-Sep-2019 14:30
D6-SC1b-50to60-82619	19I0008-08	Solid	26-Aug-2019 14:50	03-Sep-2019 14:30
D6-SC1b-60to70-82619	19I0008-09	Solid	26-Aug-2019 15:30	03-Sep-2019 14:30
D6-SC1b-70to80-82619	19I0008-10	Solid	26-Aug-2019 15:40	03-Sep-2019 14:30
D6-SC1b-80to90-82619	19I0008-11	Solid	26-Aug-2019 16:55	03-Sep-2019 14:30
D6-SC1b-90to100-82619	19I0008-12	Solid	26-Aug-2019 17:00	03-Sep-2019 14:30
D6-SC1b-100to110-82619	19I0008-13	Solid	26-Aug-2019 17:40	03-Sep-2019 14:30
D6-SC1b-110to120-82619	19I0008-14	Solid	26-Aug-2019 17:50	03-Sep-2019 14:30
411-SC1b-50to60-82619	19I0008-16	Solid	26-Aug-2019 15:00	03-Sep-2019 14:30
J3-SC1b-20to30-82719	19I0008-17	Solid	27-Aug-2019 10:00	03-Sep-2019 14:30
J3-SC1b-30to40-82719	19I0008-18	Solid	27-Aug-2019 10:05	03-Sep-2019 14:30
J3-SC1b-40to50-82719	19I0008-19	Solid	27-Aug-2019 11:20	03-Sep-2019 14:30
J3-SC1b-50to60-82719	19I0008-20	Solid	27-Aug-2019 11:25	03-Sep-2019 14:30
J3-SC1b-60to70-82719	19I0008-21	Solid	27-Aug-2019 11:30	03-Sep-2019 14:30
J3-SC1b-70to80-82719	19I0008-22	Solid	27-Aug-2019 11:35	03-Sep-2019 14:30
J3-SC1b-80to90-82719	19I0008-23	Solid	27-Aug-2019 12:20	03-Sep-2019 14:30
J3-SC1b-90to100-82719	19I0008-24	Solid	27-Aug-2019 12:25	03-Sep-2019 14:30
J3-SC1b-10to20-82719	19I0008-25	Solid	27-Aug-2019 09:55	03-Sep-2019 14:30
412-SC1b-80to90-82719	19I0008-26	Solid	27-Aug-2019 12:35	03-Sep-2019 14:30
J6-SC1b-20to30-82819	19I0008-27	Solid	28-Aug-2019 09:20	03-Sep-2019 14:30
J6-SC1b-30to40-82819	19I0008-28	Solid	28-Aug-2019 09:25	03-Sep-2019 14:30
J6-SC1b-40to50-82819	19I0008-29	Solid	28-Aug-2019 10:25	03-Sep-2019 14:30
J6-SC1b-50to60-82819	19I0008-30	Solid	28-Aug-2019 10:30	03-Sep-2019 14:30
J6-SC1b-60to70-82819	19I0008-31	Solid	28-Aug-2019 10:35	03-Sep-2019 14:30
J6-SC1b-70to80-82819	19I0008-32	Solid	28-Aug-2019 10:40	03-Sep-2019 14:30
J6-SC1b-80to90-82819	19I0008-33	Solid	28-Aug-2019 11:55	03-Sep-2019 14:30
J6-SC1b-90to100-82819	19I0008-34	Solid	28-Aug-2019 12:00	03-Sep-2019 14:30
J6-SC1b-100to110-82819	19I0008-35	Solid	28-Aug-2019 12:05	03-Sep-2019 14:30
J6-SC1b-110to120-82819	19I0008-36	Solid	28-Aug-2019 12:10	03-Sep-2019 14:30
R4-SC1b-20to30-82819	19I0008-40	Solid	28-Aug-2019 14:00	03-Sep-2019 14:30
R4-SC1b-30to40-82819	19I0008-41	Solid	28-Aug-2019 14:05	03-Sep-2019 14:30
R4-SC1b-40to50-82819	19I0008-42	Solid	28-Aug-2019 15:10	03-Sep-2019 14:30
R4-SC1b-50to60-82819	19I0008-43	Solid	28-Aug-2019 15:20	03-Sep-2019 14:30
R4-SC1b-60to70-82819	19I0008-44	Solid	28-Aug-2019 15:50	03-Sep-2019 14:30
R4-SC1b-70to80-82819	19I0008-45	Solid	28-Aug-2019 15:55	03-Sep-2019 14:30

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-80to90-82819	19I0008-46	Solid	28-Aug-2019 16:30	03-Sep-2019 14:30
R4-SC1b-90to100-82819	19I0008-48	Solid	28-Aug-2019 16:40	03-Sep-2019 14:30
R4-SC1b-100to110-82819	19I0008-50	Solid	28-Aug-2019 17:00	03-Sep-2019 14:30
R4-SC1b-110to120-82819	19I0008-51	Solid	28-Aug-2019 17:10	03-Sep-2019 14:30
R4-SC1b-120to130-82819	19I0008-52	Solid	28-Aug-2019 18:20	03-Sep-2019 14:30
413-SC1b-40to50-82819	19I0008-53	Solid	28-Aug-2019 10:45	03-Sep-2019 14:30
R4-SC1b-130to140-82819	19I0008-54	Solid	28-Aug-2019 18:25	03-Sep-2019 14:30
R4-SC1b-140to150-82819	19I0008-55	Solid	28-Aug-2019 18:30	03-Sep-2019 14:30
H3-SC1b-20to30-82819	19I0008-56	Solid	28-Aug-2019 20:15	03-Sep-2019 14:30
H3-SC1b-30to40-82919	19I0008-57	Solid	29-Aug-2019 08:25	03-Sep-2019 14:30
H3-SC1b-40to50-82919	19I0008-58	Solid	29-Aug-2019 08:30	03-Sep-2019 14:30
H3-SC1b-50to60-82919	19I0008-59	Solid	29-Aug-2019 08:35	03-Sep-2019 14:30
H3-SC1b-60to70-82919	19I0008-60	Solid	29-Aug-2019 09:00	03-Sep-2019 14:30
H3-SC1b-70to80-82919	19I0008-61	Solid	29-Aug-2019 09:05	03-Sep-2019 14:30
H3-SC1b-80to90-82919	19I0008-62	Solid	29-Aug-2019 09:30	03-Sep-2019 14:30
H3-SC1b-90to100-82919	19I0008-63	Solid	29-Aug-2019 09:35	03-Sep-2019 14:30
H3-SC1b-100to110-82919	19I0008-64	Solid	29-Aug-2019 09:50	03-Sep-2019 14:30
711-82719	19I0008-67	Water	27-Aug-2019 08:40	03-Sep-2019 14:30
712-82819	19I0008-68	Water	27-Aug-2019 08:20	03-Sep-2019 14:30
H3-SC1b-110to114-82919	19I0008-69	Solid	29-Aug-2019 10:00	03-Sep-2019 14:30
J5-SC1b-20to30-82719	19I0008-70	Solid	27-Aug-2019 14:55	03-Sep-2019 14:30
J5-SC1b-30to40-82719	19I0008-71	Solid	27-Aug-2019 15:00	03-Sep-2019 14:30
J5-SC1b-40to50-82719	19I0008-72	Solid	27-Aug-2019 16:10	03-Sep-2019 14:30
J5-SC1b-50to60-82719	19I0008-73	Solid	27-Aug-2019 16:15	03-Sep-2019 14:30
J5-SC1b-60to70-82719	19I0008-74	Solid	27-Aug-2019 16:20	03-Sep-2019 14:30
J5-SC1b-70to80-82719	19I0008-75	Solid	27-Aug-2019 16:25	03-Sep-2019 14:30
J5-SC1b-80to90-82719	19I0008-76	Solid	27-Aug-2019 17:25	03-Sep-2019 14:30
J5-SC1b-90to100-82719	19I0008-77	Solid	27-Aug-2019 17:30	03-Sep-2019 14:30
J5-SC1b-100to110-82719	19I0008-78	Solid	27-Aug-2019 17:35	03-Sep-2019 14:30

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

Work Order Case Narrative

Samples from page 4 of 8 from the COC were brought to ARI on 9/5/19 and not delivered with the 9/3/19 shipment of samples.

PCB Aroclors - EPA Method SW8082A

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements with the exception of AR 1260ccv which fails low on one column. The data is reported from passing column for sequence SHI0212.

The closing AR1260 fails low on one column. The samples require a re-analysis due to no passing column to report 60 hits from for sequence SHI0212.

The AR1260ccv2 is out of control high on one column. The data is reported from the column in control for sequence SHI0212.

Internal standard areas were within limits with the exception of HBBP which is out of control low on one column for AR 1248 CCV7 in sequence SHI0124.

AR1260ccv2 internal standards HBBP and BNB fail low on one column. The data was reported from the passing column for samples 19I0008-01,-02,-05,-06,-07,-10,-11,-12,-13,-14,-16,-17,-18,-19,-20,-21,-22 for SHI0172.

HBBP internal standard is out of control low on one column for samples 19I0008-46,-48,-50,-51,-52,-56 thru-60 for sequence SHI0212. and the closing ar1260 fails low on zb-35. samples have to be re-run due to no passing column to report 60 hits from.

HBBP is out of control low on one column for 19I0008-50 and BHI0176-MS1. The data is being reported from the passing column.

The surrogate percent recoveries were within control limits with the exception of surrogates flagged on the associated forms.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

The Matrix Spike/Matrix Spike duplicate recoveries and RPD were within limits with the exception of analytes flagged on the associated forms.

Wet Chemistry

The sample(s) were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number:	Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager:	Janet Knox	18-Sep-2019 14:41

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

The Matrix Spike/Matrix Spike duplicate recoveries and RPD were within limits with the exception of analytes flagged on the associated forms.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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WORK ORDER

19I0008

Client: Pacific Groundwater Group
Project Manager: Kelly Bottem
Project: Swan Island Lagoon Sediment Investigation
Project Number: Portland Harbor

Report To:
Pacific Groundwater Group
Janet Knox
2377 Eastlake Ave. E. Suite 200
Seattle, WA 98102
Phone: (206) 329-0141
Fax: -

Invoice To:
Pacific Groundwater Group
Janet Knox
2377 Eastlake Ave. E. Suite 200
Seattle, WA 98102
Phone :(206) 329-0141
Fax: -

Date Due:	17-Sep-2019 18:00 (10 day TAT)		
Received By:	Kenny Dang	Date Received:	03-Sep-2019 14:30
Logged In By:	Kenny Dang	Date Logged In:	03-Sep-2019 16:15

Samples Received at: **3.7°C**

Intact, properly signed and dated custody seals attached to outside of cooler(s)	No	Custody papers included with the cooler	Yes
Custody papers properly filled out (in, signed, analyses requested, etc)	Yes	Was a temperature blank included in the cooler	Yes
Was sufficient ice used (if appropriate)	Yes	All bottles sealed in individual plastic bags	Yes
All bottles arrived in good condition (unbroken)	Yes	All bottle labels complete and legible	Yes
Number of containers listed on COC match number received	Yes	Bottle labels and tags agree with COC	No
Correct bottles used for the requested analyses	Yes	All VOC vials free of air bubbles	No
Analyses/bottles require preservation (attach preservation sheet excluding VOC)	Yes	Sufficient amount of sample sent in each bottle	Yes
Sample split at ARI	No		

Analysis	Due	TAT	Expires	Comments

WORK ORDER

19I0008

Client: Pacific Groundwater Group **Project Manager:** Kelly Bottem

Project: Swan Island Lagoon Sediment Investigation **Project Number:** Portland Harbor

Analysis	Due	TAT	Expires	Comments
19I0008-01 L3-SC1b-20to30-82619 [Solid] Sampled 26-Aug-2019 10:30 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz	*A 01 = Autosampler Vial, amber*			
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	09-Sep-2019 10:30	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	25-Aug-2020 10:30	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	23-Sep-2019 10:30	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	09-Sep-2019 10:30	
8082A PCB Solid 4	17-Sep-2019 15:00	10	09-Sep-2019 10:30	
19I0008-02 L3-SC1b-30to40-82619 [Solid] Sampled 26-Aug-2019 10:35 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz	*A 01 = Autosampler Vial, amber*			
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	09-Sep-2019 10:35	
8082A PCB Solid 4	17-Sep-2019 15:00	10	09-Sep-2019 10:35	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	09-Sep-2019 10:35	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	25-Aug-2020 10:35	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	23-Sep-2019 10:35	
19I0008-03 L3-SC1b-00to10-82619 [Solid] Sampled 26-Aug-2019 10:06 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	25-Aug-2020 10:06	
19I0008-04 L3-SC1b-10to20-82619 [Solid] Sampled 26-Aug-2019 10:07 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	25-Aug-2020 10:07	
19I0008-05 D6-SC1b-20to30-82619 [Solid] Sampled 26-Aug-2019 12:45 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz	*A 01 = Autosampler Vial, amber*			
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	09-Sep-2019 12:45	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	25-Aug-2020 12:45	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	23-Sep-2019 12:45	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	09-Sep-2019 12:45	
8082A PCB Solid 4	17-Sep-2019 15:00	10	09-Sep-2019 12:45	

WORK ORDER

19I0008

Client: Pacific Groundwater Group **Project Manager:** Kelly Bottem

Project: Swan Island Lagoon Sediment Investigation **Project Number:** Portland Harbor

Analysis	Due	TAT	Expires	Comments
19I0008-06 D6-SC1b-30to40-82619 [Solid] Sampled 26-Aug-2019 13:00 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz	*A 01 = Autosampler Vial, amber*			
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	09-Sep-2019 13:00	
8082A PCB Solid 4	17-Sep-2019 15:00	10	09-Sep-2019 13:00	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	09-Sep-2019 13:00	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	25-Aug-2020 13:00	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	23-Sep-2019 13:00	
19I0008-07 D6-SC1b-40to50-82619 [Solid] Sampled 26-Aug-2019 14:45 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz	*A 01 = Autosampler Vial, amber*			
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	23-Sep-2019 14:45	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	09-Sep-2019 14:45	
8082A PCB Solid 4	17-Sep-2019 15:00	10	09-Sep-2019 14:45	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	09-Sep-2019 14:45	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	25-Aug-2020 14:45	
19I0008-08 D6-SC1b-50to60-82619 [Solid] Sampled 26-Aug-2019 14:50 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz	*A 01 = Autosampler Vial, amber*			
8082A PCB Solid 4	17-Sep-2019 15:00	10	09-Sep-2019 14:50	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	09-Sep-2019 14:50	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	25-Aug-2020 14:50	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	23-Sep-2019 14:50	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	09-Sep-2019 14:50	
19I0008-09 D6-SC1b-60to70-82619 [Solid] Sampled 26-Aug-2019 15:30 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz	*A 01 = Autosampler Vial, amber*			
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	09-Sep-2019 15:30	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	09-Sep-2019 15:30	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	25-Aug-2020 15:30	
8082A PCB Solid 4	17-Sep-2019 15:00	10	09-Sep-2019 15:30	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	23-Sep-2019 15:30	

WORK ORDER

19I0008

Client: Pacific Groundwater Group **Project Manager:** Kelly Bottem

Project: Swan Island Lagoon Sediment Investigation **Project Number:** Portland Harbor

Analysis	Due	TAT	Expires	Comments
19I0008-10 D6-SC1b-70to80-82619 [Solid] Sampled 26-Aug-2019 15:40 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz	*A 01 = Autosampler Vial, amber*			
8082A PCB Solid 4	17-Sep-2019 15:00	10	09-Sep-2019 15:40	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	09-Sep-2019 15:40	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	25-Aug-2020 15:40	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	23-Sep-2019 15:40	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	09-Sep-2019 15:40	
19I0008-11 D6-SC1b-80to90-82619 [Solid] Sampled 26-Aug-2019 16:55 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz	*A 01 = Autosampler Vial, amber*			
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	23-Sep-2019 16:55	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	25-Aug-2020 16:55	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	09-Sep-2019 16:55	
8082A PCB Solid 4	17-Sep-2019 15:00	10	09-Sep-2019 16:55	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	09-Sep-2019 16:55	
19I0008-12 D6-SC1b-90to100-82619 [Solid] Sampled 26-Aug-2019 17:00 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz	*A 01 = Autosampler Vial, amber*			
8082A PCB Solid 4	17-Sep-2019 15:00	10	09-Sep-2019 17:00	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	09-Sep-2019 17:00	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	25-Aug-2020 17:00	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	23-Sep-2019 17:00	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	09-Sep-2019 17:00	
19I0008-13 D6-SC1b-100to110-82619 [Solid] Sampled 26-Aug-2019 17:40 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz	*A 01 = Autosampler Vial, amber*			
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	09-Sep-2019 17:40	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	09-Sep-2019 17:40	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	23-Sep-2019 17:40	
8082A PCB Solid 4	17-Sep-2019 15:00	10	09-Sep-2019 17:40	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	25-Aug-2020 17:40	

WORK ORDER

19I0008

Client: Pacific Groundwater Group **Project Manager:** Kelly Bottem

Project: Swan Island Lagoon Sediment Investigation **Project Number:** Portland Harbor

Analysis	Due	TAT	Expires	Comments
19I0008-14 D6-SC1b-110to120-82619 [Solid] Sampled 26-Aug-2019 17:50 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz *A 01 = Autosampler Vial, amber*				
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	09-Sep-2019 17:50	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	23-Sep-2019 17:50	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	09-Sep-2019 17:50	
8082A PCB Solid 4	17-Sep-2019 15:00	10	09-Sep-2019 17:50	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	25-Aug-2020 17:50	
19I0008-15 D6-SC1b-10to20-82619 [Solid] Sampled 26-Aug-2019 12:10 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	25-Aug-2020 12:10	
19I0008-16 411-SC1b-50to60-82619 [Solid] Sampled 26-Aug-2019 15:00 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
8082A PCB Solid 4	17-Sep-2019 15:00	10	09-Sep-2019 15:00	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	09-Sep-2019 15:00	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	25-Aug-2020 15:00	
19I0008-17 J3-SC1b-20to30-82719 [Solid] Sampled 27-Aug-2019 10:00 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz *A 01 = Autosampler Vial, amber*				
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	26-Aug-2020 10:00	
8082A PCB Solid 4	17-Sep-2019 15:00	10	10-Sep-2019 10:00	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	24-Sep-2019 10:00	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	10-Sep-2019 10:00	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	10-Sep-2019 10:00	
19I0008-18 J3-SC1b-30to40-82719 [Solid] Sampled 27-Aug-2019 10:05 (GMT-08:00) Pacific Time (US & Canada)				**MS/MSD**
A = Glass WM, Clear, 4 oz *A 01 = Autosampler Vial, amber*				
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	24-Sep-2019 10:05	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	10-Sep-2019 10:05	
8082A PCB Solid 4	17-Sep-2019 15:00	10	10-Sep-2019 10:05	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	10-Sep-2019 10:05	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	26-Aug-2020 10:05	

WORK ORDER

19I0008

Client: Pacific Groundwater Group **Project Manager:** Kelly Bottem

Project: Swan Island Lagoon Sediment Investigation **Project Number:** Portland Harbor

Analysis	Due	TAT	Expires	Comments
19I0008-19 J3-SC1b-40to50-82719 [Solid] Sampled 27-Aug-2019 11:20 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz	*A 01 = Autosampler Vial, amber*			
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	24-Sep-2019 11:20	
8082A PCB Solid 4	17-Sep-2019 15:00	10	10-Sep-2019 11:20	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	10-Sep-2019 11:20	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	10-Sep-2019 11:20	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	26-Aug-2020 11:20	
19I0008-20 J3-SC1b-50to60-82719 [Solid] Sampled 27-Aug-2019 11:25 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz	*A 01 = Autosampler Vial, amber*			
8082A PCB Solid 4	17-Sep-2019 15:00	10	10-Sep-2019 11:25	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	10-Sep-2019 11:25	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	26-Aug-2020 11:25	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	24-Sep-2019 11:25	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	10-Sep-2019 11:25	
19I0008-21 J3-SC1b-60to70-82719 [Solid] Sampled 27-Aug-2019 11:30 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	10-Sep-2019 11:30	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	24-Sep-2019 11:30	
8082A PCB Solid 4	17-Sep-2019 15:00	10	10-Sep-2019 11:30	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	26-Aug-2020 11:30	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	10-Sep-2019 11:30	
19I0008-22 J3-SC1b-70to80-82719 [Solid] Sampled 27-Aug-2019 11:35 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	26-Aug-2020 11:35	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	24-Sep-2019 11:35	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	10-Sep-2019 11:35	
8082A PCB Solid 4	17-Sep-2019 15:00	10	10-Sep-2019 11:35	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	10-Sep-2019 11:35	

WORK ORDER

19I0008

Client: Pacific Groundwater Group **Project Manager:** Kelly Bottem

Project: Swan Island Lagoon Sediment Investigation **Project Number:** Portland Harbor

Analysis	Due	TAT	Expires	Comments
19I0008-23 J3-SC1b-80to90-82719 [Solid] Sampled 27-Aug-2019 12:20 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	10-Sep-2019 12:20	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	24-Sep-2019 12:20	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	26-Aug-2020 12:20	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	10-Sep-2019 12:20	
8082A PCB Solid 4	17-Sep-2019 15:00	10	10-Sep-2019 12:20	
19I0008-24 J3-SC1b-90to100-82719 [Solid] Sampled 27-Aug-2019 12:25 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	10-Sep-2019 12:25	
8082A PCB Solid 4	17-Sep-2019 15:00	10	10-Sep-2019 12:25	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	10-Sep-2019 12:25	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	24-Sep-2019 12:25	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	26-Aug-2020 12:25	
19I0008-25 J3-SC1b-10to20-82719 [Solid] Sampled 27-Aug-2019 09:55 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	24-Sep-2019 09:55	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	26-Aug-2020 09:55	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	10-Sep-2019 09:55	
8082A PCB Solid 4	17-Sep-2019 15:00	10	10-Sep-2019 09:55	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	10-Sep-2019 09:55	
19I0008-26 412-SC1b-80to90-82719 [Solid] Sampled 27-Aug-2019 12:35 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	10-Sep-2019 12:35	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	24-Sep-2019 12:35	
8082A PCB Solid 4	17-Sep-2019 15:00	10	10-Sep-2019 12:35	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	10-Sep-2019 12:35	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	26-Aug-2020 12:35	

WORK ORDER

19I0008

Client: Pacific Groundwater Group **Project Manager:** Kelly Bottem

Project: Swan Island Lagoon Sediment Investigation **Project Number:** Portland Harbor

Analysis	Due	TAT	Expires	Comments
19I0008-27 J6-SC1b-20to30-82819 [Solid] Sampled 28-Aug-2019 09:20 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	11-Sep-2019 09:20	
8082A PCB Solid 4	17-Sep-2019 15:00	10	11-Sep-2019 09:20	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	11-Sep-2019 09:20	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	27-Aug-2020 09:20	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	25-Sep-2019 09:20	
19I0008-28 J6-SC1b-30to40-82819 [Solid] Sampled 28-Aug-2019 09:25 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	11-Sep-2019 09:25	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	25-Sep-2019 09:25	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	27-Aug-2020 09:25	
8082A PCB Solid 4	17-Sep-2019 15:00	10	11-Sep-2019 09:25	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	11-Sep-2019 09:25	
19I0008-29 J6-SC1b-40to50-82819 [Solid] Sampled 28-Aug-2019 10:25 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	25-Sep-2019 10:25	
8082A PCB Solid 4	17-Sep-2019 15:00	10	11-Sep-2019 10:25	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	11-Sep-2019 10:25	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	11-Sep-2019 10:25	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	27-Aug-2020 10:25	
19I0008-30 J6-SC1b-50to60-82819 [Solid] Sampled 28-Aug-2019 10:30 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	27-Aug-2020 10:30	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	11-Sep-2019 10:30	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	25-Sep-2019 10:30	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	11-Sep-2019 10:30	
8082A PCB Solid 4	17-Sep-2019 15:00	10	11-Sep-2019 10:30	

WORK ORDER

19I0008

Client: Pacific Groundwater Group **Project Manager:** Kelly Bottem

Project: Swan Island Lagoon Sediment Investigation **Project Number:** Portland Harbor

Analysis	Due	TAT	Expires	Comments
19I0008-31 J6-SC1b-60to70-82819 [Solid] Sampled 28-Aug-2019 10:35 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	11-Sep-2019 10:35	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	25-Sep-2019 10:35	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	27-Aug-2020 10:35	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	11-Sep-2019 10:35	
8082A PCB Solid 4	17-Sep-2019 15:00	10	11-Sep-2019 10:35	
19I0008-32 J6-SC1b-70to80-82819 [Solid] Sampled 28-Aug-2019 10:40 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
8082A PCB Solid 4	17-Sep-2019 15:00	10	11-Sep-2019 10:40	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	27-Aug-2020 10:40	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	25-Sep-2019 10:40	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	11-Sep-2019 10:40	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	11-Sep-2019 10:40	
19I0008-33 J6-SC1b-80to90-82819 [Solid] Sampled 28-Aug-2019 11:55 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	27-Aug-2020 11:55	
8082A PCB Solid 4	17-Sep-2019 15:00	10	11-Sep-2019 11:55	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	11-Sep-2019 11:55	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	25-Sep-2019 11:55	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	11-Sep-2019 11:55	
19I0008-34 J6-SC1b-90to100-82819 [Solid] Sampled 28-Aug-2019 12:00 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
8082A PCB Solid 4	17-Sep-2019 15:00	10	11-Sep-2019 12:00	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	27-Aug-2020 12:00	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	25-Sep-2019 12:00	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	11-Sep-2019 12:00	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	11-Sep-2019 12:00	

WORK ORDER

19I0008

Client: Pacific Groundwater Group | **Project Manager:** Kelly Bottem

Project: Swan Island Lagoon Sediment Investigation | **Project Number:** Portland Harbor

Analysis	Due	TAT	Expires	Comments
19I0008-35 J6-SC1b-100to110-82819 [Solid] Sampled 28-Aug-2019 12:05 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
8082A PCB Solid 4	17-Sep-2019 15:00	10	11-Sep-2019 12:05	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	11-Sep-2019 12:05	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	27-Aug-2020 12:05	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	11-Sep-2019 12:05	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	25-Sep-2019 12:05	
19I0008-36 J6-SC1b-110to120-82819 [Solid] Sampled 28-Aug-2019 12:10 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	11-Sep-2019 12:10	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	25-Sep-2019 12:10	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	27-Aug-2020 12:10	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	11-Sep-2019 12:10	
8082A PCB Solid 4	17-Sep-2019 15:00	10	11-Sep-2019 12:10	
19I0008-37 J6-SC1b-00to10-82719 [Solid] Sampled 27-Aug-2019 19:30 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, amber, 4 oz.				
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	26-Aug-2020 19:30	
19I0008-38 J6-SC1b-00to10-82719 [Solid] Sampled 27-Aug-2019 19:30 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz *B = Glass WM, amber, 4 oz.*				
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	26-Aug-2020 19:30	
19I0008-39 J6-SC1b-10to20-82719 [Solid] Sampled 27-Aug-2019 19:35 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz *B = Glass WM, amber, 4 oz.*				
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	26-Aug-2020 19:35	
19I0008-40 R4-SC1b-20to30-82819 [Solid] Sampled 28-Aug-2019 14:00 (GMT-08:00) Pacific Time (US & Canada)				**MS/MSD**
A = Glass WM, Clear, 4 oz				
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	25-Sep-2019 14:00	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	11-Sep-2019 14:00	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	11-Sep-2019 14:00	
8082A PCB Solid 4	17-Sep-2019 15:00	10	11-Sep-2019 14:00	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	27-Aug-2020 14:00	

WORK ORDER

19I0008

Client: Pacific Groundwater Group **Project Manager:** Kelly Bottem

Project: Swan Island Lagoon Sediment Investigation **Project Number:** Portland Harbor

Analysis	Due	TAT	Expires	Comments
19I0008-41 R4-SC1b-30to40-82819 [Solid] Sampled 28-Aug-2019 14:05 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	27-Aug-2020 14:05	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	25-Sep-2019 14:05	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	11-Sep-2019 14:05	
8082A PCB Solid 4	17-Sep-2019 15:00	10	11-Sep-2019 14:05	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	11-Sep-2019 14:05	
19I0008-42 R4-SC1b-40to50-82819 [Solid] Sampled 28-Aug-2019 15:10 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	11-Sep-2019 15:10	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	27-Aug-2020 15:10	
8082A PCB Solid 4	17-Sep-2019 15:00	10	11-Sep-2019 15:10	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	11-Sep-2019 15:10	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	25-Sep-2019 15:10	
19I0008-43 R4-SC1b-50to60-82819 [Solid] Sampled 28-Aug-2019 15:20 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	11-Sep-2019 15:20	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	11-Sep-2019 15:20	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	25-Sep-2019 15:20	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	27-Aug-2020 15:20	
8082A PCB Solid 4	17-Sep-2019 15:00	10	11-Sep-2019 15:20	
19I0008-44 R4-SC1b-60to70-82819 [Solid] Sampled 28-Aug-2019 15:50 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	27-Aug-2020 15:50	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	11-Sep-2019 15:50	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	11-Sep-2019 15:50	
8082A PCB Solid 4	17-Sep-2019 15:00	10	11-Sep-2019 15:50	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	25-Sep-2019 15:50	

WORK ORDER

19I0008

Client: Pacific Groundwater Group | **Project Manager:** Kelly Bottem

Project: Swan Island Lagoon Sediment Investigation | **Project Number:** Portland Harbor

Analysis	Due	TAT	Expires	Comments
19I0008-45 R4-SC1b-70to80-82819 [Solid] Sampled 28-Aug-2019 15:55 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	11-Sep-2019 15:55	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	25-Sep-2019 15:55	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	11-Sep-2019 15:55	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	27-Aug-2020 15:55	
8082A PCB Solid 4	17-Sep-2019 15:00	10	11-Sep-2019 15:55	
19I0008-46 R4-SC1b-80to90-82819 [Solid] Sampled 28-Aug-2019 16:30 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	11-Sep-2019 16:30	
8082A PCB Solid 4	17-Sep-2019 15:00	10	11-Sep-2019 16:30	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	27-Aug-2020 16:30	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	25-Sep-2019 16:30	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	11-Sep-2019 16:30	
19I0008-47 R4-SC1b-10to20-82819 [Solid] Sampled 28-Aug-2019 13:55 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	27-Aug-2020 13:55	
19I0008-48 R4-SC1b-90to100-82819 [Solid] Sampled 28-Aug-2019 16:40 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	27-Aug-2020 16:40	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	25-Sep-2019 16:40	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	11-Sep-2019 16:40	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	11-Sep-2019 16:40	
8082A PCB Solid 4	17-Sep-2019 15:00	10	11-Sep-2019 16:40	
19I0008-49 R4-SC1b-10to20-82819 [Solid] Sampled 28-Aug-2019 13:55 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Hold Sample	17-Sep-2019 15:00	10	27-Aug-2020 13:55	

WORK ORDER

19I0008

Client: Pacific Groundwater Group **Project Manager:** Kelly Bottem

Project: Swan Island Lagoon Sediment Investigation **Project Number:** Portland Harbor

Analysis	Due	TAT	Expires	Comments
19I0008-50 R4-SC1b-100to110-82819 [Solid] Sampled 28-Aug-2019 17:00 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz	*B = Glass WM, amber, 4 oz.*			
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	11-Sep-2019 17:00	
8082A PCB Solid 4	17-Sep-2019 15:00	10	11-Sep-2019 17:00	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	27-Aug-2020 17:00	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	25-Sep-2019 17:00	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	11-Sep-2019 17:00	
19I0008-51 R4-SC1b-110to120-82819 [Solid] Sampled 28-Aug-2019 17:10 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	27-Aug-2020 17:10	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	25-Sep-2019 17:10	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	11-Sep-2019 17:10	
8082A PCB Solid 4	17-Sep-2019 15:00	10	11-Sep-2019 17:10	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	11-Sep-2019 17:10	
19I0008-52 R4-SC1b-120to130-82819 [Solid] Sampled 28-Aug-2019 18:20 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
8082A PCB Solid 4	17-Sep-2019 15:00	10	11-Sep-2019 18:20	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	11-Sep-2019 18:20	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	27-Aug-2020 18:20	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	11-Sep-2019 18:20	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	25-Sep-2019 18:20	
19I0008-53 413-SC1b-40to50-82819 [Solid] Sampled 28-Aug-2019 10:45 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
8082A PCB Solid 4	17-Sep-2019 15:00	10	11-Sep-2019 10:45	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	11-Sep-2019 10:45	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	27-Aug-2020 10:45	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	11-Sep-2019 10:45	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	25-Sep-2019 10:45	

WORK ORDER

19I0008

Client: Pacific Groundwater Group **Project Manager:** Kelly Bottem

Project: Swan Island Lagoon Sediment Investigation **Project Number:** Portland Harbor

Analysis	Due	TAT	Expires	Comments
19I0008-54 R4-SC1b-130to140-82819 [Solid] Sampled 28-Aug-2019 18:25 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
8082A PCB Solid 4	17-Sep-2019 15:00	10	11-Sep-2019 18:25	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	11-Sep-2019 18:25	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	27-Aug-2020 18:25	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	25-Sep-2019 18:25	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	11-Sep-2019 18:25	
19I0008-55 R4-SC1b-140to150-82819 [Solid] Sampled 28-Aug-2019 18:30 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	27-Aug-2020 18:30	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	11-Sep-2019 18:30	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	25-Sep-2019 18:30	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	11-Sep-2019 18:30	
8082A PCB Solid 4	17-Sep-2019 15:00	10	11-Sep-2019 18:30	
19I0008-56 H3-SC1b-20to30-82819 [Solid] Sampled 28-Aug-2019 20:15 (GMT-08:00) Pacific Time (US & Canada)				**MS/MSD**
A = Glass WM, Clear, 4 oz				
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	27-Aug-2020 20:15	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	11-Sep-2019 20:15	
8082A PCB Solid 4	17-Sep-2019 15:00	10	11-Sep-2019 20:15	
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	11-Sep-2019 20:15	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	25-Sep-2019 20:15	
19I0008-57 H3-SC1b-30to40-82919 [Solid] Sampled 29-Aug-2019 08:25 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	28-Aug-2020 08:25	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	12-Sep-2019 08:25	
8082A PCB Solid 4	17-Sep-2019 15:00	10	12-Sep-2019 08:25	
19I0008-58 H3-SC1b-40to50-82919 [Solid] Sampled 29-Aug-2019 08:30 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	12-Sep-2019 08:30	
8082A PCB Solid 4	17-Sep-2019 15:00	10	12-Sep-2019 08:30	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	28-Aug-2020 08:30	

WORK ORDER

19I0008

Client: Pacific Groundwater Group | **Project Manager:** Kelly Bottem

Project: Swan Island Lagoon Sediment Investigation | **Project Number:** Portland Harbor

Analysis	Due	TAT	Expires	Comments
19I0008-59 H3-SC1b-50to60-82919 [Solid] Sampled 29-Aug-2019 08:35 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	12-Sep-2019 08:35	
8082A PCB Solid 4	17-Sep-2019 15:00	10	12-Sep-2019 08:35	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	28-Aug-2020 08:35	
19I0008-60 H3-SC1b-60to70-82919 [Solid] Sampled 29-Aug-2019 09:00 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	28-Aug-2020 09:00	
8082A PCB Solid 4	17-Sep-2019 15:00	10	12-Sep-2019 09:00	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	12-Sep-2019 09:00	
19I0008-61 H3-SC1b-70to80-82919 [Solid] Sampled 29-Aug-2019 09:05 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz *B = Glass WM, amber, 4 oz.*				
8082A PCB Solid 4	17-Sep-2019 15:00	10	12-Sep-2019 09:05	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	28-Aug-2020 09:05	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	12-Sep-2019 09:05	
19I0008-62 H3-SC1b-80to90-82919 [Solid] Sampled 29-Aug-2019 09:30 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
8082A PCB Solid 4	17-Sep-2019 15:00	10	12-Sep-2019 09:30	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	28-Aug-2020 09:30	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	12-Sep-2019 09:30	
19I0008-63 H3-SC1b-90to100-82919 [Solid] Sampled 29-Aug-2019 09:35 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
8082A PCB Solid 4	17-Sep-2019 15:00	10	12-Sep-2019 09:35	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	12-Sep-2019 09:35	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	28-Aug-2020 09:35	
19I0008-64 H3-SC1b-100to110-82919 [Solid] Sampled 29-Aug-2019 09:50 (GMT-08:00) Pacific Time (US & Canada)				**MS/MSD**
A = Glass WM, Clear, 4 oz				
8082A PCB Solid 4	17-Sep-2019 15:00	10	12-Sep-2019 09:50	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	12-Sep-2019 09:50	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	28-Aug-2020 09:50	

WORK ORDER

19I0008

Client: Pacific Groundwater Group | **Project Manager:** Kelly Bottem

Project: Swan Island Lagoon Sediment Investigation | **Project Number:** Portland Harbor

Analysis	Due	TAT	Expires	Comments
19I0008-65 H3-SC1b-00to10-82919 [Solid] Sampled 28-Aug-2019 20:05 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	27-Aug-2020 20:05	
19I0008-66 H3-SC1b-10-20-82919 [Solid] Sampled 28-Aug-2019 20:10 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	27-Aug-2020 20:10	
19I0008-67 711-82719 [Water] Sampled 27-Aug-2019 08:40 (GMT-08:00) Pacific Time (US & Canada)				
A = Miscellaneous container, 9N H2S(B = Glass NM, Amber, 250 mL		*B 01 = Autosampler Vial, amber*	*C = Glass NM, Amber, 250 mL*	
8082A PCB (20 ug/kg) or (MTCA 0.1 u	17-Sep-2019 15:00	10	26-Aug-2020 08:40	Use this for waters only.
Carbon, Organic Total, 9060A	17-Sep-2019 15:00	10	24-Sep-2019 08:40	waters
19I0008-68 712-82819 [Water] Sampled 27-Aug-2019 08:20 (GMT-08:00) Pacific Time (US & Canada)				
A = Miscellaneous container, 9N H2S(B = Glass NM, Amber, 250 mL		*B 01 = Autosampler Vial, amber*	*C = Glass NM, Amber, 250 mL*	
8082A PCB (20 ug/kg) or (MTCA 0.1 u	17-Sep-2019 15:00	10	26-Aug-2020 08:20	Use this for waters only.
Carbon, Organic Total, 9060A	17-Sep-2019 15:00	10	24-Sep-2019 08:20	waters
19I0008-69 H3-SC1b-110to114-82919 [Solid] Sampled 29-Aug-2019 10:00 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	12-Sep-2019 10:00	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	26-Sep-2019 10:00	
Solids, Total, PSEP (Extractions)	17-Sep-2019 15:00	10	12-Sep-2019 10:00	
8082A PCB Solid 4	17-Sep-2019 15:00	10	12-Sep-2019 10:00	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	28-Aug-2020 10:00	
19I0008-70 J5-SC1b-20to30-82719 [Solid] Sampled 27-Aug-2019 14:55 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Carbon, 9060A m Solid	17-Sep-2019 15:00	10	10-Sep-2019 14:55	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	26-Aug-2020 14:55	
8082A PCB Solid 4	17-Sep-2019 15:00	10	10-Sep-2019 14:55	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	24-Sep-2019 14:55	

WORK ORDER

19I0008

Client: Pacific Groundwater Group **Project Manager:** Kelly Bottem

Project: Swan Island Lagoon Sediment Investigation **Project Number:** Portland Harbor

Analysis	Due	TAT	Expires	Comments
19I0008-71 J5-SC1b-30to40-82719 [Solid] Sampled 27-Aug-2019 15:00 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
8082A PCB Solid 4	17-Sep-2019 15:00	10	10-Sep-2019 15:00	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	24-Sep-2019 15:00	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	26-Aug-2020 15:00	
19I0008-72 J5-SC1b-40to50-82719 [Solid] Sampled 27-Aug-2019 16:10 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	24-Sep-2019 16:10	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	26-Aug-2020 16:10	
8082A PCB Solid 4	17-Sep-2019 15:00	10	10-Sep-2019 16:10	
19I0008-73 J5-SC1b-50to60-82719 [Solid] Sampled 27-Aug-2019 16:15 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
8082A PCB Solid 4	17-Sep-2019 15:00	10	10-Sep-2019 16:15	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	24-Sep-2019 16:15	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	26-Aug-2020 16:15	
19I0008-74 J5-SC1b-60to70-82719 [Solid] Sampled 27-Aug-2019 16:20 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	24-Sep-2019 16:20	
8082A PCB Solid 4	17-Sep-2019 15:00	10	10-Sep-2019 16:20	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	26-Aug-2020 16:20	
19I0008-75 J5-SC1b-70to80-82719 [Solid] Sampled 27-Aug-2019 16:25 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	26-Aug-2020 16:25	
8082A PCB Solid 4	17-Sep-2019 15:00	10	10-Sep-2019 16:25	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	24-Sep-2019 16:25	
19I0008-76 J5-SC1b-80to90-82719 [Solid] Sampled 27-Aug-2019 17:25 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
8082A PCB Solid 4	17-Sep-2019 15:00	10	10-Sep-2019 17:25	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	26-Aug-2020 17:25	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	24-Sep-2019 17:25	

WORK ORDER

19I0008

Client: Pacific Groundwater Group | **Project Manager:** Kelly Bottem

Project: Swan Island Lagoon Sediment Investigation | **Project Number:** Portland Harbor

Analysis	Due	TAT	Expires	Comments
19I0008-77 J5-SC1b-90to100-82719 [Solid] Sampled 27-Aug-2019 17:30 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	24-Sep-2019 17:30	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	26-Aug-2020 17:30	
8082A PCB Solid 4	17-Sep-2019 15:00	10	10-Sep-2019 17:30	
19I0008-78 J5-SC1b-100to110-82719 [Solid] Sampled 27-Aug-2019 17:35 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
8082A PCB Solid 4	17-Sep-2019 15:00	10	10-Sep-2019 17:35	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	26-Aug-2020 17:35	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	24-Sep-2019 17:35	
19I0008-79 J5-SC1b-00to10-82719 [Solid] Sampled 27-Aug-2019 14:45 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	24-Sep-2019 14:45	
8082A PCB Solid 4	17-Sep-2019 15:00	10	10-Sep-2019 14:45	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	26-Aug-2020 14:45	
19I0008-80 J5-SC1b-10to20-82719 [Solid] Sampled 27-Aug-2019 14:50 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
8082A PCB Solid 4	17-Sep-2019 15:00	10	10-Sep-2019 14:50	
Freeze and Hold Extractions Container	17-Sep-2019 15:00	10	26-Aug-2020 14:50	
Solids, Total, Dried at 103 -105 °C, Soli	17-Sep-2019 15:00	10	24-Sep-2019 14:50	

Reviewed By _____ Date _____

WORK ORDER

19I0008

Client: Pacific Groundwater Group **Project Manager:** Kelly Bottem

Project: Swan Island Lagoon Sediment Investigation **Project Number:** Portland Harbor

Preservation Confirmation

Container ID	Container Type	pH
19I0008-01 A	Glass WM, Clear, 4 oz	
19I0008-02 A	Glass WM, Clear, 4 oz	
19I0008-03 A	Glass WM, Clear, 4 oz	
19I0008-04 A	Glass WM, Clear, 4 oz	
19I0008-05 A	Glass WM, Clear, 4 oz	
19I0008-06 A	Glass WM, Clear, 4 oz	
19I0008-07 A	Glass WM, Clear, 4 oz	
19I0008-08 A	Glass WM, Clear, 4 oz	
19I0008-09 A	Glass WM, Clear, 4 oz	
19I0008-10 A	Glass WM, Clear, 4 oz	
19I0008-11 A	Glass WM, Clear, 4 oz	
19I0008-12 A	Glass WM, Clear, 4 oz	
19I0008-13 A	Glass WM, Clear, 4 oz	
19I0008-14 A	Glass WM, Clear, 4 oz	
19I0008-15 A	Glass WM, Clear, 4 oz	
19I0008-16 A	Glass WM, Clear, 4 oz	
19I0008-17 A	Glass WM, Clear, 4 oz	
19I0008-18 A	Glass WM, Clear, 4 oz	
19I0008-19 A	Glass WM, Clear, 4 oz	
19I0008-20 A	Glass WM, Clear, 4 oz	
19I0008-21 A	Glass WM, Clear, 4 oz	
19I0008-22 A	Glass WM, Clear, 4 oz	
19I0008-23 A	Glass WM, Clear, 4 oz	
19I0008-24 A	Glass WM, Clear, 4 oz	
19I0008-25 A	Glass WM, Clear, 4 oz	
19I0008-26 A	Glass WM, Clear, 4 oz	
19I0008-27 A	Glass WM, Clear, 4 oz	
19I0008-28 A	Glass WM, Clear, 4 oz	
19I0008-29 A	Glass WM, Clear, 4 oz	
19I0008-30 A	Glass WM, Clear, 4 oz	
19I0008-31 A	Glass WM, Clear, 4 oz	
19I0008-32 A	Glass WM, Clear, 4 oz	
19I0008-33 A	Glass WM, Clear, 4 oz	
19I0008-34 A	Glass WM, Clear, 4 oz	
19I0008-35 A	Glass WM, Clear, 4 oz	

Reviewed By Date

WORK ORDER

19I0008

Client: Pacific Groundwater Group | **Project Manager:** Kelly Bottem

Project: Swan Island Lagoon Sediment Investigation | **Project Number:** Portland Harbor

19I0008-36 A	Glass WM, Clear, 4 oz	
19I0008-37 A	Glass WM, amber, 4 oz.	
19I0008-38 A	Glass WM, Clear, 4 oz	
19I0008-38 B	Glass WM, amber, 4 oz.	
19I0008-39 A	Glass WM, Clear, 4 oz	
19I0008-39 B	Glass WM, amber, 4 oz.	
19I0008-40 A	Glass WM, Clear, 4 oz	
19I0008-41 A	Glass WM, Clear, 4 oz	
19I0008-42 A	Glass WM, Clear, 4 oz	
19I0008-43 A	Glass WM, Clear, 4 oz	
19I0008-44 A	Glass WM, Clear, 4 oz	
19I0008-45 A	Glass WM, Clear, 4 oz	
19I0008-46 A	Glass WM, Clear, 4 oz	
19I0008-47 A	Glass WM, Clear, 4 oz	
19I0008-48 A	Glass WM, Clear, 4 oz	
19I0008-49 A	Glass WM, Clear, 4 oz	
19I0008-50 A	Glass WM, Clear, 4 oz	
19I0008-50 B	Glass WM, amber, 4 oz.	
19I0008-51 A	Glass WM, Clear, 4 oz	
19I0008-52 A	Glass WM, Clear, 4 oz	
19I0008-53 A	Glass WM, Clear, 4 oz	
19I0008-54 A	Glass WM, Clear, 4 oz	
19I0008-55 A	Glass WM, Clear, 4 oz	
19I0008-56 A	Glass WM, Clear, 4 oz	
19I0008-57 A	Glass WM, Clear, 4 oz	
19I0008-58 A	Glass WM, Clear, 4 oz	
19I0008-59 A	Glass WM, Clear, 4 oz	
19I0008-60 A	Glass WM, Clear, 4 oz	
19I0008-61 A	Glass WM, Clear, 4 oz	
19I0008-61 B	Glass WM, amber, 4 oz.	
19I0008-62 A	Glass WM, Clear, 4 oz	
19I0008-63 A	Glass WM, Clear, 4 oz	
19I0008-64 A	Glass WM, Clear, 4 oz	
19I0008-65 A	Glass WM, Clear, 4 oz	
19I0008-66 A	Glass WM, Clear, 4 oz	
19I0008-67 A	Miscellaneous container, 9N H2SO4	<2 Pass
19I0008-67 B	Glass NM, Amber, 250 mL	

Reviewed By

Date

WORK ORDER

19I0008

Client: Pacific Groundwater Group **Project Manager: Kelly Bottem**

Project: Swan Island Lagoon Sediment Investigation **Project Number: Portland Harbor**

19I0008-67 C	Glass NM, Amber, 250 mL	
19I0008-68 A	Miscellaneous container, 9N H2SO4	<2 Pass
19I0008-68 B	Glass NM, Amber, 250 mL	
19I0008-68 C	Glass NM, Amber, 250 mL	
19I0008-69 A	Glass WM, Clear, 4 oz	

KD
Preservation Confirmed By

9/4/19
Date

Reviewed By

Date

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: PGG Project Name: Swan Lagoon Sediment

COC No(s): _____ (NA) Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 19I0008 Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1500 3.7 5.8 ___ ___ ___ ___

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: D00520G

Cooler Accepted by: KD Date: 9/3/19 Time: 1430

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		(YES)	NO
What kind of packing material was used? ...	Bubble Wrap (Wet Ice) Gel Packs Baggies Foam Block Paper Other: _____		
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
How were bottles sealed in plastic bags?	Individually	(Grouped)	Not
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		YES	(NO)
Were all bottles used correct for the requested analyses?	KD 9/3/19	(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ...	(NA)	YES	NO
Were all VOC vials free of air bubbles?	(NA)	YES	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	(NA)		

Were the sample(s) split by ARI? (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: KD Date: 9/3/19 Time: 1557 Labels checked by: KD

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

- Samples associated with page 4 of COC are missing
- Sample: #3-SC16-110 to 114-82919 not on COC
- Duplicates for: J6-SC16-00to10-82719
  J6-SC16-10to20-82719
  R4-SC16-100to110-82819
  #3-SC16-70to80-82919

By: KD Date:

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: PGG Project Name: Swan Island Lagoon Sediment

COC No(s): _____ NA Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: _____ Tracking No: _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 2.5

Time 1520

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: D00 25565

Cooler Accepted by: _____ Date: 9/5/19 Time: 1010

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used? ...	Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other:		
Was sufficient ice used (if appropriate)?	NA	YES	NO
How were bottles sealed in plastic bags?	Individually	Grouped	Not
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ...	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA		

Were the sample(s) split by ARI? NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: _____ Date: _____ Time: _____ Labels checked by: _____

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: PGG

Project Name: Swan Island Lagoon

COC No(s): NA

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 19I0008

Tracking No: _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1400 | 11.1 | | | | | |

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: D00520C

Cooler Accepted by: KD Date: 9/12/19 Time: 1322

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: Nothing			
Was sufficient ice used (if appropriate)?	NA	YES	NO
How were bottles sealed in plastic bags?	Individually	Grouped	Not
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ...	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA	_____	

Were the sample(s) split by ARI? NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: _____ Date: _____ Time: _____ Labels checked by: _____

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Temperature Compliance Form

ARI Work Order: 19I0008

Cooler#: 1 Temperature(°C): 11.1

Sample ID	Bottle Count	Bottle Type
Samples received above 6°C		

Cooler#: Temperature(°C):

Sample ID	Bottle Count	Bottle Type

Cooler#: Temperature(°C):

Sample ID	Bottle Count	Bottle Type

Cooler#: Temperature(°C):

Sample ID	Bottle Count	Bottle Type

Completed by: KD Date: 9/12/19 Time: 1400

Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

L3-SC1b-20to30-82619

19I0008-01 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/26/2019 10:30
Instrument: ECD7 Analyst: JGR — Analyzed: 09/11/2019 18:17

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-01 A 01
	Preparation Batch: BHI0156	Sample Size: 15.65 g (wet)	Dry Weight:12.52 g
	Prepared: 07-Sep-2019	Final Volume: 2.5 mL	% Solids: 80.00
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-01 A 01
	Cleanup Batch: CHI0070	Initial Volume: 2.5 mL	
	Cleaned: 11-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-01 A 01
	Cleanup Batch: CHI0062	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-01 A 01
	Cleanup Batch: CHI0063	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	**4.6**	ug/kg	
Aroclor 1254	11097-69-1	1	1.6	4.0	**10.7**	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	**6.7**	ug/kg	
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*83.5*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*75.3*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*74.3*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*69.8*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

L3-SC1b-20to30-82619

19I0008-01 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/26/2019 10:30
Instrument: TOC Cube Analyst: CDE — Analyzed: 09/11/2019 10:25

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-01 A
Preparation Batch: BHI0179 — Sample Size: 0.5483 g (wet) — Dry Weight:0.44 g
Prepared: 08-Sep-2019 — Final Volume: 0.5483 g — % Solids: 79.35

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**0.12**	%	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

L3-SC1b-20to30-82619

19I0008-01 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/26/2019 10:30
Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:06

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-01
Preparation Batch: BHI0180 — Sample Size: 10 g (wet) — Dry Weight:7.94 g
Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 79.35

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**79.35**	%	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

L3-SC1b-30to40-82619

19I0008-02 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/26/2019 10:35
Instrument: ECD7 Analyst: JGR — Analyzed: 09/11/2019 18:38

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-02 A 01
	Preparation Batch: BHI0156	Sample Size: 14.07 g (wet)	Dry Weight:12.50 g
	Prepared: 07-Sep-2019	Final Volume: 2.5 mL	% Solids: 88.86
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-02 A 01
	Cleanup Batch: CHI0070	Initial Volume: 2.5 mL	
	Cleaned: 11-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-02 A 01
	Cleanup Batch: CHI0062	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-02 A 01
	Cleanup Batch: CHI0063	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	**8.1**	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	**5.1**	ug/kg	
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*79.8*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*72.8*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*72.6*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*65.6*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

L3-SC1b-30to40-82619

19I0008-02 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/26/2019 10:35
Instrument: TOC Cube Analyst: CDE — Analyzed: 09/11/2019 12:27

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-02 A
Preparation Batch: BHI0179 — Sample Size: 0.5068 g (wet) — Dry Weight:0.40 g
Prepared: 08-Sep-2019 — Final Volume: 0.5068 g — % Solids: 79.20

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**0.11**	%	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

L3-SC1b-30to40-82619

19I0008-02 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/26/2019 10:35

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:06

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-02

Preparation Batch: BHI0180 — Sample Size: 10 g (wet) — Dry Weight:7.92 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 79.20

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**79.20**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

D6-SC1b-20to30-82619

19I0008-05 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/26/2019 12:45
Instrument: ECD7 Analyst: JGR — Analyzed: 09/11/2019 18:59

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-05 A 01
	Preparation Batch: BHI0156	Sample Size: 23.35 g (wet)	Dry Weight:12.51 g
	Prepared: 07-Sep-2019	Final Volume: 2.5 mL	% Solids: 53.58
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-05 A 01
	Cleanup Batch: CHI0070	Initial Volume: 2.5 mL	
	Cleaned: 11-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-05 A 01
	Cleanup Batch: CHI0062	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-05 A 01
	Cleanup Batch: CHI0063	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	5	7.8	20.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	5	7.8	20.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	5	7.8	20.0	**225**	ug/kg	D
Aroclor 1254	11097-69-1	5	7.8	20.0	**617**	ug/kg	D
Aroclor 1260	11096-82-5	5	2.9	20.0	**196**	ug/kg	D
Aroclor 1262	37324-23-5	5	2.9	20.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	5	2.9	20.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*		*NRS*	NRS
Surrogate: Tetrachlorometaxylene				*44-120 %*	*65.3*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*77.6*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*68.6*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

D6-SC1b-20to30-82619

19I0008-05 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/26/2019 12:45
Instrument: TOC Cube Analyst: CDE — Analyzed: 09/11/2019 12:58

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-05 A
Preparation Batch: BHI0179 — Sample Size: 0.6735 g (wet) — Dry Weight:0.36 g
Prepared: 08-Sep-2019 — Final Volume: 0.6735 g — % Solids: 53.98

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**2.25**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

D6-SC1b-20to30-82619

19I0008-05 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/26/2019 12:45
Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:06

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-05
Preparation Batch: BHI0180 — Sample Size: 10 g (wet) — Dry Weight:5.40 g
Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 53.98

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**53.98**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

D6-SC1b-30to40-82619

19I0008-06 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/26/2019 13:00
Instrument: ECD7 Analyst: JGR — Analyzed: 09/12/2019 02:20

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-06 A 01
	Preparation Batch: BHI0156	Sample Size: 21.38 g (wet)	Dry Weight:12.50 g
	Prepared: 07-Sep-2019	Final Volume: 2.5 mL	% Solids: 58.46
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-06 A 01
	Cleanup Batch: CHI0070	Initial Volume: 2.5 mL	
	Cleaned: 11-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-06 A 01
	Cleanup Batch: CHI0062	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-06 A 01
	Cleanup Batch: CHI0063	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	10	15.6	40.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	10	15.6	40.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	10	15.6	40.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	10	15.6	40.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	10	15.6	40.0	**215**	ug/kg	D
Aroclor 1254	11097-69-1	10	15.6	40.0	**542**	ug/kg	D
Aroclor 1260	11096-82-5	10	5.9	40.0	**641**	ug/kg	D
Aroclor 1262	37324-23-5	10	5.9	40.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	10	5.9	40.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*		*NRS*	NRS
Surrogate: Tetrachlorometaxylene				*44-120 %*	*66.9*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*87.2*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*74.7*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

D6-SC1b-30to40-82619

19I0008-06 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/26/2019 13:00
Instrument: TOC Cube Analyst: CDE — Analyzed: 09/11/2019 14:30

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-06 A
Preparation Batch: BHI0179 — Sample Size: 0.5596 g (wet) — Dry Weight:0.29 g
Prepared: 08-Sep-2019 — Final Volume: 0.5596 g — % Solids: 52.64

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**2.12**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

D6-SC1b-30to40-82619

19I0008-06 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/26/2019 13:00
Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:06

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-06
Preparation Batch: BHI0180 — Sample Size: 10 g (wet) — Dry Weight:5.26 g
Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 52.64

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**52.64**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

D6-SC1b-40to50-82619

19I0008-07 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/26/2019 14:45
Instrument: ECD7 Analyst: JGR — Analyzed: 09/11/2019 19:41

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-07 A 01
	Preparation Batch: BHI0156	Sample Size: 22.35 g (wet)	Dry Weight:12.52 g
	Prepared: 07-Sep-2019	Final Volume: 2.5 mL	% Solids: 56.02
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-07 A 01
	Cleanup Batch: CHI0070	Initial Volume: 2.5 mL	
	Cleaned: 11-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-07 A 01
	Cleanup Batch: CHI0062	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-07 A 01
	Cleanup Batch: CHI0063	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	**61.7**	ug/kg	
Aroclor 1254	11097-69-1	1	1.6	4.0	**137**	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	**84.5**	ug/kg	
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*		*NRS*	NRS
Surrogate: Tetrachlorometaxylene				*44-120 %*	*57.8*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*74.2*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*64.4*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

D6-SC1b-40to50-82619

19I0008-07 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/26/2019 14:45
Instrument: TOC Cube Analyst: CDE — Analyzed: 09/11/2019 15:01

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-07 A
Preparation Batch: BHI0179 — Sample Size: 0.5089 g (wet) — Dry Weight:0.28 g
Prepared: 08-Sep-2019 — Final Volume: 0.5089 g — % Solids: 55.77

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**2.03**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

D6-SC1b-40to50-82619

19I0008-07 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/26/2019 14:45
Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:06

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-07
Preparation Batch: BHI0180 — Sample Size: 10 g (wet) — Dry Weight:5.58 g
Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 55.77

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**55.77**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

D6-SC1b-50to60-82619

19I0008-08 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/26/2019 14:50
Instrument: ECD7 Analyst: JGR — Analyzed: 09/12/2019 08:59

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-08 A 01
	Preparation Batch: BHI0156	Sample Size: 20.82 g (wet)	Dry Weight:12.51 g
	Prepared: 07-Sep-2019	Final Volume: 2.5 mL	% Solids: 60.10
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-08 A 01
	Cleanup Batch: CHI0070	Initial Volume: 2.5 mL	
	Cleaned: 11-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-08 A 01
	Cleanup Batch: CHI0062	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-08 A 01
	Cleanup Batch: CHI0063	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	5	7.8	20.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	5	7.8	20.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	5	7.8	20.0	**97.4**	ug/kg	D
Aroclor 1254	11097-69-1	5	7.8	20.0	**201**	ug/kg	D
Aroclor 1260	11096-82-5	5	2.9	20.0	**103**	ug/kg	D
Aroclor 1262	37324-23-5	5	2.9	20.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	5	2.9	20.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*108*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*64.0*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*83.0*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*68.4*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

D6-SC1b-50to60-82619

19I0008-08 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/26/2019 14:50
Instrument: TOC Cube Analyst: CDE — Analyzed: 09/11/2019 15:31

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-08 A
Preparation Batch: BHI0179 — Sample Size: 0.6774 g (wet) — Dry Weight:0.41 g
Prepared: 08-Sep-2019 — Final Volume: 0.6774 g — % Solids: 60.12

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**1.76**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

D6-SC1b-50to60-82619

19I0008-08 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/26/2019 14:50
Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:06

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-08
Preparation Batch: BHI0180 — Sample Size: 10 g (wet) — Dry Weight:6.01 g
Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 60.12

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**60.12**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

D6-SC1b-60to70-82619

19I0008-09 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/26/2019 15:30
Instrument: ECD7 Analyst: JGR — Analyzed: 09/12/2019 09:20

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-09 A 01
	Preparation Batch: BHI0156	Sample Size: 19.65 g (wet)	Dry Weight:12.51 g
	Prepared: 07-Sep-2019	Final Volume: 2.5 mL	% Solids: 63.68
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-09 A 01
	Cleanup Batch: CHI0070	Initial Volume: 2.5 mL	
	Cleaned: 11-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-09 A 01
	Cleanup Batch: CHI0062	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-09 A 01
	Cleanup Batch: CHI0063	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	5	7.8	20.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	5	7.8	20.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	5	7.8	20.0	**80.2**	ug/kg	D
Aroclor 1254	11097-69-1	5	7.8	20.0	**185**	ug/kg	D
Aroclor 1260	11096-82-5	5	2.9	20.0	**91.5**	ug/kg	D
Aroclor 1262	37324-23-5	5	2.9	20.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	5	2.9	20.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*108*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*71.0*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*76.5*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*69.3*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

D6-SC1b-60to70-82619

19I0008-09 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/26/2019 15:30
Instrument: TOC Cube Analyst: CDE — Analyzed: 09/11/2019 16:02

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-09 A
Preparation Batch: BHI0179 — Sample Size: 0.6972 g (wet) — Dry Weight:0.42 g
Prepared: 08-Sep-2019 — Final Volume: 0.6972 g — % Solids: 60.86

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**1.41**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

D6-SC1b-60to70-82619

19I0008-09 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/26/2019 15:30
Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:06

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-09
Preparation Batch: BHI0180 — Sample Size: 10 g (wet) — Dry Weight:6.09 g
Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 60.86

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**60.86**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

D6-SC1b-70to80-82619

19I0008-10 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/26/2019 15:40
Instrument: ECD7 Analyst: JGR — Analyzed: 09/11/2019 20:44

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-10 A 01
	Preparation Batch: BHI0156	Sample Size: 19.07 g (wet)	Dry Weight:12.52 g
	Prepared: 07-Sep-2019	Final Volume: 2.5 mL	% Solids: 65.63
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-10 A 01
	Cleanup Batch: CHI0070	Initial Volume: 2.5 mL	
	Cleaned: 11-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-10 A 01
	Cleanup Batch: CHI0062	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-10 A 01
	Cleanup Batch: CHI0063	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	**11.1**	ug/kg	
Aroclor 1254	11097-69-1	1	1.6	4.0	**26.8**	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	**12.3**	ug/kg	
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*		*NRS*	NRS
Surrogate: Tetrachlorometaxylene				*44-120 %*	*69.4*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*70.4*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*67.2*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

D6-SC1b-70to80-82619

19I0008-10 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/26/2019 15:40
Instrument: TOC Cube Analyst: CDE — Analyzed: 09/11/2019 16:32

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-10 A
Preparation Batch: BHI0179 — Sample Size: 0.5075 g (wet) — Dry Weight:0.40 g
Prepared: 08-Sep-2019 — Final Volume: 0.5075 g — % Solids: 79.15

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**0.77**	%	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

D6-SC1b-70to80-82619

19I0008-10 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/26/2019 15:40
Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:06

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-10
Preparation Batch: BHI0180 — Sample Size: 10 g (wet) — Dry Weight:7.91 g
Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 79.15

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**79.15**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

D6-SC1b-80to90-82619

19I0008-11 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/26/2019 16:55
Instrument: ECD7 Analyst: JGR — Analyzed: 09/11/2019 21:05

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-11 A 01
	Preparation Batch: BHI0156	Sample Size: 18.63 g (wet)	Dry Weight:12.55 g
	Prepared: 07-Sep-2019	Final Volume: 2.5 mL	% Solids: 67.36
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-11 A 01
	Cleanup Batch: CHI0070	Initial Volume: 2.5 mL	
	Cleaned: 11-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-11 A 01
	Cleanup Batch: CHI0062	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-11 A 01
	Cleanup Batch: CHI0063	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	**4.6**	ug/kg	
Aroclor 1254	11097-69-1	1	1.6	4.0	**9.1**	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	**5.4**	ug/kg	
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*		*NRS*	NRS
Surrogate: Tetrachlorometaxylene				*44-120 %*	*71.3*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*77.8*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*69.3*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

D6-SC1b-80to90-82619

19I0008-11 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/26/2019 16:55
Instrument: TOC Cube Analyst: CDE — Analyzed: 09/11/2019 17:03

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-11 A
Preparation Batch: BHI0179 — Sample Size: 0.6975 g (wet) — Dry Weight:0.46 g
Prepared: 08-Sep-2019 — Final Volume: 0.6975 g — % Solids: 66.51

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**0.87**	%	

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Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

D6-SC1b-80to90-82619

19I0008-11 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/26/2019 16:55
Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:06

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-11
Preparation Batch: BHI0180 — Sample Size: 10 g (wet) — Dry Weight:6.65 g
Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 66.51

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**66.51**	%	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

D6-SC1b-90to100-82619

19I0008-12 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/26/2019 17:00
Instrument: ECD7 Analyst: JGR — Analyzed: 09/11/2019 21:26

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-12 A 01
	Preparation Batch: BHI0156	Sample Size: 17.61 g (wet)	Dry Weight:12.56 g
	Prepared: 07-Sep-2019	Final Volume: 2.5 mL	% Solids: 71.30
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-12 A 01
	Cleanup Batch: CHI0070	Initial Volume: 2.5 mL	
	Cleaned: 11-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-12 A 01
	Cleanup Batch: CHI0062	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-12 A 01
	Cleanup Batch: CHI0063	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	**1.9**	ug/kg	J
Aroclor 1254	11097-69-1	1	1.6	4.0	**2.9**	ug/kg	J
Aroclor 1260	11096-82-5	1	0.6	4.0	**1.4**	ug/kg	J
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*85.7*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*76.0*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*80.1*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*71.8*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

D6-SC1b-90to100-82619

19I0008-12 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/26/2019 17:00

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/11/2019 17:33

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-12 A

Preparation Batch: BHI0179 — Sample Size: 0.5198 g (wet) — Dry Weight:0.37 g

Prepared: 08-Sep-2019 — Final Volume: 0.5198 g — % Solids: 70.95

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**0.56**	%	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

D6-SC1b-90to100-82619

19I0008-12 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/26/2019 17:00

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:06

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-12

Preparation Batch: BHI0180 — Sample Size: 10 g (wet) — Dry Weight:7.09 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 70.95

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**70.95**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

D6-SC1b-100to110-82619

19I0008-13 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/26/2019 17:40
Instrument: ECD7 Analyst: JGR — Analyzed: 09/11/2019 22:29

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-13 A 01
	Preparation Batch: BHI0156	Sample Size: 17.87 g (wet)	Dry Weight:12.54 g
	Prepared: 07-Sep-2019	Final Volume: 2.5 mL	% Solids: 70.18
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-13 A 01
	Cleanup Batch: CHI0070	Initial Volume: 2.5 mL	
	Cleaned: 11-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-13 A 01
	Cleanup Batch: CHI0062	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-13 A 01
	Cleanup Batch: CHI0063	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*82.2*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*74.2*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*78.3*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*70.1*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

D6-SC1b-100to110-82619

19I0008-13 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/26/2019 17:40

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/11/2019 18:04

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-13 A

Preparation Batch: BHI0179 — Sample Size: 0.5647 g (wet) — Dry Weight:0.40 g

Prepared: 08-Sep-2019 — Final Volume: 0.5647 g — % Solids: 70.34

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**0.53**	%	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

D6-SC1b-100to110-82619

19I0008-13 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/26/2019 17:40

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:06

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-13

Preparation Batch: BHI0180 — Sample Size: 10 g (wet) — Dry Weight:7.03 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 70.34

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**70.34**	%	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

D6-SC1b-110to120-82619

19I0008-14 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/26/2019 17:50
Instrument: ECD7 Analyst: JGR — Analyzed: 09/11/2019 22:50

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-14 A 01
	Preparation Batch: BHI0156	Sample Size: 17.56 g (wet)	Dry Weight:12.56 g
	Prepared: 07-Sep-2019	Final Volume: 2.5 mL	% Solids: 71.51
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-14 A 01
	Cleanup Batch: CHI0070	Initial Volume: 2.5 mL	
	Cleaned: 11-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-14 A 01
	Cleanup Batch: CHI0062	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-14 A 01
	Cleanup Batch: CHI0063	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*86.3*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*81.1*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*76.2*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*72.8*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

D6-SC1b-110to120-82619

19I0008-14 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/26/2019 17:50

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/11/2019 18:34

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-14 A

Preparation Batch: BHI0179 — Sample Size: 0.5835 g (wet) — Dry Weight:0.42 g

Prepared: 08-Sep-2019 — Final Volume: 0.5835 g — % Solids: 71.34

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**0.43**	%	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

D6-SC1b-110to120-82619

19I0008-14 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/26/2019 17:50

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:06

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-14

Preparation Batch: BHI0180 — Sample Size: 10 g (wet) — Dry Weight:7.13 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 71.34

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**71.34**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

411-SC1b-50to60-82619

19I0008-16 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/26/2019 15:00
Instrument: ECD7 Analyst: JGR — Analyzed: 09/11/2019 23:11

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-16 A 01
	Preparation Batch: BHI0156	Sample Size: 20.55 g (wet)	Dry Weight:12.52 g
	Prepared: 07-Sep-2019	Final Volume: 2.5 mL	% Solids: 60.92
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-16 A 01
	Cleanup Batch: CHI0070	Initial Volume: 2.5 mL	
	Cleaned: 11-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-16 A 01
	Cleanup Batch: CHI0062	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-16 A 01
	Cleanup Batch: CHI0063	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	5	7.8	20.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	5	7.8	20.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	5	7.8	20.0	**104**	ug/kg	D
Aroclor 1254	11097-69-1	5	7.8	20.0	**271**	ug/kg	D
Aroclor 1260	11096-82-5	5	2.9	20.0	**93.2**	ug/kg	D
Aroclor 1262	37324-23-5	5	2.9	20.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	5	2.9	20.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*105*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*65.0*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*78.1*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*67.3*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

411-SC1b-50to60-82619

19I0008-16 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/26/2019 15:00

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 12:12

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-16

Preparation Batch: BHI0183 — Sample Size: 10 g (wet) — Dry Weight:5.93 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 59.28

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**59.28**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J3-SC1b-20to30-82719

19I0008-17 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/27/2019 10:00
Instrument: ECD7 Analyst: JGR — Analyzed: 09/11/2019 23:32

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-17 A 01
	Preparation Batch: BHI0156	Sample Size: 19.17 g (wet)	Dry Weight:12.56 g
	Prepared: 07-Sep-2019	Final Volume: 2.5 mL	% Solids: 65.52
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-17 A 01
	Cleanup Batch: CHI0070	Initial Volume: 2.5 mL	
	Cleaned: 11-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-17 A 01
	Cleanup Batch: CHI0062	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-17 A 01
	Cleanup Batch: CHI0063	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	**43.1**	ug/kg	
Aroclor 1254	11097-69-1	1	1.6	4.0	**134**	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	**56.8**	ug/kg	
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*		*NRS*	NRS
Surrogate: Tetrachlorometaxylene				*44-120 %*	*58.7*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*70.7*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*62.3*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J3-SC1b-20to30-82719

19I0008-17 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/27/2019 10:00

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/11/2019 19:05

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-17 A

Preparation Batch: BHI0179 — Sample Size: 0.5878 g (wet) — Dry Weight:0.39 g

Prepared: 08-Sep-2019 — Final Volume: 0.5878 g — % Solids: 66.66

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**1.46**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J3-SC1b-20to30-82719

19I0008-17 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/27/2019 10:00

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:06

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-17

Preparation Batch: BHI0180 — Sample Size: 10 g (wet) — Dry Weight:6.67 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 66.66

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**66.66**	%	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J3-SC1b-30to40-82719

19I0008-18 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/27/2019 10:05
Instrument: ECD7 Analyst: JGR — Analyzed: 09/11/2019 23:53

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-18 A 01
	Preparation Batch: BHI0156	Sample Size: 21.65 g (wet)	Dry Weight:12.51 g
	Prepared: 07-Sep-2019	Final Volume: 2.5 mL	% Solids: 57.79
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-18 A 01
	Cleanup Batch: CHI0070	Initial Volume: 2.5 mL	
	Cleaned: 11-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-18 A 01
	Cleanup Batch: CHI0062	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-18 A 01
	Cleanup Batch: CHI0063	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	5	7.8	20.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	5	7.8	20.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	5	7.8	20.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	5	7.8	20.0	**340**	ug/kg	D
Aroclor 1260	11096-82-5	5	2.9	20.0	**153**	ug/kg	D
Aroclor 1262	37324-23-5	5	2.9	20.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	5	2.9	20.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*125*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*61.6*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*89.7*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*64.5*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J3-SC1b-30to40-82719

19I0008-18 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/27/2019 10:05

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/14/2019 07:41

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-18 A

Preparation Batch: BHI0374 — Sample Size: 0.569 g (wet) — Dry Weight:0.33 g

Prepared: 12-Sep-2019 — Final Volume: 0.569 g — % Solids: 58.80

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**2.99**	%	H

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J3-SC1b-30to40-82719

19I0008-18 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/27/2019 10:05

Instrument: BAL2 Analyst: KLE — Analyzed: 09/15/2019 23:45

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-18

Preparation Batch: BHI0436 — Sample Size: 10 g (wet) — Dry Weight:5.88 g

Prepared: 15-Sep-2019 — Final Volume: 10 g — % Solids: 58.80

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**58.80**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J3-SC1b-40to50-82719

19I0008-19 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/27/2019 11:20
Instrument: ECD7 Analyst: JGR — Analyzed: 09/12/2019 00:56

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-19 A 01
	Preparation Batch: BHI0156	Sample Size: 18.79 g (wet)	Dry Weight:12.53 g
	Prepared: 07-Sep-2019	Final Volume: 2.5 mL	% Solids: 66.67
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-19 A 01
	Cleanup Batch: CHI0070	Initial Volume: 2.5 mL	
	Cleaned: 11-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-19 A 01
	Cleanup Batch: CHI0062	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-19 A 01
	Cleanup Batch: CHI0063	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	**68.3**	ug/kg	P1
Aroclor 1260	11096-82-5	1	0.6	4.0	**67.3**	ug/kg	
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*		*NRS*	NRS
Surrogate: Tetrachlorometaxylene				*44-120 %*	*54.5*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*		*NRS*	NRS
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*62.3*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J3-SC1b-40to50-82719

19I0008-19 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/27/2019 11:20

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/14/2019 09:43

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-19 A

Preparation Batch: BHI0374 — Sample Size: 0.5267 g (wet) — Dry Weight:0.35 g

Prepared: 12-Sep-2019 — Final Volume: 0.5267 g — % Solids: 66.78

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**1.06**	%	H

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J3-SC1b-40to50-82719

19I0008-19 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/27/2019 11:20

Instrument: BAL2 Analyst: KLE — Analyzed: 09/15/2019 23:45

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-19

Preparation Batch: BHI0436 — Sample Size: 10 g (wet) — Dry Weight:6.68 g

Prepared: 15-Sep-2019 — Final Volume: 10 g — % Solids: 66.78

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**66.78**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J3-SC1b-50to60-82719

19I0008-20 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/27/2019 11:25
Instrument: ECD7 Analyst: JGR — Analyzed: 09/12/2019 01:17

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-20 A 01
	Preparation Batch: BHI0156	Sample Size: 16.97 g (wet)	Dry Weight:12.53 g
	Prepared: 07-Sep-2019	Final Volume: 2.5 mL	% Solids: 73.84
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-20 A 01
	Cleanup Batch: CHI0070	Initial Volume: 2.5 mL	
	Cleaned: 11-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-20 A 01
	Cleanup Batch: CHI0062	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-20 A 01
	Cleanup Batch: CHI0063	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	**11.8**	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	**14.4**	ug/kg	
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*		*NRS*	NRS
Surrogate: Tetrachlorometaxylene				*44-120 %*	*62.4*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*78.3*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*61.5*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J3-SC1b-50to60-82719

19I0008-20 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/27/2019 11:25

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/11/2019 20:36

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-20 A

Preparation Batch: BHI0179 — Sample Size: 0.6558 g (wet) — Dry Weight:0.50 g

Prepared: 08-Sep-2019 — Final Volume: 0.6558 g — % Solids: 75.93

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**0.49**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J3-SC1b-50to60-82719

19I0008-20 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/27/2019 11:25

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:06

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-20

Preparation Batch: BHI0180 — Sample Size: 10 g (wet) — Dry Weight:7.59 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 75.93

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**75.93**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J3-SC1b-60to70-82719

19I0008-21 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/27/2019 11:30
Instrument: ECD7 Analyst: JGR — Analyzed: 09/12/2019 01:38

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-21 A 01
	Preparation Batch: BHI0156	Sample Size: 15.19 g (wet)	Dry Weight:12.52 g
	Prepared: 07-Sep-2019	Final Volume: 2.5 mL	% Solids: 82.42
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-21 A 01
	Cleanup Batch: CHI0070	Initial Volume: 2.5 mL	
	Cleaned: 11-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-21 A 01
	Cleanup Batch: CHI0062	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-21 A 01
	Cleanup Batch: CHI0063	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*78.0*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*74.4*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*75.9*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*68.7*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J3-SC1b-60to70-82719

19I0008-21 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/27/2019 11:30

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/11/2019 21:07

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-21 A

Preparation Batch: BHI0179 — Sample Size: 0.5837 g (wet) — Dry Weight:0.47 g

Prepared: 08-Sep-2019 — Final Volume: 0.5837 g — % Solids: 81.27

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**0.06**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J3-SC1b-60to70-82719

19I0008-21 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/27/2019 11:30

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:06

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-21

Preparation Batch: BHI0180 — Sample Size: 10 g (wet) — Dry Weight:8.13 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 81.27

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**81.27**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J3-SC1b-70to80-82719

19I0008-22 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/27/2019 11:35
Instrument: ECD7 Analyst: JGR — Analyzed: 09/12/2019 01:59

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-22 A 01
	Preparation Batch: BHI0156	Sample Size: 15.36 g (wet)	Dry Weight:12.51 g
	Prepared: 07-Sep-2019	Final Volume: 2.5 mL	% Solids: 81.45
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-22 A 01
	Cleanup Batch: CHI0070	Initial Volume: 2.5 mL	
	Cleaned: 11-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-22 A 01
	Cleanup Batch: CHI0062	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-22 A 01
	Cleanup Batch: CHI0063	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*84.7*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*80.7*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*84.9*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*73.0*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J3-SC1b-70to80-82719

19I0008-22 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/27/2019 11:35

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/11/2019 21:37

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-22 A

Preparation Batch: BHI0179 — Sample Size: 0.5856 g (wet) — Dry Weight:0.47 g

Prepared: 08-Sep-2019 — Final Volume: 0.5856 g — % Solids: 79.66

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**0.06**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J3-SC1b-70to80-82719

19I0008-22 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/27/2019 11:35

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:06

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-22

Preparation Batch: BHI0180 — Sample Size: 10 g (wet) — Dry Weight:7.97 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 79.66

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**79.66**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J3-SC1b-80to90-82719

19I0008-23 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/27/2019 12:20
Instrument: ECD7 Analyst: JGR — Analyzed: 09/10/2019 22:15

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-23 A 01
	Preparation Batch: BHI0161	Sample Size: 15.98 g (wet)	Dry Weight:12.51 g
	Prepared: 08-Sep-2019	Final Volume: 2.5 mL	% Solids: 78.30
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-23 A 01
	Cleanup Batch: CHI0066	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-23 A 01
	Cleanup Batch: CHI0064	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-23 A 01
	Cleanup Batch: CHI0065	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	**4.0**	ug/kg	J
Aroclor 1260	11096-82-5	1	0.6	4.0	**7.1**	ug/kg	
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*79.8*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*67.6*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*66.1*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*61.8*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J3-SC1b-80to90-82719

19I0008-23 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/27/2019 12:20

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/11/2019 22:08

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-23 A

Preparation Batch: BHI0179 — Sample Size: 0.5274 g (wet) — Dry Weight:0.39 g

Prepared: 08-Sep-2019 — Final Volume: 0.5274 g — % Solids: 74.85

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**0.40**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J3-SC1b-80to90-82719

19I0008-23 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/27/2019 12:20

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:06

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-23

Preparation Batch: BHI0180 — Sample Size: 10 g (wet) — Dry Weight:7.48 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 74.85

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**74.85**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J3-SC1b-90to100-82719

19I0008-24 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/27/2019 12:25
Instrument: ECD7 Analyst: JGR — Analyzed: 09/11/2019 00:42

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-24 A 01
	Preparation Batch: BHI0161	Sample Size: 16.2 g (wet)	Dry Weight:12.50 g
	Prepared: 08-Sep-2019	Final Volume: 2.5 mL	% Solids: 77.15
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-24 A 01
	Cleanup Batch: CHI0066	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-24 A 01
	Cleanup Batch: CHI0064	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-24 A 01
	Cleanup Batch: CHI0065	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*73.9*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*71.8*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*62.8*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*64.0*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J3-SC1b-90to100-82719

19I0008-24 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/27/2019 12:25

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/11/2019 22:39

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-24 A

Preparation Batch: BHI0179 — Sample Size: 0.5276 g (wet) — Dry Weight:0.37 g

Prepared: 08-Sep-2019 — Final Volume: 0.5276 g — % Solids: 70.88

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**0.40**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J3-SC1b-90to100-82719

19I0008-24 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/27/2019 12:25

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:06

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-24

Preparation Batch: BHI0180 — Sample Size: 10 g (wet) — Dry Weight:7.09 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 70.88

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**70.88**	%	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J3-SC1b-10to20-82719

19I0008-25 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/27/2019 09:55
Instrument: ECD7 Analyst: JGR — Analyzed: 09/11/2019 01:03

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-25 A 01
	Preparation Batch: BHI0161	Sample Size: 15.32 g (wet)	Dry Weight:12.51 g
	Prepared: 08-Sep-2019	Final Volume: 2.5 mL	% Solids: 81.65
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-25 A 01
	Cleanup Batch: CHI0066	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-25 A 01
	Cleanup Batch: CHI0064	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-25 A 01
	Cleanup Batch: CHI0065	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	**2.3**	ug/kg	J
Aroclor 1254	11097-69-1	1	1.6	4.0	**4.6**	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	**4.1**	ug/kg	
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*75.7*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*71.4*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*63.7*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*62.7*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J3-SC1b-10to20-82719

19I0008-25 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/27/2019 09:55

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/11/2019 23:09

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-25 A

Preparation Batch: BHI0179 — Sample Size: 0.5785 g (wet) — Dry Weight:0.46 g

Prepared: 08-Sep-2019 — Final Volume: 0.5785 g — % Solids: 80.33

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**0.09**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J3-SC1b-10to20-82719

19I0008-25 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/27/2019 09:55

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:06

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-25

Preparation Batch: BHI0180 — Sample Size: 10 g (wet) — Dry Weight:8.03 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 80.33

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**80.33**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

412-SC1b-80to90-82719

19I0008-26 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/27/2019 12:35
Instrument: ECD7 Analyst: JGR — Analyzed: 09/11/2019 01:24

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-26 A 01
	Preparation Batch: BHI0161	Sample Size: 16.05 g (wet)	Dry Weight:12.50 g
	Prepared: 08-Sep-2019	Final Volume: 2.5 mL	% Solids: 77.86
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-26 A 01
	Cleanup Batch: CHI0066	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-26 A 01
	Cleanup Batch: CHI0064	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-26 A 01
	Cleanup Batch: CHI0065	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	**6.2**	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	**6.8**	ug/kg	
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*69.9*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*64.7*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*58.4*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*62.1*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

412-SC1b-80to90-82719

19I0008-26 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/27/2019 12:35

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/11/2019 23:40

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-26 A

Preparation Batch: BHI0179 — Sample Size: 0.6653 g (wet) — Dry Weight:0.52 g

Prepared: 08-Sep-2019 — Final Volume: 0.6653 g — % Solids: 78.14

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**0.34**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

412-SC1b-80to90-82719

19I0008-26 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/27/2019 12:35

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:06

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-26

Preparation Batch: BHI0180 — Sample Size: 10 g (wet) — Dry Weight:7.81 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 78.14

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**78.14**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J6-SC1b-20to30-82819

19I0008-27 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/28/2019 09:20
Instrument: ECD7 Analyst: JGR — Analyzed: 09/11/2019 01:45

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-27 A 01
	Preparation Batch: BHI0161	Sample Size: 23.86 g (wet)	Dry Weight:12.52 g
	Prepared: 08-Sep-2019	Final Volume: 2.5 mL	% Solids: 52.47
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-27 A 01
	Cleanup Batch: CHI0066	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-27 A 01
	Cleanup Batch: CHI0064	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-27 A 01
	Cleanup Batch: CHI0065	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	**43.1**	ug/kg	
Aroclor 1254	11097-69-1	1	1.6	4.0	**76.9**	ug/kg	P1
Aroclor 1260	11096-82-5	1	0.6	4.0	**66.4**	ug/kg	
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*84.7*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*62.7*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*73.1*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*65.5*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J6-SC1b-20to30-82819

19I0008-27 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/28/2019 09:20

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/13/2019 15:54

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-27 A

Preparation Batch: BHI0334 — Sample Size: 0.506 g (wet) — Dry Weight:0.26 g

Prepared: 11-Sep-2019 — Final Volume: 0.506 g — % Solids: 51.85

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**3.17**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J6-SC1b-20to30-82819

19I0008-27 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/28/2019 09:20

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:24

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-27

Preparation Batch: BHI0181 — Sample Size: 10 g (wet) — Dry Weight:5.18 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 51.85

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**51.85**	%	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J6-SC1b-30to40-82819

19I0008-28 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/28/2019 09:25
Instrument: ECD7 Analyst: JGR — Analyzed: 09/11/2019 02:06

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-28 A 01
	Preparation Batch: BHI0161	Sample Size: 23.05 g (wet)	Dry Weight:12.52 g
	Prepared: 08-Sep-2019	Final Volume: 2.5 mL	% Solids: 54.31
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-28 A 01
	Cleanup Batch: CHI0066	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-28 A 01
	Cleanup Batch: CHI0064	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-28 A 01
	Cleanup Batch: CHI0065	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	**77.3**	ug/kg	
Aroclor 1254	11097-69-1	1	1.6	4.0	**124**	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	**166**	ug/kg	
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*81.4*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*56.8*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*62.3*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*58.2*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J6-SC1b-30to40-82819

19I0008-28 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/28/2019 09:25

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/13/2019 16:24

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-28 A

Preparation Batch: BHI0334 — Sample Size: 0.5339 g (wet) — Dry Weight:0.28 g

Prepared: 11-Sep-2019 — Final Volume: 0.5339 g — % Solids: 53.31

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**3.07**	%	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J6-SC1b-30to40-82819

19I0008-28 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/28/2019 09:25

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:24

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-28

Preparation Batch: BHI0181 — Sample Size: 10 g (wet) — Dry Weight:5.33 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 53.31

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**53.31**	%	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J6-SC1b-40to50-82819

19I0008-29 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/28/2019 10:25
Instrument: ECD7 Analyst: JGR — Analyzed: 09/11/2019 02:27

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-29 A 01
	Preparation Batch: BHI0161	Sample Size: 22.45 g (wet)	Dry Weight:12.51 g
	Prepared: 08-Sep-2019	Final Volume: 2.5 mL	% Solids: 55.71
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-29 A 01
	Cleanup Batch: CHI0066	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-29 A 01
	Cleanup Batch: CHI0064	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-29 A 01
	Cleanup Batch: CHI0065	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	**86.9**	ug/kg	
Aroclor 1254	11097-69-1	1	1.6	4.0	**140**	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	**242**	ug/kg	E
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*78.2*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*58.4*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*64.2*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*60.7*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J6-SC1b-40to50-82819

19I0008-29 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/28/2019 10:25

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/13/2019 16:55

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-29 A

Preparation Batch: BHI0334 — Sample Size: 0.591 g (wet) — Dry Weight:0.33 g

Prepared: 11-Sep-2019 — Final Volume: 0.591 g — % Solids: 55.04

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**3.02**	%	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J6-SC1b-40to50-82819

19I0008-29 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/28/2019 10:25

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:24

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-29

Preparation Batch: BHI0181 — Sample Size: 10 g (wet) — Dry Weight:5.50 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 55.04

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**55.04**	%	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J6-SC1b-40to50-82819

19I0008-29RE1 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/28/2019 10:25
Instrument: ECD7 Analyst: JGR — Analyzed: 09/15/2019 20:59

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-29RE1 A 01
	Preparation Batch: BHI0161	Sample Size: 22.45 g (wet)	Dry Weight:12.51 g
	Prepared: 08-Sep-2019	Final Volume: 2.5 mL	% Solids: 55.71
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-29RE1 A 01
	Cleanup Batch: CHI0066	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-29RE1 A 01
	Cleanup Batch: CHI0064	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-29RE1 A 01
	Cleanup Batch: CHI0065	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	5	7.8	20.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	5	7.8	20.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	5	7.8	20.0	**97.3**	ug/kg	D
Aroclor 1254	11097-69-1	5	7.8	20.0	**231**	ug/kg	D
Aroclor 1260	11096-82-5	5	2.9	20.0	**251**	ug/kg	D
Aroclor 1262	37324-23-5	5	2.9	20.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	5	2.9	20.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*96.3*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*71.0*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*81.2*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*80.0*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J6-SC1b-50to60-82819

19I0008-30 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/28/2019 10:30
Instrument: ECD7 Analyst: JGR — Analyzed: 09/11/2019 02:48

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-30 A 01
	Preparation Batch: BHI0161	Sample Size: 21.46 g (wet)	Dry Weight:12.50 g
	Prepared: 08-Sep-2019	Final Volume: 2.5 mL	% Solids: 58.25
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-30 A 01
	Cleanup Batch: CHI0066	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-30 A 01
	Cleanup Batch: CHI0064	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-30 A 01
	Cleanup Batch: CHI0065	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	5	7.8	20.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	5	7.8	20.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	5	7.8	20.0	**150**	ug/kg	D
Aroclor 1254	11097-69-1	5	7.8	20.0	**380**	ug/kg	D
Aroclor 1260	11096-82-5	5	2.9	20.0	**207**	ug/kg	D
Aroclor 1262	37324-23-5	5	2.9	20.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	5	2.9	20.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*105*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*63.0*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*72.3*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*65.9*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J6-SC1b-50to60-82819

19I0008-30 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/28/2019 10:30

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/13/2019 17:25

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-30 A

Preparation Batch: BHI0334 — Sample Size: 0.5638 g (wet) — Dry Weight:0.32 g

Prepared: 11-Sep-2019 — Final Volume: 0.5638 g — % Solids: 57.64

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**1.88**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J6-SC1b-50to60-82819

19I0008-30 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/28/2019 10:30

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:24

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-30

Preparation Batch: BHI0181 — Sample Size: 10 g (wet) — Dry Weight:5.76 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 57.64

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**57.64**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J6-SC1b-60to70-82819

19I0008-31 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/28/2019 10:35
Instrument: ECD7 Analyst: JGR — Analyzed: 09/11/2019 03:09

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-31 A 01
	Preparation Batch: BHI0161	Sample Size: 20.7 g (wet)	Dry Weight:12.52 g
	Prepared: 08-Sep-2019	Final Volume: 2.5 mL	% Solids: 60.49
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-31 A 01
	Cleanup Batch: CHI0066	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-31 A 01
	Cleanup Batch: CHI0064	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-31 A 01
	Cleanup Batch: CHI0065	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	5	7.8	20.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	5	7.8	20.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	5	7.8	20.0	**94.3**	ug/kg	D
Aroclor 1254	11097-69-1	5	7.8	20.0	**219**	ug/kg	D
Aroclor 1260	11096-82-5	5	2.9	20.0	**144**	ug/kg	D
Aroclor 1262	37324-23-5	5	2.9	20.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	5	2.9	20.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*103*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*64.1*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*71.0*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*62.4*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J6-SC1b-60to70-82819

19I0008-31 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/28/2019 10:35

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/13/2019 17:56

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-31 A

Preparation Batch: BHI0334 — Sample Size: 0.5793 g (wet) — Dry Weight:0.35 g

Prepared: 11-Sep-2019 — Final Volume: 0.5793 g — % Solids: 60.12

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**1.35**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J6-SC1b-60to70-82819

19I0008-31 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/28/2019 10:35

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:24

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-31

Preparation Batch: BHI0181 — Sample Size: 10 g (wet) — Dry Weight:6.01 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 60.12

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**60.12**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J6-SC1b-70to80-82819

19I0008-32 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/28/2019 10:40
Instrument: ECD7 Analyst: JGR — Analyzed: 09/11/2019 03:30

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-32 A 01
	Preparation Batch: BHI0161	Sample Size: 17.97 g (wet)	Dry Weight:12.51 g
	Prepared: 08-Sep-2019	Final Volume: 2.5 mL	% Solids: 69.64
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-32 A 01
	Cleanup Batch: CHI0066	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-32 A 01
	Cleanup Batch: CHI0064	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-32 A 01
	Cleanup Batch: CHI0065	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	**12.3**	ug/kg	
Aroclor 1254	11097-69-1	1	1.6	4.0	**30.4**	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	**16.8**	ug/kg	
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*79.6*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*70.2*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*64.2*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*61.9*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J6-SC1b-70to80-82819

19I0008-32 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/28/2019 10:40

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/13/2019 18:26

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-32 A

Preparation Batch: BHI0334 — Sample Size: 0.5858 g (wet) — Dry Weight:0.41 g

Prepared: 11-Sep-2019 — Final Volume: 0.5858 g — % Solids: 69.79

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**0.62**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J6-SC1b-70to80-82819

19I0008-32 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/28/2019 10:40

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:24

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-32

Preparation Batch: BHI0181 — Sample Size: 10 g (wet) — Dry Weight:6.98 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 69.79

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**69.79**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J6-SC1b-80to90-82819

19I0008-33 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/28/2019 11:55
Instrument: ECD7 Analyst: JGR — Analyzed: 09/11/2019 04:33

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-33 A 01
	Preparation Batch: BHI0161	Sample Size: 17.77 g (wet)	Dry Weight:12.51 g
	Prepared: 08-Sep-2019	Final Volume: 2.5 mL	% Solids: 70.42
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-33 A 01
	Cleanup Batch: CHI0066	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-33 A 01
	Cleanup Batch: CHI0064	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-33 A 01
	Cleanup Batch: CHI0065	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	**3.3**	ug/kg	J
Aroclor 1254	11097-69-1	1	1.6	4.0	**6.9**	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	**3.0**	ug/kg	J
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*78.7*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*70.9*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*68.5*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*64.0*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J6-SC1b-80to90-82819

19I0008-33 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/28/2019 11:55
Instrument: TOC Cube Analyst: CDE — Analyzed: 09/13/2019 19:58

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-33 A
Preparation Batch: BHI0334 — Sample Size: 0.632 g (wet) — Dry Weight:0.45 g
Prepared: 11-Sep-2019 — Final Volume: 0.632 g — % Solids: 70.43

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**0.52**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J6-SC1b-80to90-82819

19I0008-33 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/28/2019 11:55

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:24

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-33

Preparation Batch: BHI0181 — Sample Size: 10 g (wet) — Dry Weight:7.04 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 70.43

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**70.43**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J6-SC1b-90to100-82819

19I0008-34 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/28/2019 12:00
Instrument: ECD7 Analyst: JGR — Analyzed: 09/11/2019 04:54

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-34 A 01
	Preparation Batch: BHI0161	Sample Size: 18.19 g (wet)	Dry Weight:12.52 g
	Prepared: 08-Sep-2019	Final Volume: 2.5 mL	% Solids: 68.84
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-34 A 01
	Cleanup Batch: CHI0066	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-34 A 01
	Cleanup Batch: CHI0064	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-34 A 01
	Cleanup Batch: CHI0065	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*77.9*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*74.1*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*62.2*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*63.0*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J6-SC1b-90to100-82819

19I0008-34 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/28/2019 12:00

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/13/2019 20:29

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-34 A

Preparation Batch: BHI0334 — Sample Size: 0.571 g (wet) — Dry Weight:0.39 g

Prepared: 11-Sep-2019 — Final Volume: 0.571 g — % Solids: 68.64

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**0.72**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J6-SC1b-90to100-82819

19I0008-34 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/28/2019 12:00

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:24

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-34

Preparation Batch: BHI0181 — Sample Size: 10 g (wet) — Dry Weight:6.86 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 68.64

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**68.64**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J6-SC1b-100to110-82819

19I0008-35 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/28/2019 12:05
Instrument: ECD7 Analyst: JGR — Analyzed: 09/11/2019 05:15

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-35 A 01
	Preparation Batch: BHI0161	Sample Size: 17.86 g (wet)	Dry Weight:12.50 g
	Prepared: 08-Sep-2019	Final Volume: 2.5 mL	% Solids: 69.99
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-35 A 01
	Cleanup Batch: CHI0066	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-35 A 01
	Cleanup Batch: CHI0064	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-35 A 01
	Cleanup Batch: CHI0065	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*74.5*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*73.7*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*61.5*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*61.3*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J6-SC1b-100to110-82819

19I0008-35 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/28/2019 12:05

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/13/2019 20:59

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-35 A

Preparation Batch: BHI0334 — Sample Size: 0.5122 g (wet) — Dry Weight:0.36 g

Prepared: 11-Sep-2019 — Final Volume: 0.5122 g — % Solids: 69.58

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**0.48**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J6-SC1b-100to110-82819

19I0008-35 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/28/2019 12:05

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:24

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-35

Preparation Batch: BHI0181 — Sample Size: 10 g (wet) — Dry Weight:6.96 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 69.58

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**69.58**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J6-SC1b-110to120-82819

19I0008-36 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/28/2019 12:10
Instrument: ECD7 Analyst: JGR — Analyzed: 09/11/2019 05:36

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-36 A 01
	Preparation Batch: BHI0161	Sample Size: 17.07 g (wet)	Dry Weight:12.50 g
	Prepared: 08-Sep-2019	Final Volume: 2.5 mL	% Solids: 73.24
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-36 A 01
	Cleanup Batch: CHI0066	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-36 A 01
	Cleanup Batch: CHI0064	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-36 A 01
	Cleanup Batch: CHI0065	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*77.9*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*76.6*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*67.2*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*63.3*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J6-SC1b-110to120-82819

19I0008-36 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/28/2019 12:10

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/13/2019 21:30

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-36 A

Preparation Batch: BHI0334 — Sample Size: 0.5591 g (wet) — Dry Weight:0.41 g

Prepared: 11-Sep-2019 — Final Volume: 0.5591 g — % Solids: 73.55

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**0.25**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J6-SC1b-110to120-82819

19I0008-36 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/28/2019 12:10

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:24

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-36

Preparation Batch: BHI0181 — Sample Size: 10 g (wet) — Dry Weight:7.36 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 73.55

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**73.55**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-20to30-82819

19I0008-40 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/28/2019 14:00
Instrument: ECD7 Analyst: JGR — Analyzed: 09/11/2019 05:57

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-40 A 01
	Preparation Batch: BHI0161	Sample Size: 23.69 g (wet)	Dry Weight:12.52 g
	Prepared: 08-Sep-2019	Final Volume: 2.5 mL	% Solids: 52.84
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-40 A 01
	Cleanup Batch: CHI0066	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-40 A 01
	Cleanup Batch: CHI0064	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-40 A 01
	Cleanup Batch: CHI0065	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	**58.5**	ug/kg	
Aroclor 1254	11097-69-1	1	1.6	4.0	**79.0**	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	**83.3**	ug/kg	P1
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*109*	*%*	P1
Surrogate: Tetrachlorometaxylene				*44-120 %*	*57.6*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*47.2*	*%*	P1
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*61.3*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-20to30-82819

19I0008-40 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/28/2019 14:00

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/13/2019 22:00

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-40 A

Preparation Batch: BHI0334 — Sample Size: 0.5623 g (wet) — Dry Weight:0.30 g

Prepared: 11-Sep-2019 — Final Volume: 0.5623 g — % Solids: 52.55

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**3.11**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-20to30-82819

19I0008-40 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/28/2019 14:00

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:24

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-40

Preparation Batch: BHI0181 — Sample Size: 10 g (wet) — Dry Weight:5.26 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 52.55

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**52.55**	%	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-30to40-82819

19I0008-41 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/28/2019 14:05
Instrument: ECD7 Analyst: JGR — Analyzed: 09/11/2019 06:18

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-41 A 01
	Preparation Batch: BHI0161	Sample Size: 22.7 g (wet)	Dry Weight:12.50 g
	Prepared: 08-Sep-2019	Final Volume: 2.5 mL	% Solids: 55.06
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-41 A 01
	Cleanup Batch: CHI0066	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-41 A 01
	Cleanup Batch: CHI0064	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-41 A 01
	Cleanup Batch: CHI0065	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	5	7.8	20.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	5	7.8	20.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	5	7.8	20.0	**81.6**	ug/kg	D
Aroclor 1254	11097-69-1	5	7.8	20.0	**154**	ug/kg	D
Aroclor 1260	11096-82-5	5	2.9	20.0	**171**	ug/kg	D
Aroclor 1262	37324-23-5	5	2.9	20.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	5	2.9	20.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*88.6*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*68.1*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*68.9*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*71.2*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-30to40-82819

19I0008-41 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/28/2019 14:05

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/14/2019 00:02

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-41 A

Preparation Batch: BHI0334 — Sample Size: 0.5583 g (wet) — Dry Weight:0.30 g

Prepared: 11-Sep-2019 — Final Volume: 0.5583 g — % Solids: 54.58

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**2.38**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-30to40-82819

19I0008-41 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/28/2019 14:05

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:24

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-41

Preparation Batch: BHI0181 — Sample Size: 10 g (wet) — Dry Weight:5.46 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 54.58

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**54.58**	%	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-40to50-82819

19I0008-42 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/28/2019 15:10
Instrument: ECD7 Analyst: JGR — Analyzed: 09/11/2019 06:39

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-42 A 01
	Preparation Batch: BHI0161	Sample Size: 23.67 g (wet)	Dry Weight:12.50 g
	Prepared: 08-Sep-2019	Final Volume: 2.5 mL	% Solids: 52.80
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-42 A 01
	Cleanup Batch: CHI0066	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-42 A 01
	Cleanup Batch: CHI0064	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-42 A 01
	Cleanup Batch: CHI0065	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	5	7.8	20.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	5	7.8	20.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	5	7.8	20.0	**109**	ug/kg	D
Aroclor 1254	11097-69-1	5	7.8	20.0	**252**	ug/kg	D
Aroclor 1260	11096-82-5	5	2.9	20.0	**220**	ug/kg	D
Aroclor 1262	37324-23-5	5	2.9	20.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	5	2.9	20.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*95.5*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*60.7*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*74.9*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*63.5*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-40to50-82819

19I0008-42 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/28/2019 15:10

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/14/2019 00:33

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-42 A

Preparation Batch: BHI0334 — Sample Size: 0.5276 g (wet) — Dry Weight:0.28 g

Prepared: 11-Sep-2019 — Final Volume: 0.5276 g — % Solids: 53.01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**2.50**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-40to50-82819

19I0008-42 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/28/2019 15:10
Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:24

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-42
Preparation Batch: BHI0181 — Sample Size: 10 g (wet) — Dry Weight:5.30 g
Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 53.01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**53.01**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-50to60-82819

19I0008-43 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/28/2019 15:20
Instrument: ECD7 Analyst: JGR — Analyzed: 09/11/2019 07:00

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-43 A 01
	Preparation Batch: BHI0161	Sample Size: 22.87 g (wet)	Dry Weight:12.54 g
	Prepared: 08-Sep-2019	Final Volume: 2.5 mL	% Solids: 54.82
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-43 A 01
	Cleanup Batch: CHI0066	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-43 A 01
	Cleanup Batch: CHI0064	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-43 A 01
	Cleanup Batch: CHI0065	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	5	7.8	19.9	ND	ug/kg	U
Aroclor 1221	11104-28-2	5	7.8	19.9	ND	ug/kg	U
Aroclor 1232	11141-16-5	5	7.8	19.9	ND	ug/kg	U
Aroclor 1242	53469-21-9	5	7.8	19.9	ND	ug/kg	U
Aroclor 1248	12672-29-6	5	7.8	19.9	**40.3**	ug/kg	D
Aroclor 1254	11097-69-1	5	7.8	19.9	**70.8**	ug/kg	D
Aroclor 1260	11096-82-5	5	2.9	19.9	**71.9**	ug/kg	D
Aroclor 1262	37324-23-5	5	2.9	19.9	ND	ug/kg	U
Aroclor 1268	11100-14-4	5	2.9	19.9	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*103*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*64.7*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*83.3*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*67.5*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-50to60-82819

19I0008-43 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/28/2019 15:20

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/14/2019 02:04

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-43 A

Preparation Batch: BHI0334 — Sample Size: 0.5621 g (wet) — Dry Weight:0.31 g

Prepared: 11-Sep-2019 — Final Volume: 0.5621 g — % Solids: 54.51

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**2.13**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-50to60-82819

19I0008-43 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/28/2019 15:20

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:24

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-43

Preparation Batch: BHI0181 — Sample Size: 10 g (wet) — Dry Weight:5.45 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 54.51

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**54.51**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-60to70-82819

19I0008-44 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/28/2019 15:50
Instrument: ECD7 Analyst: JGR — Analyzed: 09/11/2019 07:21

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-44 A 01
	Preparation Batch: BHI0161	Sample Size: 23.06 g (wet)	Dry Weight:12.51 g
	Prepared: 08-Sep-2019	Final Volume: 2.5 mL	% Solids: 54.23
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-44 A 01
	Cleanup Batch: CHI0066	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-44 A 01
	Cleanup Batch: CHI0064	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-44 A 01
	Cleanup Batch: CHI0065	Initial Volume: 2.5 mL	
	Cleaned: 10-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	5	7.8	20.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	5	7.8	20.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	5	7.8	20.0	**78.0**	ug/kg	D
Aroclor 1254	11097-69-1	5	7.8	20.0	**188**	ug/kg	D
Aroclor 1260	11096-82-5	5	2.9	20.0	**139**	ug/kg	D
Aroclor 1262	37324-23-5	5	2.9	20.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	5	2.9	20.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*119*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*65.0*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*93.8*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*69.6*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-60to70-82819

19I0008-44 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/28/2019 15:50

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/14/2019 02:35

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-44 A

Preparation Batch: BHI0334 — Sample Size: 0.5285 g (wet) — Dry Weight:0.29 g

Prepared: 11-Sep-2019 — Final Volume: 0.5285 g — % Solids: 54.95

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**2.38**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-60to70-82819

19I0008-44 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/28/2019 15:50

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:24

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-44

Preparation Batch: BHI0181 — Sample Size: 10 g (wet) — Dry Weight:5.49 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 54.95

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**54.95**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-70to80-82819

19I0008-45 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/28/2019 15:55
Instrument: ECD7 Analyst: JGR — Analyzed: 09/13/2019 00:34

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-45 A 01
	Preparation Batch: BHI0175	Sample Size: 22.06 g (wet)	Dry Weight:12.52 g
	Prepared: 09-Sep-2019	Final Volume: 2.5 mL	% Solids: 56.74
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-45 A 01
	Cleanup Batch: CHI0092	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-45 A 01
	Cleanup Batch: CHI0090	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-45 A 01
	Cleanup Batch: CHI0091	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	**36.9**	ug/kg	P1
Aroclor 1254	11097-69-1	1	1.6	4.0	**97.0**	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	**186**	ug/kg	
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*93.5*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*57.4*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*85.3*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*60.7*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-70to80-82819

19I0008-45 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/28/2019 15:55

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/14/2019 03:06

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-45 A

Preparation Batch: BHI0334 — Sample Size: 0.5358 g (wet) — Dry Weight:0.30 g

Prepared: 11-Sep-2019 — Final Volume: 0.5358 g — % Solids: 56.01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**2.93**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-70to80-82819

19I0008-45 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/28/2019 15:55

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:24

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-45

Preparation Batch: BHI0181 — Sample Size: 10 g (wet) — Dry Weight:5.60 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 56.01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**56.01**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-80to90-82819

19I0008-46 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/28/2019 16:30
Instrument: ECD7 Analyst: JGR — Analyzed: 09/15/2019 22:23

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-46 A 01
	Preparation Batch: BHI0175	Sample Size: 23.14 g (wet)	Dry Weight:12.50 g
	Prepared: 09-Sep-2019	Final Volume: 2.5 mL	% Solids: 54.04
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-46 A 01
	Cleanup Batch: CHI0092	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-46 A 01
	Cleanup Batch: CHI0090	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-46 A 01
	Cleanup Batch: CHI0091	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	**27.8**	ug/kg	P1
Aroclor 1254	11097-69-1	1	1.6	4.0	**91.0**	ug/kg	P1
Aroclor 1260	11096-82-5	1	0.6	4.0	**116**	ug/kg	
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*122*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*61.8*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*103*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*67.2*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-80to90-82819

19I0008-46 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/28/2019 16:30

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/14/2019 03:36

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-46 A

Preparation Batch: BHI0334 — Sample Size: 0.5482 g (wet) — Dry Weight:0.29 g

Prepared: 11-Sep-2019 — Final Volume: 0.5482 g — % Solids: 53.76

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**3.21**	%	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-80to90-82819

19I0008-46 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/28/2019 16:30

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:24

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-46

Preparation Batch: BHI0181 — Sample Size: 10 g (wet) — Dry Weight:5.38 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 53.76

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**53.76**	%	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-90to100-82819

19I0008-48 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/28/2019 16:40
Instrument: ECD7 Analyst: JGR — Analyzed: 09/15/2019 21:20

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-48 A 01
	Preparation Batch: BHI0175	Sample Size: 22.69 g (wet)	Dry Weight:12.52 g
	Prepared: 09-Sep-2019	Final Volume: 2.5 mL	% Solids: 55.19
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-48 A 01
	Cleanup Batch: CHI0092	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-48 A 01
	Cleanup Batch: CHI0090	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-48 A 01
	Cleanup Batch: CHI0091	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	5	7.8	20.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	5	7.8	20.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	5	7.8	20.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	5	7.8	20.0	**129**	ug/kg	D
Aroclor 1260	11096-82-5	5	2.9	20.0	**171**	ug/kg	D
Aroclor 1262	37324-23-5	5	2.9	20.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	5	2.9	20.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*101*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*59.2*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*82.9*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*68.4*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-90to100-82819

19I0008-48 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/28/2019 16:40

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/14/2019 04:07

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-48 A

Preparation Batch: BHI0334 — Sample Size: 0.5631 g (wet) — Dry Weight:0.31 g

Prepared: 11-Sep-2019 — Final Volume: 0.5631 g — % Solids: 54.94

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**3.14**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-90to100-82819

19I0008-48 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/28/2019 16:40

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:24

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-48

Preparation Batch: BHI0181 — Sample Size: 10 g (wet) — Dry Weight:5.49 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 54.94

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**54.94**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-100to110-82819

19I0008-50 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/28/2019 17:00
Instrument: ECD7 Analyst: JGR — Analyzed: 09/15/2019 22:44

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-50 A 01
	Preparation Batch: BHI0175	Sample Size: 23.47 g (wet)	Dry Weight:12.50 g
	Prepared: 09-Sep-2019	Final Volume: 2.5 mL	% Solids: 53.25
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-50 A 01
	Cleanup Batch: CHI0092	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-50 A 01
	Cleanup Batch: CHI0090	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-50 A 01
	Cleanup Batch: CHI0091	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	**16.9**	ug/kg	P1
Aroclor 1254	11097-69-1	1	1.6	4.0	**63.7**	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	**76.4**	ug/kg	
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*		*NRS*	NRS
Surrogate: Tetrachlorometaxylene				*44-120 %*	*60.8*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*88.7*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*66.7*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-100to110-82819

19I0008-50 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/28/2019 17:00

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/12/2019 21:32

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-50 A

Preparation Batch: BHI0274 — Sample Size: 0.5566 g (wet) — Dry Weight:0.30 g

Prepared: 10-Sep-2019 — Final Volume: 0.5566 g — % Solids: 53.43

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**4.06**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-100to110-82819

19I0008-50 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/28/2019 17:00

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:24

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-50

Preparation Batch: BHI0181 — Sample Size: 10 g (wet) — Dry Weight:5.34 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 53.43

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**53.43**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-110to120-82819

19I0008-51 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/28/2019 17:10
Instrument: ECD7 Analyst: JGR — Analyzed: 09/15/2019 23:05

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-51 A 01
	Preparation Batch: BHI0175	Sample Size: 23.12 g (wet)	Dry Weight:12.51 g
	Prepared: 09-Sep-2019	Final Volume: 2.5 mL	% Solids: 54.09
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-51 A 01
	Cleanup Batch: CHI0092	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-51 A 01
	Cleanup Batch: CHI0090	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-51 A 01
	Cleanup Batch: CHI0091	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	**17.3**	ug/kg	P1
Aroclor 1254	11097-69-1	1	1.6	4.0	**66.0**	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	**83.2**	ug/kg	
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*111*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*60.5*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*87.7*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*65.8*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-110to120-82819

19I0008-51 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/28/2019 17:10

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/12/2019 23:35

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-51 A

Preparation Batch: BHI0274 — Sample Size: 0.5164 g (wet) — Dry Weight:0.28 g

Prepared: 10-Sep-2019 — Final Volume: 0.5164 g — % Solids: 53.68

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**3.65**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-110to120-82819

19I0008-51 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/28/2019 17:10

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:24

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-51

Preparation Batch: BHI0181 — Sample Size: 10 g (wet) — Dry Weight:5.37 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 53.68

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**53.68**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-120to130-82819

19I0008-52 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/28/2019 18:20
Instrument: ECD7 Analyst: JGR — Analyzed: 09/15/2019 23:26

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-52 A 01
	Preparation Batch: BHI0175	Sample Size: 22.17 g (wet)	Dry Weight:12.51 g
	Prepared: 09-Sep-2019	Final Volume: 2.5 mL	% Solids: 56.43
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-52 A 01
	Cleanup Batch: CHI0092	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-52 A 01
	Cleanup Batch: CHI0090	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-52 A 01
	Cleanup Batch: CHI0091	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	**20.6**	ug/kg	P1
Aroclor 1254	11097-69-1	1	1.6	4.0	**79.0**	ug/kg	P1
Aroclor 1260	11096-82-5	1	0.6	4.0	**97.4**	ug/kg	
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*113*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*59.7*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*93.7*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*67.1*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-120to130-82819

19I0008-52 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/28/2019 18:20

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/13/2019 00:05

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-52 A

Preparation Batch: BHI0274 — Sample Size: 0.572 g (wet) — Dry Weight:0.31 g

Prepared: 10-Sep-2019 — Final Volume: 0.572 g — % Solids: 54.75

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**2.49**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-120to130-82819

19I0008-52 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/28/2019 18:20

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:36

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-52

Preparation Batch: BHI0182 — Sample Size: 10 g (wet) — Dry Weight:5.48 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 54.75

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**54.75**	%	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

413-SC1b-40to50-82819

19I0008-53 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/28/2019 10:45
Instrument: ECD7 Analyst: JGR — Analyzed: 09/15/2019 21:41

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-53 A 01
	Preparation Batch: BHI0175	Sample Size: 22.52 g (wet)	Dry Weight:12.51 g
	Prepared: 09-Sep-2019	Final Volume: 2.5 mL	% Solids: 55.53
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-53 A 01
	Cleanup Batch: CHI0092	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-53 A 01
	Cleanup Batch: CHI0090	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-53 A 01
	Cleanup Batch: CHI0091	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	5	7.8	20.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	5	7.8	20.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	5	7.8	20.0	**160**	ug/kg	D
Aroclor 1254	11097-69-1	5	7.8	20.0	**391**	ug/kg	D
Aroclor 1260	11096-82-5	5	2.9	20.0	**269**	ug/kg	D
Aroclor 1262	37324-23-5	5	2.9	20.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	5	2.9	20.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*96.6*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*62.1*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*72.6*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*68.9*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

413-SC1b-40to50-82819

19I0008-53 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/28/2019 10:45

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/13/2019 01:37

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-53 A

Preparation Batch: BHI0274 — Sample Size: 0.5644 g (wet) — Dry Weight:0.31 g

Prepared: 10-Sep-2019 — Final Volume: 0.5644 g — % Solids: 55.21

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**2.88**	%	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

413-SC1b-40to50-82819

19I0008-53 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/28/2019 10:45
Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:36

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-53
Preparation Batch: BHI0182 — Sample Size: 10 g (wet) — Dry Weight:5.52 g
Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 55.21

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**55.21**	%	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-130to140-82819

19I0008-54 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/28/2019 18:25
Instrument: ECD7 Analyst: JGR — Analyzed: 09/13/2019 03:01

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-54 A 01
	Preparation Batch: BHI0175	Sample Size: 18.89 g (wet)	Dry Weight:12.51 g
	Prepared: 09-Sep-2019	Final Volume: 2.5 mL	% Solids: 66.20
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-54 A 01
	Cleanup Batch: CHI0092	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-54 A 01
	Cleanup Batch: CHI0090	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-54 A 01
	Cleanup Batch: CHI0091	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	**10.2**	ug/kg	P1
Aroclor 1260	11096-82-5	1	0.6	4.0	**11.5**	ug/kg	
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*87.1*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*59.3*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*73.3*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*60.1*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-130to140-82819

19I0008-54 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/28/2019 18:25

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/13/2019 02:07

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-54 A

Preparation Batch: BHI0274 — Sample Size: 0.5982 g (wet) — Dry Weight:0.39 g

Prepared: 10-Sep-2019 — Final Volume: 0.5982 g — % Solids: 65.42

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**0.79**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-130to140-82819

19I0008-54 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/28/2019 18:25

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:36

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-54

Preparation Batch: BHI0182 — Sample Size: 10 g (wet) — Dry Weight:6.54 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 65.42

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**65.42**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-140to150-82819

19I0008-55 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/28/2019 18:30
Instrument: ECD7 Analyst: JGR — Analyzed: 09/13/2019 03:22

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-55 A 01
	Preparation Batch: BHI0175	Sample Size: 16.38 g (wet)	Dry Weight:12.56 g
	Prepared: 09-Sep-2019	Final Volume: 2.5 mL	% Solids: 76.65
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-55 A 01
	Cleanup Batch: CHI0092	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-55 A 01
	Cleanup Batch: CHI0090	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-55 A 01
	Cleanup Batch: CHI0091	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	**3.7**	ug/kg	J
Aroclor 1260	11096-82-5	1	0.6	4.0	**5.4**	ug/kg	
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*82.0*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*66.5*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*73.7*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*63.8*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-140to150-82819

19I0008-55 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/28/2019 18:30

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/13/2019 02:37

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-55 A

Preparation Batch: BHI0274 — Sample Size: 0.687 g (wet) — Dry Weight:0.53 g

Prepared: 10-Sep-2019 — Final Volume: 0.687 g — % Solids: 76.53

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**0.24**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

R4-SC1b-140to150-82819

19I0008-55 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/28/2019 18:30

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:36

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-55

Preparation Batch: BHI0182 — Sample Size: 10 g (wet) — Dry Weight:7.65 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 76.53

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**76.53**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

H3-SC1b-20to30-82819

19I0008-56 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/28/2019 20:15
Instrument: ECD7 Analyst: JGR — Analyzed: 09/15/2019 22:02

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-56 A 01
	Preparation Batch: BHI0175	Sample Size: 21.05 g (wet)	Dry Weight:12.50 g
	Prepared: 09-Sep-2019	Final Volume: 2.5 mL	% Solids: 59.38
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-56 A 01
	Cleanup Batch: CHI0092	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-56 A 01
	Cleanup Batch: CHI0090	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-56 A 01
	Cleanup Batch: CHI0091	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	5	7.8	20.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	5	7.8	20.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	5	7.8	20.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	5	7.8	20.0	**369**	ug/kg	D
Aroclor 1260	11096-82-5	5	2.9	20.0	**374**	ug/kg	D
Aroclor 1262	37324-23-5	5	2.9	20.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	5	2.9	20.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*		*NRS*	NRS
Surrogate: Tetrachlorometaxylene				*44-120 %*	*60.4*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*		*NRS*	NRS
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*71.5*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

H3-SC1b-20to30-82819

19I0008-56 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/28/2019 20:15
Instrument: TOC Cube Analyst: CDE — Analyzed: 09/14/2019 10:13

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-56 A
Preparation Batch: BHI0374 — Sample Size: 0.5956 g (wet) — Dry Weight:0.35 g
Prepared: 12-Sep-2019 — Final Volume: 0.5956 g — % Solids: 59.24

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**4.36**	%	H

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

H3-SC1b-20to30-82819

19I0008-56 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/28/2019 20:15
Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:36

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-56
Preparation Batch: BHI0182 — Sample Size: 10 g (wet) — Dry Weight:5.92 g
Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 59.24

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**59.24**	%	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

H3-SC1b-30to40-82919

19I0008-57 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/29/2019 08:25
Instrument: ECD7 Analyst: JGR — Analyzed: 09/16/2019 00:29

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-57 A 01
	Preparation Batch: BHI0175	Sample Size: 16.28 g (wet)	Dry Weight:12.50 g
	Prepared: 09-Sep-2019	Final Volume: 2.5 mL	% Solids: 76.79
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-57 A 01
	Cleanup Batch: CHI0092	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-57 A 01
	Cleanup Batch: CHI0090	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-57 A 01
	Cleanup Batch: CHI0091	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	**5.9**	ug/kg	
Aroclor 1254	11097-69-1	1	1.6	4.0	**23.8**	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	**27.5**	ug/kg	
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*113*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*62.0*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*84.6*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*69.3*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

H3-SC1b-30to40-82919

19I0008-57 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/29/2019 08:25
Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 12:12

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-57
Preparation Batch: BHI0183 — Sample Size: 10 g (wet) — Dry Weight:7.72 g
Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 77.16

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**77.16**	%	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

H3-SC1b-40to50-82919

19I0008-58 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/29/2019 08:30
Instrument: ECD7 Analyst: JGR — Analyzed: 09/16/2019 01:53

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-58 A 01
	Preparation Batch: BHI0175	Sample Size: 16.55 g (wet)	Dry Weight:12.50 g
	Prepared: 09-Sep-2019	Final Volume: 2.5 mL	% Solids: 75.55
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-58 A 01
	Cleanup Batch: CHI0092	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-58 A 01
	Cleanup Batch: CHI0090	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-58 A 01
	Cleanup Batch: CHI0091	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	**4.4**	ug/kg	
Aroclor 1254	11097-69-1	1	1.6	4.0	**16.7**	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	**24.3**	ug/kg	
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*98.7*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*60.1*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*80.9*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*67.3*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

H3-SC1b-40to50-82919

19I0008-58 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/29/2019 08:30
Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 12:12

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-58
Preparation Batch: BHI0183 — Sample Size: 10 g (wet) — Dry Weight:6.83 g
Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 68.30

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**68.30**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

H3-SC1b-50to60-82919

19I0008-59 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/29/2019 08:35
Instrument: ECD7 Analyst: JGR — Analyzed: 09/16/2019 02:14

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-59 A 01
	Preparation Batch: BHI0175	Sample Size: 17.43 g (wet)	Dry Weight:12.53 g
	Prepared: 09-Sep-2019	Final Volume: 2.5 mL	% Solids: 71.88
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-59 A 01
	Cleanup Batch: CHI0092	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-59 A 01
	Cleanup Batch: CHI0090	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-59 A 01
	Cleanup Batch: CHI0091	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	**6.7**	ug/kg	
Aroclor 1254	11097-69-1	1	1.6	4.0	**25.2**	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	**43.5**	ug/kg	
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*111*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*67.0*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*90.1*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*73.2*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

H3-SC1b-50to60-82919

19I0008-59 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/29/2019 08:35
Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 12:12

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-59
Preparation Batch: BHI0183 — Sample Size: 10 g (wet) — Dry Weight:7.18 g
Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 71.77

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**71.77**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

H3-SC1b-60to70-82919

19I0008-60 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/29/2019 09:00
Instrument: ECD7 Analyst: JGR — Analyzed: 09/16/2019 02:34

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-60 A 01
	Preparation Batch: BHI0175	Sample Size: 19.96 g (wet)	Dry Weight:12.51 g
	Prepared: 09-Sep-2019	Final Volume: 2.5 mL	% Solids: 62.67
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-60 A 01
	Cleanup Batch: CHI0092	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-60 A 01
	Cleanup Batch: CHI0090	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-60 A 01
	Cleanup Batch: CHI0091	Initial Volume: 2.5 mL	
	Cleaned: 12-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	**5.8**	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	**9.0**	ug/kg	
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*102*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*63.4*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*84.4*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*65.2*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

H3-SC1b-60to70-82919

19I0008-60 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/29/2019 09:00
Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 12:12

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-60
Preparation Batch: BHI0183 — Sample Size: 10 g (wet) — Dry Weight:6.37 g
Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 63.70

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**63.70**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

H3-SC1b-70to80-82919

19I0008-61 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/29/2019 09:05
Instrument: ECD7 Analyst: JGR — Analyzed: 09/16/2019 04:19

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-61 A 01
	Preparation Batch: BHI0176	Sample Size: 25.23 g (wet)	Dry Weight:12.55 g
	Prepared: 09-Sep-2019	Final Volume: 2.5 mL	% Solids: 49.75
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-61 A 01
	Cleanup Batch: CHI0097	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-61 A 01
	Cleanup Batch: CHI0095	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-61 A 01
	Cleanup Batch: CHI0096	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	**1.9**	ug/kg	J
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*92.1*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*77.5*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*80.4*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*72.9*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

H3-SC1b-70to80-82919

19I0008-61 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/29/2019 09:05
Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 12:12

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-61
Preparation Batch: BHI0183 — Sample Size: 10 g (wet) — Dry Weight:4.99 g
Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 49.89

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**49.89**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

H3-SC1b-80to90-82919

19I0008-62 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/29/2019 09:30
Instrument: ECD7 Analyst: JGR — Analyzed: 09/16/2019 04:40

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-62 A 01
	Preparation Batch: BHI0176	Sample Size: 22.15 g (wet)	Dry Weight:12.62 g
	Prepared: 09-Sep-2019	Final Volume: 2.5 mL	% Solids: 56.99
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-62 A 01
	Cleanup Batch: CHI0097	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-62 A 01
	Cleanup Batch: CHI0095	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-62 A 01
	Cleanup Batch: CHI0096	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.5	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.5	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.5	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.5	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.5	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.5	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*87.6*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*75.8*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*75.5*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*72.6*	*%*	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

H3-SC1b-80to90-82919

19I0008-62 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/29/2019 09:30
Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 12:12

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-62
Preparation Batch: BHI0183 — Sample Size: 10 g (wet) — Dry Weight:5.62 g
Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 56.25

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**56.25**	%	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

H3-SC1b-90to100-82919

19I0008-63 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/29/2019 09:35
Instrument: ECD7 Analyst: JGR — Analyzed: 09/16/2019 05:01

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-63 A 01
	Preparation Batch: BHI0176	Sample Size: 20.17 g (wet)	Dry Weight:12.72 g
	Prepared: 09-Sep-2019	Final Volume: 2.5 mL	% Solids: 63.07
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-63 A 01
	Cleanup Batch: CHI0097	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-63 A 01
	Cleanup Batch: CHI0095	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-63 A 01
	Cleanup Batch: CHI0096	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.5	3.9	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.5	3.9	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.5	3.9	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.5	3.9	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.5	3.9	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.5	3.9	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	3.9	ND	ug/kg	U
Aroclor 1262	37324-23-5	1	0.6	3.9	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	3.9	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*84.2*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*69.3*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*73.0*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*71.3*	*%*	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

H3-SC1b-90to100-82919

19I0008-63 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/29/2019 09:35

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 12:12

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-63

Preparation Batch: BHI0183 — Sample Size: 10 g (wet) — Dry Weight:6.34 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 63.37

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**63.37**	%	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

H3-SC1b-100to110-82919

19I0008-64 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/29/2019 09:50
Instrument: ECD7 Analyst: JGR — Analyzed: 09/16/2019 05:22

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-64 A 01
	Preparation Batch: BHI0176	Sample Size: 19.69 g (wet)	Dry Weight:12.67 g
	Prepared: 09-Sep-2019	Final Volume: 2.5 mL	% Solids: 64.34
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-64 A 01
	Cleanup Batch: CHI0097	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-64 A 01
	Cleanup Batch: CHI0095	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-64 A 01
	Cleanup Batch: CHI0096	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.5	3.9	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.5	3.9	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.5	3.9	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.5	3.9	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.5	3.9	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.5	3.9	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	3.9	ND	ug/kg	U
Aroclor 1262	37324-23-5	1	0.6	3.9	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	3.9	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*87.1*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*82.9*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*80.6*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*78.0*	*%*	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

H3-SC1b-100to110-82919

19I0008-64 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/29/2019 09:50

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 12:12

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-64

Preparation Batch: BHI0183 — Sample Size: 10 g (wet) — Dry Weight:6.34 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 63.40

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**63.40**	%	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

711-82719

19I0008-67 (Water)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/27/2019 08:40
Instrument: ECD7 Analyst: JGR — Analyzed: 09/06/2019 19:09

Sample Preparation: Preparation Method: EPA 3510C SepF; Preparation Batch: BHI0076; Prepared: 05-Sep-2019; Sample Size: 500 mL; Final Volume: 1 mL — Extract ID: 19I0008-67 B 01

Sample Cleanup: Cleanup Method: Sulfuric Acid; Cleanup Batch: CHI0037; Cleaned: 06-Sep-2019; Initial Volume: 1 mL; Final Volume: 1 mL — Extract ID:19I0008-67 B 01

Sample Cleanup: Cleanup Method: Sulfur; Cleanup Batch: CHI0038; Cleaned: 06-Sep-2019; Initial Volume: 1 mL; Final Volume: 1 mL — Extract ID:19I0008-67 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	0.018	0.100	ND	ug/L	U
Aroclor 1221	11104-28-2	1	0.018	0.100	ND	ug/L	U
Aroclor 1232	11141-16-5	1	0.018	0.100	ND	ug/L	U
Aroclor 1242	53469-21-9	1	0.018	0.100	ND	ug/L	U
Aroclor 1248	12672-29-6	1	0.018	0.100	ND	ug/L	U
Aroclor 1254	11097-69-1	1	0.018	0.100	ND	ug/L	U
Aroclor 1260	11096-82-5	1	0.017	0.100	ND	ug/L	U
Aroclor 1262	37324-23-5	1	0.017	0.100	ND	ug/L	U
Aroclor 1268	11100-14-4	1	0.017	0.100	ND	ug/L	U
Surrogate: Decachlorobiphenyl				*26-120 %*	*39.4*	*%*	
Surrogate: Tetrachlorometaxylene				*39-120 %*	*56.8*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*26-120 %*	*35.0*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*39-120 %*	*47.6*	*%*	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

711-82719

19I0008-67 (Water)

Wet Chemistry

Method: EPA 9060A — Sampled: 08/27/2019 08:40

Instrument: TOC-LCSH Analyst: DJM — Analyzed: 09/05/2019 18:38

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-67 A

Preparation Batch: BHI0119 — Sample Size: 20 mL

Prepared: 05-Sep-2019 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	ND	mg/L	U

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

712-82819

19I0008-68 (Water)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/27/2019 08:20
Instrument: ECD7 Analyst: JGR — Analyzed: 09/06/2019 19:30

Sample Preparation: Preparation Method: EPA 3510C SepF; Preparation Batch: BHI0076; Prepared: 05-Sep-2019; Sample Size: 500 mL; Final Volume: 1 mL — Extract ID: 19I0008-68 B 01

Sample Cleanup: Cleanup Method: Sulfuric Acid; Cleanup Batch: CHI0037; Cleaned: 06-Sep-2019; Initial Volume: 1 mL; Final Volume: 1 mL — Extract ID:19I0008-68 B 01

Sample Cleanup: Cleanup Method: Sulfur; Cleanup Batch: CHI0038; Cleaned: 06-Sep-2019; Initial Volume: 1 mL; Final Volume: 1 mL — Extract ID:19I0008-68 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	0.018	0.100	ND	ug/L	U
Aroclor 1221	11104-28-2	1	0.018	0.100	ND	ug/L	U
Aroclor 1232	11141-16-5	1	0.018	0.100	ND	ug/L	U
Aroclor 1242	53469-21-9	1	0.018	0.100	ND	ug/L	U
Aroclor 1248	12672-29-6	1	0.018	0.100	ND	ug/L	U
Aroclor 1254	11097-69-1	1	0.018	0.100	ND	ug/L	U
Aroclor 1260	11096-82-5	1	0.017	0.100	ND	ug/L	U
Aroclor 1262	37324-23-5	1	0.017	0.100	ND	ug/L	U
Aroclor 1268	11100-14-4	1	0.017	0.100	ND	ug/L	U
Surrogate: Decachlorobiphenyl				*26-120 %*	*50.3*	*%*	
Surrogate: Tetrachlorometaxylene				*39-120 %*	*57.6*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*26-120 %*	*44.3*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*39-120 %*	*47.0*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

712-82819

19I0008-68 (Water)

Wet Chemistry

Method: EPA 9060A — Sampled: 08/27/2019 08:20

Instrument: TOC-LCSH Analyst: DJM — Analyzed: 09/05/2019 18:59

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-68 A

Preparation Batch: BHI0119 — Sample Size: 20 mL

Prepared: 05-Sep-2019 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	ND	mg/L	U

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

H3-SC1b-110to114-82919

19I0008-69 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/29/2019 10:00
Instrument: ECD7 Analyst: JGR — Analyzed: 09/16/2019 05:43

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-69 A 01
	Preparation Batch: BHI0176	Sample Size: 19.15 g (wet)	Dry Weight:12.79 g
	Prepared: 09-Sep-2019	Final Volume: 2.5 mL	% Solids: 66.77
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-69 A 01
	Cleanup Batch: CHI0097	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-69 A 01
	Cleanup Batch: CHI0095	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-69 A 01
	Cleanup Batch: CHI0096	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.5	3.9	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.5	3.9	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.5	3.9	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.5	3.9	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.5	3.9	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.5	3.9	**2.6**	ug/kg	J
Aroclor 1260	11096-82-5	1	0.6	3.9	ND	ug/kg	U
Aroclor 1262	37324-23-5	1	0.6	3.9	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	3.9	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*86.8*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*79.9*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*79.3*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*76.0*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

H3-SC1b-110to114-82919

19I0008-69 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 08/29/2019 10:00

Instrument: TOC Cube Analyst: CDE — Analyzed: 09/13/2019 03:08

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-69 A

Preparation Batch: BHI0274 — Sample Size: 0.5715 g (wet) — Dry Weight:0.36 g

Prepared: 10-Sep-2019 — Final Volume: 0.5715 g — % Solids: 63.70

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	**0.65**	%	

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Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

H3-SC1b-110to114-82919

19I0008-69 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 08/29/2019 10:00

Instrument: BAL2 Analyst: KLE — Analyzed: 09/08/2019 23:36

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19I0008-69

Preparation Batch: BHI0182 — Sample Size: 10 g (wet) — Dry Weight:6.37 g

Prepared: 08-Sep-2019 — Final Volume: 10 g — % Solids: 63.70

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	**63.70**	%	

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Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J5-SC1b-20to30-82719

19I0008-70 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/27/2019 14:55
Instrument: ECD7 Analyst: JGR — Analyzed: 09/16/2019 14:08

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-70 A 01
	Preparation Batch: BHI0176	Sample Size: 24.63 g (wet)	Dry Weight:12.52 g
	Prepared: 09-Sep-2019	Final Volume: 2.5 mL	% Solids: 50.84
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-70 A 01
	Cleanup Batch: CHI0097	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-70 A 01
	Cleanup Batch: CHI0095	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-70 A 01
	Cleanup Batch: CHI0096	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	10	15.6	39.9	ND	ug/kg	U
Aroclor 1221	11104-28-2	10	15.6	39.9	ND	ug/kg	U
Aroclor 1232	11141-16-5	10	15.6	39.9	ND	ug/kg	U
Aroclor 1242	53469-21-9	10	15.6	39.9	ND	ug/kg	U
Aroclor 1248	12672-29-6	10	15.6	39.9	**150**	ug/kg	D
Aroclor 1254	11097-69-1	10	15.6	39.9	**369**	ug/kg	D
Aroclor 1260	11096-82-5	10	5.9	39.9	**413**	ug/kg	D
Aroclor 1262	37324-23-5	10	5.9	39.9	ND	ug/kg	U
Aroclor 1268	11100-14-4	10	5.9	39.9	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*117*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*75.2*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*89.5*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*80.7*	*%*	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J5-SC1b-30to40-82719

19I0008-71 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/27/2019 15:00
Instrument: ECD7 Analyst: JGR — Analyzed: 09/16/2019 08:31

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-71 A 01
	Preparation Batch: BHI0176	Sample Size: 25.3 g (wet)	Dry Weight:12.64 g
	Prepared: 09-Sep-2019	Final Volume: 2.5 mL	% Solids: 49.95
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-71 A 01
	Cleanup Batch: CHI0097	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-71 A 01
	Cleanup Batch: CHI0095	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-71 A 01
	Cleanup Batch: CHI0096	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.5	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.5	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.5	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.5	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.5	4.0	**60.1**	ug/kg	
Aroclor 1254	11097-69-1	1	1.5	4.0	**72.1**	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	**83.5**	ug/kg	
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*89.3*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*67.8*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*78.9*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*72.3*	*%*	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J5-SC1b-40to50-82719

19I0008-72 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/27/2019 16:10
Instrument: ECD7 Analyst: JGR — Analyzed: 09/16/2019 14:29

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-72 A 01
	Preparation Batch: BHI0176	Sample Size: 23.13 g (wet)	Dry Weight:12.58 g
	Prepared: 09-Sep-2019	Final Volume: 2.5 mL	% Solids: 54.40
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-72 A 01
	Cleanup Batch: CHI0097	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-72 A 01
	Cleanup Batch: CHI0095	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-72 A 01
	Cleanup Batch: CHI0096	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	10	15.5	39.7	ND	ug/kg	U
Aroclor 1221	11104-28-2	10	15.5	39.7	ND	ug/kg	U
Aroclor 1232	11141-16-5	10	15.5	39.7	ND	ug/kg	U
Aroclor 1242	53469-21-9	10	15.5	39.7	ND	ug/kg	U
Aroclor 1248	12672-29-6	10	15.5	39.7	**174**	ug/kg	D
Aroclor 1254	11097-69-1	10	15.5	39.7	**469**	ug/kg	D
Aroclor 1260	11096-82-5	10	5.9	39.7	**241**	ug/kg	D
Aroclor 1262	37324-23-5	10	5.9	39.7	ND	ug/kg	U
Aroclor 1268	11100-14-4	10	5.9	39.7	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*133*	*%*	*
Surrogate: Tetrachlorometaxylene				*44-120 %*	*74.0*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*102*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*84.7*	*%*	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J5-SC1b-50to60-82719

19I0008-73 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/27/2019 16:15
Instrument: ECD7 Analyst: JGR — Analyzed: 09/16/2019 14:50

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-73 A 01
	Preparation Batch: BHI0176	Sample Size: 22.68 g (wet)	Dry Weight:12.64 g
	Prepared: 09-Sep-2019	Final Volume: 2.5 mL	% Solids: 55.73
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-73 A 01
	Cleanup Batch: CHI0097	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-73 A 01
	Cleanup Batch: CHI0095	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-73 A 01
	Cleanup Batch: CHI0096	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	10	15.4	39.6	ND	ug/kg	U
Aroclor 1221	11104-28-2	10	15.4	39.6	ND	ug/kg	U
Aroclor 1232	11141-16-5	10	15.4	39.6	ND	ug/kg	U
Aroclor 1242	53469-21-9	10	15.4	39.6	ND	ug/kg	U
Aroclor 1248	12672-29-6	10	15.4	39.6	**241**	ug/kg	D
Aroclor 1254	11097-69-1	10	15.4	39.6	**552**	ug/kg	D
Aroclor 1260	11096-82-5	10	5.8	39.6	**375**	ug/kg	D
Aroclor 1262	37324-23-5	10	5.8	39.6	ND	ug/kg	U
Aroclor 1268	11100-14-4	10	5.8	39.6	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*133*	*%*	*
Surrogate: Tetrachlorometaxylene				*44-120 %*	*71.1*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*102*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*77.4*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
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Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J5-SC1b-60to70-82719

19I0008-74 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/27/2019 16:20
Instrument: ECD7 Analyst: JGR — Analyzed: 09/16/2019 09:55

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-74 A 01
	Preparation Batch: BHI0176	Sample Size: 22.47 g (wet)	Dry Weight:12.54 g
	Prepared: 09-Sep-2019	Final Volume: 2.5 mL	% Solids: 55.82
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-74 A 01
	Cleanup Batch: CHI0097	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-74 A 01
	Cleanup Batch: CHI0095	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-74 A 01
	Cleanup Batch: CHI0096	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	**64.2**	ug/kg	
Aroclor 1254	11097-69-1	1	1.6	4.0	**144**	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	**123**	ug/kg	
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*105*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*64.5*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*80.9*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*69.3*	*%*	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J5-SC1b-70to80-82719

19I0008-75 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/27/2019 16:25
Instrument: ECD7 Analyst: JGR — Analyzed: 09/16/2019 10:16

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-75 A 01
	Preparation Batch: BHI0176	Sample Size: 19.48 g (wet)	Dry Weight:12.59 g
	Prepared: 09-Sep-2019	Final Volume: 2.5 mL	% Solids: 64.62
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-75 A 01
	Cleanup Batch: CHI0097	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-75 A 01
	Cleanup Batch: CHI0095	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-75 A 01
	Cleanup Batch: CHI0096	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.5	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.5	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.5	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.5	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.5	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.5	4.0	**169**	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	**129**	ug/kg	
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*113*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*60.7*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*86.1*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*68.6*	*%*	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J5-SC1b-80to90-82719

19I0008-76 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/27/2019 17:25
Instrument: ECD7 Analyst: JGR — Analyzed: 09/16/2019 10:37

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-76 A 01
	Preparation Batch: BHI0176	Sample Size: 17.97 g (wet)	Dry Weight:12.58 g
	Prepared: 09-Sep-2019	Final Volume: 2.5 mL	% Solids: 70.00
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-76 A 01
	Cleanup Batch: CHI0097	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-76 A 01
	Cleanup Batch: CHI0095	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-76 A 01
	Cleanup Batch: CHI0096	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	**2.1**	ug/kg	J
Aroclor 1260	11096-82-5	1	0.6	4.0	**1.7**	ug/kg	J
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*92.5*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*84.1*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*77.8*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*78.6*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J5-SC1b-90to100-82719

19I0008-77 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/27/2019 17:30
Instrument: ECD7 Analyst: JGR — Analyzed: 09/16/2019 10:58

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-77 A 01
	Preparation Batch: BHI0176	Sample Size: 17.56 g (wet)	Dry Weight:12.61 g
	Prepared: 09-Sep-2019	Final Volume: 2.5 mL	% Solids: 71.79
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-77 A 01
	Cleanup Batch: CHI0097	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-77 A 01
	Cleanup Batch: CHI0095	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-77 A 01
	Cleanup Batch: CHI0096	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.5	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.5	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.5	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.5	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.5	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.5	4.0	**2.7**	ug/kg	J
Aroclor 1260	11096-82-5	1	0.6	4.0	**3.1**	ug/kg	J
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*92.4*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*83.5*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*80.6*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*76.7*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

J5-SC1b-100to110-82719

19I0008-78 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/27/2019 17:35
Instrument: ECD7 Analyst: JGR — Analyzed: 09/16/2019 11:19

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19I0008-78 A 01
	Preparation Batch: BHI0176	Sample Size: 17.81 g (wet)	Dry Weight:12.63 g
	Prepared: 09-Sep-2019	Final Volume: 2.5 mL	% Solids: 70.90
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19I0008-78 A 01
	Cleanup Batch: CHI0097	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19I0008-78 A 01
	Cleanup Batch: CHI0095	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19I0008-78 A 01
	Cleanup Batch: CHI0096	Initial Volume: 2.5 mL	
	Cleaned: 13-Sep-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.5	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.5	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.5	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.5	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.5	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.5	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*89.8*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*90.1*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*79.1*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*75.9*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

Aroclor PCB - Quality Control

Batch BHI0076 - EPA 3510C SepF

Instrument: ECD7 Analyst: JGR

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BHI0076-BLK1)				Prepared: 05-Sep-2019 Analyzed: 06-Sep-2019 18:06							
Aroclor 1016	ND	0.018	0.100	ug/L							U
Aroclor 1221	ND	0.018	0.100	ug/L							U
Aroclor 1232	ND	0.018	0.100	ug/L							U
Aroclor 1242	ND	0.018	0.100	ug/L							U
Aroclor 1248	ND	0.018	0.100	ug/L							U
Aroclor 1254	ND	0.018	0.100	ug/L							U
Aroclor 1260	ND	0.017	0.100	ug/L							U
Aroclor 1262	ND	0.017	0.100	ug/L							U
Aroclor 1268	ND	0.017	0.100	ug/L							U
Surrogate: Decachlorobiphenyl	0.0578			ug/L	*0.0800*		*72.2*	*26-120*			
Surrogate: Tetrachlorometaxylene	0.0515			ug/L	*0.0800*		*64.4*	*39-120*			
Surrogate: Decachlorobiphenyl [2C]	0.0530			ug/L	*0.0800*		*66.2*	*26-120*			
Surrogate: Tetrachlorometaxylene [2C]	0.0438			ug/L	*0.0800*		*54.8*	*39-120*			
LCS (BHI0076-BS1)				Prepared: 05-Sep-2019 Analyzed: 06-Sep-2019 18:27							
Aroclor 1016	0.755	0.018	0.100	ug/L	1.00		75.5	51-120			
Aroclor 1260	0.702	0.017	0.100	ug/L	1.00		70.2	56-120			
Surrogate: Decachlorobiphenyl	0.0527			ug/L	*0.0800*		*65.9*	*26-120*			
Surrogate: Tetrachlorometaxylene	0.0526			ug/L	*0.0800*		*65.8*	*39-120*			
Surrogate: Decachlorobiphenyl [2C]	0.0465			ug/L	*0.0800*		*58.2*	*26-120*			
Surrogate: Tetrachlorometaxylene [2C]	0.0424			ug/L	*0.0800*		*53.0*	*39-120*			
LCS Dup (BHI0076-BSD1)				Prepared: 05-Sep-2019 Analyzed: 06-Sep-2019 18:48							
Aroclor 1016	0.713	0.018	0.100	ug/L	1.00		71.3	51-120	5.77	30	
Aroclor 1260	0.666	0.017	0.100	ug/L	1.00		66.6	56-120	5.28	30	
Surrogate: Decachlorobiphenyl	0.0509			ug/L	*0.0800*		*63.6*	*26-120*			
Surrogate: Tetrachlorometaxylene	0.0484			ug/L	*0.0800*		*60.5*	*39-120*			
Surrogate: Decachlorobiphenyl [2C]	0.0447			ug/L	*0.0800*		*55.9*	*26-120*			
Surrogate: Tetrachlorometaxylene [2C]	0.0387			ug/L	*0.0800*		*48.4*	*39-120*			

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

Aroclor PCB - Quality Control

Batch BHI0156 - EPA 3546 (Microwave)

Instrument: ECD7 Analyst: JGR

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BHI0156-BLK1)				Prepared: 07-Sep-2019 Analyzed: 11-Sep-2019 16:52							
Aroclor 1016	ND	1.6	4.0	ug/kg							U
Aroclor 1221	ND	1.6	4.0	ug/kg							U
Aroclor 1232	ND	1.6	4.0	ug/kg							U
Aroclor 1242	ND	1.6	4.0	ug/kg							U
Aroclor 1248	ND	1.6	4.0	ug/kg							U
Aroclor 1254	ND	1.6	4.0	ug/kg							U
Aroclor 1260	ND	0.6	4.0	ug/kg							U
Aroclor 1262	ND	0.6	4.0	ug/kg							U
Aroclor 1268	ND	0.6	4.0	ug/kg							U
Surrogate: Decachlorobiphenyl	6.59			ug/kg	*8.00*		*82.4*	*40-126*			
Surrogate: Tetrachlorometaxylene	6.84			ug/kg	*8.00*		*85.5*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	6.42			ug/kg	*8.00*		*80.2*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.71			ug/kg	*8.00*		*71.4*	*44-120*			
LCS (BHI0156-BS1)				Prepared: 07-Sep-2019 Analyzed: 11-Sep-2019 17:13							
Aroclor 1016	88.3	1.6	4.0	ug/kg	101		87.6	56-120			
Aroclor 1260	74.8	0.6	4.0	ug/kg	101		74.2	58-120			
Surrogate: Decachlorobiphenyl	6.59			ug/kg	*8.00*		*82.3*	*40-126*			
Surrogate: Tetrachlorometaxylene	6.89			ug/kg	*8.00*		*86.1*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	6.43			ug/kg	*8.00*		*80.3*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.81			ug/kg	*8.00*		*72.6*	*44-120*			
LCS Dup (BHI0156-BSD1)				Prepared: 07-Sep-2019 Analyzed: 11-Sep-2019 17:34							
Aroclor 1016	90.4	1.6	4.0	ug/kg	101		89.7	56-120	2.29	30	
Aroclor 1260	77.1	0.6	4.0	ug/kg	101		76.5	58-120	2.95	30	
Surrogate: Decachlorobiphenyl	6.66			ug/kg	*8.00*		*83.3*	*40-126*			
Surrogate: Tetrachlorometaxylene	7.03			ug/kg	*8.00*		*87.9*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	6.45			ug/kg	*8.00*		*80.7*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.91			ug/kg	*8.00*		*73.9*	*44-120*			
Matrix Spike (BHI0156-MS1)		**Source: 19I0008-18**		Prepared: 07-Sep-2019 Analyzed: 12-Sep-2019 00:14							
Aroclor 1016	77.1	1.6	4.0	ug/kg	101	ND	76.3	56-120			
Aroclor 1260	189	0.6	4.0	ug/kg	101	153	35.1	58-120			*
Surrogate: Decachlorobiphenyl	*NRS*			ug/kg	*8.00*		*NRS*	*40-126*			*NRS, P1*

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

Aroclor PCB - Quality Control

Batch BHI0156 - EPA 3546 (Microwave)

Instrument: ECD7 Analyst: JGR

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BHI0156-MS1)	**Source: 19I0008-18**			Prepared: 07-Sep-2019 Analyzed: 12-Sep-2019 00:14							
Surrogate: Tetrachlorometaxylene	4.44			ug/kg	*8.00*		*55.5*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	5.98			ug/kg	*8.00*		*74.8*	*40-126*			*P1*
Surrogate: Tetrachlorometaxylene [2C]	4.82			ug/kg	*8.00*		*60.3*	*44-120*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BHI0156-MSD1)	**Source: 19I0008-18**			Prepared: 07-Sep-2019 Analyzed: 12-Sep-2019 00:35							
Aroclor 1016	75.1	1.6	4.0	ug/kg	101	ND	74.4	56-120	2.68	30	
Aroclor 1260	188	0.6	4.0	ug/kg	101	153	34.2	58-120	0.49	30	*
Surrogate: Decachlorobiphenyl	*NRS*			ug/kg	*8.00*		*NRS*	*40-126*			*NRS*
Surrogate: Tetrachlorometaxylene	4.51			ug/kg	*8.00*		*56.4*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	5.59			ug/kg	*8.00*		*69.8*	*40-126*			*P1*
Surrogate: Tetrachlorometaxylene [2C]	4.89			ug/kg	*8.00*		*61.1*	*44-120*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Reference (BHI0156-SRM1)				Prepared: 07-Sep-2019 Analyzed: 12-Sep-2019 08:38							
Aroclor 1254	5690	195	500	ug/kg	5930		96.0	41.3-158.7			D
Surrogate: Decachlorobiphenyl	95.1			ug/kg	*100*		*95.1*	*40-126*			
Surrogate: Tetrachlorometaxylene	91.3			ug/kg	*100*		*91.3*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	96.2			ug/kg	*100*		*96.2*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	98.8			ug/kg	*100*		*98.8*	*44-120*			

Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

Aroclor PCB - Quality Control

Batch BHI0161 - EPA 3546 (Microwave)

Instrument: ECD7 Analyst: JGR

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BHI0161-BLK1)				Prepared: 08-Sep-2019 Analyzed: 10-Sep-2019 19:48							
Aroclor 1016	ND	1.6	4.0	ug/kg							U
Aroclor 1221	ND	1.6	4.0	ug/kg							U
Aroclor 1232	ND	1.6	4.0	ug/kg							U
Aroclor 1242	ND	1.6	4.0	ug/kg							U
Aroclor 1248	ND	1.6	4.0	ug/kg							U
Aroclor 1254	ND	1.6	4.0	ug/kg							U
Aroclor 1260	ND	0.6	4.0	ug/kg							U
Aroclor 1262	ND	0.6	4.0	ug/kg							U
Aroclor 1268	ND	0.6	4.0	ug/kg							U
Surrogate: Decachlorobiphenyl	6.31			ug/kg	*8.00*		*78.9*	*40-126*			
Surrogate: Tetrachlorometaxylene	6.52			ug/kg	*8.00*		*81.5*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	5.62			ug/kg	*8.00*		*70.2*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.33			ug/kg	*8.00*		*66.6*	*44-120*			
LCS (BHI0161-BS1)				Prepared: 08-Sep-2019 Analyzed: 10-Sep-2019 20:09							
Aroclor 1016	93.1	1.6	4.0	ug/kg	101		92.4	56-120			
Aroclor 1260	79.1	0.6	4.0	ug/kg	101		78.5	58-120			
Surrogate: Decachlorobiphenyl	6.83			ug/kg	*8.00*		*85.4*	*40-126*			
Surrogate: Tetrachlorometaxylene	7.19			ug/kg	*8.00*		*89.9*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	6.29			ug/kg	*8.00*		*78.6*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.72			ug/kg	*8.00*		*71.6*	*44-120*			
LCS Dup (BHI0161-BSD1)				Prepared: 08-Sep-2019 Analyzed: 10-Sep-2019 20:30							
Aroclor 1016	94.6	1.6	4.0	ug/kg	101		93.9	56-120	1.57	30	
Aroclor 1260	80.5	0.6	4.0	ug/kg	101		79.8	58-120	1.72	30	
Surrogate: Decachlorobiphenyl	6.67			ug/kg	*8.00*		*83.4*	*40-126*			
Surrogate: Tetrachlorometaxylene	7.05			ug/kg	*8.00*		*88.1*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	6.34			ug/kg	*8.00*		*79.3*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	6.01			ug/kg	*8.00*		*75.2*	*44-120*			
Duplicate (BHI0161-DUP1)		**Source: 19I0008-25**		Prepared: 08-Sep-2019 Analyzed: 10-Sep-2019 20:51							
Aroclor 1016	ND	1.6	4.0	ug/kg		ND					U
Aroclor 1221	ND	1.6	4.0	ug/kg		ND					U
Aroclor 1232	ND	1.6	4.0	ug/kg		ND					U

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

Aroclor PCB - Quality Control

Batch BHI0161 - EPA 3546 (Microwave)

Instrument: ECD7 Analyst: JGR

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Duplicate (BHI0161-DUP1)	**Source: 19I0008-25**			Prepared: 08-Sep-2019 Analyzed: 10-Sep-2019 20:51							
Aroclor 1242	ND	1.6	4.0	ug/kg		ND					U
Aroclor 1248	3.0	1.6	4.0	ug/kg		2.2			28.00	30	J
Aroclor 1254	6.9	1.6	4.0	ug/kg		4.6			39.90	30	*
Aroclor 1260	4.3	0.6	4.0	ug/kg		4.1			5.29	30	
Aroclor 1262	ND	0.6	4.0	ug/kg		ND					U
Aroclor 1268	ND	0.6	4.0	ug/kg		ND					U
Surrogate: Decachlorobiphenyl	5.99			ug/kg	*7.97*		*75.2*	*40-126*			
Surrogate: Tetrachlorometaxylene	5.59			ug/kg	*7.97*		*70.2*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	5.18			ug/kg	*7.97*		*65.0*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.08			ug/kg	*7.97*		*63.7*	*44-120*			
Matrix Spike (BHI0161-MS1)	**Source: 19I0008-40**			Prepared: 08-Sep-2019 Analyzed: 10-Sep-2019 21:12							
Aroclor 1016	73.8	1.6	4.0	ug/kg	101	ND	73.2	56-120			
Aroclor 1260	134	0.6	4.0	ug/kg	101	83.3	50.2	58-120			*
Surrogate: Decachlorobiphenyl	6.50			ug/kg	*8.00*		*81.3*	*40-126*			
Surrogate: Tetrachlorometaxylene	4.69			ug/kg	*8.00*		*58.6*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	5.33			ug/kg	*8.00*		*66.7*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	4.88			ug/kg	*8.00*		*61.0*	*44-120*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BHI0161-MSD1)	**Source: 19I0008-40**			Prepared: 08-Sep-2019 Analyzed: 10-Sep-2019 21:33							
Aroclor 1016	76.2	1.6	4.0	ug/kg	101	ND	75.4	56-120	3.18	30	
Aroclor 1260	142	0.6	4.0	ug/kg	101	83.3	58.1	58-120	6.29	30	
Surrogate: Decachlorobiphenyl	6.93			ug/kg	*8.00*		*86.7*	*40-126*			
Surrogate: Tetrachlorometaxylene	4.97			ug/kg	*8.00*		*62.2*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	4.89			ug/kg	*8.00*		*61.2*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	4.83			ug/kg	*8.00*		*60.4*	*44-120*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Reference (BHI0161-SRM1)				Prepared: 08-Sep-2019 Analyzed: 10-Sep-2019 21:54							
Aroclor 1254	4280	780	2000	ug/kg	5930		72.1	41.3-158.7			D
Surrogate: Decachlorobiphenyl	113			ug/kg	*100*		*D1*	*40-126*			*D1*
Surrogate: Tetrachlorometaxylene	80.5			ug/kg	*100*		*D1*	*44-120*			*D1*
Surrogate: Decachlorobiphenyl [2C]	101			ug/kg	*100*		*D1*	*40-126*			*D1*

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

Aroclor PCB - Quality Control

Batch BHI0161 - EPA 3546 (Microwave)

Instrument: ECD7 Analyst: JGR

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Reference (BHI0161-SRM1)				Prepared: 08-Sep-2019 Analyzed: 10-Sep-2019 21:54							
Surrogate: Tetrachlorometaxylene [2C]	98.4			ug/kg	*100*		*D1*	*44-120*			*D1*

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

Aroclor PCB - Quality Control

Batch BHI0175 - EPA 3546 (Microwave)

Instrument: ECD7 Analyst: JGR

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BHI0175-BLK1)				Prepared: 09-Sep-2019 Analyzed: 12-Sep-2019 23:10							
Aroclor 1016	ND	1.6	4.0	ug/kg							U
Aroclor 1221	ND	1.6	4.0	ug/kg							U
Aroclor 1232	ND	1.6	4.0	ug/kg							U
Aroclor 1242	ND	1.6	4.0	ug/kg							U
Aroclor 1248	ND	1.6	4.0	ug/kg							U
Aroclor 1254	ND	1.6	4.0	ug/kg							U
Aroclor 1260	ND	0.6	4.0	ug/kg							U
Aroclor 1262	ND	0.6	4.0	ug/kg							U
Aroclor 1268	ND	0.6	4.0	ug/kg							U
Surrogate: Decachlorobiphenyl	6.97			ug/kg	*8.00*		*87.2*	*40-126*			
Surrogate: Tetrachlorometaxylene	6.56			ug/kg	*8.00*		*82.0*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	6.71			ug/kg	*8.00*		*83.9*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	6.09			ug/kg	*8.00*		*76.1*	*44-120*			
LCS (BHI0175-BS1)				Prepared: 09-Sep-2019 Analyzed: 12-Sep-2019 23:31							
Aroclor 1016	89.7	1.6	4.0	ug/kg	101		89.0	56-120			
Aroclor 1260	80.4	0.6	4.0	ug/kg	101		79.8	58-120			
Surrogate: Decachlorobiphenyl	6.71			ug/kg	*8.00*		*83.9*	*40-126*			
Surrogate: Tetrachlorometaxylene	6.65			ug/kg	*8.00*		*83.2*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	6.53			ug/kg	*8.00*		*81.6*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.82			ug/kg	*8.00*		*72.7*	*44-120*			
LCS Dup (BHI0175-BSD1)				Prepared: 09-Sep-2019 Analyzed: 12-Sep-2019 23:52							
Aroclor 1016	88.9	1.6	4.0	ug/kg	101		88.2	56-120	4.51	30	
Aroclor 1260	82.1	0.6	4.0	ug/kg	101		81.4	58-120	8.27	30	
Surrogate: Decachlorobiphenyl	6.66			ug/kg	*8.00*		*83.3*	*40-126*			
Surrogate: Tetrachlorometaxylene	6.17			ug/kg	*8.00*		*77.1*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	6.90			ug/kg	*8.00*		*86.3*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.66			ug/kg	*8.00*		*70.7*	*44-120*			
Duplicate (BHI0175-DUP1)		**Source: 19I0008-57**		Prepared: 09-Sep-2019 Analyzed: 16-Sep-2019 00:50							
Aroclor 1016	ND	1.6	4.0	ug/kg		ND					U
Aroclor 1221	ND	1.6	4.0	ug/kg		ND					U
Aroclor 1232	ND	1.6	4.0	ug/kg		ND					U

Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

Aroclor PCB - Quality Control

Batch BHI0175 - EPA 3546 (Microwave)

Instrument: ECD7 Analyst: JGR

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Duplicate (BHI0175-DUP1)	**Source: 19I0008-57**			Prepared: 09-Sep-2019 Analyzed: 16-Sep-2019 00:50							
Aroclor 1242	ND	1.6	4.0	ug/kg		ND					U
Aroclor 1248	5.5	1.6	4.0	ug/kg		5.9			5.61	30	
Aroclor 1254	22.6	1.6	4.0	ug/kg		23.8			5.52	30	
Aroclor 1260	26.6	0.6	4.0	ug/kg		33.6			23.00	30	
Aroclor 1262	ND	0.6	4.0	ug/kg		ND					U
Aroclor 1268	ND	0.6	4.0	ug/kg		ND					U
Surrogate: Decachlorobiphenyl	8.64			ug/kg	*8.00*		*108*	*40-126*			
Surrogate: Tetrachlorometaxylene	5.14			ug/kg	*8.00*		*64.3*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	7.15			ug/kg	*8.00*		*89.4*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.80			ug/kg	*8.00*		*72.6*	*44-120*			
Matrix Spike (BHI0175-MS1)	**Source: 19I0008-56**			Prepared: 09-Sep-2019 Analyzed: 15-Sep-2019 23:47							
Aroclor 1016	84.3	1.7	4.4	ug/kg	112	ND	75.5	56-120			
Aroclor 1260	310	0.7	4.4	ug/kg	112	374	-57.4	58-120			*, E
Surrogate: Decachlorobiphenyl	*NRS*			ug/kg	*8.86*		*NRS*	*40-126*			*NRS*
Surrogate: Tetrachlorometaxylene	5.87			ug/kg	*8.86*		*66.3*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	*NRS*			ug/kg	*8.86*		*NRS*	*40-126*			*NRS*
Surrogate: Tetrachlorometaxylene [2C]	6.44			ug/kg	*8.86*		*72.7*	*44-120*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BHI0175-MSD1)	**Source: 19I0008-56**			Prepared: 09-Sep-2019 Analyzed: 16-Sep-2019 00:08							
Aroclor 1016	81.4	1.7	4.4	ug/kg	112	ND	72.8	56-120	3.54	30	
Aroclor 1260	314	0.7	4.4	ug/kg	112	374	-53.5	58-120	1.41	30	*, E
Surrogate: Decachlorobiphenyl	18.4			ug/kg	*8.86*		*208*	*40-126*			*
Surrogate: Tetrachlorometaxylene	5.63			ug/kg	*8.86*		*63.6*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	14.8			ug/kg	*8.86*		*167*	*40-126*			*
Surrogate: Tetrachlorometaxylene [2C]	6.22			ug/kg	*8.86*		*70.2*	*44-120*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Reference (BHI0175-SRM1)				Prepared: 09-Sep-2019 Analyzed: 13-Sep-2019 00:13							
Aroclor 1254	4360	78.0	200	ug/kg	5930		73.5	41.3-158.7			
Surrogate: Decachlorobiphenyl	80.1			ug/kg	*100*		*80.1*	*40-126*			
Surrogate: Tetrachlorometaxylene	73.6			ug/kg	*100*		*73.6*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	78.0			ug/kg	*100*		*78.0*	*40-126*			

Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

Aroclor PCB - Quality Control

Batch BHI0175 - EPA 3546 (Microwave)

Instrument: ECD7 Analyst: JGR

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Reference (BHI0175-SRM1)				Prepared: 09-Sep-2019 Analyzed: 13-Sep-2019 00:13							
Surrogate: Tetrachlorometaxylene [2C]	69.8			ug/kg	*100*		*69.8*	*44-120*			

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

Aroclor PCB - Quality Control

Batch BHI0176 - EPA 3546 (Microwave)

Instrument: ECD7 Analyst: JGR

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BHI0176-BLK1)				Prepared: 09-Sep-2019 Analyzed: 16-Sep-2019 02:55							
Aroclor 1016	ND	1.6	4.0	ug/kg							U
Aroclor 1221	ND	1.6	4.0	ug/kg							U
Aroclor 1232	ND	1.6	4.0	ug/kg							U
Aroclor 1242	ND	1.6	4.0	ug/kg							U
Aroclor 1248	ND	1.6	4.0	ug/kg							U
Aroclor 1254	ND	1.6	4.0	ug/kg							U
Aroclor 1260	ND	0.6	4.0	ug/kg							U
Aroclor 1262	ND	0.6	4.0	ug/kg							U
Aroclor 1268	ND	0.6	4.0	ug/kg							U
Surrogate: Decachlorobiphenyl	6.37			ug/kg	*8.00*		*79.7*	*40-126*			
Surrogate: Tetrachlorometaxylene	5.87			ug/kg	*8.00*		*73.3*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	5.43			ug/kg	*8.00*		*67.9*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.41			ug/kg	*8.00*		*67.6*	*44-120*			
LCS (BHI0176-BS1)				Prepared: 09-Sep-2019 Analyzed: 16-Sep-2019 03:16							
Aroclor 1016	86.8	1.6	4.0	ug/kg	101		86.1	56-120			
Aroclor 1260	82.5	0.6	4.0	ug/kg	101		81.8	58-120			
Surrogate: Decachlorobiphenyl	7.03			ug/kg	*8.00*		*87.9*	*40-126*			
Surrogate: Tetrachlorometaxylene	6.45			ug/kg	*8.00*		*80.7*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	6.28			ug/kg	*8.00*		*78.5*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.94			ug/kg	*8.00*		*74.3*	*44-120*			
LCS Dup (BHI0176-BSD1)				Prepared: 09-Sep-2019 Analyzed: 16-Sep-2019 03:37							
Aroclor 1016	88.9	1.6	4.0	ug/kg	101		88.2	56-120	2.36	30	
Aroclor 1260	79.9	0.6	4.0	ug/kg	101		79.2	58-120	3.18	30	
Surrogate: Decachlorobiphenyl	6.78			ug/kg	*8.00*		*84.7*	*40-126*			
Surrogate: Tetrachlorometaxylene	6.54			ug/kg	*8.00*		*81.7*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	6.13			ug/kg	*8.00*		*76.6*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.88			ug/kg	*8.00*		*73.6*	*44-120*			
Duplicate (BHI0176-DUP1)		**Source: 19I0008-71**		Prepared: 09-Sep-2019 Analyzed: 16-Sep-2019 08:52							
Aroclor 1016	ND	1.6	4.0	ug/kg		ND					U
Aroclor 1221	ND	1.6	4.0	ug/kg		ND					U
Aroclor 1232	ND	1.6	4.0	ug/kg		ND					U

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

Aroclor PCB - Quality Control

Batch BHI0176 - EPA 3546 (Microwave)

Instrument: ECD7 Analyst: JGR

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Duplicate (BHI0176-DUP1)	**Source: 19I0008-71**			Prepared: 09-Sep-2019 Analyzed: 16-Sep-2019 08:52							
Aroclor 1242	ND	1.6	4.0	ug/kg		ND					U
Aroclor 1248	58.7	1.6	4.0	ug/kg		60.1			2.45	30	
Aroclor 1254	99.5	1.6	4.0	ug/kg		72.1			31.90	30	*
Aroclor 1260	91.3	0.6	4.0	ug/kg		83.5			8.96	30	
Aroclor 1262	ND	0.6	4.0	ug/kg		ND					U
Aroclor 1268	ND	0.6	4.0	ug/kg		ND					U
Surrogate: Decachlorobiphenyl	7.64			ug/kg	*7.97*		*95.9*	*40-126*			
Surrogate: Tetrachlorometaxylene	5.49			ug/kg	*7.97*		*68.9*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	6.52			ug/kg	*7.97*		*81.9*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.76			ug/kg	*7.97*		*72.3*	*44-120*			
Matrix Spike (BHI0176-MS1)	**Source: 19I0008-69**			Prepared: 09-Sep-2019 Analyzed: 16-Sep-2019 06:04							
Aroclor 1016	86.2	1.5	3.9	ug/kg	98.9	ND	87.2	56-120			
Aroclor 1260	72.9	0.6	3.9	ug/kg	98.9	ND	73.7	58-120			
Surrogate: Decachlorobiphenyl	6.67			ug/kg	*7.85*		*85.0*	*40-126*			
Surrogate: Tetrachlorometaxylene	6.48			ug/kg	*7.85*		*82.5*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	6.20			ug/kg	*7.85*		*79.0*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.92			ug/kg	*7.85*		*75.4*	*44-120*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike (BHI0176-MS2)	**Source: 19I0008-70**			Prepared: 09-Sep-2019 Analyzed: 16-Sep-2019 07:49							
Aroclor 1016	104	1.6	4.0	ug/kg	101	ND	103	56-120			
Aroclor 1260	385	0.6	4.0	ug/kg	101	413	-27.7	58-120			*, E
Surrogate: Decachlorobiphenyl	8.04			ug/kg	*7.99*		*101*	*40-126*			
Surrogate: Tetrachlorometaxylene	5.23			ug/kg	*7.99*		*65.4*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	6.59			ug/kg	*7.99*		*82.5*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.63			ug/kg	*7.99*		*70.5*	*44-120*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BHI0176-MSD1)	**Source: 19I0008-69**			Prepared: 09-Sep-2019 Analyzed: 16-Sep-2019 06:25							
Aroclor 1016	81.0	1.5	3.9	ug/kg	99.2	ND	81.7	56-120	6.23	30	
Aroclor 1260	64.5	0.6	3.9	ug/kg	99.2	ND	65.1	58-120	12.10	30	
Surrogate: Decachlorobiphenyl	6.31			ug/kg	*7.87*		*80.1*	*40-126*			
Surrogate: Tetrachlorometaxylene	6.71			ug/kg	*7.87*		*85.3*	*44-120*			

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

Aroclor PCB - Quality Control

Batch BHI0176 - EPA 3546 (Microwave)

Instrument: ECD7 Analyst: JGR

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BHI0176-MSD1)	**Source: 19I0008-69**				Prepared: 09-Sep-2019		Analyzed: 16-Sep-2019 06:25				
Surrogate: Decachlorobiphenyl [2C]	5.47			ug/kg	*7.87*		*69.5*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.44			ug/kg	*7.87*		*69.1*	*44-120*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BHI0176-MSD2)	**Source: 19I0008-70**				Prepared: 09-Sep-2019		Analyzed: 16-Sep-2019 08:10				
Aroclor 1016	115	1.5	4.0	ug/kg	99.9	ND	115	56-120	9.96	30	
Aroclor 1260	407	0.6	4.0	ug/kg	99.9	413	-6.0	58-120	5.55	30	*, E
Surrogate: Decachlorobiphenyl	8.55			ug/kg	*7.92*		*108*	*40-126*			
Surrogate: Tetrachlorometaxylene	5.23			ug/kg	*7.92*		*66.0*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	5.78			ug/kg	*7.92*		*73.0*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.58			ug/kg	*7.92*		*70.4*	*44-120*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Reference (BHI0176-SRM1)					Prepared: 09-Sep-2019		Analyzed: 16-Sep-2019 03:58				
Aroclor 1254	4770	75.7	194	ug/kg	5930		80.4	41.3-158.7			
Surrogate: Decachlorobiphenyl	82.9			ug/kg	*97.1*		*85.4*	*40-126*			
Surrogate: Tetrachlorometaxylene	70.3			ug/kg	*97.1*		*72.4*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	79.1			ug/kg	*97.1*		*81.5*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	88.0			ug/kg	*97.1*		*90.7*	*44-120*			

Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

Wet Chemistry - Quality Control

Batch BHI0119 - No Prep Wet Chem

Instrument: TOC-LCSH Analyst: DJM

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BHI0119-BLK1)				Prepared: 05-Sep-2019 Analyzed: 05-Sep-2019 13:38							
Total Organic Carbon	ND	0.50	0.50	mg/L							U
LCS (BHI0119-BS1)				Prepared: 05-Sep-2019 Analyzed: 05-Sep-2019 14:05							
Total Organic Carbon	19.18	0.50	0.50	mg/L	20.00		95.9	90-110			
LCS Dup (BHI0119-BSD1)				Prepared: 05-Sep-2019 Analyzed: 05-Sep-2019 14:25							
Total Organic Carbon	19.37	0.50	0.50	mg/L	20.00		96.9	90-110	0.99	20	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

Wet Chemistry - Quality Control

Batch BHI0179 - No Prep Wet Chem

Instrument: TOC Cube Analyst: CDE

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BHI0179-BLK1)					Prepared: 08-Sep-2019 Analyzed: 11-Sep-2019 08:54						
Total Organic Carbon	ND	0.02	0.02	%							U
LCS (BHI0179-BS1)					Prepared: 08-Sep-2019 Analyzed: 11-Sep-2019 09:24						
Total Organic Carbon	45.3	0.02	0.02	%	44.4		102	80-120			
LCS Dup (BHI0179-BSD1)					Prepared: 08-Sep-2019 Analyzed: 11-Sep-2019 09:55						
Total Organic Carbon	42.0	0.02	0.02	%	44.4		94.5	80-120	7.48	20	
Duplicate (BHI0179-DUP1)		**Source: 19I0008-01**			Prepared: 08-Sep-2019 Analyzed: 11-Sep-2019 10:56						
Total Organic Carbon	0.14	0.02	0.02	%		0.12			20.50	20	L
Matrix Spike (BHI0179-MS1)		**Source: 19I0008-01**			Prepared: 08-Sep-2019 Analyzed: 11-Sep-2019 11:26						
Total Organic Carbon	0.92	0.02	0.02	%	0.771	0.12	104	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike Dup (BHI0179-MSD1)		**Source: 19I0008-01**			Prepared: 08-Sep-2019 Analyzed: 11-Sep-2019 11:57						
Total Organic Carbon	0.97	0.02	0.02	%	0.767	0.12	112	75-125	6.00	20	

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

Wet Chemistry - Quality Control

Batch BHI0180 - No Prep Wet Chem

Instrument: BAL2 Analyst: KLE

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BHI0180-BLK1)				Prepared: 08-Sep-2019 Analyzed: 08-Sep-2019 23:06							
Total Solids	ND	0.04	0.04	%							U
Duplicate (BHI0180-DUP1)		**Source: 19I0008-01**		Prepared: 08-Sep-2019 Analyzed: 08-Sep-2019 23:06							
Total Solids	79.27	0.04	0.04	%		79.35			0.10	20	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

Wet Chemistry - Quality Control

Batch BHI0181 - No Prep Wet Chem

Instrument: BAL2 Analyst: KLE

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BHI0181-BLK1)				Prepared: 08-Sep-2019 Analyzed: 08-Sep-2019 23:24							
Total Solids	ND	0.04	0.04	%							U
Duplicate (BHI0181-DUP1)	**Source: 19I0008-40**			Prepared: 08-Sep-2019 Analyzed: 08-Sep-2019 23:24							
Total Solids	51.89	0.04	0.04	%		52.55			1.28	20	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

Wet Chemistry - Quality Control

Batch BHI0182 - No Prep Wet Chem

Instrument: BAL2 Analyst: KLE

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BHI0182-BLK1)				Prepared: 08-Sep-2019 Analyzed: 08-Sep-2019 23:36							
Total Solids	ND	0.04	0.04	%							U
Duplicate (BHI0182-DUP1)	**Source: 19I0008-56**			Prepared: 08-Sep-2019 Analyzed: 08-Sep-2019 23:36							
Total Solids	59.78	0.04	0.04	%		59.24			0.89	20	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

Wet Chemistry - Quality Control

Batch BHI0183 - No Prep Wet Chem

Instrument: BAL2 Analyst: KLE

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BHI0183-BLK1)				Prepared: 08-Sep-2019 Analyzed: 08-Sep-2019 12:12							
Total Solids	ND	0.04	0.04	%							U
Duplicate (BHI0183-DUP1)		**Source: 19I0008-64**		Prepared: 08-Sep-2019 Analyzed: 08-Sep-2019 12:12							
Total Solids	65.36	0.04	0.04	%		63.40			3.05	20	

Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

Wet Chemistry - Quality Control

Batch BHI0274 - No Prep Wet Chem

Instrument: TOC Cube Analyst: CDE

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BHI0274-BLK1)				Prepared: 10-Sep-2019 Analyzed: 12-Sep-2019 00:41							
Total Organic Carbon	ND	0.02	0.02	%							U
LCS (BHI0274-BS1)				Prepared: 10-Sep-2019 Analyzed: 12-Sep-2019 01:12							
Total Organic Carbon	42.2	0.02	0.02	%	44.4		94.9	80-120			
LCS Dup (BHI0274-BSD1)				Prepared: 10-Sep-2019 Analyzed: 12-Sep-2019 19:30							
Total Organic Carbon	43.2	0.02	0.02	%	44.4		97.2	80-120	2.39	20	
Duplicate (BHI0274-DUP1)		**Source: 19I0008-50**		Prepared: 10-Sep-2019 Analyzed: 12-Sep-2019 22:03							
Total Organic Carbon	3.98	0.02	0.02	%		4.06			1.96	20	
Matrix Spike (BHI0274-MS1)		**Source: 19I0008-50**		Prepared: 10-Sep-2019 Analyzed: 12-Sep-2019 22:33							
Total Organic Carbon	5.10	0.02	0.02	%	1.10	4.06	94.3	75-125			E
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BHI0274-MSD1)		**Source: 19I0008-50**		Prepared: 10-Sep-2019 Analyzed: 12-Sep-2019 23:04							
Total Organic Carbon	5.21	0.02	0.02	%	1.11	4.06	104	75-125	2.14	20	E
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

Wet Chemistry - Quality Control

Batch BHI0334 - No Prep Wet Chem

Instrument: TOC Cube Analyst: CDE

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BHI0334-BLK1)				Prepared: 11-Sep-2019 Analyzed: 13-Sep-2019 14:22							
Total Organic Carbon	ND	0.02	0.02	%							U
LCS (BHI0334-BS1)				Prepared: 11-Sep-2019 Analyzed: 13-Sep-2019 14:53							
Total Organic Carbon	44.5	0.02	0.02	%	44.4		100	80-120			
LCS Dup (BHI0334-BSD1)				Prepared: 11-Sep-2019 Analyzed: 13-Sep-2019 15:23							
Total Organic Carbon	44.3	0.02	0.02	%	44.4		99.8	80-120	0.25	20	
Duplicate (BHI0334-DUP1)		**Source: 19I0008-40**		Prepared: 11-Sep-2019 Analyzed: 13-Sep-2019 22:31							
Total Organic Carbon	3.08	0.02	0.02	%		3.11			0.92	20	
Matrix Spike (BHI0334-MS1)		**Source: 19I0008-40**		Prepared: 11-Sep-2019 Analyzed: 13-Sep-2019 23:01							
Total Organic Carbon	4.37	0.02	0.02	%	1.09	3.11	116	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike Dup (BHI0334-MSD1)		**Source: 19I0008-40**		Prepared: 11-Sep-2019 Analyzed: 13-Sep-2019 23:32							
Total Organic Carbon	4.20	0.02	0.02	%	1.14	3.11	95.4	75-125	4.13	20	

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

Wet Chemistry - Quality Control

Batch BHI0374 - No Prep Wet Chem

Instrument: TOC Cube Analyst: CDE

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BHI0374-BLK1)					Prepared: 12-Sep-2019 Analyzed: 14-Sep-2019 06:09						
Total Organic Carbon	ND	0.02	0.02	%							U
LCS (BHI0374-BS1)					Prepared: 12-Sep-2019 Analyzed: 14-Sep-2019 06:40						
Total Organic Carbon	44.5	0.02	0.02	%	44.4		100	80-120			
LCS Dup (BHI0374-BSD1)					Prepared: 12-Sep-2019 Analyzed: 14-Sep-2019 07:10						
Total Organic Carbon	44.8	0.02	0.02	%	44.4		101	80-120	0.57	20	
Duplicate (BHI0374-DUP1)		**Source: 19I0008-18**			Prepared: 12-Sep-2019 Analyzed: 14-Sep-2019 08:11						
Total Organic Carbon	2.75	0.02	0.02	%		2.99			8.24	20	H
Matrix Spike (BHI0374-MS1)		**Source: 19I0008-18**			Prepared: 12-Sep-2019 Analyzed: 14-Sep-2019 08:42						
Total Organic Carbon	3.36	0.02	0.02	%	1.09	2.99	33.7	75-125			*, H, HC
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike (BHI0374-MS2)		**Source: 19I0008-18**			Prepared: 12-Sep-2019 Analyzed: 16-Sep-2019 17:59						
Total Organic Carbon	5.55	0.02	0.02	%	3.74	2.99	68.4	75-125			*
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BHI0374-MSD1)		**Source: 19I0008-18**			Prepared: 12-Sep-2019 Analyzed: 14-Sep-2019 09:12						
Total Organic Carbon	3.22	0.02	0.02	%	0.964	2.99	24.3	75-125	4.03	20	*, H, HC
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BHI0374-MSD2)		**Source: 19I0008-18**			Prepared: 12-Sep-2019 Analyzed: 16-Sep-2019 18:29						
Total Organic Carbon	5.60	0.02	0.02	%	3.38	2.99	77.4	75-125	0.98	20	
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

Wet Chemistry - Quality Control

Batch BHI0436 - No Prep Wet Chem

Instrument: BAL2 Analyst: KLE

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BHI0436-BLK1)				Prepared: 15-Sep-2019 Analyzed: 15-Sep-2019 23:45							
Total Solids	ND	0.04	0.04	%							U
Duplicate (BHI0436-DUP1)	**Source: 19I0008-18**			Prepared: 15-Sep-2019 Analyzed: 15-Sep-2019 23:45							
Total Solids	59.75	0.04	0.04	%		58.80			1.60	20	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
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Certified Analyses included in this Report

Analyte	Certifications
EPA 8082A in Solid	
Aroclor 1016	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1016 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1221	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1221 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1232	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1232 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1242	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1242 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1248	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1248 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1254	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1254 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1260	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1260 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1262	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1262 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1268	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1268 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
EPA 8082A in Water	
Aroclor 1016	ADEC,CALAP,DoD-ELAP,NELAP,WADOE
Aroclor-1016 (1)	ADEC,CALAP
Aroclor-1016 (2)	ADEC,CALAP
Aroclor-1016 (3)	ADEC,CALAP
Aroclor-1016 (4)	ADEC,CALAP
Aroclor 1016 [2C]	ADEC,CALAP,DoD-ELAP,NELAP,WADOE
Aroclor-1016 (1) [2C]	ADEC,CALAP
Aroclor-1016 (2) [2C]	ADEC,CALAP
Aroclor-1016 (3) [2C]	ADEC,CALAP
Aroclor-1016 (4) [2C]	ADEC,CALAP
Aroclor 1221	ADEC,CALAP,DoD-ELAP,NELAP,WADOE
Aroclor-1221 (1)	ADEC,CALAP
Aroclor-1221 (2)	ADEC,CALAP
Aroclor-1221 (3)	ADEC,CALAP
Aroclor 1221 [2C]	ADEC,CALAP,DoD-ELAP,NELAP,WADOE
Aroclor-1221 (1) [2C]	ADEC,CALAP

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Aroclor-1221 (2) [2C]	ADEC,CALAP
Aroclor-1221 (3) [2C]	ADEC,CALAP
Aroclor-1221 (4) [2C]	ADEC,CALAP
Aroclor 1232	ADEC,CALAP,DoD-ELAP,NELAP,WADOE
Aroclor-1232 (1)	ADEC,CALAP
Aroclor-1232 (2)	ADEC,CALAP
Aroclor-1232 (3)	ADEC,CALAP
Aroclor-1232 (4)	ADEC,CALAP
Aroclor 1232 [2C]	ADEC,CALAP,DoD-ELAP,NELAP,WADOE
Aroclor-1232 (1) [2C]	ADEC,CALAP
Aroclor-1232 (2) [2C]	ADEC,CALAP
Aroclor-1232 (3) [2C]	ADEC,CALAP
Aroclor-1232 (4) [2C]	ADEC,CALAP
Aroclor 1242	ADEC,CALAP,DoD-ELAP,NELAP,WADOE
Aroclor-1242 (1)	ADEC,CALAP
Aroclor-1242 (2)	ADEC,CALAP
Aroclor-1242 (3)	ADEC,CALAP
Aroclor-1242 (4)	ADEC,CALAP
Aroclor 1242 [2C]	ADEC,CALAP,DoD-ELAP,NELAP,WADOE
Aroclor-1242 (1) [2C]	ADEC,CALAP
Aroclor-1242 (2) [2C]	ADEC,CALAP
Aroclor-1242 (3) [2C]	ADEC,CALAP
Aroclor-1242 (4) [2C]	ADEC,CALAP
Aroclor 1248	ADEC,CALAP,DoD-ELAP,NELAP,WADOE
Aroclor-1248 (1)	ADEC,CALAP
Aroclor-1248 (2)	ADEC,CALAP
Aroclor-1248 (3)	ADEC,CALAP
Aroclor-1248 (4)	ADEC,CALAP
Aroclor 1248 [2C]	ADEC,CALAP,DoD-ELAP,NELAP,WADOE
Aroclor-1248 (1) [2C]	ADEC,CALAP
Aroclor-1248 (2) [2C]	ADEC,CALAP
Aroclor-1248 (3) [2C]	ADEC,CALAP
Aroclor-1248 (4) [2C]	ADEC,CALAP
Aroclor 1254	ADEC,CALAP,DoD-ELAP,NELAP,WADOE
Aroclor-1254 (1)	ADEC,CALAP
Aroclor-1254 (2)	ADEC,CALAP
Aroclor-1254 (3)	ADEC,CALAP
Aroclor-1254 (4)	ADEC,CALAP
Aroclor-1254 (5)	ADEC,CALAP
Aroclor 1254 [2C]	ADEC,CALAP,DoD-ELAP,NELAP,WADOE

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

Aroclor-1254 (1) [2C]	ADEC,CALAP
Aroclor-1254 (2) [2C]	ADEC,CALAP
Aroclor-1254 (3) [2C]	ADEC,CALAP
Aroclor-1254 (4) [2C]	ADEC,CALAP
Aroclor-1254 (5) [2C]	ADEC,CALAP
Aroclor 1260	ADEC,CALAP,DoD-ELAP,NELAP,WADOE
Aroclor-1260 (1)	ADEC,CALAP
Aroclor-1260 (2)	ADEC,CALAP
Aroclor-1260 (3)	ADEC,CALAP
Aroclor-1260 (4)	ADEC,CALAP
Aroclor-1260 (5)	ADEC,CALAP
Aroclor 1260 [2C]	ADEC,CALAP,DoD-ELAP,NELAP,WADOE
Aroclor-1260 (1) [2C]	ADEC,CALAP
Aroclor-1260 (2) [2C]	ADEC,CALAP
Aroclor-1260 (3) [2C]	ADEC,CALAP
Aroclor-1260 (4) [2C]	ADEC,CALAP
Aroclor 1262	ADEC,CALAP,DoD-ELAP,NELAP,WADOE
Aroclor-1262 (1)	ADEC,CALAP
Aroclor-1262 (2)	ADEC,CALAP
Aroclor-1262 (3)	ADEC,CALAP
Aroclor-1262 (4)	ADEC,CALAP
Aroclor-1262 (5)	ADEC,CALAP
Aroclor 1262 [2C]	ADEC,CALAP,DoD-ELAP,NELAP,WADOE
Aroclor-1262 (1) [2C]	ADEC,CALAP
Aroclor-1262 (2) [2C]	ADEC,CALAP
Aroclor-1262 (3) [2C]	ADEC,CALAP
Aroclor-1262 (4) [2C]	ADEC,CALAP
Aroclor-1262 (5) [2C]	ADEC,CALAP
Aroclor 1268	ADEC,CALAP,DoD-ELAP,NELAP,WADOE
Aroclor-1268 (1)	ADEC,CALAP
Aroclor-1268 (2)	ADEC,CALAP
Aroclor-1268 (3)	ADEC,CALAP
Aroclor-1268 (4)	ADEC,CALAP
Aroclor 1268 [2C]	ADEC,CALAP,DoD-ELAP,NELAP,WADOE
Aroclor-1268 (1) [2C]	ADEC,CALAP
Aroclor-1268 (2) [2C]	ADEC,CALAP
Aroclor-1268 (3) [2C]	ADEC,CALAP
Aroclor-1268 (4) [2C]	ADEC,CALAP

EPA 9060A in Water

Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

Total Organic Carbon DoD-ELAP,WADOE,NELAP

EPA 9060A m in Solid

Total Organic Carbon WADOE

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	01/31/2021
CALAP	California Department of Public Health CAELAP	2748	06/30/2019
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	01/01/2021
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2020
WADOE	WA Dept of Ecology	C558	06/30/2019
WA-DW	Ecology - Drinking Water	C558	06/30/2019

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Sep-2019 14:41

Notes and Definitions

*	Flagged value is not within established control limits.
D	The reported value is from a dilution
D1	Surrogate was not detected due to sample extract dilution
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)
H	Hold time violation - Hold time was exceeded.
HC	The natural concentration of the spiked analyte is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
J	Estimated concentration value detected below the reporting limit.
L	Analyte concentration is <=5 times the reporting limit and the replicate control limit defaults to +/- RL instead of 20% RPD
NRS	This surrogate not reported due to chromatographic interference
P1	The reported value is greater than 40% difference between the concentrations determined on two GC columns where applicable.
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

15 October 2019

Janet Knox
Pacific Groundwater Group
2377 Eastlake Ave. E. Suite 200
Seattle, WA 98102

RE: Swan Island Lagoon Sediment Investigation

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
19J0044	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.



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ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006

PJLA Testing
Accreditation # 66169

other ARI 19I0008 19J0044

Chain of Custody Record

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 8/__/2019	COC No:
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	1 of 8 COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	standard			
206 329 0141 Phone	TAT if different from Below			SDG No.
206 329 6968 FAX	[x] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
PO#	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Aroclors 8082A	TOC SW9060	ARCHIVE	Sample Specific Notes:
L3-SC1b-20to30-8[illegible]19	8/26/19	1030		S	1	X	X		
L3-SC1b-30to40-8[illegible]19	8/26/19	1035		S	1	X	X		
L3-SC1b-00to10-82619	8/26/19	1006		S	1	✓		✓	JP 10/2/19
L3-SC1b-10to20-82619	8/26/19	1007		S	1	✓		✓	JP 10/2/19
	8/ /19			S	1				
	8/ /19			S	1				
	8/ /19			S	1				
	8/ /19			S	1				
	8/ /19			S	1				
	8/ /19			S	1				
	8/ /19			S	1				
	8/ /19			S	1				

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification

[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

[ ] Return To Client [ ] Disposal By Lab [x] Archive For _____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PGG	9/3/2019 1210		ARI	9/3/19 1430
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

other ARI ~~19I0008~~ 19J0044

Chain of Custody Record

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 8/26/2019	COC No:
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	2 of 8 COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	standard			
206 329 0141 Phone	TAT if different from Below ____			
206 329 6968 FAX	[X] standard			SDG No.
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Aroclors 8082A	TOC SW9060	Archive	Sample Specific Notes:
D6-SC1b-20to30-8 26 19	8/26/19	1245		S	1	X	X		
D6-SC1b-30to40-8 26 19	8/26/19	1300		S	1	X	X		
D6-SC1b-40to50-8 26 19	8/26/19	1445		S	1	X	X		
D6-SC1b-50to60-8 26 19	8/26/19	1450		S	1	X	X		
D6-SC1b-60to70-8 26 19	3/26/19	1530		S	1	X	X		
D6-SC1b-70to80-8 26 19	8/26/19	1540		S	1	X	X		
D6-SC1b-80to90-8 26 19	8/26/19	1655		S	1	X	X		
D6-SC1b-90to100-8 26 19	8/26/19	1700		S	1	X	X		
D6-SC1b-100to110-8 26 19	8/26/19	1740		S	1	X	X		
D6-SC1b-110to120-8 26 19	8/26/19	1750		S	1	X	X		
D6-SC1b-10to20-82619	8/26/19	1210		S	1	✓		~~X~~	10/2/19
411-SC1b-50to60-82619	8/26/19	1500		S	1	X			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification

[ ] *Non-Hazard* [ ] *Flammable* [ ] *Skin Irritant* *Poison B* [ ] *Unknown* [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

[ ] *Return To Client* [ ] *Disposal By Lab* [X] *Archive For* ____ *Months*

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	PGG	9/3/2019 1210	[signature]	ARI	9/3/19 1430
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Other ARI 19I0008 19J0044

Chain of Custody Record

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 8/__/2019	COC No:
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	3 of 4 COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	standard			
206 329 0141 Phone	TAT if different from Below			SDG No.
206 329 6968 FAX	[x] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
PO#	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	PCBs 8082A	TOC SW9060	Sample Specific Notes:
J3-SC1b-20to30-827 19	8/27/19	1000		S	1	X	X	
J3-SC1b-30to40-827 19	8/27/19	1005		S	1	X	X	
J3-SC1b-40to50-827 19	8/27/19	1120		S	1	X	X	
J3-SC1b-50to60-827 19	8/27/19	1125		S	1	X	X	
J3-SC1b-60to70-827 19	8/27/19	1130		S	1	X	X	
J3-SC1b-70to80-827 19	8/27/19	1135		S	1	X	X	
J3-SC1b-80to90-827 19	8/27/19	1220		S	1	X	X	
J3-SC1b-90to100-827 19	8/27/19	1225		S	1	X	X	
J3-SC1b-10to20-827 19	8/27/19	0955		S	1	X	X	
[redacted]	8/ /19			S	1			
412-SC1b-30to40-827 19	8/27/19	1235		S	1	X	X	
	8/ /19			S	1			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] Return To Client [ ] Disposal By Lab [x] Archive For _____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	PGG	9/3/2019 1210	[signature]	ARI	9/3/19 1430
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Other ARI 19I0008 19J0044

Chain of Custody Record

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 8/27/2019 – 8/25/2019	COC No:
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	4 of 8 COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E. Seattle WA 98102	*standard*			
206 329 0141 Phone	TAT if different from Below			SDG No.
206 329 6968 FAX	[X] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8082A Aroclor	TOC Sm9060	Archive	Sample Specific Notes:
J6-SC1b-20to30-8Z819	8/28/19	0920		S	1	X	X		
J6-SC1b-30to40-8Z819	8/28/19	0925		S	1	X	X		
J6-SC1b-40to50-8Z819	8/28/19	1025		S	1	X	X		
J6-SC1b-50to60-8Z819	8/28/19	1030		S	1	X	X		
J6-SC1b-60to70-8Z819	8/28/19	1035		S	1	X	X		
J6-SC1b-70to80-8Z819	8/28/19	1040		S	1	X	X		
J6-SC1b-80to90-8Z819	8/28/19	1155		S	1	X	X		
J6-SC1b-90to100-8Z819	8/28/19	1200		S	1	X	X		
J6-SC1b-100to110-8Z819	8/28/19	1205		S	1	X	X		
J6-SC1b-110to120-8Z819	8/28/19	1210		S	1	X	X		
J6-SC1b-00to10-82719	8/27/19	1930		S	1	✓		X	OP 10/2/19
J6-SC1b-10to20-82719	8/27/19	1935		S	1	✓		X	OP 10/2/19

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification

[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

[ ] Return To Client [ ] Disposal By Lab [X] Archive For _____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PGG	9/3/2019 1210		ARI	9/3/19 1430
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

~~[illegible]~~ Other ARI ~~19I0008~~ 19J0044

Chain of Custody Record

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 8/28/2019	COC No:
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	10 of 8 COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	standard			
206 329 0141 Phone	TAT if different from Below _____			
206 329 6968 FAX	[x] standard			SDG No.
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8082A Aroclor	TOC SW9060	Archive	Sample Specific Notes:
R4-SC1b-20to30-8 28 19	8/28/19	1400		S	1	X	X		
R4-SC1b-30to40-8 28 19	8/28/19	1405		S	1	X	X		
R4-SC1b-40to50-8 28 19	8/28/19	1510		S	1	X	X		
R4-SC1b-50to60-8 28 19	8/28/19	1520		S	1	X	X		
R4-SC1b-60to70-8 28 19	8/28/19	1550		S	1	X	X		
R4-SC1b-70to80-8 28 19	8/28/19	1555		S	1	X	X		
R4-SC1b-80to90-8 28 19	8/28/19	1630		S	1	X	X		
R4-SC1b-90to100-8 28 19	8/28/19	1640		S	1	X	X		
~~[illegible]~~									
R4-SC1b-10to20-8 28 19	8/28/19	1355		S	1	✓		X	10/2/19
	8/ /19			S	1				
	8/ /19			S	1				

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification

[ ] *Non-Hazard* [ ] *Flammable* [ ] *Skin Irritant* *Poison B* [ ] *Unknown* [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

[ ] *Return To Client* [ ] *Disposal By Lab* [x] *Archive For* _____ *Months*

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	PGG	9/3/2019 1210	[signature]	ARI	9/3/19 1430
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Other AM 19I0008

Chain of Custody Record

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 8/ /2019	COC No: 8
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	2 of 8 COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	standard			
206 329 0141 Phone	TAT if different from Below			SDG No.
206 329 6968 FAX	[X] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
PO#	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8082A Aroclor	TOC SW9060	Archive	Sample Specific Notes:
R4-SC1b-100to110-828 19	8/28/19	1700		S	1	X	X		
R4-SC1b-110to120-828 19	8/28/19	1710		S	1	X	X		
R4-SC1b-120to130-828 19	8/28/19	1820		S	1	X	X		
[illegible]									
[illegible]									
R4-SC1b-40to50-82819	8/28/19	1045		S	1	X	X		
[illegible]									
[illegible]									
R4-SC1b-130to140-82819	8/28/19	1825		S	1	X	X		
R4-SC1b-140to150-82819	8/28/19	1830		S	1	X	X		
	8/ /19			S	1				
	8/ /19			S	1				

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification

[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

[ ] Return To Client [ ] Disposal By Lab [X] Archive For _____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	PGG	9/3/2019 1210	[signature]	ARI	9/3/19 1430
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Other ARI ~~19I0008~~ 19J0044

Chain of Custody Record

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 8/22/2019	COC No:
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	4 of 8 COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	standard			
206 329 0141 Phone	TAT if different from Below			SDG No.
206 329 6968 FAX	[x] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Aroclors 8082A TOC SM5310	Archive	Sample Specific Notes:
H3-SC1b-20to30-8Z819	8/28/19	2015		S	1	X X		
H3-SC1b-30to40-8Z819	8/29/19	[illegible] 0825		S	1	X X		
H3-SC1b-40to50-8Z919	8/29/19	0830		S	1	X X		
H3-SC1b-50to60-8Z919	8/29/19	0835		S	1	X X		
H3-SC1b-60to70-8Z919	8/29/19	0900		S	1	X X		
H3-SC1b-70to80-8Z919	8/29/19	0905		S	1	X		
H3-SC1b-80to90-8Z919	8/29/19	0930		S	1	X		
H3-SC1b-90to100-8Z919	8/29/19	0935		S	1	X		
H3-SC1b-100to110-8Z919	8/29/19	0950		S	1	X		
H3-SC1b-00to10-82819	8/28/19	2005		S	1	[illegible]	X	JD 11/2/19
H3-SC1b-10-20-82819	8/28/19	2010		S	1	✓	X	JD 11/2/19
	8/ /19			S	1			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification

[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

[ ] Return To Client [ ] Disposal By Lab [x] Archive For _____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PGG	9/3/2019 1210		ARI	9/3/19 1430
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

ALS Environmental

AM

CHAIN OF CUSTODY

19I0008 19J0044

Sediment and Tissue Chemistry

SR#: _____

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • FAX (360) 636-1068

PAGE _____ OF _____ COC# _____

PROJECT NAME

PROJECT NUMBER

PROJECT MANAGER

COMPANY NAME

ADDRESS

CITY/STATE/ZIP

E-MAIL ADDRESS

PHONE # FAX #

SAMPLER'S SIGNATURE

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	☐ Total Volatile Solids ☐ Total Solids TOC ☐ (ASTM D4129M) ☐ PSEP ASW4060	Grain Size ☐ PSEP ☐ ASTMD422	Sulfide ☐ Total (9030M) ☐ AVS ☐ PSEP ☐ Water Soluble	Ammonia ☐ Total (350.1M) ☐ SEM (metals list below)	Metals (list below) ☐ Plumb ☐ Pore Water	Pesticides (8081)	PCBs (8082) ☒ Aroclors ☐ Congeners	Semivolatiles ☐ GC/MS SIM (PAH) ☐ 8270-L	Organotins ☐ Bulk ☐ Pore Water ☐ TBT only	Volatiles (8260)	Dioxins ☐ 1613 ☐ 8290	TPH ☐ GRO ☐ DRO ☐ RRO	☐ Lipids	Tissue Sample Preparations (Instructions below)				REMARKS
711-82719	8/27/19	0840		A		X					X	X											
712-82819	8/27/19	0820		A		X					X	X											

REPORT REQUIREMENTS

— I. Routine Report: Method Blank, Surrogate, as required

— II. Report Dup., MS, MSD as required

— III. CLP Like Summary (no raw data)

— IV. Data Validation Report

— V. EDD

INVOICE INFORMATION

P.O. # _____

Bill To: _____

TURNAROUND REQUIREMENTS

____ 24 hr. ____ 48 hr.

____ 5 day

____ Standard (15 working days)

Requested Report Date

Circle which metals are to be analyzed:

SMS Metals: As Cd Cr Cu Pb Hg Ag Zn

CA Metals: Ag As Cd Cr Cu Hg Ni Pb Se Zn

SEM Metals: Cd Cu Pb Hg Ni Zn

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

SPECIAL INSTRUCTIONS/COMMENTS:

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: 9/3/2019 1210	Signature: 9/3/19 1436	Signature	Signature
Printed Name: David Wampler	Printed Name: Kenny Dang	Printed Name	Printed Name
Date/Time	Date/Time	Date/Time	Date/Time
Firm: PGG	Firm: ARI	Firm	Firm

Other ARI ~~19I0008~~ 19J0044

Chain of Custody Record

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 8/27/2019	COC No:
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	4 of 8 COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	standard			
206 329 0141 Phone	TAT if different from Below _____			
206 329 6968 FAX	[X] standard			SDG No.
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Moclors 8082A	Archive	Sample Specific Notes:
J5-SC1b-20to30-8 27 19	8/27/19	1455		S	1	X		
J5-SC1b-30to40-8 27 19	8/27/19	1500		S	1	X		
J5-SC1b-40to50-8 27 19	8/27/19	1610		S	1	X		
J5-SC1b-50to60-8 27 19	8/27/19	1615		S	1	X		
J5-SC1b-60to70-8 27 19	8/27/19	1620		S	1	X		
J5-SC1b-70to80-8 27 19	8/27/19	1625		S	1	X		
J5-SC1b-80to90-8 27 19	8/27/19	1725		S	1	X		
J5-SC1b-90to100-8 27 19	8/27/19	1730		S	1	X		
J5-SC1b-100to110-8 27 19	8/27/19	1735		S	1	X		
[illegible]	[illegible]	[illegible]		[illegible]				
J5-SC1b-00to10-82719	8/27/19	1445		S	1		X	JR 10/2/19
J5-SC1b-10 to 20-82719	8/27/19	1450		S	1		X	JR 10/2/19

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification

[ ] *Non-Hazard* [ ] *Flammable* [ ] *Skin Irritant* *Poison B* [ ] *Unknown* [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

[ ] *Return To Client* [ ] *Disposal By Lab* [X] *Archive For* _____ *Months*

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	PGG	9/3/2019 1210	[signature]	ARI	9/3/19 1430
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

19J0044

Chain of Custody Record

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 9/12/2019	COC No:
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	____ of ____ COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	standard			
206 329 0141 Phone	TAT if different from Below ____			SDG No.
206 329 6968 FAX	[X] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Relinquish to ARI	Sample Specific Notes:
H3-SC1b-20to30-82819	8/28/2019	20:15:00		S	1	x	
J3-SC1b-30to40-82719	8/27/2019	10:15:00		S	1	x	
J3-SC1b-40to50-82719	8/27/2019	11:20:00		S	1	x	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification

[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

[ ] Return To Client [ ] Disposal By Lab [X] Archive For _____ Months

TA to relinquish 3 samples to ARI.

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PGG	9/12/2019 8:45			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	iA	9/12/19 1322		ARI	9/12/19 1322
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	15-Oct-2019 14:30

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
L3-SC1b-00to10-82619	19J0044-01	Solid	26-Aug-2019 10:06	03-Sep-2019 14:30
L3-SC1b-10to20-82619	19J0044-02	Solid	26-Aug-2019 10:07	03-Sep-2019 14:30
D6-SC1b-10to20-82619	19J0044-03	Solid	26-Aug-2019 12:10	03-Sep-2019 14:30
J6-SC1b-00to10-82719	19J0044-04	Solid	27-Aug-2019 19:30	03-Sep-2019 14:30
J6-SC1b-10to20-82719	19J0044-05	Solid	27-Aug-2019 19:35	03-Sep-2019 14:30
R4-SC1b-10to20-82819	19J0044-06	Solid	28-Aug-2019 13:55	03-Sep-2019 14:30
H3-SC1b-00to10-82919	19J0044-07	Solid	28-Aug-2019 20:05	03-Sep-2019 14:30
H3-SC1b-10-20-82919	19J0044-08	Solid	28-Aug-2019 20:10	03-Sep-2019 14:30
J5-SC1b-00to10-82719	19J0044-09	Solid	27-Aug-2019 14:45	03-Sep-2019 14:30
J5-SC1b-10to20-82719	19J0044-10	Solid	27-Aug-2019 14:50	03-Sep-2019 14:30

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	15-Oct-2019 14:30

Work Order Case Narrative

PCB Aroclors - EPA Method SW8082A

The sample(s) were extracted and analyzed within the recommended holding times for samples that have been frozen.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits with the exception of surrogates flagged on the associated forms.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

The Matrix Spike/Matrix Spike duplicate recoveries and RPD were within limits with the exception of analytes flagged on the associated forms.

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Additional Aroclor analyses

Jeff S. Parker
Wed 10/2/2019 2:24 PM
To: Kelly Bottem <kelly.bottem@arilabs.com>

1 attachments (556 KB)
20191002112328460.pdf;

Hi Kelly,

I updated the COCs for the DTNA Sediments job with 10 or so additional Aroclor only analyses (no TOC needed).

I'm also going to hunt down three more of our samples from Test America and have them shipped (I think they are in Sacramento or Nashville). Also for Aroclors.

Thanks,
Jeff

Jeffrey Parker, LG | Environmental Geologist
Pacific Groundwater Group Water Resource & Environmental Consulting
(360) 570-8244 | jparker@pgwg.com | www.pgwg.com

Pull the Samples from 19I0098
The ones in dark black marked up on COCs.

log under new Job for
PCBs only

Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	15-Oct-2019 14:30

L3-SC1b-00to10-82619

19J0044-01 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/26/2019 10:06
Instrument: ECD7 Analyst: JGR — Analyzed: 10/11/2019 22:13

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19J0044-01 A 01
	Preparation Batch: BHJ0164	Sample Size: 16 g (wet)	Dry Weight:12.65 g
	Prepared: 07-Oct-2019	Final Volume: 2.5 mL	% Solids: 79.04
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19J0044-01 A 01
	Cleanup Batch: CHJ0098	Initial Volume: 2.5 mL	
	Cleaned: 10-Oct-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19J0044-01 A 01
	Cleanup Batch: CHJ0096	Initial Volume: 2.5 mL	
	Cleaned: 10-Oct-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19J0044-01 A 01
	Cleanup Batch: CHJ0097	Initial Volume: 2.5 mL	
	Cleaned: 10-Oct-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.5	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.5	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.5	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.5	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.5	4.0	**4.8**	ug/kg	
Aroclor 1254	11097-69-1	1	1.5	4.0	**13.0**	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	**11.2**	ug/kg	
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*119*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*86.4*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*106*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*83.8*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	15-Oct-2019 14:30

L3-SC1b-10to20-82619

19J0044-02 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/26/2019 10:07
Instrument: ECD7 Analyst: JGR — Analyzed: 10/11/2019 23:15

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19J0044-02 A 01
	Preparation Batch: BHJ0164	Sample Size: 15.89 g (wet)	Dry Weight:12.58 g
	Prepared: 07-Oct-2019	Final Volume: 2.5 mL	% Solids: 79.15
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19J0044-02 A 01
	Cleanup Batch: CHJ0098	Initial Volume: 2.5 mL	
	Cleaned: 10-Oct-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19J0044-02 A 01
	Cleanup Batch: CHJ0096	Initial Volume: 2.5 mL	
	Cleaned: 10-Oct-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19J0044-02 A 01
	Cleanup Batch: CHJ0097	Initial Volume: 2.5 mL	
	Cleaned: 10-Oct-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	**5.1**	ug/kg	
Aroclor 1254	11097-69-1	1	1.6	4.0	**14.5**	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	**9.5**	ug/kg	
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*117*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*91.1*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*109*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*88.9*	*%*	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	15-Oct-2019 14:30

D6-SC1b-10to20-82619

19J0044-03 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/26/2019 12:10
Instrument: ECD7 Analyst: JGR — Analyzed: 10/12/2019 00:18

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19J0044-03 A 01
	Preparation Batch: BHJ0164	Sample Size: 23.76 g (wet)	Dry Weight:12.60 g
	Prepared: 07-Oct-2019	Final Volume: 2.5 mL	% Solids: 53.02
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19J0044-03 A 01
	Cleanup Batch: CHJ0098	Initial Volume: 2.5 mL	
	Cleaned: 10-Oct-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19J0044-03 A 01
	Cleanup Batch: CHJ0096	Initial Volume: 2.5 mL	
	Cleaned: 10-Oct-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19J0044-03 A 01
	Cleanup Batch: CHJ0097	Initial Volume: 2.5 mL	
	Cleaned: 10-Oct-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	10	15.5	39.7	ND	ug/kg	U
Aroclor 1221	11104-28-2	10	15.5	39.7	ND	ug/kg	U
Aroclor 1232	11141-16-5	10	15.5	39.7	ND	ug/kg	U
Aroclor 1242	53469-21-9	10	15.5	39.7	ND	ug/kg	U
Aroclor 1248	12672-29-6	10	15.5	39.7	**323**	ug/kg	D
Aroclor 1254	11097-69-1	10	15.5	39.7	**1040**	ug/kg	D
Aroclor 1260	11096-82-5	10	5.8	39.7	**349**	ug/kg	D
Aroclor 1262	37324-23-5	10	5.8	39.7	ND	ug/kg	U
Aroclor 1268	11100-14-4	10	5.8	39.7	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*199*	*%*	*, P1
Surrogate: Tetrachlorometaxylene				*44-120 %*	*77.2*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*110*	*%*	P1
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*95.0*	*%*	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	15-Oct-2019 14:30

J6-SC1b-00to10-82719

19J0044-04 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/27/2019 19:30
Instrument: ECD7 Analyst: JGR — Analyzed: 10/12/2019 00:39

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19J0044-04 A 01
	Preparation Batch: BHJ0164	Sample Size: 24.06 g (wet)	Dry Weight:12.54 g
	Prepared: 07-Oct-2019	Final Volume: 2.5 mL	% Solids: 52.10
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19J0044-04 A 01
	Cleanup Batch: CHJ0098	Initial Volume: 2.5 mL	
	Cleaned: 10-Oct-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19J0044-04 A 01
	Cleanup Batch: CHJ0096	Initial Volume: 2.5 mL	
	Cleaned: 10-Oct-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19J0044-04 A 01
	Cleanup Batch: CHJ0097	Initial Volume: 2.5 mL	
	Cleaned: 10-Oct-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	10	15.6	39.9	ND	ug/kg	U
Aroclor 1221	11104-28-2	10	15.6	39.9	ND	ug/kg	U
Aroclor 1232	11141-16-5	10	15.6	39.9	ND	ug/kg	U
Aroclor 1242	53469-21-9	10	15.6	39.9	ND	ug/kg	U
Aroclor 1248	12672-29-6	10	15.6	39.9	ND	ug/kg	U
Aroclor 1254	11097-69-1	10	15.6	39.9	**720**	ug/kg	D
Aroclor 1260	11096-82-5	10	5.9	39.9	**444**	ug/kg	D
Aroclor 1262	37324-23-5	10	5.9	39.9	ND	ug/kg	U
Aroclor 1268	11100-14-4	10	5.9	39.9	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*255*	*%*	*, P1
Surrogate: Tetrachlorometaxylene				*44-120 %*	*83.0*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*147*	*%*	*, P1
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*100*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	15-Oct-2019 14:30

J6-SC1b-10to20-82719

19J0044-05 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/27/2019 19:35
Instrument: ECD7 Analyst: JGR — Analyzed: 10/12/2019 01:00

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19J0044-05 A 01
	Preparation Batch: BHJ0164	Sample Size: 24.27 g (wet)	Dry Weight:12.59 g
	Prepared: 07-Oct-2019	Final Volume: 2.5 mL	% Solids: 51.89
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19J0044-05 A 01
	Cleanup Batch: CHJ0098	Initial Volume: 2.5 mL	
	Cleaned: 10-Oct-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19J0044-05 A 01
	Cleanup Batch: CHJ0096	Initial Volume: 2.5 mL	
	Cleaned: 10-Oct-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19J0044-05 A 01
	Cleanup Batch: CHJ0097	Initial Volume: 2.5 mL	
	Cleaned: 10-Oct-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	5	7.7	19.9	ND	ug/kg	U
Aroclor 1221	11104-28-2	5	7.7	19.9	ND	ug/kg	U
Aroclor 1232	11141-16-5	5	7.7	19.9	ND	ug/kg	U
Aroclor 1242	53469-21-9	5	7.7	19.9	ND	ug/kg	U
Aroclor 1248	12672-29-6	5	7.7	19.9	**84.7**	ug/kg	D
Aroclor 1254	11097-69-1	5	7.7	19.9	**161**	ug/kg	D
Aroclor 1260	11096-82-5	5	2.9	19.9	**178**	ug/kg	D
Aroclor 1262	37324-23-5	5	2.9	19.9	ND	ug/kg	U
Aroclor 1268	11100-14-4	5	2.9	19.9	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*160*	*%*	*, P1
Surrogate: Tetrachlorometaxylene				*44-120 %*	*78.8*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*103*	*%*	P1
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*88.0*	*%*	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	15-Oct-2019 14:30

R4-SC1b-10to20-82819

19J0044-06 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/28/2019 13:55
Instrument: ECD7 Analyst: JGR — Analyzed: 10/12/2019 01:21

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19J0044-06 A 01
	Preparation Batch: BHJ0164	Sample Size: 23.94 g (wet)	Dry Weight:12.55 g
	Prepared: 07-Oct-2019	Final Volume: 2.5 mL	% Solids: 52.44
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19J0044-06 A 01
	Cleanup Batch: CHJ0098	Initial Volume: 2.5 mL	
	Cleaned: 10-Oct-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19J0044-06 A 01
	Cleanup Batch: CHJ0096	Initial Volume: 2.5 mL	
	Cleaned: 10-Oct-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19J0044-06 A 01
	Cleanup Batch: CHJ0097	Initial Volume: 2.5 mL	
	Cleaned: 10-Oct-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	5	7.8	19.9	ND	ug/kg	U
Aroclor 1221	11104-28-2	5	7.8	19.9	ND	ug/kg	U
Aroclor 1232	11141-16-5	5	7.8	19.9	ND	ug/kg	U
Aroclor 1242	53469-21-9	5	7.8	19.9	ND	ug/kg	U
Aroclor 1248	12672-29-6	5	7.8	19.9	**74.8**	ug/kg	D
Aroclor 1254	11097-69-1	5	7.8	19.9	**157**	ug/kg	D
Aroclor 1260	11096-82-5	5	2.9	19.9	**170**	ug/kg	D
Aroclor 1262	37324-23-5	5	2.9	19.9	ND	ug/kg	U
Aroclor 1268	11100-14-4	5	2.9	19.9	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*151*	*%*	*, P1
Surrogate: Tetrachlorometaxylene				*44-120 %*	*75.7*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*98.5*	*%*	P1
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*88.8*	*%*	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	15-Oct-2019 14:30

H3-SC1b-00to10-82919

19J0044-07 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/28/2019 20:05
Instrument: ECD7 Analyst: JGR — Analyzed: 10/12/2019 01:42

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19J0044-07 A 01
	Preparation Batch: BHJ0164	Sample Size: 23.91 g (wet)	Dry Weight:12.61 g
	Prepared: 07-Oct-2019	Final Volume: 2.5 mL	% Solids: 52.75
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19J0044-07 A 01
	Cleanup Batch: CHJ0098	Initial Volume: 2.5 mL	
	Cleaned: 10-Oct-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19J0044-07 A 01
	Cleanup Batch: CHJ0096	Initial Volume: 2.5 mL	
	Cleaned: 10-Oct-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19J0044-07 A 01
	Cleanup Batch: CHJ0097	Initial Volume: 2.5 mL	
	Cleaned: 10-Oct-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	10	15.5	39.6	ND	ug/kg	U
Aroclor 1221	11104-28-2	10	15.5	39.6	ND	ug/kg	U
Aroclor 1232	11141-16-5	10	15.5	39.6	ND	ug/kg	U
Aroclor 1242	53469-21-9	10	15.5	39.6	ND	ug/kg	U
Aroclor 1248	12672-29-6	10	15.5	39.6	**250**	ug/kg	P1, D
Aroclor 1254	11097-69-1	10	15.5	39.6	**775**	ug/kg	D
Aroclor 1260	11096-82-5	10	5.8	39.6	**460**	ug/kg	D
Aroclor 1262	37324-23-5	10	5.8	39.6	ND	ug/kg	U
Aroclor 1268	11100-14-4	10	5.8	39.6	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*206*	*%*	*, P1
Surrogate: Tetrachlorometaxylene				*44-120 %*	*72.6*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*135*	*%*	*, P1
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*86.6*	*%*	

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2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	15-Oct-2019 14:30

H3-SC1b-10-20-82919

19J0044-08 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/28/2019 20:10
Instrument: ECD7 Analyst: JGR — Analyzed: 10/12/2019 02:02

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19J0044-08 A 01
	Preparation Batch: BHJ0164	Sample Size: 23.85 g (wet)	Dry Weight:12.68 g
	Prepared: 07-Oct-2019	Final Volume: 2.5 mL	% Solids: 53.18
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19J0044-08 A 01
	Cleanup Batch: CHJ0098	Initial Volume: 2.5 mL	
	Cleaned: 10-Oct-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19J0044-08 A 01
	Cleanup Batch: CHJ0096	Initial Volume: 2.5 mL	
	Cleaned: 10-Oct-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19J0044-08 A 01
	Cleanup Batch: CHJ0097	Initial Volume: 2.5 mL	
	Cleaned: 10-Oct-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	10	15.4	39.4	ND	ug/kg	U
Aroclor 1221	11104-28-2	10	15.4	39.4	ND	ug/kg	U
Aroclor 1232	11141-16-5	10	15.4	39.4	ND	ug/kg	U
Aroclor 1242	53469-21-9	10	15.4	39.4	ND	ug/kg	U
Aroclor 1248	12672-29-6	10	15.4	39.4	ND	ug/kg	U
Aroclor 1254	11097-69-1	10	15.4	39.4	**1070**	ug/kg	D
Aroclor 1260	11096-82-5	10	5.8	39.4	**474**	ug/kg	D
Aroclor 1262	37324-23-5	10	5.8	39.4	ND	ug/kg	U
Aroclor 1268	11100-14-4	10	5.8	39.4	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*238*	*%*	*
Surrogate: Tetrachlorometaxylene				*44-120 %*	*76.5*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*162*	*%*	*
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*88.6*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	15-Oct-2019 14:30

J5-SC1b-00to10-82719

19J0044-09 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/27/2019 14:45
Instrument: ECD7 Analyst: JGR — Analyzed: 10/12/2019 02:44

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19J0044-09 A 01
	Preparation Batch: BHJ0164	Sample Size: 27.18 g (wet)	Dry Weight:12.55 g
	Prepared: 07-Oct-2019	Final Volume: 2.5 mL	% Solids: 46.19
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19J0044-09 A 01
	Cleanup Batch: CHJ0098	Initial Volume: 2.5 mL	
	Cleaned: 10-Oct-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19J0044-09 A 01
	Cleanup Batch: CHJ0096	Initial Volume: 2.5 mL	
	Cleaned: 10-Oct-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19J0044-09 A 01
	Cleanup Batch: CHJ0097	Initial Volume: 2.5 mL	
	Cleaned: 10-Oct-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	5	7.8	19.9	ND	ug/kg	U
Aroclor 1221	11104-28-2	5	7.8	19.9	ND	ug/kg	U
Aroclor 1232	11141-16-5	5	7.8	19.9	ND	ug/kg	U
Aroclor 1242	53469-21-9	5	7.8	19.9	ND	ug/kg	U
Aroclor 1248	12672-29-6	5	7.8	19.9	ND	ug/kg	U
Aroclor 1254	11097-69-1	5	7.8	19.9	**320**	ug/kg	D
Aroclor 1260	11096-82-5	5	2.9	19.9	**279**	ug/kg	D
Aroclor 1262	37324-23-5	5	2.9	19.9	ND	ug/kg	U
Aroclor 1268	11100-14-4	5	2.9	19.9	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*151*	*%*	*, P1
Surrogate: Tetrachlorometaxylene				*44-120 %*	*79.5*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*100*	*%*	P1
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*85.6*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	15-Oct-2019 14:30

J5-SC1b-10to20-82719

19J0044-10 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 08/27/2019 14:50
Instrument: ECD7 Analyst: JGR — Analyzed: 10/12/2019 03:05

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19J0044-10 A 01
	Preparation Batch: BHJ0164	Sample Size: 24 g (wet)	Dry Weight:12.59 g
	Prepared: 07-Oct-2019	Final Volume: 2.5 mL	% Solids: 52.47
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19J0044-10 A 01
	Cleanup Batch: CHJ0098	Initial Volume: 2.5 mL	
	Cleaned: 10-Oct-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19J0044-10 A 01
	Cleanup Batch: CHJ0096	Initial Volume: 2.5 mL	
	Cleaned: 10-Oct-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19J0044-10 A 01
	Cleanup Batch: CHJ0097	Initial Volume: 2.5 mL	
	Cleaned: 10-Oct-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	10	15.5	39.7	ND	ug/kg	U
Aroclor 1221	11104-28-2	10	15.5	39.7	ND	ug/kg	U
Aroclor 1232	11141-16-5	10	15.5	39.7	ND	ug/kg	U
Aroclor 1242	53469-21-9	10	15.5	39.7	ND	ug/kg	U
Aroclor 1248	12672-29-6	10	15.5	39.7	**268**	ug/kg	D
Aroclor 1254	11097-69-1	10	15.5	39.7	**681**	ug/kg	D
Aroclor 1260	11096-82-5	10	5.8	39.7	**266**	ug/kg	D
Aroclor 1262	37324-23-5	10	5.8	39.7	ND	ug/kg	U
Aroclor 1268	11100-14-4	10	5.8	39.7	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*179*	*%*	*, P1
Surrogate: Tetrachlorometaxylene				*44-120 %*	*77.0*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*116*	*%*	P1
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*88.0*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	15-Oct-2019 14:30

Aroclor PCB - Quality Control

Batch BHJ0164 - EPA 3546 (Microwave)

Instrument: ECD7 Analyst: JGR

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BHJ0164-BLK1)				Prepared: 07-Oct-2019 Analyzed: 11-Oct-2019 20:49							
Aroclor 1016	ND	1.6	4.0	ug/kg							U
Aroclor 1221	ND	1.6	4.0	ug/kg							U
Aroclor 1232	ND	1.6	4.0	ug/kg							U
Aroclor 1242	ND	1.6	4.0	ug/kg							U
Aroclor 1248	ND	1.6	4.0	ug/kg							U
Aroclor 1254	ND	1.6	4.0	ug/kg							U
Aroclor 1260	ND	0.6	4.0	ug/kg							U
Aroclor 1262	ND	0.6	4.0	ug/kg							U
Aroclor 1268	ND	0.6	4.0	ug/kg							U
Surrogate: Decachlorobiphenyl	8.12			ug/kg	*8.00*		*101*	*40-126*			
Surrogate: Tetrachlorometaxylene	7.26			ug/kg	*8.00*		*90.7*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	8.43			ug/kg	*8.00*		*105*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	6.42			ug/kg	*8.00*		*80.3*	*44-120*			
LCS (BHJ0164-BS1)				Prepared: 07-Oct-2019 Analyzed: 11-Oct-2019 21:10							
Aroclor 1016	87.9	1.6	4.0	ug/kg	101		87.2	56-120			
Aroclor 1260	87.8	0.6	4.0	ug/kg	101		87.1	58-120			
Surrogate: Decachlorobiphenyl	8.19			ug/kg	*8.00*		*102*	*40-126*			
Surrogate: Tetrachlorometaxylene	7.13			ug/kg	*8.00*		*89.1*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	8.51			ug/kg	*8.00*		*106*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	6.48			ug/kg	*8.00*		*81.0*	*44-120*			
LCS Dup (BHJ0164-BSD1)				Prepared: 07-Oct-2019 Analyzed: 11-Oct-2019 21:31							
Aroclor 1016	96.4	1.6	4.0	ug/kg	101		95.6	56-120	9.23	30	
Aroclor 1260	94.5	0.6	4.0	ug/kg	101		93.7	58-120	7.38	30	
Surrogate: Decachlorobiphenyl	9.40			ug/kg	*8.00*		*118*	*40-126*			
Surrogate: Tetrachlorometaxylene	7.90			ug/kg	*8.00*		*98.7*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	9.57			ug/kg	*8.00*		*120*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	6.98			ug/kg	*8.00*		*87.3*	*44-120*			
Duplicate (BHJ0164-DUP1)		**Source: 19J0044-08**		Prepared: 07-Oct-2019 Analyzed: 12-Oct-2019 02:23							
Aroclor 1016	ND	15.5	39.8	ug/kg		ND					U
Aroclor 1221	ND	15.5	39.8	ug/kg		ND					U
Aroclor 1232	ND	15.5	39.8	ug/kg		ND					U

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	15-Oct-2019 14:30

Aroclor PCB - Quality Control

Batch BHJ0164 - EPA 3546 (Microwave)

Instrument: ECD7 Analyst: JGR

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Duplicate (BHJ0164-DUP1)	**Source: 19J0044-08**			Prepared: 07-Oct-2019 Analyzed: 12-Oct-2019 02:23							
Aroclor 1242	ND	15.5	39.8	ug/kg		ND					U
Aroclor 1248	ND	15.5	39.8	ug/kg		ND					U
Aroclor 1254	915	15.5	39.8	ug/kg		1070			15.90	30	D
Aroclor 1260	454	5.9	39.8	ug/kg		474			4.31	30	D
Aroclor 1262	ND	5.9	39.8	ug/kg		ND					U
Aroclor 1268	ND	5.9	39.8	ug/kg		ND					U
Surrogate: Decachlorobiphenyl	21.5			ug/kg	*7.96*		*270*	*40-126*			*
Surrogate: Tetrachlorometaxylene	5.97			ug/kg	*7.96*		*75.0*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	14.6			ug/kg	*7.96*		*184*	*40-126*			*
Surrogate: Tetrachlorometaxylene [2C]	7.18			ug/kg	*7.96*		*90.2*	*44-120*			
Matrix Spike (BHJ0164-MS1)	**Source: 19J0044-01**			Prepared: 07-Oct-2019 Analyzed: 11-Oct-2019 22:33							
Aroclor 1016	76.5	1.5	4.0	ug/kg	99.6	ND	76.8	56-120			
Aroclor 1260	111	0.6	4.0	ug/kg	99.6	11.2	100	58-120			
Surrogate: Decachlorobiphenyl	9.23			ug/kg	*7.90*		*117*	*40-126*			
Surrogate: Tetrachlorometaxylene	6.66			ug/kg	*7.90*		*84.2*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	8.03			ug/kg	*7.90*		*102*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	6.86			ug/kg	*7.90*		*86.9*	*44-120*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BHJ0164-MSD1)	**Source: 19J0044-01**			Prepared: 07-Oct-2019 Analyzed: 11-Oct-2019 22:54							
Aroclor 1016	73.5	1.5	4.0	ug/kg	99.6	ND	73.8	56-120	4.05	30	
Aroclor 1260	98.6	0.6	4.0	ug/kg	99.6	11.2	87.8	58-120	11.40	30	
Surrogate: Decachlorobiphenyl	8.84			ug/kg	*7.90*		*112*	*40-126*			
Surrogate: Tetrachlorometaxylene	6.41			ug/kg	*7.90*		*81.2*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	7.45			ug/kg	*7.90*		*94.2*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	6.14			ug/kg	*7.90*		*77.7*	*44-120*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Reference (BHJ0164-SRM1)				Prepared: 07-Oct-2019 Analyzed: 11-Oct-2019 21:52							
Aroclor 1254	7060	77.2	198	ug/kg	5930		119	41.3-158.7			
Surrogate: Decachlorobiphenyl	111			ug/kg	*99.0*		*112*	*40-126*			
Surrogate: Tetrachlorometaxylene	89.7			ug/kg	*99.0*		*90.6*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	123			ug/kg	*99.0*		*124*	*40-126*			

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	15-Oct-2019 14:30

Aroclor PCB - Quality Control

Batch BHJ0164 - EPA 3546 (Microwave)

Instrument: ECD7 Analyst: JGR

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Reference (BHJ0164-SRM1)				Prepared: 07-Oct-2019 Analyzed: 11-Oct-2019 21:52							
Surrogate: Tetrachlorometaxylene [2C]	98.4			ug/kg	*99.0*		*99.4*	*44-120*			

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	15-Oct-2019 14:30

Certified Analyses included in this Report

Analyte	Certifications
EPA 8082A in Solid	
Aroclor 1016	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1016 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1221	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1221 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1232	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1232 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1242	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1242 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1248	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1248 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1254	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1254 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1260	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1260 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1262	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1262 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1268	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1268 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	01/31/2021
CALAP	California Department of Public Health CAELAP	2748	06/30/2019
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	01/01/2021
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2020
WADOE	WA Dept of Ecology	C558	06/30/2019
WA-DW	Ecology - Drinking Water	C558	06/30/2019

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Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number:	Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager:	Janet Knox	15-Oct-2019 14:30

Notes and Definitions

*	Flagged value is not within established control limits.
D	The reported value is from a dilution
J	Estimated concentration value detected below the reporting limit.
P1	The reported value is greater than 40% difference between the concentrations determined on two GC columns where applicable.
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

18 October 2019

Janet Knox
Pacific Groundwater Group
2377 Eastlake Ave. E. Suite 200
Seattle, WA 98102

RE: Swan Island Lagoon Sediment Investigation

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
19J0249	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.



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ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006

PJLA Testing
Accreditation # 66169

Chain of Custody Record

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date:9/12/2019	COC No:
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	____ of ____ COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115 19J0249
2377 Eastlake Ave E, Seattle WA 98102	standard			
206 329 0141 Phone	TAT if different from Below ____			SDG No.
206 329 6968 FAX	[X] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Relinquish to ARI	Sample Specific Notes:
J3-SC-00to10-102218	10/22/2018	12:40:00		S	1	x	580-81308-8
D6-SC-0to1-102118	10/21/2018	16:00:00		S	1	x	580-81257-26
R4-SC-0to1-102118	10/21/2018	18:40:00		S	1	x	580-81257-12

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification

[ ] *Non-Hazard* [ ] *Flammable* [ ] *Skin Irritant* *Poison B* [ ] *Unknown* [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

[ ] *Return To Client* [ ] *Disposal By Lab* [X] *Archive For* _____ *Months*

TA to relinquish 3 samples to ARI.

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PGG	10/2/19 14:35		ARI	10/15/19 1043
Relinquished by: B. Farrell	Company: SEA TA	Date/Time: 1043 10.15.19	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Oct-2019 17:27

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
J3-SC-00to10-102218	19J0249-01	Solid	22-Oct-2018 12:40	15-Oct-2019 10:43
D6-SC-0to1-102118	19J0249-02	Solid	21-Oct-2018 16:00	15-Oct-2019 10:43
R4-SC-0to1-102118	19J0249-03	Solid	21-Oct-2018 18:40	15-Oct-2019 10:43

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Oct-2019 17:27

Work Order Case Narrative

PCB Aroclors - EPA Method SW8082A

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

The matrix spike/matrix spike duplicate recoveries and RPD were within limits with the exception of analytes flagged on the associated forms.

WORK ORDER

19J0249

Client: Pacific Groundwater Group
Project: Swan Island Lagoon Sediment Investigation
Project Manager: Kelly Bottem
Project Number: Portland Harbor

Report To:
Pacific Groundwater Group
Janet Knox
2377 Eastlake Ave. E. Suite 200
Seattle, WA 98102
Phone: (206) 329-0141
Fax: -

Invoice To:
Pacific Groundwater Group
Janet Knox
2377 Eastlake Ave. E. Suite 200
Seattle, WA 98102
Phone :(206) 329-0141
Fax: -

Date Due: 29-Oct-2019 18:00 (10 day TAT)
Received By: Kenny Dang
Logged In By: Kenny Dang
Date Received: 15-Oct-2019 10:43
Date Logged In: 15-Oct-2019 11:35

Samples Received at: **0.9°C**

Intact, properly signed and dated custody seals attached to outside of cooler(s)	No	Custody papers included with the cooler	Yes
Custody papers properly filled out (in, signed, analyses requested, etc)	Yes	Was a temperature blank included in the cooler	No
Was sufficient ice used (if appropriate)	Yes	All bottles sealed in individual plastic bags	Yes
All bottles arrived in good condition (unbroken)	Yes	All bottle labels complete and legible	Yes
Number of containers listed on COC match number received	Yes	Bottle labels and tags agree with COC	Yes
Correct bottles used for the requested analyses	Yes	All VOC vials free of air bubbles	No
Analyses/bottles require preservation (attach preservation sheet excluding VOC)	No	Sufficient amount of sample sent in each bottle	Yes
Sample split at ARI	No		

Analysis	Due	TAT	Expires	Comments
19J0249-01 J3-SC-00to10-102218 [Solid] Sampled 22-Oct-2018 12:40 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, amber, 4 oz.				
Freeze and Hold Extractions Container	29-Oct-2019 15:00	10	22-Oct-2019 12:40	
19J0249-02 D6-SC-0to1-102118 [Solid] Sampled 21-Oct-2018 16:00 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Freeze and Hold Extractions Container	29-Oct-2019 15:00	10	21-Oct-2019 16:00	
19J0249-03 R4-SC-0to1-102118 [Solid] Sampled 21-Oct-2018 18:40 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, amber, 4 oz.				
Freeze and Hold Extractions Container	29-Oct-2019 15:00	10	21-Oct-2019 18:40	

Reviewed By

Date

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: PGG Project Name: Swan Island Lagoon

COC No(s): _____ (NA) Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 19J0249 Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1043 0.9 _____ _____ _____ _____ _____

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: DOO S206

Cooler Accepted by: KD Date: 10/15/19 Time: 1043

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used? ...	Bubble Wrap Wet Ice (Gel Packs) Baggies Foam Block Paper Other: _____		
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
How were bottles sealed in plastic bags?	Individually	(Grouped)	Not
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ...	(NA)	YES	NO
Were all VOC vials free of air bubbles?	(NA)	YES	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	(NA)		

Were the sample(s) split by ARI? (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: KD Date: 10/15/19 Time: 1135 Labels checked by: KD

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Oct-2019 17:27

J3-SC-00to10-102218

19J0249-01 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 10/22/2018 12:40
Instrument: ECD7 Analyst: JGR — Analyzed: 10/17/2019 22:32

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19J0249-01 A 01
	Preparation Batch: BHJ0482	Sample Size: 16.98 g (wet)	Dry Weight:12.53 g
	Prepared: 16-Oct-2019	Final Volume: 2.5 mL	% Solids: 73.81
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19J0249-01 A 01
	Cleanup Batch: CHJ0148	Initial Volume: 2.5 mL	
	Cleaned: 17-Oct-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19J0249-01 A 01
	Cleanup Batch: CHJ0145	Initial Volume: 2.5 mL	
	Cleaned: 17-Oct-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19J0249-01 A 01
	Cleanup Batch: CHJ0147	Initial Volume: 2.5 mL	
	Cleaned: 17-Oct-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	**10.4**	ug/kg	
Aroclor 1254	11097-69-1	1	1.6	4.0	**28.5**	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	**16.0**	ug/kg	
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*94.3*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*66.3*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*77.4*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*65.6*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Oct-2019 17:27

D6-SC-0to1-102118

19J0249-02 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 10/21/2018 16:00
Instrument: ECD7 Analyst: JGR — Analyzed: 10/18/2019 14:36

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19J0249-02 A 01
	Preparation Batch: BHJ0482	Sample Size: 29.94 g (wet)	Dry Weight:12.50 g
	Prepared: 16-Oct-2019	Final Volume: 2.5 mL	% Solids: 41.75
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19J0249-02 A 01
	Cleanup Batch: CHJ0148	Initial Volume: 2.5 mL	
	Cleaned: 17-Oct-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19J0249-02 A 01
	Cleanup Batch: CHJ0145	Initial Volume: 2.5 mL	
	Cleaned: 17-Oct-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19J0249-02 A 01
	Cleanup Batch: CHJ0147	Initial Volume: 2.5 mL	
	Cleaned: 17-Oct-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	10	15.6	40.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	10	15.6	40.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	10	15.6	40.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	10	15.6	40.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	10	15.6	40.0	**190**	ug/kg	P1, D
Aroclor 1254	11097-69-1	10	15.6	40.0	**708**	ug/kg	D
Aroclor 1260	11096-82-5	10	5.9	40.0	**634**	ug/kg	D
Aroclor 1262	37324-23-5	10	5.9	40.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	10	5.9	40.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*99.6*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*63.4*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*90.1*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*83.7*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Oct-2019 17:27

R4-SC-0to1-102118

19J0249-03 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 10/21/2018 18:40
Instrument: ECD7 Analyst: JGR — Analyzed: 10/18/2019 00:38

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 19J0249-03 A 01
	Preparation Batch: BHJ0482	Sample Size: 25.19 g (wet)	Dry Weight:12.50 g
	Prepared: 16-Oct-2019	Final Volume: 2.5 mL	% Solids: 49.62
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19J0249-03 A 01
	Cleanup Batch: CHJ0148	Initial Volume: 2.5 mL	
	Cleaned: 17-Oct-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19J0249-03 A 01
	Cleanup Batch: CHJ0145	Initial Volume: 2.5 mL	
	Cleaned: 17-Oct-2019	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:19J0249-03 A 01
	Cleanup Batch: CHJ0147	Initial Volume: 2.5 mL	
	Cleaned: 17-Oct-2019	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	**42.9**	ug/kg	
Aroclor 1254	11097-69-1	1	1.6	4.0	**102**	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	**76.9**	ug/kg	
Aroclor 1262	37324-23-5	1	0.6	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*103*	*%*	P1
Surrogate: Tetrachlorometaxylene				*44-120 %*	*61.8*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*64.5*	*%*	P1
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*70.9*	*%*	

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Oct-2019 17:27

Aroclor PCB - Quality Control

Batch BHJ0482 - EPA 3546 (Microwave)

Instrument: ECD7 Analyst: JGR

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BHJ0482-BLK1)				Prepared: 16-Oct-2019 Analyzed: 17-Oct-2019 21:09							
Aroclor 1016	ND	1.6	4.0	ug/kg							U
Aroclor 1221	ND	1.6	4.0	ug/kg							U
Aroclor 1232	ND	1.6	4.0	ug/kg							U
Aroclor 1242	ND	1.6	4.0	ug/kg							U
Aroclor 1248	ND	1.6	4.0	ug/kg							U
Aroclor 1254	ND	1.6	4.0	ug/kg							U
Aroclor 1260	ND	0.6	4.0	ug/kg							U
Aroclor 1262	ND	0.6	4.0	ug/kg							U
Aroclor 1268	ND	0.6	4.0	ug/kg							U
Surrogate: Decachlorobiphenyl	6.93			ug/kg	*8.00*		*86.6*	*40-126*			
Surrogate: Tetrachlorometaxylene	5.52			ug/kg	*8.00*		*69.0*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	6.53			ug/kg	*8.00*		*81.6*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	4.95			ug/kg	*8.00*		*61.8*	*44-120*			
LCS (BHJ0482-BS1)				Prepared: 16-Oct-2019 Analyzed: 17-Oct-2019 21:30							
Aroclor 1016	86.9	1.6	4.0	ug/kg	101		86.2	56-120			
Aroclor 1260	80.7	0.6	4.0	ug/kg	101		80.0	58-120			
Surrogate: Decachlorobiphenyl	6.96			ug/kg	*8.00*		*87.0*	*40-126*			
Surrogate: Tetrachlorometaxylene	6.45			ug/kg	*8.00*		*80.6*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	6.75			ug/kg	*8.00*		*84.3*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	6.15			ug/kg	*8.00*		*76.9*	*44-120*			
LCS Dup (BHJ0482-BSD1)				Prepared: 16-Oct-2019 Analyzed: 17-Oct-2019 21:51							
Aroclor 1016	86.4	1.6	4.0	ug/kg	101		85.7	56-120	0.52	30	
Aroclor 1260	81.3	0.6	4.0	ug/kg	101		80.6	58-120	0.78	30	
Surrogate: Decachlorobiphenyl	7.02			ug/kg	*8.00*		*87.7*	*40-126*			
Surrogate: Tetrachlorometaxylene	6.36			ug/kg	*8.00*		*79.5*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	6.98			ug/kg	*8.00*		*87.3*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	6.19			ug/kg	*8.00*		*77.4*	*44-120*			
Matrix Spike (BHJ0482-MS1)		**Source: 19J0249-01**		Prepared: 16-Oct-2019 Analyzed: 17-Oct-2019 22:53							
Aroclor 1016	62.5	1.6	4.0	ug/kg	101	ND	62.0	56-120			
Aroclor 1260	77.9	0.6	4.0	ug/kg	101	16.0	61.5	58-120			
Surrogate: Decachlorobiphenyl	7.66			ug/kg	*8.00*		*95.8*	*40-126*			

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Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Oct-2019 17:27

Aroclor PCB - Quality Control

Batch BHJ0482 - EPA 3546 (Microwave)

Instrument: ECD7 Analyst: JGR

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BHJ0482-MS1)	**Source: 19J0249-01**			Prepared: 16-Oct-2019 Analyzed: 17-Oct-2019 22:53							
Surrogate: Tetrachlorometaxylene	5.46			ug/kg	*8.00*		*68.3*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	6.16			ug/kg	*8.00*		*77.0*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.50			ug/kg	*8.00*		*68.8*	*44-120*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BHJ0482-MSD1)	**Source: 19J0249-01**			Prepared: 16-Oct-2019 Analyzed: 17-Oct-2019 23:14							
Aroclor 1016	56.4	1.6	4.0	ug/kg	101	ND	55.8	56-120	10.40	30	*
Aroclor 1260	69.8	0.6	4.0	ug/kg	101	16.0	53.5	58-120	11.00	30	*
Surrogate: Decachlorobiphenyl	7.39			ug/kg	*8.00*		*92.4*	*40-126*			
Surrogate: Tetrachlorometaxylene	5.00			ug/kg	*8.00*		*62.5*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	5.84			ug/kg	*8.00*		*73.1*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.01			ug/kg	*8.00*		*62.6*	*44-120*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Reference (BHJ0482-SRM1)				Prepared: 16-Oct-2019 Analyzed: 17-Oct-2019 22:11							
Aroclor 1254	4980	78.0	200	ug/kg	5930		84.0	41.3-158.7			
Surrogate: Decachlorobiphenyl	82.7			ug/kg	*100*		*82.7*	*40-126*			
Surrogate: Tetrachlorometaxylene	74.0			ug/kg	*100*		*74.0*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	88.5			ug/kg	*100*		*88.5*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	79.8			ug/kg	*100*		*79.8*	*44-120*			

Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Oct-2019 17:27

Certified Analyses included in this Report

Analyte	Certifications
EPA 8082A in Solid	
Aroclor 1016	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1016 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1221	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1221 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1232	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1232 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1242	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1242 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1248	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1248 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1254	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1254 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1260	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1260 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1262	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1262 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1268	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1268 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	01/31/2021
CALAP	California Department of Public Health CAELAP	2748	06/30/2019
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	01/01/2021
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2020
WADOE	WA Dept of Ecology	C558	06/30/2019
WA-DW	Ecology - Drinking Water	C558	06/30/2019

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Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number:	Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager:	Janet Knox	18-Oct-2019 17:27

Notes and Definitions

*	Flagged value is not within established control limits.
D	The reported value is from a dilution
J	Estimated concentration value detected below the reporting limit.
NRS	This surrogate not reported due to chromatographic interference
P1	The reported value is greater than 40% difference between the concentrations determined on two GC columns where applicable.
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

APPENDIX D4
ANALYTICAL LABORATORY DATA SUMMARY REPORTS SGS AXYS

SGS AXYS

2045 Mills Road West
Sidney, BC, Canada V8L5X2

TEL: (250) 655-5800
TOLL-FREE: 1-888-373-0881

SGS AXYS Client No.: 5055

Client Address: Pacific Groundwater Group
2377 Eastlake Ave. Suite 200
Seattle, WA. US 98102

The SGS AXYS contact for these data is Kalai Pillay.

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DIOXIN/FURAN ANALYSIS

SOLID SAMPLES

Contract: 5055
Data Package Identification: DPWG69768

Analysis WG69303

9 October 2019

PACIFIC GROUNDWATER GROUP
SOLID SAMPLES

DIOXIN AND FURAN ANALYSIS
SGS AXYS METHOD: MLA-017
5055: L31654-1 to -12

Project Name: Swan Island Lagoon Sed Investigation

09 October 2019

NARRATIVE

This narrative describes the analysis of twelve solid samples for polychlorinated dibenzodioxins and furans using high-resolution gas chromatography / high-resolution mass spectrometry (HRGC/HRMS).

SAMPLE RECEIPT AND STORAGE

The samples were received at SGS Axys on 6th August 2019. Details of sample conditions on receipt are provided on the sample receiving records. The samples were stored at -20°C prior to sample preparation and analysis.

The sample receiving chemist noted on the sample receiving records that the sample J5-SC-60to80-102218 (SGS AXYS ID: L31654-11) arrived at SGS AXYS with broken jar and sample L3-SC-00to10-102218 (SGS AXYS ID: L31654-4) was logged in based on sample container labelling information instead of the chain of custody.

SAMPLE PREPARATION AND ANALYSIS

The samples were homogenized as documented in the sample preparation records in WG69335. The work group note indicated that sample jar for J7-0to26-101218 (SGS AXYS ID: L31654-12) was observed to be with a broken bottom and a small portion (approximately 8 grams) of the sample was lost but the sample integrity was intact.

Extraction and analysis procedures were in general accordance with **USEPA Method 1613B,** as documented in SGS Axys Method **MLA-017**: "***Analytical Method for the Determination of Polychlorinated Dibenzodioxins and Dibenzofurans by EPA Method 1613B, EPA Method 8290/8290A or EPA Method DLM02.2***". A summary of the Axys method, which includes a list of modifications to the EPA method, follows this narrative.

The client samples and their corresponding QC samples were analyzed in one batch named WG69303, the composition of the batch is shown on the correlation table, and on the batch list heading the extraction workup sheets. For each batch, the QC samples consisted of a procedural blank, a lab-generated reference sample known as the Ongoing Precision and Recovery (OPR), and three certified reference material (CRMs). The blank and OPR were prepared using clean sand as the matrix; the CRMs using EDF-5183.

For each sample, an accurately weighed wet subsample corresponding to approximately 10 g dry weight was spiked with ^{13}C-labeled quantification standards and extracted in a Soxhlet apparatus using 80:20 toluene/acetone. The resulting extract was cleaned up using the standard chromatographic columns listed on the extraction workup sheets. The cleaned extract was concentrated and spiked with the labeled recovery standard (internal standard), for a final volume of 20 µL, 1 µL of which was injected for the DB5 column analysis, 2 µL for the DB225 confirmation analysis.

CALCULATION

Target analyte concentrations were determined by isotope dilution or internal standard quantification procedures, using Waters MassLynx software for the DB5 analysis and OPUS Quan software for the DB225 analysis. The equations for calculating concentrations from the GC-MS data are given in the method summary.

As described in the method summary, sample specific detection limits (SDLs) were determined from the noise for each analyte and used as the detection qualifier. To account for instrument variability and laboratory background levels, detection limits are reported no lower than 0.5 pg absolute (e.g. 0.05 pg/g for a 10 g sample). The reported detection limit is the greater of the SDL and the 0.5 pg absolute reporting limit.

If the data validation chemists modified the concentrations, detection limits, or recoveries from as they appear on the quantification pages, those modifications are documented on the audit reports included at the end of the analysis reports. Some edits may in addition be annotated by hand on the quantification pages themselves.

Homologue totals were obtained by summing the concentrations of all detected congeners at each level of chlorination. Toxic Equivalents (TEQs) were calculated using WHO 2005 TEFs. Congener peaks that did not meet the method ion abundance ratio criteria were excluded from the homologue totals and TEQ calculations.

REPORTING CONVENTIONS

For internal tracking, SGS Axys assigned the client contract number 5055. Axys logged the samples under unique laboratory identifiers of the form L31654-XX, where X is a numeral. All data reports refer to both the client and Axys IDs, which are cross-referenced on the correlation table.

Any extra work required and performed after the initial instrumental analysis of a sample extract is given an extra test suffix code. This single letter code per extra work performed is added to the AXYS sample ID as a suffix and is combined with any other applicable test suffix codes. The extra work codes used to report data in this package include:

i = instrumental re-analysis performed on the sample extract
W = the sample extract was diluted followed by instrumental re-analysis

The following laboratory qualifier flags are used in this data package:

B = analyte found in the sample and the lab blank
J = the concentration is above the SDL, but below the lowest calibration equivalent
K = a GC peak was detected that did not meet all the method specifications for positive identification as the target analyte. The reported value is the estimated maximum possible concentration.
U = not detected
T = result quantified against alternate labeled compound(s)

Results are reported to three significant figures, in units of picograms per gram (pg/g), on a dry weight basis.

QA/QC NOTES

The samples and the QC samples were prepared alongside each other and were subjected to the same analytical procedures for each analysis batch. The sample results were evaluated in comparison to the batch QC samples.

- Sample analyte concentrations are not blank corrected. Blank data should be taken into consideration when evaluating sample data. Blank data should be evaluated against specifications using the same blank sample size as the size of the client samples.
- By virtue of the isotope dilution/internal standard quantification procedures, data are recovery corrected for possible losses during extraction and cleanup.
- All initial calibration, calibration verification, OPR, blank, and labeled compound recovery specifications were met with the following exceptions:

1,2,3,4,6,7,8-HPCDD was detected slightly above the method limit. Blank data should be taken into consideration when evaluating sample data.

For samples listed in the following table, an interference was observed with the acquisition of 12378-PeCDD consistent with the presence of a phthalate ester. This interference affected the response of 12378-PeCDD and 13C-12378-PeCDD equally, resulting in a calculated over-recovery of 13C-12378-PeCDD, but not affecting the accuracy of the 12378-PeCDD result. Due to the calculated over-recovery of the surrogate, the total PeCDD result would have been under-reported and thus a correction factor was applied based on the ratio of 13C-PeCDD to 13C-PeCDF in the samples compared to the opening calibration verification. The results for total PeCDDs have been flagged with a 'T'.

Client ID	SGS AXYS ID
L3-SC-00to10-102218	L31654-4
F1-0to23-101418	L31654-5
R4-SC-120to138-102118	L31654-6
J6-SC-40to60-102218	L31654-9
J5-SC-60to80-102218	L31654-11
J7-0to26-101218	L31654-12

ANALYTICAL DISCUSSION

DB-5 analysis

Samples listed in the following table were instrumentally re-analyzed due to instrument disruption. The re-analysis was successful, and this data are reported (indicated by the test suffix 'i' added to SGS AXYS IDs).

Client ID	SGS AXYS ID
R1-0to30-101518	L31654-2
B1-0to20-101418	L31654-3
L3-SC-00to10-102218	L31654-4
F1-0to23-101418	L31654-5
R4-SC-120to138-102118	L31654-6
B5-0to26-100818	L31654-7
Lab Blank	WG69303-101
OPR	WG69303-102

Sample D6-SC-108to123-102118 (SGS AXYS ID: L31654-1) was instrumentally re-analyzed twice due to instrument disruption. The secondary re-analysis was successful, and this data are reported (indicated by the test suffix 'i2' added to SGS AXYS ID).

Samples J6-SC-40to60-102218, D6-SC-2to4-102118, J5-SC-60to80-102218 and J7-0to26-101218 (SGS AXYS IDs: L31654-9, -10, -11 and -12, respectively) were diluted to bring the area counts for some compounds to be within the calibrated linear ranges. The results for the affected compounds are reported from the dilution data (indicated by the suffix 'W' following SGS AXYS IDs).

DB-225 analysis

No analytical difficulties were encountered.

DATA PACKAGE

This data package, assigned a unique identifier DPWG69768, includes:

- Method summary
- Sample correlation table
- Sample receiving documentation
- Sample homogenization records
- Laboratory extraction worksheets
- Sample data reports (in order of SGS Axys sample ID)
- QC sample data reports
- Instrumental QC data reports and mass resolution printouts (organized by analysis start date)
- Audit reports
- Sample raw data (in order of SGS Axys sample ID)
- QC sample raw data
- Instrumental QC raw data (organized by analysis start date)
- Accreditation scope

I certify that this data package complies with the terms and conditions of the contract, both technically and for completeness, except for the conditions detailed above. In addition, I certify, that to the best of my knowledge and belief, the data as reported are true and accurate. The following signature, on behalf of SGS Axys Analytical Services Ltd, authorizes the release of the data contained in this data package.

Henry Huang

Signed: Henry Huang, Ph.D., Data Validation Chemist

09-Oct-2019

Date Signed

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SGS AXYS Analytical Services Ltd.

SUMMARY OF SGS AXYS METHOD MLA-017 REV. 20 VER. 10:

ANALYTICAL METHOD FOR THE DETERMINATION OF POLYCHLORINATED DIBENZODIOXINS AND DIBENZOFURANS BY EPA METHOD 1613B, 8290/8290A OR DLM02.2

SGS AXYS Method MLA-017 describes the analysis of polychlorinated (tetra-octa) dibenzo-dioxins and dibenzofurans in solids (sediment, soil, biosolid, pulp), tissues (including blood, serum, plasma and milk), aqueous samples, XAD-2 columns, air samples, particulate filters and solvent extracts.

Target Analytes

Dioxins (PCDD)	Furans (PCDF)
2,3,7,8 Tetrachlorodibenzodioxin (TCDD)	2,3,7,8 Tetrachlorodibenzofuran (TCDF)
Total TCDD	Total TCDF
1,2,3,7,8 Pentachlorodibenzodioxin (PeCDD)	1,2,3,7,8 Pentachlorodibenzofuran (PeCDF)
Total PeCDD	2,3,4,7,8 PeCDF
	Total PeCDF
1,2,3,4,7,8 Hexachlorodibenzodioxin (HxCDD)	1,2,3,4,7,8 Hexachlorodibenzofuran (HxCDF)
1,2,3,6,7,8 HxCDD	1,2,3,6,7,8 HxCDF
1,2,3,7,8,9 HxCDD	1,2,3,7,8,9 HxCDF
Total HxCDD	2,3,4,6,7,8 HxCDF
	Total HxCDF
1,2,3,4,6,7,8 Heptachlorodibenzodioxin (HpCDD)	1,2,3,4,6,7,8 Heptachlorodibenzofuran (HpCDF)
Total HpCDD	1,2,3,4,7,8,9 HpCDF
	Total HpCDF
Octachlorodibenzodioxin (OCDD)	Octachlorodibenzofuran (OCDF)

1.0 EXTRACTION AND CLEANUP PROCEDURES

All samples are spiked with ^{13}C-labelled surrogate standards prior to extraction and extracted as per the table below. Optional extraction procedures are shown within parentheses.

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Sample Extraction

Matrix	Extraction
Aqueous samples	Liquid-liquid extraction with dichloromethane. (If visible particulates are present the sample is filtered prior to extraction and the particulate fraction separately extracted by Soxhlet extraction or Dean-Stark Soxhlet extraction. The two extracts are then combined.)
Solid (sediment, soil, sludge, particles on filter paper)	Soxhlet extraction with toluene:acetone 80:20. (optional: Dean-Stark Soxhlet extraction with toluene)
Solid (pulp, black liquor)	Soxhlet extraction with toluene:acetone 80:20.
Solid (ash, slag)	Sonication with hydrochloric acid and filtering. Liquid-liquid extraction of filtrate using dichloromethane, Soxhlet extraction of particulate using toluene:acetone 80:20. The two extracts are combined.
Tissue	Soxhlet extraction with dichloromethane:hexane 1:1 (optional: Base digestion and liquid-liquid extraction with hexane)
Whole blood/serum	Liquid-liquid extraction with ethanol:hexane:saturated ammonium sulfate.
Milk	Liquid-liquid extraction with acetone and hexane.
XAD-2 column and filter	XAD-2 adsorbent is dried and Soxhlet extracted (with toluene:acetone 80:20) or Dean-Stark Soxhlet extracted (with toluene). The filter is extracted by Dean-Stark Soxhlet extraction using toluene.
Ambient air (PUF and filter)	The PUF and filter(s) are Soxhlet extracted together using toluene:acetone 80:20.
Stationary Source Air Samples (Stack Gas sample trains)	The filter is sonicated with dilute hydrochloride acid and filtered. Equipment rinsates are collected, filtered, dried and/or extracted depending on sampling conditions.

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The extracts are then routinely cleaned up according to the following table:

Water Soil Sediment XAD-2 adsorbent Air samples Sludge High organic soil	(Base/acid wash →) DX $AgNO_3$ 30g 44% → (DX Florisil →) Copper → Alumina/carbon/Celite combination column
Tissue Blood/serum/ plasma Milk	(Biobead →) DX 20g 44% → DX Florisil → (Copper →) Alumina/carbon/Celite combination column

Note: Items in brackets are optional procedures that may be used if needed or if required by Project Managers.

An optional Biobead clean-up may be carried out for biosolid sample extracts.

2.0 INSTRUMENTATION

Instrumental analysis is performed on a DB-5 capillary chromatography column coupled to a high-resolution mass spectrometer (HRMS). The HRMS is operated at a static (10000) mass resolution in the voltage selected ion-recording mode (V-SIR) using selected PFK ions as a reference for mass lock. Two masses from the molecular ion cluster are used to monitor each of the target analytes and ^{13}C-labelled surrogate standards. Five chlorinated diphenylethers are monitored to check for interference using one specific ion for each compound.

A second column, DB-225, is used for confirmation/quantification of 2,3,7,8-TCDF and 1,2,3,7,8,9-HxCDD in all samples and matrices for which a peak was detected in the DB-5 run for these congeners.

Upon client request, the concentrations of PCDD/F may be determined using bracketing calibration procedures and a smaller suite of surrogate standards.

3.0 CALIBRATION

Initial calibration (default procedure) is performed using a five point calibration series of solutions that encompass the working concentration range. Initial calibration solutions contain the suite of labelled surrogate and recovery standards and authentic target PCDDs/PCDFs. Calibration is verified at least once every 12 hours by analysis of a mid-level calibration solution. Calibration procedures use the mean RRFs determined from the initial calibration to calculate analyte concentrations.

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Alternately clients may request initial calibration be performed using a six point calibration series of solutions if lower detection limits are required.

Concentration of PCDD/PCDF Calibration Solutions

	Concentration (ng/mL)						Authentic Standard Amount added to sample (pg)
	CS0.2	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**	
Native Compound							
2,3,7,8-TCDD	0.1	0.5	2	10	40	200	200
2,3,7,8-TCDF	0.1	0.5	2	10	40	200	200
1,2,3,7,8-PeCDD	0.5	2.5	10	50	200	1000	1000
1,2,3,7,8-PeCDF	0.5	2.5	10	50	200	1000	1000
2,3,4,7,8-PeCDF	0.5	2.5	10	50	200	1000	1000
1,2,3,4,7,8-HxCDD	0.5	2.5	10	50	200	1000	1000
1,2,3,6,7,8-HxCDD	0.5	2.5	10	50	200	1000	1000
1,2,3,7,8,9-HXCDD	0.5	2.5	10	50	200	1000	1000
1,2,3,4,7,8-HxCDF	0.5	2.5	10	50	200	1000	1000
1,2,3,6,7,8-HxCDF	0.5	2.5	10	50	200	1000	1000
1,2,3,7,8,9-HxCDF	0.5	2.5	10	50	200	1000	1000
2,3,4,6,7,8-HxCDF	0.5	2.5	10	50	200	1000	1000
1,2,3,4,6,7,8-HpCDD	0.5	2.5	10	50	200	1000	1000
1,2,3,4,6,7,8-HpCDF	0.5	2.5	10	50	200	1000	1000
1,2,3,4,7,8,9-HpCDF	0.5	2.5	10	50	200	1000	1000
OCDD	1.0	5.0	20	100	400	2000	2000
OCDF	1.0	5.0	20	100	400	2000	2000
Surrogate Standards							**Surrogate Standard Amount added to sample (pg) [1]**
$^{13}C_{12}$-2,3,7,8-TCDD	100	100	100	100	100	100	2000
$^{13}C_{12}$-2,3,7,8-TCDF	100	100	100	100	100	100	2000
$^{13}C_{12}$-1,2,3,7,8-PeCDD	100	100	100	100	100	100	2000
$^{13}C_{12}$-1,2,3,7,8-PeCDF	100	100	100	100	100	100	2000
$^{13}C_{12}$-2,3,4,7,8-PeCDF	100	100	100	100	100	100	2000
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	100	100	100	100	100	100	2000
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	100	100	100	100	100	100	2000
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	100	100	100	100	100	100	2000
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	100	100	100	100	100	100	2000
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	100	100	100	100	100	100	2000
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	100	100	100	100	100	100	2000
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	100	100	100	100	100	100	2000
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	100	100	100	100	100	100	2000
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	100	100	100	100	100	100	2000

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$^{13}C_{12}$-OCDD	200	200	200	200	200	200	4000
Cleanup Standard							
$^{37}Cl_4$-2,3,7,8-TCDD	0.1	0.5	2	10	40	200	200
Recovery Standard							
$^{13}C_{12}$-1,2,3,4-TCDD	100	100	100	100	100	100	2000
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	100	100	100	100	100	100	2000

[1] Blood/plasma/serum and milk samples are spiked with ½ the amounts of surrogate and recovery standards shown in this table.

4.0 QUANTIFICATION PROCEDURES

The response for any component is taken as the sum of the integrated peak areas for the two characteristic masses for that compound. Quantification is by the isotope dilution method. Target concentrations are determined with respect to labelled surrogate standards. Mean relative response factors (RRF), determined from the multi-level initial calibration series are used to convert raw peak areas in sample chromatograms to final concentrations as follows:

$$\text{Concentration of Target} = \left(\frac{\text{area of Target}}{\text{area of Qt Std}}\right) \times \left(\frac{\text{weight of Qt Std}}{\text{RRF}}\right) \times \left(\frac{1}{\text{weight of sample}}\right)$$

$$\textit{where} \quad \text{RRF} = \left(\frac{\text{area of Target}}{\text{area of Qt Std}}\right) \times \left(\frac{\text{weight of Qt Std}}{\text{weight of Target}}\right)$$

and the Qt Std is either the surrogate or the internal standard

Those compounds quantified against a labelled standard added at the beginning of the analysis procedure are recovery corrected by the method of quantification. Surrogate recoveries are determined similarly against the recovery (internal) standard and are used as general indicators of overall analytical quality.

4.1 Reporting Limits

Concentrations and detection limits for the 2,3,7,8-polychlorinated dioxins and furans (tetra-octa) are reported. Typical reporting units for all data are pg/g, pg/L or pg/sample. Concentrations for solids are reported on a dry weight basis. Concentrations in tissues (including blood and milk) are reported on a wet weight basis and/or on a lipid weight basis when requested. Concentrations in aqueous samples are reported on a volume basis. Concentrations in XAD-2 resin, filters and stack gas samples are reported on a per sample basis or a per volume basis. Concentrations in particulate filters are reported on a per sample basis.

The following are commonly requested reporting limits:

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Sample Specific Detection Limit or Sample Detection Limit (SDL) – determined individually for every sample analysis run by converting the area equivalent of 3.0 times (2.5 times for EPA 1600 series methods) the estimated chromatographic noise height to a concentration in the same manner that target peak responses are converted to final concentrations. The SDL accounts for any effect of matrix on the detection system and for recovery achieved through the analytical work-up. Equivalent term(s): Estimated Detection Limit (EDL) from EPA method 8290.

Method Detection Limit (MDL) - determined as specified by EPA Fed. Reg. 40 CFR Part 136 Appendix B (no iteration option). The 99% confidence level MDL is determined based on analysis of a minimum of 7 replicate matrix spikes fortified at 1-10 times the estimated detection limit. MDL is determined as required based on accreditation, contract and workload requirements.

Lower Method Calibration Limit (LMCL) - determined by prorating the concentration of the lowest calibration limit for sample size and extract volume. The following equation is used. ((lowest level cal conc.) x (extract volume))/sample size. Typical extract volume for PCDDs/PCDFs is 20 µL.

For the analysis of PCDDs/PCDFs SGS AXYS standard is to report sample concentrations using the SDL with a minimum reporting limit of 0.5 pg absolute.

Analyte Ions Monitored, Surrogates Used and RRF Determination for Dioxins/Furans

Analytes	Quantification Ion (m/z)	Confirmation Ion (m/z)	Surrogate	RRF Determined From
2,3,7,8-TCDD	319.8965	321.8936	$^{13}C_{12}$-2,3,7,8-TCDD	2,3,7,8-TCDD
1,3,6,8-TCDD *	319.8965	321.8936	$^{13}C_{12}$-2,3,7,8-TCDD	2,3,7,8-TCDD
1,3,7,9-TCDD *	319.8965	321.8936	$^{13}C_{12}$-2,3,7,8-TCDD	2,3,7,8-TCDD
1,2,3,7,8-PeCDD	353.8576	355.8546	$^{13}C_{12}$-1,2,3,7,8-PeCDD	1,2,3,7,8-PeCDD
1,2,3,4,7,8-HxCDD	389.8156	391.8127	$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	1,2,3,4,7,8-HxCDD
1,2,3,6,7,8-HxCDD	389.8156	391.8127	$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	1,2,3,6,7,8-HxCDD
1,2,3,7,8,9-HxCDD	389.8156	391.8127	Mean of $^{13}C_{12}$-1,2,3,6,7,8/1,2,3,4,7,8-HxCDD	1,2,3,7,8,9-HxCDD
1,2,3,4,6,7,8-HpCDD	423.7767	425.7737	$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	1,2,3,4,6,7,8-HpCDD
OCDD	457.7377	459.7348	$^{13}C_{12}$-OCDD	OCDD
2,3,7,8-TCDF	303.9016	305.8987	$^{13}C_{12}$-2,3,7,8 -TCDF	2,3,7,8-TCDF
1,2,7,8-TCDF *	303.9016	305.8987	$^{13}C_{12}$-2,3,7,8 -TCDF	2,3,7,8-TCDF
1,2,3,7,8-PeCDF	339.8597	341.8568	$^{13}C_{12}$-1,2,3,7,8-PeCDF	1,2,3,7,8-PeCDF
2,3,4,7,8-PeCDF	339.8597	341.8568	$^{13}C_{12}$-2,3,4,7,8-PeCDF	2,3,4,7,8-PeCDF
1,2,3,4,7,8-HxCDF	373.8207	375.8178	$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	1,2,3,4,7,8-HxCDF
1,2,3,6,7,8-HxCDF	373.8207	375.8178	$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	1,2,3,6,7,8-HxCDF
2,3,4,6,7,8-HxCDF	373.8207	375.8178	$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	2,3,4,6,7,8-HxCDF
1,2,3,7,8,9-HxCDF	373.8207	375.8178	$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	1,2,3,7,8,9-HxCDF
1,2,3,4,6,7,8-HpCDF	407.7818	409.7788	$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	1,2,3,4,6,7,8-HpCDF
1,2,3,4,7,8,9-HpCDF	407.7818	409.7788	$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	1,2,3,4,7,8,9-HpCDF
OCDF	441.7428	443.7398	$^{13}C_{12}$-OCDD	OCDF
Cleanup Standard				

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$^{37}Cl_4$-2,3,7,8-TCDD	327.8847	-	$^{13}C_{12}$-1,2,3,4-TCDD	
Field Standard				
$^{13}C_6$-1,2,3,4-TCDD	325.9166	327.9137	$^{13}C_{12}$-1,2,3,4-TCDD	$^{13}C_{12}$-1,2,3,4-TCDD
Labelled Surrogates	**Quantification Ion (m/z)**	**Confirmation Ion (m/z)**	**Recovery Calculated Using**	
$^{13}C_{12}$-2,3,7,8-TCDD	331.9368	333.9339	$^{13}C_{12}$-1,2,3,4-TCDD	
$^{13}C_{12}$-1,2,3,7,8-PeCDD	365.8978	367.8949	$^{13}C_{12}$-1,2,3,4-TCDD	
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	401.8559	403.8530	$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	401.8559	403.8530	$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	435.8169	437.8140	$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	
$^{13}C_{12}$-OCDD	469.7780	471.7750	$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	
$^{13}C_{12}$-2,3,7,8 -TCDF	315.9419	317.9389	$^{13}C_{12}$-1,2,3,4-TCDD	
$^{13}C_{12}$-1,2,3,7,8-PeCDF	351.9000	353.8970	$^{13}C_{12}$-1,2,3,4-TCDD	
$^{13}C_{12}$-2,3,4,7,8-PeCDF	351.9000	353.8970	$^{13}C_{12}$-1,2,3,4-TCDD	
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	383.8639	385.8610	$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	383.8639	385.8610	$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	383.8639	385.8610	$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	383.8639	385.8610	$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	417.8250	419.8220	$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	417.8250	419.8220	$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	
Recovery Standards				
$^{13}C_{12}$-1,2,3,4-TCDD	331.9368	333.9339	*Optional isomers which may be reported upon client request.	
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	401.8559	403.8530		
Cl-DPE Monitoring Ions				
Descriptor	**Exact M/Z**	**M/Z Type**	**Substance**	
3	375.8364	M+2	HxCDPE	
4	409.7974	M+2	HpCDPE	
5	445.7555	M+4	OCDPE	
6	479.7165	M+4	NCDPE	
7	513.6775	M+4	DCDPE	

5.0 QUALITY ACCEPTANCE CRITERIA

Samples are analyzed in batches consisting of a maximum of twenty samples, one procedural blank and one spiked matrix (OPR) sample. A duplicate is analyzed, provided there is sufficient sample, with batches containing 7-20 samples. Matrix spike/matrix spike duplicate (MS/MSD) pairs may be analyzed on an individual contract basis. The batch is carried through the complete analytical process as a unit. For sample data to be reportable, the batch QC data must meet the established acceptance criteria presented on the analysis reports.

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QC Specification Table: Authentic and Surrogate Standard Recoveries, CAL/VER, IPR, OPR and Samples

	Test Conc. (ng/mL)	IPR		OPR (%)	I-CAL (%)	CAL/VER (%)	Labelled Compound (% rec. in sample)	
		SD (%) *	$\bar{X}$ (%)				Warning Limits	Control Limits
Native Compound								
2,3,7,8-TCDD	10	28	83-129	70-130	20	78-125	-	-
2,3,7,8-TCDF	10	20	87-137	75-130	20	84-120	-	-
1,2,3,7,8-PeCDD	50	15	76-132	70-130	20	78-125	-	-
1,2,3,7,8-PeCDF	50	15	86-124	80-130	20	82-120	-	-
2,3,4,7,8-PeCDF	50	17.2	72-150	70-130	20	82-122	-	-
1,2,3,4,7,8-HxCDD	50	18.8	78-152	70-130	20	78-125	-	-
1,2,3,6,7,8-HxCDD	50	15.4	84-124	76-130	20	78-125	-	-
1,2,3,7,8,9-HXCDD	50	22.2	74-142	70-130	35	82-122	-	-
1,2,3,4,7,8-HxCDF	50	17.4	82-118	72-130	20	90-112	-	-
1,2,3,6,7,8-HxCDF	50	13.4	92-120	84-130	20	88-114	-	-
1,2,3,7,8,9-HxCDF	50	12.8	84-122	78-130	20	90-112	-	-
2,3,4,6,7,8-HxCDF	50	14.8	74-148	70-130	20	88-114	-	-
1,2,3,4,6,7,8-HpCDD	50	15.4	76-130	70-130	20	86-116	-	-
1,2,3,4,6,7,8-HpCDF	50	12.6	90-112	82-122	20	90-110	-	-
1,2,3,4,7,8,9-HpCDF	50	16.2	86-126	78-130	20	86-116	-	-
OCDD	100	19	89-127	78-130	20	79-125	-	-
OCDF	100	27	74-146	70-130	35	75-125	-	-
Surrogate Standards								
$^{13}C_{12}$-2,3,7,8-TCDD	100	37	28-134	25-130	35	82-121	40-120	25-130
$^{13}C_{12}$-2,3,7,8-TCDF	100	35	31-113	25-130	35	71-130	40-120	24-130
$^{13}C_{12}$-1,2,3,7,8-PeCDD	100	39	27-184	25-150	35	70-130	40-120	25-130
$^{13}C_{12}$-1,2,3,7,8-PeCDF	100	34	27-156	25-130	35	76-130	40-120	24-130
$^{13}C_{12}$-2,3,4,7,8-PeCDF	100	38	16-279	25-130	35	77-130	40-120	21-130
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	100	41	29-147	25-130	35	85-117	40-120	32-130
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	100	38	34-122	25-130	35	85-118	40-120	28-130
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	100	43	27-152	25-130	35	76-130	40-120	26-130
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	100	35	30-122	25-130	35	70-130	40-120	26-123
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	100	40	24-157	25-130	35	74-130	40-120	29-130
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	100	37	29-136	25-130	35	73-130	40-120	28-130
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	100	35	34-129	26-130	35	72-130	40-120	23-130
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	100	41	32-110	25-130	35	78-129	40-120	28-130
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	100	40	28-141	25-130	35	77-129	40-120	26-130
$^{13}C_{12}$-OCDD	200	47.5	20.5-138	25-130	35	70-130	25-120	17-130
Cleanup Standard								
$^{37}Cl_4$-2,3,7,8-TCDD	10	36	39-154	31-130	35	79-127	40-120	35-130

* For comparability with EPA 1613B the precision specification for IPR is stated as %SD (=standard deviation relative to the fortification level,)

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QC Specification Table: QC Samples, Instrumental Analysis, and Analyte Quantification

QC Parameter	Specification
Analysis Duplicate	Must agree to within ±20% of the mean (applicable to concentrations >10 times the DL)[1]
Procedural Blank	**Blood/serum/plasma and milk:** TCDD/F <0.2 pg/sample, PeCDD/F <0.5 pg/sample, HxCDD/F and HpCDD/F <1.0 pg/ sample, OCDD/F<5 pg/sample. **Other matrices:** TCDD/F <0.5 pg/sample, PeCDD/F, HxCDD/F, HpCDD/F <1.0 pg/sample, OCDD/F <5 pg/sample. Higher levels acceptable where all sample concentrations are > 10X the blank concentrations.
Detection Limit	SDL Requirements (where target concentrations are detectable or sample extracts display atypical interference, SDL values may be higher): **Blood/serum/plasma and milk:** Tetra-penta-CDD/F 0.2 pg/sample, Hexa-octa-CDD/F 0.5 pg/sample **Other matrices**: 0.5 pg/sample
Instrument Carry over and Background: **Toluene Blank** **Samples**	 A. 1st toluene blank following Cal Ver must have <0.6 pg TCDD and <25 pg OCDD[2]. B. 2nd toluene blank following Cal Ver must have <0.2 pg TCDD/F, <0.8 pg Pe-HpCDD/F, and <5.0 pg OCDD[2]. Blood/serum/plasma and milk extract analysis: As many toluene blanks as necessary are run to achieve an instrument blank level of <0.1 pg TCDD/F, <0.3 pg PeCDD/F, <0.5 pg HxCDD/F, <0.5 pg HpCDD/F and <3.5 pg OCDD. <10% contribution from preceding sample (based on observed instrument carryover rate).
Analyte Peak Response	Response must be below the upper calibrated range of the instrument. Data may be taken from more than one chromatogram to get the responses in the calibrated range.
Ion Ratios	Must be within ±15% of theoretical. For 1613B applications only (as per section 16.3 of 1613B) an alternate acceptance criteria of within ±10% of the ratio in the midpoint calibration (CS3) or calibration verification (Cal Ver), whichever is most recent., may be applied. Exception for blood/serum/plasma samples: Ion ratios for sample responses below the lowest calibration level equivalent must be within ±35% of theoretical.
Sensitivity	S:N ≥10:1 for all compounds in CS-0.2 for 1.0 µL injected, plus for blood/serum/plasma and milk S:N ≥3:1 for 0.05 pg injected 2,3,7,8-TCDD.

[1] Duplicate criterion is a guideline; final assessment depends upon sample characteristics, overall batch QC and on-going lab performance.

[2] Instrument background specifications are calculated from spiking labelled standard into the toluene blank and expressed as pg in a 20 µL extract.

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Modifications to EPA Method 1613B

The following sections of EPA Method 1613B have been modified as described below.

Section 2.1.2

Aqueous liquid from multiphase samples is liquid/liquid extracted with DCM. The extract from the aqueous phase is then combined with the extract from the solid phase portion of the sample.

Section 7.2.1

Anhydrous sodium sulfate (Na_2SO_4) is baked overnight prior to use. There is no solvent rinse with dichloromethane.

Section 7.10

The concentration of the labelled compound solution is 100 ng/mL (except for labeled OCDD which is 200 ng/mL) and is prepared in toluene; 20 µL of the labelled compound solution is spiked to solids and tissue samples to yield the method specified concentrations in the final extracts.

Section 7.11

The concentration of the cleanup standard spiking solution is 10 ng/mL (2 ng/mL for tissue samples) in toluene, and the sample spiking volume is 20 µL. The resulting concentration in the final extracts is reduced (to ¼ of the concentration specified in EPA method 1613B for all matrices except tissue, and to $^1/_{20}$ of the EPA method 1613B specified level for tissue).

Sections 7.13, 14.0, 15.0

A modified EPA 1613B/8290 procedure is offered that includes an additional lower level calibration solution, 0.2 times the concentration of CS1 in the initial calibration series so that initial calibration is based on a six-point series. The calibration solutions are prepared in nonane. A modified EPA 1613B/8290 procedure using calibration solutions prepared in toluene is also available.

Section 7.14

The concentration of the PAR spiking solutions is 0.2/1.0/2.0 ng/mL for tetra/penta, hexa, hepta, hexa/octas respectively and the spiking volume is 1 mL. The resulting final concentration in the extracts are as specified in the method.

Section 9.3.3

Table 7 (EPA 1613B) specifications for the percent recovery of surrogate standards in samples that are higher than 130% have been lowered to 130%, as presented in table ”QC Specification Table: Authentic and Surrogate Standard Recoveries, CAL/VER, IPR, OPR and Samples” of this document.

Section 11.5

Multiphase, predominately aqueous, samples containing >1% suspended solids may be prepared and extracted using the same procedure as samples containing ≤1% suspended solids with client approval. This involves separating the solids and aqueous phases by filtration, extracting the solids by Soxhlet extraction, extracting the filtrate by liquid/liquid

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extraction, and combining the extract from the two phases. Alternatively, with client approval, multiphase, predominately particulate, samples containing >1% suspended solids may be processed as solids samples using Soxhlet or Soxhlet Dean-Stark extraction.

Section 11.7

To avoid compromising sample integrity through contamination or loss of material to surfaces particles larger than 1 mm in solid samples are by default not subject to grinding prior to extraction. Instead solid samples are homogenized prior to sub-sampling by breaking up clumps with a disposable spoon and mixing/stirring. If required by the client rocks larger than 0.4 cm are removed. Surrogate standard is added after homogenization and sub-sampling.

Section 12.3

For solids samples with suitable moisture content, an option is offered for drying the sample with anhydrous sodium sulfate followed by Soxhlet extraction with 80:20 toluene:acetone. Alternatively Soxhlet Dean-Stark extraction using toluene is available

Section 12.3.1 – 12.3.5

Silica or quartz sand is not pre-extracted in the Dean Stark apparatus. Silica is baked the lab. Quartz sand is proofed prior to use. Sand is mixed with the sample in a beaker and then loaded into the soxhlet thimble.

Section 12.3.9.1.1

Sample extracts are reduced to approximately 1 mL after extraction, not 5 mL.

Section 12.4

The equilibration time for the sodium sulfate drying step is sufficient to produce a dry, free-flowing powder (minimum 30 minutes). This may be less than the 12-hour minimum specified in EPA 1613B.

Section 12.5.3

Ultra-pure water is used to rinse the extract between base and acid washes, not NaCl solution.

Section 12.6.1.1

Rotary evaporator baths are maintained at 35°C. Trends in QC blanks are monitored and diagnostic proofing is conducted if indicated instead of collecting proofs each day and archiving. Historical proofing tests have demonstrated that routine cleaning practices between samples are sufficient to ensure rotary evaporator cleanliness; as an additional safeguard the laboratory segregates processing of samples on the basis of predicted target concentration levels.

Section 12.7.3

Water baths are not used with the nitrogen blowdown apparatus.

Section 12.7.4

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Solvent exchange is dependent on the type of solvent present: if toluene is present the extract is reduced to 50 µL and topped up to 1 mL with hexane; if dichloromethane is present the extract is reduced to 300 µL and topped up to 1 mL with hexane.

Section 12.7.7

Sample extracts are concentrated in a microvial using nitrogen to near dryness before adding the recovery standard.

Section 13.7

Gravimetric lipid analysis is carried out on two subsamples of the extract, representing 2/15ths of the extract. A correction factor is applied to the surrogate recovery standards.

Sections 14.0, 15.0, 16.0, Table 8, Table 9

M/Z channels 354/356 and 366/368 are used to confirm and quantify the native and surrogate penta-substituted dioxins, respectively; this change from the method's specification is made in the instrument method in order to avoid a persistent interference in the 356/358 and 368/370 M/Z channels. The theoretical ratio for the P5CDD M/M+2 ions is 0.61; therefore, the acceptance range is 0.52 - 0.70.

Section 14.2

The EPA 1613B/8290 procedure uses nonane to dilute extracts. Alternatively a modified EPA 1613B/8290 procedure using toluene to dilute extracts may be performed.

Section 15.3.5

Table 6 (EPA 1613B) specifications for CAL-VER solution concentrations outside the 70-130% range have been revised to be 70-130%, as presented in table ”QC Specification Table: Authentic and Surrogate Standard Recoveries, CAL/VER, IPR, OPR and Samples” on page 7 of this document.

Section 15.4.2.2

Figure 7 (EPA 1613B) is incorrectly titled as ‘on DB-5 column’, should be ‘on DB-225 column’. The peak annotation in figure 7 is also incorrect; the centre peak is 2,3,7,8-TCDF, not 2,3,4,8-TCDF as indicated.

Section 15.5.3

Table 6 (EPA 1613B) specifications for OPR concentrations outside the 70-130% range have been revised to be 70-130%, as presented in table ”QC Specification Table: Authentic and Surrogate Standard Recoveries, CAL/VER, IPR, OPR and Samples” on page 7 of this document.

Section 17.0

$Conc_i$ - the concentrations of target analytes, and the labelled compound concentrations and recoveries, are calculated using the equations below. These procedures are equivalent to those described in the method but are more direct.

$$Conc_i = \frac{A_i}{A_{si}} \times \frac{M_{si}}{RRF_{i,si}} \times \frac{1}{M_x}$$

-

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where Ai = summed areas of the primary and secondary m/z's for the analyte peak of interest (compound i)

Asi = summed areas of the primary and secondary m/z's for the labelled surrogate peak used to quantify i)

Mx = mass of sample taken for analysis

Msi = mass of labelled surrogate (compound si) added to sample as calculated by the concentration of standard spiked (pg/mL) multiplied by the volume spiked (mL)

$RRFi,si$ = mean relative response factor of i to si from the five-point calibration range and defined individually as:

$$\frac{A_i}{A_{si}} \; x \; \frac{M_{si}}{M_i}$$

Calculation of Surrogate Standard Concentrations and Percent Recoveries:

Concentrations of surrogate standards are calculated using the following equation:

$$Conc_{si} = \frac{A_{si}}{A_{rs}} \; x \; \frac{M_{rs}}{RRF_{si,rs}}$$

and, the percent recoveries of the surrogate standards are calculated using the following equation:

$$\%Recovery = \frac{A_{si}}{A_{rs}} \; x \; \frac{M_{rs}}{RRF_{si,rs}} \; x \; \frac{1}{M_{si}} \; x \; 100$$

where A_{rs} and A_{si} are the summed peak areas (from the primary and secondary m/z channels) of recovery standard and labelled surrogate added to the sample;
M_{rs} and M_{si} are the masses of recovery standard and labelled surrogate added to the sample, and;
$RRF_{si,rs}$ is the mean relative response factor of the labelled surrogate to the recovery standard as determined by the five-point calibration range and defined individually as:

$$\frac{A_{si}}{A_{rs}} \; x \; \frac{M_{rs}}{M_{si}}$$

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Section 17.5

Where acceptable to the client, extracts may be diluted with solvent and re-analyzed by GC/MS to bring the instrumental response to within the linear range of the instrument. Typically, no additional recovery (internal) standard is added. For very high-level samples where a smaller sample aliquot may not be representative, extracts may be diluted and respiked with labelled quantification standards and re-analyzed by GC/MS to bring the instrumental response analytes within range. Final results are recovery corrected using the mean recovery of labelled quantification standards.

Modifications to EPA Method 8290

The SGS AXYS implementation of EPA Methods 8290 and 8290A includes the following:

1. A sample hold time of 30 days from time of sample collection is recommended.
2. Extract hold time, stored at <-10°C, is 45 days.
3. The same surrogate, recovery, authentic spike and calibration solutions that are used for EPA method 1613B are used to perform EPA Methods 8290 and 8290A.
4. A matrix spike/matrix spike duplicate (MS/MSD) sample may be analysed with every analysis batch, as negotiated with the client and provided sufficient sample is available. This requirement may be waived by contract.
5. The typical final extract volume is 20 µL but may vary between 10 µL and 50 µL.
6. HRGC/MS analysis is performed according to EPA 1613B protocols with the following requirements:
   - An instrumental blank is analyzed at the beginning of every 12-hour analysis sequence, injected following the CAL/VER solution.
   - Should the CAL/VER analysis fail at the end of a 12 hour period by no more than 25% RPD for the native analytes and 35% for the labelled standards, the mean RRF from the two CAL/VER analyses may be used to calculate the analyte concentrations.
7. Quantification of target analytes is performed using an expanded suite of surrogate standards and quantification references (listed in table "Analyte Ions Monitored, Surrogates Used and RRF Determination for Dioxins/Furans" on pages 5-6 of this document) as per method 8290A section 5.8 allowances (alternative quantification using the smaller suite of surrogate standards listed in method 8290A and in table "Analyte Ions Monitored, Surrogates Used and RRF Determination for Dioxins/Furans by EPA 8290/8290A" on page 14 of this document may be negotiated by individual customers).
8. The QC specifications in table “QC Criteria for PCDD/F Analysis by EPA 8290/8290A” below are used for evaluating data.

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The following modifications have been made to EPA Methods 8290 and 8290A:

1. Procedures described in section "Modifications to EPA Method 1613B" of this document are applicable.
2. The concentrations of the initial calibration solutions, surrogate standard solution and recovery standard solution are modified to be those described in table “Concentration of PCDD/PCDF Calibration Solutions” found on pages 3-4 of this document.
3. The amount of surrogate standard and recovery standard added to each sample are modified to be as described in table “Concentration of PCDD/PCDF Calibration Solutions” found on pages 3-4 of this document.
4. Sample Specific Estimated Detection Limits (EDL) are reported as Sample Specific Detection Limits (SDL), calculated as described in sections “4. Quantification Procedures” and “4.1 Reporting Limits” of this document.

QC Criteria for PCDD/F Analysis by EPA 8290/8290A

Initial Calibration	Native analytes: ±20% RSD for mean RRF Labelled Compounds: ±30% RSD for mean RRF
CAL-VER	Native Analytes: RRF must be ±20% of mean RRF from ICAL Labelled Compounds: RRF must be ±30% of mean RRF from ICAL
Sample Surrogate Recovery	40-135% (lower or higher recoveries for the procedural blank may be accepted based on analyst professional judgement.)
Spiked Reference Sample	In house specification: 70%-130% of the expected value for all targets except 1,2,3,7,8,9-HxCDF, which is 60%-140%. Professional judgement may be applied in consideration of overall QC data, including MS/MSD to determine acceptability.
Analysis Duplicate	Must agree to within 25% RPD
MS/MSD	Must agree to within 20% RPD

Analyte Ions Monitored, Surrogates Used and RRF Determination for Dioxins/Furans by EPA 8290/8290A

Analytes	Quantification Ion (m/z)	Confirmation Ion (m/z)	Surrogate	RRF Determined From
2,3,7,8-TCDD	319.8965	321.8936	$^{13}C_{12}$-2,3,7,8-TCDD	2,3,7,8-TCDD
1,2,3,7,8-PeCDD	353.8576	355.8546	$^{13}C_{12}$-1,2,3,7,8-PeCDD	1,2,3,7,8-PeCDD
1,2,3,4,7,8-HxCDD	389.8156	391.8127	$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	1,2,3,4,7,8-HxCDD
1,2,3,6,7,8-HxCDD	389.8156	391.8127	$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	1,2,3,6,7,8-HxCDD
1,2,3,7,8,9-HxCDD	389.8156	391.8127	$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD
1,2,3,4,6,7,8-HpCDD	423.7767	425.7737	$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	1,2,3,4,6,7,8-HpCDD
OCDD	457.7377	459.7348	$^{13}C_{12}$-OCDD	OCDD
2,3,7,8-TCDF	303.9016	305.8987	$^{13}C_{12}$-2,3,7,8-TCDF	2,3,7,8-TCDF

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1,2,3,7,8-PeCDF	339.8597	341.8568	$^{13}C_{12}$-1,2,3,7,8-PeCDF	1,2,3,7,8-PeCDF
2,3,4,7,8-PeCDF	339.8597	341.8568	$^{13}C_{12}$-1,2,3,7,8-PeCDF	2,3,4,7,8-PeCDF
1,2,3,4,7,8-HxCDF	373.8207	375.8178	$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	1,2,3,4,7,8-HxCDF
1,2,3,6,7,8-HxCDF	373.8207	375.8178	$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF
2,3,4,6,7,8-HxCDF	373.8207	375.8178	$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	2,3,4,6,7,8-HxCDF
1,2,3,7,8,9-HxCDF	373.8207	375.8178	$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	1,2,3,7,8,9-HxCDF
1,2,3,4,6,7,8-HpCDF	407.7818	409.7788	$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	1,2,3,4,6,7,8-HpCDF
1,2,3,4,7,8,9-HpCDF	407.7818	409.7788	$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF
OCDF	441.7428	443.7398	$^{13}C_{12}$-OCDD	OCDF
Labelled Surrogate Stds	**Quantification Ion (m/z)**	**Confirmation Ion (m/z)**	**Recovery Calculated Using**	
$^{13}C_{12}$-2,3,7,8-TCDF	315.9419	317.9389	$^{13}C_{12}$-1,2,3,4-TCDD	
$^{13}C_{12}$-2,3,7,8-TCDD	331.9368	333.9339	$^{13}C_{12}$-1,2,3,4-TCDD	
$^{13}C_{12}$-1,2,3,7,8-PeCDF	351.9000	353.8970	$^{13}C_{12}$-1,2,3,4-TCDD	
$^{13}C_{12}$-1,2,3,7,8-PeCDD	365.8978	367.8949	$^{13}C_{12}$-1,2,3,4-TCDD	
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	383.8639	385.8610	$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	401.8559	403.8530	$^{13}C_{12}$-1,2,3,7, 8,9-HxCDD	
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	417.8250	419.8220	$^{13}C_{12}$-1,2,3,7,8,9 -HxCDD	
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	435.8169	437.8140	$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	
$^{13}C_{12}$-OCDD	469.7780	471.7750	$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	
Labelled Recovery Stds				
$^{13}C_{12}$-1,2,3,4-TCDD	331.9368	333.9339		
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	401.8559	403.8530		

PACIFIC GROUNDWATER GROUP

CORRELATION TABLE

DIOXIN/FURAN ANALYSIS

Lab Name: SGS AXYS Analytical Services Ltd.	**Project Manager: Kalai Pillay**
Project Name: Swan Island Lagoon Sed Investigation	**Contract No: 5055**
	SGS AXYS Method: MLA-017
Data Package Identification: DPWG69768	**Program: Solid Samples**
Client Sample No.	**Lab Sample ID**
LAB BLANK	WG69303-101
OPR	WG69303-102
CERTIFIED REFERENCE MATERIAL	WG69303-103
CERTIFIED REFERENCE MATERIAL	WG69303-104
CERTIFIED REFERENCE MATERIAL	WG69303-105
D6-SC-108to123-102118	L31654-1
R1-0to30-101518	L31654-2
B1-0to20-101418	L31654-3
L3-SC-00to10-102218	L31654-4
F1-0to23-101418	L31654-5
R4-SC-120to138-102118	L31654-6
B5-0to26-100818	L31654-7
R4-SC-8to10-102118	L31654-8
J6-SC-40to60-102218	L31654-9
D6-SC-2to4-102118	L31654-10
J5-SC-60to80-102218	L31654-11
J7-0to26-101218	L31654-12

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Chain of Custody Record

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date:8/1/2019	COC No:
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:Elaine Walker	Carrier:	1 of 1 COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	standard			
206 329 0141 Phone	TAT if different from Below			SDG No.
206 329 6968 FAX	[X] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	1613B - Dioxin/Furans	Sample Specific Notes:
D6-SC-108to123-102118 L31654-1	10/21/2018	6:00:00 PM		S			580-81257-25
R1-0to30-101518 -2	10/15/2018	2:37:00 PM		S			580-81156-9
B1-0to20-101418 -3	10/14/2018	12:58:00 PM		S			580-81081-6
L3-SC-10to20-102218 -4	10/22/2018	10:45:00 AM		S			580-81308-26
F1-0to23-101418 -5	10/14/2018	11:08:00 AM		S			580-81081-4
R4-SC-120to138-102118 -6	10/21/2018	8:45:00 PM		S			580-81257-34
B5-0to26-100818 -7	10/8/2018	3:07:00 PM		S			580-81041-9
R4-SC-8to10-102118 -8	10/21/2018	7:40:00 PM		S			580-81257-32
J6-SC-40to60-102218 -9	10/22/2018	6:50:00 PM		S			580-81308-19
D6-SC-2to4-102118 -10	10/21/2018	4:30:00 PM		S			580-81257-27
J5-SC-60to80-102218 -11	10/22/2018	4:50:00 PM		S			580-81308-13
J7-0to26-101218 -12	10/12/2018	3:52:00 PM		S			580-81081-28

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification

[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

[ ] Return To Client [ ] Disposal By Lab [X] Archive For _____ Months

Relinquish jars from Test America - Sacramento that were used for 1613B analysis to SGS AXYS for the samples listed above.

Ship samples to:
SGS AXYS
2045 Mills Road West
Sidney, BC V8L 5X2

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PGG	8/1/19 1530		SGS AXYS	06AUG2019 16:05
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	ETA WS	8/5/19 1600			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

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ORIGIN ID:BLUA (916) 373-5600
EUROFINS TESTAMERICA
EUROFINS TESTAMERICA
880 RIVERSIDE PARKWAY

WEST SACRAMENTO, CA 95605 US
SIGN: EUROFINS TESTAMERICA

SHIP DATE: 05AUG19
ACTWGT: 40.00 LB MAN
CAD: 0694334/CAFE3211
DIMS: 23x14x14 IN

BILL RECIPIENT
NO EEI 30.36

TO KALAI PILLAY
SGS AXYS
2045 MILLS ROAD WEST

SIDNEY BC V8L5X2 (CA)
(888) 373-0881
INV:
PO: REF:
DEPT:

FedEx Express

E

J181118060502ev

TRK# 0430 4727 9462 9123

AM
INTL PRIORITY

XQ YYJA

V8L 5X2
BC-CA YVR

5649
0.7°C
Wet ice, frozen

WB25980

RECEIVED
AUG 06 2019
16:05



SGS AXYS

SGS AXYS Analytical Services Ltd
SAMPLE RECEIVING RECORD

Waybill : Yes /No
Date Shipped: 05-AUG-19

Waybill #: 472796429123
Date /Time Received: 06-AUG-19 16:05
Receipt No: WB25980

SGS AXYS Client & Contract # 5055-Pacific Groundwater Group

Received By: RGENDIVE
Log in by: RGENDIVE Signature:

Axys Sample ID's: L31654-1 to -12

Matrix Type: S
Condition of Shipping Container: INTACT
Temperature upon Receipt: .7 Celcius wet ice frozen

Thermometer ID: 5649
Corrected Temperature: .3 Celcius
Samples received above temperature: Yes /No

Custody Seals: Shipping Containers Yes /No Intact Yes /No Seal Numbers Yes /No Signature and Date Yes /No
Samples Yes /No Intact Yes /No Seal Numbers Yes /No Signature and Date Yes /No

Chain of Custody or Documents: Yes /No
- Sample ID's Yes /No
- Collection Location Yes /No
- Date & Time Collection Yes /No
- Collector's Name Yes /No

Tracking Report /Packing List: Yes /No
- Sample Tag Numbers Yes /No
- Sample Type Yes /No
- Preservative Added Prior to Receipt Yes /No
- Preservative Added at SGS AXYS Yes /No

Sample Tags Yes /No
Sample Tags Cross Referenced to Sample Labels Yes /No Information Agrees Yes /No
Sample Tags Cross Referenced to COC Yes /No Information Agrees Yes /No

Sample Labels Yes /No
Sample Labels Cross Referenced to COC Yes /No
Information Agrees Yes /No
Samples logged in as per previous submissions Yes /No
Samples logged in as per COC Yes /No
Discrepancies attached Yes /No

Sample Container breakage Yes /No If yes, see sample transfer documentation
Sample Lid breakage Yes /No

Comments:

L31654-11 arrived with broken jar.

L31654-4 Logged in as per client label

SGS AXYS Analytical Services Ltd.

Login Chain of Custody Report (ln01)

Aug. 09, 2019

10:35 AM

Login Number: L31654

Account: 5055 Pacific Groundwater Group

Project:

Axys ID versus Client Sample Identification		Received	Due	PR
L31654-1		06-AUG-19		
	Storage: WIF-4, 1B			
D6-SC-108to123-102118 21-OCT-18 18:00				
Solid	2:MOISTURE	:		USD
Solid	7:MOISTURE	:		USD
Solid	DX017.1613	:		USD
Solid	DX017.1613-2	:		USD
Solid	HOMOGENIZATION	:		USD
EDataDeliv	DX017 EDD	:		USD
Data Package	DX017 DPKG	:		USD
ANY	ENVIRO DISPOSAL FEE	:		USD
ANY	SAMPLE RECEIPT	1	: 120 mL glass AMB	USD
L31654-2		06-AUG-19		
	Storage: WIF-4, 1B			
R1-0to30-101518 15-OCT-18 14:37				
Solid	2:MOISTURE	:		USD
Solid	7:MOISTURE	:		USD
Solid	DX017.1613	:		USD
Solid	DX017.1613-2	:		USD
Solid	HOMOGENIZATION	:		USD
EDataDeliv	DX017 EDD	:		USD
Data Package	DX017 DPKG	:		USD
ANY	ENVIRO DISPOSAL FEE	:		USD
ANY	SAMPLE RECEIPT	1	: 120 mL glass AMB	USD
L31654-3		06-AUG-19		
	Storage: WIF-4, 1B			
B1-0to20-101418 14-OCT-18 12:58				
Solid	2:MOISTURE	:		USD
Solid	7:MOISTURE	:		USD
Solid	DX017.1613	:		USD
Solid	DX017.1613-2	:		USD
Solid	HOMOGENIZATION	:		USD
EDataDeliv	DX017 EDD	:		USD
Data Package	DX017 DPKG	:		USD
ANY	ENVIRO DISPOSAL FEE	:		USD
ANY	SAMPLE RECEIPT	1	: 120 mL glass AMB	USD

KP
15 Aug 2019
for Scanning

SGS AXYS Analytical Services Ltd.

Login Chain of Custody Report (ln01)

Aug. 09, 2019

10:35 AM

Login Number: L31654

Account: 5055 Pacific Groundwater Group

Project:

Axys ID versus Client Sample Identification		Received	Due	PR
L31654-4		06-AUG-19		
	Storage: WIF-4, 1B			
L3-SC-00to10-102218 22-OCT-18 10:45				
Solid	2:MOISTURE		:	USD
Solid	7:MOISTURE		:	USD
Solid	DX017.1613		:	USD
Solid	DX017.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
EDataDeliv	DX017 EDD		:	USD
Data Package	DX017 DPKG		:	USD
ANY	ENVIRO DISPOSAL FEE		:	USD
ANY	SAMPLE RECEIPT	1	: 120 mL glass AMB	USD
L31654-5		06-AUG-19		
	Storage: WIF-4, 1B			
F1-0to23-101418 14-OCT-18 11:08				
Solid	2:MOISTURE		:	USD
Solid	7:MOISTURE		:	USD
Solid	DX017.1613		:	USD
Solid	DX017.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
EDataDeliv	DX017 EDD		:	USD
Data Package	DX017 DPKG		:	USD
ANY	ENVIRO DISPOSAL FEE		:	USD
ANY	SAMPLE RECEIPT	1	: 120 mL glass AMB	USD
L31654-6		06-AUG-19		
	Storage: WIF-4, 1B			
R4-SC-120-to138-102118 21-OCT-18 20:45				
Solid	2:MOISTURE		:	USD
Solid	7:MOISTURE		:	USD
Solid	DX017.1613		:	USD
Solid	DX017.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
EDataDeliv	DX017 EDD		:	USD
Data Package	DX017 DPKG		:	USD
ANY	ENVIRO DISPOSAL FEE		:	USD
ANY	SAMPLE RECEIPT	1	: 120 mL glass AMB	USD

SGS AXYS Analytical Services Ltd.

Login Chain of Custody Report (ln01)

Aug. 09, 2019

10:35 AM

Login Number: L31654

Account: 5055 Pacific Groundwater Group

Project:

Axys ID versus Client Sample Identification		Received	Due	PR
L31654-7		06-AUG-19		
	Storage: WIF-4, 1B			
B5-0to26-100818				
08-OCT-18 15:07				
Solid	2:MOISTURE		:	USD
Solid	7:MOISTURE		:	USD
Solid	DX017.1613		:	USD
Solid	DX017.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
EDataDeliv	DX017 EDD		:	USD
Data Package	DX017 DPKG		:	USD
ANY	ENVIRO DISPOSAL FEE		:	USD
ANY	SAMPLE RECEIPT	1	: 120 mL glass AMB	USD
L31654-8		06-AUG-19		
	Storage: WIF-4, 1B			
R4-SC-8to10-102118				
21-OCT-18 19:40				
Solid	2:MOISTURE		:	USD
Solid	7:MOISTURE		:	USD
Solid	DX017.1613		:	USD
Solid	DX017.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
EDataDeliv	DX017 EDD		:	USD
Data Package	DX017 DPKG		:	USD
ANY	ENVIRO DISPOSAL FEE		:	USD
ANY	SAMPLE RECEIPT	1	: 120 mL glass AMB	USD
L31654-9		06-AUG-19		
	Storage: WIF-4, 1B			
J6-SC-40to60-102218				
22-OCT-18 18:50				
Solid	2:MOISTURE		:	USD
Solid	7:MOISTURE		:	USD
Solid	DX017.1613		:	USD
Solid	DX017.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
EDataDeliv	DX017 EDD		:	USD
Data Package	DX017 DPKG		:	USD
ANY	ENVIRO DISPOSAL FEE		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

SGS AXYS Analytical Services Ltd.

Login Chain of Custody Report (In01)

Aug. 09, 2019

10:35 AM

Login Number: L31654
Account: 5055 Pacific Groundwater Group
Project:

Axys ID versus Client Sample Identification		Received	Due	PR
L31654-10		06-AUG-19		
	Storage: WIF-4, 1B			
D6-SC-2to4-102118 21-OCT-18 16:30				
Solid	2:MOISTURE		:	USD
Solid	7:MOISTURE		:	USD
Solid	DX017.1613		:	USD
Solid	DX017.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
EDataDeliv	DX017 EDD		:	USD
Data Package	DX017 DPKG		:	USD
ANY	ENVIRO DISPOSAL FEE		:	USD
ANY	SAMPLE RECEIPT	1	: 120 mL glass AMB	USD
L31654-11		06-AUG-19		
	Storage: WIF-4, 1B			
J5-SC-60to80-102218 22-OCT-18 16:50				
Solid	2:MOISTURE		:	USD
Solid	7:MOISTURE		:	USD
Solid	DX017.1613		:	USD
Solid	DX017.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
EDataDeliv	DX017 EDD		:	USD
Data Package	DX017 DPKG		:	USD
ANY	ENVIRO DISPOSAL FEE		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L31654-12		06-AUG-19		
	Storage: WIF-4, 1B			
J7-0to26-101218 12-OCT-18 15:52				
Solid	2:MOISTURE		:	USD
Solid	7:MOISTURE		:	USD
Solid	DX017.1613		:	USD
Solid	DX017.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
EDataDeliv	DX017 EDD		:	USD
Data Package	DX017 DPKG		:	USD
ANY	ENVIRO DISPOSAL FEE		:	USD
ANY	SAMPLE RECEIPT	1	: 120 mL glass AMB	USD

Contract: 5055	Date: 07-Aug-2019	Initials: RTY

Axys ID	Client ID		Sampling Date&Time		Missing	Damaged Label	Other/Comments:
	COC	Client Label (if discrepancy)	COC	Client Label (if discrepancy)			
L31654-1	D6-SC-108to123-102118		21/10/2018 6:00:00 PM				
L31654-2	R1-0to30-101518		15/10/2018 2:37:00 PM				
L31654-3	B1-0to20-101418		14/10/2018 12:58:00 PM				
L31654-4	L3-SC-10to20-102218	L3-SC-00to10-102218	22/10/2018 10:45:00 AM				
L31654-5	F1-0to23-101418		14/10/2018 11:08:00 AM				
L31654-6	R4-SC-120-to138-102118		21/10/2018 8:45:00 PM				
L31654-7	B5-0to26-100818		08/10/2018 3:07:00 PM				
L31654-8	R4-SC-8to10-102118		21/10/2018 7:40:00 PM				
L31654-9	J6-SC-40to60-102218		22/10/2018 6:50:00 PM				
L31654-10	D6-SC-2to4-102118		21/10/2018 4:30:00 PM				
L31654-11	J5-SC-60to80-102218		22/10/2018 4:50:00 PM				
L31654-12	J7-0to26-101218		12/10/2018 3:52:00 PM				

Definitions:
Missing: sample(s) listed on the COC which did not arrive with the shipment
Damaged label: sample(s) which have a damaged or illegible label. X=sample able to be identified through process of elimination or a partial match, ? = unknown
Client label: field populated if differs from COC

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TESTAMERICA
880 Riverside Pkwy
West Sacramento, CA 95605
(916) 373-5600

ACI-472794629123

Commercial Invoice

Invoice Number	Purpose of Shipment	Curr	Ult Dest.	Air Waybill Nbr.
	Not Sold	USD	CA	472794629123
Export Dt	C.I. References	Pkgs	Bill T/C	Bill D/T/F
8/5/2019		1	1148-2771-1	1148-2771-1
		CHS		

Shipper:
Eurofins TestAmerica
Eurofins TestAmerica
880 RIVERSIDE PARKWAY

WEST SACRAMENTO
CA 95605 US (916) 373-5600
ID/EIN:841271186

Consignee:
kalai pillay
sgs axys
2045 mills road west

SIDNEY
BC V8L5X2 CA (888) 373-0881
ID/EIN:

Broker:

Importer:
kalai pillay
sgs axys
2045 mills road west

SIDNEY
BC V8L5X2 CA (888) 373-0881
ID/EIN:

Part Nbr: Marks/Nbrs: Cntry MFG:US Net Wgt: 0.00 lbs
HS Code: Unit Qty: 12.00 EA Unit Value: 1.000000 Commodity Value: 12.00
Desc: EMVIRNMENTA SAMPLING BOTTLE KITS. 41 BOTTLES PRESERVED WITH LESS THAN 20% NITRIC ACID

Total Shipment Weight: 40 lbs

Total Commodity Value: 12.00

These commodities, technology, or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to United States law is prohibited.

Terms of Sale:	FCA
Freight:	0.00
Insurance:	0.00
Others:	0.00
Total Invoice Value:	12.00

Comments:
1)see import permit
2)
3)

I declare all information in this invoice to be true and correct.
Signature of shipper: Eurofins TestAmerica 8/5/2019

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905 | YVR | 11478891 ORIGINAL Airwaybill # 905-11478891

Shipper's Name & Address	Shipper's Account Number	Not negotiable **Air Waybill** Issued by
SELECT EXPRESS 91 GOLDEN DRIVE COQUITLAM BC Canada Tel : 6049441933 Mobile :		Pacific Coastal AIRLINES

Consignee's Name & Address	Consignee's Account Number	It is agreed that the goods declared herein are accepted in apparent good order and condition (except as noted) for carriage SUBJECT TO THE CONDITIONS OF CONTRACT ON THE REVERSE HEREOF. ALL GOODS MAY BE CARRIED BY ANY OTHER MEANS INCLUDING ROAD OR ANY OTHER CARRIER UNLESS SPECIFIC CONTRARY INSTRUCTIONS ARE GIVEN HEREON BY THE SHIPPER, AND SHIPPER AGREES THAT THE SHIPMENT MAY BE CARRIED VIA INTERMEDIATE STOPPING PLACES WHICH THE CARRIER DEEMS APPROPRIATE. THE SHIPPER'S ATTENTION IS DRAWN TO THE NOTICE CONCERNING CARRIER'S LIMITATION OF LIABILITY.
SGS AXYS ANALYTICAL SERVICES LTD 2045 MILLS RD WEST SIDNEY BCCanada Tel : (250) 655-5800 Ext. 0000 Mobile :	A227	It is agreed that the Goods described herein are accepted in apparent good order and condition (Except as noted). Date 20 Time AM PM Consignee's Printed Name X Consignee Signature X

Issuing Carrier's Agent's Name & City	Accounting Information
Pacific Coastal Cargo	COLLECT PAYMENT AT DESTINATION CHARGE TO CONSIGNEE ACCOUNT - A227 SECURITY ID : Other Screening PRIORITY : 3
Agent's IATA Code / Account No.	
Airport of Departure (Addr. of first Carrier) and requested Routing Vancouver Airport	

to	By first carrier / Routing & Destination	to	by	to	by	Currency	Chgs Code	WT VAL PPD	WT VAL COLL	Other PPD	Other COLL	Declared value for Carriage	Declared value for Customs
YYJ	8P					CAD	CC		XX		XX	NDV	NCV

Airport of Destination	Flight/Date / For Carrier Use Only / Flight/Date	Amount of Insurance	INSURANCE - If carrier offers Insurance and such Insurance is requested in accordance with conditions on reverse hereof indicate amount to be insured in figure in box marked Amount of Insurance
Victoria			

Handling Information:
SLA: Space available loading only

No. of Pieces RCP	Gross Weight	KG LB	Rate Class / Commodity Item No.	Chargeable Weight	Rate / Charge	Total	Nature and Quantity of Goods (incl. Dimensions or Volume)
1	47	LB	STBY	47	0.72	33.84	SOIL SAMPLES NON HAZ 1 @ 61.0x33.0x35.6 CM
1	47						

Prepaid / Weight Charge / Collect: 33.84	SEC 5.00, GST 1.94	
Valuation Charge		
Tax: 1.94		
Total other charges Due Agent	I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labelled, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. I declare that all of the applicable air transport requirements have been met	
Total other charges Due Carrier: 5.00		
	BYUNG HUN LEE ID BCD Signature of Shipper or his Agent	
Total Prepaid / Total Collect: 40.78		
Currency Conversion Rates / CC charges in Dest. Currency	06 August 2019 13:40 VANCOUVER AIRPORT GUEM1 Executed on (Date) at (Place) Signature of issuing Carrier or its Agent	

For Carriers Use only at Destination	Charges at Destination	Total Collect Charges: 40.78

905-11478891
06 August 2019 12:41

AXYS Analytical Services Ltd.

Sample Preparation - Sample weights

WG: WG69335 Date: 22 Aug 2019 Chemist: BZ/ AVK Contract: 5055 Balance ID# : 3542

Sample ID	Before preparation				After preparation			Subsample								
	sample + container (g)	container (g)	sample (g)	water discarded (g)	sample + container (g)	container (g)	sample (g)	Sub sample	jar size (mL)	wt (g)	Sub sample	jar size (mL)	wt (g)	Sub sample	jar size (mL)	wt (g)
L31654-1	284.30	132.59	151.71	NA	260.84	111.84	149.00	1 of 1	120	146.33						
L31654-2	286.35	128.30	158.05	NA	216.05	110.85	105.20	1 of 1	120	100.71						
L31654-3	330.96	126.81	204.15	NA	291.24	110.85	180.39	1 of 1	120	174.83						
L31654-4	222.07	124.18	97.89	NA	202.04	110.60	91.44	1 of 1	120	89.80						
L31654-5	259.97	127.11	132.86	NA	238.81	110.77	128.04	1 of 1	120	124.11						
L31654-6	250.29	130.42	119.87	NA	229.34	111.28	118.06	1 of 1	120	116.09						
L31654-7	249.95	131.90	118.05	NA	228.63	111.34	117.29	1 of 1	120	114.29						
L31654-8	242.49	128.84	113.65	NA	223.81	111.47	112.34	1 of 1	120	108.78						
L31654-9	398.38	191.34	207.04	NA	380.61	176.21	204.40	1 of 1	250	199.01						
L31654-10	243.84	132.63	111.21	NA	217.13	111.06	106.07	1 of 1	120	103.20						
L31654-11	384.61	186.04	198.57	NA	372.40	176.71	195.69	1 of 1	250	192.20						
L31654-12	285.97	122.00	163.97	NA	186.19	111.44	74.75	1 of 1	120	71.02						
L31702-1	29.84	19.94	9.90	NA	25.53	16.84	8.69	1 of 1	20	8.69						
L31702-2	30.28	20.00	10.28	NA	26.38	16.84	9.54	1 of 1	20	9.54						
L31702-3	29.87	19.95	9.92	NA	26.25	16.66	9.59	1 of 1	20	9.59						

BZ Aug 2019 AVK

BZ Aug 2019 AVK

Reviewed by: KEY Date: AUG 27 2019

SGS AXYS Analytical Services Ltd.

Sample Wt & Moistures: Batch ID: WG69335 Date: 22 Aug 2019 Chemist: BZ/AVL Balance or Syringe # 3542

Method: MLAxxx

Sample ID	Moisture (SLA-015) (all weights in grams)						Sample Wt or Vol (SLA-085) (g or mL)	Backup (g)
	Tare (a)	Tare + Wet	Tare + dry	Tare (b)	Tare + wet	Tare + dry		
L31654-1	1.06	3.53	2.83					
L31654-2	1.04	5.65	4.79					
L31654-3	1.04	6.40	4.85					
L31654-4	1.05	2.53	2.20					
L31654-5	1.07	4.98	4.13					
L31654-6	1.08	3.21	2.31					
L31654-7	1.06	3.92	2.01					
L31654-8	1.04	4.37	2.85					
L31654-9	1.03	6.15	3.78					
L31654-10	1.06	3.59	2.31					
L31654-11	1.07	4.83	3.10					
L31654-12	1.06	3.87	2.49					
L31702-1								
L31702-2								
L31702-3								

AVL 23 Aug 2019

Moistures into oven: Date: 22 Aug 2019 Time: 12:30 Temperature: 105°C Chemist: AVL Oven #: 3264

Out of Oven: Date: 23 Aug 2019 Time: 7:05 Temperature: 105°C Chemist: AVL

FWO-306 Rev 10, 08-Feb-2018

Reviewed by KEM date AUG 27 2019

SGS AXYS Analytical Services Ltd.

Moisture/Solids Data

Work Group: WG69335
ANALYST: AVOSKNUDSEN

colours indicate: less than tare | limits failed | less than dry

Sample #	Extraction Date	Units g or L	Tare 1	Wet + Tare1	Dry + Tare1	Tare 2	Wet + Tare 2	Dry + Tare 2	Dry Weight	% Moisture	% Solids	Duplicate Test	Sample Size	Backup weight
L31654-1	22-AUG-19	sample	1.06	3.53	2.83				0.7166	28.34	71.66	0	1	
L31654-2	22-AUG-19	sample	1.04	5.65	4.79				0.8134	18.655	81.345	0	1	
L31654-3	22-AUG-19	sample	1.04	6.4	4.85				0.7108	28.918	71.082	0	1	
L31654-4	22-AUG-19	sample	1.05	2.53	2.2				0.777	22.297	77.703	0	1	
L31654-5	22-AUG-19	sample	1.07	4.98	4.13				0.7826	21.739	78.261	0	1	
L31654-6	22-AUG-19	sample	1.08	3.21	2.31				0.5775	42.254	57.746	0	1	
L31654-7	22-AUG-19	sample	1.06	3.92	2.01				0.3322	66.783	33.217	0	1	
L31654-8	22-AUG-19	sample	1.04	4.37	2.85				0.5435	45.646	54.354	0	1	
L31654-9	22-AUG-19	sample	1.03	6.25	3.78				0.5268	47.318	52.682	0	1	
L31654-10	22-AUG-19	sample	1.06	3.59	2.31				0.4941	50.593	49.407	0	1	
L31654-11	22-AUG-19	sample	1.07	4.83	3.1				0.5399	46.011	53.989	0	1	
L31654-12	22-AUG-19	sample	1.06	3.87	2.49				0.5089	49.11	50.89	0	1	
L31702-1	22-AUG-19	sample											1	
L31702-2	22-AUG-19	sample											1	
L31702-3	22-AUG-19	sample											1	

FWO-204 Rev 04, 04-Oct-2018 [printed: 23/08/2019 7:15 AM]

entered by: AVK date: 23 AUG 2019

checked by: KEY date: AUG 27 2019

AXYS Analytical Services Ltd.

Solid Sample Preparation Record - Sample description and procedure

WG69335 date 22 Aug 2019 contract 5055

Sample 1

Sample ID/ Analyst BZ | wet ☑Y ☐N | standing water ☑none ☐clear ☐cloudy ☐decant/ discard ☐stirred in | Equipment: ☐scissors ☑spoon ☑forceps ☐pipette ☐stainless steel bowl ☐other

L31654-1 | clay ☐Y ☒N | rocks ☐Y ☒N ☐not removed ☐removed rocks > ____mm

Client Label | sand ☐Y ☒N | vegetation ☐Y ☒N ☐chopped ☐removed from sample

D6-SC-108to123-162118 | loam ☐Y ☒N | invertebrates ☐Y ☒N ☐chopped ☐removed from sample

original container: | high level ☐Y ☒N | foreign objects ☐Y ☒N ☐chopped ☐removed from sample

1x120 Amber | colour: Dark green | protocol followed ☐TOC ☐PFOS ☐Metals ☒routine organics

Sample 2

Sample ID/ Analyst AVK | wet ☒Y ☐N | standing water ☐none ☒clear ☐cloudy ☐decant/discard ☒stirred in | ☐scissors ☒spoon ☒forceps ☐pipette ☐stainless steel bowl ☐other

L31654-2 | clay ☐Y ☒N | rocks ☒Y ☐N ☐not removed ☒removed rocks > 4 mm

Client Label | sand ☒Y ☐N | vegetation ☐Y ☒N ☐chopped ☐removed from sample

R1-0to30-101518 | loam ☐Y ☒N | invertebrates ☐Y ☒N ☐chopped ☐removed from sample

original container: | high level ☐Y ☒N | foreign objects ☐Y ☒N ☐chopped ☐removed from sample

1x120 Amber | colour: Black/orange. | protocol followed ☐TOC ☐PFOS ☐Metals ☒routine organics

Sample 3

Sample ID/ Analyst BZ | wet ☒Y ☐N | standing water ☐none ☒clear ☐cloudy ☐decant/discard ☒stirred in | ☐scissors ☒spoon ☒forceps ☐pipette ☐stainless steel bowl ☐other

L31654-3 | clay ☐Y ☒N | rocks ☒Y ☐N ☐not removed ☒removed rocks > 4 mm

Client Label BZ 5SEP2019 | sand ☒Y ☐N | vegetation ☐Y ☒N ☐chopped ☐removed from sample

B1-0to22-101418 | loam ☐Y ☒N | invertebrates ☐Y ☒N ☐chopped ☐removed from sample

original container: | high level ☐Y ☒N | foreign objects ☒Y ☐N ☐chopped ☒removed from sample Hair/shell

1x120 Amber | colour: Brown | protocol followed ☐TOC ☐PFOS ☐Metals ☒routine organics

Sample 4

BZ 22 Aug 2019 BZ 22 Aug 2019

Sample ID/ Analyst BZ | wet ☒Y ☐N | standing water ☒none ☒clear ☐cloudy ☐decant/discard ☒stirred in | ☐scissors ☒spoon ☒forceps ☐pipette ☐stainless steel bowl ☐other

L31654-4 | clay ☐Y ☒N | rocks ☐Y ☒N ☐not removed ☐removed rocks > ____mm

Client Label | sand ☒Y ☐N | vegetation ☒Y ☐N ☐chopped ☒removed from sample

L3-SC-00to10-162218 | loam ☐Y ☒N | invertebrates ☐Y ☒N ☐chopped ☐removed from sample

original container: | high level ☐Y ☒N | foreign objects ☒Y ☐N ☐chopped ☒removed from sample Shell

1x120 Amber | colour: Brown | protocol followed ☐TOC ☐PFOS ☐Metals ☒routine organics

reviewed by KEY. date 12 SEP 2019

AXYS Analytical Services Ltd.

Solid Sample Preparation Record - Sample description and procedure

WG69335 date 22 Aug 2019 contract 5055

Sample 1

Sample ID/ Analyst AVK
L31654-5
Client Label
F1-0to23-101418
original container:
1x120 Amber

wet	☑Y	☐N	
clay	☐Y	☑N	
sand	☑Y	☐N	
loam	☐Y	☑N	
high level	☐Y	☑N	
colour:	Brown/Grey		

standing water	☐none	☑clear	☐cloudy	☐ decant/ discard	☑stirred in
rocks	☑Y	☐N	☐not removed	☑removed rocks > 4 mm	
vegetation	☑Y	☐N	☐chopped	☑removed from sample	
invertebrates	☐Y	☑N	☐chopped	☐removed from sample	
foreign objects	☐Y	☑N	☐chopped	☐removed from sample	
protocol followed	☐TOC	☐PFOS	☐Metals	☑routine organics	

Equipment: ☐scissors ☑spoon ☑forceps ☐pipette ☐stainless steel bowl ☐other

Sample 2

Sample ID/ Analyst AVK
L31654-6
Client Label
R4-Sc-120to138-102118
original container:
1x120 Amber

wet	☑Y	☐N	
clay	☐Y	☑N	
sand	☐Y	☑N	
loam	☐Y	☑N	
high level	☐Y	☑N	
colour:	Dark brown		

standing water	☑none	☐clear	☐cloudy	☐ decant/discard	☐stirred in
rocks	☐Y	☑N	☐not removed	☐removed rocks > ____ mm	
vegetation	☐Y	☑N	☐chopped	☐removed from sample	
invertebrates	☐Y	☑N	☐chopped	☐removed from sample	
foreign objects	☐Y	☑N	☐chopped	☐removed from sample	
protocol followed	☐TOC	☐PFOS	☐Metals	☑routine organics	

Equipment: ☐scissors ☑spoon ☑forceps ☐pipette ☐stainless steel bowl ☐other

Sample 3

Sample ID/ Analyst AVK
L31654-7
Client Label
B5-0to26-100818
original container:
1x120 Amber

wet	☑Y	☐N	
clay	☐Y	☑N	
sand	☐Y	☑N	
loam	☐Y	☑N	
high level	☐Y	☑N	
colour:	Brown		

standing water	☐none	☐clear	☑cloudy	☐ decant/discard	☑stirred in
rocks	☑Y	☐N	☐not removed	☑removed rocks > 4 mm	
vegetation	☑Y	☐N	☐chopped	☑removed from sample	
invertebrates	☐Y	☑N	☐chopped	☐removed from sample	
foreign objects	☐Y	☑N	☐chopped	☐removed from sample	
protocol followed	☐TOC	☐PFOS	☐Metals	☑routine organics	

Equipment: ☐scissors ☑spoon ☑forceps ☐pipette ☐stainless steel bowl ☐other

Sample 4

Sample ID/ Analyst AVK
L31654-8
Client Label
R4-Sc-8to10-102118
original container:
1x120 Amber

wet	☑Y	☐N	
clay	☐Y	☑N	
sand	☐Y	☑N	
loam	☐Y	☑N	
high level	☐Y	☑N	
colour:	Brown		

standing water	☑none	☐clear	☐cloudy	☐ decant/discard	☐stirred in
rocks	☐Y	☑N	☐not removed	☐removed rocks > ____ mm	
vegetation	☑Y	☐N	☐chopped	☑removed from sample	
invertebrates	☐Y	☑N	☐chopped	☐removed from sample	
foreign objects	☐Y	☑N	☐chopped	☐removed from sample	
protocol followed	☐TOC	☐PFOS	☐Metals	☑routine organics	

Equipment: ☐scissors ☑spoon ☑forceps ☐pipette ☐stainless steel bowl ☐other

reviewed by KEY date AUG 27 2019

AXYS Analytical Services Ltd.

Solid Sample Preparation Record - Sample description and procedure

WG69335 date 22 Aug 2019 contract 5055

Sample 1

Sample ID/ Analyst	wet	☑Y	☐N	standing water	☑none	☐clear	☐cloudy	☐ decant/ discard	☐stirred in	Equipment:	
L31654-9	clay	☐Y	☑N	rocks	☐Y	☑N	☐not removed	☐removed rocks > ____mm		☐scissors	☑spoon
Client Label	sand	☐Y	☑N	vegetation	☑Y	☐N	☐chopped	☑removed from sample		☑forceps	☐pipette
J6 -Sc-40to60-102218	loam	☐Y	☑N	invertebrates	☐Y	☑N	☐chopped	☐removed from sample		☐stainless steel bowl	
original container:	high level	☐Y	☑N	foreign objects	☐Y	☑N	☐chopped	☐removed from sample		☐other	
1x250 ~~Amber~~ Clear	colour:	Dark brown		protocol followed	☐TOC	☐PFOS	☐Metals	☑routine organics			

AK 22Aug2019

Sample 2

Sample ID/ Analyst BZ	wet	☑Y	☐N	standing water	☐none	☐clear	☑cloudy	☐ decant/discard	☑stirred in	☐scissors	☑spoon
L31654-10	clay	☐Y	☑N	rocks	☐Y	☑N	☐not removed	☐removed rocks > ____mm		☑forceps	☐pipette
Client Label	sand	☐Y	☑N	vegetation	☐Y	☑N	☐chopped	☐removed from sample		☐stainless steel bowl	
D6 -Sc -2to4 -102118	loam	☐Y	☑N	invertebrates	☐Y	☑N	☐chopped	☐removed from sample		☐other	
original container:	high level	☐Y	☑N	foreign objects	☐Y	☑N	☐chopped	☐removed from sample			
1x120 Amber	colour:	Dark green		protocol followed	☐TOC	☐PFOS	☐Metals	☑routine organics			

Sample 3

Sample ID/ Analyst AVK	wet	☑Y	☐N	standing water	☑none	☐clear	☐cloudy	☐ decant/discard	☐stirred in	☐scissors	☑spoon
L31654-11	clay	☐Y	☑N	rocks	☐Y	☑N	☐not removed	☐removed rocks > ____mm		☑forceps	☐pipette
Client Label	sand	☐Y	☑N	vegetation	☑Y	☐N	☐chopped	☑removed from sample		☐stainless steel bowl	
J5 -Sc-60to80 -102218	loam	☐Y	☑N	invertebrates	☐Y	☑N	☐chopped	☐removed from sample		☐other	
original container:	high level	☐Y	☑N	foreign objects	☐Y	☑N	☐chopped	☐removed from sample			
1x250 Amber	colour:	Dark brown		protocol followed	☐TOC	☐PFOS	☐Metals	☑routine organics			

Sample 4

Sample ID/ Analyst AVK	wet	☑Y	☐N	standing water	☑none	☐clear	☐cloudy	☐ decant/discard	☐stirred in	☐scissors	☑spoon
L31654-12	clay	☐Y	☑N	rocks	☑Y	☐N	☐not removed	☑removed rocks > 4 mm		☑forceps	☐pipette
Client Label	sand	☐Y	☑N	vegetation	☑Y	☐N	☐chopped	☑removed from sample		☐stainless steel bowl	
J7 -0to26 -101218	loam	☐Y	☑N	invertebrates	☐Y	☑N	☐chopped	☐removed from sample		☐other	
original container:	high level	☐Y	☑N	foreign objects	☐Y	☑N	☐chopped	☐removed from sample			
1x120 Amber	colour:	Dark brown		protocol followed	☐TOC	☐PFOS	☐Metals	☑routine organics			

reviewed by KEY date AUG 27 2019

AXYS Analytical Services Ltd

Notes: Batch ID: WG69335 Method: MLAxxx

Date:	Analyst	Fraction	Notes:
22Aug2019	AVL		L31702-1 was mostly made up of small vegetation. Larger pieces were removed leaving smaller particles behind.
			L31702-1 to -3 were small samples so did not need a moisture with pm permission.
			L31702-12 arrived to Homog with a broken bottom ~85g of Liquid and Solid mix was Lost. Sample Integrity was still intact.

Reviewed by KEY date AUG 27 2019

BATCH ID: WG69303

Method ID: MLA-017 R20.10	
Method ID:	
Method ID:	
Start Date:	27-Aug-2019
WIP Date/Chemist:	27Aug2019 /EK
Batch List Author:	PTHALER
Checked By:	CNR
Project Manager:	Ivona Z, Kalai P
Glassware Type:	Regular
Glassware Treatment:	Regular
Rotovap Type:	Regular
Matrix:	Solid
Sample size:	see comments
Moistures required?	YES
Lipids required?	NO
Extraction Solvent:	80:20 Toluene/Acetone
Biohazard Type:	5055 Agricultural Hazard

Comments:

4919: Use 10g wet

5055: Use 10g dry

For CRMs. Use the contents of each vial for the analysis – weigh accurately.

Calibration: | DX042D-CAL/

previous WG's associated with samples:

WG69302_D2, WG69335_D2; #Keep Discards: 0

Contract #	Sample	Wt	Contract #	Sample	Wt
4919	L31683-1	10g			
5055	L31654-1	14.0 g			
5055	L31654-2	12.3 g			
5055	L31654-3	14.1 g			
5055	L31654-4	12.9 g			
5055	L31654-5	12.8 g			
5055	L31654-6	17.3 g			
5055	L31654-7	30.1 g			
5055	L31654-8	18.4 g			
5055	L31654-9	19.0 g			
5055	L31654-10	20.2 g			
5055	L31654-11	18.5 g			
5055	L31654-12	19.7 g			

Spiking:

Product	Samples required:	Before Extraction: Surrogate	After Extraction: Cleanup Surrogate	Recovery	F.V.	U-vial	Instructions and Comments:
DX017.1613	L31683-1, L31654-1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, WG69303-101, 102, 103, 104, 105	(7099) SBD #246,245 20uL DX052A-SUR/01	20uL DX044A-SUR/ 08	(7133) 10uL DX022A-REC/01	20 uL	GCMS	none
			(7135) #14, 11, 10 PJ, 5	#187 Yta			

BATCH ID: WG69303

QC Samples	Type and Weight	Analysis QC required for:	Authentic spiking:	Comments:
WG69303-101 BLANK	10G SC7490B (10S-REF SAND)	DX017.1613		
WG69303-102 SPM	10G SC7490B (10S-REF SAND)	DX017.1613	1000uL DX042A-AUT/61 #140 exact SPD	
WG69303-103 CRM	USE L31702-1	DX017.1613		
WG69303-104 CRM	USE L31702-2	DX017.1613		
WG69303-105 CRM	USE L31702-3	DX017.1613		

QC Samples	Type and Weight	Analysis QC required for:	Authentic spiking:	Comments:

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WorkGroup: WG69303

Sample	Contract	Product	Matrix	Lab Code	Additional Work Action	Reason	Requested by/date		Lab Completed by/Date		Inst. Completed by/Date		Remedial Action
L31654-1	5055	DX017.1613	S	I	REINJECT	instrumental disruption	BARVI	12/Sep/2019			BARVI	12/Sep/2019	
L31654-1	5055	DX017.1613	S	I2	REINJECT	instrumental disruption	EANDAYA	16/Sep/2019			EWU	18/Sep/2019	
L31654-10	5055	DX017.1613	S	W	DILUTE 5X TO 100 uL	target(s) outside demonstrated linear range	EANDAYA	16/Sep/2019	BARVI	16/Sep/2019	EWU	18/Sep/2019	XTRA|Made to 100uL with Nonane. . Final vol. 100.
L31654-11	5055	DX017.1613	S	W	DILUTE 5X TO 100 uL	target(s) outside demonstrated linear range	EANDAYA	16/Sep/2019	BARVI	16/Sep/2019	EWU	18/Sep/2019	XTRA|Made to 100uL with Nonane. . Final vol. 100.
L31654-12	5055	DX017.1613	S	W	DILUTE 5X TO 100 uL	target(s) outside demonstrated linear range	EANDAYA	16/Sep/2019	BARVI	16/Sep/2019	EWU	18/Sep/2019	XTRA|Made to 100uL with Nonane. . Final vol. 100.
L31654-2	5055	DX017.1613	S	I	REINJECT	instrumental disruption	BARVI	12/Sep/2019			BARVI	12/Sep/2019	
L31654-3	5055	DX017.1613	S	I	REINJECT	instrumental disruption	BARVI	12/Sep/2019			BARVI	12/Sep/2019	
L31654-4	5055	DX017.1613	S	I	REINJECT	instrumental disruption	BARVI	12/Sep/2019			BARVI	12/Sep/2019	
L31654-5	5055	DX017.1613	S	I	REINJECT	instrumental disruption	BARVI	12/Sep/2019			BARVI	12/Sep/2019	
L31654-6	5055	DX017.1613	S	I	REINJECT	instrumental disruption	BARVI	12/Sep/2019			BARVI	12/Sep/2019	
L31654-7	5055	DX017.1613	S	I	REINJECT	instrumental disruption	BARVI	12/Sep/2019			XXIE	13/Sep/2019	
L31654-9	5055	DX017.1613	S	W	DILUTE 5X TO 100 uL	target(s) outside demonstrated linear range	EANDAYA	16/Sep/2019	BARVI	16/Sep/2019	EWU	18/Sep/2019	XTRA|Made to 100uL with Nonane. . Final vol. 100.
WG69303-101	BLANK	DX017.1613	S	I	REINJECT	instrumental disruption	BARVI	12/Sep/2019			BARVI	12/Sep/2019	
WG69303-102	SPM	DX017.1613	S	I	REINJECT	instrumental disruption	BARVI	12/Sep/2019			BARVI	12/Sep/2019	
WG69303-104	5055	DX017.1613	S	I	REINJECT	instrumental disruption	EANDAYA	16/Sep/2019			EWU	18/Sep/2019	
WG69303-105	5055	DX017.1613	S	I	REINJECT	instrumental disruption	EANDAYA	16/Sep/2019			EWU	18/Sep/2019	

Reviewed by/Date HH/22 Sept 2019

SGS AXYS Analytical Services Ltd

Bottle/Jar Type	
☑ Glass	☐ Plastic

Sample Labeling Information: Batch ID: WG69303 Date: 27AUG2019 Chemist: CUR Contract #: 5055

Method: MLA-017 R20.10

Sample ID	Sample Type and Description	Original Labelling	LIMS label correct as per client
L31654-1	wet dark grey solid	DG-SC-108+0123-102118	☐
L31654-2	Moist dark grey coarse solid	R1-0+030-101518	☐
L31654-3	wet brown coarse solid	B1-0+020-101418	☐
L31654-4	Moist dark grey solid	L3-SC-00+010-102218	☐
L31654-5	Moist dark grey solid	F1-0+023-101418	☐
L31654-6	wet dark grey solid	R4-SC-120+0138-102118	☐
L31654-7	Very wet dark grey solid	B5-0+026-100818	☐
L31654-8	Moist dark grey solid	R4-SC-8+010-102118	☐
L31654-9	wet dark grey solid	J6-SC-40+060-102218	☐
L31654-10	Very wet dark grey solid	DG-SC-2+04-102118	☐
L31654-11	Moist dark grey solid	J5-SC-60+080-102218	☐
L31654-12	Very wet dark grey solid	J7-0+026-101218	☐
WG69303-103 (CRM)	Dry dark brown solid Certified Reference Material	L31702-1 SCC6652 #8	☐
WG69303-104 (CRM)	Dry dark brown solid Certified Reference Material	L31702-2 SCC6652 #9	☐
WG69303-105 (CRM)	Dry dark brown solid Certified Reference Material	L31702-3 SCC6652 #10	☐
			☐

27AUG2019 CUR

Reviewed by CMM date SEP 12 2019

SGS AXYS Analytical Services Ltd

Bottle/Jar Type	
☑ Glass	☐ Plastic

Sample Labeling Information: Batch ID: WG69303 Date: 27AUG2019 Chemist: CUR Contract #: NONE

Method: MLA-017 R20.10

Sample ID	Sample Type and Description	Original Labelling	LIMS label correct as per client
WG69303-101 (BLANK)	Dry beige sand solid 27AUG2019 CUR Procedural Blank	SC7490B 100REF 16 of 29	☐ 27AUG 2019 CUR
WG69303-102 (SPM)	Dry beige solid Spiked Matrix	SC7490B 100REF 16 of 29	☐
			☐
			☐
			☐
			☐
			☐
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			☐
			☐
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			☐
			☐

Reviewed by CMM date SEP 12 2019

SGS AXYS Analytical Services Ltd.

Moisture/Solids Data

Work Group: WG69303
ANALYST: ACHAWALLA

colours indicate: less than tare | limits failed | less than dry

Sample #	Extraction Date	Units g or L	Tare 1	Wet + Tare1	Dry + Tare1	Tare 2	Wet + Tare 2	Dry + Tare 2	Dry Weight	% Moisture	% Solids	Duplicate Test	Sample Size	Backup weight
L31654-1	27-AUG-19	g	1.03	3.76	2.98	1.04	3.48	2.79	10.056	28.425	71.575	0.409	14.05	125
L31654-2	27-AUG-19	g	1.03	3.29	2.89	1.05	2.9	2.55	10.072	18.309	81.691	1.4932	12.33	90
L31654-3	27-AUG-19	g	1.07	3.85	3.09	1.05	3.75	3.01	10.24	27.373	72.627	0.0954	14.1	160
L31654-4	27-AUG-19	g	1.07	3.98	3.3	1.06	3.49	2.91	9.8533	23.618	76.382	0.6554	12.9	75
L31654-5	27-AUG-19	g	1.06	3.38	2.84	1.06	4.1	3.41	9.8731	22.987	77.013	0.7512	12.82	200
L31654-6	27-AUG-19	g	1.07	3.66	2.6	1.05	3	2.21	10.297	40.72	59.28	0.6981	17.37	190
L31654-7	27-AUG-19	g	1.06	3.99	2.1	1.05	4.33	2.25	10.877	63.96	36.04	3.0258	30.18	70
L31654-8	27-AUG-19	g	1.07	4.24	2.86	1.03	4.07	2.76	10.459	43.313	56.687	0.778	18.45	90
L31654-9	27-AUG-19	g	1.06	3.64	2.47	1.09	3.51	2.41	10.406	45.402	54.598	0.1936	19.06	165
L31654-10	27-AUG-19	g	1.09	3.18	2.15	1.1	3.52	2.31	10.172	49.641	50.359	1.4252	20.2	75
L31654-11	27-AUG-19	g	1.05	3.55	2.44	1.06	4.45	2.96	10.327	44.176	55.824	0.8011	18.5	160
L31654-12	27-AUG-19	g	1.04	3.47	2.33	1.05	3.26	2.22	10.449	46.986	53.014	0.274	19.71	45
L31683-1	27-AUG-19	g	1.04	2.03	1.9	1.06	2.05	1.91	8.6536	13.636	86.364	1.1696	10.02	255
WG69303-101	27-AUG-19	g	1.06	2.42	2.41	1.04	2.14	2.14	10.013	0.3676	99.632	0.738	10.05	0
WG69303-102	27-AUG-19	g	1.07	2.14	2.14	1.08	2	1.99	9.9954	0.5435	99.457	1.0929	10.05	0
WG69303-103	27-AUG-19	g											8.67	0
WG69303-104	27-AUG-19	g											9.5	0
WG69303-105	27-AUG-19	g											9.48	0

entered by: AC date: 23 AUG 2019

checked by: VM date: SEP 12 2019

SGS AXYS Analytical Services Ltd.

Extraction Information #1 – Aqueous, Solid, Tissue

Batch ID: WG69303 Method: MLA-017 R20.10

Sample ID	Filtered? Y / N Date: Chemist:	Solid & Aq. extracts combined? Y / N Date: Chemist:	Solids Stored? Y / N Date: Chemist:
L31654-1			
L31654-2			
L31654-3			
L31654-4			
L31654-5			
L31654-6			
L31654-7			
L31654-8			
L31654-9			
L31654-10			
L31654-11			
L31654-12			
L31683-1			
WG69303-101 (BLANK)			
WG69303-102 (SPM)			
WG69303-103 (CRM)			
WG69303-104 (CRM)			
WG69303-105 (CRM)			

27AUG 2019 CUR

Chemist: CUR Date: 27AUG2019 Balance #: 3639

Aqueous:

Stirring: Solvent used: DCM Lot#: _____ Volume: _____ mL
Chemist: _____ Start Date: _____ Time: _____
End Date: _____ Time: _____

Shaking: Solvent used: DCM Lot#: _____ Volume: _____ mL
Chemist: _____ Date: _____ Time: _____

Drying: Na_2SO_4 Lot/batch #: _____ Chemist: _____

Solid/Tissue:

Moistures into oven: Oven #: 3264
Date: 27AUG2019 Time: 11:37 Temperature: 105° Chemist: CUR

Out of Oven:
Date: 28 AUG 2019 Time: 10:15 Temperature: 105°C Chemist: AC

Soxhlet: ☑ Dean Stark: ☐ Steam Distillation: ☐ Base Digest: ☐
Drying: Drying Time: >30 mins. Analyst: CUR
Reagent: Na2SO4 Lot/batch #: 187

Extraction Solvent used: 80:20 Toluene Acetone
Volume: 300 mL Lot/batch #: 475-05, 1109-05, 1093-05

Other reagent used: _____ Amount: _____
Lot/batch #: _____

Other reagent used: _____ Amount: _____
Lot/batch #: _____

27AUG2019 CUR

Begin: Date: 27AUG2019 Time: 14:35 Chemist: CUR
End: Date: 28 Aug 2019 Time: 6:45 Chemist: BSD
Begin: Date: _____ Time: _____ Chemist: _____
End: Date: _____ Time: _____ Chemist: _____

Reviewed by _____ date SEP 12 2019

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Spiking Sheet: Batch ID: WG69303 Method: MLA-017 R20.10 Witness name/ initials: Caitlyn Rooker/COR

Sample ID	Before extraction		Before extraction		Cleanup Std.	Cleanup Std.	Recovery	Recovery
	Surr. ID: DX052A-SUR101 Date: 27AUG2019 Vol.: 20 µL Syringe#: 7099 Ampoule: 246, 245 Chemist: EK		Surr. ID: Date: Vol.: µL Syringe#: Ampoule: Chemist:		Surr. ID: Date: Vol.: µL Syringe#: Ampoule: Start time: Finish time:	Surr. ID: DX044A-SUR108 Date: 04SEP2019 Vol.: 20 µL Syringe#: 7135 Ampoule: (14, 11, 10) Start time: 13:37 Finish time: 14:18	ID: DX022A-REC601 Date: 11SEP2019 Vol.: 10 µL F.V.: 20 µL Syringe#: 7133 Ampoule: 187 Start time: 14:09 Finish time: 14:14	ID: Date: Vol.: µL F.V.: µL Syringe#: Ampoule: Start time: Finish time:
	Time	Witness	Time	Witness	Chemist:	Chemist: UMM	Chemist: SDD	Chemist:
L31654-1	11:36	COR			☐	☑ X	☑	☐
L31654-2	11:36	COR			☐	☑	☑	☐
L31654-3	11:37	COR			☐	☑	☑	☐
L31654-4	11:37	COR			☐	☑	☑	☐
L31654-5	11:37	COR			☐	☑	☑	☐
L31654-6	11:37	COR			☐	☑ X	☑	☐
L31654-7	11:38	COR			☐	☑	☑	☐
L31654-8	11:38	COR			☐	☑	☑	☐
L31654-9	11:38	COR			☐	☑ X	☑	☐
L31654-10	11:38	COR			☐	☑	☑	☐
L31654-11	11:39	COR			☐	☑ X	☑	☐
L31654-12	11:39	COR			☐	☑	☑	☐
L31683-1	11:39	COR			☐	☑	☑	☐
WG69303-101 (BLANK)	11:40	COR			☐	☑	☑	☐
WG69303-102 (SPM)	11:40	COR			☐	☑	☑	☐
WG69303-103 (CRM)	11:40	COR			☐	☑	☑	☐
WG69303-104 (CRM)	11:41	COR			☐	☑	☑	☐
WG69303-105 (CRM)	11:41	COR			☐	☑	☑	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

UMM 04SEP 2019

UMM SEP 12 2019

Sample ID	Aut. ID: DX042A-AUT101 Date: 27AUG2019 Vol.: 1000 µL Syringe#: Exact Ampoule#: 190 Chemist: EK		Aut. ID: Date: Vol.: µL Syringe#: Ampoule#: Chemist:		Aut. ID: Date: Vol.: µL Syringe#: Ampoule#: Chemist:		Aut. ID: Date: Vol.: µL Syringe#: Ampoule#: Chemist:	
	Time	Witness	Time	Witness	Time	Witness	Time	Witness
WG69303-102(SPM)	11:32	COR						

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SEP 12 2019 LMM

Extract Cleanup - Biobead/Cu **WorkGroup:** WG69303 **Method:** MLA-017 R20.10

Sample ID	BB #	BB#	Cu Test 1:	Cu Test 2:	Cu Test 3:	Cu Test 4:	Cu Test 5:	Cu Test 6:
	Portion: LMM	Portion:	Date: 10SEP2019	Date:	Date:	Date:	Date:	Date:
			Time: 1133	Time:	Time:	Time:	Time:	Time:
			Portion: DX	Portion:	Portion:	Portion:	Portion:	Portion:
			Chemist: SO	Chemist:	Chemist:	Chemist:	Chemist:	Chemist:
L31654-1			___ +ve ✓ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve
L31654-2			___ +ve ✓ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve
L31654-3			___ +ve ✓ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve
L31654-4			___ +ve ✓ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve
L31654-5			___ +ve ✓ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve
L31654-6			___ +ve ✓ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve
L31654-7			___ +ve ✓ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve
L31654-8			___ +ve ✓ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve
L31654-9			___ +ve ✓ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve
L31654-10			___ +ve ✓ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve
L31654-11			___ +ve ✓ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve
L31654-12			___ +ve ✓ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve
L31683-1			___ +ve ✓ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve
WG69303-101 (BLANK)			___ +ve ✓ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve
WG69303-102 (SPM)			___ +ve ✓ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve
WG69303-103 (CRM)			___ +ve ✓ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve
WG69303-104 (CRM)			___ +ve ✓ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve
WG69303-105 (CRM)			___ +ve ✓ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve
			___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve
			___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve
			___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve
			___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve
			___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve
			___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve
			___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve
			___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve
			___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve	___ +ve ___ -ve

SEP 12 2018

Reviewed by: LMM Date: SEP 12 2019

SGS AXYS Analytical Services Ltd.

Extract Cleanup - Columning, Split, Lipid

WG: WG69303
Method: MLA-017 R20.10

Cleanup Type	Portion	Date	Time	Batch # / Type	Chemist	Pre-Elute	F1 (solvent, batch #, vol [mL])	F2 (solvent, batch #, vol [mL])	F3 (solvent, batch #, vol [mL])
A/B Si (DX)	DX	05 Sep 2019	13:28	30g 44% A/B	MCE	Y	Hex, 104537, 200mL		
~~FI (DX)~~							~~5% DCM/Hex~~	~~DCM~~ CMH SEP 12 2019	
Al (DX)	DX	10 SEP 2019	1255	1% Deactivated Al #314, 6.0g	SO	N/A	Hex 104317, 40mL	2% DCM/Hex 1044-05, 10mL	1:1 DCM:Hex 37-06, 35mL
CC (DX)	DX	10 SEP 2019	1445	4.5% c/c, #148, 0.22g	SO	YES	1:1 CycHex:DCM 8335-05, 2ml	1:1 EtAc:Tol 927-05, 2ml	Tol 103471, 25ml
~~BB~~							1:1 DCM:Hex	~~1:1 DCM:Hex~~ CMH SEP 12 2019	
									SEP 12 2019
									CMH

Solvent Exchange

Before	Portion	Date	Time	Vol [µL]	Chemist
AL	DX	10 SEP 2019	1101	50	SO

Extract Wash

Date:	
Chemist:	
Start time:	
Acid/Base Wash	**MeCN:H_2O Wash**
20% KOH:	pH 10:
# times:	# times:
Water:	pH 7:
H_2SO_4:	pH 2:
# times:	
Water:	

Extract Splitting	Lipid
Balance #:	Balance #:
Date:	Date:
Time:	Time:
Chemist:	Chemist:

Reviewed by: CMH Date: SEP 12 2019

AXYS Analytical Services Ltd

Notes: Batch ID: WG69303 Method: MLA-017 R20.10

Date:	Analyst	Fraction	Notes:
			none
			UMM
			SEP 12 2019

Reviewed by UMM date SEP 12 2019

SGS AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
D6-SC-108to123-102118
Sample Collection:
21-Oct-2018 18:00

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-1 i2
Matrix:	SOLID	**Sample Size:**	10.1 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	17-Sep-2019 **Time:** 19:53:29	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX9M_095A S: 12**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX9M_095A S: 8
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	28.4

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	J	0.052	0.0497 (Q)	0.68	1.001
1,2,3,7,8-PECDD [4]	J	0.061	0.0497 (Q)	0.70	1.000
1,2,3,4,7,8-HXCDD	J	0.097	0.0497 (Q)	1.11	1.000
1,2,3,6,7,8-HXCDD	J	0.164	0.0497 (Q)	1.12	1.000
1,2,3,7,8,9-HXCDD	J	0.257	0.0497 (Q)	1.34	1.010
1,2,3,4,6,7,8-HPCDD	B J	3.37	0.0497 (Q)	0.96	1.000
OCDD	B	42.4	0.0497 (Q)	0.89	1.000
2,3,7,8-TCDF	U		0.0497 (Q)		
1,2,3,7,8-PECDF	U		0.0497 (Q)		
2,3,4,7,8-PECDF	U		0.0497 (Q)		
1,2,3,4,7,8-HXCDF	U		0.0497 (Q)		
1,2,3,6,7,8-HXCDF	U		0.0497 (Q)		
1,2,3,7,8,9-HXCDF	B J	0.071	0.0497 (Q)	1.12	1.001
2,3,4,6,7,8-HXCDF	U		0.0497 (Q)		
1,2,3,4,6,7,8-HPCDF	B J	0.521	0.0497 (Q)	0.93	1.000
1,2,3,4,7,8,9-HPCDF	U		0.0497 (Q)		
OCDF	B J	1.24	0.0497 (Q)	0.99	1.002
TOTAL TETRA-DIOXINS		0.846	0.0497 (Q)		
TOTAL PENTA-DIOXINS		0.339	0.0497 (Q)		
TOTAL HEXA-DIOXINS		2.18	0.0497 (Q)		
TOTAL HEPTA-DIOXINS		8.14	0.0497 (Q)		
TOTAL TETRA-FURANS	U		0.0497 (Q)		
TOTAL PENTA-FURANS	U		0.0497 (Q)		
TOTAL HEXA-FURANS		0.500	0.0497 (Q)		
TOTAL HEPTA-FURANS		1.46	0.0497 (Q)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_L31654-1_Form1A_DX9M_095AS12_SJ2621560.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
D6-SC-108to123-102118
Sample Collection:
21-Oct-2018 18:00

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-1 i2
Matrix:	SOLID	**Sample Size:**	10.1 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	17-Sep-2019 **Time:** 19:53:29	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX9M_095A S: 12**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX9M_095A S: 8
Concentration Units:	pg absolute	**% Moisture:**	28.4

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		2000	1660	83.2	0.76	1.013
13C-1,2,3,7,8-PECDD [4]		2000	1950	97.6	0.62	1.383
13C-1,2,3,4,7,8-HXCDD		2000	1670	83.6	1.27	0.987
13C-1,2,3,6,7,8-HXCDD		2000	1680	84.2	1.19	0.990
13C-1,2,3,4,6,7,8-HPCDD		2000	1870	93.7	1.05	1.095
13C-OCDD		4000	3390	84.7	0.86	1.179
13C-2,3,7,8-TCDF		2000	1570	78.7	0.77	0.966
13C-1,2,3,7,8-PECDF		2000	1800	90.0	1.55	1.283
13C-2,3,4,7,8-PECDF		2000	1750	87.4	1.54	1.352
13C-1,2,3,4,7,8-HXCDF		2000	1590	79.7	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		2000	1650	82.7	0.51	0.958
13C-1,2,3,7,8,9-HXCDF		2000	1590	79.5	0.53	1.005
13C-2,3,4,6,7,8-HXCDF		2000	1610	80.6	0.52	0.981
13C-1,2,3,4,6,7,8-HPCDF		2000	1680	83.9	0.45	1.063
13C-1,2,3,4,7,8,9-HPCDF		2000	1780	88.9	0.45	1.105
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	166	82.9		1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_L31654-1_Form2_DX9M_095AS12_SJ2621560.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
D6-SC-108to123-102118
Sample Collection:
21-Oct-2018 18:00

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-1
Matrix:	SOLID	**Sample Size:**	10.1 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jul-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 22:42:57	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB9T_084 S: 5**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB9T_084 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	28.4

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
1,2,3,7,8,9-HXCDD	K J	0.191	0.0616 (S)	1.83	1.058

(1) Where applicable, custom lab flags have been used on this report; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB225_L31654-1_Form1A_DB9T_084S5_SJ2620829.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
D6-SC-108to123-102118

PCDD/PCDF ANALYSIS TEQ DATA REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection:	21-Oct-2018 18:00		
Contract No.:	5055	**Project No.**	SWAN ISLAND LAGOON SED INVESTIGATION
Matrix:	SOLID	**Lab Sample I.D.:**	L31654-1
Sample Size:	10.1 g (dry)	**GC Column ID(s):**	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB9T_084 S: 5** **DX9M_095A S: 12**

COMPOUND	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 RL	TEQ ND=RL
2,3,7,8-TCDD		0.052	0.0497	1	5.20e-02	5.20e-02	
1,2,3,7,8-PECDD		0.061	0.0497	1	6.10e-02	6.10e-02	
1,2,3,4,7,8-HXCDD		0.097	0.0497	0.1	9.70e-03	9.70e-03	
1,2,3,6,7,8-HXCDD		0.164	0.0497	0.1	1.64e-02	1.64e-02	
1,2,3,7,8,9-HXCDD	U		0.0616	0.1	0.00e+00	3.08e-03	
1,2,3,4,6,7,8-HPCDD		3.37	0.0497	0.01	3.37e-02	3.37e-02	
OCDD		42.4	0.0497	0.0003	1.27e-02	1.27e-02	
2,3,7,8-TCDF	U		0.0497	0.1	0.00e+00	2.49e-03	
1,2,3,7,8-PECDF	U		0.0497	0.03	0.00e+00	7.46e-04	
2,3,4,7,8-PECDF	U		0.0497	0.3	0.00e+00	7.46e-03	
1,2,3,4,7,8-HXCDF	U		0.0497	0.1	0.00e+00	2.49e-03	
1,2,3,6,7,8-HXCDF	U		0.0497	0.1	0.00e+00	2.49e-03	
1,2,3,7,8,9-HXCDF		0.071	0.0497	0.1	7.10e-03	7.10e-03	
2,3,4,6,7,8-HXCDF	U		0.0497	0.1	0.00e+00	2.49e-03	
1,2,3,4,6,7,8-HPCDF		0.521	0.0497	0.01	5.21e-03	5.21e-03	
1,2,3,4,7,8,9-HPCDF	U		0.0497	0.01	0.00e+00	2.49e-04	
OCDF		1.24	0.0497	0.0003	3.72e-04	3.72e-04	
			TOTAL TEQ		0.198	0.220	

(1) Where applicable, custom lab flags may have been used on this report; U = not detected at RL.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 22-Sep-2019 12:42:33; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613-TEQ_L31654-1_TEQ_SJ2620829.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
R1-0to30-101518
Sample Collection:
15-Oct-2018 14:37

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-2 i
Matrix:	SOLID	**Sample Size:**	10.1 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 14:35:04	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX9M_093 S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX9M_093 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	18.3

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	U		0.0625 (S)		
1,2,3,7,8-PECDD [4]	K J	0.162	0.0885 (S)	0.42	1.001
1,2,3,4,7,8-HXCDD	J	0.205	0.0612 (S)	1.10	1.000
1,2,3,6,7,8-HXCDD	J	0.713	0.0612 (S)	1.27	1.001
1,2,3,7,8,9-HXCDD	J	0.550	0.0612 (S)	1.21	1.010
1,2,3,4,6,7,8-HPCDD	B	20.7	0.0841 (S)	1.00	1.000
OCDD	B	159	0.127 (S)	0.88	1.000
2,3,7,8-TCDF	J	0.195	0.0862 (S)	0.71	1.003
1,2,3,7,8-PECDF	B J	0.119	0.0496 (Q)	1.62	1.001
2,3,4,7,8-PECDF	J	0.136	0.0496 (Q)	1.54	0.999
1,2,3,4,7,8-HXCDF	J	0.383	0.0496 (Q)	1.15	1.000
1,2,3,6,7,8-HXCDF	K J	0.265	0.0496 (Q)	0.92	1.000
1,2,3,7,8,9-HXCDF	K B J	0.089	0.0496 (Q)	2.02	1.001
2,3,4,6,7,8-HXCDF	K J	0.196	0.0496 (Q)	2.62	1.001
1,2,3,4,6,7,8-HPCDF	B J	3.79	0.0496 (Q)	0.94	1.000
1,2,3,4,7,8,9-HPCDF	J	0.253	0.0496 (Q)	1.16	1.001
OCDF	B J	8.69	0.108 (S)	0.92	1.002
TOTAL TETRA-DIOXINS		0.125	0.0610 (S)		
TOTAL PENTA-DIOXINS		0.257	0.0885 (S)		
TOTAL HEXA-DIOXINS		5.71	0.0612 (S)		
TOTAL HEPTA-DIOXINS		53.1	0.0841 (S)		
TOTAL TETRA-FURANS		1.20	0.0862 (S)		
TOTAL PENTA-FURANS	B	3.79	0.0496 (Q)		
TOTAL HEXA-FURANS		6.31	0.0496 (Q)		
TOTAL HEPTA-FURANS		11.8	0.0496 (Q)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_L31654-2_Form1A_DX9M_093S7_SJ2619891.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
R1-0to30-101518
Sample Collection:
15-Oct-2018 14:37

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-2 i
Matrix:	SOLID	**Sample Size:**	10.1 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 14:35:04	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX9M_093 S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX9M_093 S: 1
Concentration Units:	pg absolute	**% Moisture:**	18.3

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		2000	1430	71.6	0.82	1.013
13C-1,2,3,7,8-PECDD [4]		2000	1700	85.1	0.63	1.384
13C-1,2,3,4,7,8-HXCDD		2000	1410	70.4	1.23	0.987
13C-1,2,3,6,7,8-HXCDD		2000	1450	72.5	1.23	0.990
13C-1,2,3,4,6,7,8-HPCDD		2000	1640	81.8	1.02	1.095
13C-OCDD		4000	4240	106	0.87	1.180
13C-2,3,7,8-TCDF		2000	1420	71.0	0.81	0.966
13C-1,2,3,7,8-PECDF		2000	1440	72.1	1.57	1.284
13C-2,3,4,7,8-PECDF		2000	1370	68.4	1.49	1.353
13C-1,2,3,4,7,8-HXCDF		2000	1380	69.1	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		2000	1430	71.5	0.53	0.958
13C-1,2,3,7,8,9-HXCDF		2000	1540	77.0	0.53	1.005
13C-2,3,4,6,7,8-HXCDF		2000	1430	71.3	0.50	0.980
13C-1,2,3,4,6,7,8-HPCDF		2000	1630	81.6	0.46	1.063
13C-1,2,3,4,7,8,9-HPCDF		2000	1790	89.7	0.45	1.105
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	144	72.1		1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_L31654-2_Form2_DX9M_093S7_SJ2619891.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
R1-0to30-101518
Sample Collection:
15-Oct-2018 14:37

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-2
Matrix:	SOLID	**Sample Size:**	10.1 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jul-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 23:27:43	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB9T_084 S: 6**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB9T_084 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	18.3

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
1,2,3,7,8,9-HXCDD	J	0.448	0.0697 (S)	1.16	1.059
2,3,7,8-TCDF	J	0.109	0.0532 (S)	0.82	1.002

(1) Where applicable, custom lab flags have been used on this report; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB225_L31654-2_Form1A_DB9T_084S6_SJ2620830.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
R1-0to30-101518

PCDD/PCDF ANALYSIS TEQ DATA REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection:	15-Oct-2018 14:37		
Contract No.:	5055	**Project No.**	SWAN ISLAND LAGOON SED INVESTIGATION
Matrix:	SOLID	**Lab Sample I.D.:**	L31654-2 i
Sample Size:	10.1 g (dry)	**GC Column ID(s):**	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB9T_084 S: 6** **DX9M_093 S: 7**

COMPOUND	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 RL	TEQ ND=RL
2,3,7,8-TCDD	U		0.0625	1	0.00e+00	3.13e-02	
1,2,3,7,8-PECDD	U		0.0885	1	0.00e+00	4.43e-02	
1,2,3,4,7,8-HXCDD		0.205	0.0612	0.1	2.05e-02	2.05e-02	
1,2,3,6,7,8-HXCDD		0.713	0.0612	0.1	7.13e-02	7.13e-02	
1,2,3,7,8,9-HXCDD		0.448	0.0697	0.1	4.48e-02	4.48e-02	
1,2,3,4,6,7,8-HPCDD		20.7	0.0841	0.01	2.07e-01	2.07e-01	
OCDD		159	0.127	0.0003	4.77e-02	4.77e-02	
2,3,7,8-TCDF		0.109	0.0532	0.1	1.09e-02	1.09e-02	
1,2,3,7,8-PECDF		0.119	0.0496	0.03	3.57e-03	3.57e-03	
2,3,4,7,8-PECDF		0.136	0.0496	0.3	4.08e-02	4.08e-02	
1,2,3,4,7,8-HXCDF		0.383	0.0496	0.1	3.83e-02	3.83e-02	
1,2,3,6,7,8-HXCDF	U		0.0496	0.1	0.00e+00	2.48e-03	
1,2,3,7,8,9-HXCDF	U		0.0496	0.1	0.00e+00	2.48e-03	
2,3,4,6,7,8-HXCDF	U		0.0496	0.1	0.00e+00	2.48e-03	
1,2,3,4,6,7,8-HPCDF		3.79	0.0496	0.01	3.79e-02	3.79e-02	
1,2,3,4,7,8,9-HPCDF		0.253	0.0496	0.01	2.53e-03	2.53e-03	
OCDF		8.69	0.108	0.0003	2.61e-03	2.61e-03	
			TOTAL TEQ		0.528	0.611	

(1) Where applicable, custom lab flags may have been used on this report; U = not detected at RL.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 22-Sep-2019 12:42:33; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613-TEQ_L31654-2_TEQ_SJ2619891.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
B1-0to20-101418
Sample Collection:
14-Oct-2018 12:58

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-3 i
Matrix:	SOLID	**Sample Size:**	10.2 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 15:30:12	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX9M_093 S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX9M_093 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	27.4

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	K J	0.078	0.0488 (Q)	0.41	1.000
1,2,3,7,8-PECDD [4]	K J	0.233	0.0488 (Q)	0.76	1.001
1,2,3,4,7,8-HXCDD	J	0.385	0.0488 (Q)	1.26	1.000
1,2,3,6,7,8-HXCDD	J	1.80	0.0488 (Q)	1.33	1.000
1,2,3,7,8,9-HXCDD	J	0.723	0.0488 (Q)	1.06	1.010
1,2,3,4,6,7,8-HPCDD	B	67.7	0.0902 (S)	1.04	1.000
OCDD	B	517	0.0488 (Q)	0.90	1.000
2,3,7,8-TCDF	J	0.316	0.0488 (Q)	0.87	1.001
1,2,3,7,8-PECDF	B J	0.169	0.0488 (Q)	1.43	1.001
2,3,4,7,8-PECDF	J	0.254	0.0488 (Q)	1.53	1.001
1,2,3,4,7,8-HXCDF	J	1.36	0.0488 (Q)	1.26	1.000
1,2,3,6,7,8-HXCDF	J	0.491	0.0488 (Q)	1.20	1.000
1,2,3,7,8,9-HXCDF	K B J	0.078	0.0488 (Q)	1.85	1.001
2,3,4,6,7,8-HXCDF	K J	0.292	0.0488 (Q)	1.53	1.000
1,2,3,4,6,7,8-HPCDF	B	14.3	0.0488 (Q)	1.04	1.000
1,2,3,4,7,8,9-HPCDF	J	0.894	0.0488 (Q)	0.97	1.000
OCDF	B	57.4	0.0488 (Q)	0.90	1.002
TOTAL TETRA-DIOXINS		0.444	0.0488 (Q)		
TOTAL PENTA-DIOXINS		0.898	0.0488 (Q)		
TOTAL HEXA-DIOXINS		9.91	0.0488 (Q)		
TOTAL HEPTA-DIOXINS		125	0.0902 (S)		
TOTAL TETRA-FURANS		2.68	0.0488 (Q)		
TOTAL PENTA-FURANS	B	8.22	0.0488 (Q)		
TOTAL HEXA-FURANS		19.6	0.0488 (Q)		
TOTAL HEPTA-FURANS		57.1	0.0488 (Q)		

(1) Where applicable, custom lab flags have been used on this report; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_L31654-3_Form1A_DX9M_093S8_SJ2619892.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
B1-0to20-101418
Sample Collection:
14-Oct-2018 12:58

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-3 i
Matrix:	SOLID	**Sample Size:**	10.2 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 15:30:12	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX9M_093 S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX9M_093 S: 1
Concentration Units:	pg absolute	**% Moisture:**	27.4

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		2000	1650	82.6	0.76	1.013
13C-1,2,3,7,8-PECDD [4]		2000	2030	102	0.62	1.384
13C-1,2,3,4,7,8-HXCDD		2000	1650	82.5	1.27	0.987
13C-1,2,3,6,7,8-HXCDD		2000	2050	102	1.26	0.990
13C-1,2,3,4,6,7,8-HPCDD		2000	2030	102	1.04	1.095
13C-OCDD		4000	5110	128	0.89	1.180
13C-2,3,7,8-TCDF		2000	1630	81.4	0.80	0.966
13C-1,2,3,7,8-PECDF		2000	1680	83.9	1.54	1.284
13C-2,3,4,7,8-PECDF		2000	1660	82.9	1.58	1.352
13C-1,2,3,4,7,8-HXCDF		2000	1580	79.1	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		2000	1520	75.9	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		2000	1700	84.9	0.53	1.005
13C-2,3,4,6,7,8-HXCDF		2000	1630	81.6	0.52	0.981
13C-1,2,3,4,6,7,8-HPCDF		2000	1730	86.4	0.46	1.063
13C-1,2,3,4,7,8,9-HPCDF		2000	2160	108	0.46	1.105
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	165	82.6		1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_L31654-3_Form2_DX9M_093S8_SJ2619892.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
B1-0to20-101418
Sample Collection:
14-Oct-2018 12:58

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-3
Matrix:	SOLID	**Sample Size:**	10.2 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jul-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 00:12:26	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB9T_084 S: 7**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB9T_084 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	27.4

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Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
1,2,3,7,8,9-HXCDD	J	0.765	0.0488 (Q)	1.08	1.059
2,3,7,8-TCDF	K J	0.180	0.0488 (Q)	0.60	1.001

(1) Where applicable, custom lab flags have been used on this report; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

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Report Filename: 1613_DIOXINS_1613DB225_L31654-3_Form1A_DB9T_084S7_SJ2620831.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
B1-0to20-101418

PCDD/PCDF ANALYSIS TEQ DATA REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection:	14-Oct-2018 12:58		
Contract No.:	5055	**Project No.**	SWAN ISLAND LAGOON SED INVESTIGATION
Matrix:	SOLID	**Lab Sample I.D.:**	L31654-3 i
Sample Size:	10.2 g (dry)	**GC Column ID(s):**	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB9T_084 S: 7** **DX9M_093 S: 8**

COMPOUND	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 RL	TEQ ND=RL
2,3,7,8-TCDD	U		0.0488	1	0.00e+00	2.44e-02	
1,2,3,7,8-PECDD	U		0.0488	1	0.00e+00	2.44e-02	
1,2,3,4,7,8-HXCDD		0.385	0.0488	0.1	3.85e-02	3.85e-02	
1,2,3,6,7,8-HXCDD		1.80	0.0488	0.1	1.80e-01	1.80e-01	
1,2,3,7,8,9-HXCDD		0.765	0.0488	0.1	7.65e-02	7.65e-02	
1,2,3,4,6,7,8-HPCDD		67.7	0.0902	0.01	6.77e-01	6.77e-01	
OCDD		517	0.0488	0.0003	1.55e-01	1.55e-01	
2,3,7,8-TCDF	U		0.0488	0.1	0.00e+00	2.44e-03	
1,2,3,7,8-PECDF		0.169	0.0488	0.03	5.07e-03	5.07e-03	
2,3,4,7,8-PECDF		0.254	0.0488	0.3	7.62e-02	7.62e-02	
1,2,3,4,7,8-HXCDF		1.36	0.0488	0.1	1.36e-01	1.36e-01	
1,2,3,6,7,8-HXCDF		0.491	0.0488	0.1	4.91e-02	4.91e-02	
1,2,3,7,8,9-HXCDF	U		0.0488	0.1	0.00e+00	2.44e-03	
2,3,4,6,7,8-HXCDF	U		0.0488	0.1	0.00e+00	2.44e-03	
1,2,3,4,6,7,8-HPCDF		14.3	0.0488	0.01	1.43e-01	1.43e-01	
1,2,3,4,7,8,9-HPCDF		0.894	0.0488	0.01	8.94e-03	8.94e-03	
OCDF		57.4	0.0488	0.0003	1.72e-02	1.72e-02	
			TOTAL TEQ		1.56	1.62	

(1) Where applicable, custom lab flags may have been used on this report; U = not detected at RL.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1613_DIOXINS_1613-TEQ_L31654-3_TEQ_SJ2619892.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
L3-SC-00to10-102218
Sample Collection:
22-Oct-2018 10:45

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-4 i
Matrix:	SOLID	**Sample Size:**	9.85 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 16:25:13	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX9M_093 S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX9M_093 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	23.6

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	K J	0.157	0.0644 (S)	0.58	1.002
1,2,3,7,8-PECDD [4]	K J	0.326	0.0781 (S)	0.89	1.001
1,2,3,4,7,8-HXCDD	J	0.611	0.0507 (Q)	1.21	1.000
1,2,3,6,7,8-HXCDD	J	3.47	0.0507 (Q)	1.22	1.000
1,2,3,7,8,9-HXCDD	J	1.71	0.0507 (Q)	1.14	1.010
1,2,3,4,6,7,8-HPCDD	B	87.0	0.0816 (S)	1.06	1.000
OCDD	B	876	0.0509 (S)	0.89	1.000
2,3,7,8-TCDF	J	0.776	0.0507 (Q)	0.68	1.001
1,2,3,7,8-PECDF	B J	0.528	0.0592 (S)	1.37	1.000
2,3,4,7,8-PECDF	J	0.568	0.0592 (S)	1.64	1.001
1,2,3,4,7,8-HXCDF	J	3.41	0.0507 (Q)	1.36	1.000
1,2,3,6,7,8-HXCDF	J	1.48	0.0507 (Q)	1.24	1.000
1,2,3,7,8,9-HXCDF	B J	0.164	0.0507 (Q)	1.19	1.000
2,3,4,6,7,8-HXCDF	J	0.644	0.0507 (Q)	1.11	1.000
1,2,3,4,6,7,8-HPCDF	B	34.1	0.0565 (S)	1.04	1.000
1,2,3,4,7,8,9-HPCDF	J	2.17	0.0565 (S)	0.98	1.000
OCDF	B	91.0	0.0507 (Q)	0.91	1.002
TOTAL TETRA-DIOXINS		1.99	0.0644 (S)		
TOTAL PENTA-DIOXINS	T	1.96	0.0781 (S)		
TOTAL HEXA-DIOXINS		21.9	0.0507 (Q)		
TOTAL HEPTA-DIOXINS		174	0.0816 (S)		
TOTAL TETRA-FURANS		6.67	0.0507 (Q)		
TOTAL PENTA-FURANS	B	9.27	0.0592 (S)		
TOTAL HEXA-FURANS		39.9	0.0507 (Q)		
TOTAL HEPTA-FURANS		126	0.0565 (S)		

(1) Where applicable, custom lab flags have been used on this report; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; T = result recalculated against alternate labeled compound(s) or internal standard.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_L31654-4_Form1A_DX9M_093S9_SJ2619893.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
L3-SC-00to10-102218
Sample Collection:
22-Oct-2018 10:45

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-4 i
Matrix:	SOLID	**Sample Size:**	9.85 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 16:25:13	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX9M_093 S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX9M_093 S: 1
Concentration Units:	pg absolute	**% Moisture:**	23.6

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		2000	1530	76.7	0.82	1.013
13C-1,2,3,7,8-PECDD [4]		2000	2180	109	0.63	1.384
13C-1,2,3,4,7,8-HXCDD		2000	1530	76.7	1.30	0.987
13C-1,2,3,6,7,8-HXCDD		2000	1560	78.2	1.28	0.990
13C-1,2,3,4,6,7,8-HPCDD		2000	1870	93.6	1.02	1.095
13C-OCDD		4000	4950	124	0.92	1.180
13C-2,3,7,8-TCDF		2000	1540	77.0	0.77	0.966
13C-1,2,3,7,8-PECDF		2000	1720	86.2	1.58	1.284
13C-2,3,4,7,8-PECDF		2000	1710	85.5	1.56	1.352
13C-1,2,3,4,7,8-HXCDF		2000	1400	70.1	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		2000	1370	68.4	0.53	0.958
13C-1,2,3,7,8,9-HXCDF		2000	1590	79.4	0.53	1.005
13C-2,3,4,6,7,8-HXCDF		2000	1560	77.9	0.53	0.981
13C-1,2,3,4,6,7,8-HPCDF		2000	1620	80.9	0.45	1.063
13C-1,2,3,4,7,8,9-HPCDF		2000	1850	92.3	0.45	1.105
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	164	82.1		1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_L31654-4_Form2_DX9M_093S9_SJ2619893.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
L3-SC-00to10-102218
Sample Collection:
22-Oct-2018 10:45

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-4
Matrix:	SOLID	**Sample Size:**	9.85 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jul-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 00:57:10	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB9T_084 S: 8**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB9T_084 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	23.6

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
1,2,3,7,8,9-HXCDD	J	1.35	0.0579 (S)	1.38	1.059
2,3,7,8-TCDF	J	0.519	0.0709 (S)	0.69	1.001

(1) Where applicable, custom lab flags have been used on this report; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB225_L31654-4_Form1A_DB9T_084S8_SJ2620832.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
L3-SC-00to10-102218

PCDD/PCDF ANALYSIS TEQ DATA REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection:	22-Oct-2018 10:45		
Contract No.:	5055	**Project No.**	SWAN ISLAND LAGOON SED INVESTIGATION
Matrix:	SOLID	**Lab Sample I.D.:**	L31654-4 i
Sample Size:	9.85 g (dry)	**GC Column ID(s):**	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB9T_084 S: 8** **DX9M_093 S: 9**

COMPOUND	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 RL	TEQ ND=RL
2,3,7,8-TCDD	U		0.0644	1	0.00e+00	3.22e-02	
1,2,3,7,8-PECDD	U		0.0781	1	0.00e+00	3.91e-02	
1,2,3,4,7,8-HXCDD		0.611	0.0507	0.1	6.11e-02	6.11e-02	
1,2,3,6,7,8-HXCDD		3.47	0.0507	0.1	3.47e-01	3.47e-01	
1,2,3,7,8,9-HXCDD		1.35	0.0579	0.1	1.35e-01	1.35e-01	
1,2,3,4,6,7,8-HPCDD		87.0	0.0816	0.01	8.70e-01	8.70e-01	
OCDD		876	0.0509	0.0003	2.63e-01	2.63e-01	
2,3,7,8-TCDF		0.519	0.0709	0.1	5.19e-02	5.19e-02	
1,2,3,7,8-PECDF		0.528	0.0592	0.03	1.58e-02	1.58e-02	
2,3,4,7,8-PECDF		0.568	0.0592	0.3	1.70e-01	1.70e-01	
1,2,3,4,7,8-HXCDF		3.41	0.0507	0.1	3.41e-01	3.41e-01	
1,2,3,6,7,8-HXCDF		1.48	0.0507	0.1	1.48e-01	1.48e-01	
1,2,3,7,8,9-HXCDF		0.164	0.0507	0.1	1.64e-02	1.64e-02	
2,3,4,6,7,8-HXCDF		0.644	0.0507	0.1	6.44e-02	6.44e-02	
1,2,3,4,6,7,8-HPCDF		34.1	0.0565	0.01	3.41e-01	3.41e-01	
1,2,3,4,7,8,9-HPCDF		2.17	0.0565	0.01	2.17e-02	2.17e-02	
OCDF		91.0	0.0507	0.0003	2.73e-02	2.73e-02	
			TOTAL TEQ		2.87	2.95	

(1) Where applicable, custom lab flags may have been used on this report; U = not detected at RL.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 22-Sep-2019 12:42:33; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613-TEQ_L31654-4_TEQ_SJ2619893.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
F1-0to23-101418
Sample Collection:
14-Oct-2018 11:08

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-5 i
Matrix:	SOLID	**Sample Size:**	9.87 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 17:20:16	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX9M_093 S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX9M_093 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	23.0

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	K J	0.093	0.0506 (Q)	0.43	1.002
1,2,3,7,8-PECDD [4]	J	0.135	0.0506 (Q)	0.62	1.001
1,2,3,4,7,8-HXCDD	J	0.268	0.0506 (Q)	1.31	1.000
1,2,3,6,7,8-HXCDD	J	1.43	0.0506 (Q)	1.20	1.000
1,2,3,7,8,9-HXCDD	J	0.693	0.0506 (Q)	1.16	1.011
1,2,3,4,6,7,8-HPCDD	B	48.1	0.0660 (S)	0.99	1.000
OCDD	B	427	0.0519 (S)	0.88	1.000
2,3,7,8-TCDF	J	0.252	0.0506 (Q)	0.75	1.001
1,2,3,7,8-PECDF	K B J	0.118	0.0686 (S)	1.25	1.001
2,3,4,7,8-PECDF	K J	0.158	0.0686 (S)	2.15	1.001
1,2,3,4,7,8-HXCDF	J	0.819	0.0506 (Q)	1.40	1.000
1,2,3,6,7,8-HXCDF	J	0.386	0.0506 (Q)	1.28	1.000
1,2,3,7,8,9-HXCDF	B J	0.105	0.0506 (Q)	1.06	1.001
2,3,4,6,7,8-HXCDF	K J	0.176	0.0506 (Q)	2.10	1.001
1,2,3,4,6,7,8-HPCDF	B	9.18	0.0506 (Q)	1.05	1.000
1,2,3,4,7,8,9-HPCDF	J	0.568	0.0506 (Q)	1.09	1.000
OCDF	B	39.8	0.0506 (Q)	0.91	1.002
TOTAL TETRA-DIOXINS		0.555	0.0506 (Q)		
TOTAL PENTA-DIOXINS	T	0.839	0.0506 (Q)		
TOTAL HEXA-DIOXINS		8.87	0.0506 (Q)		
TOTAL HEPTA-DIOXINS		108	0.0660 (S)		
TOTAL TETRA-FURANS		1.72	0.0506 (Q)		
TOTAL PENTA-FURANS	B	3.71	0.0686 (S)		
TOTAL HEXA-FURANS		12.4	0.0506 (Q)		
TOTAL HEPTA-FURANS		39.6	0.0506 (Q)		

(1) Where applicable, custom lab flags have been used on this report; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; T = result recalculated against alternate labeled compound(s) or internal standard.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_L31654-5_Form1A_DX9M_093S10_SJ2619881.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
F1-0to23-101418
Sample Collection:
14-Oct-2018 11:08

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-5 i
Matrix:	SOLID	**Sample Size:**	9.87 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 17:20:16	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX9M_093 S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX9M_093 S: 1
Concentration Units:	pg absolute	**% Moisture:**	23.0

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		2000	1510	75.3	0.79	1.013
13C-1,2,3,7,8-PECDD [4]		2000	2470	123	0.63	1.385
13C-1,2,3,4,7,8-HXCDD		2000	1270	63.6	1.25	0.987
13C-1,2,3,6,7,8-HXCDD		2000	1890	94.5	1.19	0.990
13C-1,2,3,4,6,7,8-HPCDD		2000	1600	80.0	1.04	1.095
13C-OCDD		4000	3420	85.5	0.89	1.179
13C-2,3,7,8-TCDF		2000	1200	59.8	0.76	0.967
13C-1,2,3,7,8-PECDF		2000	1330	66.5	1.57	1.285
13C-2,3,4,7,8-PECDF		2000	1350	67.3	1.60	1.353
13C-1,2,3,4,7,8-HXCDF		2000	1270	63.4	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		2000	1270	63.3	0.54	0.958
13C-1,2,3,7,8,9-HXCDF		2000	1430	71.3	0.52	1.004
13C-2,3,4,6,7,8-HXCDF		2000	1340	67.0	0.53	0.980
13C-1,2,3,4,6,7,8-HPCDF		2000	1470	73.5	0.45	1.062
13C-1,2,3,4,7,8,9-HPCDF		2000	1620	80.9	0.45	1.104
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	155	77.6		1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_L31654-5_Form2_DX9M_093S10_SJ2619881.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
F1-0to23-101418
Sample Collection:
14-Oct-2018 11:08

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-5
Matrix:	SOLID	**Sample Size:**	9.87 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jul-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 01:41:53	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB9T_084 S: 9**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB9T_084 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	23.0

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Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
1,2,3,7,8,9-HXCDD	J	0.554	0.0780 (S)	1.25	1.059
2,3,7,8-TCDF	J	0.163	0.0506 (Q)	0.66	1.001

(1) Where applicable, custom lab flags have been used on this report; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

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Report Filename: 1613_DIOXINS_1613DB225_L31654-5_Form1A_DB9T_084S9_SJ2620833.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
F1-0to23-101418

PCDD/PCDF ANALYSIS TEQ DATA REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection:	14-Oct-2018 11:08		
Contract No.:	5055	**Project No.**	SWAN ISLAND LAGOON SED INVESTIGATION
Matrix:	SOLID	**Lab Sample I.D.:**	L31654-5 i
Sample Size:	9.87 g (dry)	**GC Column ID(s):**	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB9T_084 S: 9** **DX9M_093 S: 10**

COMPOUND	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 RL	TEQ ND=RL
2,3,7,8-TCDD	U		0.0506	1	0.00e+00	2.53e-02	
1,2,3,7,8-PECDD		0.135	0.0506	1	1.35e-01	1.35e-01	
1,2,3,4,7,8-HXCDD		0.268	0.0506	0.1	2.68e-02	2.68e-02	
1,2,3,6,7,8-HXCDD		1.43	0.0506	0.1	1.43e-01	1.43e-01	
1,2,3,7,8,9-HXCDD		0.554	0.0780	0.1	5.54e-02	5.54e-02	
1,2,3,4,6,7,8-HPCDD		48.1	0.0660	0.01	4.81e-01	4.81e-01	
OCDD		427	0.0519	0.0003	1.28e-01	1.28e-01	
2,3,7,8-TCDF		0.163	0.0506	0.1	1.63e-02	1.63e-02	
1,2,3,7,8-PECDF	U		0.0686	0.03	0.00e+00	1.03e-03	
2,3,4,7,8-PECDF	U		0.0686	0.3	0.00e+00	1.03e-02	
1,2,3,4,7,8-HXCDF		0.819	0.0506	0.1	8.19e-02	8.19e-02	
1,2,3,6,7,8-HXCDF		0.386	0.0506	0.1	3.86e-02	3.86e-02	
1,2,3,7,8,9-HXCDF		0.105	0.0506	0.1	1.05e-02	1.05e-02	
2,3,4,6,7,8-HXCDF	U		0.0506	0.1	0.00e+00	2.53e-03	
1,2,3,4,6,7,8-HPCDF		9.18	0.0506	0.01	9.18e-02	9.18e-02	
1,2,3,4,7,8,9-HPCDF		0.568	0.0506	0.01	5.68e-03	5.68e-03	
OCDF		39.8	0.0506	0.0003	1.19e-02	1.19e-02	
			TOTAL TEQ		1.23	1.27	

(1) Where applicable, custom lab flags may have been used on this report; U = not detected at RL.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 22-Sep-2019 12:42:33; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613-TEQ_L31654-5_TEQ_SJ2619881.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
R4-SC-120to138-102118
Sample Collection:
21-Oct-2018 20:45

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-6 i
Matrix:	SOLID	**Sample Size:**	10.3 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 18:15:23	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX9M_093 S: 11**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX9M_093 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	40.7

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	J	0.391	0.0486 (Q)	0.66	1.001
1,2,3,7,8-PECDD [4]	J	0.917	0.0486 (Q)	0.61	1.001
1,2,3,4,7,8-HXCDD	J	1.26	0.0486 (Q)	1.23	1.001
1,2,3,6,7,8-HXCDD		7.64	0.0486 (Q)	1.23	1.000
1,2,3,7,8,9-HXCDD	J	3.63	0.0486 (Q)	1.23	1.011
1,2,3,4,6,7,8-HPCDD	B	141	0.0917 (S)	1.02	1.000
OCDD	B	2210	0.0486 (Q)	0.87	1.000
2,3,7,8-TCDF		1.89	0.0486 (Q)	0.72	1.001
1,2,3,7,8-PECDF	B J	0.941	0.0494 (S)	1.42	1.001
2,3,4,7,8-PECDF	J	1.24	0.0494 (S)	1.46	1.001
1,2,3,4,7,8-HXCDF	J	3.92	0.0486 (Q)	1.18	1.001
1,2,3,6,7,8-HXCDF		10.6	0.0486 (Q)	1.28	1.000
1,2,3,7,8,9-HXCDF	B J	0.310	0.0486 (Q)	1.26	1.000
2,3,4,6,7,8-HXCDF	J	2.42	0.0486 (Q)	1.25	1.000
1,2,3,4,6,7,8-HPCDF	B	144	0.0616 (S)	1.05	1.000
1,2,3,4,7,8,9-HPCDF	J	3.42	0.0616 (S)	1.02	1.000
OCDF	B	148	0.0486 (Q)	0.90	1.002
TOTAL TETRA-DIOXINS		10.3	0.0486 (Q)		
TOTAL PENTA-DIOXINS	T	13.9	0.0486 (Q)		
TOTAL HEXA-DIOXINS		56.2	0.0486 (Q)		
TOTAL HEPTA-DIOXINS		351	0.0917 (S)		
TOTAL TETRA-FURANS		27.8	0.0486 (Q)		
TOTAL PENTA-FURANS	B	65.9	0.0494 (S)		
TOTAL HEXA-FURANS		127	0.0486 (Q)		
TOTAL HEPTA-FURANS		327	0.0616 (S)		

(1) Where applicable, custom lab flags have been used on this report; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; T = result recalculated against alternate labeled compound(s) or internal standard.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_L31654-6_Form1A_DX9M_093S11_SJ2619882.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
R4-SC-120to138-102118
Sample Collection:
21-Oct-2018 20:45

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-6 i
Matrix:	SOLID	**Sample Size:**	10.3 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 18:15:23	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX9M_093 S: 11**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX9M_093 S: 1
Concentration Units:	pg absolute	**% Moisture:**	40.7

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		2000	1540	77.0	0.76	1.013
13C-1,2,3,7,8-PECDD [4]		2000	2140	107	0.61	1.383
13C-1,2,3,4,7,8-HXCDD		2000	1500	74.8	1.27	0.987
13C-1,2,3,6,7,8-HXCDD		2000	1730	86.3	1.30	0.990
13C-1,2,3,4,6,7,8-HPCDD		2000	1810	90.5	1.04	1.095
13C-OCDD		4000	4450	111	0.87	1.179
13C-2,3,7,8-TCDF		2000	1400	70.1	0.83	0.966
13C-1,2,3,7,8-PECDF		2000	1650	82.4	1.56	1.284
13C-2,3,4,7,8-PECDF		2000	1620	81.2	1.55	1.352
13C-1,2,3,4,7,8-HXCDF		2000	1430	71.4	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		2000	1400	69.9	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		2000	1570	78.6	0.53	1.004
13C-2,3,4,6,7,8-HXCDF		2000	1510	75.3	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		2000	1650	82.5	0.45	1.062
13C-1,2,3,4,7,8,9-HPCDF		2000	1810	90.5	0.45	1.104
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	151	75.5		1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_L31654-6_Form2_DX9M_093S11_SJ2619882.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
R4-SC-120to138-102118
Sample Collection:
21-Oct-2018 20:45

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-6
Matrix:	SOLID	**Sample Size:**	10.3 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jul-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 02:26:36	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB9T_084 S: 10**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB9T_084 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	40.7

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
1,2,3,7,8,9-HXCDD	J	3.17	0.0664 (S)	1.19	1.059
2,3,7,8-TCDF	J	0.757	0.100 (S)	0.87	1.001

(1) Where applicable, custom lab flags have been used on this report; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB225_L31654-6_Form1A_DB9T_084S10_SJ2620834.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
R4-SC-120to138-102118

PCDD/PCDF ANALYSIS TEQ DATA REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection:	21-Oct-2018 20:45		
Contract No.:	5055	**Project No.**	SWAN ISLAND LAGOON SED INVESTIGATION
Matrix:	SOLID	**Lab Sample I.D.:**	L31654-6 i
Sample Size:	10.3 g (dry)	**GC Column ID(s):**	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB9T_084 S: 10** **DX9M_093 S: 11**

COMPOUND	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 RL	TEQ ND=RL
2,3,7,8-TCDD		0.391	0.0486	1	3.91e-01	3.91e-01	
1,2,3,7,8-PECDD		0.917	0.0486	1	9.17e-01	9.17e-01	
1,2,3,4,7,8-HXCDD		1.26	0.0486	0.1	1.26e-01	1.26e-01	
1,2,3,6,7,8-HXCDD		7.64	0.0486	0.1	7.64e-01	7.64e-01	
1,2,3,7,8,9-HXCDD		3.17	0.0664	0.1	3.17e-01	3.17e-01	
1,2,3,4,6,7,8-HPCDD		141	0.0917	0.01	1.41e+00	1.41e+00	
OCDD		2210	0.0486	0.0003	6.63e-01	6.63e-01	
2,3,7,8-TCDF		0.757	0.100	0.1	7.57e-02	7.57e-02	
1,2,3,7,8-PECDF		0.941	0.0494	0.03	2.82e-02	2.82e-02	
2,3,4,7,8-PECDF		1.24	0.0494	0.3	3.72e-01	3.72e-01	
1,2,3,4,7,8-HXCDF		3.92	0.0486	0.1	3.92e-01	3.92e-01	
1,2,3,6,7,8-HXCDF		10.6	0.0486	0.1	1.06e+00	1.06e+00	
1,2,3,7,8,9-HXCDF		0.310	0.0486	0.1	3.10e-02	3.10e-02	
2,3,4,6,7,8-HXCDF		2.42	0.0486	0.1	2.42e-01	2.42e-01	
1,2,3,4,6,7,8-HPCDF		144	0.0616	0.01	1.44e+00	1.44e+00	
1,2,3,4,7,8,9-HPCDF		3.42	0.0616	0.01	3.42e-02	3.42e-02	
OCDF		148	0.0486	0.0003	4.44e-02	4.44e-02	
			TOTAL TEQ		8.31	8.31	

(1) Where applicable, custom lab flags may have been used on this report; U = not detected at RL.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1613_DIOXINS_1613-TEQ_L31654-6_TEQ_SJ2619882.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
B5-0to26-100818
Sample Collection:
08-Oct-2018 15:07

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-7 i
Matrix:	SOLID	**Sample Size:**	10.9 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 23:06:41	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX9M_093 S: 16**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX9M_093 S: 13
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	64.0

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	J	0.771	0.0719 (S)	0.79	1.001
1,2,3,7,8-PECDD [4]	J	2.50	0.102 (S)	0.57	1.001
1,2,3,4,7,8-HXCDD		7.50	0.0460 (Q)	1.25	1.000
1,2,3,6,7,8-HXCDD		43.3	0.0460 (Q)	1.22	1.000
1,2,3,7,8,9-HXCDD		11.0	0.0460 (Q)	1.20	1.011
1,2,3,4,6,7,8-HPCDD	B	1630	0.147 (S)	1.02	1.000
OCDD	B	11300	0.277 (S)	0.91	1.000
2,3,7,8-TCDF		2.73	0.0581 (S)	0.81	1.001
1,2,3,7,8-PECDF	B J	1.29	0.0721 (S)	1.55	1.001
2,3,4,7,8-PECDF	J	2.20	0.0721 (S)	1.70	1.001
1,2,3,4,7,8-HXCDF		18.5	0.0594 (S)	1.27	1.000
1,2,3,6,7,8-HXCDF		5.69	0.0594 (S)	1.16	1.000
1,2,3,7,8,9-HXCDF	B J	0.601	0.0594 (S)	1.15	1.000
2,3,4,6,7,8-HXCDF	J	3.55	0.0594 (S)	1.14	1.000
1,2,3,4,6,7,8-HPCDF	B	437	0.130 (S)	1.03	1.000
1,2,3,4,7,8,9-HPCDF		22.7	0.130 (S)	1.01	1.000
OCDF	B	2020	0.134 (S)	0.91	1.001
TOTAL TETRA-DIOXINS		11.3	0.0719 (S)		
TOTAL PENTA-DIOXINS		23.2	0.102 (S)		
TOTAL HEXA-DIOXINS		178	0.0460 (Q)		
TOTAL HEPTA-DIOXINS		3100	0.147 (S)		
TOTAL TETRA-FURANS		15.9	0.0581 (S)		
TOTAL PENTA-FURANS	B	45.8	0.0721 (S)		
TOTAL HEXA-FURANS		398	0.0594 (S)		
TOTAL HEPTA-FURANS		2340	0.130 (S)		

(1) Where applicable, custom lab flags have been used on this report; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

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Report Filename: 1613_DIOXINS_1613DB5_L31654-7_Form1A_DX9M_093S16_SJ2619984.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
B5-0to26-100818
Sample Collection:
08-Oct-2018 15:07

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-7 i
Matrix:	SOLID	**Sample Size:**	10.9 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 23:06:41	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX9M_093 S: 16**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX9M_093 S: 13
Concentration Units:	pg absolute	**% Moisture:**	64.0

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		2000	1290	64.3	0.77	1.014
13C-1,2,3,7,8-PECDD [4]		2000	1500	75.2	0.63	1.385
13C-1,2,3,4,7,8-HXCDD		2000	1920	96.0	1.29	0.987
13C-1,2,3,6,7,8-HXCDD		2000	1890	94.5	1.26	0.990
13C-1,2,3,4,6,7,8-HPCDD		2000	1570	78.3	1.02	1.094
13C-OCDD		4000	3910	97.6	0.90	1.181
13C-2,3,7,8-TCDF		2000	1200	59.8	0.79	0.967
13C-1,2,3,7,8-PECDF		2000	1420	70.8	1.55	1.286
13C-2,3,4,7,8-PECDF		2000	1260	62.8	1.56	1.354
13C-1,2,3,4,7,8-HXCDF		2000	1220	61.0	0.52	0.955
13C-1,2,3,6,7,8-HXCDF		2000	1160	58.2	0.52	0.959
13C-1,2,3,7,8,9-HXCDF		2000	1510	75.3	0.53	1.004
13C-2,3,4,6,7,8-HXCDF		2000	1160	58.1	0.51	0.982
13C-1,2,3,4,6,7,8-HPCDF		2000	1340	67.2	0.46	1.063
13C-1,2,3,4,7,8,9-HPCDF		2000	1460	73.2	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	178	89.2		1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_L31654-7_Form2_DX9M_093S16_SJ2619984.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
B5-0to26-100818
Sample Collection:
08-Oct-2018 15:07

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-7
Matrix:	SOLID	**Sample Size:**	10.9 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jul-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 11:55:36	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB9T_083 S: 7**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB9T_083 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	64.0

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
1,2,3,7,8,9-HXCDD		12.4	0.0756 (S)	1.20	1.059
2,3,7,8-TCDF		1.84	0.102 (S)	0.87	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

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Report Filename: 1613_DIOXINS_1613DB225_L31654-7_Form1A_DB9T_083S7_SJ2620857.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
B5-0to26-100818

PCDD/PCDF ANALYSIS TEQ DATA REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection:	08-Oct-2018 15:07		
Contract No.:	5055	**Project No.**	SWAN ISLAND LAGOON SED INVESTIGATION
Matrix:	SOLID	**Lab Sample I.D.:**	L31654-7
Sample Size:	10.9 g (dry)	**GC Column ID(s):**	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB9T_083 S: 7** **DX9M_093 S: 16**

COMPOUND	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 RL	TEQ ND=RL
2,3,7,8-TCDD		0.771	0.0719	1	7.71e-01	7.71e-01	
1,2,3,7,8-PECDD		2.50	0.102	1	2.50e+00	2.50e+00	
1,2,3,4,7,8-HXCDD		7.50	0.0460	0.1	7.50e-01	7.50e-01	
1,2,3,6,7,8-HXCDD		43.3	0.0460	0.1	4.33e+00	4.33e+00	
1,2,3,7,8,9-HXCDD		12.4	0.0756	0.1	1.24e+00	1.24e+00	
1,2,3,4,6,7,8-HPCDD		1630	0.147	0.01	1.63e+01	1.63e+01	
OCDD		11300	0.277	0.0003	3.39e+00	3.39e+00	
2,3,7,8-TCDF		1.84	0.102	0.1	1.84e-01	1.84e-01	
1,2,3,7,8-PECDF		1.29	0.0721	0.03	3.87e-02	3.87e-02	
2,3,4,7,8-PECDF		2.20	0.0721	0.3	6.60e-01	6.60e-01	
1,2,3,4,7,8-HXCDF		18.5	0.0594	0.1	1.85e+00	1.85e+00	
1,2,3,6,7,8-HXCDF		5.69	0.0594	0.1	5.69e-01	5.69e-01	
1,2,3,7,8,9-HXCDF		0.601	0.0594	0.1	6.01e-02	6.01e-02	
2,3,4,6,7,8-HXCDF		3.55	0.0594	0.1	3.55e-01	3.55e-01	
1,2,3,4,6,7,8-HPCDF		437	0.130	0.01	4.37e+00	4.37e+00	
1,2,3,4,7,8,9-HPCDF		22.7	0.130	0.01	2.27e-01	2.27e-01	
OCDF		2020	0.134	0.0003	6.06e-01	6.06e-01	
			TOTAL TEQ		38.2	38.2	

(1) Where applicable, custom lab flags may have been used on this report; U = not detected at RL.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1613_DIOXINS_1613-TEQ_L31654-7_TEQ_SJ2620857.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
R4-SC-8to10-102118
Sample Collection:
21-Oct-2018 19:40

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-8
Matrix:	SOLID	**Sample Size:**	10.5 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 00:01:49	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX9M_093 S: 17**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX9M_093 S: 13
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	43.3

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD		1.19	0.0478 (Q)	0.79	1.001
1,2,3,7,8-PECDD [4]	J	2.32	0.0495 (S)	0.59	1.001
1,2,3,4,7,8-HXCDD	J	3.12	0.0478 (Q)	1.25	1.000
1,2,3,6,7,8-HXCDD		16.2	0.0478 (Q)	1.23	1.000
1,2,3,7,8,9-HXCDD		8.27	0.0478 (Q)	1.28	1.011
1,2,3,4,6,7,8-HPCDD	B	341	0.0848 (S)	1.03	1.000
OCDD	B	5030	0.0783 (S)	0.88	1.000
2,3,7,8-TCDF		4.49	0.0480 (S)	0.77	1.001
1,2,3,7,8-PECDF	B J	2.42	0.0492 (S)	1.48	1.001
2,3,4,7,8-PECDF	J	3.17	0.0492 (S)	1.52	1.001
1,2,3,4,7,8-HXCDF		10.6	0.0478 (Q)	1.28	1.000
1,2,3,6,7,8-HXCDF		23.3	0.0478 (Q)	1.26	1.000
1,2,3,7,8,9-HXCDF	B J	0.748	0.0478 (Q)	1.19	1.000
2,3,4,6,7,8-HXCDF		5.33	0.0478 (Q)	1.24	1.001
1,2,3,4,6,7,8-HPCDF	B	281	0.0649 (S)	1.04	1.000
1,2,3,4,7,8,9-HPCDF		10.1	0.0649 (S)	1.02	1.000
OCDF	B	374	0.0478 (Q)	0.91	1.002
TOTAL TETRA-DIOXINS		18.6	0.0478 (Q)		
TOTAL PENTA-DIOXINS		28.4	0.0495 (S)		
TOTAL HEXA-DIOXINS		115	0.0478 (Q)		
TOTAL HEPTA-DIOXINS		821	0.0848 (S)		
TOTAL TETRA-FURANS		70.7	0.0480 (S)		
TOTAL PENTA-FURANS	B	177	0.0492 (S)		
TOTAL HEXA-FURANS		284	0.0478 (Q)		
TOTAL HEPTA-FURANS		681	0.0649 (S)		

(1) Where applicable, custom lab flags have been used on this report; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_L31654-8_Form1A_DX9M_093S17_SJ2619985.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
R4-SC-8to10-102118
Sample Collection:
21-Oct-2018 19:40

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-8
Matrix:	SOLID	**Sample Size:**	10.5 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 00:01:49	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX9M_093 S: 17**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX9M_093 S: 13
Concentration Units:	pg absolute	**% Moisture:**	43.3

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		2000	1780	89.2	0.78	1.013
13C-1,2,3,7,8-PECDD [4]		2000	2110	106	0.63	1.384
13C-1,2,3,4,7,8-HXCDD		2000	1870	93.4	1.28	0.987
13C-1,2,3,6,7,8-HXCDD		2000	1900	95.1	1.24	0.990
13C-1,2,3,4,6,7,8-HPCDD		2000	1950	97.5	1.03	1.095
13C-OCDD		4000	4800	120	0.88	1.180
13C-2,3,7,8-TCDF		2000	1450	72.6	0.82	0.966
13C-1,2,3,7,8-PECDF		2000	1850	92.5	1.57	1.285
13C-2,3,4,7,8-PECDF		2000	1870	93.6	1.58	1.353
13C-1,2,3,4,7,8-HXCDF		2000	1750	87.3	0.53	0.954
13C-1,2,3,6,7,8-HXCDF		2000	1560	78.0	0.53	0.958
13C-1,2,3,7,8,9-HXCDF		2000	1730	86.6	0.52	1.004
13C-2,3,4,6,7,8-HXCDF		2000	1670	83.3	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		2000	1720	85.8	0.45	1.063
13C-1,2,3,4,7,8,9-HPCDF		2000	1900	94.9	0.46	1.104
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	184	91.8		1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_L31654-8_Form2_DX9M_093S17_SJ2619985.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
R4-SC-8to10-102118
Sample Collection:
21-Oct-2018 19:40

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-8
Matrix:	SOLID	**Sample Size:**	10.5 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jul-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 12:40:20	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB9T_083 S: 8**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB9T_083 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	43.3

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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
1,2,3,7,8,9-HXCDD		8.31	0.185 (S)	1.16	1.059
2,3,7,8-TCDF		1.76	0.156 (S)	0.84	1.002

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

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Report Filename: 1613_DIOXINS_1613DB225_L31654-8_Form1A_DB9T_083S8_SJ2620858.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
R4-SC-8to10-102118

PCDD/PCDF ANALYSIS TEQ DATA REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection:	21-Oct-2018 19:40		
Contract No.:	5055	**Project No.**	SWAN ISLAND LAGOON SED INVESTIGATION
Matrix:	SOLID	**Lab Sample I.D.:**	L31654-8
Sample Size:	10.5 g (dry)	**GC Column ID(s):**	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB9T_083 S: 8** **DX9M_093 S: 17**

COMPOUND	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 RL	TEQ ND=RL
2,3,7,8-TCDD		1.19	0.0478	1	1.19e+00	1.19e+00	
1,2,3,7,8-PECDD		2.32	0.0495	1	2.32e+00	2.32e+00	
1,2,3,4,7,8-HXCDD		3.12	0.0478	0.1	3.12e-01	3.12e-01	
1,2,3,6,7,8-HXCDD		16.2	0.0478	0.1	1.62e+00	1.62e+00	
1,2,3,7,8,9-HXCDD		8.31	0.185	0.1	8.31e-01	8.31e-01	
1,2,3,4,6,7,8-HPCDD		341	0.0848	0.01	3.41e+00	3.41e+00	
OCDD		5030	0.0783	0.0003	1.51e+00	1.51e+00	
2,3,7,8-TCDF		1.76	0.156	0.1	1.76e-01	1.76e-01	
1,2,3,7,8-PECDF		2.42	0.0492	0.03	7.26e-02	7.26e-02	
2,3,4,7,8-PECDF		3.17	0.0492	0.3	9.51e-01	9.51e-01	
1,2,3,4,7,8-HXCDF		10.6	0.0478	0.1	1.06e+00	1.06e+00	
1,2,3,6,7,8-HXCDF		23.3	0.0478	0.1	2.33e+00	2.33e+00	
1,2,3,7,8,9-HXCDF		0.748	0.0478	0.1	7.48e-02	7.48e-02	
2,3,4,6,7,8-HXCDF		5.33	0.0478	0.1	5.33e-01	5.33e-01	
1,2,3,4,6,7,8-HPCDF		281	0.0649	0.01	2.81e+00	2.81e+00	
1,2,3,4,7,8,9-HPCDF		10.1	0.0649	0.01	1.01e-01	1.01e-01	
OCDF		374	0.0478	0.0003	1.12e-01	1.12e-01	
			TOTAL TEQ		19.4	19.4	

(1) Where applicable, custom lab flags may have been used on this report; U = not detected at RL.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 22-Sep-2019 12:42:33; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613-TEQ_L31654-8_TEQ_SJ2620858.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
J6-SC-40to60-102218
Sample Collection:
22-Oct-2018 18:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-9
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 00:56:57	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX9M_093 S: 18**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX9M_093 S: 13
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	45.4

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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD		1.95	0.0480 (Q)	0.77	1.001
1,2,3,7,8-PECDD [4]	J	3.61	0.0480 (Q)	0.67	1.001
1,2,3,4,7,8-HXCDD		8.27	0.0610 (S)	1.26	1.000
1,2,3,6,7,8-HXCDD		34.8	0.0610 (S)	1.23	1.000
1,2,3,7,8,9-HXCDD		18.3	0.0610 (S)	1.21	1.011
1,2,3,4,6,7,8-HPCDD	B	950	0.124 (S)	1.03	1.000
OCDD	E				
2,3,7,8-TCDF		6.40	0.0480 (Q)	0.75	1.001
1,2,3,7,8-PECDF	B J	4.08	0.0608 (S)	1.49	1.001
2,3,4,7,8-PECDF	J	3.70	0.0608 (S)	1.55	1.001
1,2,3,4,7,8-HXCDF		23.6	0.0534 (S)	1.21	1.000
1,2,3,6,7,8-HXCDF		14.9	0.0534 (S)	1.27	1.000
1,2,3,7,8,9-HXCDF	B J	1.02	0.0534 (S)	1.39	1.001
2,3,4,6,7,8-HXCDF		4.85	0.0534 (S)	1.24	1.001
1,2,3,4,6,7,8-HPCDF	B	229	0.0898 (S)	1.04	1.000
1,2,3,4,7,8,9-HPCDF		17.3	0.0898 (S)	1.01	1.000
OCDF	B	598	0.0480 (Q)	0.90	1.001
TOTAL TETRA-DIOXINS		17.4	0.0480 (Q)		
TOTAL PENTA-DIOXINS	T	43.1	0.0480 (Q)		
TOTAL HEXA-DIOXINS		239	0.0610 (S)		
TOTAL HEPTA-DIOXINS		2020	0.124 (S)		
TOTAL TETRA-FURANS		67.4	0.0480 (Q)		
TOTAL PENTA-FURANS	B	108	0.0608 (S)		
TOTAL HEXA-FURANS		305	0.0534 (S)		
TOTAL HEPTA-FURANS		842	0.0898 (S)		

(1) Where applicable, custom lab flags have been used on this report; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; T = result recalculated against alternate labeled compound(s) or internal standard; E = exceeds calibrated linear range, see dilution data.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_L31654-9_Form1A_DX9M_093S18_SJ2619986.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
J6-SC-40to60-102218
Sample Collection:
22-Oct-2018 18:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-9
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 00:56:57	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX9M_093 S: 18**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX9M_093 S: 13
Concentration Units:	pg absolute	**% Moisture:**	45.4

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		2000	1660	83.2	0.75	1.013
13C-1,2,3,7,8-PECDD [4]		2000	2210	111	0.62	1.384
13C-1,2,3,4,7,8-HXCDD		2000	1800	90.0	1.24	0.987
13C-1,2,3,6,7,8-HXCDD		2000	1720	85.9	1.22	0.990
13C-1,2,3,4,6,7,8-HPCDD		2000	1830	91.7	1.00	1.095
13C-OCDD		4000	4750	119	0.89	1.180
13C-2,3,7,8-TCDF		2000	1540	77.1	0.81	0.967
13C-1,2,3,7,8-PECDF		2000	1800	90.0	1.56	1.285
13C-2,3,4,7,8-PECDF		2000	1730	86.6	1.61	1.353
13C-1,2,3,4,7,8-HXCDF		2000	1690	84.5	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		2000	1450	72.3	0.53	0.958
13C-1,2,3,7,8,9-HXCDF		2000	1560	78.2	0.52	1.004
13C-2,3,4,6,7,8-HXCDF		2000	1470	73.5	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		2000	1600	80.0	0.46	1.062
13C-1,2,3,4,7,8,9-HPCDF		2000	1660	82.8	0.45	1.104
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	182	91.1		1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_L31654-9_Form2_DX9M_093S18_SJ2619986.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
J6-SC-40to60-102218
Sample Collection:
22-Oct-2018 18:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-9 W
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	17-Sep-2019 **Time:** 20:48:37	**GC Column ID:**	DB5
Extract Volume (uL):	100	**Sample Data Filename:**	**DX9M_095A S: 13**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	5	**Cal. Ver. Data Filename:**	DX9M_095A S: 8
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	45.4

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	X				
1,2,3,7,8-PECDD [4]	X				
1,2,3,4,7,8-HXCDD	X				
1,2,3,6,7,8-HXCDD	X				
1,2,3,7,8,9-HXCDD	X				
1,2,3,4,6,7,8-HPCDD	X				
OCDD	B D	12700	0.0517 (S)	0.86	1.000
2,3,7,8-TCDF	X				
1,2,3,7,8-PECDF	X				
2,3,4,7,8-PECDF	X				
1,2,3,4,7,8-HXCDF	X				
1,2,3,6,7,8-HXCDF	X				
1,2,3,7,8,9-HXCDF	X				
2,3,4,6,7,8-HXCDF	X				
1,2,3,4,6,7,8-HPCDF	X				
1,2,3,4,7,8,9-HPCDF	X				
OCDF	X				
TOTAL TETRA-DIOXINS	X				
TOTAL PENTA-DIOXINS	X				
TOTAL HEXA-DIOXINS	X				
TOTAL HEPTA-DIOXINS	X				
TOTAL TETRA-FURANS	X				
TOTAL PENTA-FURANS	X				
TOTAL HEXA-FURANS	X				
TOTAL HEPTA-FURANS	X				

(1) Where applicable, custom lab flags have been used on this report; B = analyte found in sample and the associated blank; D = dilution data; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_L31654-9_Form1A_DX9M_095AS13_SJ2621561.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
J6-SC-40to60-102218
Sample Collection:
22-Oct-2018 18:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-9 W
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	17-Sep-2019 **Time:** 20:48:37	**GC Column ID:**	DB5
Extract Volume (uL):	100	**Sample Data Filename:**	**DX9M_095A S: 13**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	5	**Cal. Ver. Data Filename:**	DX9M_095A S: 8
Concentration Units:	pg absolute	**% Moisture:**	45.4

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD	X					
13C-1,2,3,7,8-PECDD [4]	X					
13C-1,2,3,4,7,8-HXCDD	X					
13C-1,2,3,6,7,8-HXCDD	X					
13C-1,2,3,4,6,7,8-HPCDD	X					
13C-OCDD	D	4000	3970	99.3	0.85	1.179
13C-2,3,7,8-TCDF	X					
13C-1,2,3,7,8-PECDF	X					
13C-2,3,4,7,8-PECDF	X					
13C-1,2,3,4,7,8-HXCDF	X					
13C-1,2,3,6,7,8-HXCDF	X					
13C-1,2,3,7,8,9-HXCDF	X					
13C-2,3,4,6,7,8-HXCDF	X					
13C-1,2,3,4,6,7,8-HPCDF	X					
13C-1,2,3,4,7,8,9-HPCDF	X					
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD	X					

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_L31654-9_Form2_DX9M_095AS13_SJ2621561.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
J6-SC-40to60-102218
Sample Collection:
22-Oct-2018 18:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-9
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jul-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 13:25:03	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB9T_083 S: 9**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB9T_083 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	45.4

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
1,2,3,7,8,9-HXCDD		17.9	0.331 (S)	1.22	1.059
2,3,7,8-TCDF		3.90	0.425 (S)	0.79	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB225_L31654-9_Form1A_DB9T_083S9_SJ2620859.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
J6-SC-40to60-102218

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Project No.**	SWAN ISLAND LAGOON SED INVESTIGATION
Matrix:	SOLID	**Lab Sample I.D.:**	L31654-9
Sample Size:	10.4 g (dry)	**GC Column ID(s):**	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB9T_083 S: 9** **DX9M_093 S: 18** **DX9M_095A S: 13**

Sample Collection: 22-Oct-2018 18:50

COMPOUND	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 RL	TEQ ND=RL
2,3,7,8-TCDD		1.95	0.0480	1	1.95e+00	1.95e+00	
1,2,3,7,8-PECDD		3.61	0.0480	1	3.61e+00	3.61e+00	
1,2,3,4,7,8-HXCDD		8.27	0.0610	0.1	8.27e-01	8.27e-01	
1,2,3,6,7,8-HXCDD		34.8	0.0610	0.1	3.48e+00	3.48e+00	
1,2,3,7,8,9-HXCDD		17.9	0.331	0.1	1.79e+00	1.79e+00	
1,2,3,4,6,7,8-HPCDD		950	0.124	0.01	9.50e+00	9.50e+00	
OCDD		12700	0.0517	0.0003	3.81e+00	3.81e+00	
2,3,7,8-TCDF		3.90	0.425	0.1	3.90e-01	3.90e-01	
1,2,3,7,8-PECDF		4.08	0.0608	0.03	1.22e-01	1.22e-01	
2,3,4,7,8-PECDF		3.70	0.0608	0.3	1.11e+00	1.11e+00	
1,2,3,4,7,8-HXCDF		23.6	0.0534	0.1	2.36e+00	2.36e+00	
1,2,3,6,7,8-HXCDF		14.9	0.0534	0.1	1.49e+00	1.49e+00	
1,2,3,7,8,9-HXCDF		1.02	0.0534	0.1	1.02e-01	1.02e-01	
2,3,4,6,7,8-HXCDF		4.85	0.0534	0.1	4.85e-01	4.85e-01	
1,2,3,4,6,7,8-HPCDF		229	0.0898	0.01	2.29e+00	2.29e+00	
1,2,3,4,7,8,9-HPCDF		17.3	0.0898	0.01	1.73e-01	1.73e-01	
OCDF		598	0.0480	0.0003	1.79e-01	1.79e-01	
			TOTAL TEQ		33.7	33.7	

(1) Where applicable, custom lab flags may have been used on this report; U = not detected at RL.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 22-Sep-2019 12:42:33; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613-TEQ_L31654-9_TEQ_SJ2620859.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
D6-SC-2to4-102118
Sample Collection:
21-Oct-2018 16:30

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-10
Matrix:	SOLID	**Sample Size:**	10.2 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 01:52:05	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX9M_093 S: 19**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX9M_093 S: 13
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	49.6

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD		1.59	0.0492 (Q)	0.81	1.001
1,2,3,7,8-PECDD [4]	J	3.75	0.0564 (S)	0.63	1.001
1,2,3,4,7,8-HXCDD		7.44	0.0492 (Q)	1.22	1.000
1,2,3,6,7,8-HXCDD		42.7	0.0492 (Q)	1.22	1.000
1,2,3,7,8,9-HXCDD		17.2	0.0492 (Q)	1.21	1.011
1,2,3,4,6,7,8-HPCDD	B	1100	0.0993 (S)	1.01	1.000
OCDD	E				
2,3,7,8-TCDF		7.70	0.0492 (Q)	0.78	1.001
1,2,3,7,8-PECDF	B	5.01	0.0492 (Q)	1.59	1.001
2,3,4,7,8-PECDF	J	4.49	0.0492 (Q)	1.50	1.001
1,2,3,4,7,8-HXCDF		25.5	0.0522 (S)	1.29	1.000
1,2,3,6,7,8-HXCDF		15.4	0.0522 (S)	1.27	1.000
1,2,3,7,8,9-HXCDF	B J	1.18	0.0522 (S)	1.28	1.001
2,3,4,6,7,8-HXCDF		5.54	0.0522 (S)	1.25	1.000
1,2,3,4,6,7,8-HPCDF	B	324	0.0721 (S)	1.02	1.000
1,2,3,4,7,8,9-HPCDF		22.1	0.0721 (S)	1.04	1.000
OCDF	B	1120	0.0660 (S)	0.91	1.002
TOTAL TETRA-DIOXINS		11.1	0.0492 (Q)		
TOTAL PENTA-DIOXINS		41.3	0.0564 (S)		
TOTAL HEXA-DIOXINS		225	0.0492 (Q)		
TOTAL HEPTA-DIOXINS		2170	0.0993 (S)		
TOTAL TETRA-FURANS		52.3	0.0492 (Q)		
TOTAL PENTA-FURANS	B	109	0.0492 (Q)		
TOTAL HEXA-FURANS		374	0.0522 (S)		
TOTAL HEPTA-FURANS		1350	0.0721 (S)		

(1) Where applicable, custom lab flags have been used on this report; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; E = exceeds calibrated linear range, see dilution data.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_L31654-10_Form1A_DX9M_093S19_SJ2619987.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
D6-SC-2to4-102118
Sample Collection:
21-Oct-2018 16:30

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-10
Matrix:	SOLID	**Sample Size:**	10.2 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 01:52:05	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX9M_093 S: 19**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX9M_093 S: 13
Concentration Units:	pg absolute	**% Moisture:**	49.6

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		2000	1750	87.6	0.77	1.015
13C-1,2,3,7,8-PECDD [4]		2000	1980	98.8	0.63	1.385
13C-1,2,3,4,7,8-HXCDD		2000	2190	109	1.27	0.987
13C-1,2,3,6,7,8-HXCDD		2000	2060	103	1.26	0.990
13C-1,2,3,4,6,7,8-HPCDD		2000	1870	93.6	1.05	1.093
13C-OCDD		4000	4260	107	0.89	1.178
13C-2,3,7,8-TCDF		2000	1580	78.9	0.78	0.968
13C-1,2,3,7,8-PECDF		2000	1890	94.7	1.57	1.287
13C-2,3,4,7,8-PECDF		2000	1730	86.5	1.57	1.354
13C-1,2,3,4,7,8-HXCDF		2000	1600	80.1	0.52	0.955
13C-1,2,3,6,7,8-HXCDF		2000	1600	80.2	0.53	0.959
13C-1,2,3,7,8,9-HXCDF		2000	1860	93.2	0.52	1.004
13C-2,3,4,6,7,8-HXCDF		2000	1590	79.6	0.53	0.981
13C-1,2,3,4,6,7,8-HPCDF		2000	1680	84.0	0.45	1.062
13C-1,2,3,4,7,8,9-HPCDF		2000	1730	86.4	0.45	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	193	96.3		1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_L31654-10_Form2_DX9M_093S19_SJ2619987.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
D6-SC-2to4-102118
Sample Collection:
21-Oct-2018 16:30

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-10 W
Matrix:	SOLID	**Sample Size:**	10.2 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	17-Sep-2019 **Time:** 21:43:45	**GC Column ID:**	DB5
Extract Volume (uL):	100	**Sample Data Filename:**	**DX9M_095A S: 14**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	5	**Cal. Ver. Data Filename:**	DX9M_095A S: 8
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	49.6

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	X				
1,2,3,7,8-PECDD [4]	X				
1,2,3,4,7,8-HXCDD	X				
1,2,3,6,7,8-HXCDD	X				
1,2,3,7,8,9-HXCDD	X				
1,2,3,4,6,7,8-HPCDD	X				
OCDD	B D	11500	0.166 (S)	0.88	1.000
2,3,7,8-TCDF	X				
1,2,3,7,8-PECDF	X				
2,3,4,7,8-PECDF	X				
1,2,3,4,7,8-HXCDF	X				
1,2,3,6,7,8-HXCDF	X				
1,2,3,7,8,9-HXCDF	X				
2,3,4,6,7,8-HXCDF	X				
1,2,3,4,6,7,8-HPCDF	X				
1,2,3,4,7,8,9-HPCDF	X				
OCDF	X				
TOTAL TETRA-DIOXINS	X				
TOTAL PENTA-DIOXINS	X				
TOTAL HEXA-DIOXINS	X				
TOTAL HEPTA-DIOXINS	X				
TOTAL TETRA-FURANS	X				
TOTAL PENTA-FURANS	X				
TOTAL HEXA-FURANS	X				
TOTAL HEPTA-FURANS	X				

(1) Where applicable, custom lab flags have been used on this report; B = analyte found in sample and the associated blank; D = dilution data; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_L31654-10_Form1A_DX9M_095AS14_SJ2621562.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
D6-SC-2to4-102118
Sample Collection:
21-Oct-2018 16:30

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-10 W
Matrix:	SOLID	**Sample Size:**	10.2 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	17-Sep-2019 **Time:** 21:43:45	**GC Column ID:**	DB5
Extract Volume (uL):	100	**Sample Data Filename:**	**DX9M_095A S: 14**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	5	**Cal. Ver. Data Filename:**	DX9M_095A S: 8
Concentration Units:	pg absolute	**% Moisture:**	49.6

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD	X					
13C-1,2,3,7,8-PECDD [4]	X					
13C-1,2,3,4,7,8-HXCDD	X					
13C-1,2,3,6,7,8-HXCDD	X					
13C-1,2,3,4,6,7,8-HPCDD	X					
13C-OCDD	D	4000	3990	99.7	0.89	1.179
13C-2,3,7,8-TCDF	X					
13C-1,2,3,7,8-PECDF	X					
13C-2,3,4,7,8-PECDF	X					
13C-1,2,3,4,7,8-HXCDF	X					
13C-1,2,3,6,7,8-HXCDF	X					
13C-1,2,3,7,8,9-HXCDF	X					
13C-2,3,4,6,7,8-HXCDF	X					
13C-1,2,3,4,6,7,8-HPCDF	X					
13C-1,2,3,4,7,8,9-HPCDF	X					
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD	X					

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_L31654-10_Form2_DX9M_095AS14_SJ2621562.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
D6-SC-2to4-102118
Sample Collection:
21-Oct-2018 16:30

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-10
Matrix:	SOLID	**Sample Size:**	10.2 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jul-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 14:09:46	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB9T_083 S: 10**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB9T_083 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	49.6

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Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
1,2,3,7,8,9-HXCDD		19.5	0.286 (S)	1.26	1.059
2,3,7,8-TCDF		4.86	0.264 (S)	0.77	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB225_L31654-10_Form1A_DB9T_083S10_SJ2620860.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
D6-SC-2to4-102118

PCDD/PCDF ANALYSIS TEQ DATA REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Sample Collection:**	21-Oct-2018 16:30
		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Matrix:	SOLID	**Lab Sample I.D.:**	L31654-10
Sample Size:	10.2 g (dry)	**GC Column ID(s):**	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB9T_083 S: 10** **DX9M_093 S: 19** **DX9M_095A S: 14**

COMPOUND	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 RL	TEQ ND=RL
2,3,7,8-TCDD		1.59	0.0492	1	1.59e+00	1.59e+00	
1,2,3,7,8-PECDD		3.75	0.0564	1	3.75e+00	3.75e+00	
1,2,3,4,7,8-HXCDD		7.44	0.0492	0.1	7.44e-01	7.44e-01	
1,2,3,6,7,8-HXCDD		42.7	0.0492	0.1	4.27e+00	4.27e+00	
1,2,3,7,8,9-HXCDD		19.5	0.286	0.1	1.95e+00	1.95e+00	
1,2,3,4,6,7,8-HPCDD		1100	0.0993	0.01	1.10e+01	1.10e+01	
OCDD		11500	0.166	0.0003	3.45e+00	3.45e+00	
2,3,7,8-TCDF		4.86	0.264	0.1	4.86e-01	4.86e-01	
1,2,3,7,8-PECDF		5.01	0.0492	0.03	1.50e-01	1.50e-01	
2,3,4,7,8-PECDF		4.49	0.0492	0.3	1.35e+00	1.35e+00	
1,2,3,4,7,8-HXCDF		25.5	0.0522	0.1	2.55e+00	2.55e+00	
1,2,3,6,7,8-HXCDF		15.4	0.0522	0.1	1.54e+00	1.54e+00	
1,2,3,7,8,9-HXCDF		1.18	0.0522	0.1	1.18e-01	1.18e-01	
2,3,4,6,7,8-HXCDF		5.54	0.0522	0.1	5.54e-01	5.54e-01	
1,2,3,4,6,7,8-HPCDF		324	0.0721	0.01	3.24e+00	3.24e+00	
1,2,3,4,7,8,9-HPCDF		22.1	0.0721	0.01	2.21e-01	2.21e-01	
OCDF		1120	0.0660	0.0003	3.36e-01	3.36e-01	
			TOTAL TEQ		37.3	37.3	

(1) Where applicable, custom lab flags may have been used on this report; U = not detected at RL.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 22-Sep-2019 12:42:33; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613-TEQ_L31654-10_TEQ_SJ2620860.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
J5-SC-60to80-102218
Sample Collection:
22-Oct-2018 16:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-11
Matrix:	SOLID	**Sample Size:**	10.3 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 02:47:12	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX9M_093 S: 20**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX9M_093 S: 13
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	44.2

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD		1.86	0.0484 (Q)	0.70	1.001
1,2,3,7,8-PECDD [4]	J	3.91	0.0484 (Q)	0.59	1.001
1,2,3,4,7,8-HXCDD		8.51	0.0694 (S)	1.21	1.001
1,2,3,6,7,8-HXCDD		40.6	0.0694 (S)	1.22	1.000
1,2,3,7,8,9-HXCDD		20.2	0.0694 (S)	1.22	1.011
1,2,3,4,6,7,8-HPCDD	B	1110	0.159 (S)	1.04	1.000
OCDD	E				
2,3,7,8-TCDF		7.98	0.0484 (Q)	0.79	1.001
1,2,3,7,8-PECDF	B	5.03	0.0610 (S)	1.56	1.001
2,3,4,7,8-PECDF		5.05	0.0610 (S)	1.52	1.001
1,2,3,4,7,8-HXCDF		30.4	0.0551 (S)	1.27	1.000
1,2,3,6,7,8-HXCDF		15.5	0.0551 (S)	1.27	1.000
1,2,3,7,8,9-HXCDF	B J	1.09	0.0551 (S)	1.20	1.001
2,3,4,6,7,8-HXCDF		5.92	0.0551 (S)	1.30	1.001
1,2,3,4,6,7,8-HPCDF	B	300	0.0608 (S)	1.03	1.000
1,2,3,4,7,8,9-HPCDF		19.9	0.0608 (S)	0.99	1.000
OCDF	B	818	0.0484 (Q)	0.90	1.002
TOTAL TETRA-DIOXINS		19.3	0.0484 (Q)		
TOTAL PENTA-DIOXINS	T	47.9	0.0484 (Q)		
TOTAL HEXA-DIOXINS		273	0.0694 (S)		
TOTAL HEPTA-DIOXINS		2410	0.159 (S)		
TOTAL TETRA-FURANS		89.5	0.0484 (Q)		
TOTAL PENTA-FURANS	B	128	0.0610 (S)		
TOTAL HEXA-FURANS		347	0.0551 (S)		
TOTAL HEPTA-FURANS		1100	0.0608 (S)		

(1) Where applicable, custom lab flags have been used on this report; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; T = result recalculated against alternate labeled compound(s) or internal standard; E = exceeds calibrated linear range, see dilution data.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_L31654-11_Form1A_DX9M_093S20_SJ2619988.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
J5-SC-60to80-102218
Sample Collection:
22-Oct-2018 16:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-11
Matrix:	SOLID	**Sample Size:**	10.3 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 02:47:12	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX9M_093 S: 20**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX9M_093 S: 13
Concentration Units:	pg absolute	**% Moisture:**	44.2

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Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		2000	1780	89.1	0.78	1.013
13C-1,2,3,7,8-PECDD [4]		2000	2970	149	0.64	1.384
13C-1,2,3,4,7,8-HXCDD		2000	1890	94.6	1.27	0.987
13C-1,2,3,6,7,8-HXCDD		2000	2050	102	1.25	0.990
13C-1,2,3,4,6,7,8-HPCDD		2000	1970	98.6	1.02	1.095
13C-OCDD		4000	4860	121	0.90	1.180
13C-2,3,7,8-TCDF		2000	1540	77.0	0.81	0.967
13C-1,2,3,7,8-PECDF		2000	1870	93.5	1.53	1.284
13C-2,3,4,7,8-PECDF		2000	1830	91.5	1.60	1.353
13C-1,2,3,4,7,8-HXCDF		2000	1950	97.6	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		2000	1830	91.5	0.51	0.958
13C-1,2,3,7,8,9-HXCDF		2000	1710	85.7	0.52	1.004
13C-2,3,4,6,7,8-HXCDF		2000	1630	81.4	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		2000	1710	85.7	0.45	1.062
13C-1,2,3,4,7,8,9-HPCDF		2000	1760	88.2	0.46	1.104
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	187	93.5		1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_L31654-11_Form2_DX9M_093S20_SJ2619988.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
J5-SC-60to80-102218
Sample Collection:
22-Oct-2018 16:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-11 W
Matrix:	SOLID	**Sample Size:**	10.3 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	17-Sep-2019 **Time:** 22:38:52	**GC Column ID:**	DB5
Extract Volume (uL):	100	**Sample Data Filename:**	**DX9M_095A S: 15**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	5	**Cal. Ver. Data Filename:**	DX9M_095A S: 8
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	44.2

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	X				
1,2,3,7,8-PECDD [4]	X				
1,2,3,4,7,8-HXCDD	X				
1,2,3,6,7,8-HXCDD	X				
1,2,3,7,8,9-HXCDD	X				
1,2,3,4,6,7,8-HPCDD	X				
OCDD	B D	15500	0.145 (S)	0.87	1.000
2,3,7,8-TCDF	X				
1,2,3,7,8-PECDF	X				
2,3,4,7,8-PECDF	X				
1,2,3,4,7,8-HXCDF	X				
1,2,3,6,7,8-HXCDF	X				
1,2,3,7,8,9-HXCDF	X				
2,3,4,6,7,8-HXCDF	X				
1,2,3,4,6,7,8-HPCDF	X				
1,2,3,4,7,8,9-HPCDF	X				
OCDF	X				
TOTAL TETRA-DIOXINS	X				
TOTAL PENTA-DIOXINS	X				
TOTAL HEXA-DIOXINS	X				
TOTAL HEPTA-DIOXINS	X				
TOTAL TETRA-FURANS	X				
TOTAL PENTA-FURANS	X				
TOTAL HEXA-FURANS	X				
TOTAL HEPTA-FURANS	X				

(1) Where applicable, custom lab flags have been used on this report; B = analyte found in sample and the associated blank; D = dilution data; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_L31654-11_Form1A_DX9M_095AS15_SJ2621563.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
J5-SC-60to80-102218
Sample Collection:
22-Oct-2018 16:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-11 W
Matrix:	SOLID	**Sample Size:**	10.3 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	17-Sep-2019 **Time:** 22:38:52	**GC Column ID:**	DB5
Extract Volume (uL):	100	**Sample Data Filename:**	**DX9M_095A S: 15**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	5	**Cal. Ver. Data Filename:**	DX9M_095A S: 8
Concentration Units:	pg absolute	**% Moisture:**	44.2

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD	X					
13C-1,2,3,7,8-PECDD [4]	X					
13C-1,2,3,4,7,8-HXCDD	X					
13C-1,2,3,6,7,8-HXCDD	X					
13C-1,2,3,4,6,7,8-HPCDD	X					
13C-OCDD	D	4000	4130	103	0.86	1.180
13C-2,3,7,8-TCDF	X					
13C-1,2,3,7,8-PECDF	X					
13C-2,3,4,7,8-PECDF	X					
13C-1,2,3,4,7,8-HXCDF	X					
13C-1,2,3,6,7,8-HXCDF	X					
13C-1,2,3,7,8,9-HXCDF	X					
13C-2,3,4,6,7,8-HXCDF	X					
13C-1,2,3,4,6,7,8-HPCDF	X					
13C-1,2,3,4,7,8,9-HPCDF	X					
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD	X					

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_L31654-11_Form2_DX9M_095AS15_SJ2621563.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
J5-SC-60to80-102218
Sample Collection:
22-Oct-2018 16:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-11
Matrix:	SOLID	**Sample Size:**	10.3 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jul-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 14:54:30	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB9T_083 S: 11**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB9T_083 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	44.2

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
1,2,3,7,8,9-HXCDD		21.2	0.376 (S)	1.22	1.059
2,3,7,8-TCDF		5.31	0.260 (S)	0.81	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB225_L31654-11_Form1A_DB9T_083S11_SJ2620861.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
J5-SC-60to80-102218

PCDD/PCDF ANALYSIS TEQ DATA REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Sample Collection:**	22-Oct-2018 16:50
Matrix:	SOLID	**Project No.**	SWAN ISLAND LAGOON SED INVESTIGATION
Sample Size:	10.3 g (dry)	**Lab Sample I.D.:**	L31654-11
Concentration Units:	pg/g (dry weight basis)	**GC Column ID(s):**	DB225 DB5
		Sample Data Filenames:	**DB9T_083 S: 11** **DX9M_093 S: 20** **DX9M_095A S: 15**

COMPOUND	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 RL	TEQ ND=RL
2,3,7,8-TCDD		1.86	0.0484	1	1.86e+00	1.86e+00	
1,2,3,7,8-PECDD		3.91	0.0484	1	3.91e+00	3.91e+00	
1,2,3,4,7,8-HXCDD		8.51	0.0694	0.1	8.51e-01	8.51e-01	
1,2,3,6,7,8-HXCDD		40.6	0.0694	0.1	4.06e+00	4.06e+00	
1,2,3,7,8,9-HXCDD		21.2	0.376	0.1	2.12e+00	2.12e+00	
1,2,3,4,6,7,8-HPCDD		1110	0.159	0.01	1.11e+01	1.11e+01	
OCDD		15500	0.145	0.0003	4.65e+00	4.65e+00	
2,3,7,8-TCDF		5.31	0.260	0.1	5.31e-01	5.31e-01	
1,2,3,7,8-PECDF		5.03	0.0610	0.03	1.51e-01	1.51e-01	
2,3,4,7,8-PECDF		5.05	0.0610	0.3	1.52e+00	1.52e+00	
1,2,3,4,7,8-HXCDF		30.4	0.0551	0.1	3.04e+00	3.04e+00	
1,2,3,6,7,8-HXCDF		15.5	0.0551	0.1	1.55e+00	1.55e+00	
1,2,3,7,8,9-HXCDF		1.09	0.0551	0.1	1.09e-01	1.09e-01	
2,3,4,6,7,8-HXCDF		5.92	0.0551	0.1	5.92e-01	5.92e-01	
1,2,3,4,6,7,8-HPCDF		300	0.0608	0.01	3.00e+00	3.00e+00	
1,2,3,4,7,8,9-HPCDF		19.9	0.0608	0.01	1.99e-01	1.99e-01	
OCDF		818	0.0484	0.0003	2.45e-01	2.45e-01	
			TOTAL TEQ		39.5	39.5	

(1) Where applicable, custom lab flags may have been used on this report; U = not detected at RL.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 22-Sep-2019 12:42:33; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613-TEQ_L31654-11_TEQ_SJ2620861.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
J7-0to26-101218
Sample Collection:
12-Oct-2018 15:52

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-12
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 03:42:14	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX9M_093 S: 21**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX9M_093 S: 13
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	47.0

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	J	0.804	0.0479 (Q)	0.89	1.001
1,2,3,7,8-PECDD [4]	J	3.83	0.0515 (S)	0.63	1.001
1,2,3,4,7,8-HXCDD		9.43	0.0753 (S)	1.23	1.000
1,2,3,6,7,8-HXCDD		136	0.0753 (S)	1.22	1.000
1,2,3,7,8,9-HXCDD		26.3	0.0753 (S)	1.20	1.011
1,2,3,4,6,7,8-HPCDD	B	4820	0.213 (S)	1.02	1.000
OCDD	E				
2,3,7,8-TCDF		4.06	0.0479 (Q)	0.78	1.001
1,2,3,7,8-PECDF	B J	4.78	0.0949 (S)	1.60	1.001
2,3,4,7,8-PECDF		20.3	0.0949 (S)	1.55	1.001
1,2,3,4,7,8-HXCDF		246	0.119 (S)	1.23	1.000
1,2,3,6,7,8-HXCDF		39.1	0.119 (S)	1.26	1.000
1,2,3,7,8,9-HXCDF	B J	2.66	0.119 (S)	1.27	1.000
2,3,4,6,7,8-HXCDF		18.4	0.119 (S)	1.23	1.000
1,2,3,4,6,7,8-HPCDF	B	1950	0.230 (S)	1.04	1.000
1,2,3,4,7,8,9-HPCDF		137	0.230 (S)	1.04	1.000
OCDF	B	7380	0.256 (S)	0.91	1.001
TOTAL TETRA-DIOXINS		14.1	0.0479 (Q)		
TOTAL PENTA-DIOXINS	T	47.7	0.0515 (S)		
TOTAL HEXA-DIOXINS		628	0.0753 (S)		
TOTAL HEPTA-DIOXINS		9640	0.213 (S)		
TOTAL TETRA-FURANS		33.7	0.0479 (Q)		
TOTAL PENTA-FURANS	B	220	0.0949 (S)		
TOTAL HEXA-FURANS		2550	0.119 (S)		
TOTAL HEPTA-FURANS		9960	0.230 (S)		

(1) Where applicable, custom lab flags have been used on this report; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; T = result recalculated against alternate labeled compound(s) or internal standard; E = exceeds calibrated linear range, see dilution data.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_L31654-12_Form1A_DX9M_093S21_SJ2619989.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
J7-0to26-101218
Sample Collection:
12-Oct-2018 15:52

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-12
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 03:42:14	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX9M_093 S: 21**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX9M_093 S: 13
Concentration Units:	pg absolute	**% Moisture:**	47.0

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		2000	1510	75.3	0.78	1.013
13C-1,2,3,7,8-PECDD [4]		2000	1840	91.8	0.62	1.384
13C-1,2,3,4,7,8-HXCDD		2000	1510	75.6	1.23	0.987
13C-1,2,3,6,7,8-HXCDD		2000	1850	92.6	1.25	0.990
13C-1,2,3,4,6,7,8-HPCDD		2000	1980	99.2	1.04	1.095
13C-OCDD		4000	4810	120	0.89	1.181
13C-2,3,7,8-TCDF		2000	1290	64.3	0.83	0.966
13C-1,2,3,7,8-PECDF		2000	1600	80.2	1.60	1.285
13C-2,3,4,7,8-PECDF		2000	1570	78.6	1.59	1.353
13C-1,2,3,4,7,8-HXCDF		2000	1380	68.9	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		2000	1320	66.0	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		2000	1460	73.1	0.52	1.004
13C-2,3,4,6,7,8-HXCDF		2000	1400	70.0	0.52	0.981
13C-1,2,3,4,6,7,8-HPCDF		2000	1670	83.6	0.45	1.062
13C-1,2,3,4,7,8,9-HPCDF		2000	1600	80.2	0.45	1.104
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	165	82.5		1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_L31654-12_Form2_DX9M_093S21_SJ2619989.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
J7-0to26-101218
Sample Collection:
12-Oct-2018 15:52

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-12 W
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	17-Sep-2019 **Time:** 23:34:00	**GC Column ID:**	DB5
Extract Volume (uL):	100	**Sample Data Filename:**	**DX9M_095A S: 16**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	5	**Cal. Ver. Data Filename:**	DX9M_095A S: 8
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	47.0

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	X				
1,2,3,7,8-PECDD [4]	X				
1,2,3,4,7,8-HXCDD	X				
1,2,3,6,7,8-HXCDD	X				
1,2,3,7,8,9-HXCDD	X				
1,2,3,4,6,7,8-HPCDD	X				
OCDD	B D	38800	1.17 (S)	0.89	1.000
2,3,7,8-TCDF	X				
1,2,3,7,8-PECDF	X				
2,3,4,7,8-PECDF	X				
1,2,3,4,7,8-HXCDF	X				
1,2,3,6,7,8-HXCDF	X				
1,2,3,7,8,9-HXCDF	X				
2,3,4,6,7,8-HXCDF	X				
1,2,3,4,6,7,8-HPCDF	X				
1,2,3,4,7,8,9-HPCDF	X				
OCDF	X				
TOTAL TETRA-DIOXINS	X				
TOTAL PENTA-DIOXINS	X				
TOTAL HEXA-DIOXINS	X				
TOTAL HEPTA-DIOXINS	X				
TOTAL TETRA-FURANS	X				
TOTAL PENTA-FURANS	X				
TOTAL HEXA-FURANS	X				
TOTAL HEPTA-FURANS	X				

(1) Where applicable, custom lab flags have been used on this report; B = analyte found in sample and the associated blank; D = dilution data; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_L31654-12_Form1A_DX9M_095AS16_SJ2621564.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
J7-0to26-101218
Sample Collection:
12-Oct-2018 15:52

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-12 W
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	17-Sep-2019 **Time:** 23:34:00	**GC Column ID:**	DB5
Extract Volume (uL):	100	**Sample Data Filename:**	**DX9M_095A S: 16**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	5	**Cal. Ver. Data Filename:**	DX9M_095A S: 8
Concentration Units:	pg absolute	**% Moisture:**	47.0

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD	X					
13C-1,2,3,7,8-PECDD [4]	X					
13C-1,2,3,4,7,8-HXCDD	X					
13C-1,2,3,6,7,8-HXCDD	X					
13C-1,2,3,4,6,7,8-HPCDD	X					
13C-OCDD	D	4000	4070	102	0.84	1.180
13C-2,3,7,8-TCDF	X					
13C-1,2,3,7,8-PECDF	X					
13C-2,3,4,7,8-PECDF	X					
13C-1,2,3,4,7,8-HXCDF	X					
13C-1,2,3,6,7,8-HXCDF	X					
13C-1,2,3,7,8,9-HXCDF	X					
13C-2,3,4,6,7,8-HXCDF	X					
13C-1,2,3,4,6,7,8-HPCDF	X					
13C-1,2,3,4,7,8,9-HPCDF	X					
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD	X					

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_L31654-12_Form2_DX9M_095AS16_SJ2621564.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
J7-0to26-101218
Sample Collection:
12-Oct-2018 15:52

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	SWAN ISLAND LAGOON SED INVESTIGATION		
Contract No.:	5055	**Lab Sample I.D.:**	L31654-12
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	06-Aug-2019	**Initial Calibration Date:**	25-Jul-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 15:39:12	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB9T_083 S: 12**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB9T_083 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	47.0

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
1,2,3,7,8,9-HXCDD		22.9	0.262 (S)	1.27	1.059
2,3,7,8-TCDF		2.75	0.136 (S)	0.80	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB225_L31654-12_Form1A_DB9T_083S12_SJ2620862.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
J7-0to26-101218

PCDD/PCDF ANALYSIS TEQ DATA REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Sample Collection:**	12-Oct-2018 15:52
		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Matrix:	SOLID	**Lab Sample I.D.:**	L31654-12
Sample Size:	10.4 g (dry)	**GC Column ID(s):**	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB9T_083 S: 12** **DX9M_093 S: 21** **DX9M_095A S: 16**

COMPOUND	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 RL	TEQ ND=RL
2,3,7,8-TCDD		0.804	0.0479	1	8.04e-01	8.04e-01	
1,2,3,7,8-PECDD		3.83	0.0515	1	3.83e+00	3.83e+00	
1,2,3,4,7,8-HXCDD		9.43	0.0753	0.1	9.43e-01	9.43e-01	
1,2,3,6,7,8-HXCDD		136	0.0753	0.1	1.36e+01	1.36e+01	
1,2,3,7,8,9-HXCDD		22.9	0.262	0.1	2.29e+00	2.29e+00	
1,2,3,4,6,7,8-HPCDD		4820	0.213	0.01	4.82e+01	4.82e+01	
OCDD		38800	1.17	0.0003	1.16e+01	1.16e+01	
2,3,7,8-TCDF		2.75	0.136	0.1	2.75e-01	2.75e-01	
1,2,3,7,8-PECDF		4.78	0.0949	0.03	1.43e-01	1.43e-01	
2,3,4,7,8-PECDF		20.3	0.0949	0.3	6.09e+00	6.09e+00	
1,2,3,4,7,8-HXCDF		246	0.119	0.1	2.46e+01	2.46e+01	
1,2,3,6,7,8-HXCDF		39.1	0.119	0.1	3.91e+00	3.91e+00	
1,2,3,7,8,9-HXCDF		2.66	0.119	0.1	2.66e-01	2.66e-01	
2,3,4,6,7,8-HXCDF		18.4	0.119	0.1	1.84e+00	1.84e+00	
1,2,3,4,6,7,8-HPCDF		1950	0.230	0.01	1.95e+01	1.95e+01	
1,2,3,4,7,8,9-HPCDF		137	0.230	0.01	1.37e+00	1.37e+00	
OCDF		7380	0.256	0.0003	2.21e+00	2.21e+00	
			TOTAL TEQ		142	142	

(1) Where applicable, custom lab flags may have been used on this report; U = not detected at RL.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 22-Sep-2019 12:42:33; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613-TEQ_L31654-12_TEQ_SJ2620862.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	N/A		
Contract No.:	5055	**Lab Sample I.D.:**	WG69303-101 i
Matrix:	SOLID	**Sample Size:**	10.0 g
Sample Receipt Date:	N/A	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 12:44:54	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX9M_093 S: 5**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX9M_093 S: 1
Concentration Units:	pg/g		

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	U		0.0500 (Q)		
1,2,3,7,8-PECDD [4]	U		0.0500 (Q)		
1,2,3,4,7,8-HXCDD	U		0.0500 (Q)		
1,2,3,6,7,8-HXCDD	U		0.0500 (Q)		
1,2,3,7,8,9-HXCDD	U		0.0500 (Q)		
1,2,3,4,6,7,8-HPCDD	K J	0.111	0.0500 (Q)	1.40	1.000
OCDD	J	0.489	0.0500 (Q)	1.00	1.000
2,3,7,8-TCDF	U		0.0500 (Q)		
1,2,3,7,8-PECDF	J	0.059	0.0500 (Q)	1.45	1.000
2,3,4,7,8-PECDF	U		0.0500 (Q)		
1,2,3,4,7,8-HXCDF	U		0.0602 (S)		
1,2,3,6,7,8-HXCDF	U		0.0602 (S)		
1,2,3,7,8,9-HXCDF	K J	0.087	0.0602 (S)	0.64	1.000
2,3,4,6,7,8-HXCDF	U		0.0602 (S)		
1,2,3,4,6,7,8-HPCDF	K J	0.098	0.0653 (S)	0.69	1.000
1,2,3,4,7,8,9-HPCDF	U		0.0653 (S)		
OCDF	J	0.111	0.0500 (Q)	0.86	1.002
TOTAL TETRA-DIOXINS	U		0.0500 (Q)		
TOTAL PENTA-DIOXINS	U		0.0500 (Q)		
TOTAL HEXA-DIOXINS	U		0.0500 (Q)		
TOTAL HEPTA-DIOXINS	U		0.0500 (Q)		
TOTAL TETRA-FURANS	U		0.0500 (Q)		
TOTAL PENTA-FURANS		0.059	0.0500 (Q)		
TOTAL HEXA-FURANS	U		0.0602 (S)		
TOTAL HEPTA-FURANS	U		0.0653 (S)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_WG69303-101_Form1A_DX9M_093S5_SJ2619888.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	N/A		
Contract No.:	5055	**Lab Sample I.D.:**	WG69303-101 i
Matrix:	SOLID	**Sample Size:**	10.0 g
Sample Receipt Date:	N/A	**Initial Calibration Date:**	25-Jun-2019
Extraction Date:	27-Aug-2019	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 12:44:54	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX9M_093 S: 5**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX9M_093 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX9M_093 S: 1
Concentration Units:	pg absolute		

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		2000	1490	74.4	0.78	1.013
13C-1,2,3,7,8-PECDD [4]		2000	1950	97.3	0.65	1.384
13C-1,2,3,4,7,8-HXCDD		2000	1470	73.5	1.27	0.987
13C-1,2,3,6,7,8-HXCDD		2000	1560	78.2	1.27	0.990
13C-1,2,3,4,6,7,8-HPCDD		2000	1760	88.2	1.04	1.095
13C-OCDD		4000	3810	95.2	0.88	1.179
13C-2,3,7,8-TCDF		2000	1490	74.5	0.76	0.967
13C-1,2,3,7,8-PECDF		2000	1500	74.8	1.54	1.284
13C-2,3,4,7,8-PECDF		2000	1450	72.4	1.55	1.352
13C-1,2,3,4,7,8-HXCDF		2000	1470	73.6	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		2000	1490	74.3	0.51	0.958
13C-1,2,3,7,8,9-HXCDF		2000	1530	76.3	0.51	1.005
13C-2,3,4,6,7,8-HXCDF		2000	1560	77.9	0.53	0.980
13C-1,2,3,4,6,7,8-HPCDF		2000	1620	80.8	0.47	1.063
13C-1,2,3,4,7,8,9-HPCDF		2000	1690	84.7	0.48	1.105
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	147	73.6		1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_WG69303-101_Form2_DX9M_093S5_SJ2619888.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
Lab Blank

PCDD/PCDF ANALYSIS TEQ DATA REPORT

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection:	N/A		
Contract No.:	5055	**Project No.**	N/A
Matrix:	SOLID	**Lab Sample I.D.:**	WG69303-101 i
Sample Size:	10.0 g	**GC Column ID:**	DB5
Concentration Units:	pg/g	**Sample Data Filename:**	**DX9M_093 S: 5**

COMPOUND	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 RL	TEQ ND=RL
2,3,7,8-TCDD	U		0.0500	1	0.00e+00	2.50e-02	
1,2,3,7,8-PECDD	U		0.0500	1	0.00e+00	2.50e-02	
1,2,3,4,7,8-HXCDD	U		0.0500	0.1	0.00e+00	2.50e-03	
1,2,3,6,7,8-HXCDD	U		0.0500	0.1	0.00e+00	2.50e-03	
1,2,3,7,8,9-HXCDD	U		0.0500	0.1	0.00e+00	2.50e-03	
1,2,3,4,6,7,8-HPCDD	U		0.0500	0.01	0.00e+00	2.50e-04	
OCDD		0.489	0.0500	0.0003	1.47e-04	1.47e-04	
2,3,7,8-TCDF	U		0.0500	0.1	0.00e+00	2.50e-03	
1,2,3,7,8-PECDF		0.059	0.0500	0.03	1.77e-03	1.77e-03	
2,3,4,7,8-PECDF	U		0.0500	0.3	0.00e+00	7.50e-03	
1,2,3,4,7,8-HXCDF	U		0.0602	0.1	0.00e+00	3.01e-03	
1,2,3,6,7,8-HXCDF	U		0.0602	0.1	0.00e+00	3.01e-03	
1,2,3,7,8,9-HXCDF	U		0.0602	0.1	0.00e+00	3.01e-03	
2,3,4,6,7,8-HXCDF	U		0.0602	0.1	0.00e+00	3.01e-03	
1,2,3,4,6,7,8-HPCDF	U		0.0653	0.01	0.00e+00	3.27e-04	
1,2,3,4,7,8,9-HPCDF	U		0.0653	0.01	0.00e+00	3.27e-04	
OCDF		0.111	0.0500	0.0003	3.33e-05	3.33e-05	
			TOTAL TEQ		0.00195	0.0824	

(1) Where applicable, custom lab flags may have been used on this report; U = not detected at RL.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 22-Sep-2019 12:42:33; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613-TEQ_WG69303-101_TEQ_SJ2619888.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 8A

PCDD/PCDF ONGOING PRECISION AND RECOVERY (OPR)

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**OPR Data Filename:**	**DX9M_093 S: 2**
Matrix:	SOLID	**Lab Sample I.D.:**	WG69303-102 i
Extraction Date:	27-Aug-2019	**Analysis Date:**	12-Sep-2019 **Time:** 10:01:18

ALL CONCENTRATIONS REPORTED ON THIS FORM ARE CONCENTRATIONS IN EXTRACT, BASED ON A 20 uL EXTRACT VOLUME.

COMPOUND	LAB FLAG [1]	ION ABUND. RATIO [2]	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	OPR CONC. LIMITS [3] (ng/mL)	% RECOVERY
2,3,7,8-TCDD		0.76	10.0	10.4	6.70 - 15.8	104
1,2,3,7,8-PECDD [4]		0.61	50.0	49.3	35.0 - 71.0	98.6
1,2,3,4,7,8-HXCDD		1.21	50.0	49.6	35.0 - 82.0	99.2
1,2,3,6,7,8-HXCDD		1.20	50.0	50.5	38.0 - 67.0	101
1,2,3,7,8,9-HXCDD		1.22	50.0	53.3	32.0 - 81.0	107
1,2,3,4,6,7,8-HPCDD		1.03	50.0	48.8	35.0 - 70.0	97.5
OCDD		0.87	100	97.8	78.0 - 144	97.8
2,3,7,8-TCDF		0.78	10.0	9.27	7.50 - 15.8	92.7
1,2,3,7,8-PECDF		1.56	50.0	50.0	40.0 - 67.0	100
2,3,4,7,8-PECDF		1.53	50.0	50.2	34.0 - 80.0	100
1,2,3,4,7,8-HXCDF		1.23	50.0	48.2	36.0 - 67.0	96.5
1,2,3,6,7,8-HXCDF		1.27	50.0	52.2	42.0 - 65.0	104
1,2,3,7,8,9-HXCDF		1.20	50.0	49.3	39.0 - 65.0	98.6
2,3,4,6,7,8-HXCDF		1.23	50.0	49.8	35.0 - 78.0	99.6
1,2,3,4,6,7,8-HPCDF		1.07	50.0	55.7	41.0 - 61.0	111
1,2,3,4,7,8,9-HPCDF		1.02	50.0	52.8	39.0 - 69.0	106
OCDF		0.91	100	93.3	63.0 - 170	93.3

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required Ion Abundance Ratios are specified in Table 9, Method 1613.
(3) Contract-required concentration range as determined from the percent of the test concentration in Table 6, Method 1613, under OPR.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: Form8A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_WG69303-102_Form8A_SJ2619884.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 8B

PCDD/PCDF ONGOING PRECISION AND RECOVERY (OPR)

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**OPR Data Filename:**	**DX9M_093 S: 2**
Matrix:	SOLID	**Lab Sample I.D.:**	WG69303-102 i
Extraction Date:	27-Aug-2019	**Analysis Date:**	12-Sep-2019 **Time:** 10:01:18

ALL CONCENTRATIONS REPORTED ON THIS FORM ARE CONCENTRATIONS IN EXTRACT, BASED ON A 20 uL EXTRACT VOLUME.

LABELED COMPOUND	LAB FLAG [1]	ION ABUND. RATIO [2]	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	OPR CONC. LIMITS [3] (ng/mL)	% RECOVERY
13C-2,3,7,8-TCDD		0.75	100	76.7	20.0-175	76.7
13C-1,2,3,7,8-PECDD [4]		0.64	100	104	21.0-227	104
13C-1,2,3,4,7,8-HXCDD		1.25	100	81.3	21.0-193	81.3
13C-1,2,3,6,7,8-HXCDD		1.30	100	79.5	25.0-163	79.5
13C-1,2,3,4,6,7,8-HPCDD		1.07	100	97.1	26.0-166	97.1
13C-OCDD		0.91	200	215	26.0-397	107
13C-2,3,7,8-TCDF		0.73	100	76.7	22.0-152	76.7
13C-1,2,3,7,8-PECDF		1.56	100	86.6	21.0-192	86.6
13C-2,3,4,7,8-PECDF		1.56	100	85.3	13.0-328	85.3
13C-1,2,3,4,7,8-HXCDF		0.52	100	77.3	19.0-202	77.3
13C-1,2,3,6,7,8-HXCDF		0.51	100	74.3	21.0-159	74.3
13C-1,2,3,7,8,9-HXCDF		0.50	100	86.0	17.0-205	86.0
13C-2,3,4,6,7,8-HXCDF		0.52	100	82.4	22.0-176	82.4
13C-1,2,3,4,6,7,8-HPCDF		0.46	100	88.2	21.0-158	88.2
13C-1,2,3,4,7,8,9-HPCDF		0.45	100	100	20.0-186	100
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD			10.0	8.48	3.10-19.1	84.8

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required Ion Abundance Ratios are specified in Table 9, Method 1613.
(3) Contract-required concentration limits for OPR as specified in Table 6, Method 1613. Labeled compound concentrations limits are based on required percent recovery (Section 15.5, Method 1613).
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: Form8B.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB5_WG69303-102_Form8B_SJ2619884.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 8G

PCDD/PCDF CERTIFIED REFERENCE MATERIAL (CRM) REPORT FOR EDF-5183

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-103
Matrix:	SOLID	**Sample Size:**	8.67 g (dry)
Extraction Date:	27-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Analysis Date:	13-Sep-2019 **Time:** 05:32:31	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**CRM Data Filename:**	**DX9M_093 S: 23**
Dilution Factor:	N/A	**Blank Data Filename:**	DX9M_093 S: 5
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DX9M_093 S: 13

COMPOUND	LAB FLAG [1]	DETERMINED	CERTIFIED / REFERENCE
2,3,7,8-TCDD	J	0.188	0.11 +/- 0.14
1,2,3,7,8-PECDD [2]	J	0.365	0.39 +/- 0.32
1,2,3,4,7,8-HXCDD	J	1.01	1.12 +/- 0.52
1,2,3,6,7,8-HXCDD	J	3.70	4.39 +/- 0.88
1,2,3,7,8,9-HXCDD	J	2.82	2 +/- 1.2
1,2,3,4,6,7,8-HPCDD		145	153 +/- 57.2
OCDD		6790	7870 +/- 1650
2,3,7,8-TCDF	J	0.752	0.7 +/- 0.34
1,2,3,7,8-PECDF	J	0.126	0.23 +/- 0.22
2,3,4,7,8-PECDF	J	0.171	0.34 +/- 0.14
1,2,3,4,7,8-HXCDF	J	0.707	0.86 +/- 0.44
1,2,3,6,7,8-HXCDF	J	0.468	0.58 +/- 0.26
1,2,3,7,8,9-HXCDF	J	0.123	0.12 +/- 0.16
2,3,4,6,7,8-HXCDF	J	0.394	0.72 +/- 0.92
1,2,3,4,6,7,8-HPCDF		13.8	13.9 +/- 3.68
1,2,3,4,7,8,9-HPCDF	J	1.05	1.25 +/- 0.62
OCDF		44.5	58.2 +/- 32.4

(1) Where applicable, custom lab flags have been used on this report; J = concentration less than lowest calibration equivalent.
(2) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1613_DIOXINS_1613DB5_WG69303-103_Form8G_SJ2619991.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 8H

PCDD/PCDF CERTIFIED REFERENCE MATERIAL (CRM) REPORT FOR EDF-5183

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-103
Matrix:	SOLID	**Sample Size:**	8.67 g (dry)
Extraction Date:	27-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Analysis Date:	13-Sep-2019 **Time:** 05:32:31	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**CRM Data Filename:**	**DX9M_093 S: 23**
Dilution Factor:	N/A	**Blank Data Filename:**	DX9M_093 S: 5
Concentration Units:	pg absolute	**Cal. Ver. Data Filename:**	DX9M_093 S: 13

LABELED COMPOUND	LAB FLAG[1]	SPIKE CONC.	CONC. FOUND	% RECOVERY	ION ABUND. RATIO	RRT
13C-2,3,7,8-TCDD		2000	1560	78.1	0.79	1.013
13C-1,2,3,7,8-PECDD [2]		2000	1910	95.5	0.62	1.383
13C-1,2,3,4,7,8-HXCDD		2000	1550	77.7	1.33	0.987
13C-1,2,3,6,7,8-HXCDD		2000	1570	78.4	1.26	0.990
13C-1,2,3,4,6,7,8-HPCDD		2000	1800	90.0	1.01	1.095
13C-OCDD		4000	4850	121	0.90	1.179
13C-2,3,7,8-TCDF		2000	1450	72.4	0.79	0.967
13C-1,2,3,7,8-PECDF		2000	1650	82.3	1.57	1.285
13C-2,3,4,7,8-PECDF		2000	1540	76.8	1.54	1.352
13C-1,2,3,4,7,8-HXCDF		2000	1420	70.9	0.53	0.954
13C-1,2,3,6,7,8-HXCDF		2000	1380	69.2	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		2000	1500	75.1	0.53	1.005
13C-2,3,4,6,7,8-HXCDF		2000	1430	71.4	0.53	0.981
13C-1,2,3,4,6,7,8-HPCDF		2000	1500	75.0	0.45	1.063
13C-1,2,3,4,7,8,9-HPCDF		2000	1730	86.4	0.44	1.105
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	166	83.0		1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1613_DIOXINS_1613DB5_WG69303-103_Form8H_SJ2619991.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 8G

PCDD/PCDF CERTIFIED REFERENCE MATERIAL (CRM) REPORT FOR EDF-5183

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-103
Matrix:	SOLID	**Sample Size:**	8.67 g (dry)
Extraction Date:	27-Aug-2019	**Initial Calibration Date:**	25-Jul-2019
Analysis Date:	12-Sep-2019 **Time:** 03:42:55	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB225
Injection Volume (uL):	2.0	**CRM Data Filename:**	**DB9T_082 S: 12**
Dilution Factor:	N/A	**Blank Data Filename:**	DX9M_093 S: 5
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DB9T_082 S: 2

COMPOUND	LAB FLAG [1]	DETERMINED	CERTIFIED / REFERENCE
1,2,3,7,8,9-HXCDD	J	1.74	2 +/- 1.2
2,3,7,8-TCDF	J	0.520	0.7 +/- 0.34

(1) Where applicable, custom lab flags have been used on this report; J = concentration less than lowest calibration equivalent.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

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Report Filename: 1613_DIOXINS_1613DB225_WG69303-103_Form8G_SJ2620909.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 8G

PCDD/PCDF CERTIFIED REFERENCE MATERIAL (CRM) REPORT FOR EDF-5183

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-104
Matrix:	SOLID	**Sample Size:**	9.50 g (dry)
Extraction Date:	27-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Analysis Date:	13-Sep-2019 **Time:** 15:56:38	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**CRM Data Filename:**	**DX9M_093 S: 34**
Dilution Factor:	N/A	**Blank Data Filename:**	DX9M_093 S: 5
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DX9M_093 S: 24

COMPOUND	LAB FLAG [1]	DETERMINED	CERTIFIED / REFERENCE
2,3,7,8-TCDD	J	0.291	0.11 +/- 0.14
1,2,3,7,8-PECDD [2]	J	0.389	0.39 +/- 0.32
1,2,3,4,7,8-HXCDD	J	1.21	1.12 +/- 0.52
1,2,3,6,7,8-HXCDD		7.87	4.39 +/- 0.88
1,2,3,7,8,9-HXCDD	J	3.33	2 +/- 1.2
1,2,3,4,6,7,8-HPCDD		255	153 +/- 57.2
OCDD		8530	7870 +/- 1650
2,3,7,8-TCDF	J	0.734	0.7 +/- 0.34
1,2,3,7,8-PECDF	J	0.173	0.23 +/- 0.22
2,3,4,7,8-PECDF	J	0.209	0.34 +/- 0.14
1,2,3,4,7,8-HXCDF	J	1.17	0.86 +/- 0.44
1,2,3,6,7,8-HXCDF	J	0.666	0.58 +/- 0.26
1,2,3,7,8,9-HXCDF	K J	0.127	0.12 +/- 0.16
2,3,4,6,7,8-HXCDF	J	0.533	0.72 +/- 0.92
1,2,3,4,6,7,8-HPCDF		55.9	13.9 +/- 3.68
1,2,3,4,7,8,9-HPCDF	J	3.43	1.25 +/- 0.62
OCDF		237	58.2 +/- 32.4

(1) Where applicable, custom lab flags have been used on this report; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent.
(2) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

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Report Filename: 1613_DIOXINS_1613DB5_WG69303-104_Form8G_SJ2620050.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 8H

PCDD/PCDF CERTIFIED REFERENCE MATERIAL (CRM) REPORT FOR EDF-5183

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-104
Matrix:	SOLID	**Sample Size:**	9.50 g (dry)
Extraction Date:	27-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Analysis Date:	13-Sep-2019 **Time:** 15:56:38	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**CRM Data Filename:**	**DX9M_093 S: 34**
Dilution Factor:	N/A	**Blank Data Filename:**	DX9M_093 S: 5
Concentration Units:	pg absolute	**Cal. Ver. Data Filename:**	DX9M_093 S: 24

LABELED COMPOUND	LAB FLAG[1]	SPIKE CONC.	CONC. FOUND	% RECOVERY	ION ABUND. RATIO	RRT
13C-2,3,7,8-TCDD		2000	1690	84.5	0.75	1.013
13C-1,2,3,7,8-PECDD [2]		2000	2450	122	0.64	1.384
13C-1,2,3,4,7,8-HXCDD		2000	1680	83.8	1.26	0.987
13C-1,2,3,6,7,8-HXCDD		2000	1980	98.8	1.25	0.990
13C-1,2,3,4,6,7,8-HPCDD		2000	1900	95.0	1.03	1.095
13C-OCDD		4000	6220	156	0.90	1.180
13C-2,3,7,8-TCDF		2000	1690	84.6	0.77	0.967
13C-1,2,3,7,8-PECDF		2000	1820	91.0	1.56	1.284
13C-2,3,4,7,8-PECDF		2000	1730	86.6	1.54	1.352
13C-1,2,3,4,7,8-HXCDF		2000	1650	82.4	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		2000	1690	84.7	0.51	0.958
13C-1,2,3,7,8,9-HXCDF		2000	1710	85.4	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		2000	1680	83.8	0.53	0.981
13C-1,2,3,4,6,7,8-HPCDF		2000	1770	88.4	0.45	1.063
13C-1,2,3,4,7,8,9-HPCDF		2000	1800	90.0	0.47	1.105
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	174	87.0		1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

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Report Filename: 1613_DIOXINS_1613DB5_WG69303-104_Form8H_SJ2620050.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 8G

PCDD/PCDF CERTIFIED REFERENCE MATERIAL (CRM) REPORT FOR EDF-5183

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-104
Matrix:	SOLID	**Sample Size:**	9.50 g (dry)
Extraction Date:	27-Aug-2019	**Initial Calibration Date:**	25-Jul-2019
Analysis Date:	12-Sep-2019 **Time:** 04:27:39	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB225
Injection Volume (uL):	2.0	**CRM Data Filename:**	**DB9T_082 S: 13**
Dilution Factor:	N/A	**Blank Data Filename:**	DX9M_093 S: 5
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DB9T_082 S: 2

COMPOUND	LAB FLAG [1]	DETERMINED	CERTIFIED / REFERENCE
1,2,3,7,8,9-HXCDD	J	2.85	2 +/- 1.2
2,3,7,8-TCDF	J	0.646	0.7 +/- 0.34

(1) Where applicable, custom lab flags have been used on this report; J = concentration less than lowest calibration equivalent.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

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Report Filename: 1613_DIOXINS_1613DB225_WG69303-104_Form8G_SJ2620910.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 8G

PCDD/PCDF CERTIFIED REFERENCE MATERIAL (CRM) REPORT FOR EDF-5183

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-105
Matrix:	SOLID	**Sample Size:**	9.48 g (dry)
Extraction Date:	27-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Analysis Date:	13-Sep-2019 **Time:** 16:51:40	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**CRM Data Filename:**	**DX9M_093 S: 35**
Dilution Factor:	N/A	**Blank Data Filename:**	DX9M_093 S: 5
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DX9M_093 S: 24

COMPOUND	LAB FLAG [1]	DETERMINED	CERTIFIED / REFERENCE
2,3,7,8-TCDD	J	0.328	0.11 +/- 0.14
1,2,3,7,8-PECDD [2]	J	0.468	0.39 +/- 0.32
1,2,3,4,7,8-HXCDD	J	1.50	1.12 +/- 0.52
1,2,3,6,7,8-HXCDD		5.62	4.39 +/- 0.88
1,2,3,7,8,9-HXCDD	J	3.77	2 +/- 1.2
1,2,3,4,6,7,8-HPCDD		204	153 +/- 57.2
OCDD		11000	7870 +/- 1650
2,3,7,8-TCDF	J	0.786	0.7 +/- 0.34
1,2,3,7,8-PECDF	J	0.190	0.23 +/- 0.22
2,3,4,7,8-PECDF	J	0.220	0.34 +/- 0.14
1,2,3,4,7,8-HXCDF	J	1.04	0.86 +/- 0.44
1,2,3,6,7,8-HXCDF	J	0.641	0.58 +/- 0.26
1,2,3,7,8,9-HXCDF	K J	0.153	0.12 +/- 0.16
2,3,4,6,7,8-HXCDF	J	0.593	0.72 +/- 0.92
1,2,3,4,6,7,8-HPCDF		28.7	13.9 +/- 3.68
1,2,3,4,7,8,9-HPCDF	J	1.97	1.25 +/- 0.62
OCDF		122	58.2 +/- 32.4

(1) Where applicable, custom lab flags have been used on this report; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent.
(2) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1613_DIOXINS_1613DB5_WG69303-105_Form8G_SJ2620051.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 8H

PCDD/PCDF CERTIFIED REFERENCE MATERIAL (CRM) REPORT FOR EDF-5183

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-105
Matrix:	SOLID	**Sample Size:**	9.48 g (dry)
Extraction Date:	27-Aug-2019	**Initial Calibration Date:**	25-Jun-2019
Analysis Date:	13-Sep-2019 **Time:** 16:51:40	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**CRM Data Filename:**	**DX9M_093 S: 35**
Dilution Factor:	N/A	**Blank Data Filename:**	DX9M_093 S: 5
Concentration Units:	pg absolute	**Cal. Ver. Data Filename:**	DX9M_093 S: 24

LABELED COMPOUND	LAB FLAG[1]	SPIKE CONC.	CONC. FOUND	% RECOVERY	ION ABUND. RATIO	RRT
13C-2,3,7,8-TCDD		2000	1700	84.8	0.79	1.013
13C-1,2,3,7,8-PECDD [2]		2000	1910	95.6	0.64	1.383
13C-1,2,3,4,7,8-HXCDD		2000	1720	85.8	1.23	0.987
13C-1,2,3,6,7,8-HXCDD		2000	1710	85.7	1.27	0.990
13C-1,2,3,4,6,7,8-HPCDD		2000	2010	100	1.01	1.095
13C-OCDD		4000	5820	146	0.89	1.179
13C-2,3,7,8-TCDF		2000	1690	84.7	0.75	0.967
13C-1,2,3,7,8-PECDF		2000	1870	93.7	1.52	1.283
13C-2,3,4,7,8-PECDF		2000	1740	87.2	1.57	1.352
13C-1,2,3,4,7,8-HXCDF		2000	1670	83.4	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		2000	1730	86.4	0.53	0.958
13C-1,2,3,7,8,9-HXCDF		2000	1750	87.4	0.51	1.005
13C-2,3,4,6,7,8-HXCDF		2000	1730	86.5	0.51	0.980
13C-1,2,3,4,6,7,8-HPCDF		2000	1820	91.2	0.45	1.063
13C-1,2,3,4,7,8,9-HPCDF		2000	1960	98.0	0.47	1.105
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	192	96.1		1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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SGS AXYS METHOD MLA-017 Rev 20

Form 8G

PCDD/PCDF CERTIFIED REFERENCE MATERIAL (CRM) REPORT FOR EDF-5183

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-105
Matrix:	SOLID	**Sample Size:**	9.48 g (dry)
Extraction Date:	27-Aug-2019	**Initial Calibration Date:**	25-Jul-2019
Analysis Date:	12-Sep-2019 **Time:** 05:12:22	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB225
Injection Volume (uL):	2.0	**CRM Data Filename:**	**DB9T_082 S: 14**
Dilution Factor:	N/A	**Blank Data Filename:**	DX9M_093 S: 5
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DB9T_082 S: 2

COMPOUND	LAB FLAG [1]	DETERMINED	CERTIFIED / REFERENCE
1,2,3,7,8,9-HXCDD	J	2.66	2 +/- 1.2
2,3,7,8-TCDF	J	0.671	0.7 +/- 0.34

(1) Where applicable, custom lab flags have been used on this report; J = concentration less than lowest calibration equivalent.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: Form8G.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_1613DB225_WG69303-105_Form8G_SJ2620911.html; Workgroup: WG69303; Design ID: 3698]

Method: G:\Masslynx\Inst_M\Projects\190510DX.PRO\MethDB\DX_Log.mdb 21 Nov 2008 11:39:44
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

Compound name: -

#	Name	ID	Sample Text	Acq Date	Acq Time
1	DX9M_065CS1	DX041D-CAL,,/01-67	1,,1.0uL Cal Win/Res	25-Jun-19	09:11:15
2	DX9M_065CS2	DX041D-CAL,,/01-67	1,,1.0uL Cal Win/Res	25-Jun-19	10:10:46
3	DX9M_065CS3	DX042D-CAL,,/01	1,,1.0uL Cal Win/Res	25-Jun-19	11:05:52
4	DX9M_065CS4	DX042C-CAL,,/01	1,,1.0uL CS-2	25-Jun-19	12:04:13
5	DX9M_065CS5	DX042B-CAL,,/01	1,,1.0uL CS-1	25-Jun-19	12:57:52
6	DX9M_065CS6	DX042B-CAL,,/01	1,,1.0uL CS-1	25-Jun-19	13:58:52
7	DX9M_065CS7	DX042B2-CAL,,/01	1,,1.0uL Cal Win/Res	25-Jun-19	14:55:33
8	DX9M_065CS8	DX042A-CAL,,/01	1,,1.0uL CS-0.2 Sens	25-Jun-19	15:49:54
9	DX9M_065CS9	DX042G-CAL,,/01	1,,1.0uL CS-6	25-Jun-19	16:57:12
10	DX9M_065CS10	DX042F-CAL,,/01	1,,1.0uL CS-5	25-Jun-19	18:00:03
11	DX9M_065CS11	DX042F-CAL,,/01	1,,1.0uL CS-5	25-Jun-19	18:57:54
12	DX9M_065CS12	DX042E-CAL,,/01	1,,1.0uL CS-4	25-Jun-19	19:52:17
13	DX9M_065CS13	DX005A-SSV,,/01	1,,1.0uL Cal	25-Jun-19	22:05:10
14	DX9M_065CS14	DX041D-CAL,,/01-67	1,,1.0uL Cal Win/Res	25-Jun-19	22:57:42
15	DX9M_065CS15	DX042D-CAL,,/01	1,,1.0uL Cal Win/Res	25-Jun-19	23:52:55

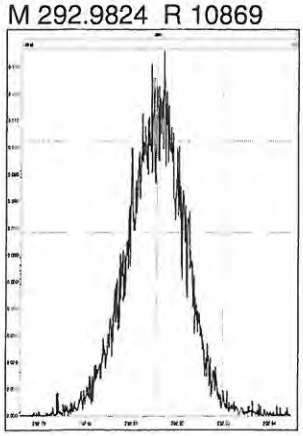
Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DX_DB5_1_04.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

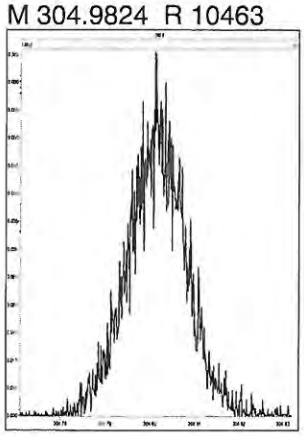
Printed: Tuesday, June 25, 2019 09:08:06 Pacific Daylight Time DX9M_065CSICALIM

Approved by EW 25-Jun-2019

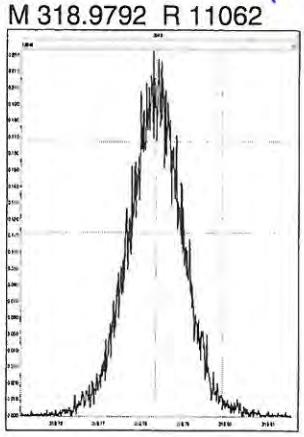
M 292.9824 R 10869



M 304.9824 R 10463



M 318.9792 R 11062



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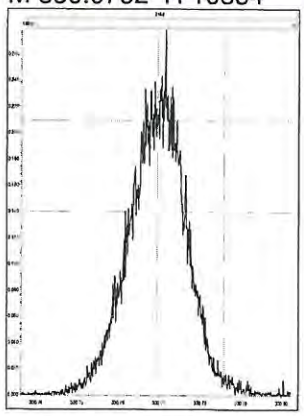

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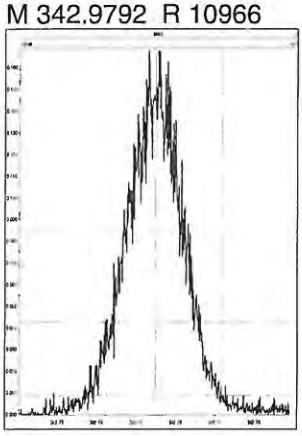
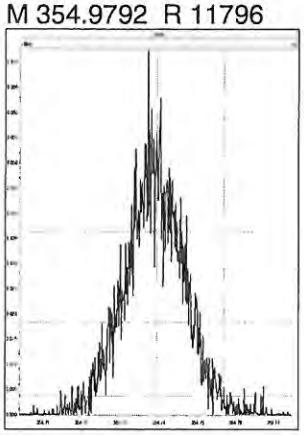
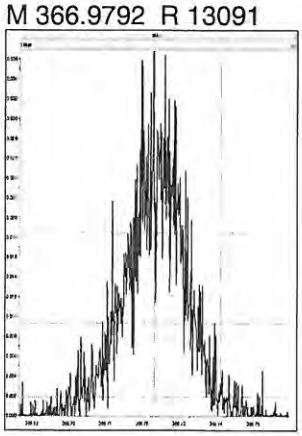


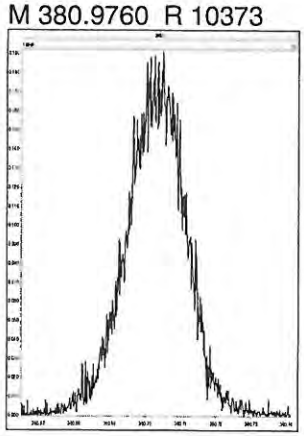
M 354.9792 R 11796



M 366.9792 R 13091



M 380.9760 R 10373



Experiment Calibration Report **MassLynx 4.1**

File: Experiment: DX_DB5_1_04.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

Printed: Tuesday, June 25, 2019 09:08:44 Pacific Daylight Time

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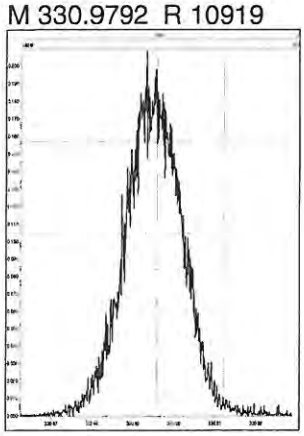

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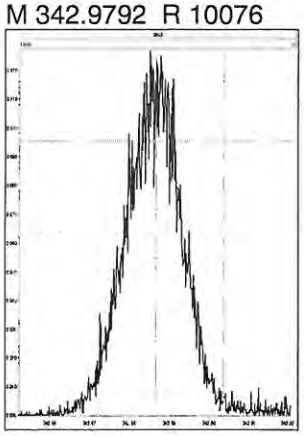
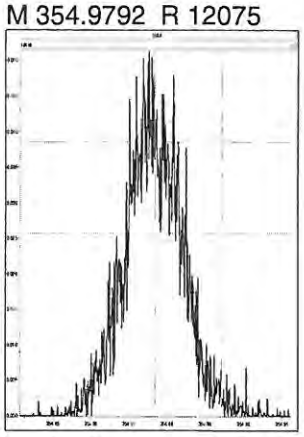


M 354.9792 R 12075



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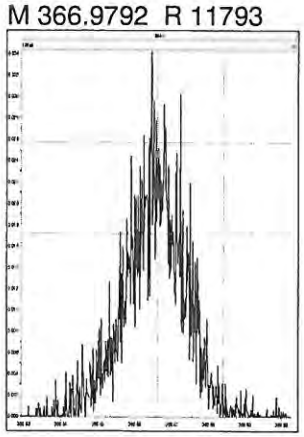

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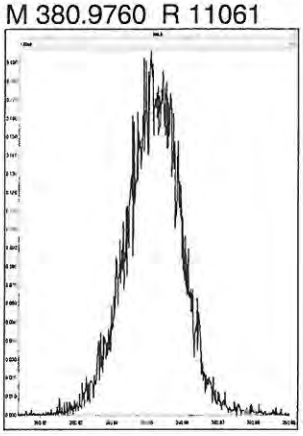

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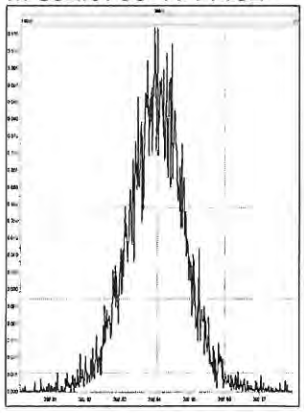
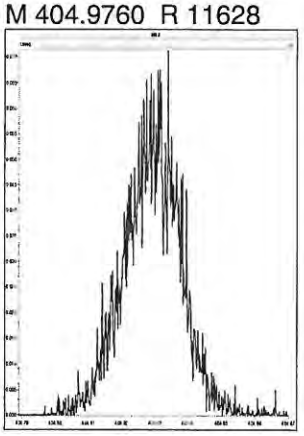


M 404.9760 R 11628



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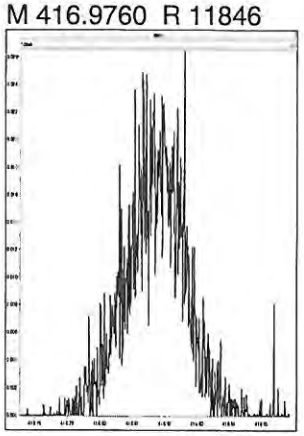

Experiment Calibration Report **MassLynx 4.1**

File: Experiment: DX_DB5_1_04.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

Printed: Tuesday, June 25, 2019 09:09:22 Pacific Daylight Time

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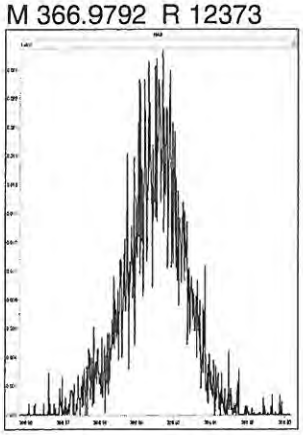

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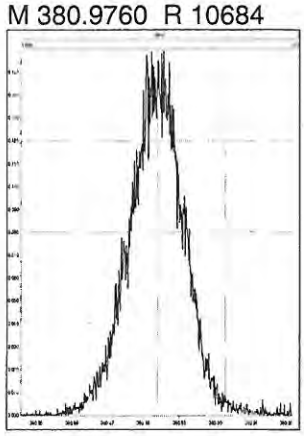

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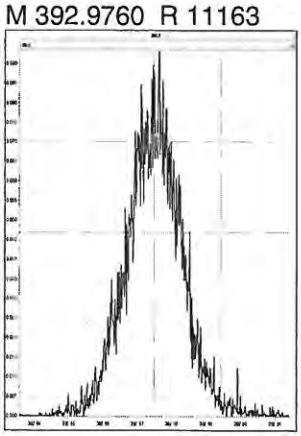

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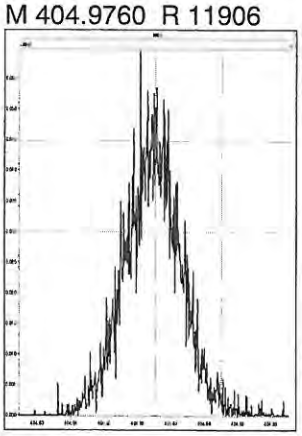

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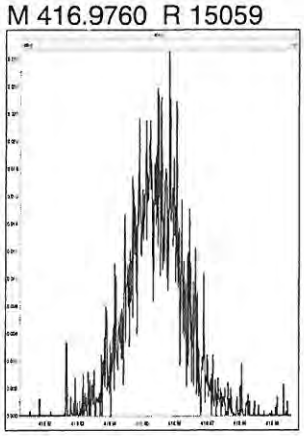

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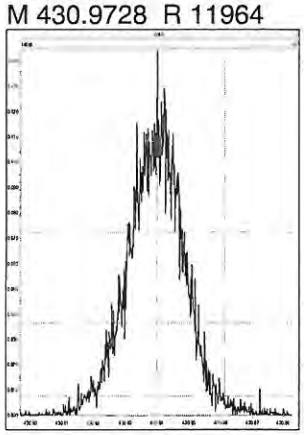

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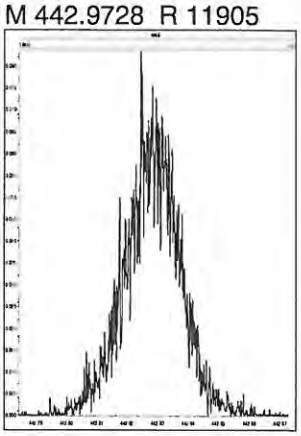

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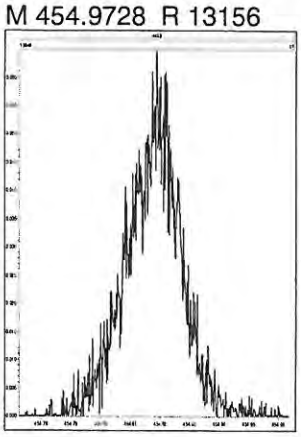
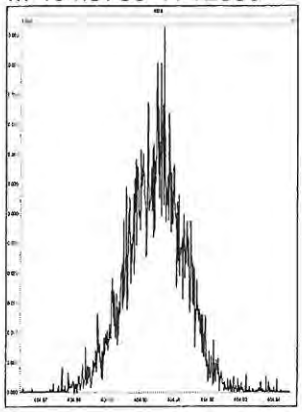


Experiment Calibration Report **MassLynx 4.1**

File: Experiment: DX_DB5_1_04.exp Reference: pfk.ref Function: 6 @ 200 (ppm)

Printed: Tuesday, June 25, 2019 09:09:55 Pacific Daylight Time

M 404.9760 R 12889



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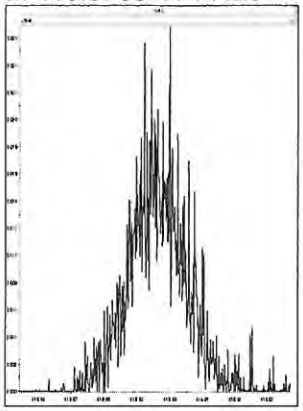

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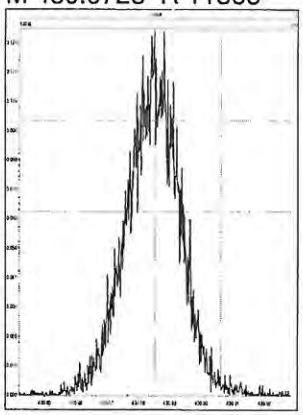

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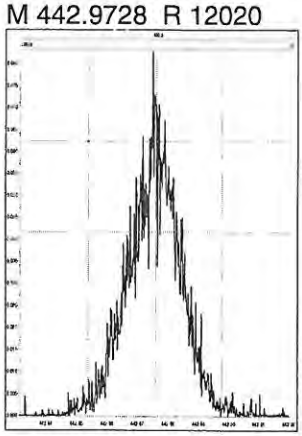
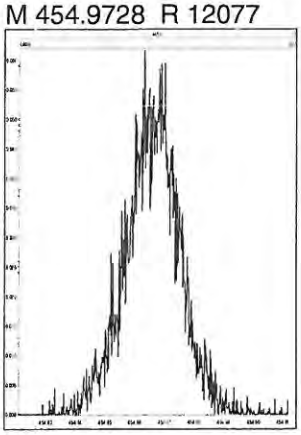


M 454.9728 R 12077



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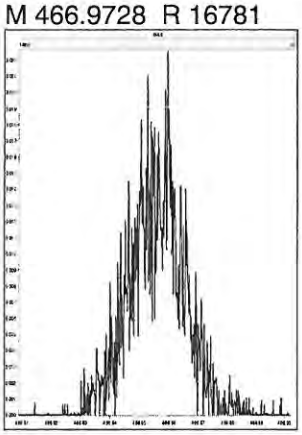

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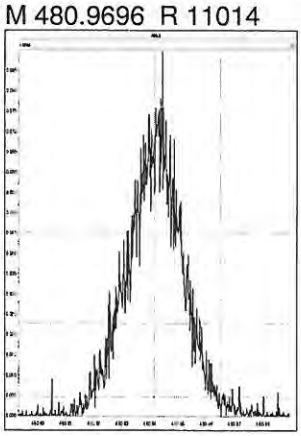

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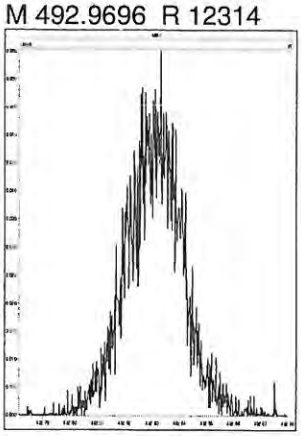

Experiment Calibration Report **MassLynx 4.1**

File: Experiment: DX_DB5_1_04.exp Reference: pfk.ref Function: 7 @ 200 (ppm)

Printed: Tuesday, June 25, 2019 09:10:29 Pacific Daylight Time

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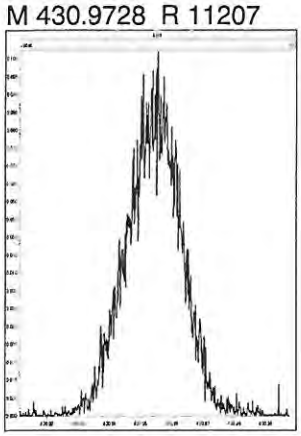

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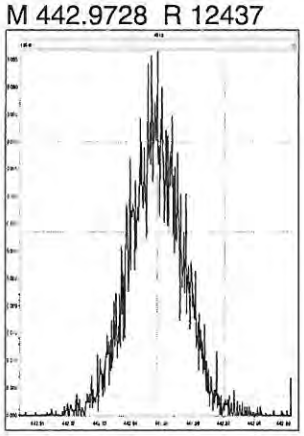

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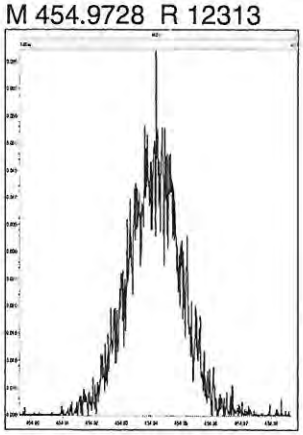

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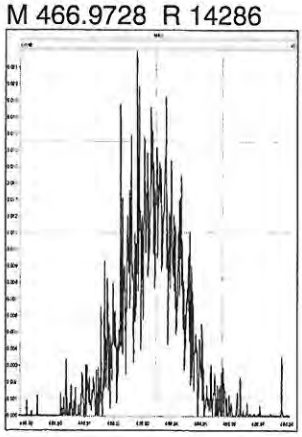

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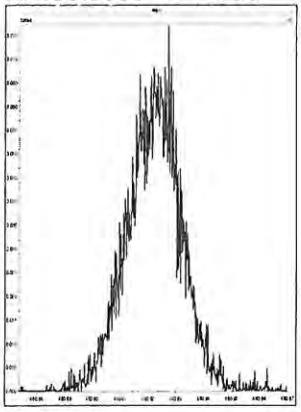

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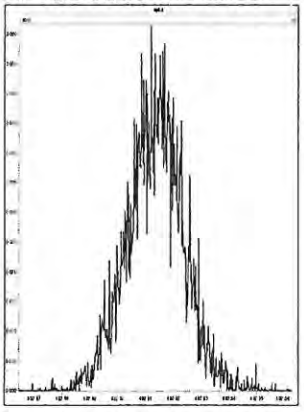

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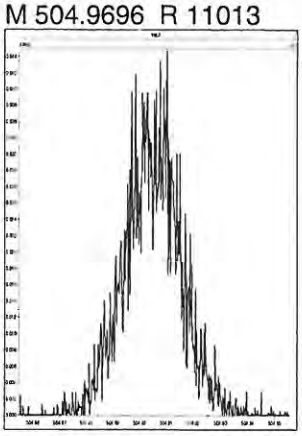

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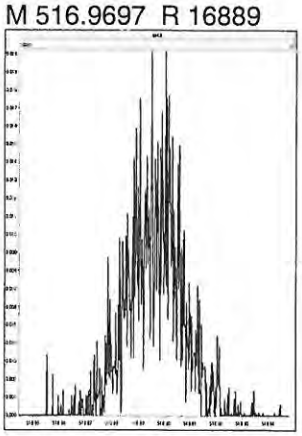

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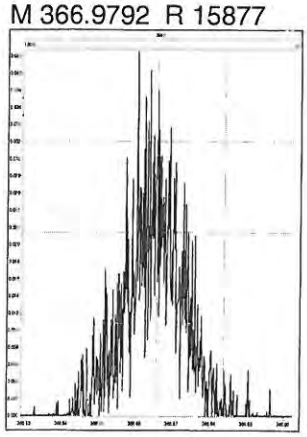
M 366.9792 R 15877



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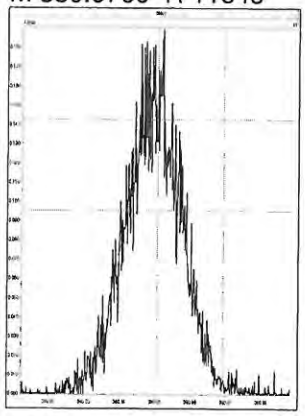

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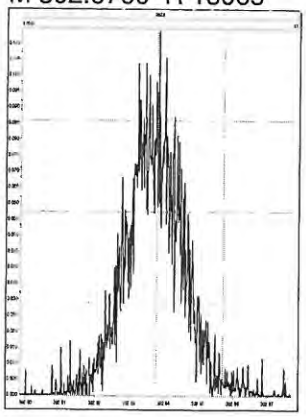

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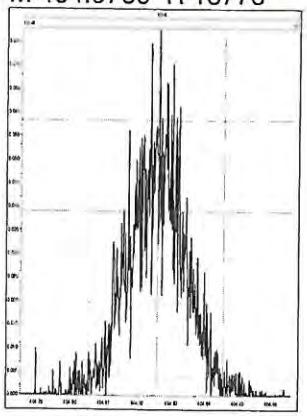
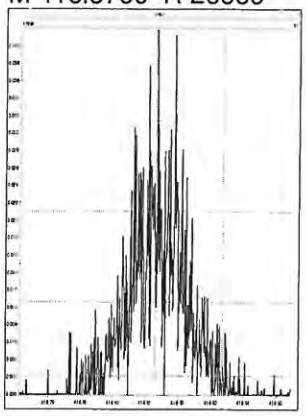


M 416.9760 R 26669



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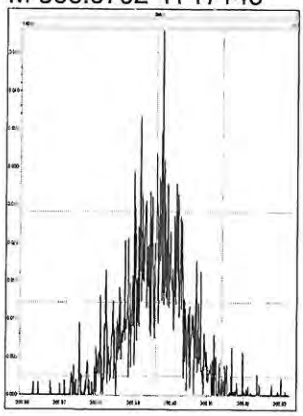
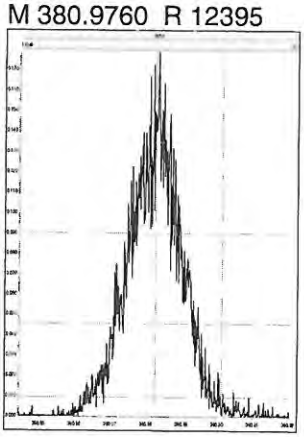


M 380.9760 R 12395



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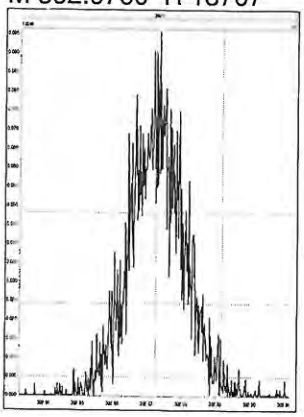

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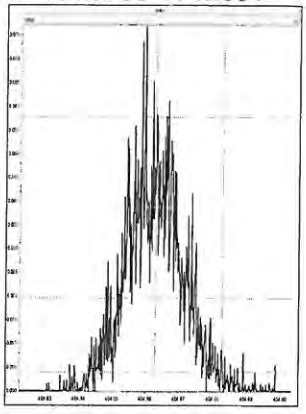

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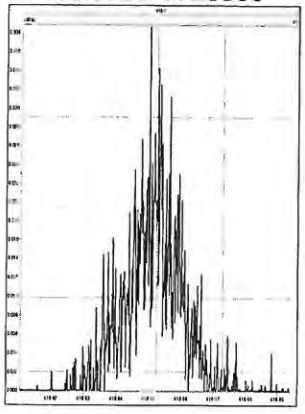

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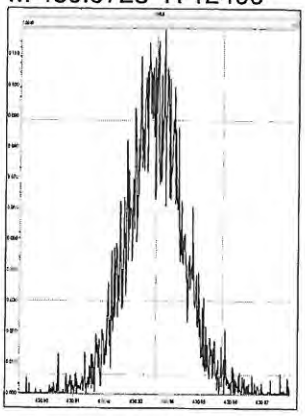

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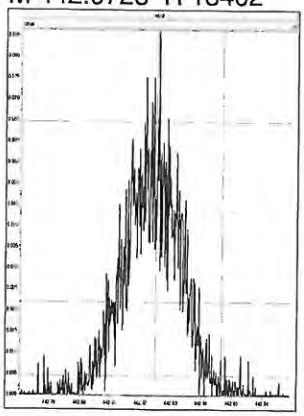

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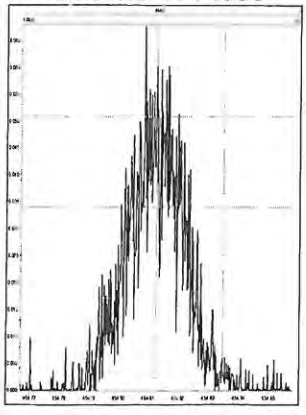

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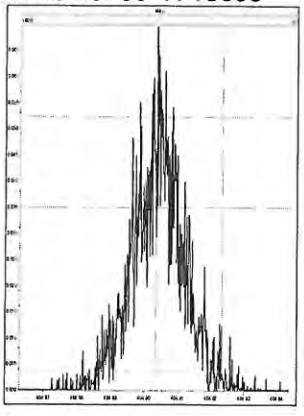

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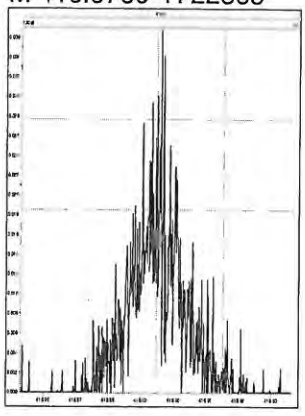

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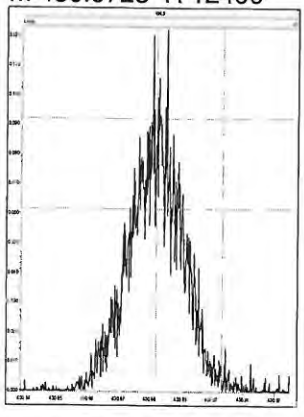

Resolution Check Report **MassLynx 4.1**

Printed: Tuesday, June 25, 2019 20:54:47 Pacific Daylight Time

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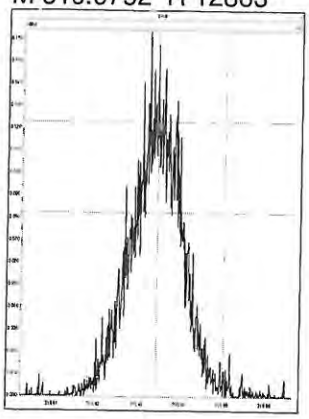

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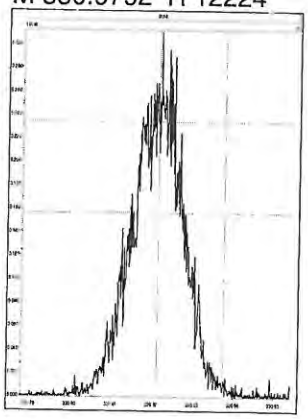

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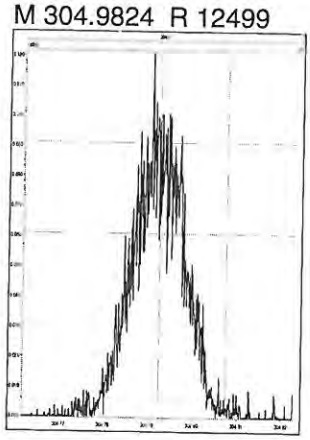
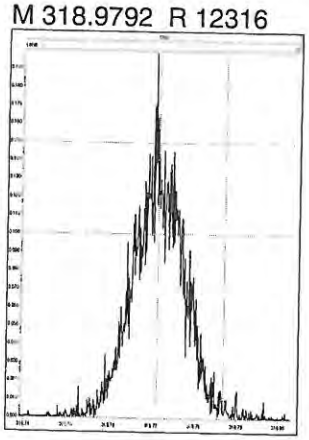
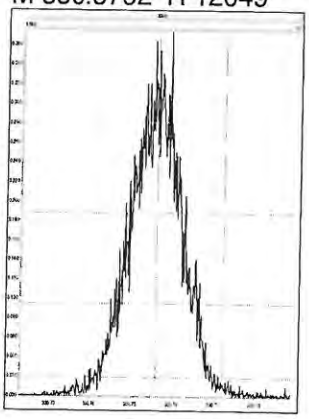


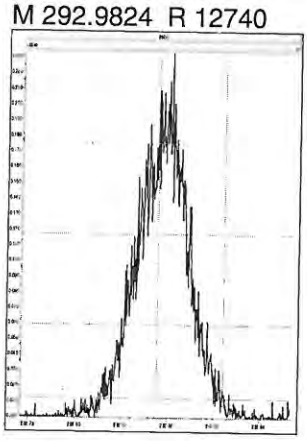
M 318.9792 R 12316



M 330.9792 R 12049



M 292.9824 R 12740



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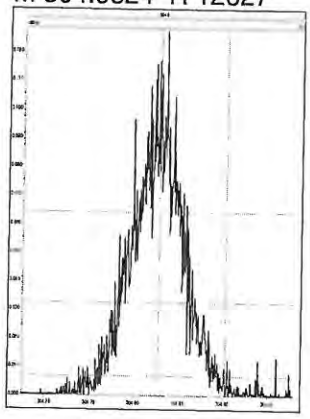

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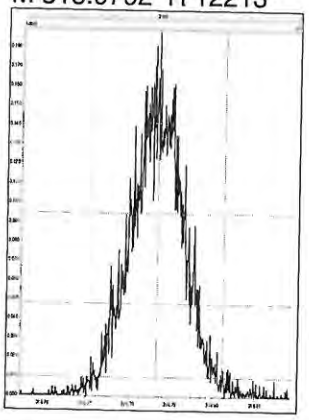

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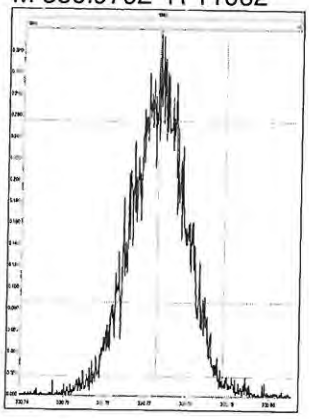

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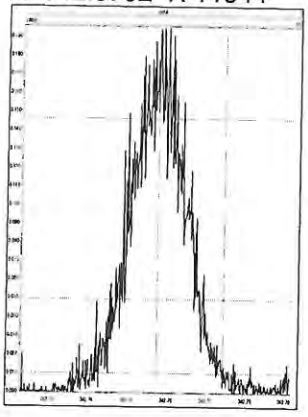
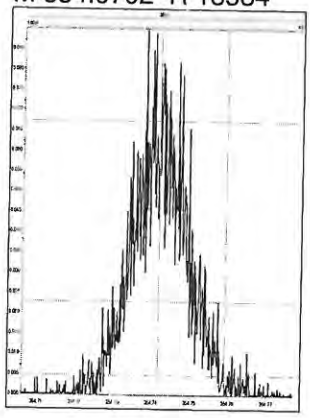


M 354.9792 R 13584



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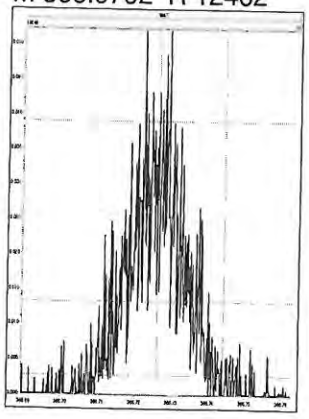

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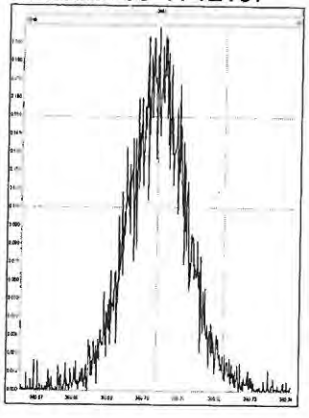

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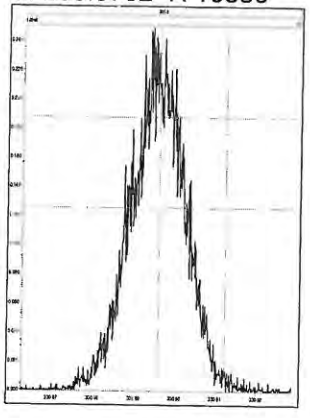

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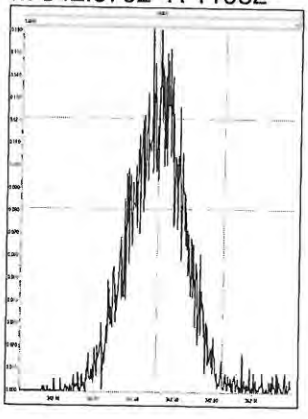
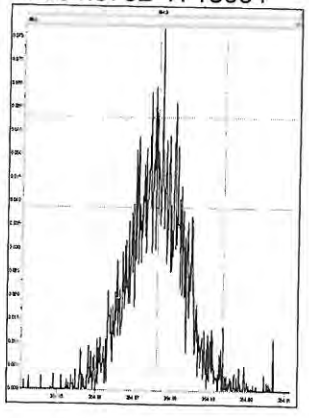


M 354.9792 R 13664



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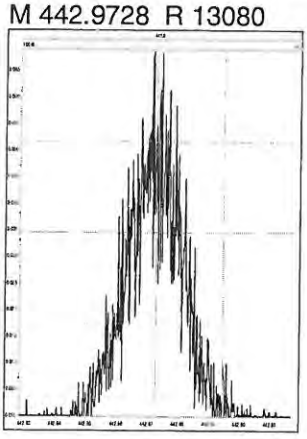

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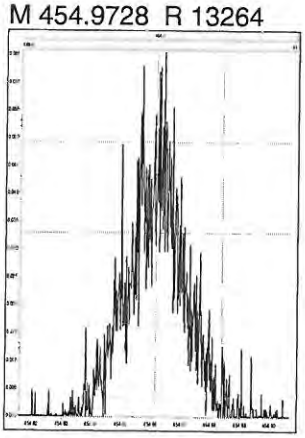

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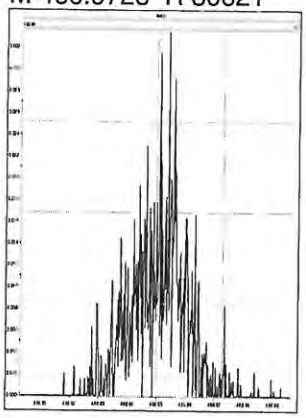
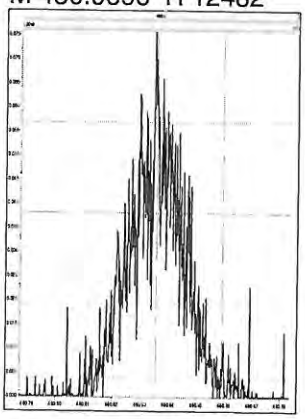
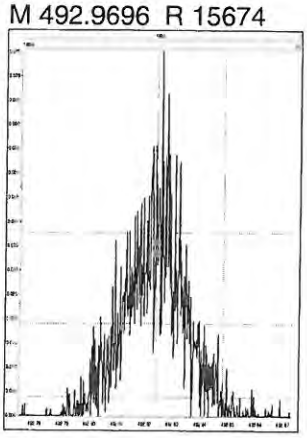


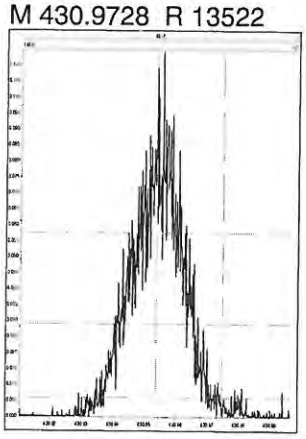
M 480.9696 R 12482



M 492.9696 R 15674



M 430.9728 R 13522



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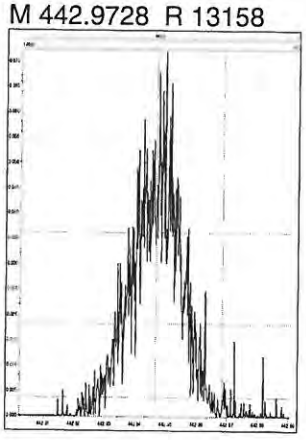

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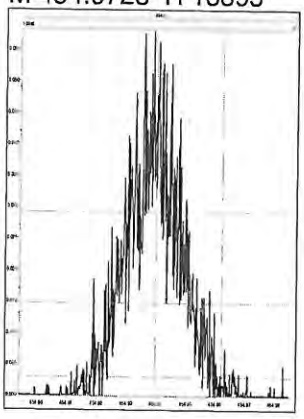

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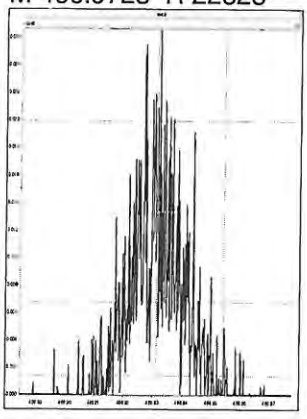

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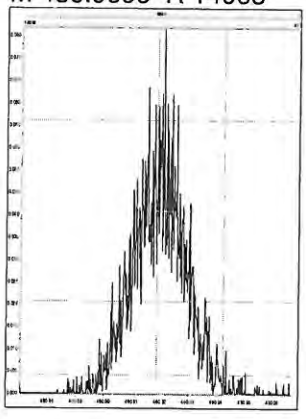

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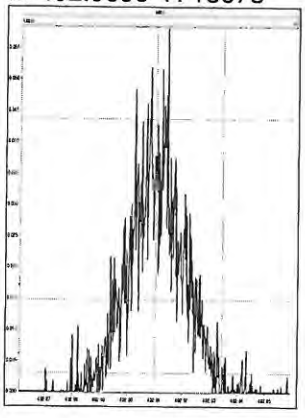

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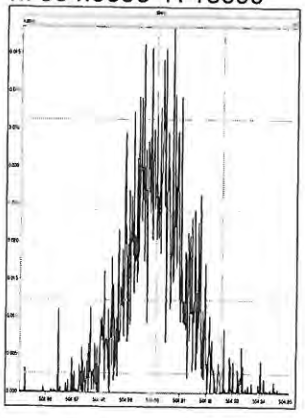

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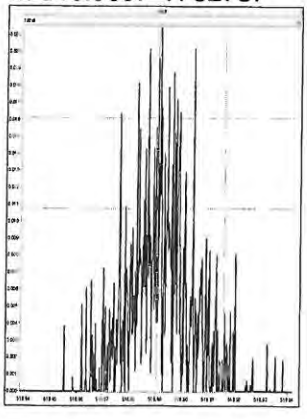

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	File Name	Sample ID	File Text	Sample Type	TCDD	TCDF	Pe-Hp	Octa	13C-Te-Hp	13C-OCDD	Rec Std	C/Up
1	DX9M_065CS6	DX042B-CAL,,/01	1,,1.0uL CS-1	Standard	.5	.5	2.5	5	100	200	100	.5
2	DX9M_065CS4	DX042C-CAL,,/01	1,,1.0uL CS-2	Standard	2	2	10	20	100	200	100	2
3	DX9M_065CS3	DX042D-CAL,,/01	1,,1.0uL Cal Win/Res	Standard	10	10	50	100	100	200	100	10
4	DX9M_065CS12	DX042E-CAL,,/01	1,,1.0uL CS-4	Standard	40	40	200	400	100	200	100	40
5	DX9M_065CS11	DX042F-CAL,,/01	1,,1.0uL CS-5	Standard	200	200	1000	2000	100	200	100	200
6	DX9M_065CS9	DX042G-CAL,,/01	1,,1.0uL CS-6	Standard	---	---	3000	6000	100	200	100	---
7	DX9M_065CS13	DX005A-SSV,,/01	1,,1.0uL Cal	QC	10	10	50	100	100	200	100	10
8	DX9M_065CS3	DX042D-CAL,,/01	1,,1.0uL Cal Win/Res	QC	10	10	50	100	100	200	100	10

SGS AXYS METHOD MLA-017 Rev 20

Form 3A
PCDD/PCDF INITIAL CALIBRATION RELATIVE RESPONSES

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 25-Jun-2019

Instrument ID: HR GC/MS

GC Column ID: DB5

CS0 Data Filename: N/A
CS1 Data Filename: DX9M_065C S: 6
CS2 Data Filename: DX9M_065C S: 4
CS3 Data Filename: DX9M_065C S: 3
CS4 Data Filename: DX9M_065C S: 12
CS5 Data Filename: DX9M_065C S: 11
CS6 Data Filename: DX9M_065C S: 9

		RELATIVE RESPONSE (RR)								
COMPOUND	**LAB FLAG [1]**	**CS0**	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**	**CS6**	**MEAN RR**	**CV (%RSD)[2]**
2,3,7,8-TCDD			1.02	1.11	1.15	1.12	1.12		1.10	4.28
1,2,3,7,8-PECDD [3]			0.97	0.99	0.99	1.00	0.99		0.99	0.96
1,2,3,4,7,8-HXCDD			1.03	1.03	1.01	1.05	1.02		1.03	1.44
1,2,3,6,7,8-HXCDD			0.92	0.94	0.94	0.98	0.93		0.94	2.49
1,2,3,7,8,9-HXCDD [4]			0.96	0.98	0.96	1.01	0.96		0.97	2.10
1,2,3,4,6,7,8-HPCDD			0.76	0.79	0.80	0.80	0.77	0.75	0.78	2.71
OCDD			0.99	1.01	1.02	1.02	1.01	0.83	0.98	7.59
2,3,7,8-TCDF			0.91	0.92	0.94	0.95	0.91		0.93	1.96
1,2,3,7,8-PECDF			0.94	0.89	0.93	0.95	0.93		0.93	2.43
2,3,4,7,8-PECDF			0.90	0.94	0.97	0.98	0.96		0.95	3.48
1,2,3,4,7,8-HXCDF			1.13	1.08	1.12	1.10	1.09		1.11	1.95
1,2,3,6,7,8-HXCDF			1.05	1.07	1.07	1.09	1.09		1.07	1.76
1,2,3,7,8,9-HXCDF			1.08	1.06	1.01	1.06	1.05		1.05	2.45
2,3,4,6,7,8-HXCDF			1.17	1.12	1.12	1.17	1.11		1.14	2.45
1,2,3,4,6,7,8-HPCDF			1.22	1.27	1.28	1.28	1.26	1.18	1.25	3.06
1,2,3,4,7,8,9-HPCDF			1.23	1.29	1.26	1.27	1.26	1.22	1.25	2.15
OCDF [5]			1.08	1.12	1.14	1.23	1.22	1.04	1.14	6.56

(1) Where applicable, custom lab flags have been used on this report.
(2) For contract CV specifications, see Section 10.5.4, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.
(4) Response ratios are calculated relative to the labeled analogs of the other two HXCDDs (Section 17.1.2, Method 1613).
(5) Response ratios are calculated relative to the labeled analog of OCDD (Section 17.1.1, Method 1613).

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Bjorn Arvi_____

For Axys Internal Use Only [XSL Template: Form3A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15; Report Filename: 1613_DIOXINS_25-Jun-2019_DX9M__Form3A_GS83589.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 3B
PCDD/PCDF INITIAL CALIBRATION RELATIVE RESPONSES

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 25-Jun-2019

Instrument ID: HR GC/MS

GC Column ID: DB5

CS0 Data Filename: N/A

CS1 Data Filename: DX9M_065C S: 6

CS2 Data Filename: DX9M_065C S: 4

CS3 Data Filename: DX9M_065C S: 3

CS4 Data Filename: DX9M_065C S: 12

CS5 Data Filename: DX9M_065C S: 11

CS6 Data Filename: DX9M_065C S: 9

		RELATIVE RESPONSE (RR)							
LABELED COMPOUND	**LAB FLAG [1]**	**CS0**	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**	**CS6**	**MEAN RR**	**CV (%RSD)[2]**
13C-2,3,7,8-TCDD			0.97	0.94	0.93	0.98	1.02	0.97	0.97	3.31
13C-1,2,3,7,8-PECDD [3]			0.76	0.75	0.72	0.79	0.85	0.75	0.77	5.95
13C-1,2,3,4,7,8-HXCDD			0.97	0.97	0.96	0.98	1.00	0.94	0.97	2.02
13C-1,2,3,6,7,8-HXCDD			1.09	1.05	1.05	1.06	1.09	1.07	1.07	1.85
13C-1,2,3,4,6,7,8-HPCDD			1.05	1.02	0.97	1.01	1.03	1.41	1.08	15.1
13C-OCDD			0.74	0.73	0.66	0.74	0.78	1.13	0.80	21.0
13C-2,3,7,8-TCDF			1.53	1.52	1.46	1.50	1.57	1.56	1.52	2.68
13C-1,2,3,7,8-PECDF			1.20	1.20	1.16	1.25	1.38	1.23	1.24	6.17
13C-2,3,4,7,8-PECDF			1.26	1.23	1.18	1.30	1.42	1.27	1.28	6.33
13C-1,2,3,4,7,8-HXCDF			1.23	1.21	1.19	1.22	1.23	1.21	1.21	1.43
13C-1,2,3,6,7,8-HXCDF			1.37	1.33	1.28	1.33	1.34	1.35	1.33	2.28
13C-1,2,3,7,8,9-HXCDF			1.08	1.08	1.01	1.08	1.10	1.06	1.07	2.70
13C-2,3,4,6,7,8-HXCDF			1.23	1.20	1.18	1.20	1.20	1.21	1.20	1.34
13C-1,2,3,4,6,7,8-HPCDF			0.97	0.95	0.87	0.95	0.96	1.31	1.00	15.4
13C-1,2,3,4,7,8,9-HPCDF			0.78	0.75	0.70	0.76	0.78	1.08	0.81	16.9
CLEANUP STANDARD										
37CL-2,3,7,8-TCDD			0.97	1.08	1.01	1.11	1.17		1.07	7.49

(1) Where applicable, custom lab flags have been used on this report.
(2) For contract CV specifications, see Section 10.5.4, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Bjorn Arvi_____

For Axys Internal Use Only [XSL Template: Form3B.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15; Report Filename: 1613_DIOXINS_25-Jun-2019_DX9M__Form3B_GS83589.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 3C

PCDD/PCDF INITIAL CALIBRATION ION ABUNDANCE RATIOS

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 25-Jun-2019

Instrument ID: HR GC/MS

GC Column ID: DB5

CS0 Data Filename: N/A

CS1 Data Filename: DX9M_065C S: 6

CS2 Data Filename: DX9M_065C S: 4

CS3 Data Filename: DX9M_065C S: 3

CS4 Data Filename: DX9M_065C S: 12

CS5 Data Filename: DX9M_065C S: 11

CS6 Data Filename: DX9M_065C S: 9

COMPOUND	LAB FLAG [1]	M/Z's FORMING RATIO [2]	ION ABUNDANCE RATIO CS0	CS1	CS2	CS3	CS4	CS5	CS6	QC LIMITS[3]
2,3,7,8-TCDD		**M/M+2**		0.80	0.81	0.78	0.79	0.78		0.65-0.89
1,2,3,7,8-PECDD [4]		**M/M+2**		0.59	0.60	0.62	0.61	0.62		0.52-0.70
1,2,3,4,7,8-HXCDD		**M+2/M+4**		1.32	1.21	1.24	1.25	1.24		1.05-1.43
1,2,3,6,7,8-HXCDD		**M+2/M+4**		1.31	1.22	1.25	1.24	1.24		1.05-1.43
1,2,3,7,8,9-HXCDD		**M+2/M+4**		1.21	1.28	1.25	1.21	1.24		1.05-1.43
1,2,3,4,6,7,8-HPCDD		**M+2/M+4**		0.99	1.06	1.03	1.04	1.03	1.02	0.88-1.20
OCDD		**M+2/M+4**		0.87	0.90	0.88	0.89	0.88	0.93	0.76-1.02
2,3,7,8-TCDF		**M/M+2**		0.75	0.79	0.77	0.77	0.78		0.65-0.89
1,2,3,7,8-PECDF		**M+2/M+4**		1.49	1.48	1.55	1.52	1.57		1.32-1.78
2,3,4,7,8-PECDF		**M+2/M+4**		1.60	1.46	1.54	1.52	1.51		1.32-1.78
1,2,3,4,7,8-HXCDF		**M+2/M+4**		1.22	1.20	1.20	1.19	1.20		1.05-1.43
1,2,3,6,7,8-HXCDF		**M+2/M+4**		1.31	1.22	1.24	1.19	1.21		1.05-1.43
1,2,3,7,8,9-HXCDF		**M+2/M+4**		1.24	1.21	1.24	1.18	1.20		1.05-1.43
2,3,4,6,7,8-HXCDF		**M+2/M+4**		1.28	1.24	1.24	1.24	1.16		1.05-1.43
1,2,3,4,6,7,8-HPCDF		**M+2/M+4**		1.03	1.07	1.03	1.05	1.07	1.04	0.88-1.20
1,2,3,4,7,8,9-HPCDF		**M+2/M+4**		1.11	1.00	1.06	1.04	0.99	1.06	0.88-1.20
OCDF		**M+2/M+4**		0.88	0.89	0.89	0.89	0.90	0.97	0.76-1.02

(1) Where applicable, custom lab flags have been used on this report.
(2) See Table 8, Method 1613, for m/z specifications.
(3) Ion Abundance Ratio Control Limits from Table 9, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Bjorn Arvi_____

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SGS AXYS METHOD MLA-017 Rev 20

Form 3D
PCDD/PCDF INITIAL CALIBRATION ION ABUNDANCE RATIOS

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 25-Jun-2019

Instrument ID: HR GC/MS

GC Column ID: DB5

CS0 Data Filename: N/A

CS1 Data Filename: DX9M_065C S: 6

CS2 Data Filename: DX9M_065C S: 4

CS3 Data Filename: DX9M_065C S: 3

CS4 Data Filename: DX9M_065C S: 12

CS5 Data Filename: DX9M_065C S: 11

CS6 Data Filename: DX9M_065C S: 9

LABELED COMPOUND	LAB FLAG[1]	M/Z's FORMING RATIO [2]	ION ABUNDANCE RATIO CS0	CS1	CS2	CS3	CS4	CS5	CS6	QC LIMITS[3]
13C-2,3,7,8-TCDD		**M/M+2**		0.80	0.77	0.77	0.78	0.80	0.79	0.65-0.89
13C-1,2,3,7,8-PECDD [4]		**M/M+2**		0.62	0.63	0.63	0.63	0.63	0.63	0.52-0.70
13C-1,2,3,4,7,8-HXCDD		**M+2/M+4**		1.27	1.28	1.25	1.27	1.28	1.29	1.05-1.43
13C-1,2,3,6,7,8-HXCDD		**M+2/M+4**		1.27	1.24	1.25	1.24	1.23	1.29	1.05-1.43
13C-1,2,3,4,6,7,8-HPCDD		**M+2/M+4**		1.04	1.06	1.08	1.03	1.04	1.06	0.88-1.20
13C-OCDD		**M+2/M+4**		0.88	0.88	0.89	0.91	0.89	0.89	0.76-1.02
13C-2,3,7,8-TCDF		**M/M+2**		0.76	0.76	0.77	0.77	0.77	0.76	0.65-0.89
13C-1,2,3,7,8-PECDF		**M+2/M+4**		1.58	1.52	1.58	1.56	1.53	1.54	1.32-1.78
13C-2,3,4,7,8-PECDF		**M+2/M+4**		1.58	1.54	1.54	1.56	1.54	1.58	1.32-1.78
13C-1,2,3,4,7,8-HXCDF		**M/M+2**		0.51	0.52	0.52	0.51	0.52	0.53	0.43-0.59
13C-1,2,3,6,7,8-HXCDF		**M/M+2**		0.51	0.51	0.51	0.51	0.52	0.50	0.43-0.59
13C-1,2,3,7,8,9-HXCDF		**M/M+2**		0.51	0.52	0.52	0.51	0.52	0.52	0.43-0.59
13C-2,3,4,6,7,8-HXCDF		**M/M+2**		0.51	0.51	0.51	0.51	0.52	0.52	0.43-0.59
13C-1,2,3,4,6,7,8-HPCDF		**M/M+2**		0.46	0.47	0.45	0.46	0.46	0.45	0.37-0.51
13C-1,2,3,4,7,8,9-HPCDF		**M/M+2**		0.44	0.46	0.45	0.46	0.45	0.45	0.37-0.51

(1) Where applicable, custom lab flags have been used on this report.
(2) See Table 8, Method 1613, for m/z specifications.
(3) Ion Abundance Ratio Control Limits from Table 9, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Bjorn Arvi_____

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SGS AXYS METHOD MLA-017 Rev 20

Form 5

PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Instrument ID:	HR GC/MS	**Initial Calibration Date:**		25-Jun-2019
RT Window Data Filename:	DX9M_065C S: 3	**Analysis Date:**	25-Jun-2019	**Time:** 11:05:52
DB-5 IS Data Filename:	DX9M_065C S: 3	**Analysis Date:**	25-Jun-2019	**Time:** 11:05:52
DB-225 IS Data Filename:		**Analysis Date:**		**Time:**

DB5 RT WINDOW DEFINING STANDARDS RESULT

ISOMERS	ABSOLUTE RT	ISOMERS	ABSOLUTE RT
1,3,6,8-TCDD (F)	22:59	**1,3,6,8-TCDF (F)**	21:27
1,2,8,9-TCDD (L)	28:21	**1,2,8,9-TCDF (L)**	28:12
1,2,4,7,9-PECDD (F)	32:03	**1,3,4,6,8-PECDF (F)**	28:53
1,2,3,8,9-PECDD (L)	37:06	**1,2,3,8,9-PECDF (L)**	37:10
1,2,4,6,7,9-HXCDD (F)	40:05	**1,2,3,4,6,8-HXCDF (F)**	39:02
1,2,3,4,6,7-HXCDD (L)	42:45	**1,2,3,4,8,9-HXCDF (L)**	43:05
1,2,3,4,6,7,9-HPCDD (F)	45:53	**1,2,3,4,6,7,8-HPCDF (F)**	45:24
1,2,3,4,6,7,8-HPCDD (L)	46:47	**1,2,3,4,7,8,9-HPCDF (L)**	47:13

(F) = First eluting isomer (DB-5); (L) = Last eluting isomer (DB-5)

ISOMER SPECIFICITY (IS) TEST STANDARDS RESULT

Isomers	% Valley Height Between Compared Peaks	Isomers	% Valley Height Between Compared Peaks
1,2,3,4-TCDD **1,2,7,8-TCDD**	0	**1,2,3,8-TCDD** **2,3,7,8-TCDD**	12
1,2,7,8-TCDD **1,4,7,8-TCDD**	0	**2,3,4,7-TCDF** **2,3,7,8-TCDF**	N/A
1,4,7,8-TCDD **1,2,3,7-TCDD**	0	**2,3,7,8-TCDF** **1,2,3,9-TCDF**	N/A
1,2,3,7-TCDD **1,2,3,8-TCDD**	DB-5 column; co-elute as per Figure 6 in Method		

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

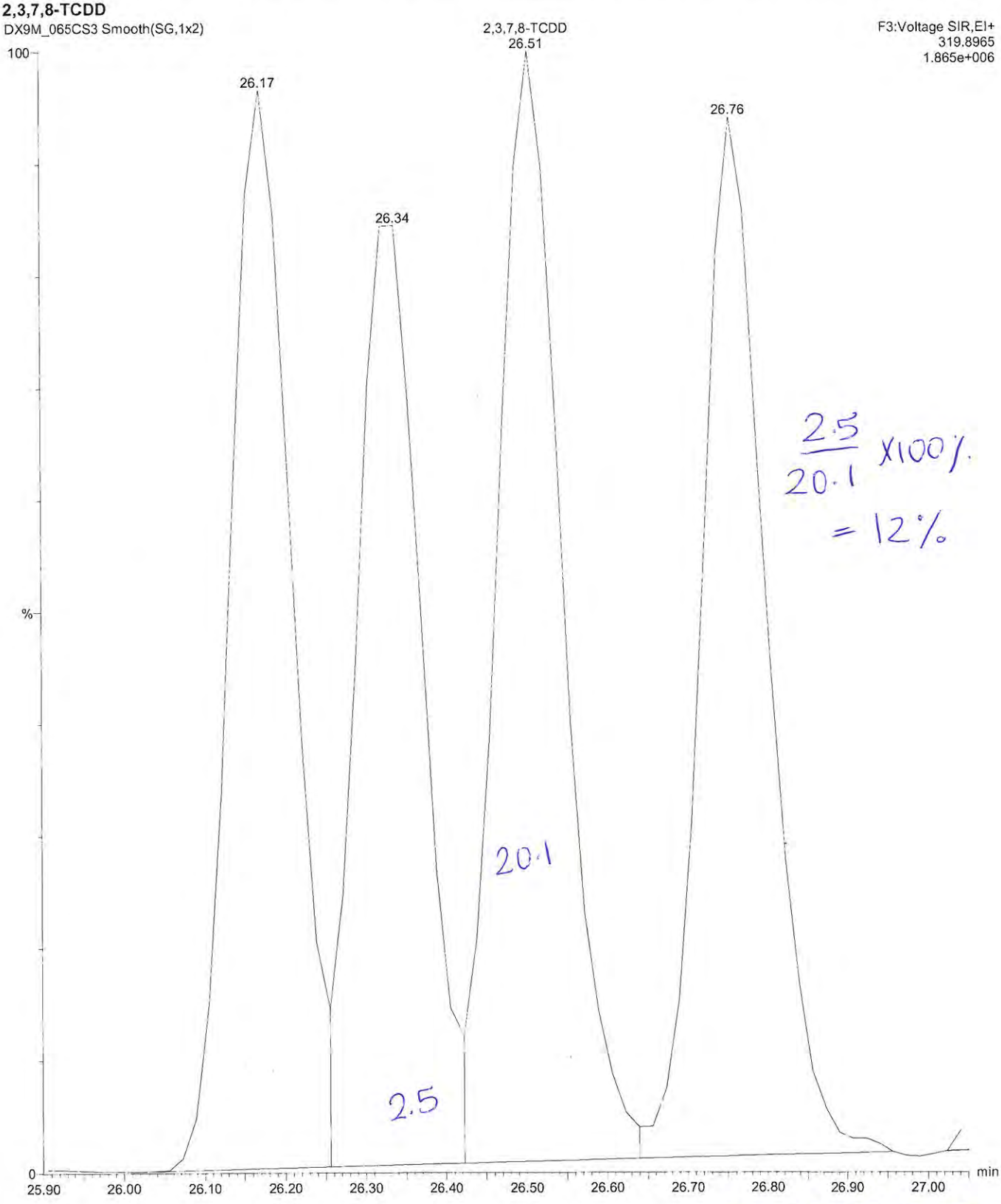
Signed: _____Kristen Bowes_____

For Axys Internal Use Only [XSL Template: DXForm5.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15; Report Filename: 1613_DIOXINS__DX9M_065CS3_Form5_SJ2593506.html; Workgroup: WG69303; Design ID: 3698]

Method: G:\Masslynx\Inst_M\Projects\190510DX.PRO\MethDB\DX_Win_ResC.mdb 02 Jul 2019 13:48:12
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

Name: DX9M_065CS3, Date: 25-Jun-2019, Time: 11:05:52, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

2,3,7,8-TCDD



$\frac{2.5}{20.1} \times 100\% = 12\%$

pbjKB 22 JUL 2019

Experiment : DX-DB225-4_01
GC Program : DX-DB225-4_01
Column type : DB-225
Serial # : USA226732J/USP
kPa : 193
Vol injected: 2.0uL
PMT Voltage : 415

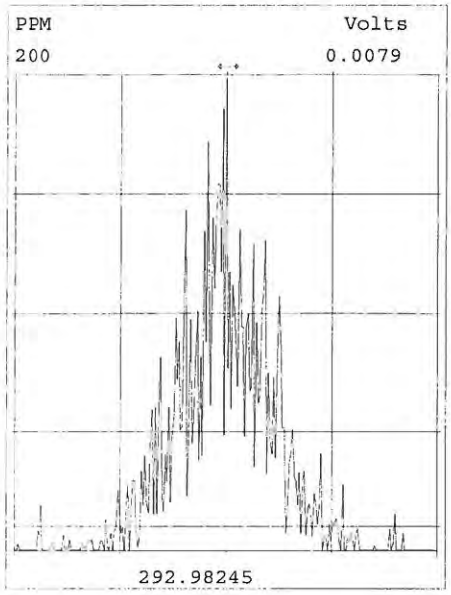
Temps -source: 260
-s resv: 140
-re_ent: 285
-cap_1 : 285
-cap_2 : 305

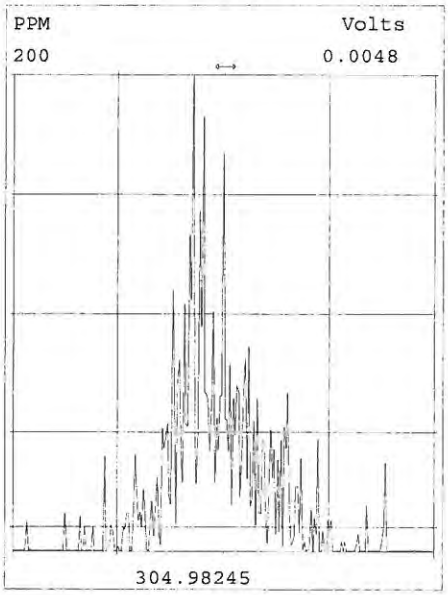
Tune : EW
List : EW
Check :
LIMS :
Logfile:

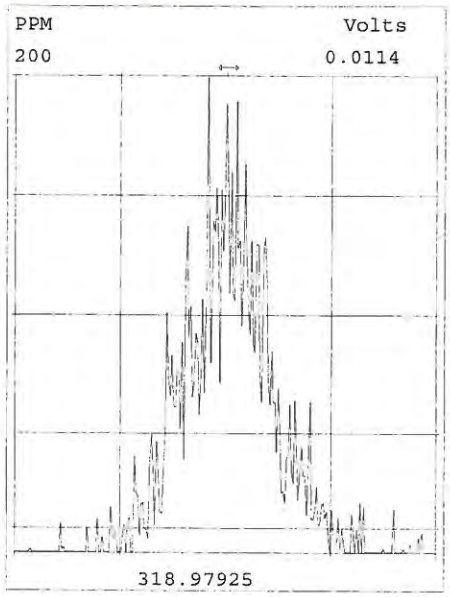
Date -list : 25-JUL-2019
-liner : 08-JUL-2019
-septum: 08-JUL-2019
-guard : 60CM 08-JUL-2019
-column: 20CM 23-APR-2019
-t line: 60cm 23-APR-2019

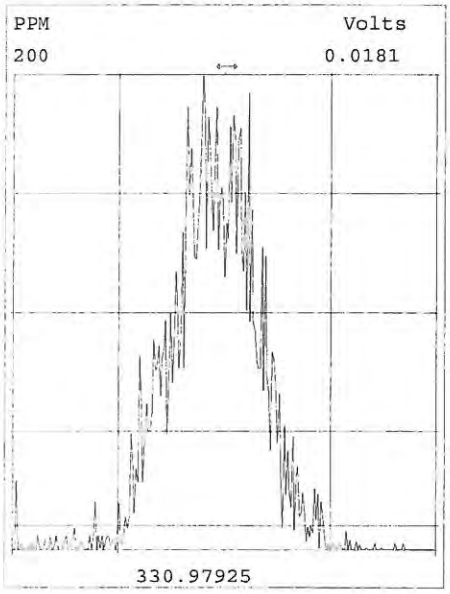
#	Data file	S	V	Sample Text	Comments	Acquisition Date/Time
1	DB9T_055	1	1	DX003A-RSN,,/01-17	1,,2.0uL WIN/RES	25-JUL-19 07:32:19
2	DB9T_055	2	2	DX042D-CAL,,/01-93	1,,2.0uL CS-3/CAL	25-JUL-19 08:17:02
3	DB9T_055	3	3	DX042C-CAL,,/01	1,,2.0uL CS-2	25-JUL-19 09:10:55
4	DB9T_055	4	4	DX042B-CAL,,/01	1,,2.0uL CS-1	25-JUL-19 09:57:31
5	DB9T_055	5	5	DX042A-CAL,,/01	1,,2.0uL CS-0.2	25-JUL-19 10:42:19
6	DB9T_055	6	6	DX042F-CAL,,/01	1,,2.0uL CS-5	25-JUL-19 11:27:03
7	DB9T_055	7	7	DX042E-CAL,,/01	1,,2.0uL CS-4	25-JUL-19 12:12:22
8	DB9T_055	8	8	DX005A-SSV,,/01	1,,2.0uL SSV	25-JUL-19 12:57:23

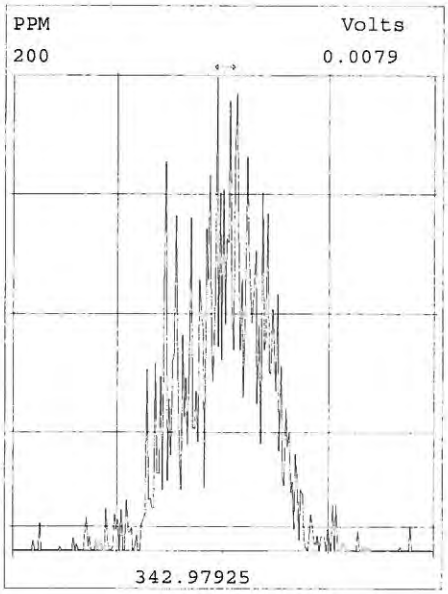
Peak Locate Examination:25-JUL-2019:07:30 File:DB9T_054CAL2/055CAL Approved by EW 25-Jul-2019
Experiment:DX-DB225-4_01 Function:1 Reference:PFK

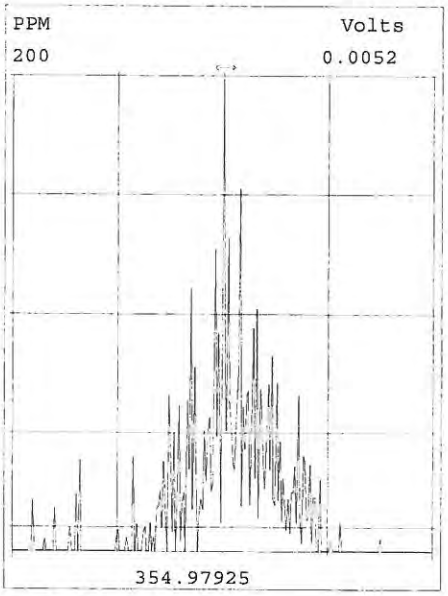


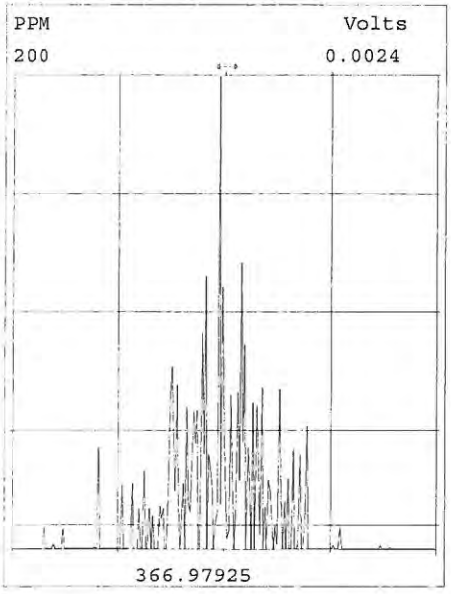


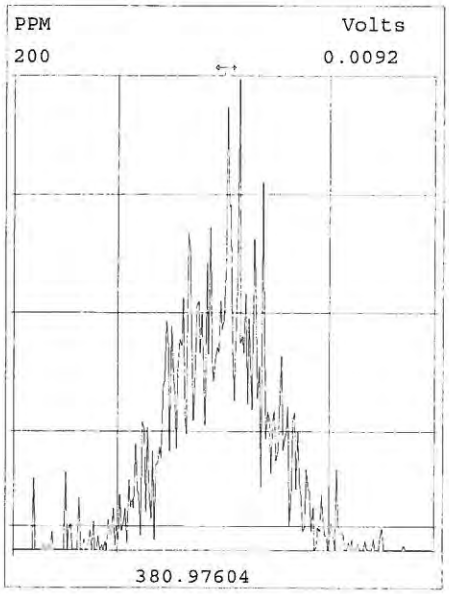




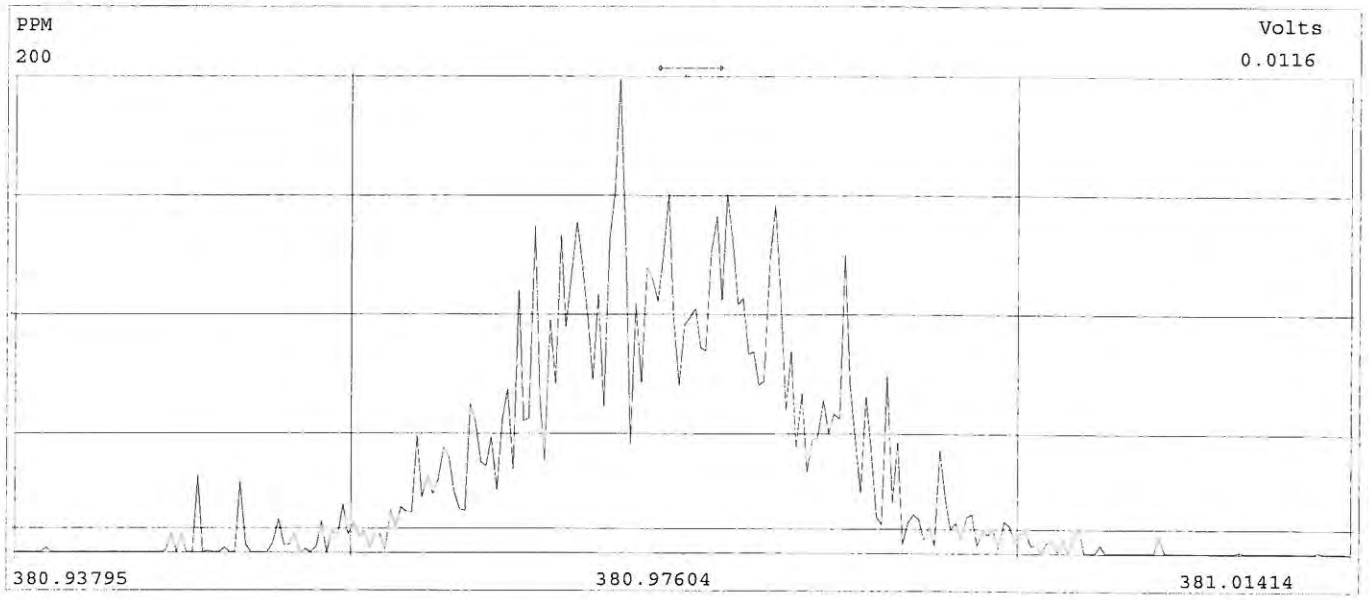


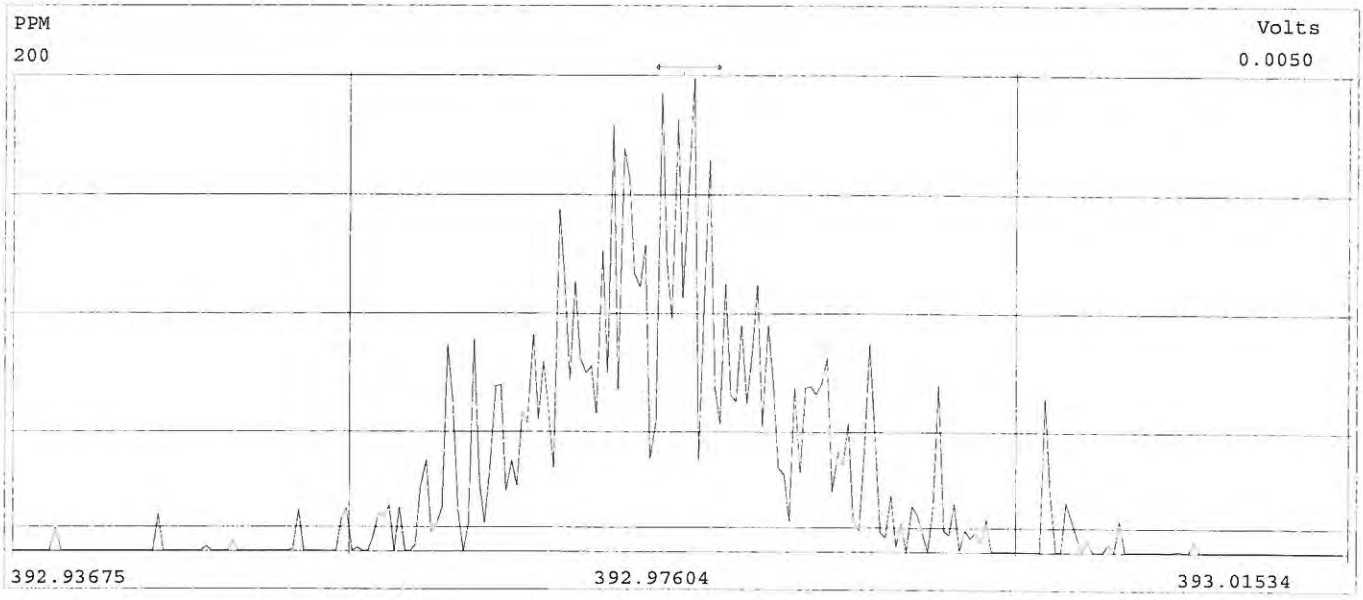


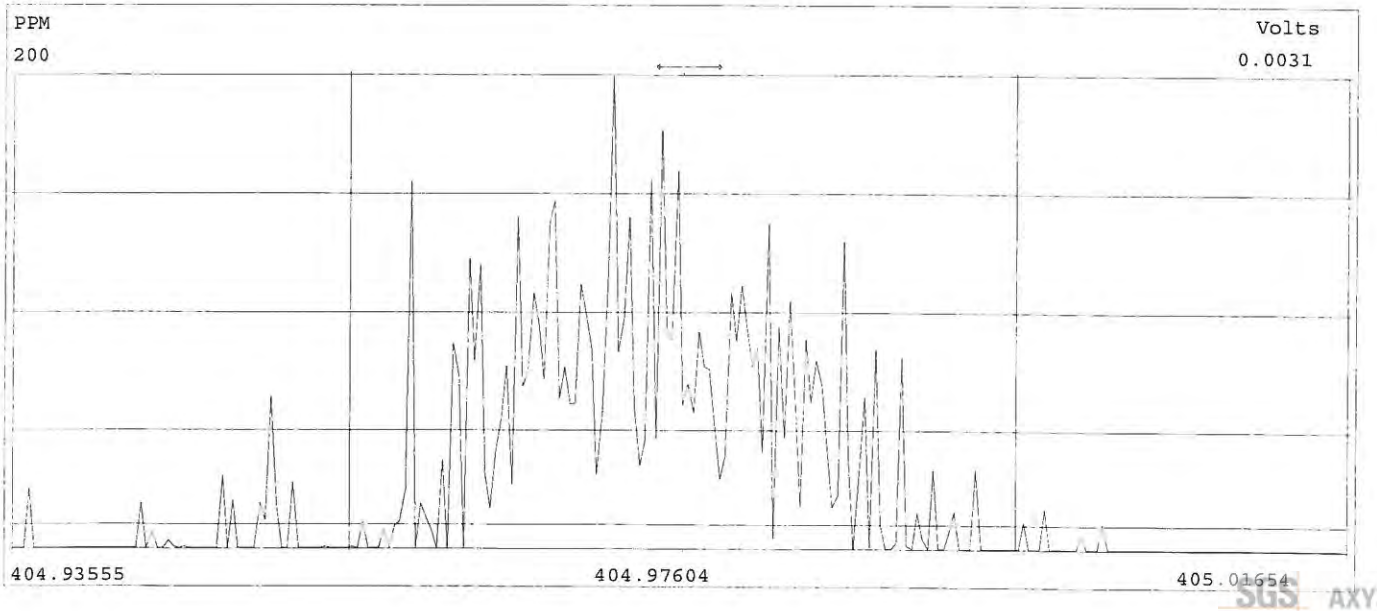




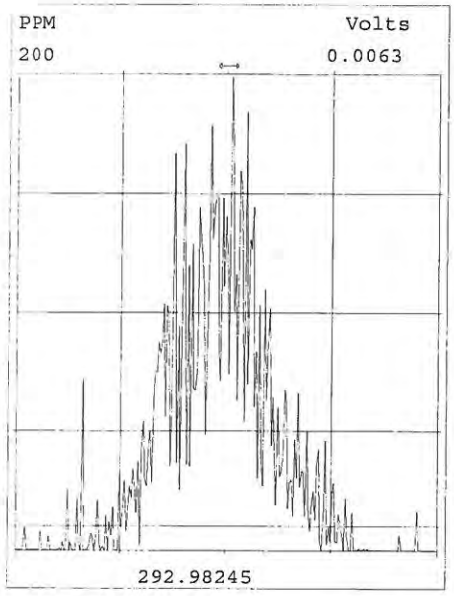
Peak Locate Examination:25-JUL-2019:07:31 File:DB9T_054CAL2/055CAL
Experiment:DX-DB225-4_01 Function:2 Reference:PFK

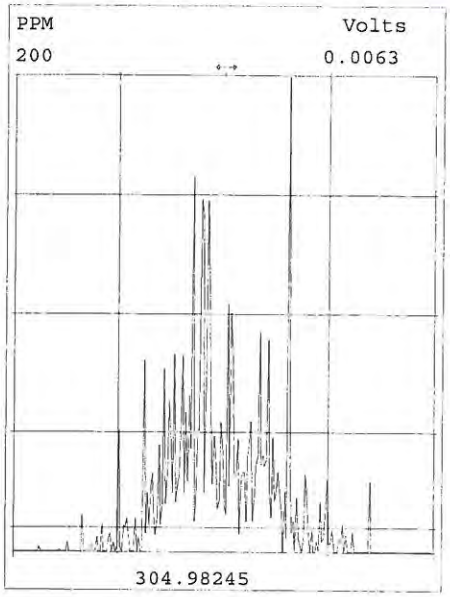


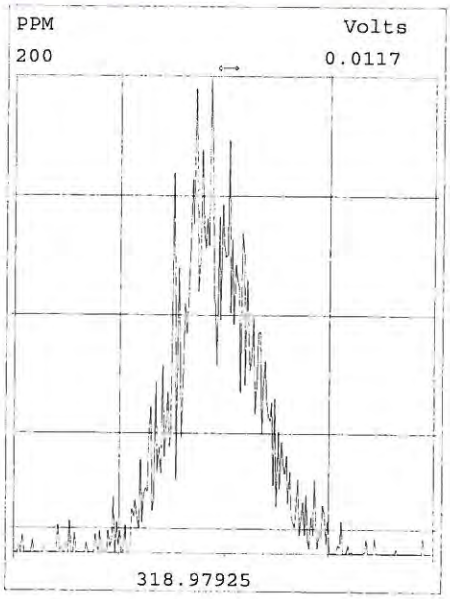


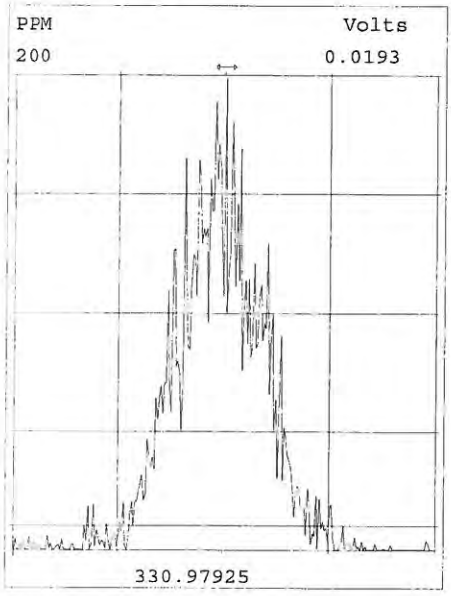


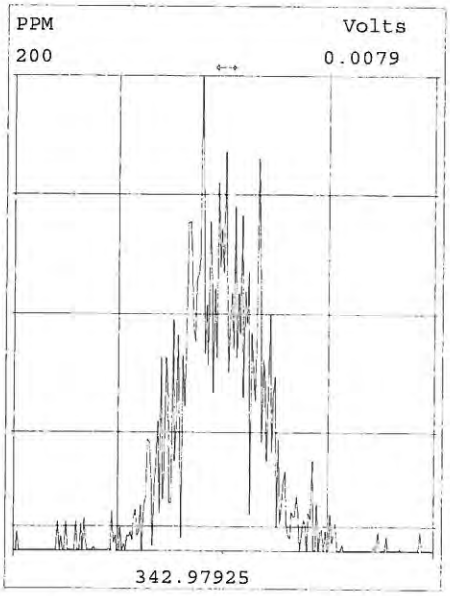
Peak Locate Examination:25-JUL-2019:14:03 File:DB9T_055CAL2 Approved by EW 25-Jul-2019
Experiment:DX-DB225-4_01 Function:1 Reference:PFK

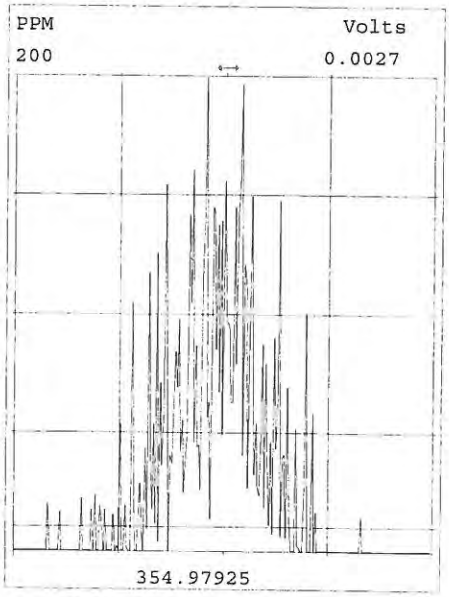


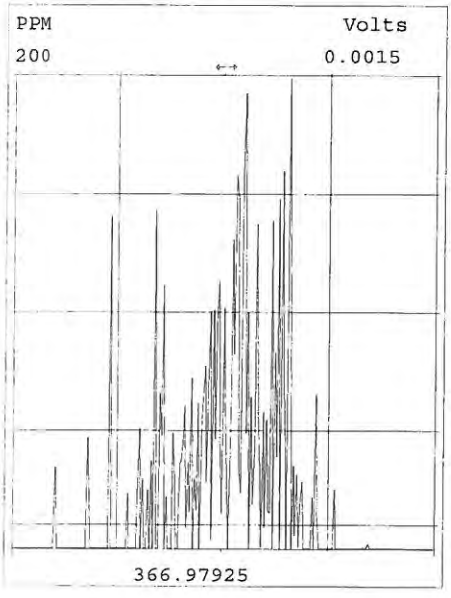


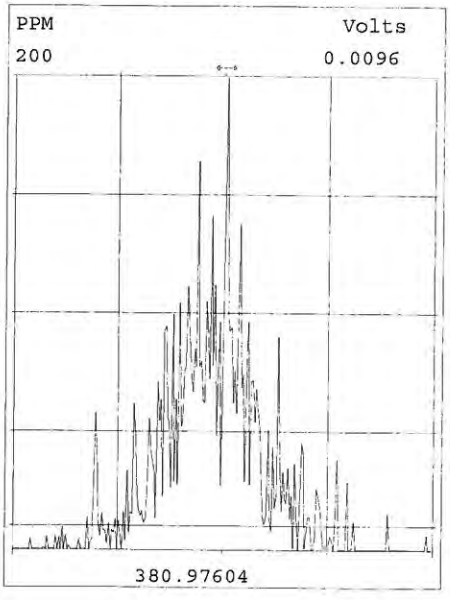




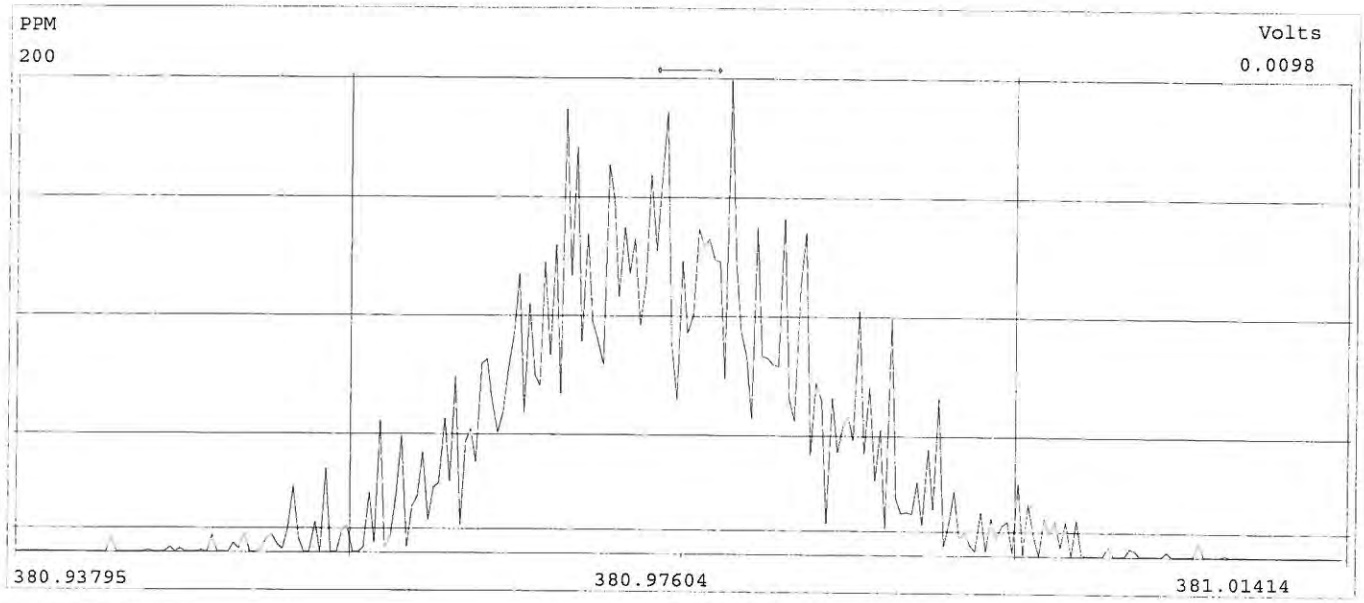


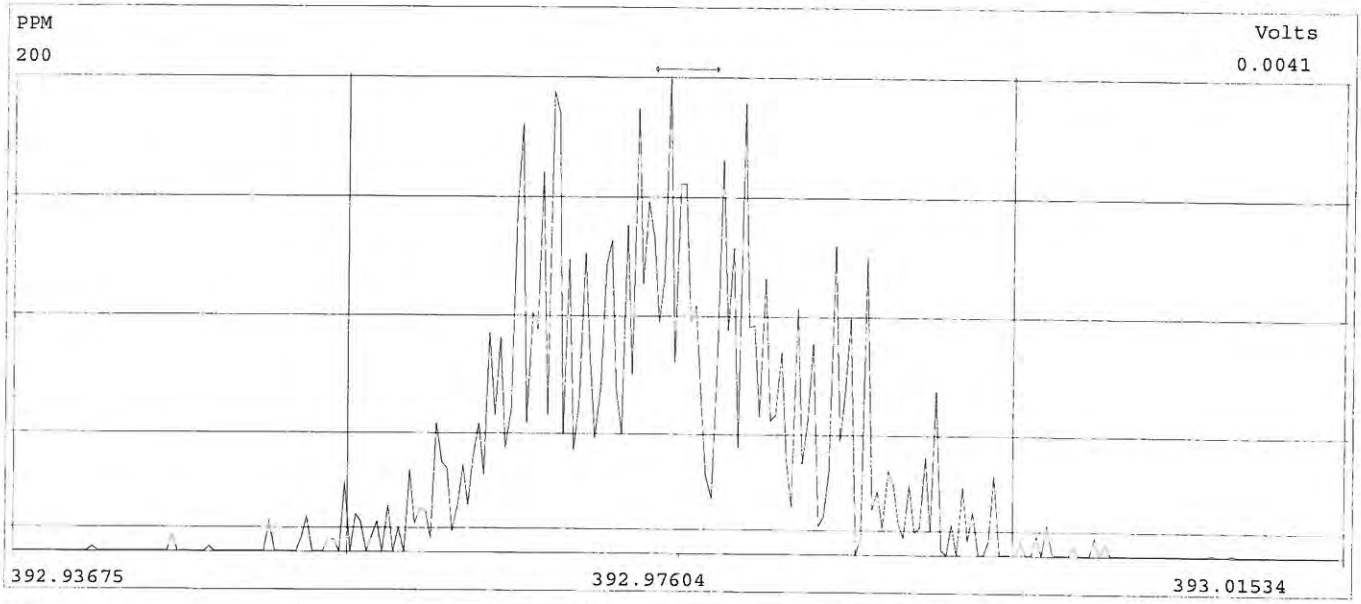


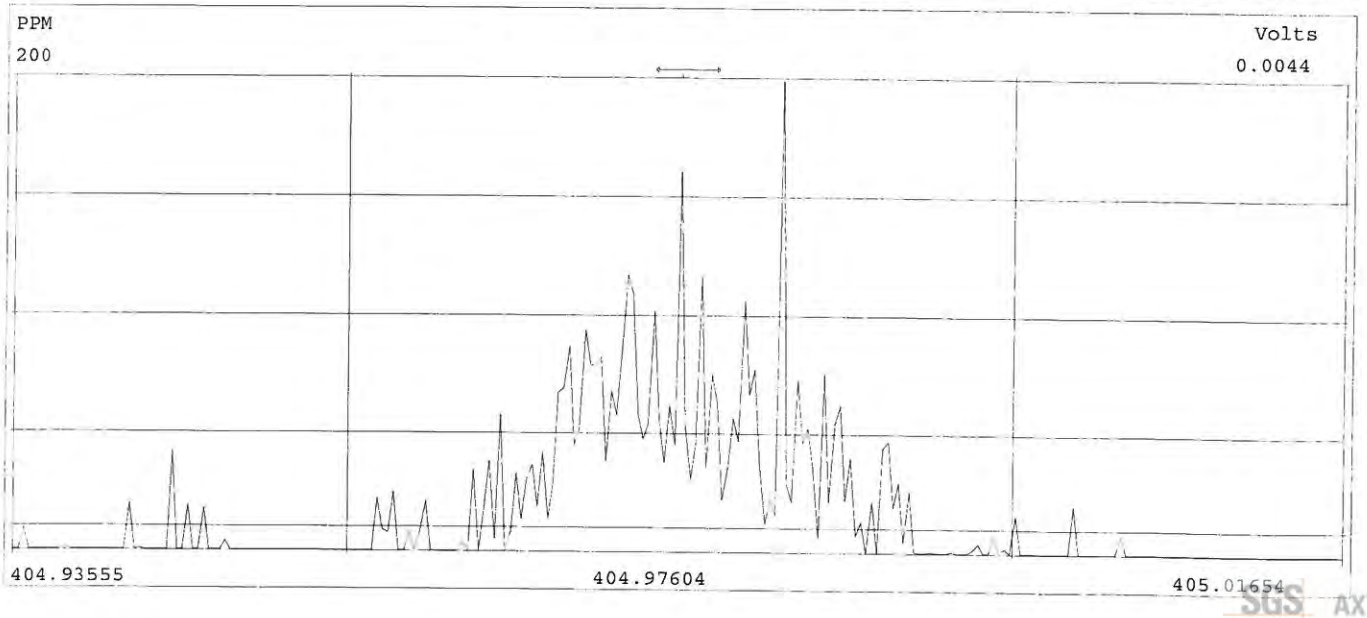




Peak Locate Examination:25-JUL-2019:14:04 File:DB9T_055CAL2
Experiment:DX-DB225-4_01 Function:2 Reference:PFK







OPUSquan 26-JUL-2019 Page 1 DB9T_055-5A

c/q	Data Area	Data File	S	I	AnalyteTable	Factr #1	Factr #2	Size	HC	Sample Text	Comments	Done
1 c	ultt	DB9T_055	4	1	db-hxd-c2	1.0000	1.0000	1.000000	y	DX042B-CAL,,»	1,,2.0uL CS-1	y
2 c	ultt	DB9T_055	3	1	db-hxd-c2	4.0000	1.0000	1.000000	y	DX042C-CAL,,»	1,,2.0uL CS-2	y
3 c	ultt	DB9T_055	2	1	db-hxd-c2	20.0000	1.0000	1.000000	y	DX042D-CAL,,»	1,,2.0uL CS-3/CAL	y
4 c	ultt	DB9T_055	7	1	db-hxd-c2	80.0000	1.0000	1.000000	y	DX042E-CAL,,»	1,,2.0uL CS-4	y
5 c	ultt	DB9T_055	6	1	db-hxd-c2	400.0000	1.0000	1.000000	y	DX042F-CAL,,»	1,,2.0uL CS-5	y
6 q	ultt	DB9T_055	1	1	db-hxd-c2	1.0000	1.0000	1.000000	y	DX003A-RSN,,»	1,,2.0uL WIN/RES	y
7 q	ultt	DB9T_055	2	1	db-hxd-c2	20.0000	1.0000	1.000000	y	DX042D-CAL,,»	1,,2.0uL CS-3/CAL	y
8 q	ultt	DB9T_055	8	1	db-hxd-c2	20.0000	1.0000	1.000000	y	DX005A-SSV,,»	1,,2.0uL SSV	y

SGS AXYS METHOD MLA-017 Rev 20

Form 3A
PCDD/PCDF INITIAL CALIBRATION RELATIVE RESPONSES

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 25-Jul-2019

Instrument ID: HR GC/MS

GC Column ID: DB225

CS0 Data Filename: N/A
CS1 Data Filename: DB9T_055 S: 4
CS2 Data Filename: DB9T_055 S: 3
CS3 Data Filename: DB9T_055 S: 2
CS4 Data Filename: DB9T_055 S: 7
CS5 Data Filename: DB9T_055 S: 6
CS6 Data Filename: N/A

		RELATIVE RESPONSE (RR)								
COMPOUND	**LAB FLAG [1]**	**CS0**	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**	**CS6**	**MEAN RR**	**CV (%RSD)[2]**
1,2,3,7,8,9-HXCDD			0.80	0.81	0.80	0.82	0.82		0.81	1.26
2,3,7,8-TCDF			0.76	0.78	0.78	0.79	0.78		0.78	1.28

(1) Where applicable, custom lab flags have been used on this report.
(2) For contract CV specifications, see Section 10.5.4, Method 1613.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Kristen Bowes_____

For Axys Internal Use Only [XSL Template: Form3A.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15; Report Filename: 1613_DIOXINS_25-Jul-2019_DB9T__Form3A_GS83619.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 3C

PCDD/PCDF INITIAL CALIBRATION ION ABUNDANCE RATIOS

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 25-Jul-2019

Instrument ID: HR GC/MS

GC Column ID: DB225

CS0 Data Filename: N/A

CS1 Data Filename: DB9T_055 S: 4

CS2 Data Filename: DB9T_055 S: 3

CS3 Data Filename: DB9T_055 S: 2

CS4 Data Filename: DB9T_055 S: 7

CS5 Data Filename: DB9T_055 S: 6

CS6 Data Filename: N/A

			ION ABUNDANCE RATIO							
COMPOUND	**LAB FLAG [1]**	**M/Z's FORMING RATIO [2]**	**CS0**	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**	**CS6**	**QC LIMITS[3]**
1,2,3,7,8,9-HXCDD		**M+2/M+4**		1.18	1.23	1.21	1.21	1.20		1.05-1.43
2,3,7,8-TCDF		**M/M+2**		0.75	0.74	0.76	0.76	0.75		0.65-0.89

(1) Where applicable, custom lab flags have been used on this report.
(2) See Table 8, Method 1613, for m/z specifications.
(3) Ion Abundance Ratio Control Limits from Table 9, Method 1613.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Kristen Bowes_____

For Axys Internal Use Only [XSL Template: Form3C.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15; Report Filename: 1613_DIOXINS_25-Jul-2019_DB9T__Form3C_GS83619.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 5

PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Instrument ID:	HR GC/MS	**Initial Calibration Date:**		25-Jul-2019
RT Window Data Filename:		**Analysis Date:**		**Time:**
DB-5 IS Data Filename:		**Analysis Date:**		**Time:**
DB-225 IS Data Filename:	DB9T_055 S: 1	**Analysis Date:**	25-Jul-2019	**Time:** 07:32:19

DB225 RT WINDOW DEFINING STANDARDS RESULT

ISOMERS	ABSOLUTE RT	ISOMERS	ABSOLUTE RT
1,3,6,8-TCDD (F)	N/A	**1,3,6,8-TCDF (F)**	N/A
1,2,8,9-TCDD (L)	N/A	**1,2,8,9-TCDF (L)**	N/A
1,2,4,7,9-PECDD (F)	N/A	**1,3,4,6,8-PECDF (F)**	N/A
1,2,3,8,9-PECDD (L)	N/A	**1,2,3,8,9-PECDF (L)**	N/A
1,2,4,6,7,9-HXCDD (F)	N/A	**1,2,3,4,6,8-HXCDF (F)**	N/A
1,2,3,4,6,7-HXCDD (L)	N/A	**1,2,3,4,8,9-HXCDF (L)**	N/A
1,2,3,4,6,7,9-HPCDD (F)	N/A	**1,2,3,4,6,7,8-HPCDF (F)**	N/A
1,2,3,4,6,7,8-HPCDD (L)	N/A	**1,2,3,4,7,8,9-HPCDF (L)**	N/A

(F) = First eluting isomer (DB-5); (L) = Last eluting isomer (DB-5)

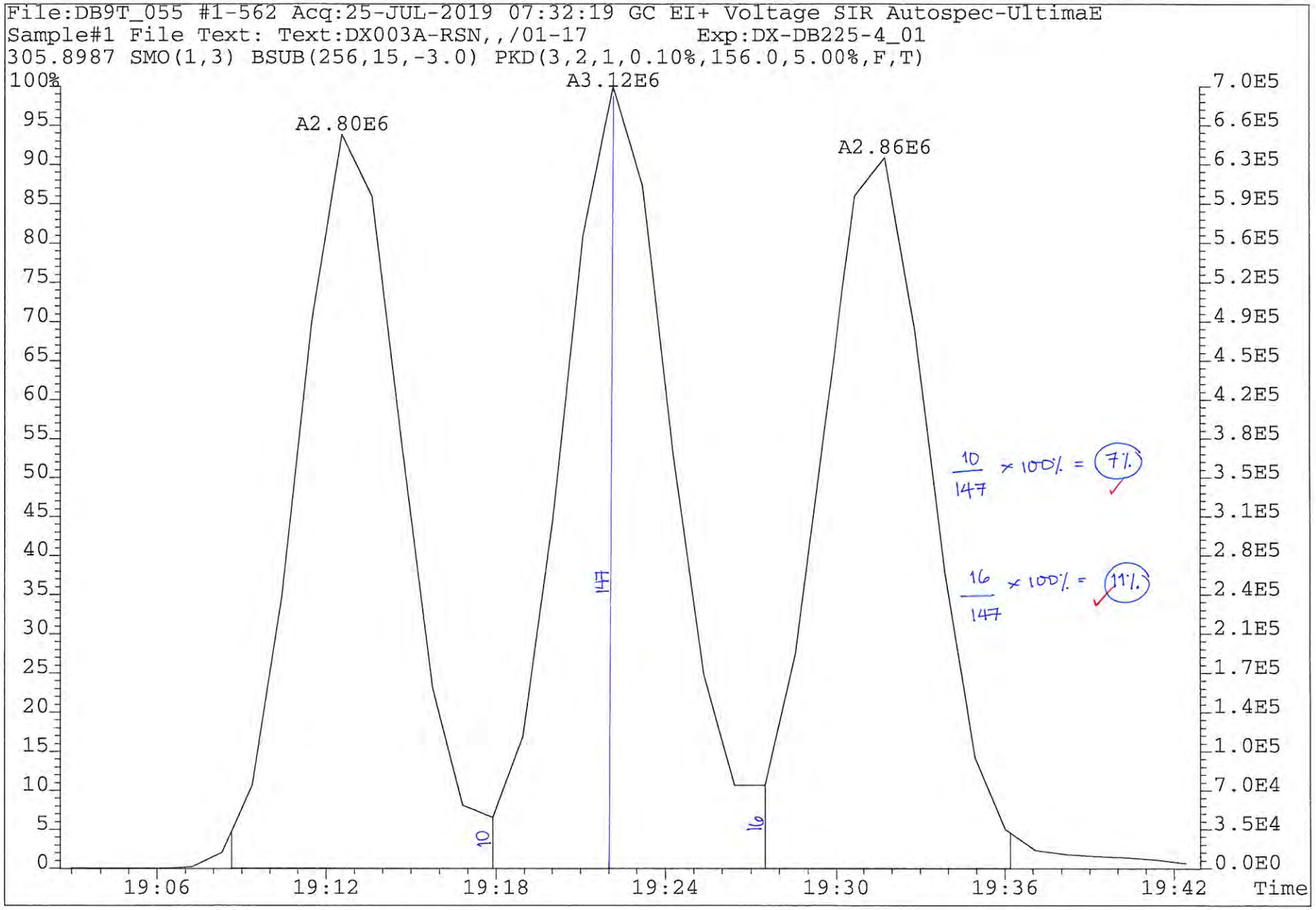
ISOMER SPECIFICITY (IS) TEST STANDARDS RESULT

Isomers	% Valley Height Between Compared Peaks	Isomers	% Valley Height Between Compared Peaks
1,2,3,4-TCDD **1,2,7,8-TCDD**	N/A	**1,2,3,8-TCDD** **2,3,7,8-TCDD**	N/A
1,2,7,8-TCDD **1,4,7,8-TCDD**	N/A	**2,3,4,7-TCDF** **2,3,7,8-TCDF**	7
1,4,7,8-TCDD **1,2,3,7-TCDD**	N/A	**2,3,7,8-TCDF** **1,2,3,9-TCDF**	11
1,2,3,7-TCDD **1,2,3,8-TCDD**	N/A		

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Elleanor Andaya_____

For Axys Internal Use Only [XSL Template: DXForm5.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15; Report Filename: 1613_DIOXINS__DB9T_055S1_Form5_SJ2595976.html; Workgroup: WG69303; Design ID: 3698]


File:DB9T_055 #1-562 Acq:25-JUL-2019 07:32:19 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text: Text:DX003A-RSN,,/01-17 Exp:DX-DB225-4_01
305.8987 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,156.0,5.00%,F,T)
A2.80E6
A3.12E6
A2.86E6
10
147
16
10/147 x 100% = 7%
16/147 x 100% = 11%
PV by RA 26JUL2019
Time

www.axysanalytical.com

Experiment : DX-DB225-4_01
GC Program : DX-DB225-4_01
Column type : DB-225
Serial # : USA226732J/USP╖
kPa : 191
Vol injected: 2.0uL
PMT Voltage : 415

Temps -source: 260
-s resv: 140
-re_ent: 220
-cap_1 : 235
-cap_2 : 220

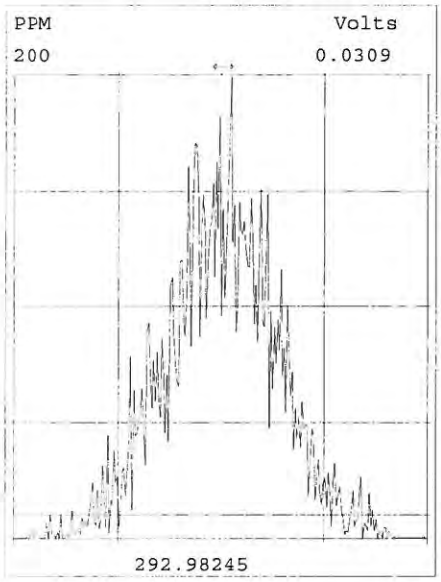
Tune :
List : XX/FS
Check :
LIMS :
Logfile:

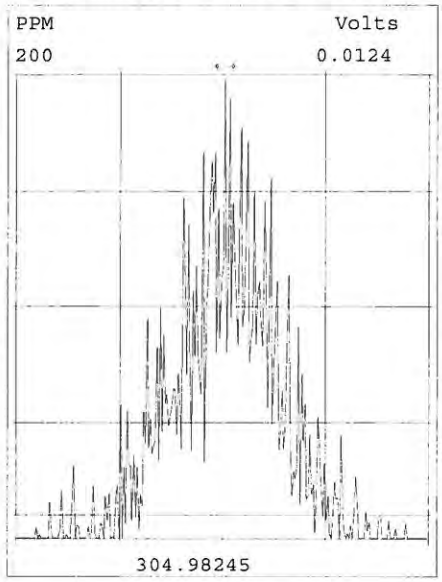
Date -list : 11-SEP-2019
-liner : 07-SEP-2019
-septum: 06-SEP-2019
-guard : 60CM 02-AUG-2019
-column: 20CM 23-APR-2019
-t line: 60cm 23-APR-2019

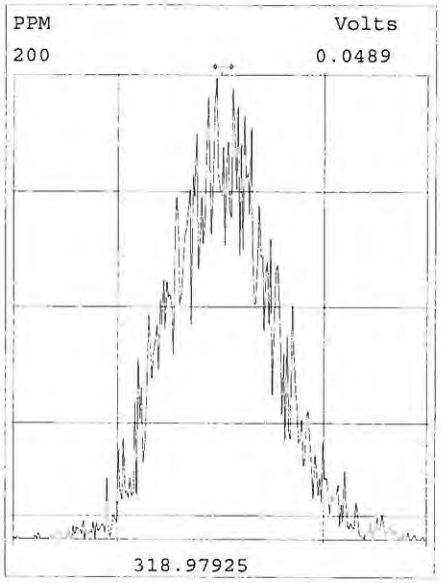
#	Data file	S	V	Sample Text	Comments	Acquisition Date/Time
1	DB9T_082	1	1	DX003A-RSN,,/01-17	1,,2.0uL WIN/RES	11-SEP-19 19:30:57
2	DB9T_082	2	2	DX042D-CAL,,/01-93	1,,2.0uL CS-3/CAL	11-SEP-19 20:15:40
3	DB9T_082	3	3	Toluene,,	1,,2.0uL	11-SEP-19 21:00:25
4	DB9T_082	4	4	Toluene,,	1,,2.0uL	11-SEP-19 21:45:08
5	DB9T_082	5	5	WG69303-101,,BLK	1,WG69303,2.0/20uL	11-SEP-19 22:29:52
6	DB9T_082	6	6	WG69347-101,,BLK	1,WG69347,2.0/20uL	11-SEP-19 23:14:36
7	DB9T_082	7	7	L31831-1,,	1,WG69347,2.0/20uL	11-SEP-19 23:59:19
8	DB9T_082	8	8	L31764-1,,	1,WG69347,2.0/20uL	12-SEP-19 00:44:02
9	DB9T_082	9	9	L31764-2,,	1,WG69347,2.0/20uL	12-SEP-19 01:28:46
10	DB9T_082	10	10	L31764-3,,	1,WG69347,2.0/20uL	12-SEP-19 02:13:28
11	DB9T_082	11	11	L31683-1,,	1,WG69303,2.0/20uL	12-SEP-19 02:58:12
12	DB9T_082	12	12	WG69303-103,,CRM	1,WG69303,2.0/20uL	12-SEP-19 03:42:55
13	DB9T_082	13	13	WG69303-104,,CRM	1,WG69303,2.0/20uL	12-SEP-19 04:27:39
14	DB9T_082	14	14	WG69303-105,,CRM	1,WG69303,2.0/20uL	12-SEP-19 05:12:22
15	DB9T_082	15	15	DX042D-CAL,,/01-93	1,,2.0uL CS-3/CAL	12-SEP-19 05:57:06

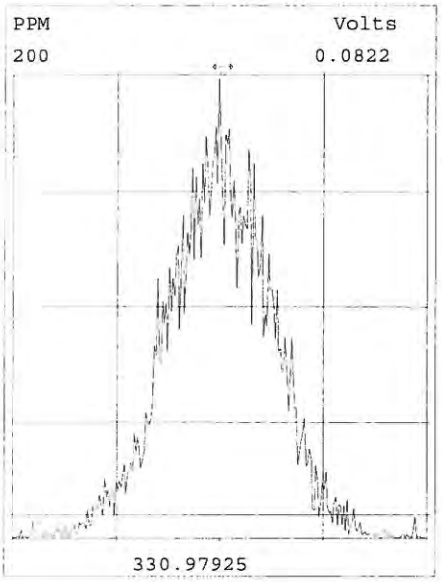
Approved by FS
11 Sep 2019

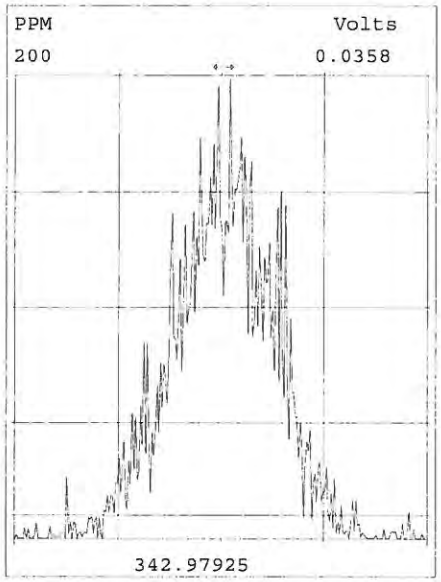
Peak Locate Examination:11-SEP-2019:19:29 File:DB9T_082CAL
Experiment:DX-DB225-4_01 Function:1 Reference:PFK

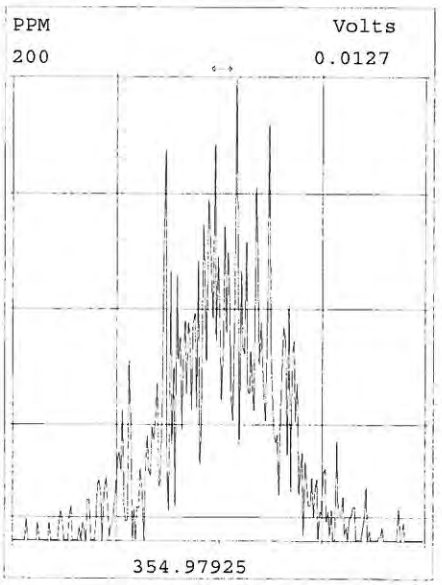


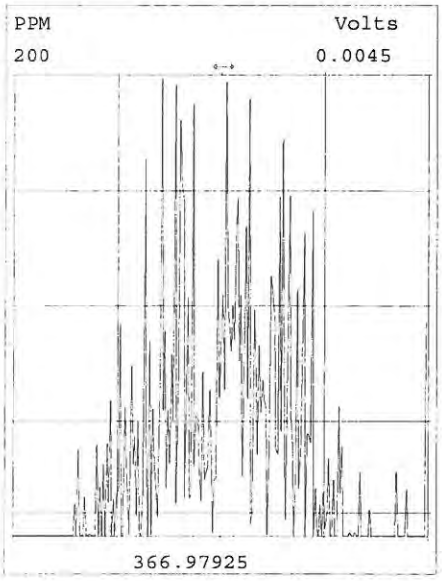


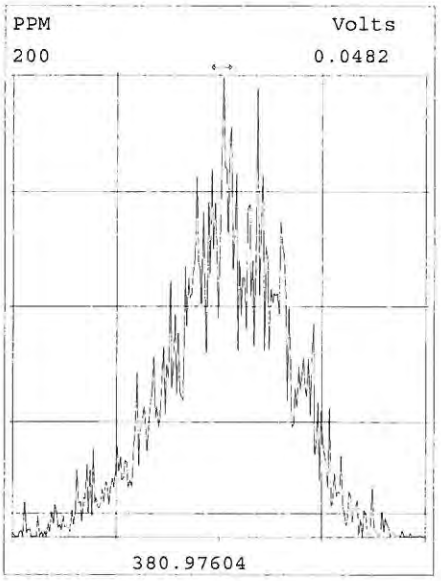




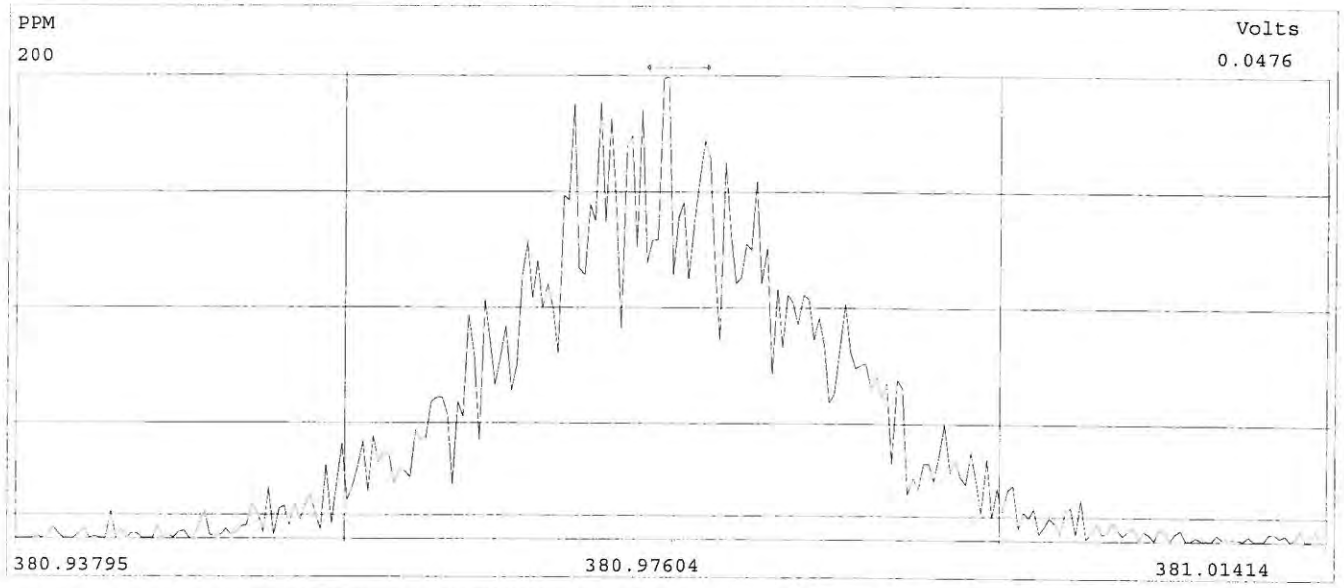


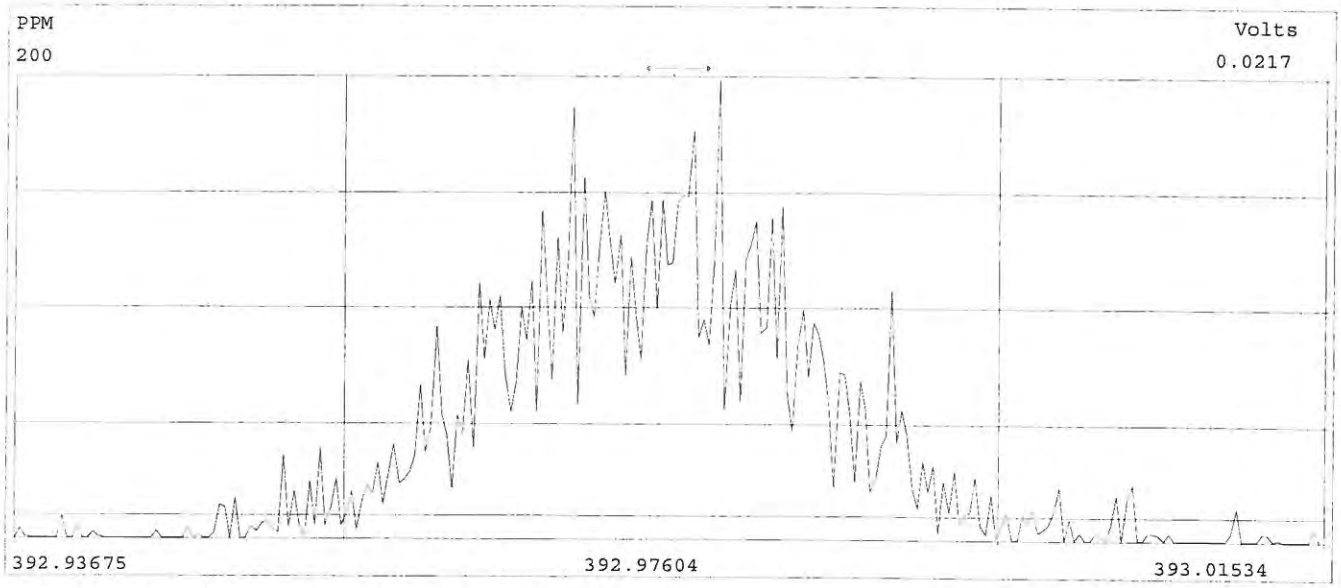


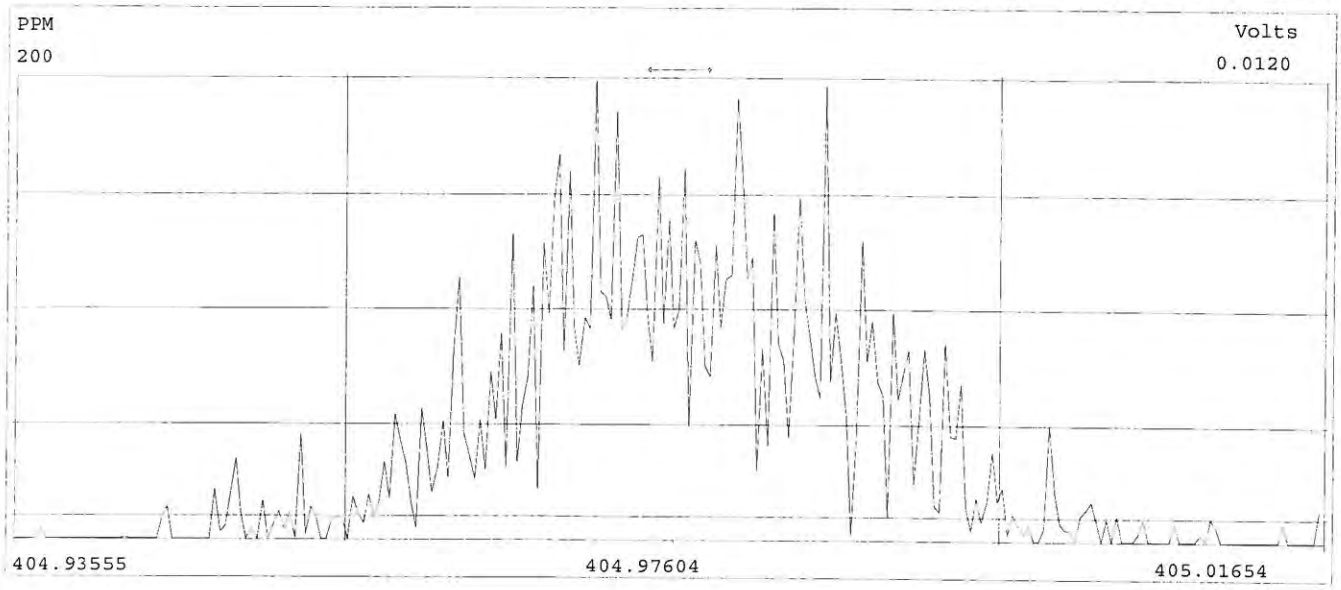




Peak Locate Examination:11-SEP-2019:19:30 File:DB9T_082CAL
Experiment:DX-DB225-4_01 Function:2 Reference:PFK

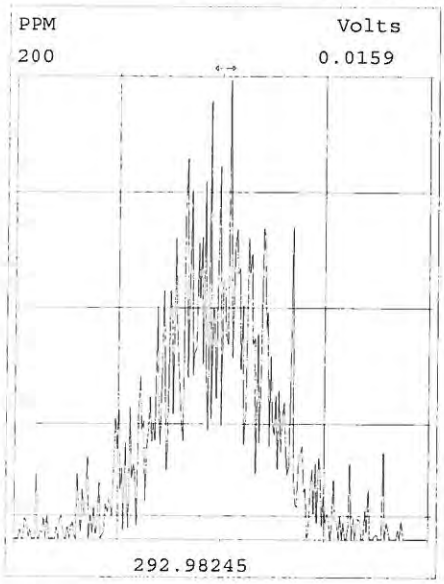


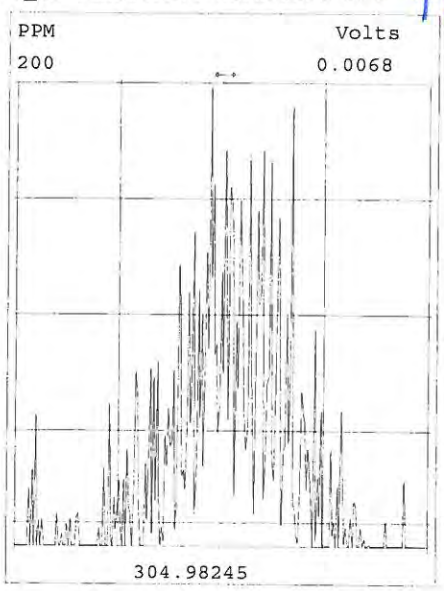


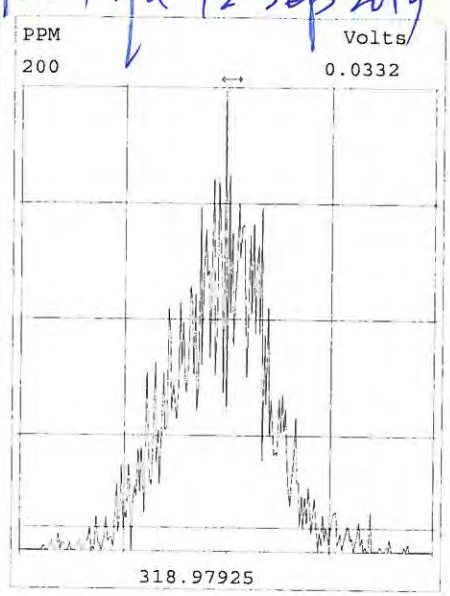


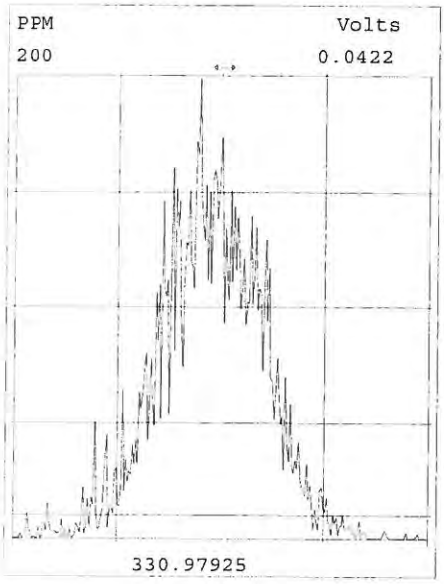
Peak Locate Examination:12-SEP-2019:07:26 File:DB9T_083CAL/082CAL2
Experiment:DX-DB225-4_01 Function:1 Reference:PFK

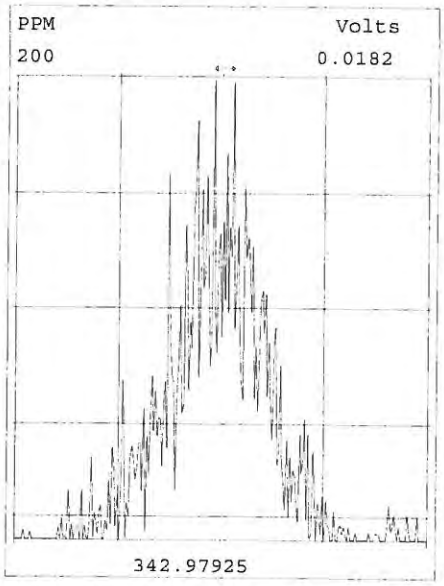
Approved JX 12 Sep 2019

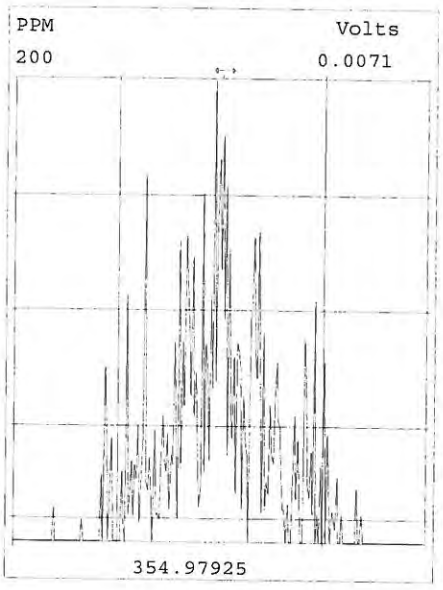


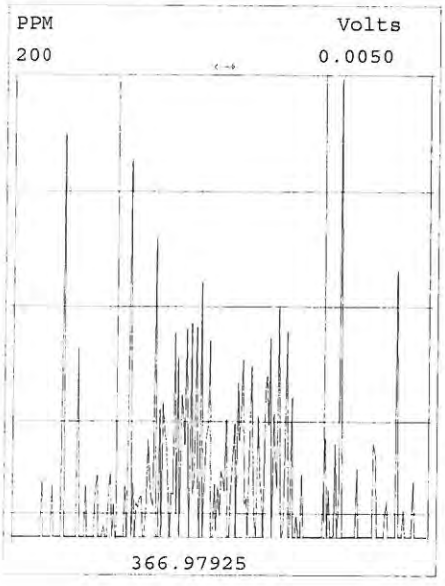


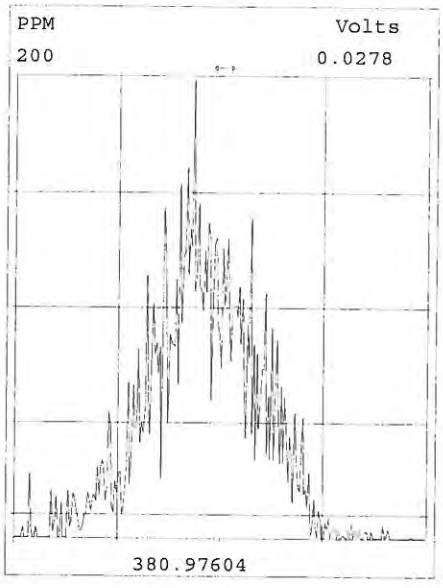




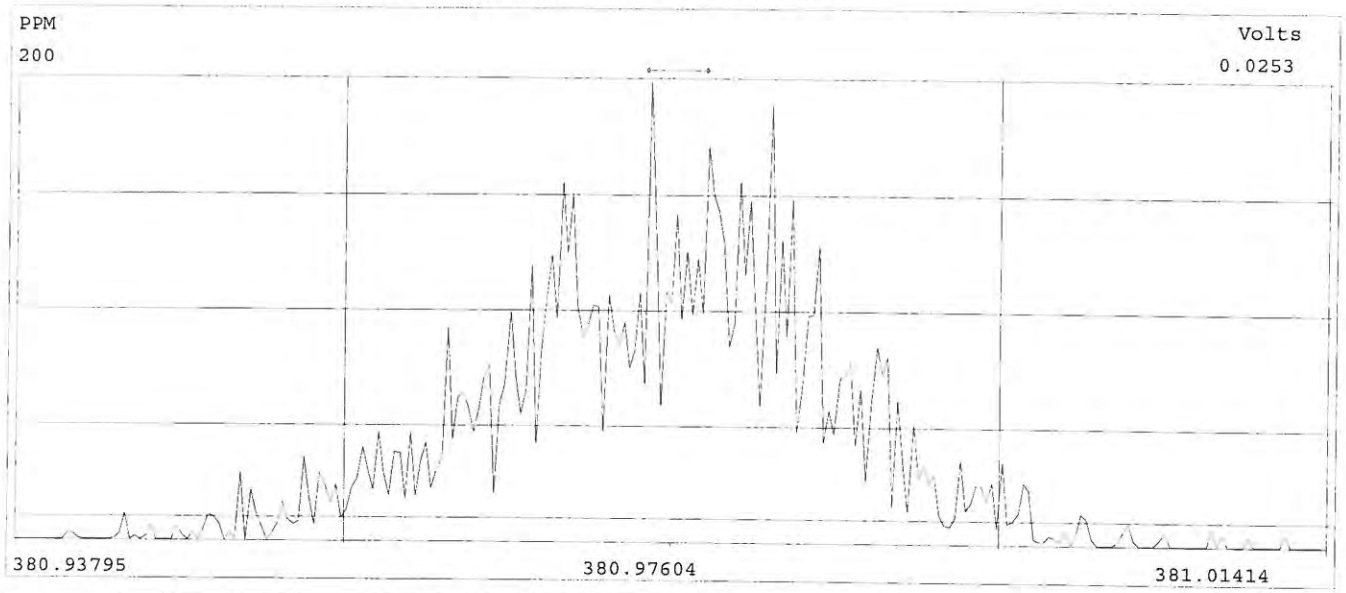


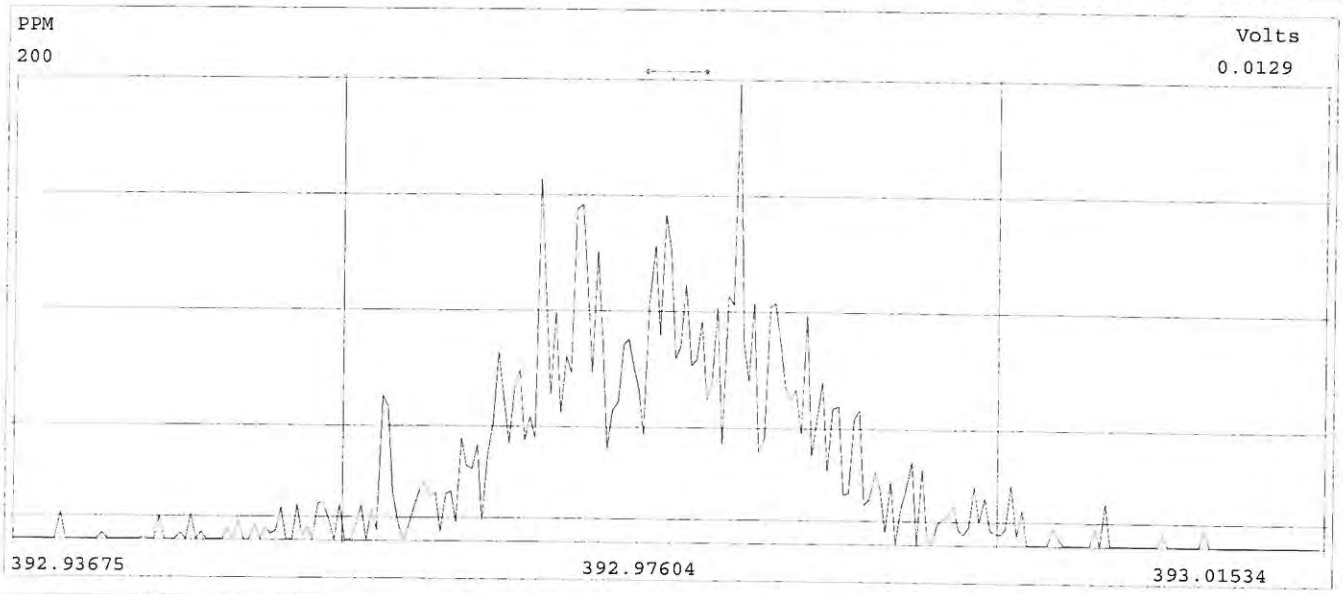


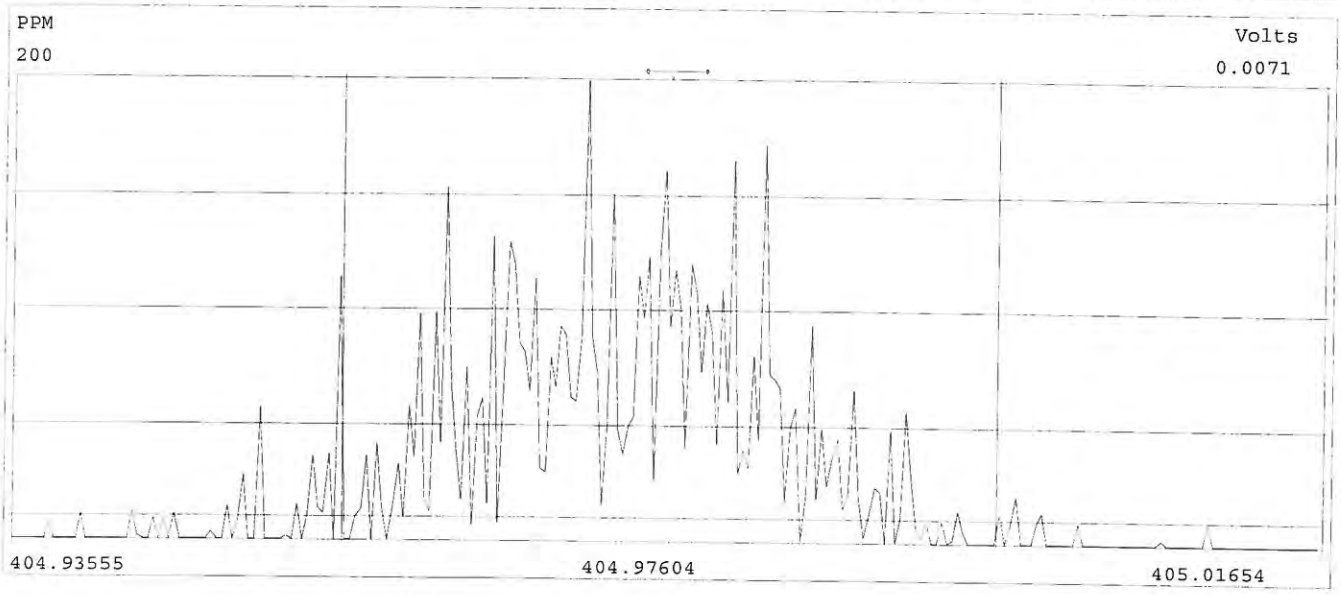




Peak Locate Examination:12-SEP-2019:07:26 File:DB9T_083CAL/082CAL2
Experiment:DX-DB225-4_01 Function:2 Reference:PFK







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DB9T_082-A

c/q	Data Area	Data File	S	I	AnalyteTable	Factr #1	Factr #2	Size	HC	Sample Text	Comments	Done
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2 c	ultt	DB9T_055	3	1	db-hxd-c2	4.0000	1.0000	1.000000	y	DX042C-CAL,,»	1,,2.0uL CS-2	y
3 c	ultt	DB9T_055	2	1	db-hxd-c2	20.0000	1.0000	1.000000	y	DX042D-CAL,,»	1,,2.0uL CS-3/CAL	y
4 c	ultt	DB9T_055	7	1	db-hxd-c2	80.0000	1.0000	1.000000	y	DX042E-CAL,,»	1,,2.0uL CS-4	y
5 c	ultt	DB9T_055	6	1	db-hxd-c2	400.0000	1.0000	1.000000	y	DX042F-CAL,,»	1,,2.0uL CS-5	y
6 q	ultt	DB9T_082	1	1	db-hxd-c2	1.0000	1.0000	1.000000	y	DX003A-RSN,,»	1,,2.0uL WIN/RES	y
7 q	ultt	DB9T_082	2	1	db-hxd-c2	20.0000	1.0000	1.000000	y	DX042D-CAL,,»	1,,2.0uL CS-3/CAL	y
8 q	ultt	DB9T_082	3	1	db-hxd-s2	1.0000	1.0000	1.000000	y	Toluene,,	1,,2.0uL	y
9 q	ultt	DB9T_082	4	1	db-hxd-s2	1.0000	1.0000	1.000000	y	Toluene,,	1,,2.0uL	y
10 q	ultt	DB9T_082	11	1	db-hxd-s2	1.0000	1.0000	8.653600	y	L31683-1,,	1,WG69303,2.0/20»	y
11 q	ultt	DB9T_082	12	1	db-hxd-s2	1.0000	1.0000	8.670000	y	WG69303-103,»	1,WG69303,2.0/20»	y
12 q	ultt	DB9T_082	13	1	db-hxd-s2	1.0000	1.0000	9.500000	y	WG69303-104,»	1,WG69303,2.0/20»	y
13 q	ultt	DB9T_082	14	1	db-hxd-s2	1.0000	1.0000	9.480000	y	WG69303-105,»	1,WG69303,2.0/20»	y
14 q	ultt	DB9T_082	15	1	db-hxd-c2	20.0000	1.0000	1.000000	y	DX042D-CAL,,»	1,,2.0uL CS-3/CAL	y

SGS AXYS METHOD MLA-017 Rev 20

Form 4A
PCDD/PCDF CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	25-Jul-2019	**VER Data Filename:**	DB9T_082 S: 2
Instrument ID:	HR GC/MS	**Analysis Date:**	11-Sep-2019
GC Column ID:	DB225	**Analysis Time:**	20:15:40

COMPOUND	LAB FLAG [1]	MZ's FORMING RATIO [2]	ION ABUND. RATIO	QC LIMITS [3]	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL) [4]
1,2,3,7,8,9-HXCDD		**M+2/M+4**	1.22	1.05-1.43	56.9	41 - 61
2,3,7,8-TCDF		**M/M+2**	0.74	0.65-0.89	11.2	8.4 - 12

(1) Where applicable, custom lab flags have been used on this report.
(2) See Table 8, Method 1613, for m/z specifications.
(3) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.
(4) Contract-required concentration range as determined from the percent of the test concentration in Table 6, Method 1613, under VER.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Elleanor Andaya_____

For Axys Internal Use Only [XSL Template: Form4A.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_DB9T_082S2__Form4A_SJ2620907.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 6A
PCDD/PCDF RELATIVE RETENTION TIMES

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	25-Jul-2019	**VER Data Filename:**	DB9T_082 S: 2
Instrument ID:	HR GC/MS	**Analysis Date:**	11-Sep-2019
GC Column ID:	DB225	**Analysis Time:**	20:15:40

COMPOUND	LAB FLAG [1]	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS [2]
1,2,3,7,8,9-HXCDD		13C-1,2,3,6,7,8-HXCDD	1.059	1.052-1.075
2,3,7,8-TCDF		13C-2,3,7,8-TCDF	1.001	0.999-1.003

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Elleanor Andaya_____

For Axys Internal Use Only [XSL Template: Form6A.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_DB9T_082S2__Form6A_SJ2620907.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 5

PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Instrument ID:	HR GC/MS	**Initial Calibration Date:**		25-Jul-2019
RT Window Data Filename:		**Analysis Date:**		**Time:**
DB-5 IS Data Filename:		**Analysis Date:**		**Time:**
DB-225 IS Data Filename:	DB9T_082 S: 1	**Analysis Date:**	11-Sep-2019	**Time:** 19:30:57

DB225 RT WINDOW DEFINING STANDARDS RESULT

ISOMERS	ABSOLUTE RT	ISOMERS	ABSOLUTE RT
1,3,6,8-TCDD (F)	N/A	**1,3,6,8-TCDF (F)**	N/A
1,2,8,9-TCDD (L)	N/A	**1,2,8,9-TCDF (L)**	N/A
1,2,4,7,9-PECDD (F)	N/A	**1,3,4,6,8-PECDF (F)**	N/A
1,2,3,8,9-PECDD (L)	N/A	**1,2,3,8,9-PECDF (L)**	N/A
1,2,4,6,7,9-HXCDD (F)	N/A	**1,2,3,4,6,8-HXCDF (F)**	N/A
1,2,3,4,6,7-HXCDD (L)	N/A	**1,2,3,4,8,9-HXCDF (L)**	N/A
1,2,3,4,6,7,9-HPCDD (F)	N/A	**1,2,3,4,6,7,8-HPCDF (F)**	N/A
1,2,3,4,6,7,8-HPCDD (L)	N/A	**1,2,3,4,7,8,9-HPCDF (L)**	N/A

(F) = First eluting isomer (DB-5); (L) = Last eluting isomer (DB-5)

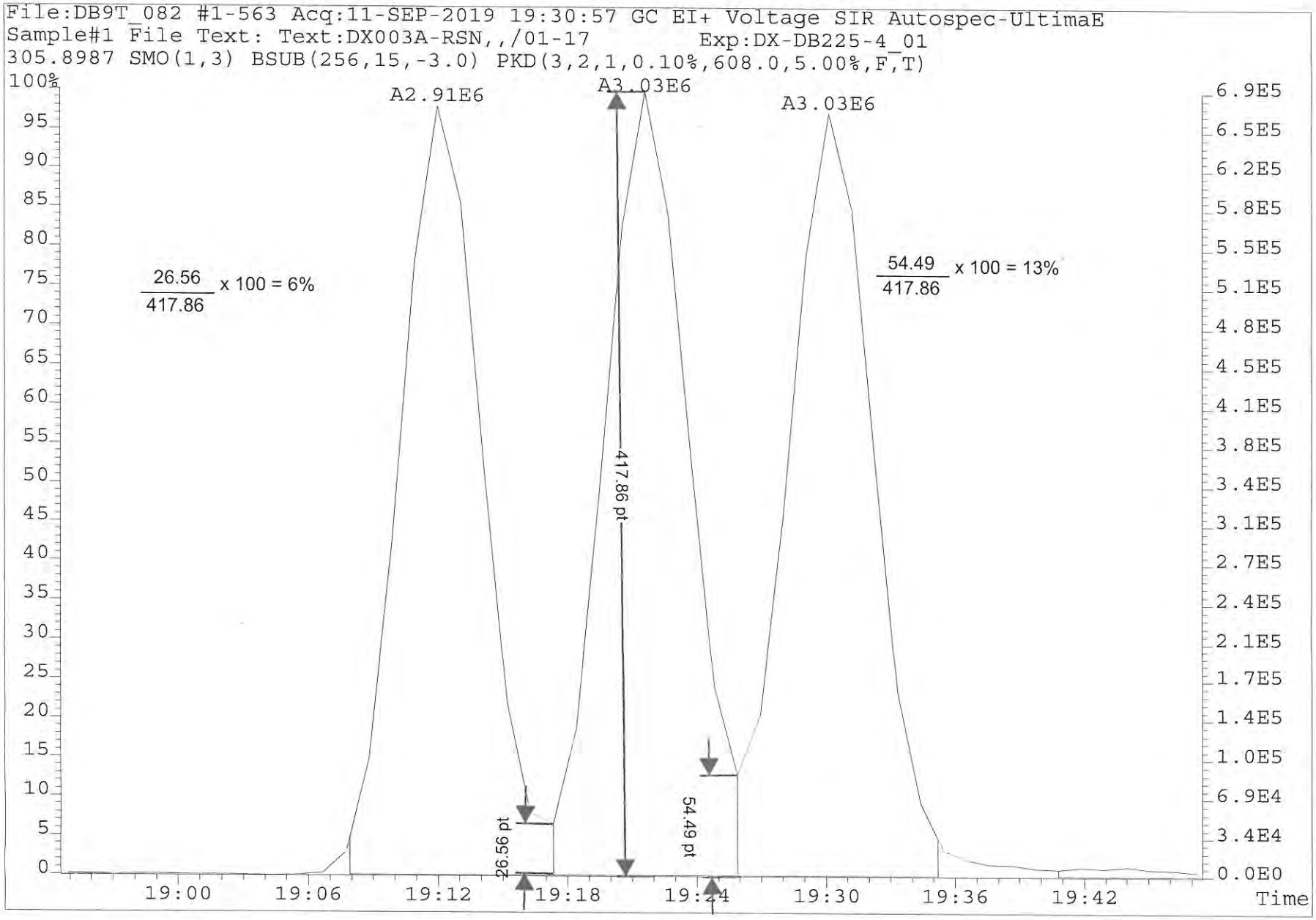
ISOMER SPECIFICITY (IS) TEST STANDARDS RESULT

Isomers	% Valley Height Between Compared Peaks	Isomers	% Valley Height Between Compared Peaks
1,2,3,4-TCDD **1,2,7,8-TCDD**	N/A	**1,2,3,8-TCDD** **2,3,7,8-TCDD**	N/A
1,2,7,8-TCDD **1,4,7,8-TCDD**	N/A	**2,3,4,7-TCDF** **2,3,7,8-TCDF**	6
1,4,7,8-TCDD **1,2,3,7-TCDD**	N/A	**2,3,7,8-TCDF** **1,2,3,9-TCDF**	13
1,2,3,7-TCDD **1,2,3,8-TCDD**	N/A		

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Leanne Henley_____

For Axys Internal Use Only [XSL Template: DXForm5.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15; Report Filename: 1613_DIOXINS__DB9T_082S1_Form5_SJ2620458.html; Workgroup: WG69303; Design ID: 3698]



PV by LHE
16-SEPT-2019

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Experiment : DX-DB225-4_01
GC Program : DX-DB225-4_01
Column type : DB-225
Serial # : USA226732J/USP
kPa : 191
Vol injected: 2.0uL
PMT Voltage : 415

Temps -source: 260
-s resv: 140
-re_ent: 220
-cap_1 : 235
-cap_2 : 220

Tune : XX
List : XX/FS
Check :
LIMS :
Logfile:

Date -list : 12-SEP-2019
-liner : 07-SEP-2019
-septum: 06-SEP-2019
-guard : 60CM 02-AUG-2019
-column: 20CM 23-APR-2019
-t line: 60cm 23-APR-2019

#	Data file	S	V	Sample Text	Comments	Acquisition Date/Time
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3	DB9T_083	3	3	Toluene,,	1,,2.0uL	12-SEP-19 08:56:43
4	DB9T_083	4	4	Toluene,,	1,,2.0uL	12-SEP-19 09:41:27
5	DB9T_083	5	5	WG69237-101,,BLK	1,WG69237,2.0/20uL	12-SEP-19 10:26:10
6	DB9T_083	6	6	WG69237-102,,MDL	1,WG69237,2.0/20uL	12-SEP-19 11:10:53
7	DB9T_083	7	7	L31654-7,,	1,WG69303,2.0/20uL	12-SEP-19 11:55:36
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10	DB9T_083	10	10	L31654-10,,	1,WG69303,2.0/20uL	12-SEP-19 14:09:46
11	DB9T_083	11	11	L31654-11,,	1,WG69303,2.0/20uL	12-SEP-19 14:54:30
12	DB9T_083	12	12	L31654-12,,	1,WG69303,2.0/20uL	12-SEP-19 15:39:12
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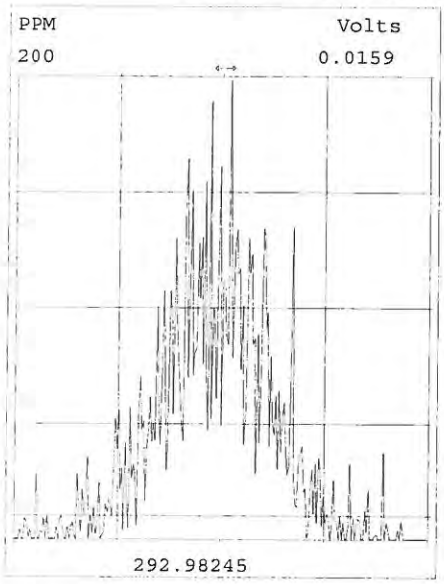
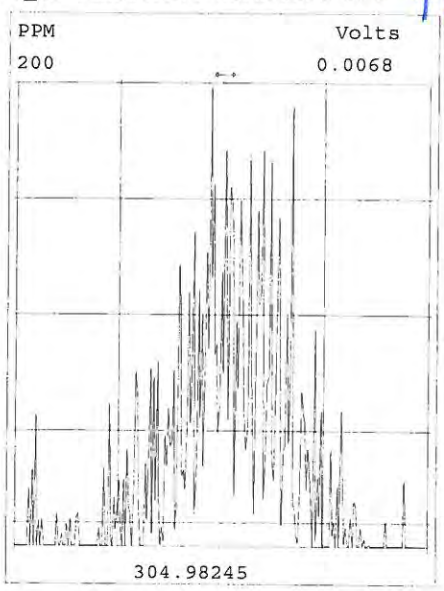
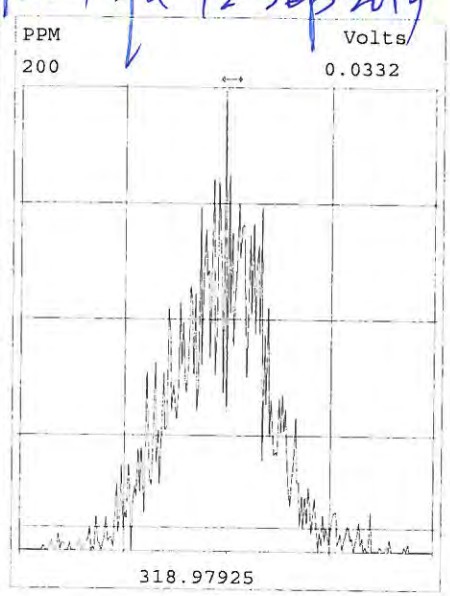
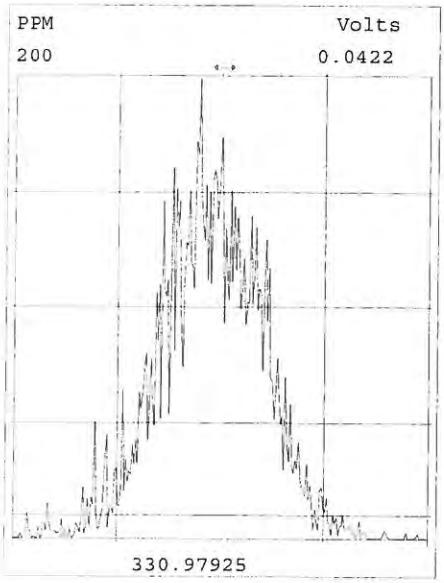
Peak Locate Examination:12-SEP-2019:07:26 File:DB9T_083CAL/082CAL2
Experiment:DX-DB225-4_01 Function:1 Reference:PFK

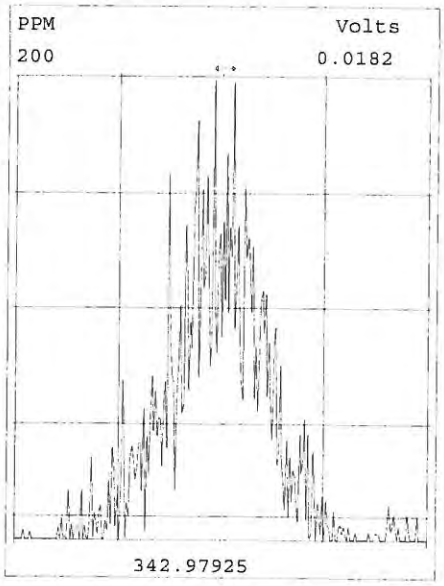
Approved JX 12 Sep 2019

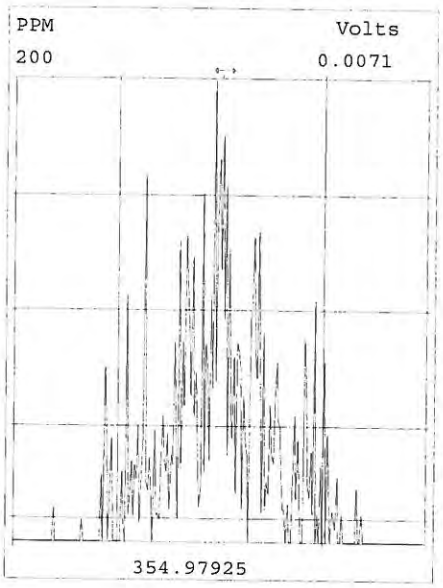


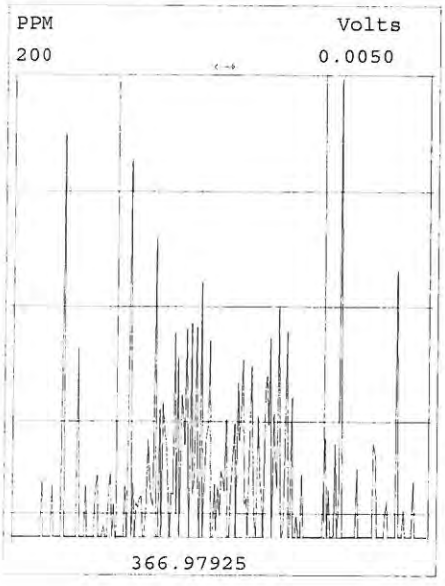


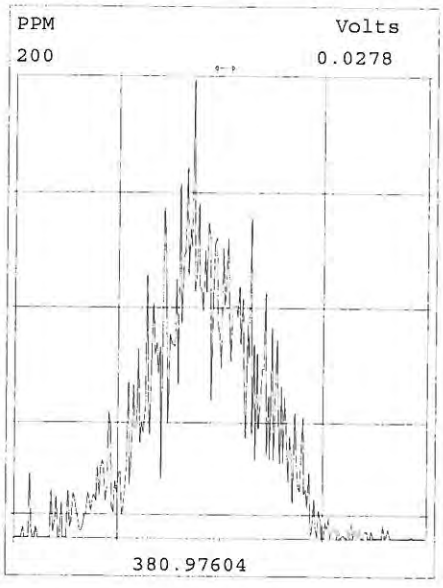




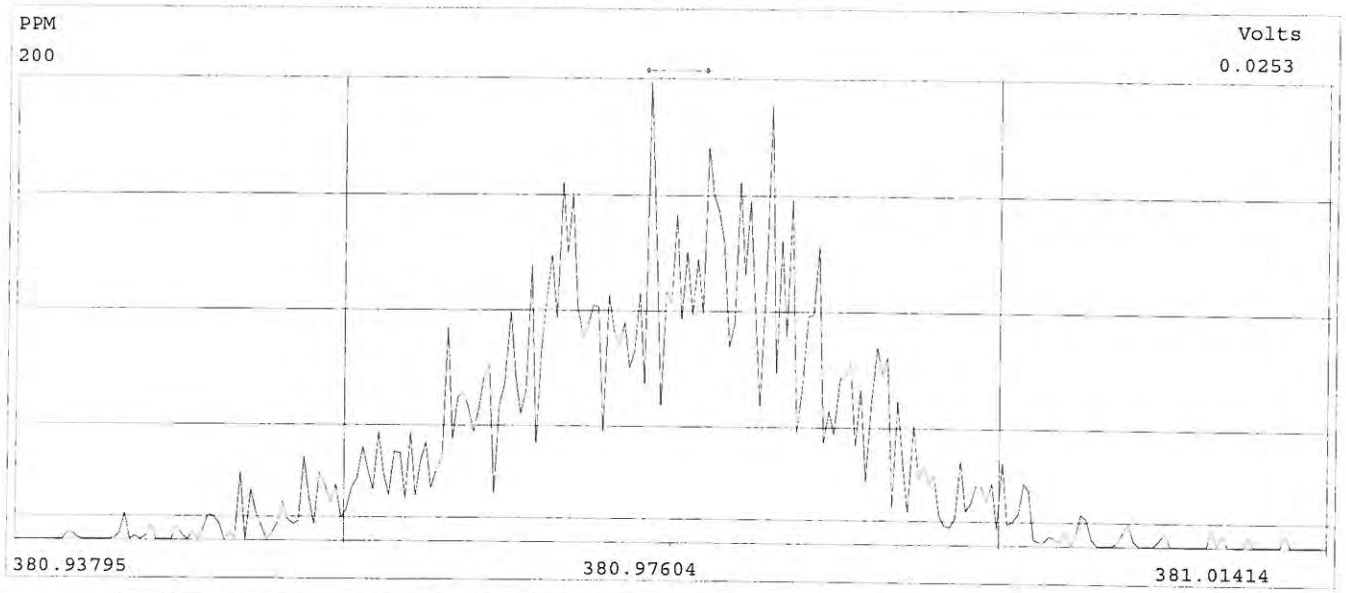


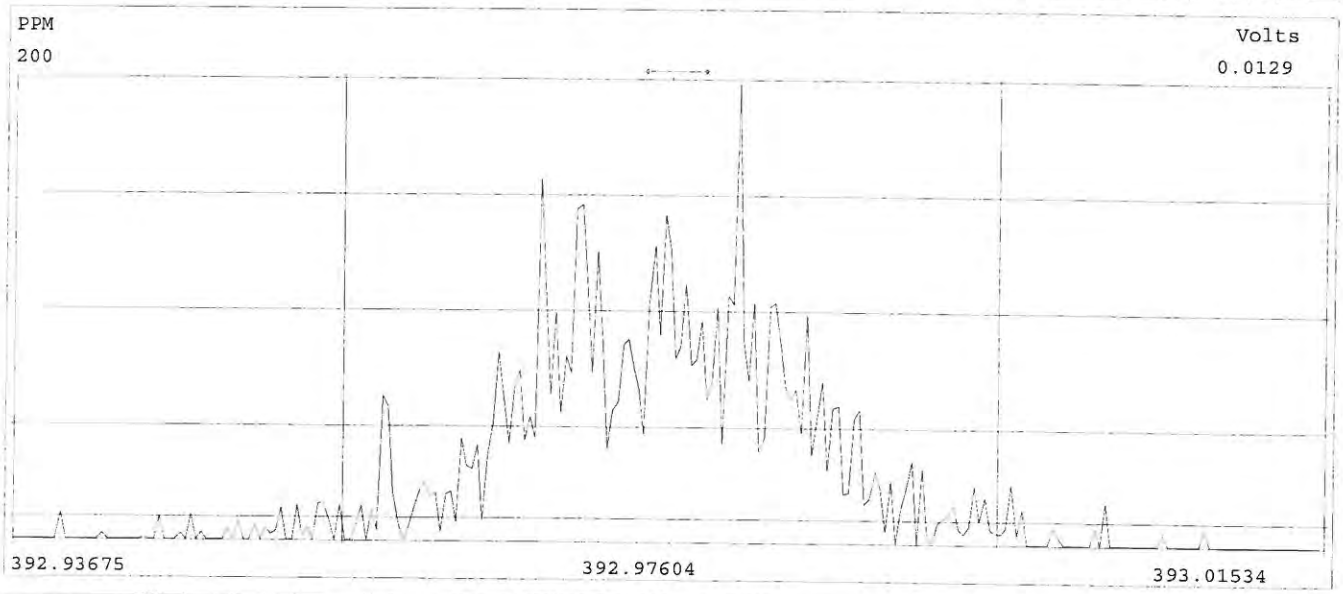


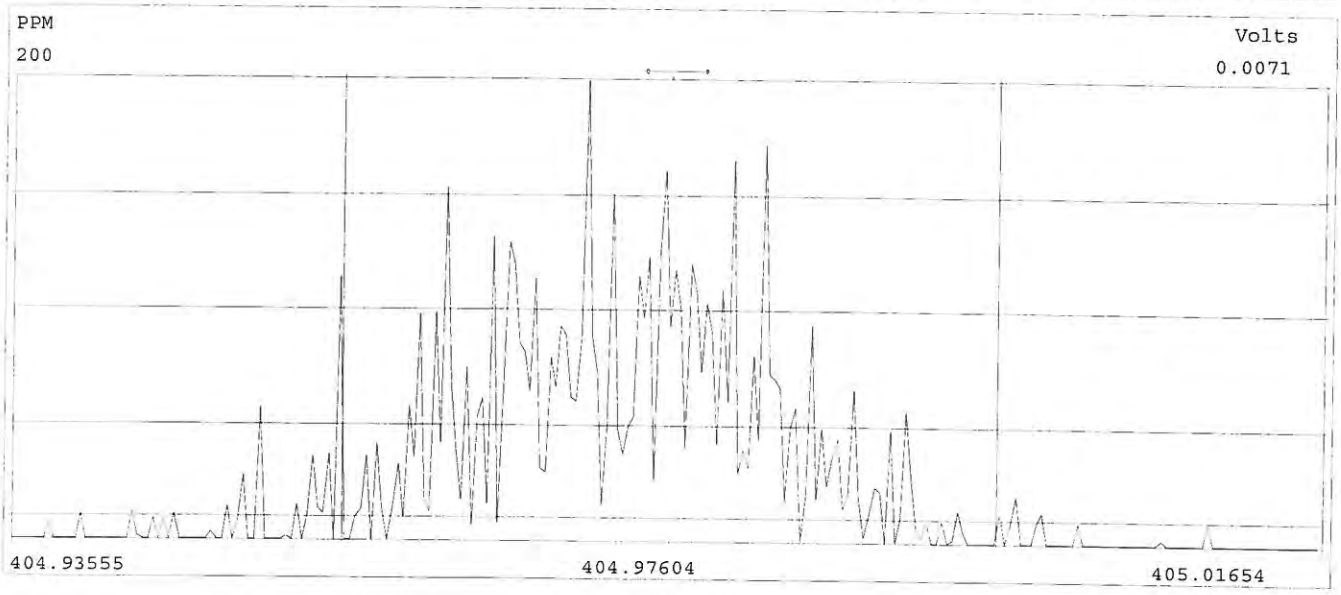




Peak Locate Examination:12-SEP-2019:07:26 File:DB9T_083CAL/082CAL2
Experiment:DX-DB225-4_01 Function:2 Reference:PFK

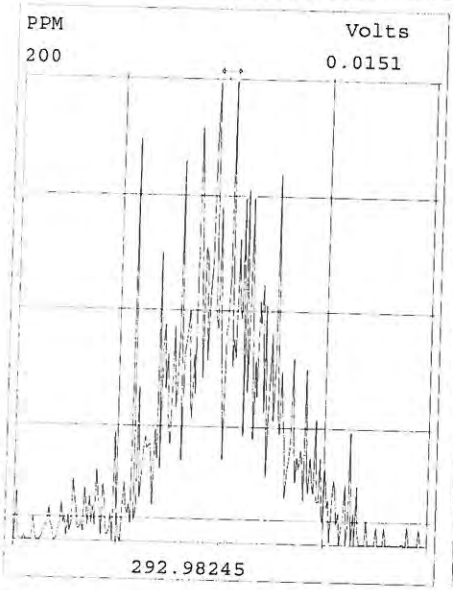


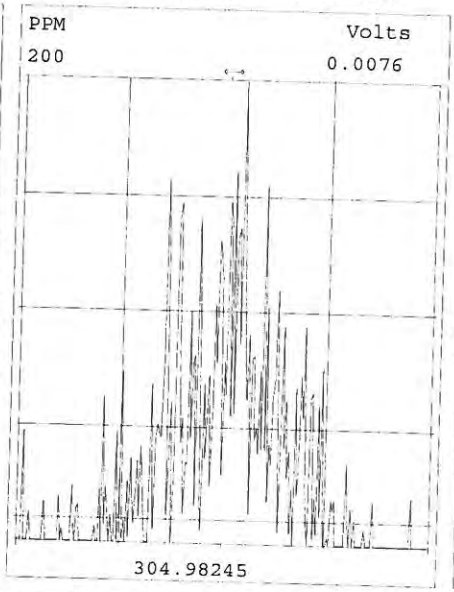


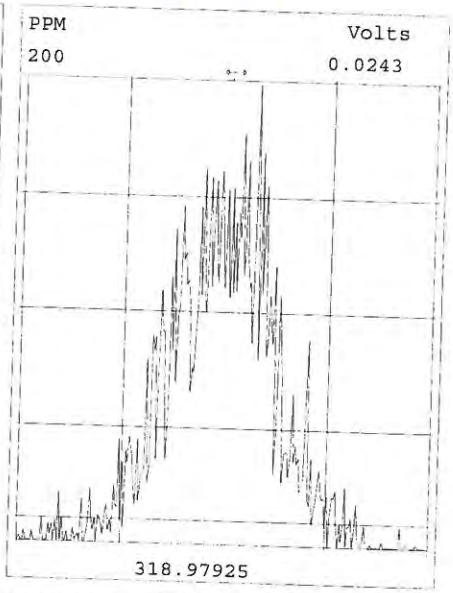


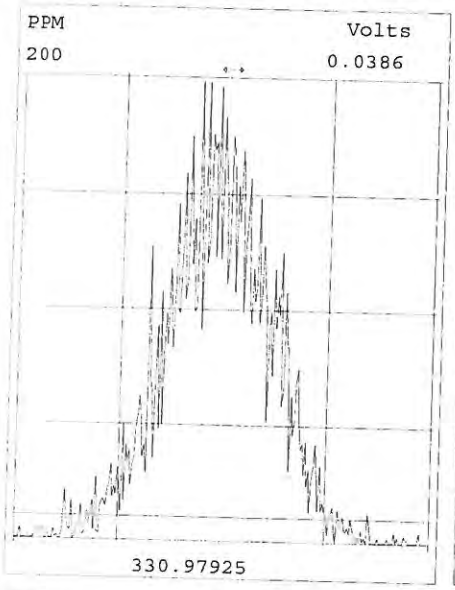
Approved by FS
12Sep2019

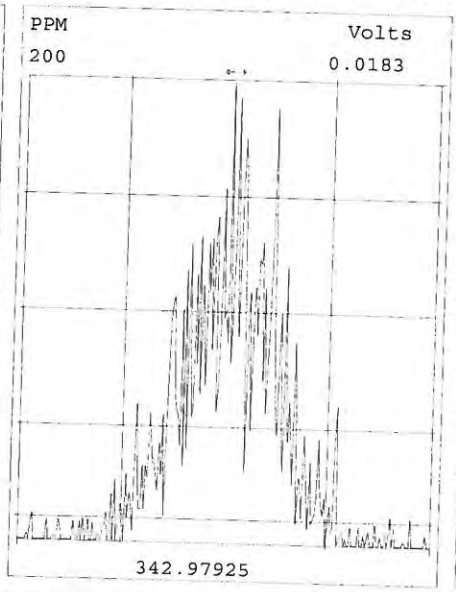
Peak Locate Examination:12-SEP-2019:17:10 File:DB9T_083CAL2
Experiment:DX-DB225-4_01 Function:1 Reference:PFK

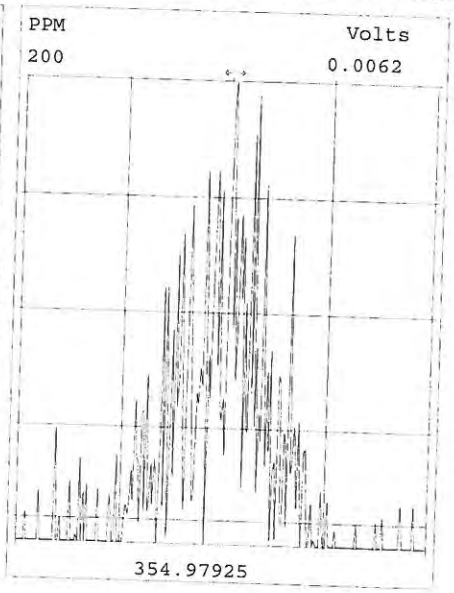


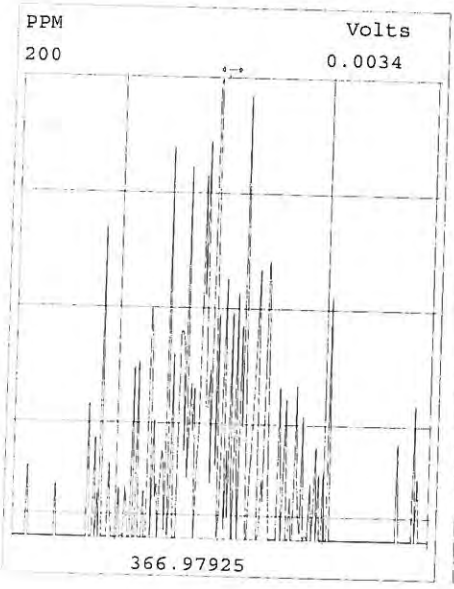


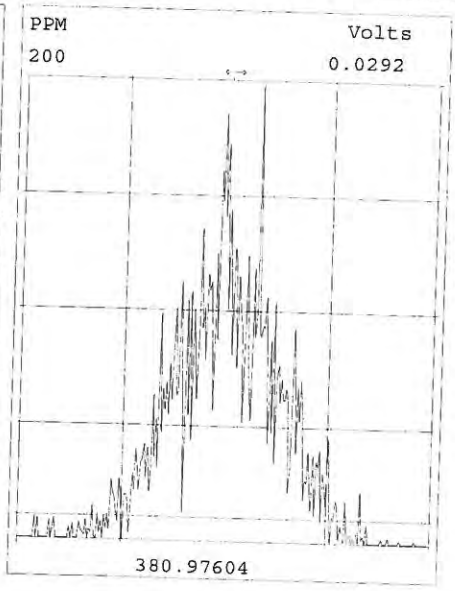












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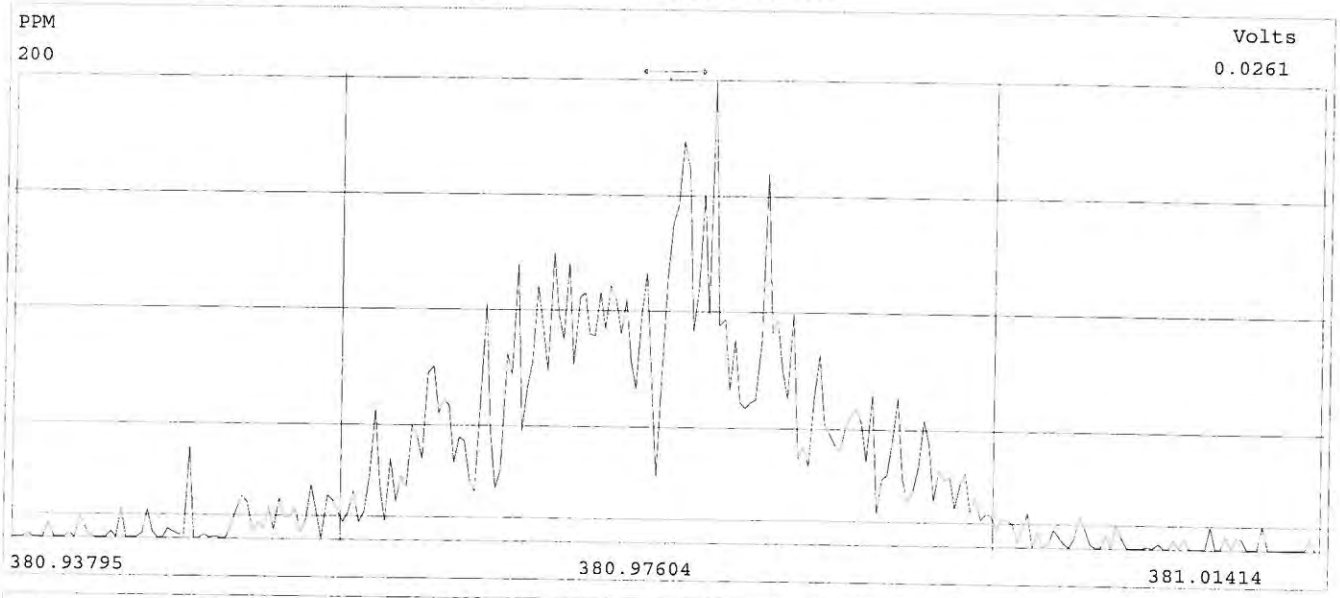
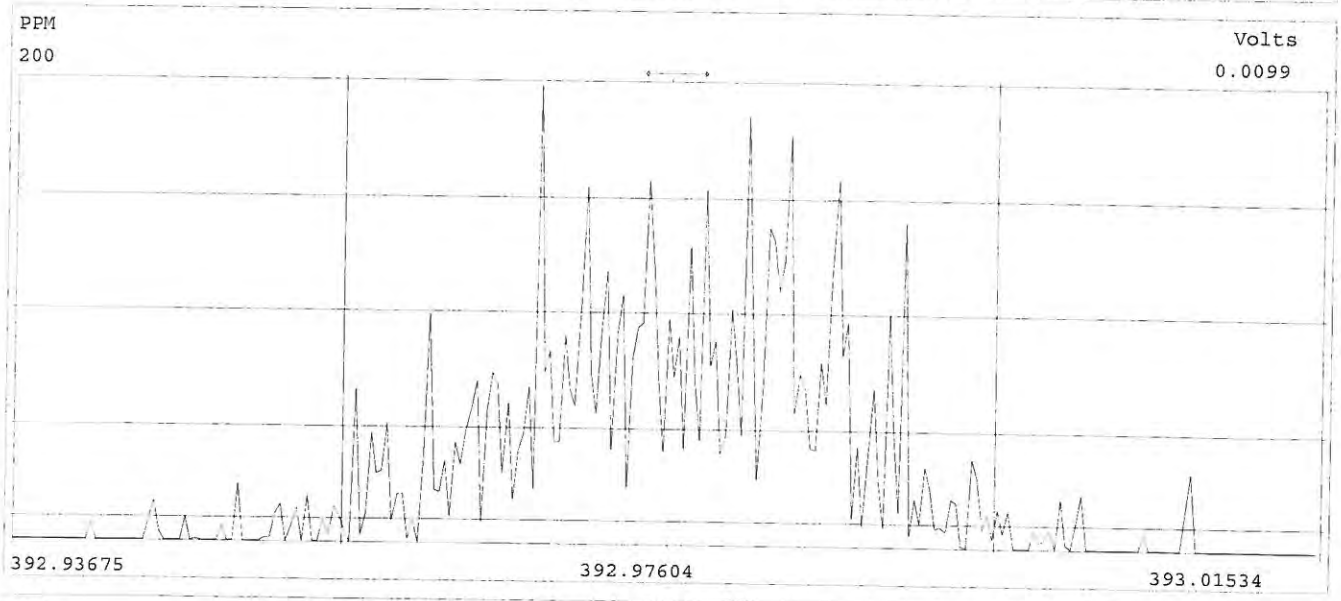
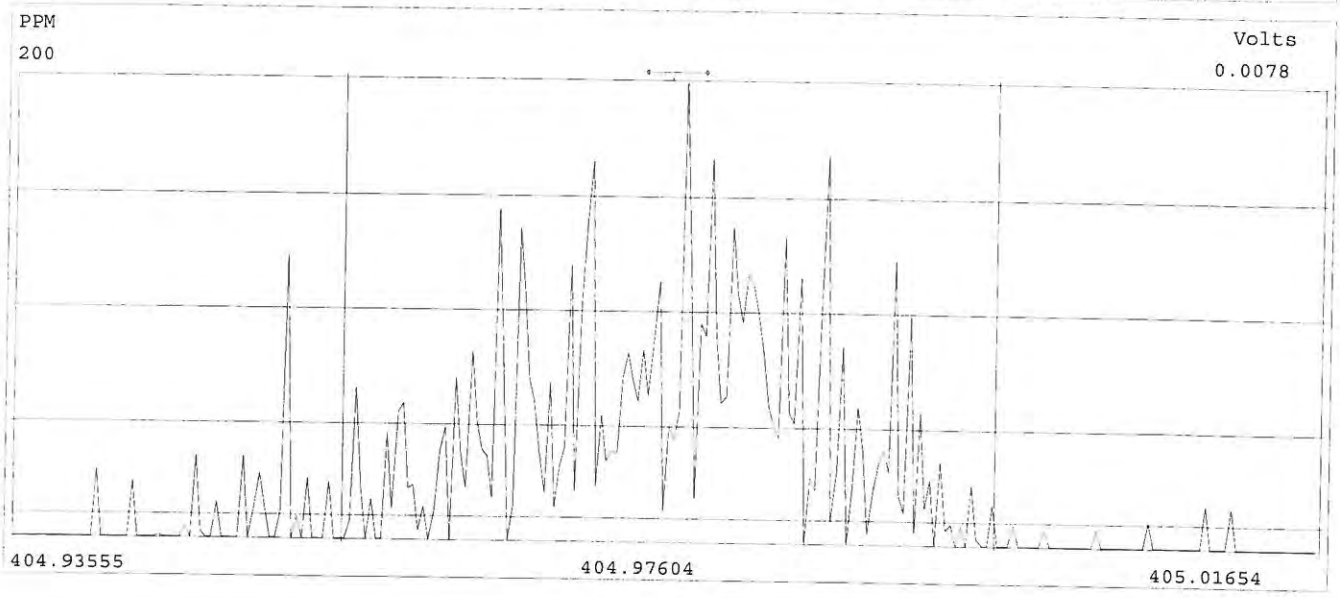
Experiment:DX-DB225-4_01 Function:2 Reference:PFK







DB9T_083-B

	c/q	Data Area	Data File	S	I	AnalyteTable	Factr #1	Factr #2	Size	HC	Sample Text	Comments	Done
1	c	ultt	DB9T_055	4	1	db-hxd-c2	1.0000	1.0000	1.000000	y	DX042B-CAL,,»	1,,2.0uL CS-1	y
2	c	ultt	DB9T_055	3	1	db-hxd-c2	4.0000	1.0000	1.000000	y	DX042C-CAL,,»	1,,2.0uL CS-2	y
3	c	ultt	DB9T_055	2	1	db-hxd-c2	20.0000	1.0000	1.000000	y	DX042D-CAL,,»	1,,2.0uL CS-3/CAL	y
4	c	ultt	DB9T_055	7	1	db-hxd-c2	80.0000	1.0000	1.000000	y	DX042E-CAL,,»	1,,2.0uL CS-4	y
5	c	ultt	DB9T_055	6	1	db-hxd-c2	400.0000	1.0000	1.000000	y	DX042F-CAL,,»	1,,2.0uL CS-5	y
6	q	ultt	DB9T_083	1	1	db-hxd-c2	1.0000	1.0000	1.000000	y	DX003A-RSN,,»	1,,2.0uL WIN/RES	y
7	q	ultt	DB9T_083	2	1	db-hxd-c2	20.0000	1.0000	1.000000	y	DX042D-CAL,,»	1,,2.0uL CS-3/CAL	y
8	q	ultt	DB9T_083	3	1	db-hxd-s2	1.0000	1.0000	1.000000	y	Toluene,,	1,,2.0uL	y
9	q	ultt	DB9T_083	4	1	db-hxd-s2	1.0000	1.0000	1.000000	y	Toluene,,	1,,2.0uL	y
10	q	ultt	DB9T_083	7	1	db-hxd-s2	1.0000	1.0000	10.877000	y	L31654-7,,	1,WG69303,2.0/20»	y
11	q	ultt	DB9T_083	8	1	db-hxd-s2	1.0000	1.0000	10.459000	y	L31654-8,,	1,WG69303,2.0/20»	y
12	q	ultt	DB9T_083	9	1	db-hxd-s2	1.0000	1.0000	10.406000	y	L31654-9,,	1,WG69303,2.0/20»	y
13	q	ultt	DB9T_083	10	1	db-hxd-s2	1.0000	1.0000	10.172000	y	L31654-10,,	1,WG69303,2.0/20»	y
14	q	ultt	DB9T_083	11	1	db-hxd-s2	1.0000	1.0000	10.327000	y	L31654-11,,	1,WG69303,2.0/20»	y
15	q	ultt	DB9T_083	12	1	db-hxd-s2	1.0000	1.0000	10.449000	y	L31654-12,,	1,WG69303,2.0/20»	y
16	q	ultt	DB9T_083	13	1	db-hxd-c2	20.0000	1.0000	1.000000	y	DX042D-CAL,,»	1,,2.0uL CS-3/CAL	y

SGS AXYS METHOD MLA-017 Rev 20

Form 4A
PCDD/PCDF CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	25-Jul-2019	**VER Data Filename:**	DB9T_083 S: 2
Instrument ID:	HR GC/MS	**Analysis Date:**	12-Sep-2019
GC Column ID:	DB225	**Analysis Time:**	08:11:59

COMPOUND	LAB FLAG [1]	MZ's FORMING RATIO [2]	ION ABUND. RATIO	QC LIMITS [3]	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL) [4]
1,2,3,7,8,9-HXCDD		**M+2/M+4**	1.22	1.05-1.43	55.8	41 - 61
2,3,7,8-TCDF		**M/M+2**	0.76	0.65-0.89	11.5	8.4 - 12

(1) Where applicable, custom lab flags have been used on this report.
(2) See Table 8, Method 1613, for m/z specifications.
(3) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.
(4) Contract-required concentration range as determined from the percent of the test concentration in Table 6, Method 1613, under VER.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Elleanor Andaya_____

For Axys Internal Use Only [XSL Template: Form4A.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_DB9T_083S2__Form4A_SJ2620854.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 6A
PCDD/PCDF RELATIVE RETENTION TIMES

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	25-Jul-2019	**VER Data Filename:**	DB9T_083 S: 2
Instrument ID:	HR GC/MS	**Analysis Date:**	12-Sep-2019
GC Column ID:	DB225	**Analysis Time:**	08:11:59

COMPOUND	LAB FLAG [1]	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS [2]
1,2,3,7,8,9-HXCDD		13C-1,2,3,6,7,8-HXCDD	1.059	1.052-1.075
2,3,7,8-TCDF		13C-2,3,7,8-TCDF	1.001	0.999-1.003

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Elleanor Andaya_____

For Axys Internal Use Only [XSL Template: Form6A.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_DB9T_083S2__Form6A_SJ2620854.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 5

PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Instrument ID:	HR GC/MS	**Initial Calibration Date:**		25-Jul-2019
RT Window Data Filename:		**Analysis Date:**		**Time:**
DB-5 IS Data Filename:		**Analysis Date:**		**Time:**
DB-225 IS Data Filename:	DB9T_083 S: 1	**Analysis Date:**	12-Sep-2019	**Time:** 07:27:16

DB225 RT WINDOW DEFINING STANDARDS RESULT

ISOMERS	ABSOLUTE RT	ISOMERS	ABSOLUTE RT
1,3,6,8-TCDD (F)	N/A	**1,3,6,8-TCDF (F)**	N/A
1,2,8,9-TCDD (L)	N/A	**1,2,8,9-TCDF (L)**	N/A
1,2,4,7,9-PECDD (F)	N/A	**1,3,4,6,8-PECDF (F)**	N/A
1,2,3,8,9-PECDD (L)	N/A	**1,2,3,8,9-PECDF (L)**	N/A
1,2,4,6,7,9-HXCDD (F)	N/A	**1,2,3,4,6,8-HXCDF (F)**	N/A
1,2,3,4,6,7-HXCDD (L)	N/A	**1,2,3,4,8,9-HXCDF (L)**	N/A
1,2,3,4,6,7,9-HPCDD (F)	N/A	**1,2,3,4,6,7,8-HPCDF (F)**	N/A
1,2,3,4,6,7,8-HPCDD (L)	N/A	**1,2,3,4,7,8,9-HPCDF (L)**	N/A

(F) = First eluting isomer (DB-5); (L) = Last eluting isomer (DB-5)

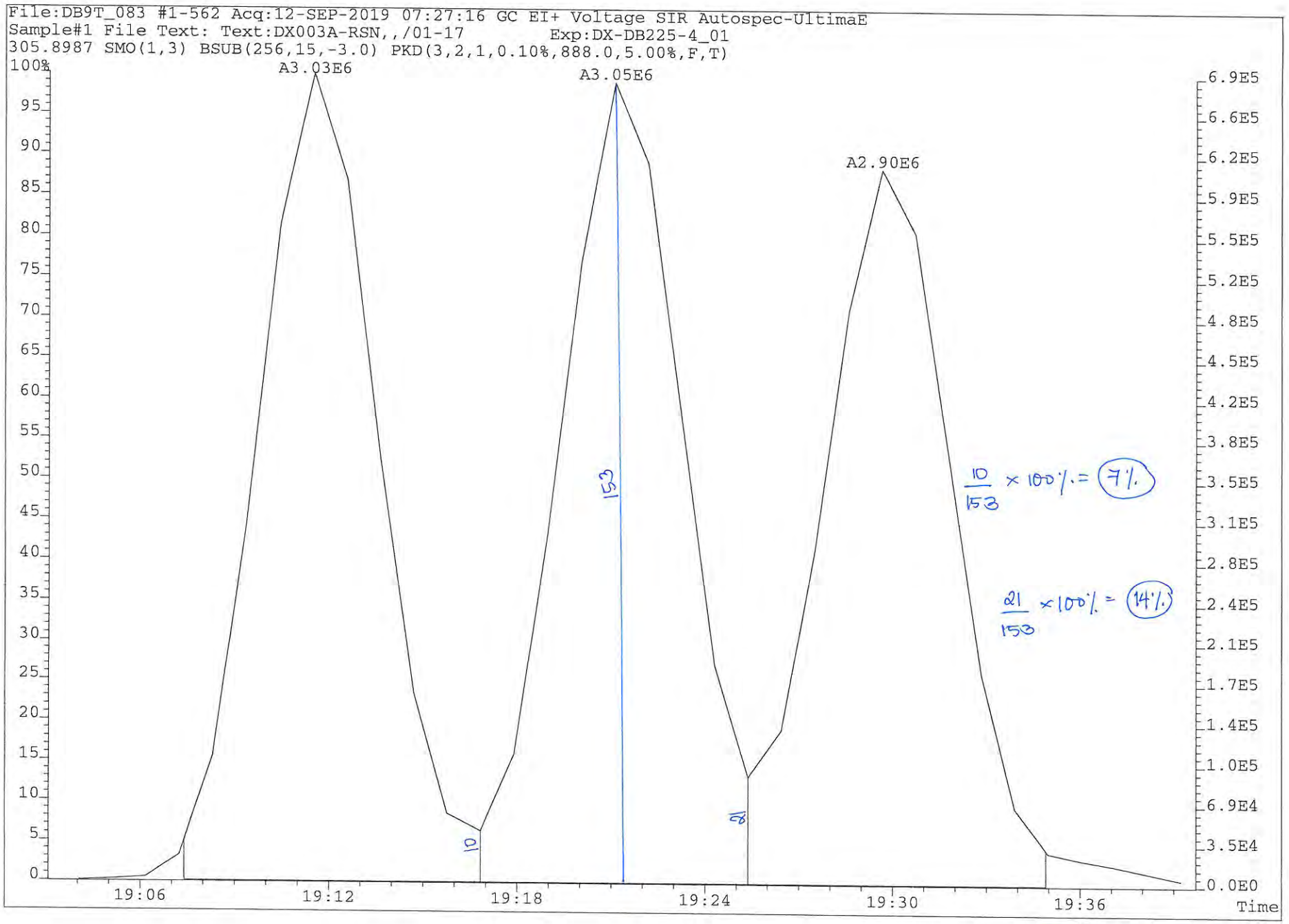
ISOMER SPECIFICITY (IS) TEST STANDARDS RESULT

Isomers	% Valley Height Between Compared Peaks	Isomers	% Valley Height Between Compared Peaks
1,2,3,4-TCDD **1,2,7,8-TCDD**	N/A	**1,2,3,8-TCDD** **2,3,7,8-TCDD**	N/A
1,2,7,8-TCDD **1,4,7,8-TCDD**	N/A	**2,3,4,7-TCDF** **2,3,7,8-TCDF**	7
1,4,7,8-TCDD **1,2,3,7-TCDD**	N/A	**2,3,7,8-TCDF** **1,2,3,9-TCDF**	14
1,2,3,7-TCDD **1,2,3,8-TCDD**	N/A		

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Elleanor Andaya_____

For Axys Internal Use Only [XSL Template: DXForm5.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15; Report Filename: 1613_DIOXINS__DB9T_083S1_Form5_SJ2620852.html; Workgroup: WG69303; Design ID: 3698]



PV by RA 18SEP2019

Method: G:\Masslynx\Inst_M\Master methods and layouts\Current Methods\DX_Log.mdb 30 Oct 2014 14:48:05
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

Compound name: -

#	Name	ID	Sample Text	Acq.Date	Acq.Time
1	DX9M_093S1	DX042D-CAL,,/01	1,,1.0uL Cal Win/Res	12-Sep-19	09:06:33
2	DX9M_093S2	WG69303-102,I,SPM	1,WG69303,1.0/20uL	12-Sep-19	10:01:18
3	DX9M_093S3	DX051A-SUR,,/02	1,,1.0uL Inst Blank	12-Sep-19	10:54:43
4	DX9M_093S4	DX051A-SUR,,/02	1,,1.0uL Inst Blank	12-Sep-19	11:49:46
5	DX9M_093S5	WG69303-101,I,BLK	1,WG69303,1.0/20uL	12-Sep-19	12:44:54
6	DX9M_093S6	L31654-1,I,	1,WG69303,1.0/20uL	12-Sep-19	13:40:01
7	DX9M_093S7	L31654-2,I,	1,WG69303,1.0/20uL	12-Sep-19	14:35:04
8	DX9M_093S8	L31654-3,I,	1,WG69303,1.0/20uL	12-Sep-19	15:30:12
9	DX9M_093S9	L31654-4,I,	1,WG69303,1.0/20uL	12-Sep-19	16:25:13
10	DX9M_093S10	L31654-5,I,	1,WG69303,1.0/20uL	12-Sep-19	17:20:16
11	DX9M_093S11	L31654-6,I,	1,WG69303,1.0/20uL	12-Sep-19	18:15:23
12	DX9M_093S12	DX042D-CAL,,/01	1,,1.0uL Cal Win/Res	12-Sep-19	19:10:26
13	DX9M_093S13	DX042D-CAL,,/01	1,,1.0uL Cal Win/Res	12-Sep-19	20:24:00
14	DX9M_093S14	DX051A-SUR,,/02	1,,1.0uL Inst Blank	12-Sep-19	21:18:38
15	DX9M_093S15	DX051A-SUR,,/02	1,,1.0uL Inst Blank	12-Sep-19	22:11:32
16	DX9M_093S16	L31654-7,I,	1,WG69303,1.0/20uL	12-Sep-19	23:06:41
17	DX9M_093S17	L31654-8,,	1,WG69303,1.0/20uL	13-Sep-19	00:01:49
18	DX9M_093S18	L31654-9,,	1,WG69303,1.0/20uL	13-Sep-19	00:56:57
19	DX9M_093S19	L31654-10,,	1,WG69303,1.0/20uL	13-Sep-19	01:52:05
20	DX9M_093S20	L31654-11,,	1,WG69303,1.0/20uL	13-Sep-19	02:47:12
21	DX9M_093S21	L31654-12,,	1,WG69303,1.0/20uL	13-Sep-19	03:42:14
22	DX9M_093S22	L31683-1,,	1,WG69303,1.0/20uL	13-Sep-19	04:37:23
23	DX9M_093S23	WG69303-103,,CRM	1,WG69303,1.0/20uL	13-Sep-19	05:32:31
24	DX9M_093S24	DX042D-CAL,,/01	1,,1.0uL Cal Win/Res	13-Sep-19	06:27:39
25	DX9M_093S25	WG69347-102,,SPM	1,WG69347,1.0/20uL	13-Sep-19	07:36:30
26	DX9M_093S26	WG69347-103,,SPMDUP	1,WG69347,1.0/20uL	13-Sep-19	08:29:01
27	DX9M_093S27	DX051A-SUR,,/02	1,,1.0uL Inst Blank	13-Sep-19	09:24:09
28	DX9M_093S28	DX051A-SUR,,/02	1,,1.0uL Inst Blank	13-Sep-19	10:19:17
29	DX9M_093S29	WG69347-101,,BLK	1,WG69347,1.0/20uL	13-Sep-19	11:14:24
30	DX9M_093S30	L31831-1,,	1,WG69347,1.0/20uL	13-Sep-19	12:09:32
31	DX9M_093S31	L31704-2,,	1,WG69347,1.0/20uL	13-Sep-19	13:13:59
32	DX9M_093S32	L31704-5,,	1,WG69347,1.0/20uL	13-Sep-19	14:06:32
33	DX9M_093S33	L31704-9,,	1,WG69347,1.0/20uL	13-Sep-19	15:01:34
34	DX9M_093S34	WG69303-104,,CRM	1,WG69303,1.0/20uL	13-Sep-19	15:56:38
35	DX9M_093S35	WG69303-105,,CRM	1,WG69303,1.0/20uL	13-Sep-19	16:51:40
36	DX9M_093S36	DX042D-CAL,,/01	1,,1.0uL Cal Win/Res	13-Sep-19	17:46:48
37	DX9M_093S37	DX051A-SUR,,/02	1,,1.0uL Inst Blank	13-Sep-19	18:51:52

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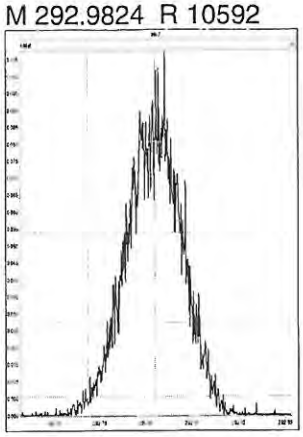
Experiment Calibration Report **MassLynx 4.1** dx9m-093 Cal: 1 5:1

File: Experiment: DX_DB5_1_04.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

Printed: Thursday, September 12, 2019 09:01:15 Pacific Daylight Time

Approved by pm 12-Sep-19

M 292.9824 R 10592



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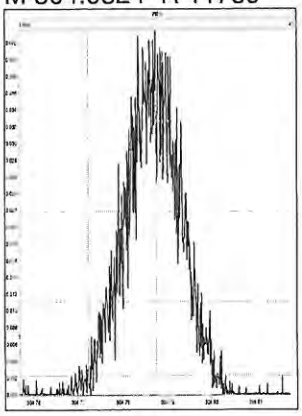

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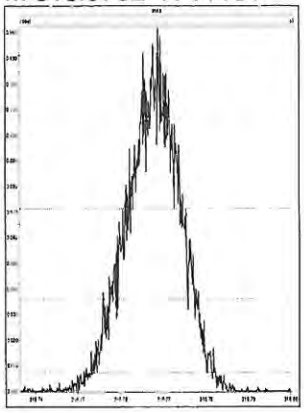

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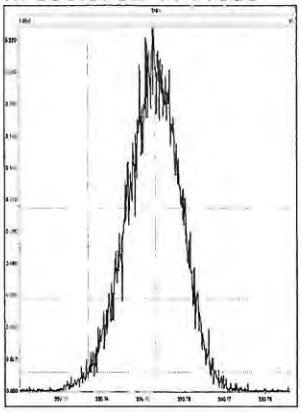

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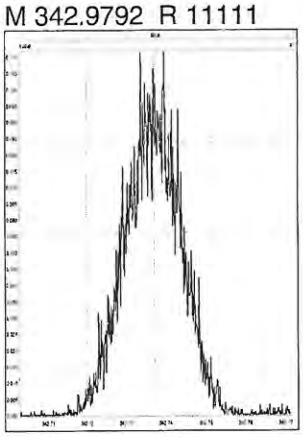

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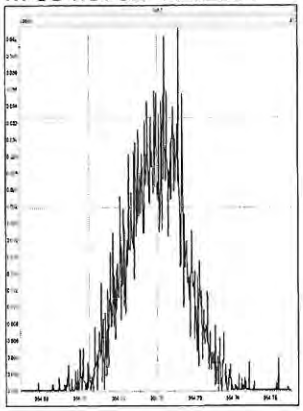

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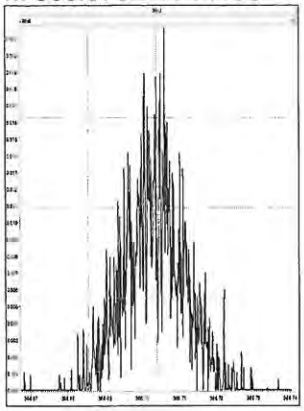
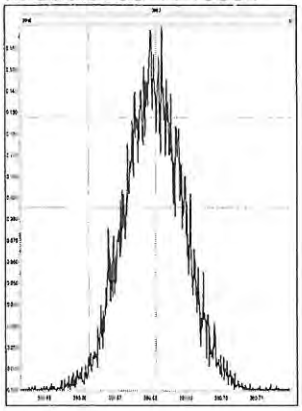


M 380.9760 R 10084

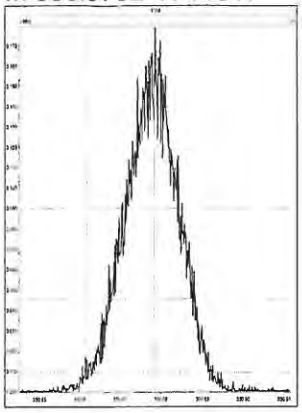


Experiment Calibration Report **MassLynx 4.1**

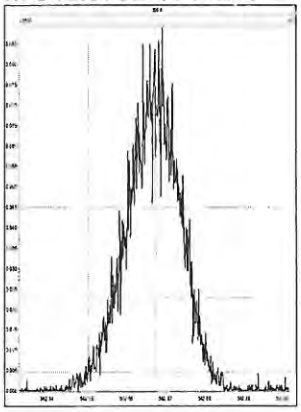
File: Experiment: DX_DB5_1_04.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

Printed: Thursday, September 12, 2019 09:02:34 Pacific Daylight Time

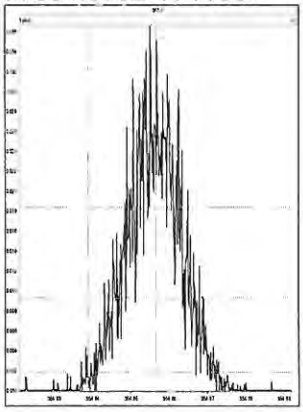
M 330.9792 R 11517



M 342.9792 R 11210



M 354.9792 R 11361



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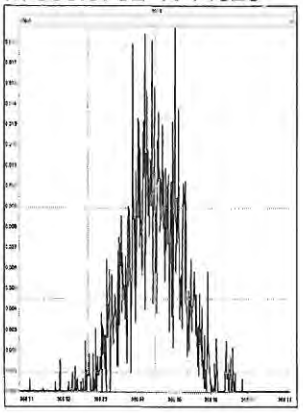

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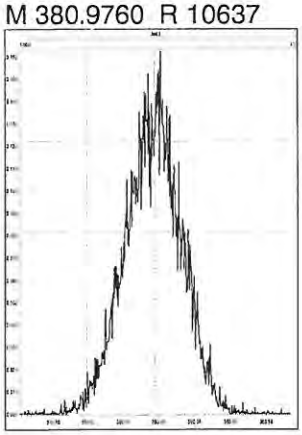

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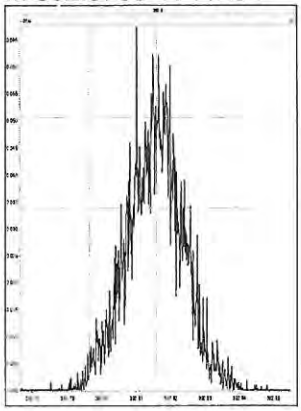

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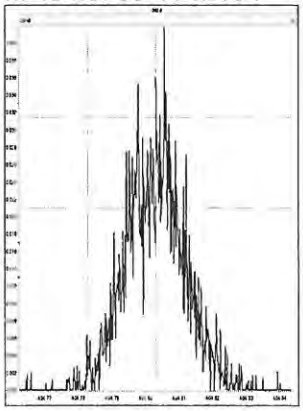
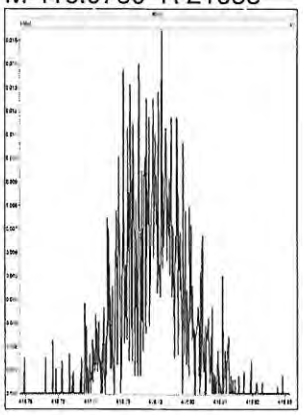


M 416.9760 R 21933

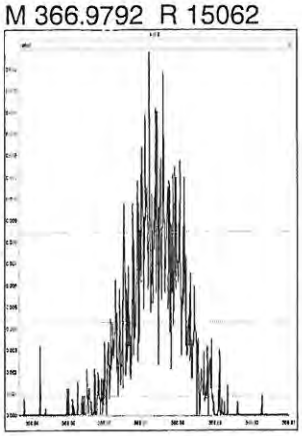


Experiment Calibration Report **MassLynx 4.1**

File: Experiment: DX_DB5_1_04.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

Printed: Thursday, September 12, 2019 09:03:04 Pacific Daylight Time

M 366.9792 R 15062



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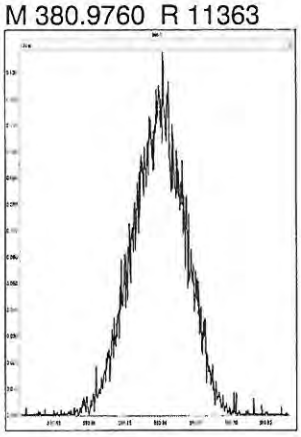

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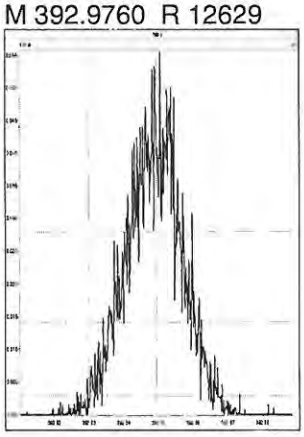
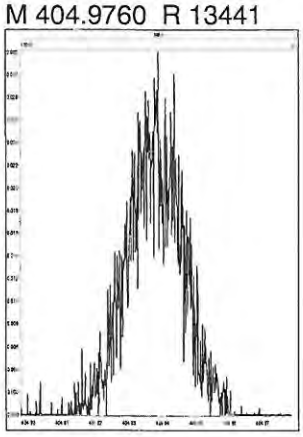
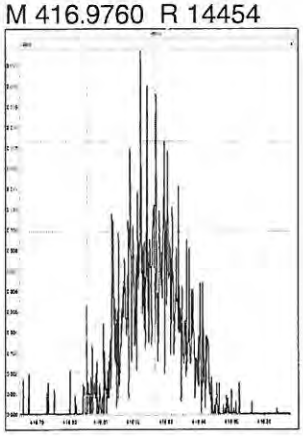


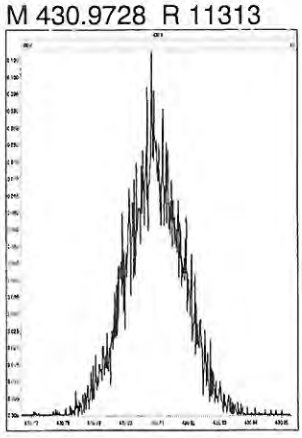
M 404.9760 R 13441



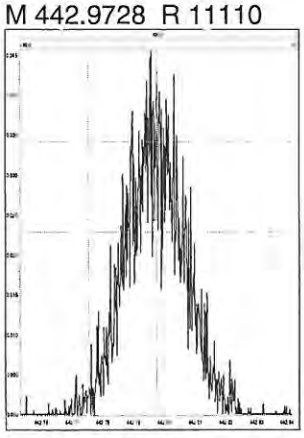
M 416.9760 R 14454



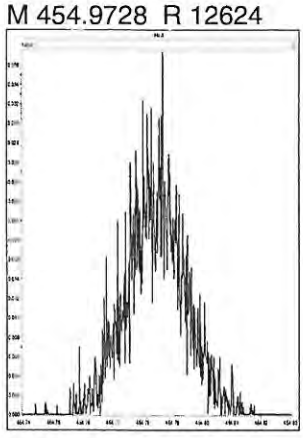
M 430.9728 R 11313



M 442.9728 R 11110



M 454.9728 R 12624

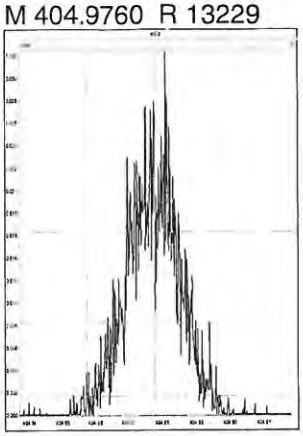


Experiment Calibration Report **MassLynx 4.1**

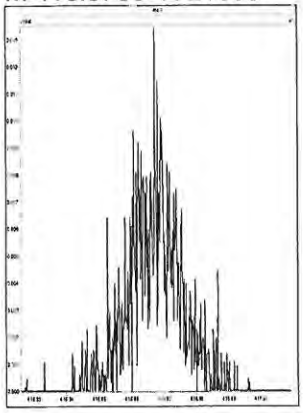
File: Experiment: DX_DB5_1_04.exp Reference: pfk.ref Function: 6 @ 200 (ppm)

Printed: Thursday, September 12, 2019 09:03:42 Pacific Daylight Time

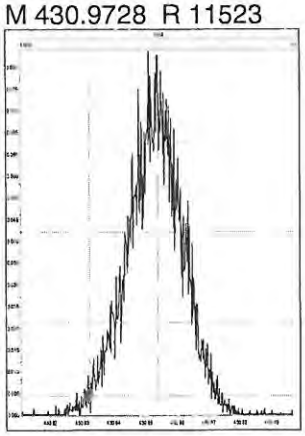
M 404.9760 R 13229



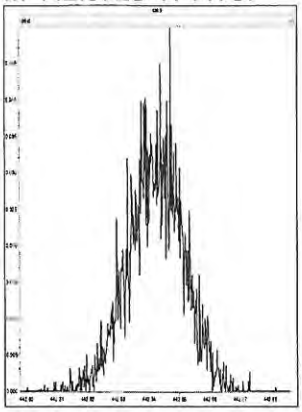
M 416.9760 R 21008



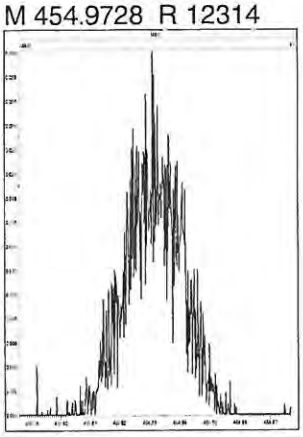
M 430.9728 R 11523



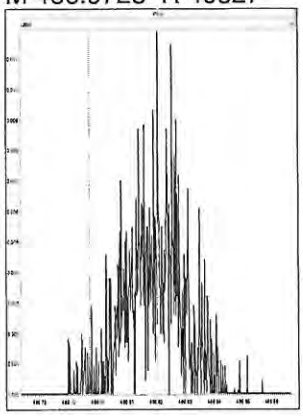
M 442.9728 R 11737



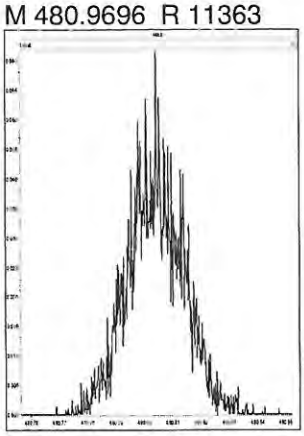
M 454.9728 R 12314



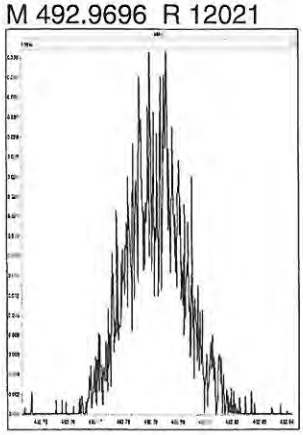
M 466.9728 R 40327



M 480.9696 R 11363



M 492.9696 R 12021

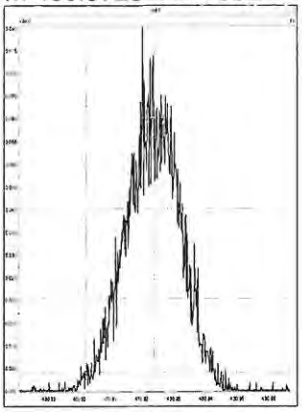


Experiment Calibration Report **MassLynx 4.1**

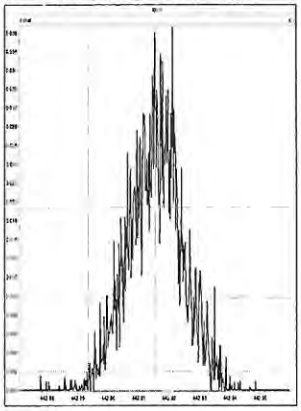
File: Experiment: DX_DB5_1_04.exp Reference: pfk.ref Function: 7 @ 200 (ppm)

Printed: Thursday, September 12, 2019 09:04:37 Pacific Daylight Time

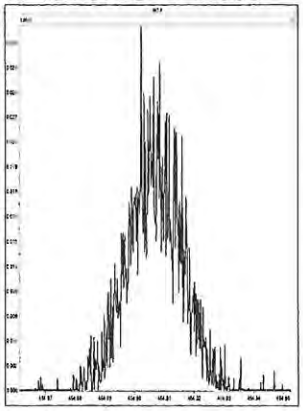
M 430.9728 R 11062



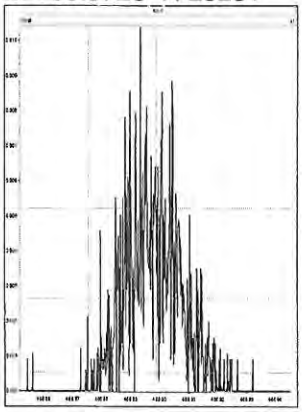
M 442.9728 R 11851



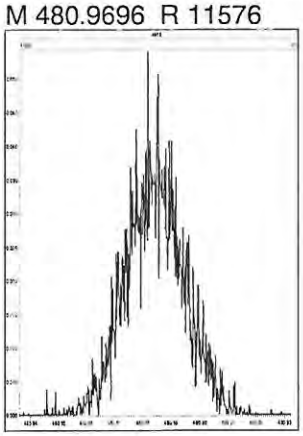
M 454.9728 R 12563



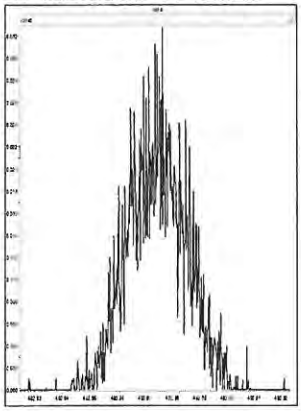
M 466.9728 R 25251



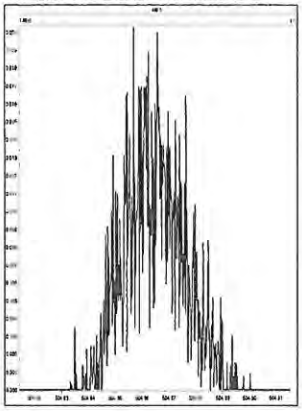
M 480.9696 R 11576



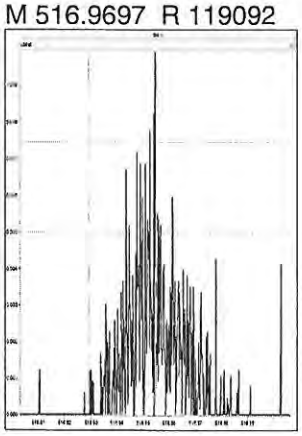
M 492.9696 R 12626



M 504.9696 R 13734



M 516.9697 R 119092



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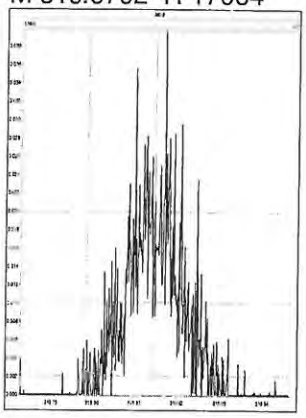
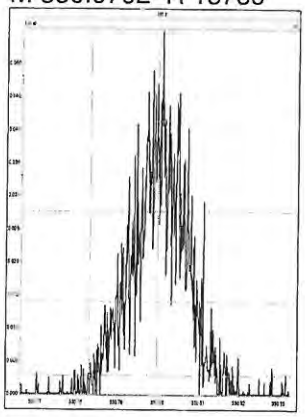
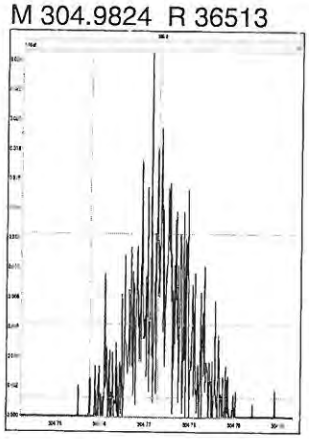
M 318.9792 R 17064



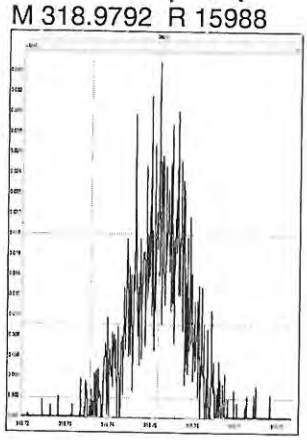
M 330.9792 R 13736



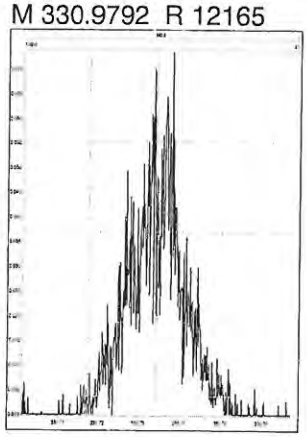
M 304.9824 R 36513



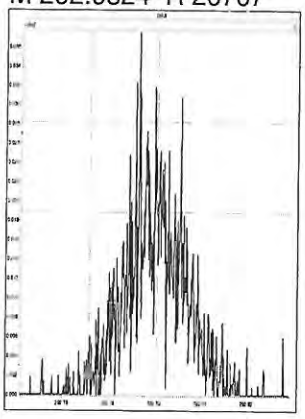
M 318.9792 R 15988



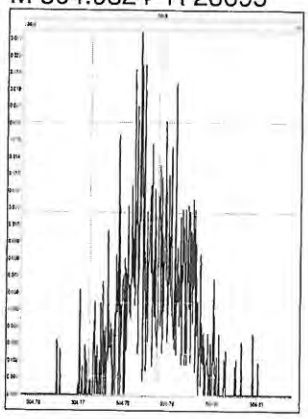
M 330.9792 R 12165



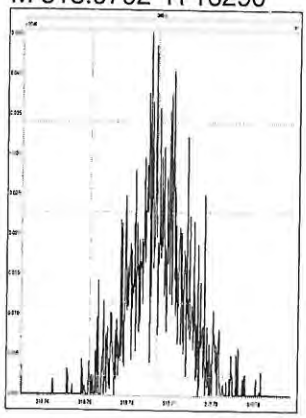
M 292.9824 R 20707



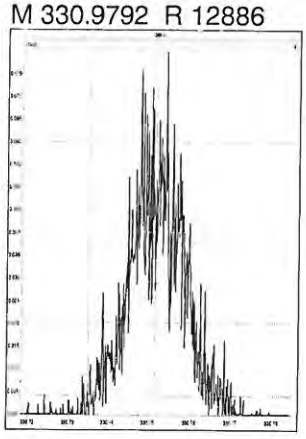
M 304.9824 R 23695



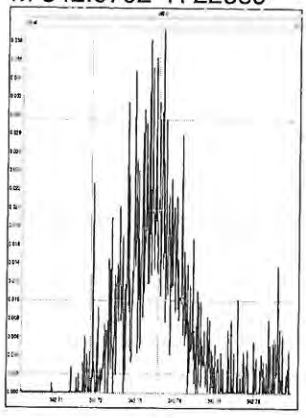
M 318.9792 R 16290



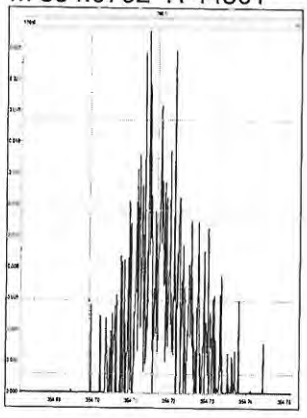
M 330.9792 R 12886



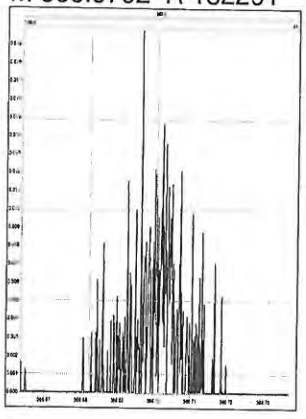
M 342.9792 R 22385



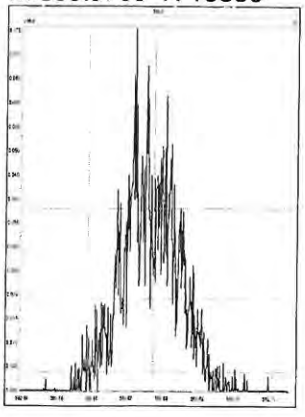
M 354.9792 R 44501



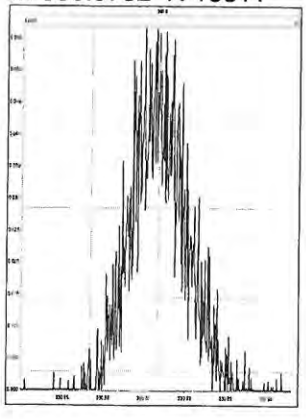
M 366.9792 R 182291



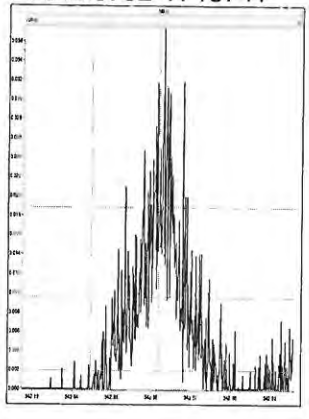
M 380.9760 R 15386



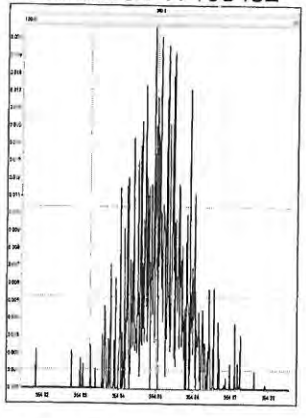
M 330.9792 R 13811



M 342.9792 R 15741



M 354.9792 R 193452



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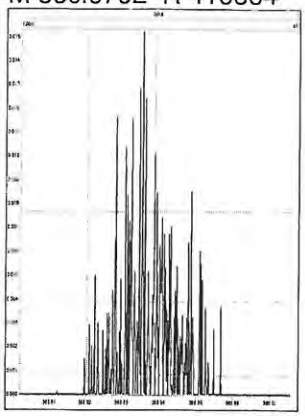
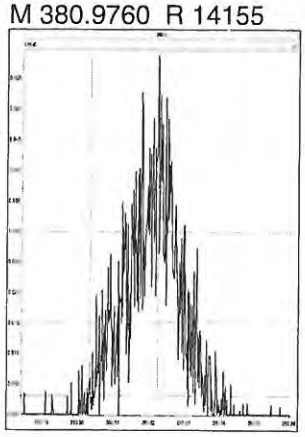
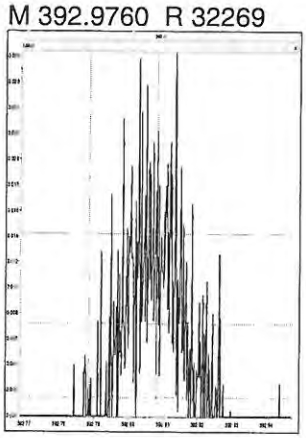
M 366.9792 R 416664



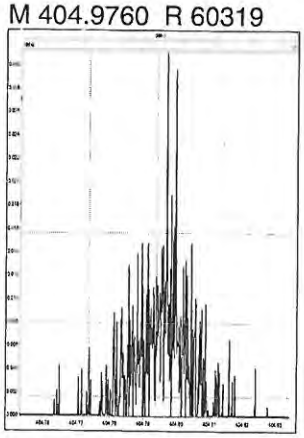
M 380.9760 R 14155



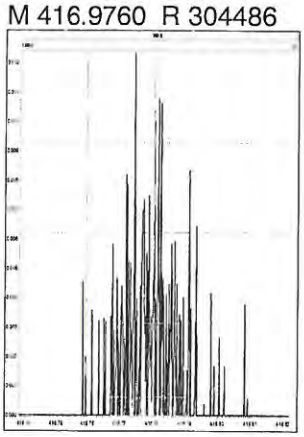
M 392.9760 R 32269



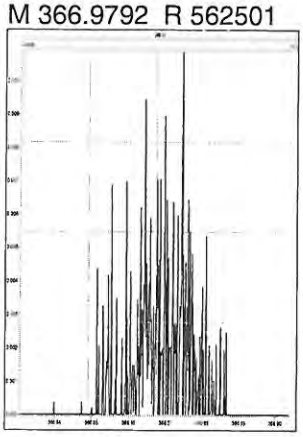
M 404.9760 R 60319



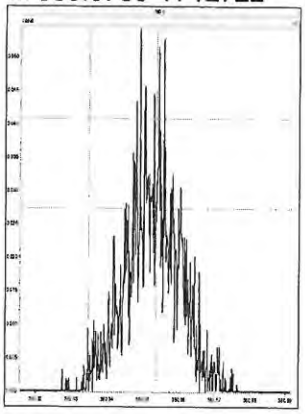
M 416.9760 R 304486



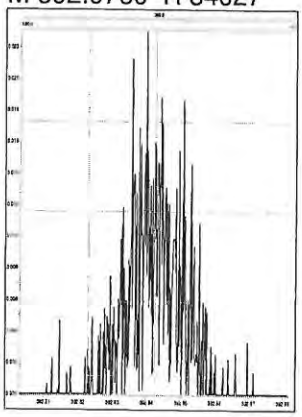
M 366.9792 R 562501



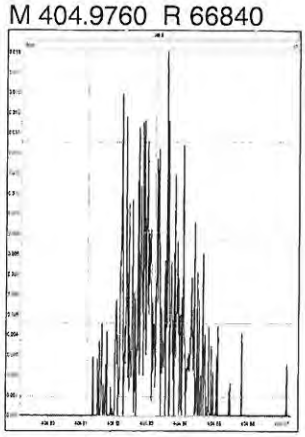
M 380.9760 R 12722



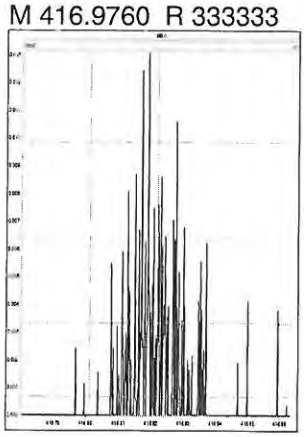
M 392.9760 R 34027



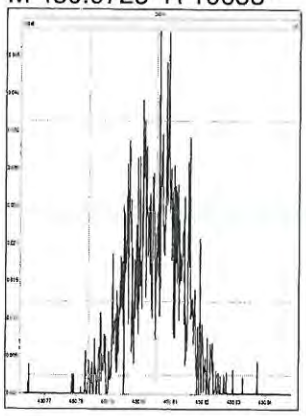
M 404.9760 R 66840



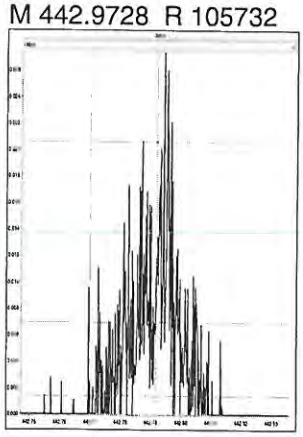
M 416.9760 R 333333



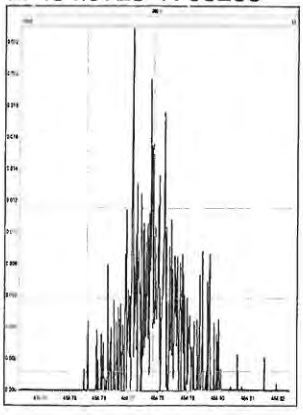
M 430.9728 R 19658



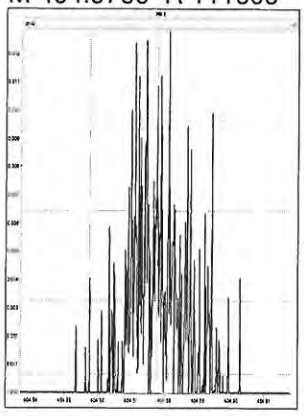
M 442.9728 R 105732



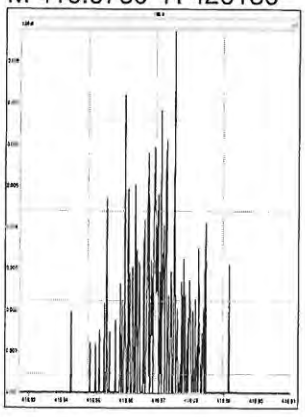
M 454.9728 R 95238



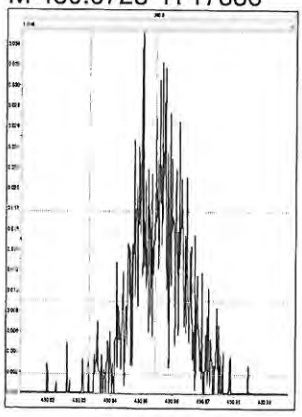
M 404.9760 R 111606



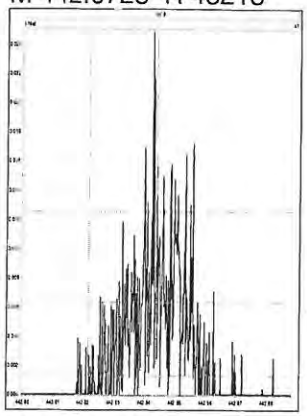
M 416.9760 R 426136



M 430.9728 R 17336



M 442.9728 R 43218



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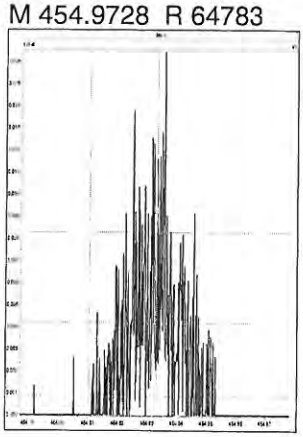

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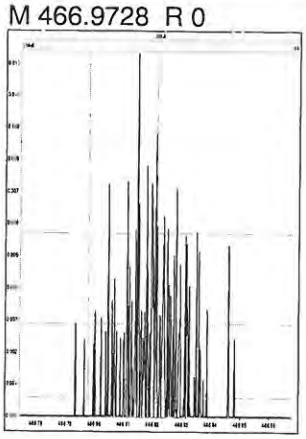

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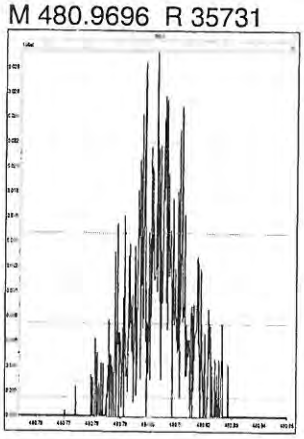

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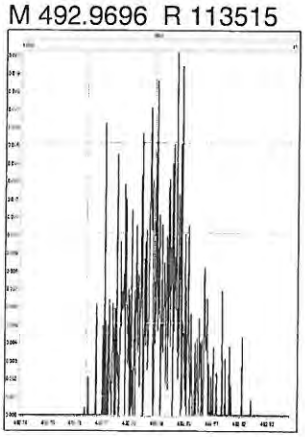

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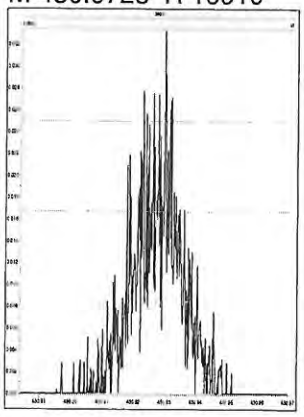

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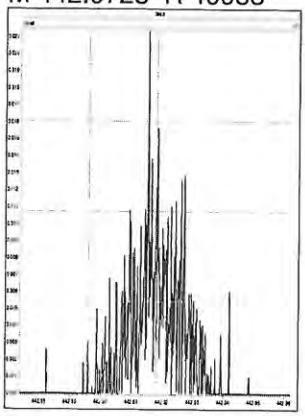

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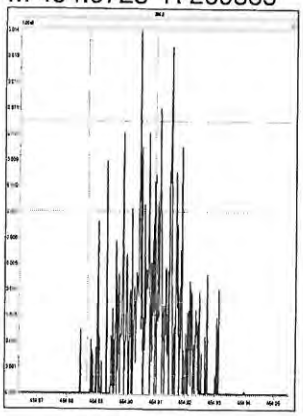

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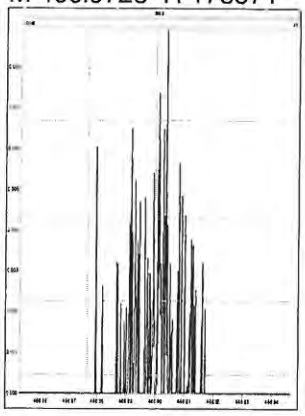

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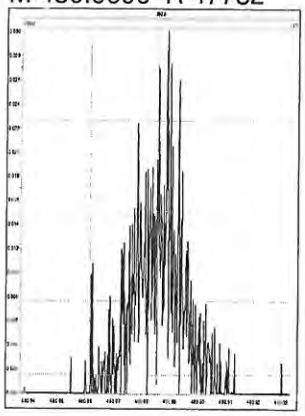

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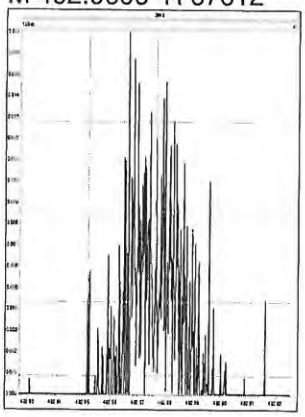

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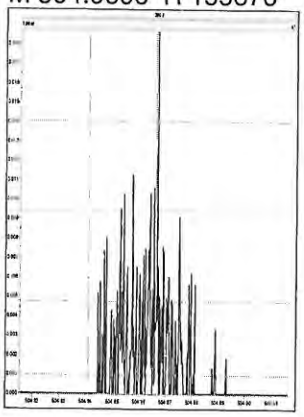

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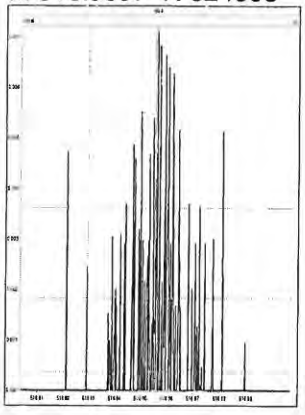

Resolution Check Report **MassLynx 4.1** DX9M-093 S24 CAL3

Printed: Friday, September 13, 2019 07:31:57 Pacific Daylight Time Approval XX 13 Sep 2019

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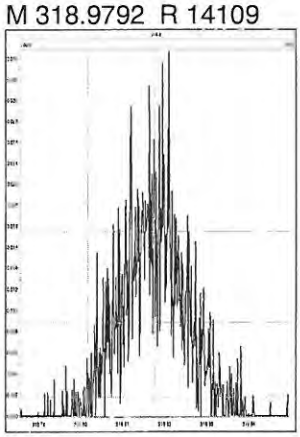

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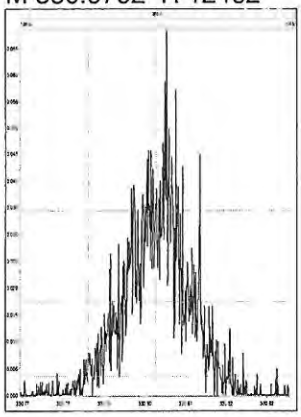

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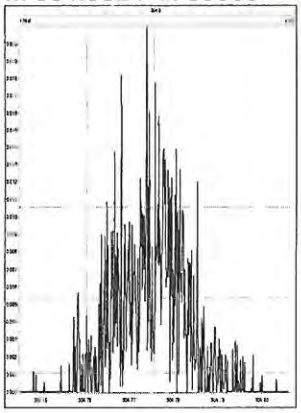

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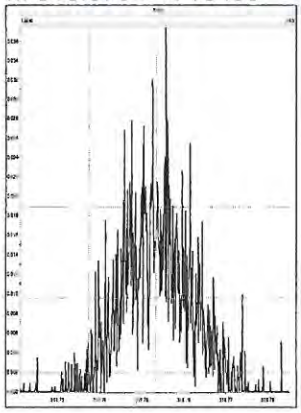

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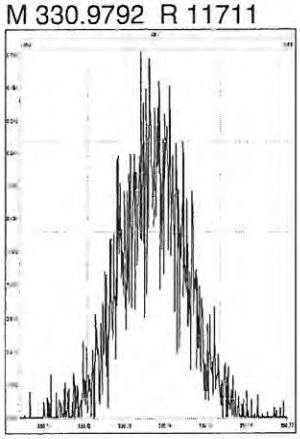

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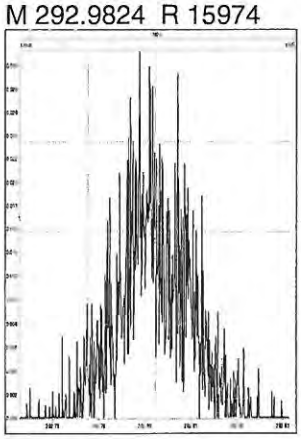

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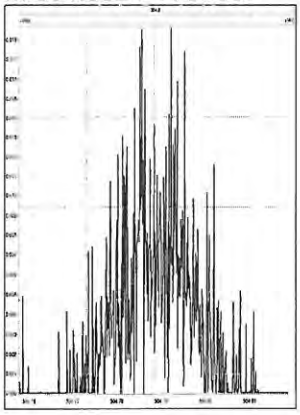

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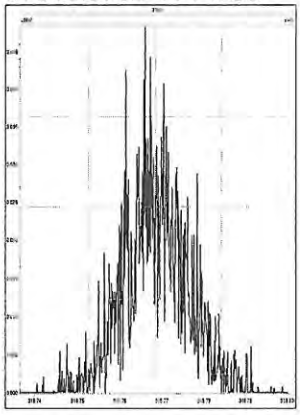

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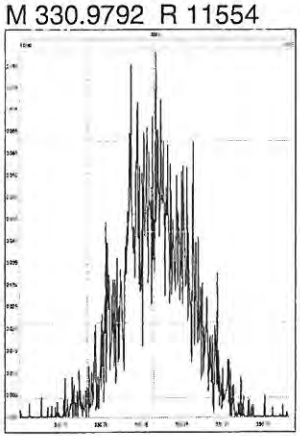

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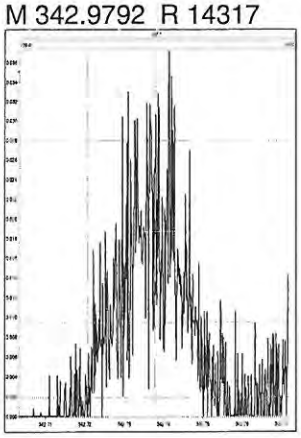

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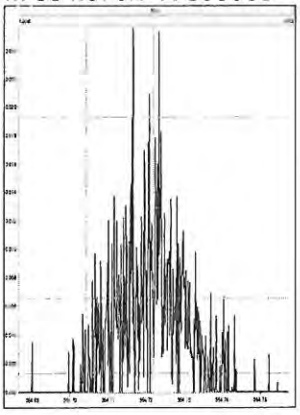

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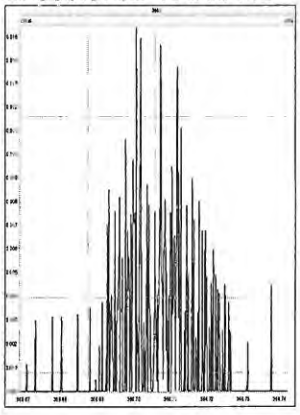

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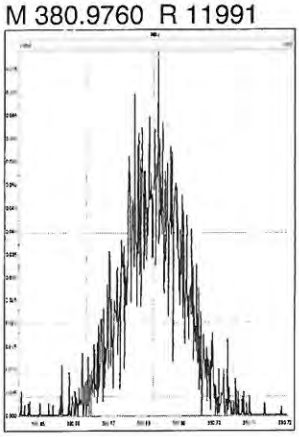

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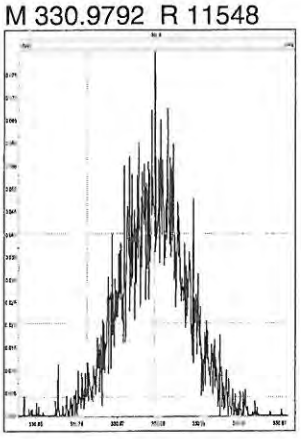

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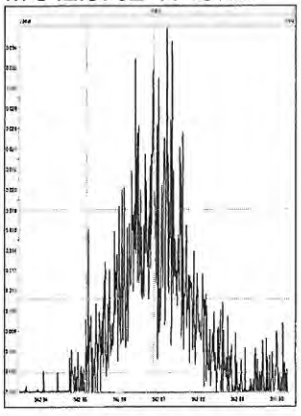

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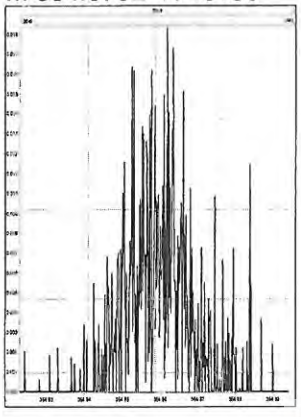

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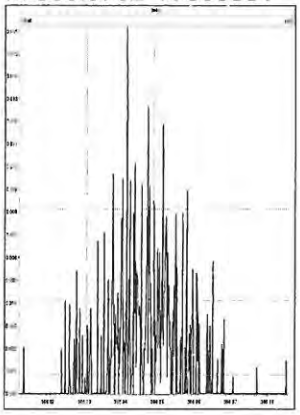

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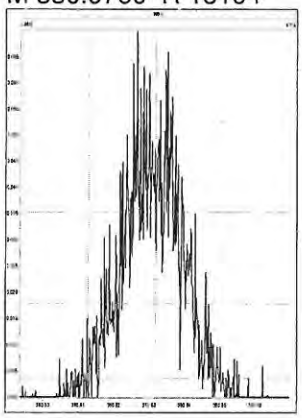

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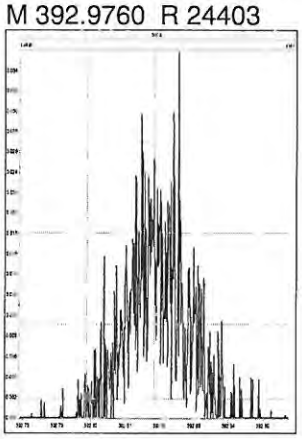

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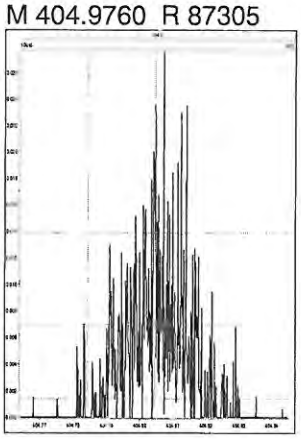

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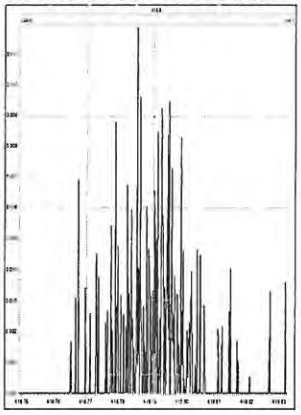

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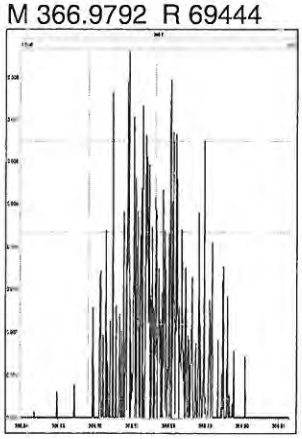

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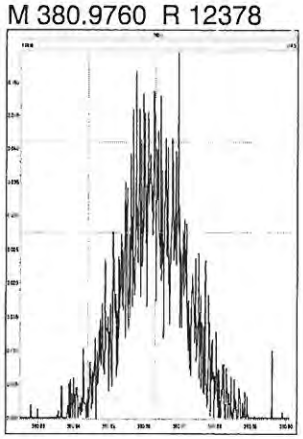

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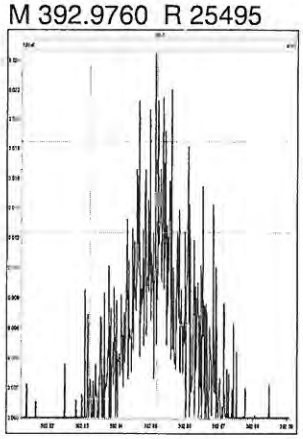

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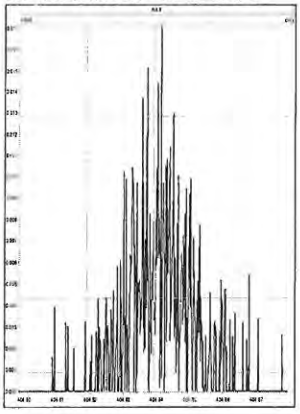

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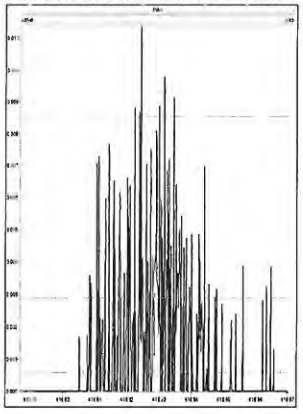

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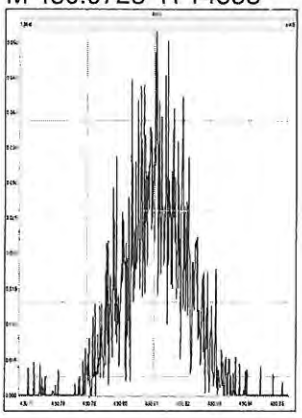

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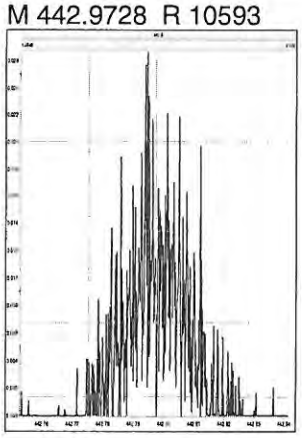

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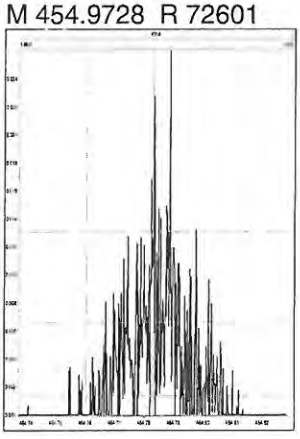

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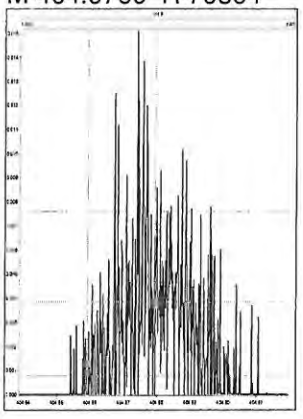

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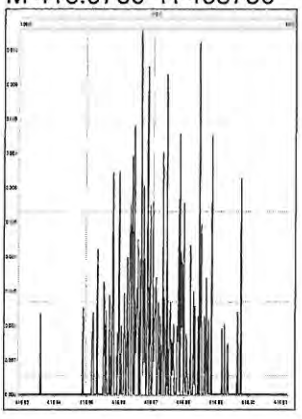

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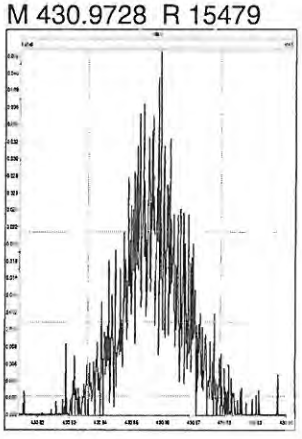

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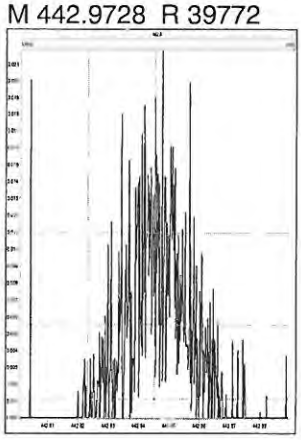

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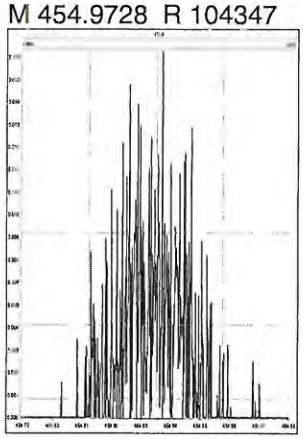

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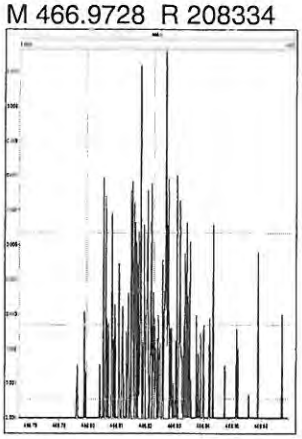

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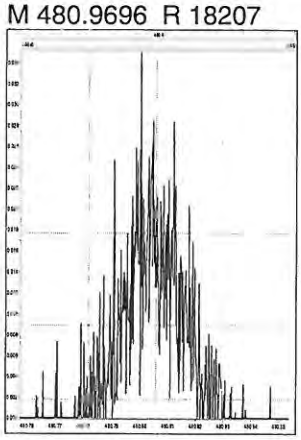

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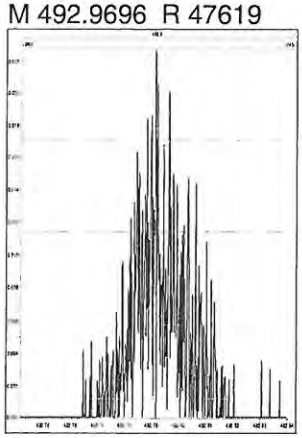

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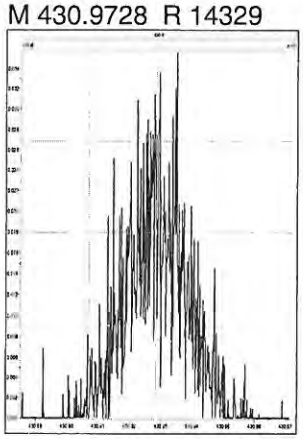

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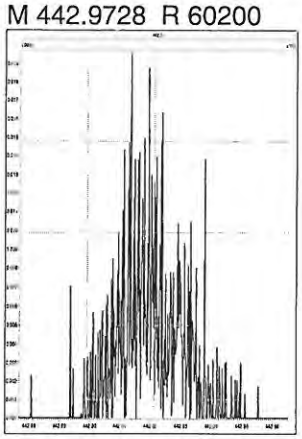

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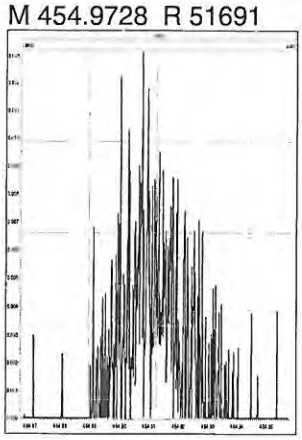

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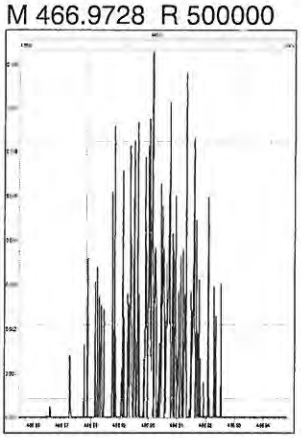

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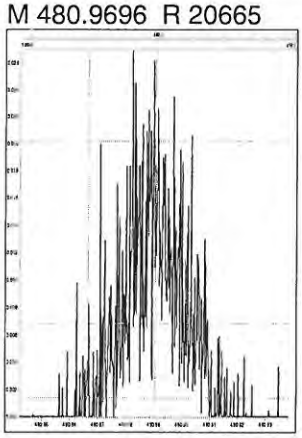

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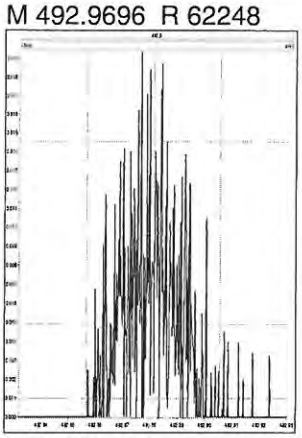

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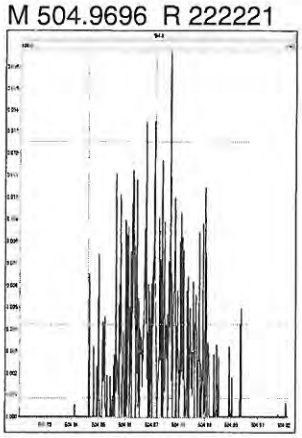

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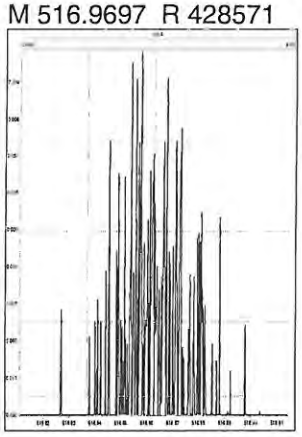

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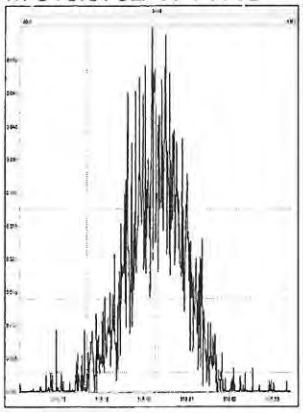

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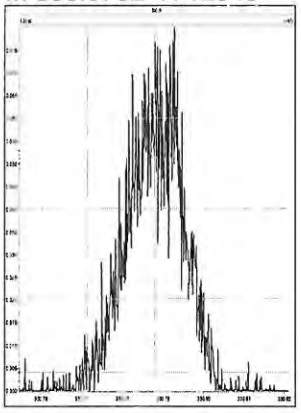

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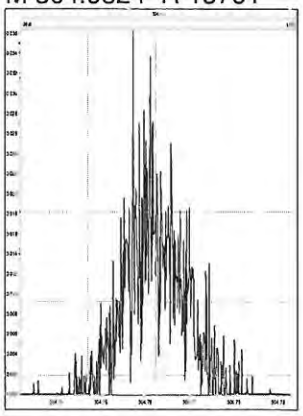

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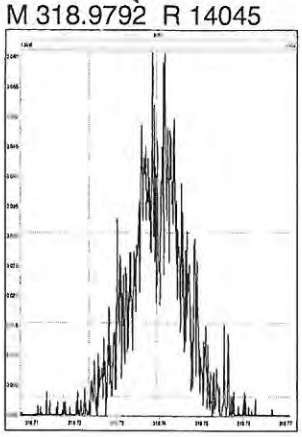

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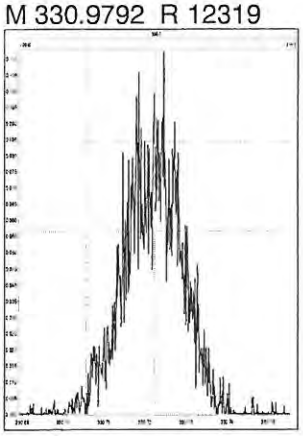

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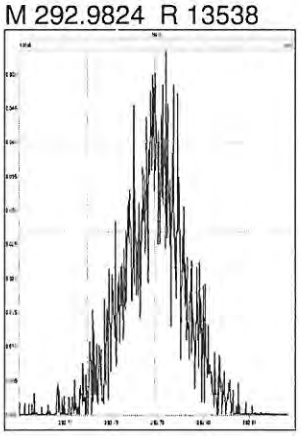

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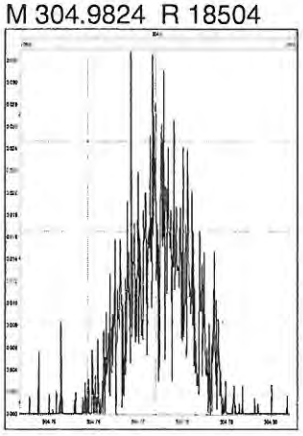

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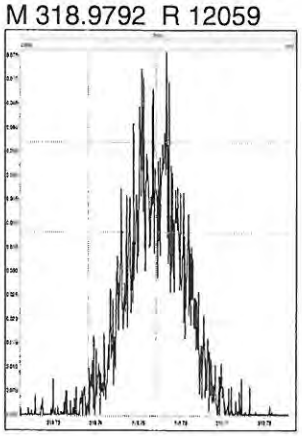

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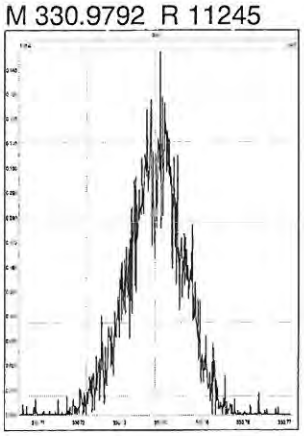

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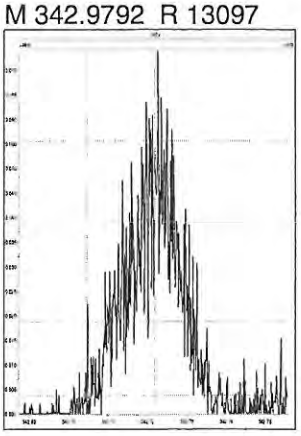

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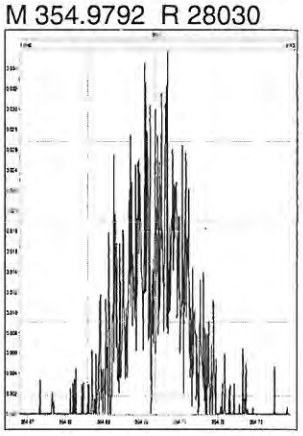

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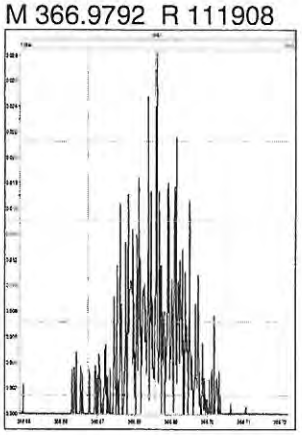

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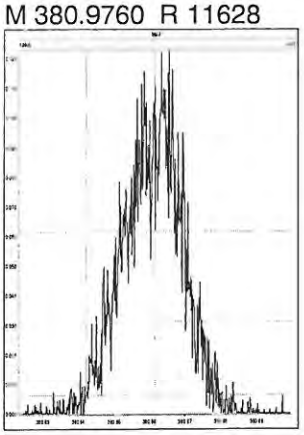

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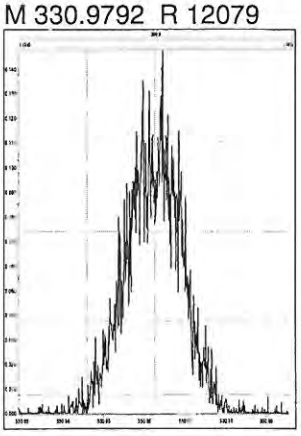

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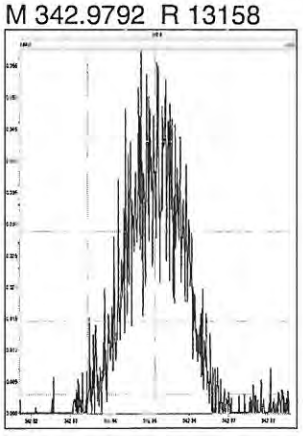

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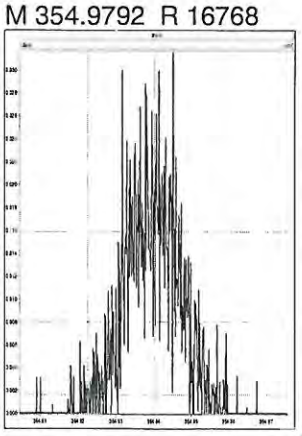

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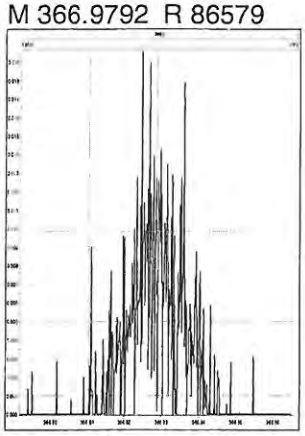

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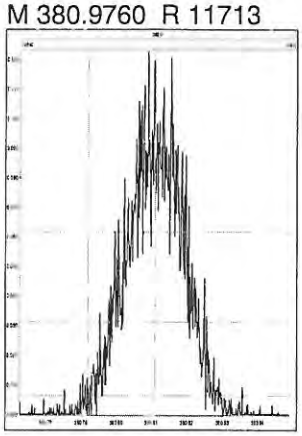

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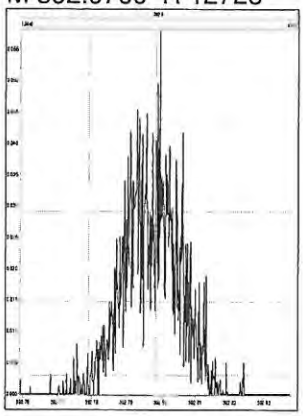

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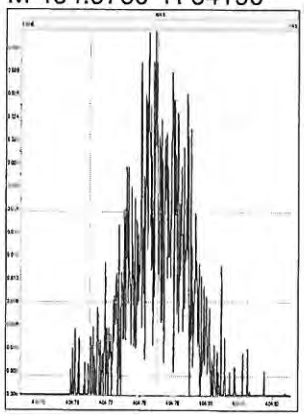

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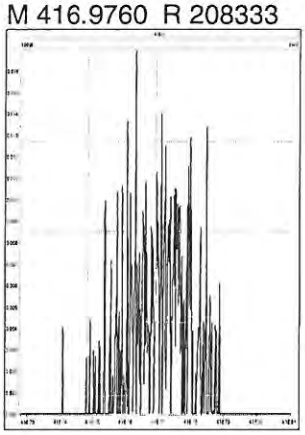

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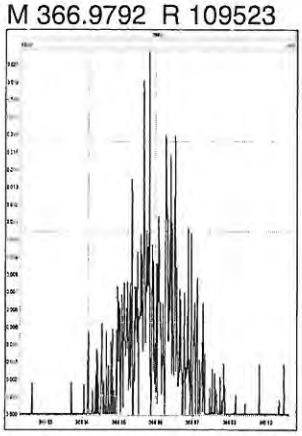

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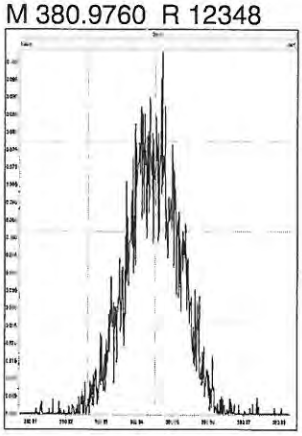

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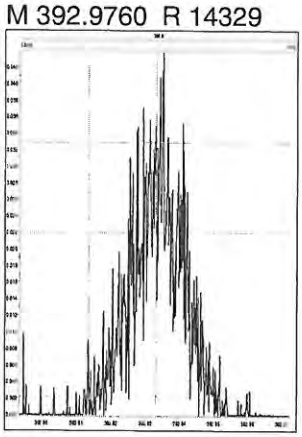

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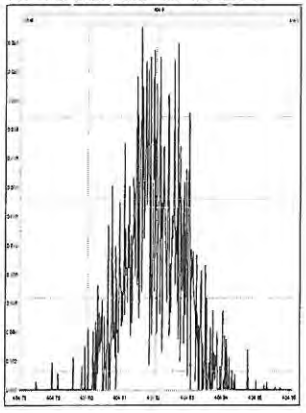

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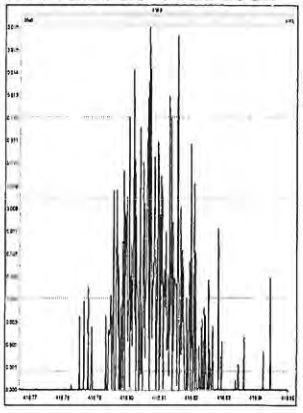

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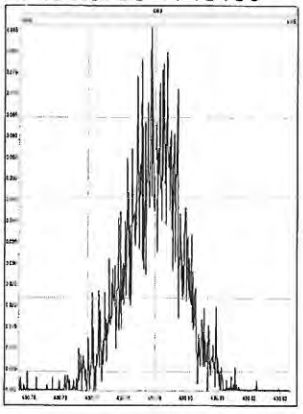

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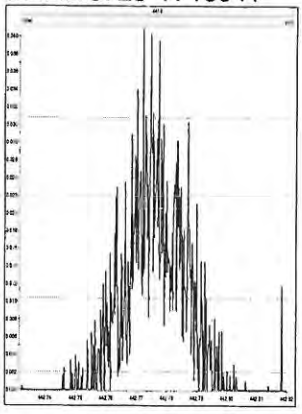

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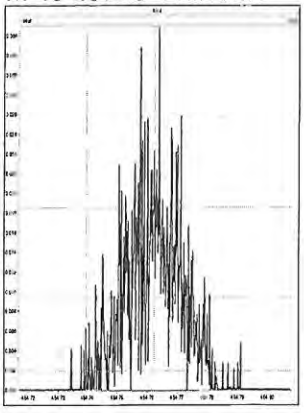

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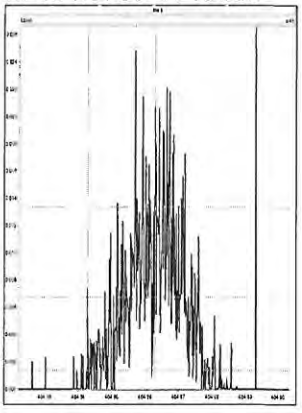

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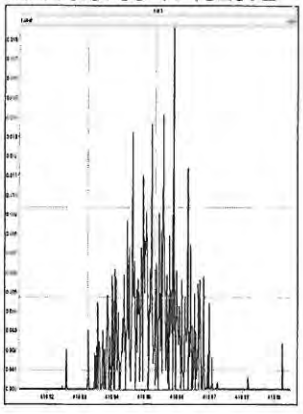

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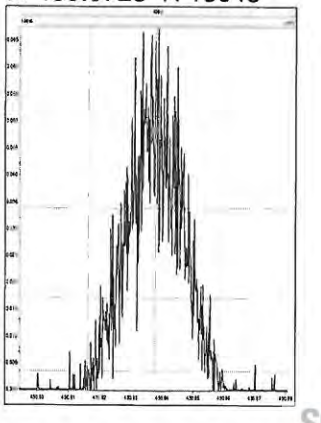

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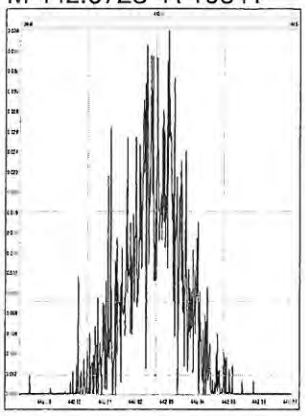

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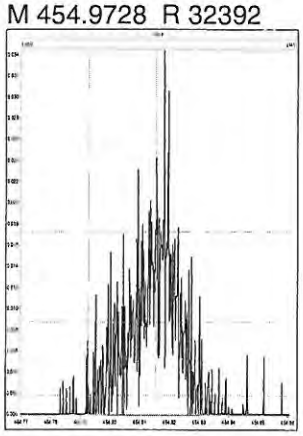

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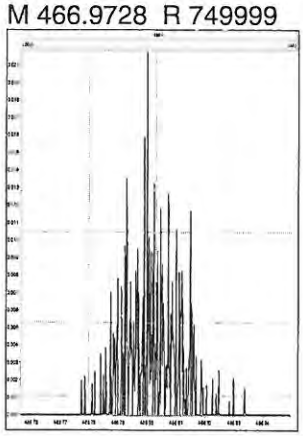

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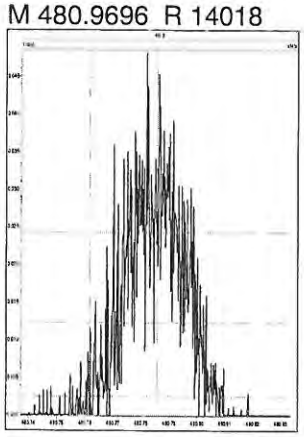

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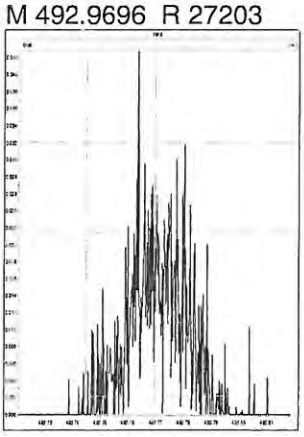

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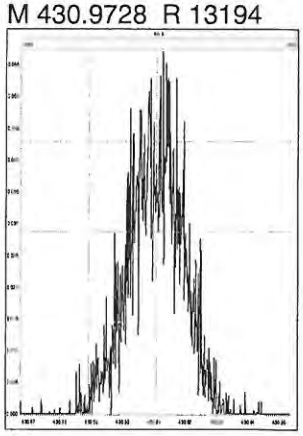

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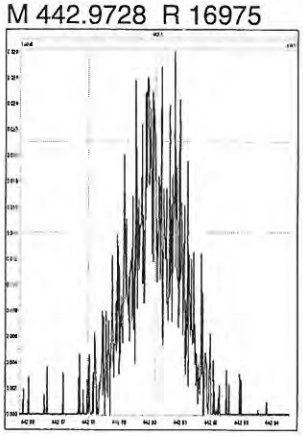

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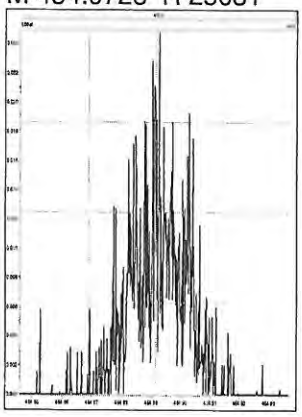

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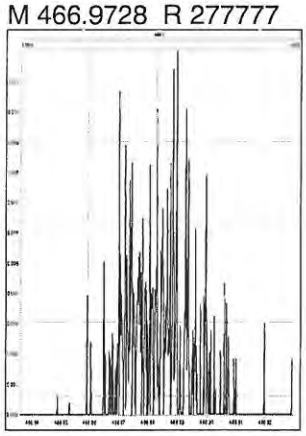

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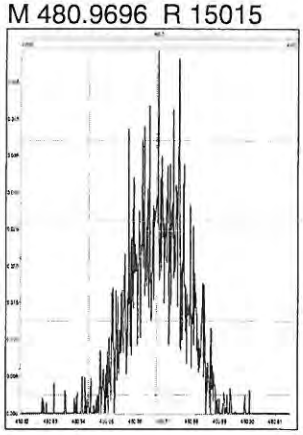

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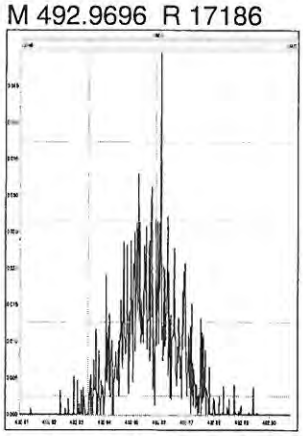

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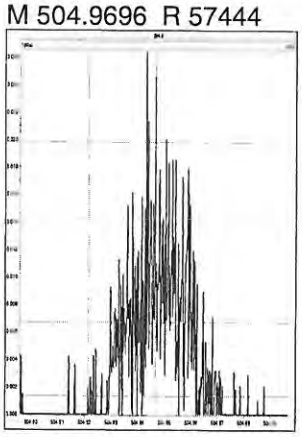

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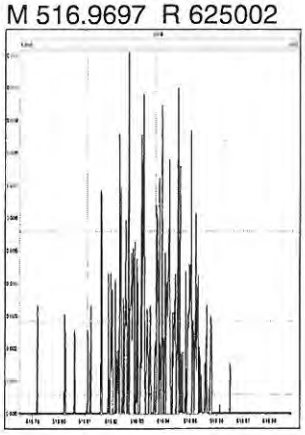

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2	DX9M_093S2	WG69303-102,I,SPM	1,WG69303,1.0/20uL	Analyte	DB5,ng/mL	20.000	2000	4000	2000	200
3	DX9M_093S3	DX051A-SUR,,/02	1,,1.0uL Inst Blank	Blank	DB5,pg/sam	1.000	200	400	200	---
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5	DX9M_093S5	WG69303-101,I,BLK	1,WG69303,1.0/20uL	Analyte	DB5,pg/g	10.000	2000	4000	2000	200
6	DX9M_093S6	L31654-1,I,	1,WG69303,1.0/20uL	Analyte	DB5,pg/g	10.056	2000	4000	2000	200
7	DX9M_093S7	L31654-2,I,	1,WG69303,1.0/20uL	Analyte	DB5,pg/g	10.072	2000	4000	2000	200
8	DX9M_093S8	L31654-3,I,	1,WG69303,1.0/20uL	Analyte	DB5,pg/g	10.240	2000	4000	2000	200
9	DX9M_093S9	L31654-4,I,	1,WG69303,1.0/20uL	Analyte	DB5,pg/g	9.853	2000	4000	2000	200
10	DX9M_093S10	L31654-5,I,	1,WG69303,1.0/20uL	Analyte	DB5,pg/g	9.873	2000	4000	2000	200
11	DX9M_093S11	L31654-6,I,	1,WG69303,1.0/20uL	Analyte	DB5,pg/g	10.297	2000	4000	2000	200

Sample List Report **MassLynx MassLynx V4.1 SCN909**

Sample List: G:\Masslynx\Inst_M\Projects\190510DX.PRO\SampleDB\DX9M_093-B.SPL
Last Modified: Monday, September 16, 2019 09:35:52 Pacific Daylight Time
Printed: Thursday, September 19, 2019 13:29:57 Pacific Daylight Time

Page Position (1, 1)

	File Name	Sample ID	File Text	Sample Type	Subject Text	Samp Size	13C-Te-Hp	13C-OCDD	Rec Std	C/Up
1	DX9M_093S13	DX042D-CAL,,/01	1,,1.0uL Cal Win/Res	QC	DB5,ng/mL	1.000	100	200	100	10
2	DX9M_093S14	DX051A-SUR,,/02	1,,1.0uL Inst Blank	Blank	DB5,pg/sam	1.000	200	400	200	---
3	DX9M_093S15	DX051A-SUR,,/02	1,,1.0uL Inst Blank	Blank	DB5,pg/sam	1.000	200	400	200	---
4	DX9M_093S16	L31654-7,I,	1,WG69303,1.0/20uL	Analyte	DB5,pg/g	10.877	2000	4000	2000	200
5	DX9M_093S17	L31654-8,,	1,WG69303,1.0/20uL	Analyte	DB5,pg/g	10.459	2000	4000	2000	200
6	DX9M_093S18	L31654-9,,	1,WG69303,1.0/20uL	Analyte	DB5,pg/g	10.406	2000	4000	2000	200
7	DX9M_093S19	L31654-10,,	1,WG69303,1.0/20uL	Analyte	DB5,pg/g	10.172	2000	4000	2000	200
8	DX9M_093S20	L31654-11,,	1,WG69303,1.0/20uL	Analyte	DB5,pg/g	10.327	2000	4000	2000	200
9	DX9M_093S21	L31654-12,,	1,WG69303,1.0/20uL	Analyte	DB5,pg/g	10.449	2000	4000	2000	200
10	DX9M_093S22	L31683-1,,	1,WG69303,1.0/20uL	Analyte	DB5,pg/g	8.654	2000	4000	2000	200
11	DX9M_093S23	WG69303-103,,CRM	1,WG69303,1.0/20uL	Analyte	DB5,pg/g	8.670	2000	4000	2000	200
12	DX9M_093S24	DX042D-CAL,,/01	1,,1.0uL Cal Win/Res	QC	DB5,ng/mL	1.000	100	200	100	10

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Sample List Report **MassLynx MassLynx V4.1 SCN909**

Sample List: G:\Masslynx\Inst_M\Projects\190510DX.PRO\SampleDB\DX9M_093-D.SPL
Last Modified: Monday, September 16, 2019 10:57:06 Pacific Daylight Time
Printed: Thursday, September 19, 2019 13:30:14 Pacific Daylight Time

	File Name	Sample ID	File Text	Sample Type	Subject Text	Samp Size	13C-Te-Hp	13C-OCDD	Rec Std	C/Up
1	DX9M_093S24	DX042D-CAL,,/01	1,,1.0uL Cal Win/Res	QC	DB5,ng/mL	1.000	100	200	100	10
2	DX9M_093S27	DX051A-SUR,,/02	1,,1.0uL Inst Blank	Blank	DB5,pg/sam	1.000	200	400	200	---
3	DX9M_093S28	DX051A-SUR,,/02	1,,1.0uL Inst Blank	Blank	DB5,pg/sam	1.000	200	400	200	---
4	DX9M_093S34	WG69303-104,,CRM	1,WG69303,1.0/20uL	Analyte	DB5,pg/g	9.500	2000	4000	2000	200
5	DX9M_093S35	WG69303-105,,CRM	1,WG69303,1.0/20uL	Analyte	DB5,pg/g	9.480	2000	4000	2000	200
6	DX9M_093S36	DX042D-CAL,,/01	1,,1.0uL Cal Win/Res	QC	DB5,ng/mL	1.000	100	200	100	10

SGS AXYS METHOD MLA-017 Rev 20

Form 4A
PCDD/PCDF CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	25-Jun-2019	**VER Data Filename:**	DX9M_093 S: 1
Instrument ID:	HR GC/MS	**Analysis Date:**	12-Sep-2019
GC Column ID:	DB5	**Analysis Time:**	09:06:33

COMPOUND	LAB FLAG [1]	MZ's FORMING RATIO [2]	ION ABUND. RATIO	QC LIMITS [3]	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL) [4]
2,3,7,8-TCDD		**M/M+2**	0.79	0.65-0.89	11.0	7.8 - 12.9
1,2,3,7,8-PECDD [5]		**M/M+2**	0.62	0.52-0.70	50.4	39 - 65
1,2,3,4,7,8-HXCDD		**M+2/M+4**	1.23	1.05-1.43	50.2	39 - 64
1,2,3,6,7,8-HXCDD		**M+2/M+4**	1.22	1.05-1.43	48.9	39 - 64
1,2,3,7,8,9-HXCDD		**M+2/M+4**	1.22	1.05-1.43	53.2	41 - 61
1,2,3,4,6,7,8-HPCDD		**M+2/M+4**	1.04	0.88-1.20	49.0	43 - 58
OCDD		**M+2/M+4**	0.89	0.76-1.02	104	79 - 126
2,3,7,8-TCDF		**M/M+2**	0.79	0.65-0.89	10.6	8.4 - 12
1,2,3,7,8-PECDF		**M+2/M+4**	1.57	1.32-1.78	51.2	41 - 60
2,3,4,7,8-PECDF		**M+2/M+4**	1.52	1.32-1.78	52.0	41 - 61
1,2,3,4,7,8-HXCDF		**M+2/M+4**	1.27	1.05-1.43	52.8	45 - 56
1,2,3,6,7,8-HXCDF		**M+2/M+4**	1.26	1.05-1.43	52.1	44 - 57
1,2,3,7,8,9-HXCDF		**M+2/M+4**	1.30	1.05-1.43	50.9	45 - 56
2,3,4,6,7,8-HXCDF		**M+2/M+4**	1.25	1.05-1.43	50.8	44 - 57
1,2,3,4,6,7,8-HPCDF		**M+2/M+4**	1.03	0.88-1.20	53.2	45 - 55
1,2,3,4,7,8,9-HPCDF		**M+2/M+4**	1.03	0.88-1.20	53.4	43 - 58
OCDF		**M+2/M+4**	0.93	0.76-1.02	104	63 - 159

(1) Where applicable, custom lab flags have been used on this report.
(2) See Table 8, Method 1613, for m/z specifications.
(3) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.
(4) Contract-required concentration range as determined from the percent of the test concentration in Table 6, Method 1613, under VER.
(5) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Elleanor Andaya_____

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SGS AXYS METHOD MLA-017 Rev 20

Form 4B
PCDD/PCDF CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	25-Jun-2019	**VER Data Filename:**	DX9M_093 S: 1
Instrument ID:	HR GC/MS	**Analysis Date:**	12-Sep-2019
GC Column ID:	DB5	**Analysis Time:**	09:06:33

	LAB FLAG [1]	MZ's FORMING RATIO [2]	ION ABUND. RATIO	QC LIMITS [3]	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL) [4]
LABELED COMPOUND						
13C-2,3,7,8-TCDD		**M/M+2**	0.79	0.65-0.89	96.0	82 - 121
13C-1,2,3,7,8-PECDD [5]		**M/M+2**	0.64	0.52-0.70	110	62 - 160
13C-1,2,3,4,7,8-HXCDD		**M+2/M+4**	1.28	1.05-1.43	94.7	85 - 117
13C-1,2,3,6,7,8-HXCDD		**M+2/M+4**	1.21	1.05-1.43	93.1	85 - 118
13C-1,2,3,4,6,7,8-HPCDD		**M+2/M+4**	1.03	0.88-1.20	111	72 - 138
13C-OCDD		**M+2/M+4**	0.90	0.76-1.02	209	96 - 415
13C-2,3,7,8-TCDF		**M/M+2**	0.78	0.65-0.89	102	71 - 140
13C-1,2,3,7,8-PECDF		**M+2/M+4**	1.50	1.32-1.78	101	76 - 130
13C-2,3,4,7,8-PECDF		**M+2/M+4**	1.53	1.32-1.78	104	77 - 130
13C-1,2,3,4,7,8-HXCDF		**M/M+2**	0.52	0.43-0.59	92.1	76 - 131
13C-1,2,3,6,7,8-HXCDF		**M/M+2**	0.52	0.43-0.59	88.2	70 - 143
13C-1,2,3,7,8,9-HXCDF		**M/M+2**	0.52	0.43-0.59	95.9	74 - 135
13C-2,3,4,6,7,8-HXCDF		**M/M+2**	0.53	0.43-0.59	93.3	73 - 137
13C-1,2,3,4,6,7,8-HPCDF		**M/M+2**	0.47	0.37-0.51	103	78 - 129
13C-1,2,3,4,7,8,9-HPCDF		**M/M+2**	0.46	0.37-0.51	109	77 - 129
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD [6]					10.1	7.9 - 12.7

(1) Where applicable, custom lab flags have been used on this report.
(2) See Table 8, Method 1613, for m/z specifications.
(3) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.
(4) Contract-required concentration range as determined from the percent of the test concentration in Table 6, Method 1613, under VER.
(5) Alternate confirmation and quantitation ions used for native and labeled PECDD.
(6) No ion abundance ratio for 37Cl4-2,3,7,8-TCDD; concentration reported.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Elleanor Andaya_____

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SGS AXYS METHOD MLA-017 Rev 20

Form 6A
PCDD/PCDF RELATIVE RETENTION TIMES

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	25-Jun-2019	**VER Data Filename:**	DX9M_093 S: 1
Instrument ID:	HR GC/MS	**Analysis Date:**	12-Sep-2019
GC Column ID:	DB5	**Analysis Time:**	09:06:33

COMPOUND	LAB FLAG [1]	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS [2]
2,3,7,8-TCDD		13C-2,3,7,8-TCDD	1.001	0.999-1.002
1,2,3,7,8-PECDD [3]		13C-1,2,3,7,8-PECDD	1.001	0.999-1.002
1,2,3,4,7,8-HXCDD		13C-1,2,3,4,7,8-HXCDD	1.000	0.999-1.001
1,2,3,6,7,8-HXCDD		13C-1,2,3,6,7,8-HXCDD	1.000	0.998-1.004
1,2,3,7,8,9-HXCDD		13C-1,2,3,6,7,8-HXCDD	1.010	1.000-1.019
1,2,3,4,6,7,8-HPCDD		13C-1,2,3,4,6,7,8-HPCDD	1.000	0.999-1.001
OCDD		13C-OCDD	1.000	0.999-1.001
2,3,7,8-TCDF		13C-2,3,7,8-TCDF	1.001	0.999-1.003
1,2,3,7,8-PECDF		13C-1,2,3,7,8-PECDF	1.001	0.999-1.002
2,3,4,7,8-PECDF		13C-2,3,4,7,8-PECDF	1.001	0.999-1.002
1,2,3,4,7,8-HXCDF		13C-1,2,3,4,7,8-HXCDF	1.000	0.999-1.001
1,2,3,6,7,8-HXCDF		13C-1,2,3,6,7,8-HXCDF	1.000	0.997-1.005
1,2,3,7,8,9-HXCDF		13C-1,2,3,7,8,9-HXCDF	1.000	0.999-1.001
2,3,4,6,7,8-HXCDF		13C-2,3,4,6,7,8-HXCDF	1.001	0.999-1.001
1,2,3,4,6,7,8-HPCDF		13C-1,2,3,4,6,7,8-HPCDF	1.000	0.999-1.001
1,2,3,4,7,8,9-HPCDF		13C-1,2,3,4,7,8,9-HPCDF	1.000	0.999-1.001
OCDF		13C-OCDD	1.002	0.999-1.008

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Elleanor Andaya_____

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SGS AXYS METHOD MLA-017 Rev 20

Form 6B
PCDD/PCDF RELATIVE RETENTION TIMES

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	25-Jun-2019	**VER Data Filename:**	DX9M_093 S: 1
Instrument ID:	HR GC/MS	**Analysis Date:**	12-Sep-2019
GC Column ID:	DB5	**Analysis Time:**	09:06:33

	LAB FLAG [1]	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS [2]
LABELED COMPOUND				
13C-2,3,7,8-TCDD		13C-1,2,3,4-TCDD	1.013	0.976-1.043
13C-1,2,3,7,8-PECDD		13C-1,2,3,4-TCDD	1.383	1.000-1.567
13C-1,2,3,4,7,8-HXCDD		13C-1,2,3,7,8,9-HXCDD	0.987	0.977-1.000
13C-1,2,3,6,7,8-HXCDD		13C-1,2,3,7,8,9-HXCDD	0.990	0.981-1.003
13C-1,2,3,4,6,7,8-HPCDD		13C-1,2,3,7,8,9-HXCDD	1.095	1.086-1.110
13C-OCDD		13C-1,2,3,7,8,9-HXCDD	1.179	1.032-1.311
13C-2,3,7,8-TCDF		13C-1,2,3,4-TCDD	0.966	0.923-1.103
13C-1,2,3,7,8-PECDF		13C-1,2,3,4-TCDD	1.284	1.000-1.425
13C-2,3,4,7,8-PECDF		13C-1,2,3,4-TCDD	1.351	1.011-1.526
13C-1,2,3,4,7,8-HXCDF		13C-1,2,3,7,8,9-HXCDD	0.954	0.944-0.970
13C-1,2,3,6,7,8-HXCDF		13C-1,2,3,7,8,9-HXCDD	0.958	0.949-0.975
13C-1,2,3,7,8,9-HXCDF		13C-1,2,3,7,8,9-HXCDD	1.005	0.977-1.047
13C-2,3,4,6,7,8-HXCDF		13C-1,2,3,7,8,9-HXCDD	0.980	0.959-1.021
13C-1,2,3,4,6,7,8-HPCDF		13C-1,2,3,7,8,9-HXCDD	1.062	1.043-1.085
13C-1,2,3,4,7,8,9-HPCDF		13C-1,2,3,7,8,9-HXCDD	1.105	1.057-1.151
CLEANUP STANDARD				
37CL-2,3,7,8-TCDD		13C-1,2,3,4-TCDD	1.001	0.989-1.052

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Elleanor Andaya_____

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SGS AXYS METHOD MLA-017 Rev 20

Form 4A
PCDD/PCDF CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	25-Jun-2019	**VER Data Filename:**	DX9M_093 S: 13
Instrument ID:	HR GC/MS	**Analysis Date:**	12-Sep-2019
GC Column ID:	DB5	**Analysis Time:**	20:24:00

COMPOUND	LAB FLAG [1]	MZ's FORMING RATIO [2]	ION ABUND. RATIO	QC LIMITS [3]	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL) [4]
2,3,7,8-TCDD		**M/M+2**	0.80	0.65-0.89	10.5	7.8 - 12.9
1,2,3,7,8-PECDD [5]		**M/M+2**	0.63	0.52-0.70	48.3	39 - 65
1,2,3,4,7,8-HXCDD		**M+2/M+4**	1.26	1.05-1.43	50.6	39 - 64
1,2,3,6,7,8-HXCDD		**M+2/M+4**	1.19	1.05-1.43	49.0	39 - 64
1,2,3,7,8,9-HXCDD		**M+2/M+4**	1.22	1.05-1.43	51.4	41 - 61
1,2,3,4,6,7,8-HPCDD		**M+2/M+4**	1.05	0.88-1.20	48.8	43 - 58
OCDD		**M+2/M+4**	0.88	0.76-1.02	98.5	79 - 126
2,3,7,8-TCDF		**M/M+2**	0.78	0.65-0.89	10.3	8.4 - 12
1,2,3,7,8-PECDF		**M+2/M+4**	1.55	1.32-1.78	50.6	41 - 60
2,3,4,7,8-PECDF		**M+2/M+4**	1.55	1.32-1.78	51.4	41 - 61
1,2,3,4,7,8-HXCDF		**M+2/M+4**	1.25	1.05-1.43	53.3	45 - 56
1,2,3,6,7,8-HXCDF		**M+2/M+4**	1.30	1.05-1.43	53.3	44 - 57
1,2,3,7,8,9-HXCDF		**M+2/M+4**	1.25	1.05-1.43	52.2	45 - 56
2,3,4,6,7,8-HXCDF		**M+2/M+4**	1.26	1.05-1.43	52.6	44 - 57
1,2,3,4,6,7,8-HPCDF		**M+2/M+4**	1.05	0.88-1.20	51.8	45 - 55
1,2,3,4,7,8,9-HPCDF		**M+2/M+4**	1.04	0.88-1.20	51.6	43 - 58
OCDF		**M+2/M+4**	0.93	0.76-1.02	97.1	63 - 159

(1) Where applicable, custom lab flags have been used on this report.
(2) See Table 8, Method 1613, for m/z specifications.
(3) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.
(4) Contract-required concentration range as determined from the percent of the test concentration in Table 6, Method 1613, under VER.
(5) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Elleanor Andaya_____

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Report Filename: 1613_DIOXINS_DX9M_093S13__Form4A_SJ2619981.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 4B
PCDD/PCDF CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	25-Jun-2019	**VER Data Filename:**	DX9M_093 S: 13
Instrument ID:	HR GC/MS	**Analysis Date:**	12-Sep-2019
GC Column ID:	DB5	**Analysis Time:**	20:24:00

LABELED COMPOUND	LAB FLAG [1]	MZ's FORMING RATIO [2]	ION ABUND. RATIO	QC LIMITS [3]	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL) [4]
13C-2,3,7,8-TCDD		**M/M+2**	0.79	0.65-0.89	97.5	82 - 121
13C-1,2,3,7,8-PECDD [5]		**M/M+2**	0.65	0.52-0.70	102	62 - 160
13C-1,2,3,4,7,8-HXCDD		**M+2/M+4**	1.31	1.05-1.43	90.8	85 - 117
13C-1,2,3,6,7,8-HXCDD		**M+2/M+4**	1.28	1.05-1.43	92.6	85 - 118
13C-1,2,3,4,6,7,8-HPCDD		**M+2/M+4**	1.01	0.88-1.20	115	72 - 138
13C-OCDD		**M+2/M+4**	0.91	0.76-1.02	259	96 - 415
13C-2,3,7,8-TCDF		**M/M+2**	0.81	0.65-0.89	89.1	71 - 140
13C-1,2,3,7,8-PECDF		**M+2/M+4**	1.56	1.32-1.78	103	76 - 130
13C-2,3,4,7,8-PECDF		**M+2/M+4**	1.64	1.32-1.78	104	77 - 130
13C-1,2,3,4,7,8-HXCDF		**M/M+2**	0.53	0.43-0.59	87.5	76 - 131
13C-1,2,3,6,7,8-HXCDF		**M/M+2**	0.53	0.43-0.59	85.0	70 - 143
13C-1,2,3,7,8,9-HXCDF		**M/M+2**	0.52	0.43-0.59	95.2	74 - 135
13C-2,3,4,6,7,8-HXCDF		**M/M+2**	0.53	0.43-0.59	91.0	73 - 137
13C-1,2,3,4,6,7,8-HPCDF		**M/M+2**	0.45	0.37-0.51	102	78 - 129
13C-1,2,3,4,7,8,9-HPCDF		**M/M+2**	0.44	0.37-0.51	117	77 - 129
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD [6]					11.0	7.9 - 12.7

(1) Where applicable, custom lab flags have been used on this report.
(2) See Table 8, Method 1613, for m/z specifications.
(3) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.
(4) Contract-required concentration range as determined from the percent of the test concentration in Table 6, Method 1613, under VER.
(5) Alternate confirmation and quantitation ions used for native and labeled PECDD.
(6) No ion abundance ratio for 37Cl4-2,3,7,8-TCDD; concentration reported.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Elleanor Andaya_____

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Report Filename: 1613_DIOXINS_DX9M_093S13__Form4B_SJ2619981.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 6A
PCDD/PCDF RELATIVE RETENTION TIMES

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	25-Jun-2019	**VER Data Filename:**	DX9M_093 S: 13
Instrument ID:	HR GC/MS	**Analysis Date:**	12-Sep-2019
GC Column ID:	DB5	**Analysis Time:**	20:24:00

COMPOUND	LAB FLAG [1]	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS [2]
2,3,7,8-TCDD		13C-2,3,7,8-TCDD	1.001	0.999-1.002
1,2,3,7,8-PECDD [3]		13C-1,2,3,7,8-PECDD	1.001	0.999-1.002
1,2,3,4,7,8-HXCDD		13C-1,2,3,4,7,8-HXCDD	1.000	0.999-1.001
1,2,3,6,7,8-HXCDD		13C-1,2,3,6,7,8-HXCDD	1.000	0.998-1.004
1,2,3,7,8,9-HXCDD		13C-1,2,3,6,7,8-HXCDD	1.011	1.000-1.019
1,2,3,4,6,7,8-HPCDD		13C-1,2,3,4,6,7,8-HPCDD	1.000	0.999-1.001
OCDD		13C-OCDD	1.000	0.999-1.001
2,3,7,8-TCDF		13C-2,3,7,8-TCDF	1.001	0.999-1.003
1,2,3,7,8-PECDF		13C-1,2,3,7,8-PECDF	1.001	0.999-1.002
2,3,4,7,8-PECDF		13C-2,3,4,7,8-PECDF	1.001	0.999-1.002
1,2,3,4,7,8-HXCDF		13C-1,2,3,4,7,8-HXCDF	1.001	0.999-1.001
1,2,3,6,7,8-HXCDF		13C-1,2,3,6,7,8-HXCDF	1.000	0.997-1.005
1,2,3,7,8,9-HXCDF		13C-1,2,3,7,8,9-HXCDF	1.000	0.999-1.001
2,3,4,6,7,8-HXCDF		13C-2,3,4,6,7,8-HXCDF	1.000	0.999-1.001
1,2,3,4,6,7,8-HPCDF		13C-1,2,3,4,6,7,8-HPCDF	1.000	0.999-1.001
1,2,3,4,7,8,9-HPCDF		13C-1,2,3,4,7,8,9-HPCDF	1.000	0.999-1.001
OCDF		13C-OCDD	1.002	0.999-1.008

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Elleanor Andaya_____

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SGS AXYS METHOD MLA-017 Rev 20

Form 6B
PCDD/PCDF RELATIVE RETENTION TIMES

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	25-Jun-2019	**VER Data Filename:**	DX9M_093 S: 13
Instrument ID:	HR GC/MS	**Analysis Date:**	12-Sep-2019
GC Column ID:	DB5	**Analysis Time:**	20:24:00

	LAB FLAG [1]	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS [2]
LABELED COMPOUND				
13C-2,3,7,8-TCDD		13C-1,2,3,4-TCDD	1.013	0.976-1.043
13C-1,2,3,7,8-PECDD		13C-1,2,3,4-TCDD	1.384	1.000-1.567
13C-1,2,3,4,7,8-HXCDD		13C-1,2,3,7,8,9-HXCDD	0.987	0.977-1.000
13C-1,2,3,6,7,8-HXCDD		13C-1,2,3,7,8,9-HXCDD	0.990	0.981-1.003
13C-1,2,3,4,6,7,8-HPCDD		13C-1,2,3,7,8,9-HXCDD	1.095	1.086-1.110
13C-OCDD		13C-1,2,3,7,8,9-HXCDD	1.179	1.032-1.311
13C-2,3,7,8-TCDF		13C-1,2,3,4-TCDD	0.967	0.923-1.103
13C-1,2,3,7,8-PECDF		13C-1,2,3,4-TCDD	1.284	1.000-1.425
13C-2,3,4,7,8-PECDF		13C-1,2,3,4-TCDD	1.352	1.011-1.526
13C-1,2,3,4,7,8-HXCDF		13C-1,2,3,7,8,9-HXCDD	0.954	0.944-0.970
13C-1,2,3,6,7,8-HXCDF		13C-1,2,3,7,8,9-HXCDD	0.958	0.949-0.975
13C-1,2,3,7,8,9-HXCDF		13C-1,2,3,7,8,9-HXCDD	1.005	0.977-1.047
13C-2,3,4,6,7,8-HXCDF		13C-1,2,3,7,8,9-HXCDD	0.980	0.959-1.021
13C-1,2,3,4,6,7,8-HPCDF		13C-1,2,3,7,8,9-HXCDD	1.062	1.043-1.085
13C-1,2,3,4,7,8,9-HPCDF		13C-1,2,3,7,8,9-HXCDD	1.105	1.057-1.151
CLEANUP STANDARD				
37CL-2,3,7,8-TCDD		13C-1,2,3,4-TCDD	1.001	0.989-1.052

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Elleanor Andaya_____

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SGS AXYS METHOD MLA-017 Rev 20

Form 4A
PCDD/PCDF CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	25-Jun-2019	**VER Data Filename:**	DX9M_093 S: 24
Instrument ID:	HR GC/MS	**Analysis Date:**	13-Sep-2019
GC Column ID:	DB5	**Analysis Time:**	06:27:39

COMPOUND	LAB FLAG [1]	MZ's FORMING RATIO [2]	ION ABUND. RATIO	QC LIMITS [3]	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL) [4]
2,3,7,8-TCDD		**M/M+2**	0.79	0.65-0.89	10.6	7.8 - 12.9
1,2,3,7,8-PECDD [5]		**M/M+2**	0.63	0.52-0.70	50.2	39 - 65
1,2,3,4,7,8-HXCDD		**M+2/M+4**	1.22	1.05-1.43	49.6	39 - 64
1,2,3,6,7,8-HXCDD		**M+2/M+4**	1.20	1.05-1.43	50.5	39 - 64
1,2,3,7,8,9-HXCDD		**M+2/M+4**	1.22	1.05-1.43	52.6	41 - 61
1,2,3,4,6,7,8-HPCDD		**M+2/M+4**	1.06	0.88-1.20	49.9	43 - 58
OCDD		**M+2/M+4**	0.89	0.76-1.02	101	79 - 126
2,3,7,8-TCDF		**M/M+2**	0.80	0.65-0.89	10.2	8.4 - 12
1,2,3,7,8-PECDF		**M+2/M+4**	1.58	1.32-1.78	49.4	41 - 60
2,3,4,7,8-PECDF		**M+2/M+4**	1.55	1.32-1.78	51.4	41 - 61
1,2,3,4,7,8-HXCDF		**M+2/M+4**	1.23	1.05-1.43	53.0	45 - 56
1,2,3,6,7,8-HXCDF		**M+2/M+4**	1.26	1.05-1.43	52.0	44 - 57
1,2,3,7,8,9-HXCDF		**M+2/M+4**	1.22	1.05-1.43	51.6	45 - 56
2,3,4,6,7,8-HXCDF		**M+2/M+4**	1.23	1.05-1.43	52.1	44 - 57
1,2,3,4,6,7,8-HPCDF		**M+2/M+4**	1.02	0.88-1.20	52.1	45 - 55
1,2,3,4,7,8,9-HPCDF		**M+2/M+4**	1.04	0.88-1.20	55.7	43 - 58
OCDF		**M+2/M+4**	0.92	0.76-1.02	94.5	63 - 159

(1) Where applicable, custom lab flags have been used on this report.
(2) See Table 8, Method 1613, for m/z specifications.
(3) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.
(4) Contract-required concentration range as determined from the percent of the test concentration in Table 6, Method 1613, under VER.
(5) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Elleanor Andaya_____

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Report Filename: 1613_DIOXINS_DX9M_093S24__Form4A_SJ2620042.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 4B
PCDD/PCDF CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	25-Jun-2019	**VER Data Filename:**	DX9M_093 S: 24
Instrument ID:	HR GC/MS	**Analysis Date:**	13-Sep-2019
GC Column ID:	DB5	**Analysis Time:**	06:27:39

LABELED COMPOUND	LAB FLAG [1]	MZ's FORMING RATIO [2]	ION ABUND. RATIO	QC LIMITS [3]	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL) [4]
13C-2,3,7,8-TCDD		**M/M+2**	0.75	0.65-0.89	95.6	82 - 121
13C-1,2,3,7,8-PECDD [5]		**M/M+2**	0.61	0.52-0.70	103	62 - 160
13C-1,2,3,4,7,8-HXCDD		**M+2/M+4**	1.23	1.05-1.43	94.5	85 - 117
13C-1,2,3,6,7,8-HXCDD		**M+2/M+4**	1.25	1.05-1.43	95.5	85 - 118
13C-1,2,3,4,6,7,8-HPCDD		**M+2/M+4**	1.08	0.88-1.20	111	72 - 138
13C-OCDD		**M+2/M+4**	0.90	0.76-1.02	252	96 - 415
13C-2,3,7,8-TCDF		**M/M+2**	0.81	0.65-0.89	91.4	71 - 140
13C-1,2,3,7,8-PECDF		**M+2/M+4**	1.55	1.32-1.78	101	76 - 130
13C-2,3,4,7,8-PECDF		**M+2/M+4**	1.56	1.32-1.78	103	77 - 130
13C-1,2,3,4,7,8-HXCDF		**M/M+2**	0.52	0.43-0.59	88.5	76 - 131
13C-1,2,3,6,7,8-HXCDF		**M/M+2**	0.51	0.43-0.59	86.2	70 - 143
13C-1,2,3,7,8,9-HXCDF		**M/M+2**	0.51	0.43-0.59	98.5	74 - 135
13C-2,3,4,6,7,8-HXCDF		**M/M+2**	0.50	0.43-0.59	96.7	73 - 137
13C-1,2,3,4,6,7,8-HPCDF		**M/M+2**	0.44	0.37-0.51	103	78 - 129
13C-1,2,3,4,7,8,9-HPCDF		**M/M+2**	0.46	0.37-0.51	114	77 - 129
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD [6]					9.50	7.9 - 12.7

(1) Where applicable, custom lab flags have been used on this report.
(2) See Table 8, Method 1613, for m/z specifications.
(3) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.
(4) Contract-required concentration range as determined from the percent of the test concentration in Table 6, Method 1613, under VER.
(5) Alternate confirmation and quantitation ions used for native and labeled PECDD.
(6) No ion abundance ratio for 37Cl4-2,3,7,8-TCDD; concentration reported.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Elleanor Andaya_____

For Axys Internal Use Only [XSL Template: Form4B.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_DX9M_093S24__Form4B_SJ2620042.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 6A
PCDD/PCDF RELATIVE RETENTION TIMES

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	25-Jun-2019	**VER Data Filename:**	DX9M_093 S: 24
Instrument ID:	HR GC/MS	**Analysis Date:**	13-Sep-2019
GC Column ID:	DB5	**Analysis Time:**	06:27:39

COMPOUND	LAB FLAG [1]	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS [2]
2,3,7,8-TCDD		13C-2,3,7,8-TCDD	1.001	0.999-1.002
1,2,3,7,8-PECDD [3]		13C-1,2,3,7,8-PECDD	1.000	0.999-1.002
1,2,3,4,7,8-HXCDD		13C-1,2,3,4,7,8-HXCDD	1.000	0.999-1.001
1,2,3,6,7,8-HXCDD		13C-1,2,3,6,7,8-HXCDD	1.000	0.998-1.004
1,2,3,7,8,9-HXCDD		13C-1,2,3,6,7,8-HXCDD	1.010	1.000-1.019
1,2,3,4,6,7,8-HPCDD		13C-1,2,3,4,6,7,8-HPCDD	1.000	0.999-1.001
OCDD		13C-OCDD	1.000	0.999-1.001
2,3,7,8-TCDF		13C-2,3,7,8-TCDF	1.001	0.999-1.003
1,2,3,7,8-PECDF		13C-1,2,3,7,8-PECDF	1.001	0.999-1.002
2,3,4,7,8-PECDF		13C-2,3,4,7,8-PECDF	1.001	0.999-1.002
1,2,3,4,7,8-HXCDF		13C-1,2,3,4,7,8-HXCDF	1.000	0.999-1.001
1,2,3,6,7,8-HXCDF		13C-1,2,3,6,7,8-HXCDF	1.001	0.997-1.005
1,2,3,7,8,9-HXCDF		13C-1,2,3,7,8,9-HXCDF	1.001	0.999-1.001
2,3,4,6,7,8-HXCDF		13C-2,3,4,6,7,8-HXCDF	1.000	0.999-1.001
1,2,3,4,6,7,8-HPCDF		13C-1,2,3,4,6,7,8-HPCDF	1.000	0.999-1.001
1,2,3,4,7,8,9-HPCDF		13C-1,2,3,4,7,8,9-HPCDF	1.000	0.999-1.001
OCDF		13C-OCDD	1.002	0.999-1.008

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Elleanor Andaya_____

For Axys Internal Use Only [XSL Template: Form6A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15; Report Filename: 1613_DIOXINS_DX9M_093S24__Form6A_SJ2620042.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 6B
PCDD/PCDF RELATIVE RETENTION TIMES

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	25-Jun-2019	**VER Data Filename:**	DX9M_093 S: 24
Instrument ID:	HR GC/MS	**Analysis Date:**	13-Sep-2019
GC Column ID:	DB5	**Analysis Time:**	06:27:39

	LAB FLAG [1]	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS [2]
LABELED COMPOUND				
13C-2,3,7,8-TCDD		13C-1,2,3,4-TCDD	1.013	0.976-1.043
13C-1,2,3,7,8-PECDD		13C-1,2,3,4-TCDD	1.384	1.000-1.567
13C-1,2,3,4,7,8-HXCDD		13C-1,2,3,7,8,9-HXCDD	0.987	0.977-1.000
13C-1,2,3,6,7,8-HXCDD		13C-1,2,3,7,8,9-HXCDD	0.990	0.981-1.003
13C-1,2,3,4,6,7,8-HPCDD		13C-1,2,3,7,8,9-HXCDD	1.095	1.086-1.110
13C-OCDD		13C-1,2,3,7,8,9-HXCDD	1.179	1.032-1.311
13C-2,3,7,8-TCDF		13C-1,2,3,4-TCDD	0.967	0.923-1.103
13C-1,2,3,7,8-PECDF		13C-1,2,3,4-TCDD	1.284	1.000-1.425
13C-2,3,4,7,8-PECDF		13C-1,2,3,4-TCDD	1.352	1.011-1.526
13C-1,2,3,4,7,8-HXCDF		13C-1,2,3,7,8,9-HXCDD	0.954	0.944-0.970
13C-1,2,3,6,7,8-HXCDF		13C-1,2,3,7,8,9-HXCDD	0.958	0.949-0.975
13C-1,2,3,7,8,9-HXCDF		13C-1,2,3,7,8,9-HXCDD	1.005	0.977-1.047
13C-2,3,4,6,7,8-HXCDF		13C-1,2,3,7,8,9-HXCDD	0.981	0.959-1.021
13C-1,2,3,4,6,7,8-HPCDF		13C-1,2,3,7,8,9-HXCDD	1.063	1.043-1.085
13C-1,2,3,4,7,8,9-HPCDF		13C-1,2,3,7,8,9-HXCDD	1.105	1.057-1.151
CLEANUP STANDARD				
37CL-2,3,7,8-TCDD		13C-1,2,3,4-TCDD	1.001	0.989-1.052

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Elleanor Andaya_____

For Axys Internal Use Only [XSL Template: Form6B.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15; Report Filename: 1613_DIOXINS_DX9M_093S24__Form6B_SJ2620042.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 5

PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Instrument ID:	HR GC/MS	**Initial Calibration Date:**		25-Jun-2019
RT Window Data Filename:	DX9M_093 S: 1	**Analysis Date:**	12-Sep-2019	**Time:** 09:06:33
DB-5 IS Data Filename:	DX9M_093 S: 1	**Analysis Date:**	12-Sep-2019	**Time:** 09:06:33
DB-225 IS Data Filename:		**Analysis Date:**		**Time:**

DB5 RT WINDOW DEFINING STANDARDS RESULT

ISOMERS	ABSOLUTE RT	ISOMERS	ABSOLUTE RT
1,3,6,8-TCDD (F)	22:57	**1,3,6,8-TCDF (F)**	21:26
1,2,8,9-TCDD (L)	28:18	**1,2,8,9-TCDF (L)**	28:09
1,2,4,7,9-PECDD (F)	32:00	**1,3,4,6,8-PECDF (F)**	28:51
1,2,3,8,9-PECDD (L)	37:03	**1,2,3,8,9-PECDF (L)**	37:07
1,2,4,6,7,9-HXCDD (F)	40:03	**1,2,3,4,6,8-HXCDF (F)**	39:00
1,2,3,4,6,7-HXCDD (L)	42:43	**1,2,3,4,8,9-HXCDF (L)**	43:03
1,2,3,4,6,7,9-HPCDD (F)	45:50	**1,2,3,4,6,7,8-HPCDF (F)**	45:22
1,2,3,4,6,7,8-HPCDD (L)	46:45	**1,2,3,4,7,8,9-HPCDF (L)**	47:11

(F) = First eluting isomer (DB-5); (L) = Last eluting isomer (DB-5)

ISOMER SPECIFICITY (IS) TEST STANDARDS RESULT

Isomers	% Valley Height Between Compared Peaks	Isomers	% Valley Height Between Compared Peaks
1,2,3,4-TCDD **1,2,7,8-TCDD**	0	**1,2,3,8-TCDD** **2,3,7,8-TCDD**	9
1,2,7,8-TCDD **1,4,7,8-TCDD**	0	**2,3,4,7-TCDF** **2,3,7,8-TCDF**	N/A
1,4,7,8-TCDD **1,2,3,7-TCDD**	0	**2,3,7,8-TCDF** **1,2,3,9-TCDF**	N/A
1,2,3,7-TCDD **1,2,3,8-TCDD**	DB-5 column; co-elute as per Figure 6 in Method		

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

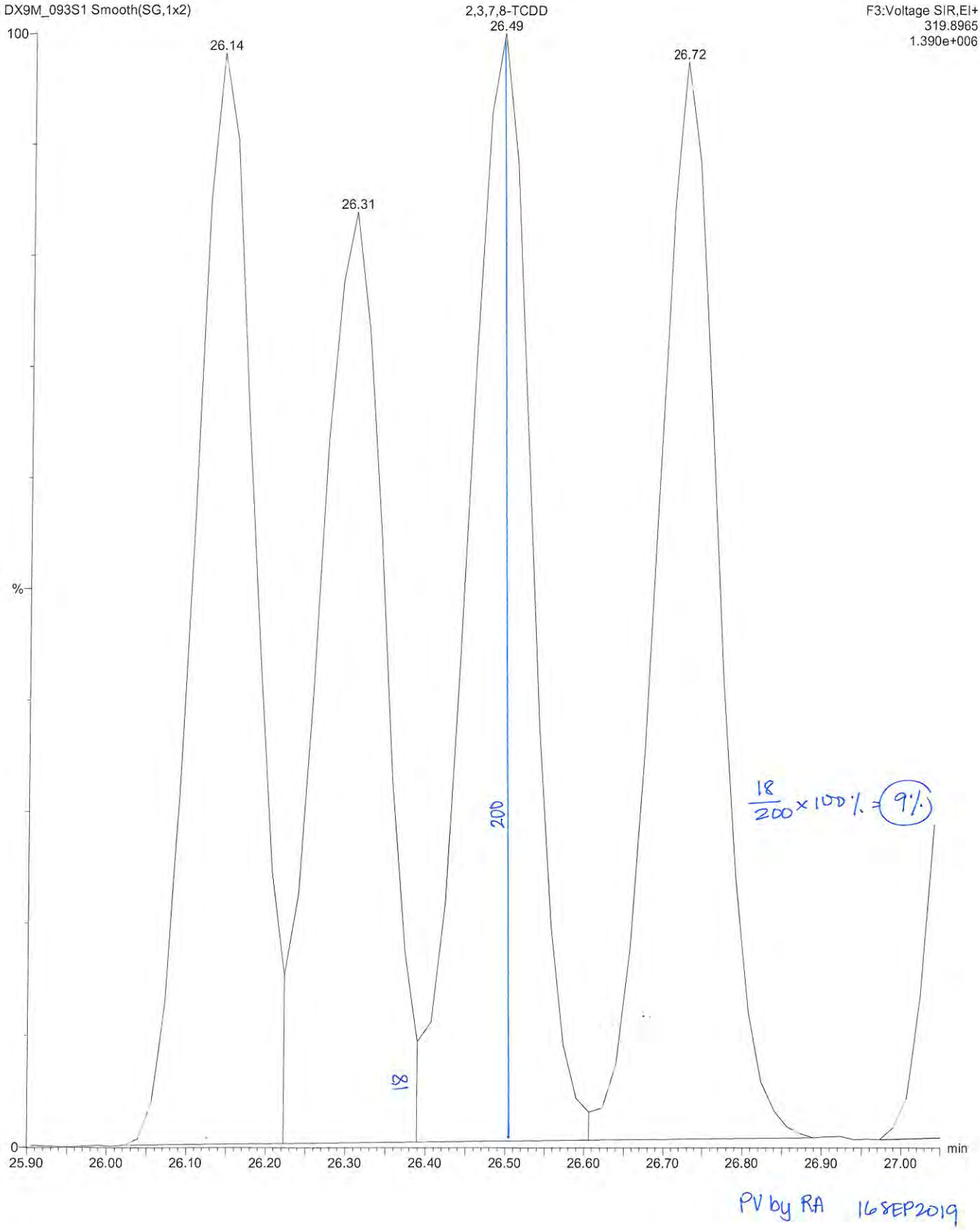
Signed: _____Elleanor Andaya_____

For Axys Internal Use Only [XSL Template: DXForm5.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15; Report Filename: 1613_DIOXINS__DX9M_093S1_Form5_SJ2619815.html; Workgroup: WG69303; Design ID: 3698]

Method: G:\Masslynx\Inst_M\Master methods and layouts\Current Methods\DX_Win_ResC.mdb 13 Mar 2017 14:40:23
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

Name: DX9M_093S1, Date: 12-Sep-2019, Time: 09:06:33, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

2,3,7,8-TCDD



PV by RA 16SEP2019

SGS AXYS METHOD MLA-017 Rev 20

Form 5

PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Instrument ID:	HR GC/MS	**Initial Calibration Date:**		25-Jun-2019
RT Window Data Filename:	DX9M_093 S: 13	**Analysis Date:**	12-Sep-2019	**Time:** 20:24:00
DB-5 IS Data Filename:	DX9M_093 S: 13	**Analysis Date:**	12-Sep-2019	**Time:** 20:24:00
DB-225 IS Data Filename:		**Analysis Date:**		**Time:**

DB5 RT WINDOW DEFINING STANDARDS RESULT

ISOMERS	ABSOLUTE RT	ISOMERS	ABSOLUTE RT
1,3,6,8-TCDD (F)	22:56	**1,3,6,8-TCDF (F)**	21:25
1,2,8,9-TCDD (L)	28:17	**1,2,8,9-TCDF (L)**	28:09
1,2,4,7,9-PECDD (F)	31:59	**1,3,4,6,8-PECDF (F)**	28:50
1,2,3,8,9-PECDD (L)	37:02	**1,2,3,8,9-PECDF (L)**	37:06
1,2,4,6,7,9-HXCDD (F)	40:02	**1,2,3,4,6,8-HXCDF (F)**	38:59
1,2,3,4,6,7-HXCDD (L)	42:42	**1,2,3,4,8,9-HXCDF (L)**	43:02
1,2,3,4,6,7,9-HPCDD (F)	45:49	**1,2,3,4,6,7,8-HPCDF (F)**	45:21
1,2,3,4,6,7,8-HPCDD (L)	46:44	**1,2,3,4,7,8,9-HPCDF (L)**	47:10

(F) = First eluting isomer (DB-5); (L) = Last eluting isomer (DB-5)

ISOMER SPECIFICITY (IS) TEST STANDARDS RESULT

Isomers	% Valley Height Between Compared Peaks	Isomers	% Valley Height Between Compared Peaks
1,2,3,4-TCDD **1,2,7,8-TCDD**	0	**1,2,3,8-TCDD** **2,3,7,8-TCDD**	13
1,2,7,8-TCDD **1,4,7,8-TCDD**	0	**2,3,4,7-TCDF** **2,3,7,8-TCDF**	N/A
1,4,7,8-TCDD **1,2,3,7-TCDD**	0	**2,3,7,8-TCDF** **1,2,3,9-TCDF**	N/A
1,2,3,7-TCDD **1,2,3,8-TCDD**	DB-5 column; co-elute as per Figure 6 in Method		

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

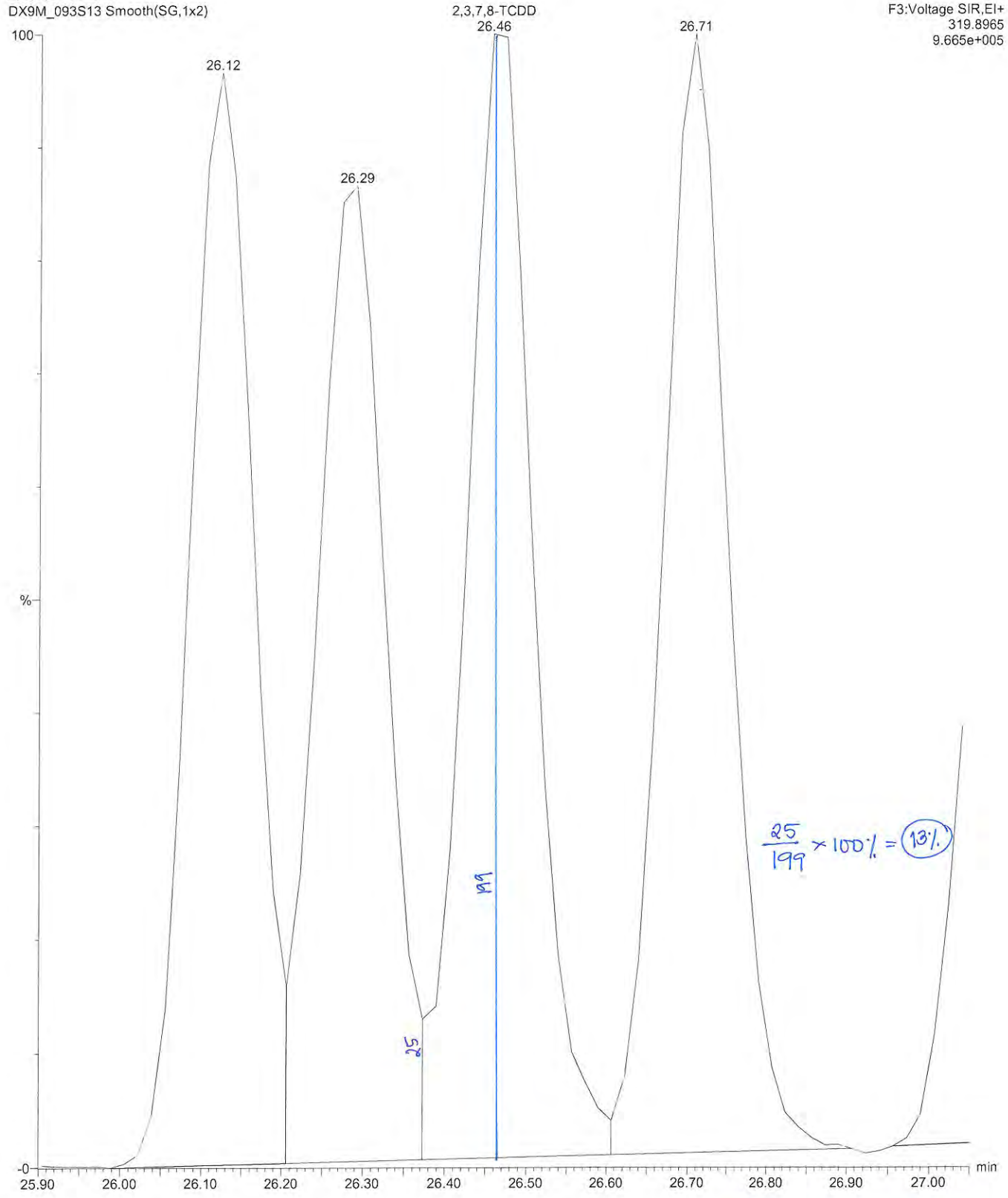
Signed: _____Elleanor Andaya_____

For Axys Internal Use Only [XSL Template: DXForm5.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15; Report Filename: 1613_DIOXINS__DX9M_093S13_Form5_SJ2619993.html; Workgroup: WG69303; Design ID: 3698]

Method: G:\Masslynx\Inst_M\Master methods and layouts\Current Methods\DX_Win_ResC.mdb 13 Mar 2017 14:40:23
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

Name: DX9M_093S13, Date: 12-Sep-2019, Time: 20:24:00, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

2,3,7,8-TCDD



PV by RA 16SEP2019

SGS AXYS METHOD MLA-017 Rev 20

Form 5

PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Instrument ID:	HR GC/MS	**Initial Calibration Date:**		25-Jun-2019
RT Window Data Filename:	DX9M_093 S: 24	**Analysis Date:**	13-Sep-2019	**Time:** 06:27:39
DB-5 IS Data Filename:	DX9M_093 S: 24	**Analysis Date:**	13-Sep-2019	**Time:** 06:27:39
DB-225 IS Data Filename:		**Analysis Date:**		**Time:**

DB5 RT WINDOW DEFINING STANDARDS RESULT

ISOMERS	ABSOLUTE RT	ISOMERS	ABSOLUTE RT
1,3,6,8-TCDD (F)	22:56	**1,3,6,8-TCDF (F)**	21:25
1,2,8,9-TCDD (L)	28:17	**1,2,8,9-TCDF (L)**	28:08
1,2,4,7,9-PECDD (F)	31:59	**1,3,4,6,8-PECDF (F)**	28:51
1,2,3,8,9-PECDD (L)	37:02	**1,2,3,8,9-PECDF (L)**	37:07
1,2,4,6,7,9-HXCDD (F)	40:02	**1,2,3,4,6,8-HXCDF (F)**	39:00
1,2,3,4,6,7-HXCDD (L)	42:42	**1,2,3,4,8,9-HXCDF (L)**	43:03
1,2,3,4,6,7,9-HPCDD (F)	45:50	**1,2,3,4,6,7,8-HPCDF (F)**	45:22
1,2,3,4,6,7,8-HPCDD (L)	46:45	**1,2,3,4,7,8,9-HPCDF (L)**	47:10

(F) = First eluting isomer (DB-5); (L) = Last eluting isomer (DB-5)

ISOMER SPECIFICITY (IS) TEST STANDARDS RESULT

Isomers	% Valley Height Between Compared Peaks	Isomers	% Valley Height Between Compared Peaks
1,2,3,4-TCDD **1,2,7,8-TCDD**	0	**1,2,3,8-TCDD** **2,3,7,8-TCDD**	15
1,2,7,8-TCDD **1,4,7,8-TCDD**	0	**2,3,4,7-TCDF** **2,3,7,8-TCDF**	N/A
1,4,7,8-TCDD **1,2,3,7-TCDD**	0	**2,3,7,8-TCDF** **1,2,3,9-TCDF**	N/A
1,2,3,7-TCDD **1,2,3,8-TCDD**	DB-5 column; co-elute as per Figure 6 in Method		

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Leanne Henley_____

For Axys Internal Use Only [XSL Template: DXForm5.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15; Report Filename: 1613_DIOXINS__DX9M_093S24_Form5_SJ2620053.html; Workgroup: WG69303; Design ID: 3698]

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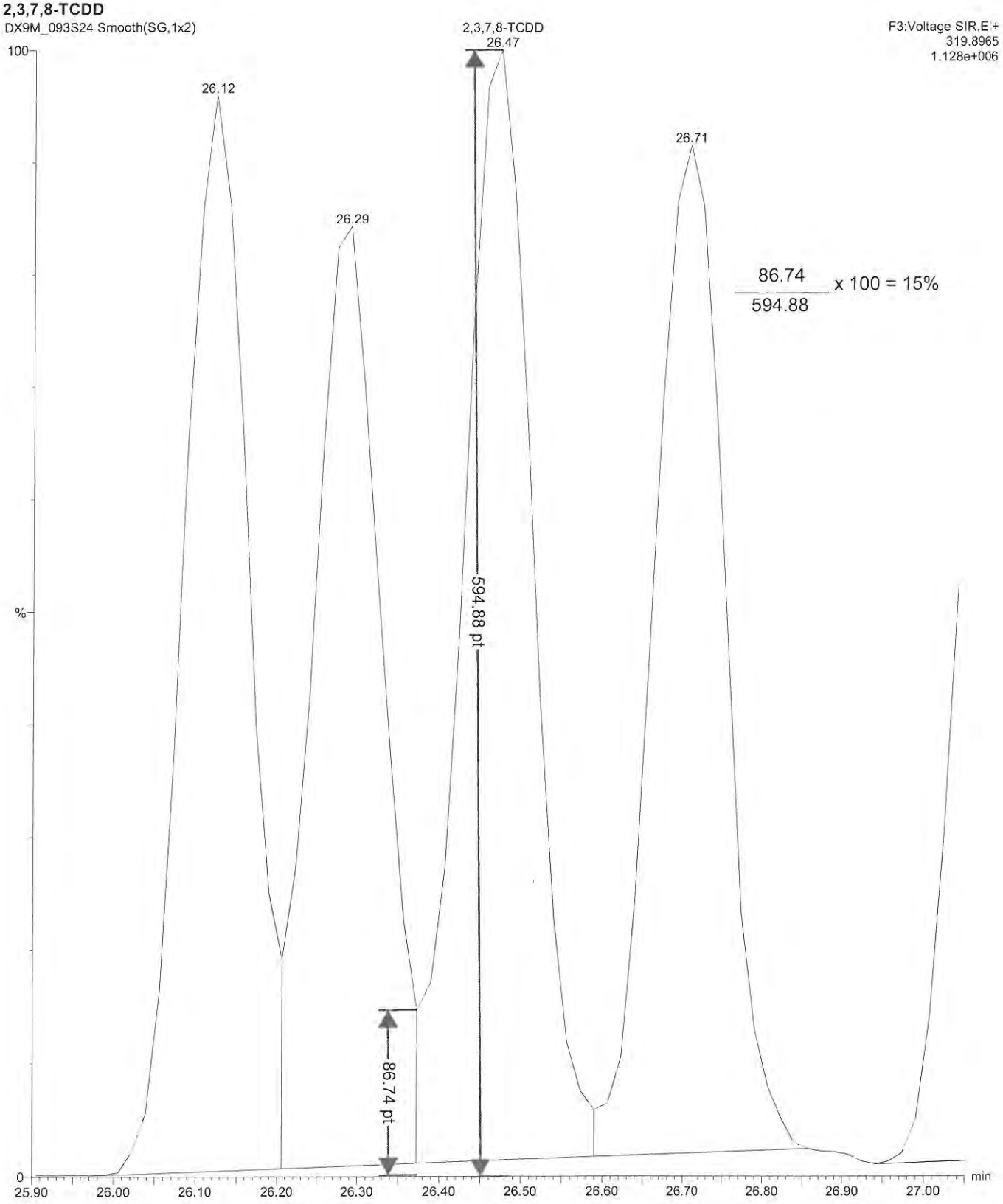
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

Name: DX9M_093S24, Date: 13-Sep-2019, Time: 06:27:39, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

2,3,7,8-TCDD



PV by LHE
16-SEPT-2019

Experiment : DX-DB225-4_01
GC Program : DX-DB225-4_01
Column type : DB-225
Serial # : USA226732J/USP
kPa : 191
Vol injected: 2.0uL
PMT Voltage : 415

Temps -source: 260
-s resv: 140
-re_ent: 220
-cap_1 : 235
-cap_2 : 220

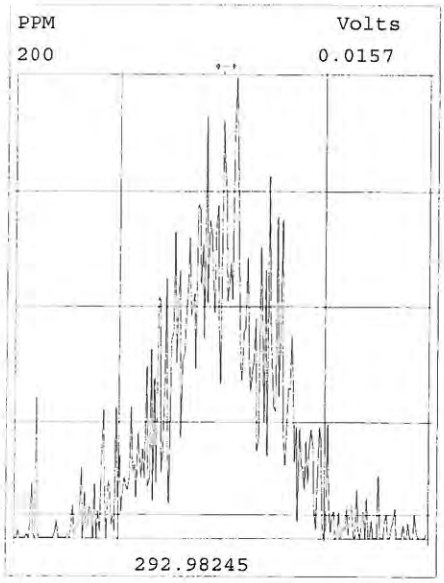
Tune : FS
List : XX/FS
Check :
LIMS :
Logfile:

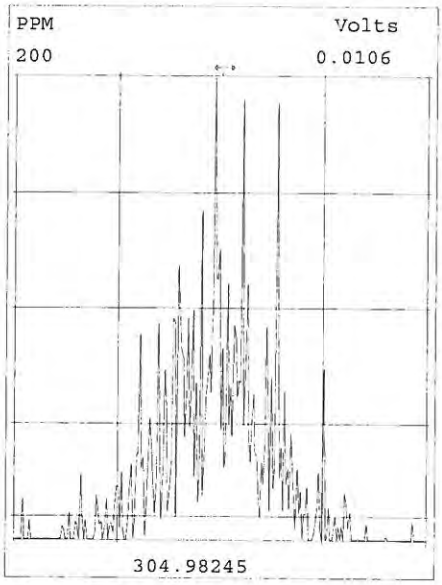
Date -list : 12-SEP-2019
-liner : 07-SEP-2019
-septum: 06-SEP-2019
-guard : 60CM 02-AUG-2019
-column: 20CM 23-APR-2019
-t line: 60cm 23-APR-2019

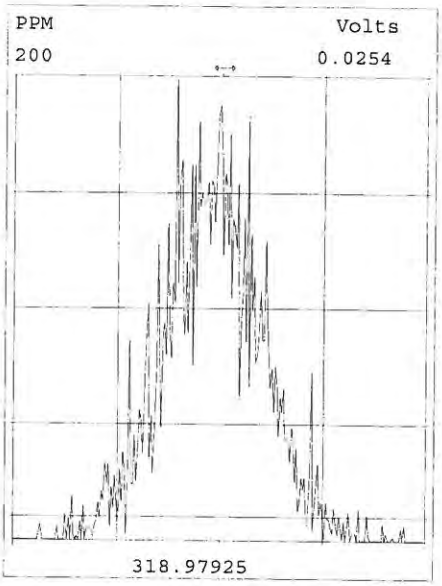
#	Data file	S	V	Sample Text	Comments	Acquisition Date/Time
1	DB9T_084	1	1	DX003A-RSN,,/01-17	1,,2.0uL WIN/RES	12-SEP-19 19:44:02
2	DB9T_084	2	2	DX042D-CAL,,/01-93	1,,2.0uL CS-3/CAL	12-SEP-19 20:28:45
3	DB9T_084	3	3	Toluene,,	1,,2.0uL	12-SEP-19 21:13:29
4	DB9T_084	4	4	Toluene,,	1,,2.0uL	12-SEP-19 21:58:13
5	DB9T_084	5	5	L31654-1,,	1,WG69303,2.0/20uL	12-SEP-19 22:42:57
6	DB9T_084	6	6	L31654-2,,	1,WG69303,2.0/20uL	12-SEP-19 23:27:43
7	DB9T_084	7	7	L31654-3,,	1,WG69303,2.0/20uL	13-SEP-19 00:12:26
8	DB9T_084	8	8	L31654-4,,	1,WG69303,2.0/20uL	13-SEP-19 00:57:10
9	DB9T_084	9	9	L31654-5,,	1,WG69303,2.0/20uL	13-SEP-19 01:41:53
10	DB9T_084	10	10	L31654-6,,	1,WG69303,2.0/20uL	13-SEP-19 02:26:36
11	DB9T_084	11	11	DX042D-CAL,,/01-93	1,,2.0uL CS-3/CAL	13-SEP-19 03:11:19

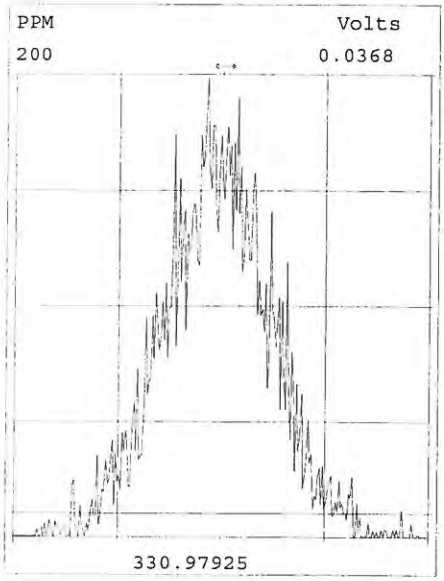
Approved by FS
12 Sep 2019

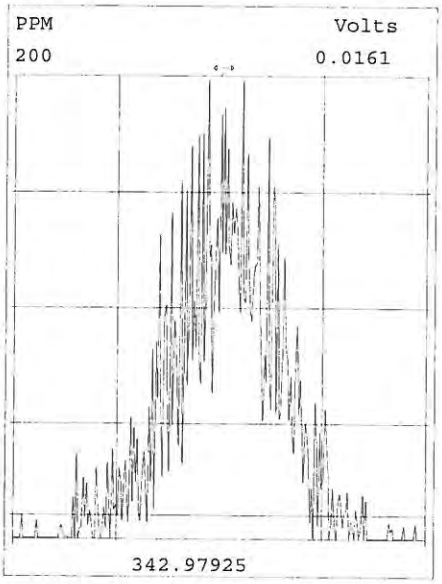
Peak Locate Examination:12-SEP-2019:19:42 File:DB9T_084CAL
Experiment:DX-DB225-4_01 Function:1 Reference:PFK

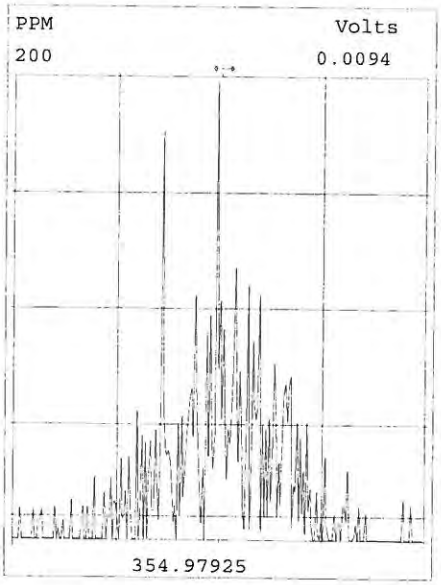


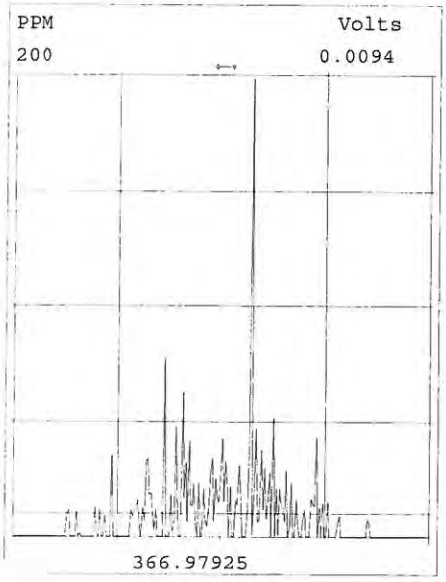


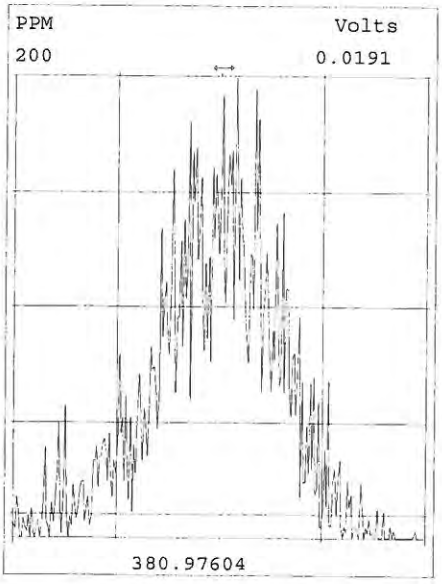




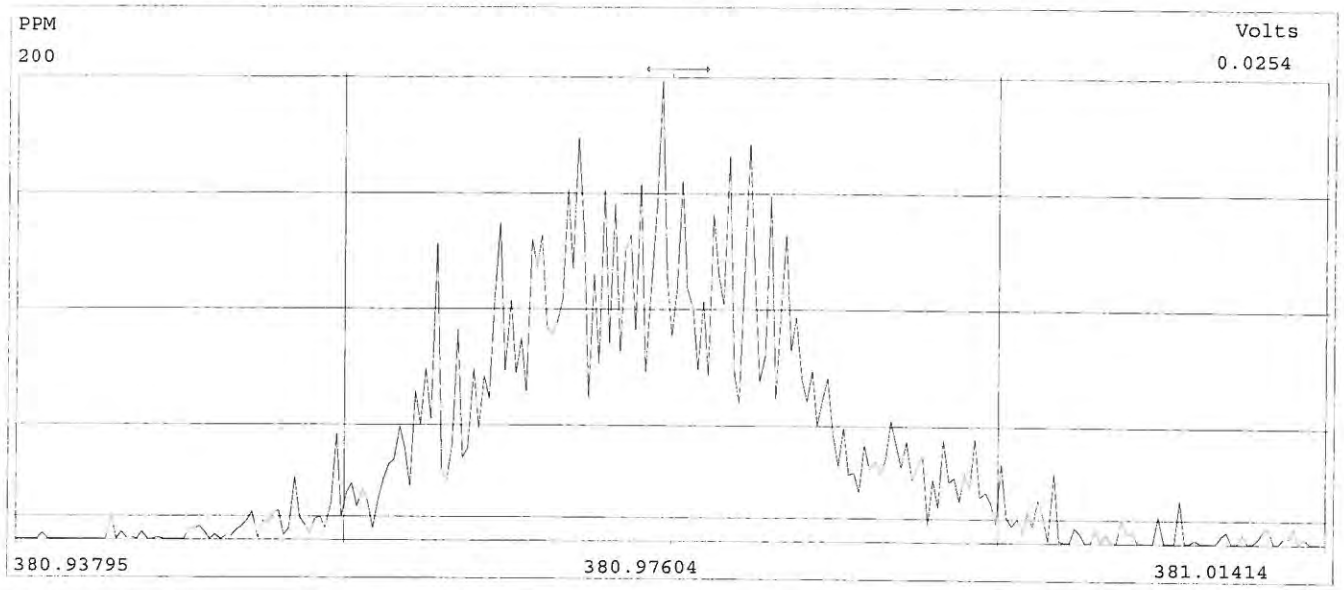


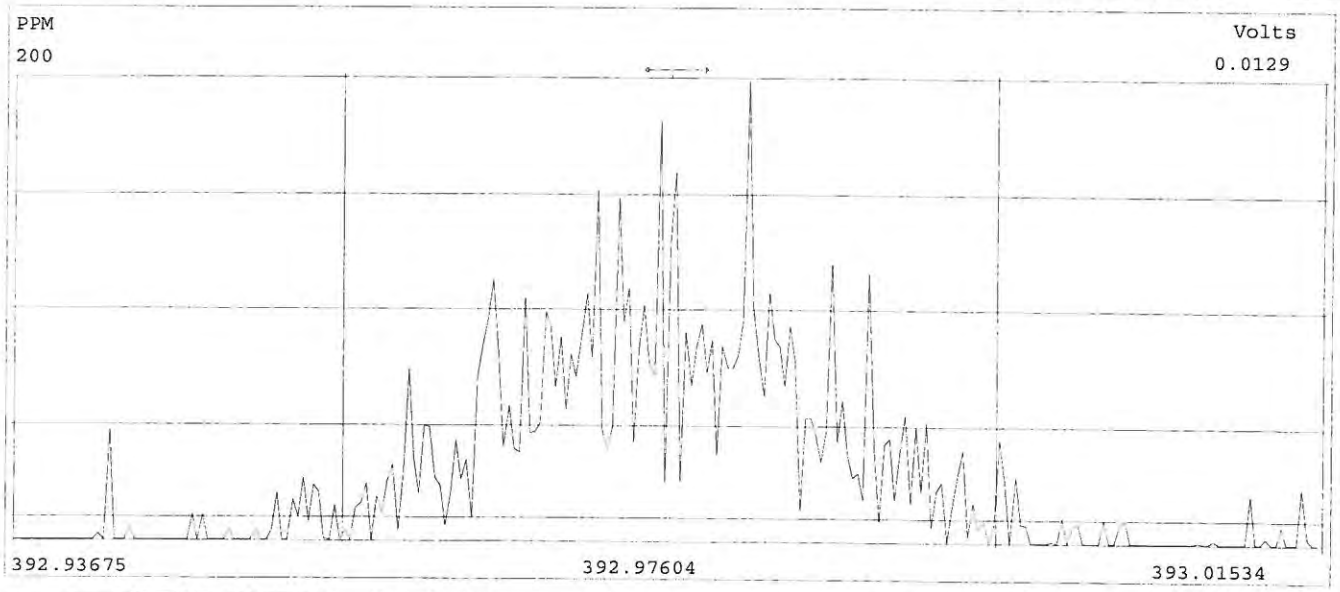


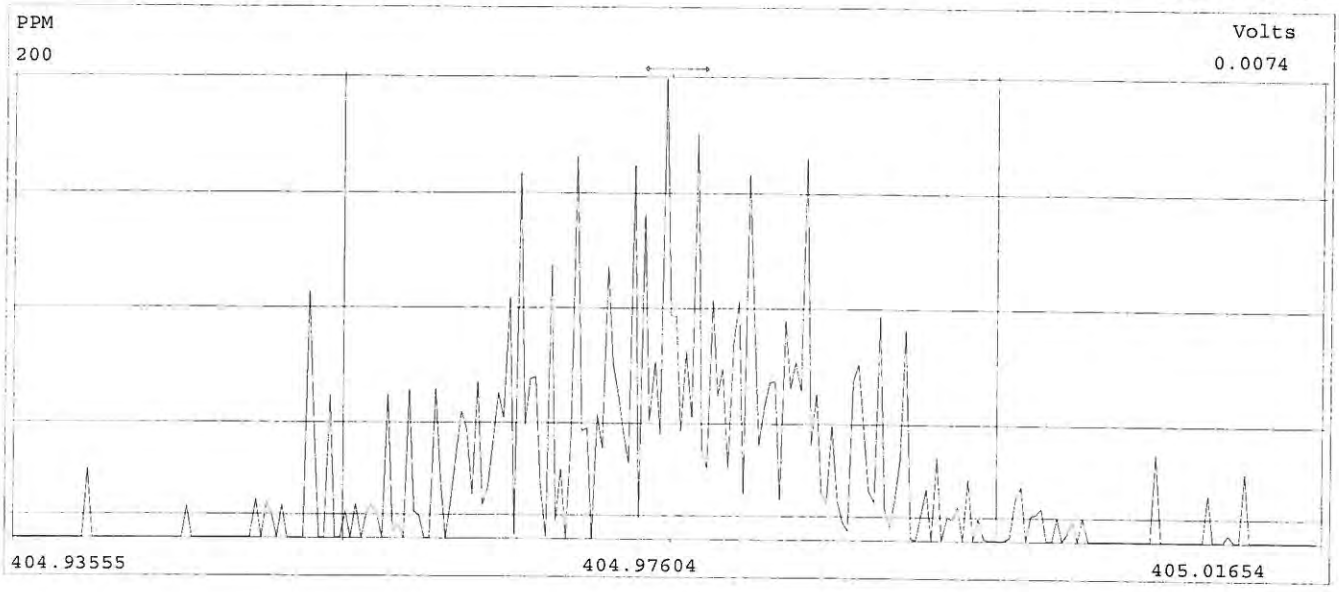




Peak Locate Examination:12-SEP-2019:19:43 File:DB9T_084CAL
Experiment:DX-DB225-4_01 Function:2 Reference:PFK

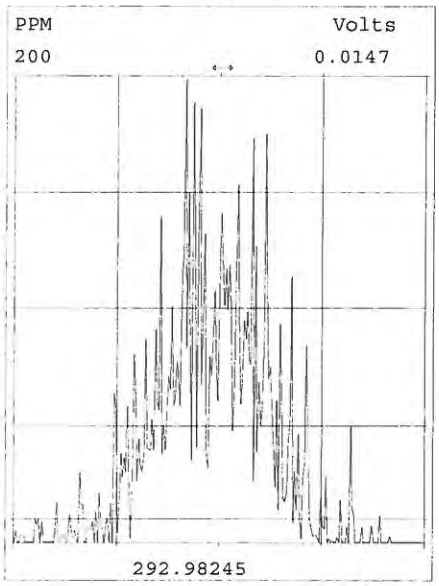


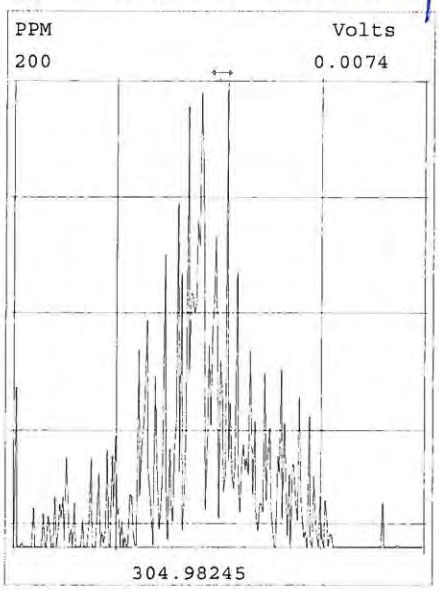


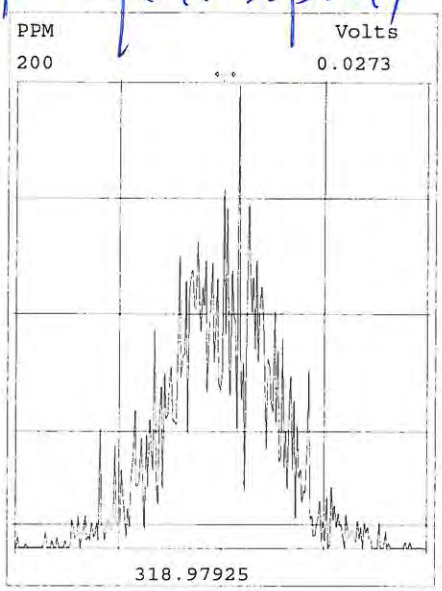


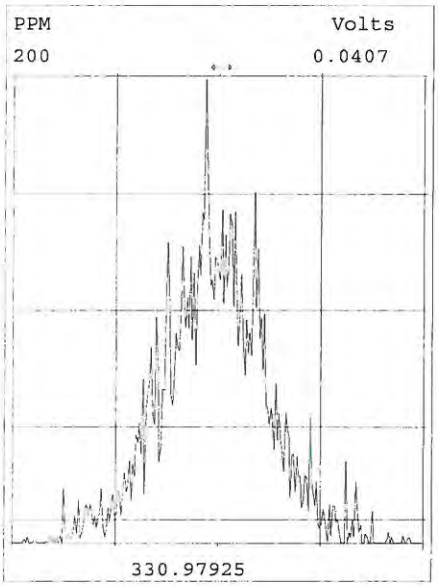
Peak Locate Examination:13-SEP-2019:07:35 File:DB9T_084CAL2
Experiment:DX-DB225-4_01 Function:1 Reference:PFK

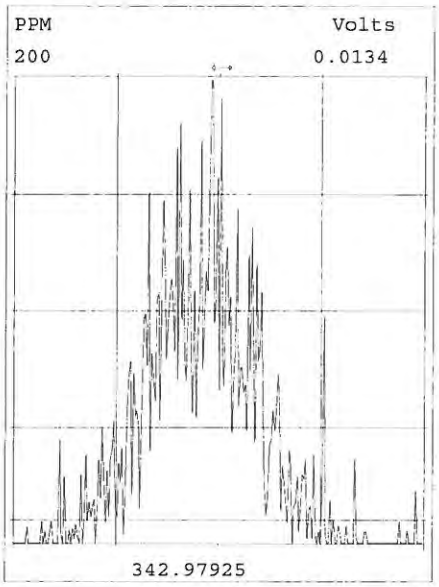
Approved for 13 Sep 2019

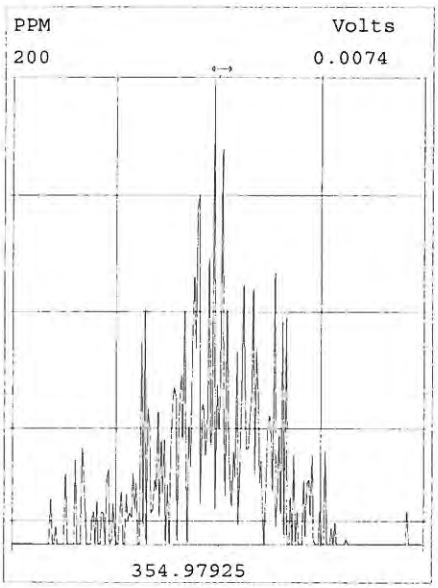


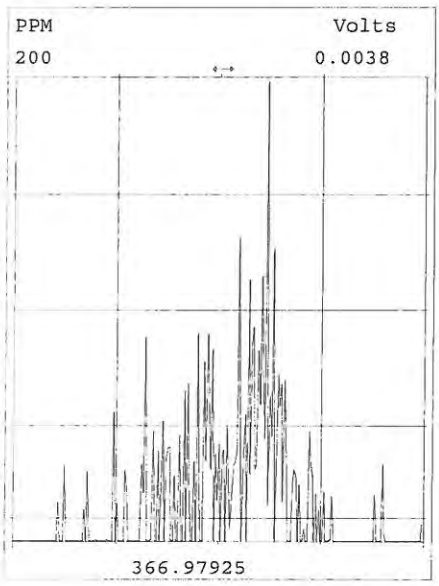


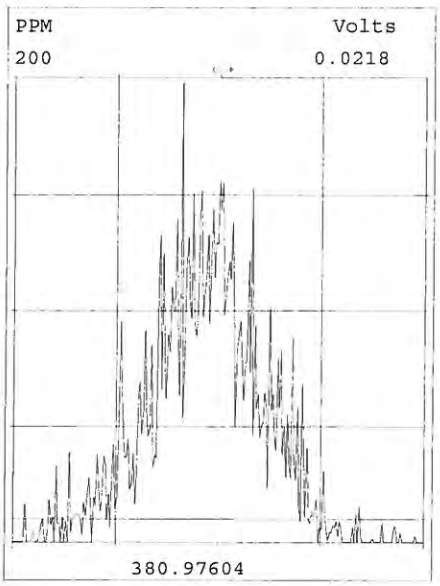




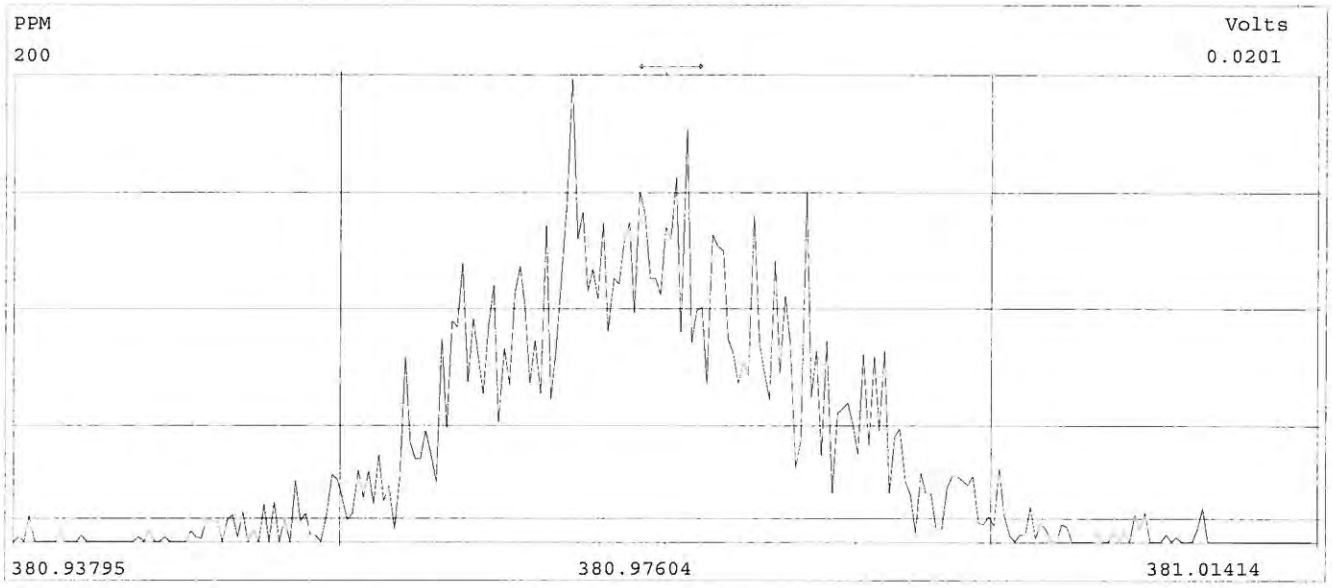


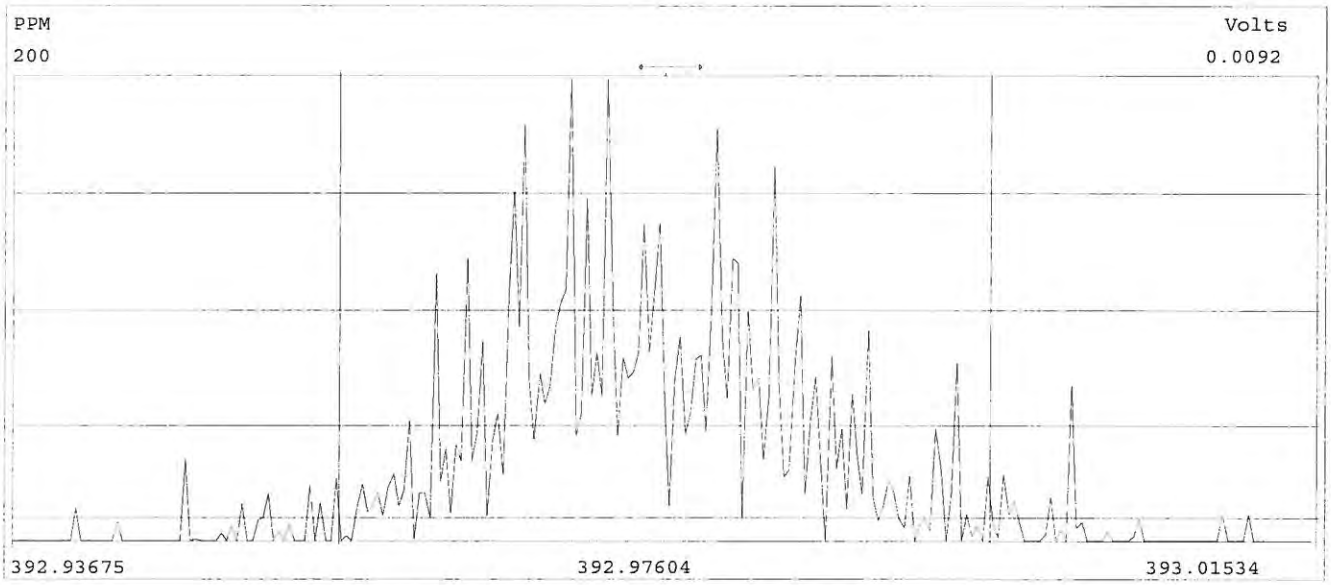


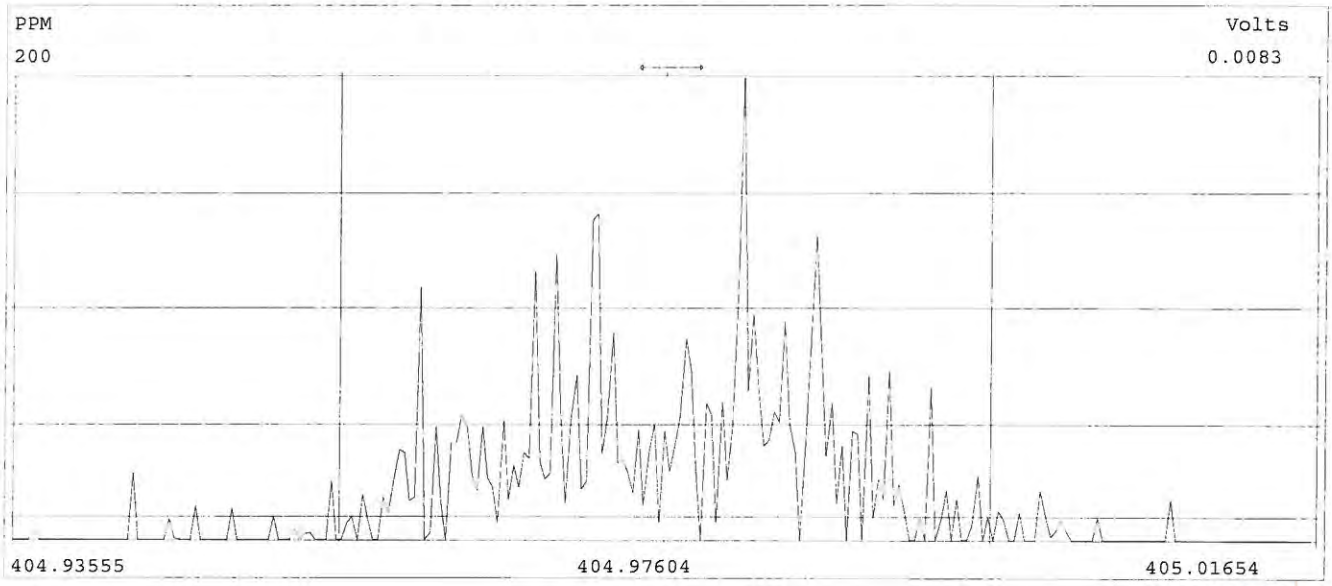




Peak Locate Examination:13-SEP-2019:07:35 File:DB9T_084CAL2
Experiment:DX-DB225-4_01 Function:2 Reference:PFK







DB9T-084-A

	c/q	Data Area	Data File	S	I	AnalyteTable	Factr #1	Factr #2	Size	HC	Sample Text	Comments	Done
1	c	ultt	DB9T_055	4	1	db-hxd-c2	1.0000	1.0000	1.000000	y	DX042B-CAL,,»	1,,2.0uL CS-1	y
2	c	ultt	DB9T_055	3	1	db-hxd-c2	4.0000	1.0000	1.000000	y	DX042C-CAL,,»	1,,2.0uL CS-2	y
3	c	ultt	DB9T_055	2	1	db-hxd-c2	20.0000	1.0000	1.000000	y	DX042D-CAL,,»	1,,2.0uL CS-3/CAL	y
4	c	ultt	DB9T_055	7	1	db-hxd-c2	80.0000	1.0000	1.000000	y	DX042E-CAL,,»	1,,2.0uL CS-4	y
5	c	ultt	DB9T_055	6	1	db-hxd-c2	400.0000	1.0000	1.000000	y	DX042F-CAL,,»	1,,2.0uL CS-5	y
6	q	ultt	DB9T_084	1	1	db-hxd-c2	1.0000	1.0000	1.000000	y	DX003A-RSN,,»	1,,2.0uL WIN/RES	y
7	q	ultt	DB9T_084	2	1	db-hxd-c2	20.0000	1.0000	1.000000	y	DX042D-CAL,,»	1,,2.0uL CS-3/CAL	y
8	q	ultt	DB9T_084	3	1	db-hxd-s2	1.0000	1.0000	1.000000	y	Toluene,,	1,,2.0uL	y
9	q	ultt	DB9T_084	4	1	db-hxd-s2	1.0000	1.0000	1.000000	y	Toluene,,	1,,2.0uL	y
10	q	ultt	DB9T_084	5	1	db-hxd-s2	1.0000	1.0000	10.056000	y	L31654-1,,	1,WG69303,2.0/20»	y
11	q	ultt	DB9T_084	6	1	db-hxd-s2	1.0000	1.0000	10.072000	y	L31654-2,,	1,WG69303,2.0/20»	y
12	q	ultt	DB9T_084	7	1	db-hxd-s2	1.0000	1.0000	10.240000	y	L31654-3,,	1,WG69303,2.0/20»	y
13	q	ultt	DB9T_084	8	1	db-hxd-s2	1.0000	1.0000	9.853300	y	L31654-4,,	1,WG69303,2.0/20»	y
14	q	ultt	DB9T_084	9	1	db-hxd-s2	1.0000	1.0000	9.873100	y	L31654-5,,	1,WG69303,2.0/20»	y
15	q	ultt	DB9T_084	10	1	db-hxd-s2	1.0000	1.0000	10.297000	y	L31654-6,,	1,WG69303,2.0/20»	y
16	q	ultt	DB9T_084	11	1	db-hxd-c2	20.0000	1.0000	1.000000	y	DX042D-CAL,,»	1,,2.0uL CS-3/CAL	y

SGS AXYS METHOD MLA-017 Rev 20

Form 4A
PCDD/PCDF CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	25-Jul-2019	**VER Data Filename:**	DB9T_084 S: 2
Instrument ID:	HR GC/MS	**Analysis Date:**	12-Sep-2019
GC Column ID:	DB225	**Analysis Time:**	20:28:45

COMPOUND	LAB FLAG [1]	MZ's FORMING RATIO [2]	ION ABUND. RATIO	QC LIMITS [3]	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL) [4]
1,2,3,7,8,9-HXCDD		**M+2/M+4**	1.22	1.05-1.43	55.6	41 - 61
2,3,7,8-TCDF		**M/M+2**	0.75	0.65-0.89	11.3	8.4 - 12

(1) Where applicable, custom lab flags have been used on this report.
(2) See Table 8, Method 1613, for m/z specifications.
(3) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.
(4) Contract-required concentration range as determined from the percent of the test concentration in Table 6, Method 1613, under VER.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Elleanor Andaya_____

For Axys Internal Use Only [XSL Template: Form4A.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_DB9T_084S2__Form4A_SJ2620826.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 6A
PCDD/PCDF RELATIVE RETENTION TIMES

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	25-Jul-2019	**VER Data Filename:**	DB9T_084 S: 2
Instrument ID:	HR GC/MS	**Analysis Date:**	12-Sep-2019
GC Column ID:	DB225	**Analysis Time:**	20:28:45

COMPOUND	LAB FLAG [1]	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS [2]
1,2,3,7,8,9-HXCDD		13C-1,2,3,6,7,8-HXCDD	1.059	1.052-1.075
2,3,7,8-TCDF		13C-2,3,7,8-TCDF	1.001	0.999-1.003

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Elleanor Andaya_____

For Axys Internal Use Only [XSL Template: Form6A.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: 1613_DIOXINS_DB9T_084S2__Form6A_SJ2620826.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 5

PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Instrument ID:	HR GC/MS	**Initial Calibration Date:**		25-Jul-2019
RT Window Data Filename:		**Analysis Date:**		**Time:**
DB-5 IS Data Filename:		**Analysis Date:**		**Time:**
DB-225 IS Data Filename:	DB9T_084 S: 1	**Analysis Date:**	12-Sep-2019	**Time:** 19:44:02

DB225 RT WINDOW DEFINING STANDARDS RESULT

ISOMERS	ABSOLUTE RT	ISOMERS	ABSOLUTE RT
1,3,6,8-TCDD (F)	N/A	**1,3,6,8-TCDF (F)**	N/A
1,2,8,9-TCDD (L)	N/A	**1,2,8,9-TCDF (L)**	N/A
1,2,4,7,9-PECDD (F)	N/A	**1,3,4,6,8-PECDF (F)**	N/A
1,2,3,8,9-PECDD (L)	N/A	**1,2,3,8,9-PECDF (L)**	N/A
1,2,4,6,7,9-HXCDD (F)	N/A	**1,2,3,4,6,8-HXCDF (F)**	N/A
1,2,3,4,6,7-HXCDD (L)	N/A	**1,2,3,4,8,9-HXCDF (L)**	N/A
1,2,3,4,6,7,9-HPCDD (F)	N/A	**1,2,3,4,6,7,8-HPCDF (F)**	N/A
1,2,3,4,6,7,8-HPCDD (L)	N/A	**1,2,3,4,7,8,9-HPCDF (L)**	N/A

(F) = First eluting isomer (DB-5); (L) = Last eluting isomer (DB-5)

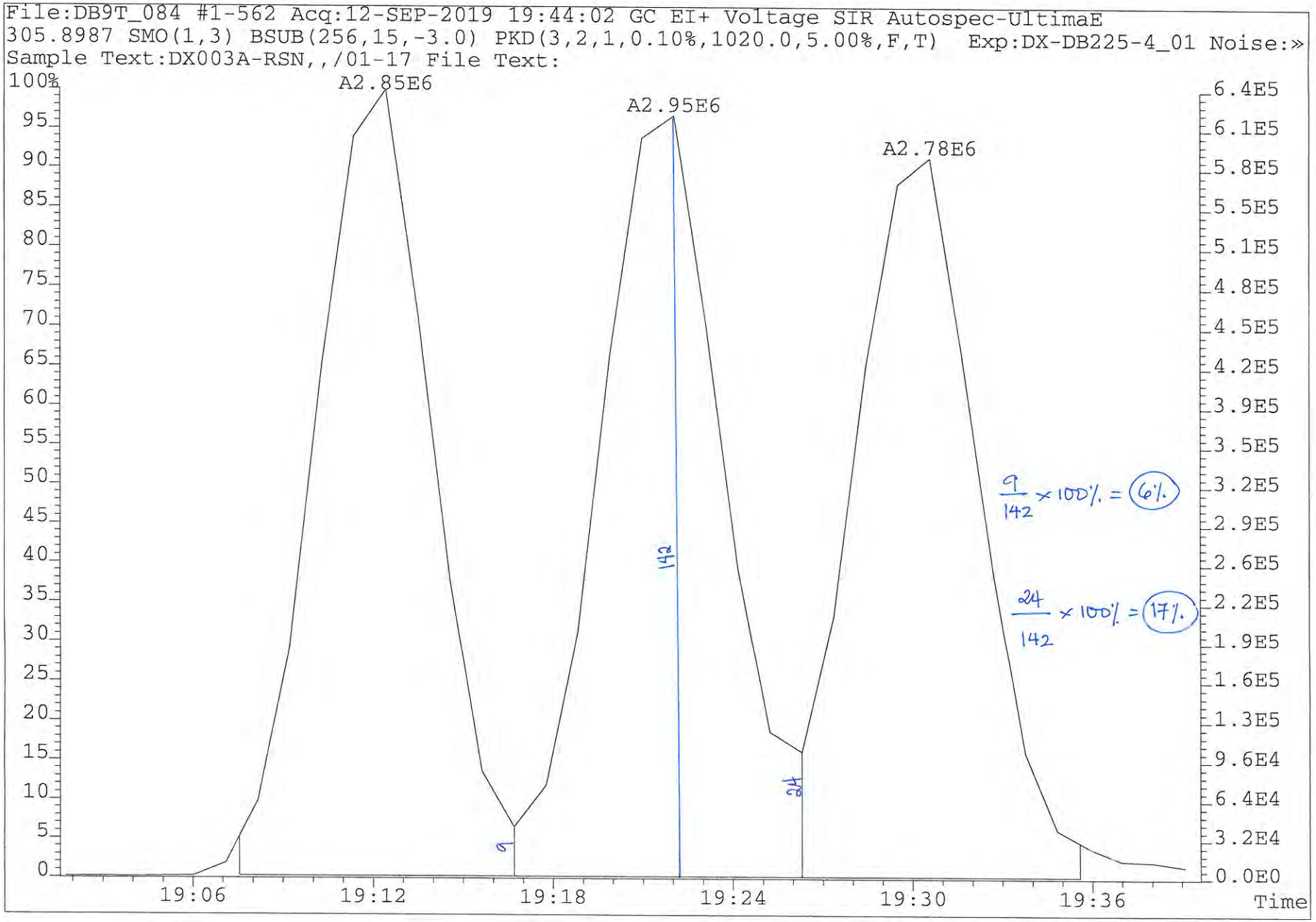
ISOMER SPECIFICITY (IS) TEST STANDARDS RESULT

Isomers	% Valley Height Between Compared Peaks	Isomers	% Valley Height Between Compared Peaks
1,2,3,4-TCDD **1,2,7,8-TCDD**	N/A	**1,2,3,8-TCDD** **2,3,7,8-TCDD**	N/A
1,2,7,8-TCDD **1,4,7,8-TCDD**	N/A	**2,3,4,7-TCDF** **2,3,7,8-TCDF**	6
1,4,7,8-TCDD **1,2,3,7-TCDD**	N/A	**2,3,7,8-TCDF** **1,2,3,9-TCDF**	17
1,2,3,7-TCDD **1,2,3,8-TCDD**	N/A		

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Elleanor Andaya_____

For Axys Internal Use Only [XSL Template: DXForm5.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15; Report Filename: 1613_DIOXINS__DB9T_084S1_Form5_SJ2620810.html; Workgroup: WG69303; Design ID: 3698]



PV by RA 17 SEP 2019

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Method: C:\MassLynx\190510DX.PRO\MethDB\DX_Log.mdb 21 Nov 2008 11:39:44
Calibration: C:\MassLynx\190510DX.PRO\CurveDB\DX9M_065C-CAL6.cdb 25 Jun 2019 21:52:33

Compound name: -

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1	DX9M_095AS1	DX042D-CAL,,/01	1,,1.0uL Cal Win/Res	17-Sep-19	09:42:38
2	DX9M_095AS2	DX051A-SUR,,/02	1,,1.0uL Inst Blank	17-Sep-19	10:36:03
3	DX9M_095AS3	DX051A-SUR,,/02	1,,1.0uL Inst Blank	17-Sep-19	11:30:12
4	DX9M_095AS4	WG69652-101,,CUTPT	1,WG69652,1.0/20uL	17-Sep-19	12:27:40
5	DX9M_095AS5	WG69652-102,,CUTPT	1,WG69652,1.0/20uL	17-Sep-19	13:20:30
6	DX9M_095AS6	WG69652-103,,CUTPT	1,WG69652,1.0/20uL	17-Sep-19	14:15:34
7	DX9M_095AS7	WG69652-104,,SAR	1,WG69652,1.0/50uL	17-Sep-19	15:10:41
8	DX9M_095AS8	DX042D-CAL,,/01	1,,1.0uL Cal Win/Res	17-Sep-19	16:05:42
9	DX9M_095AS9	DX051A-SUR,,/02	1,,1.0uL Inst Blank	17-Sep-19	17:10:42
10	DX9M_095AS10	DX051A-SUR,,/02	1,,1.0uL Inst Blank	17-Sep-19	18:03:14
11	DX9M_095AS11	L31683-1,I,	1,WG69303,1.0/20uL	17-Sep-19	18:58:20
12	DX9M_095AS12	L31654-1,I2,	1,WG69303,1.0/20uL	17-Sep-19	19:53:29
13	DX9M_095AS13	L31654-9,W,	5,WG69303,1.0/100uL	17-Sep-19	20:48:37
14	DX9M_095AS14	L31654-10,W,	5,WG69303,1.0/100uL	17-Sep-19	21:43:45
15	DX9M_095AS15	L31654-11,W,	5,WG69303,1.0/100uL	17-Sep-19	22:38:52
16	DX9M_095AS16	L31654-12,W,	5,WG69303,1.0/100uL	17-Sep-19	23:34:00
17	DX9M_095AS17	WG69303-104,I,CRM	1,WG69303,1.0/20uL	18-Sep-19	00:29:08
18	DX9M_095AS18	WG69303-105,I,CRM	1,WG69303,1.0/20uL	18-Sep-19	01:24:15
19	DX9M_095AS19	DX042D-CAL,,/01	1,,1.0uL Cal Win/Res	18-Sep-19	02:19:24

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Printed: Tuesday, September 17, 2019 17:10:03 Pacific Daylight Time

Approved by [signature] 17-Sep-19

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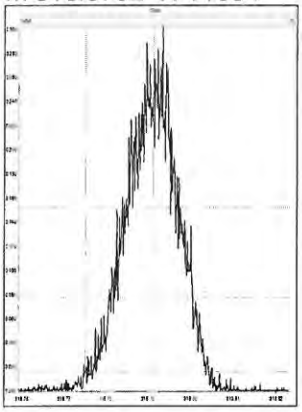

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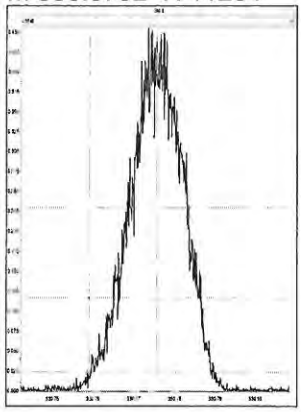

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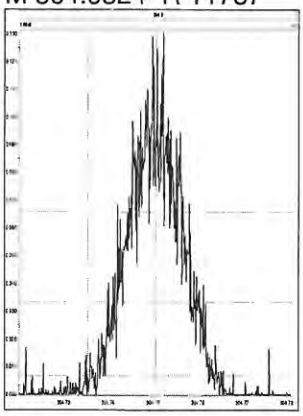

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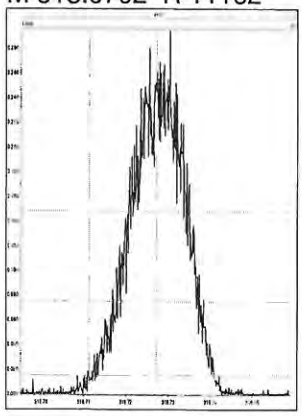

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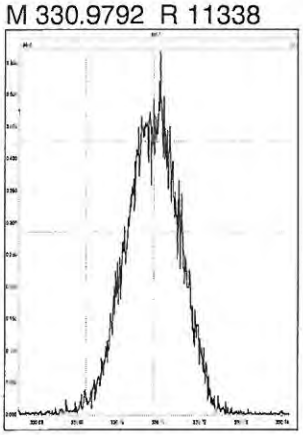

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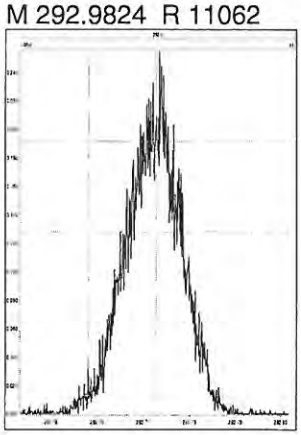

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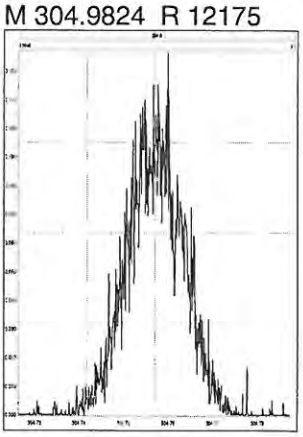

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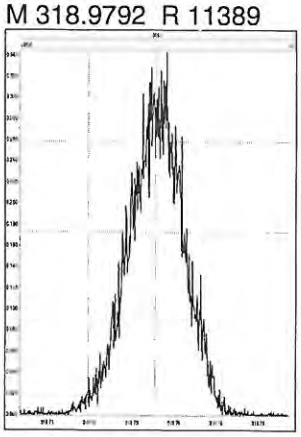

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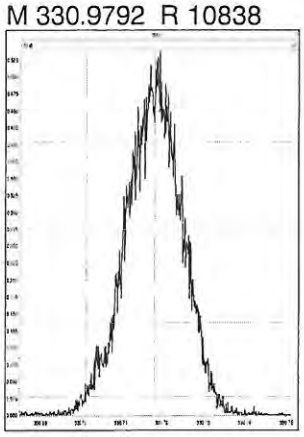

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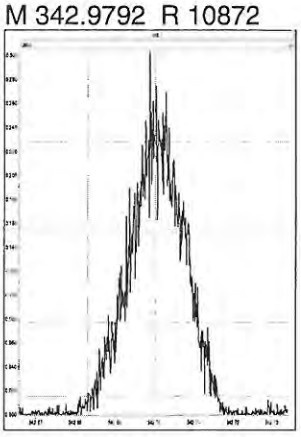

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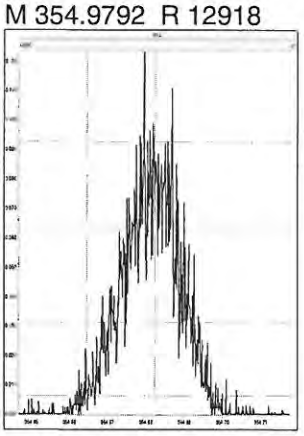

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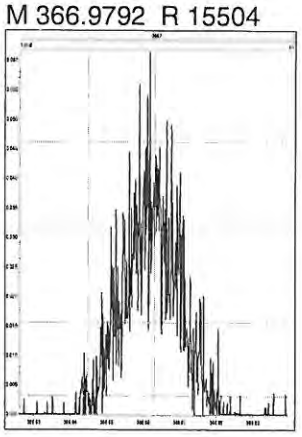

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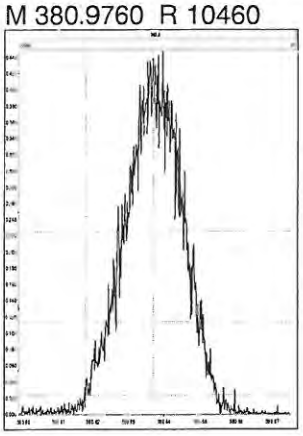

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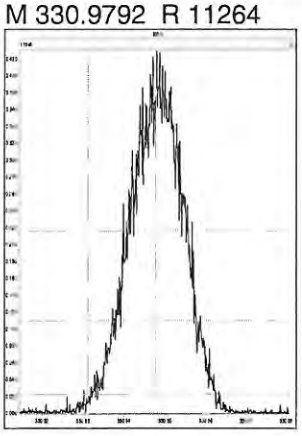

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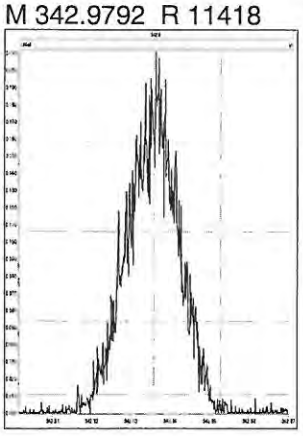

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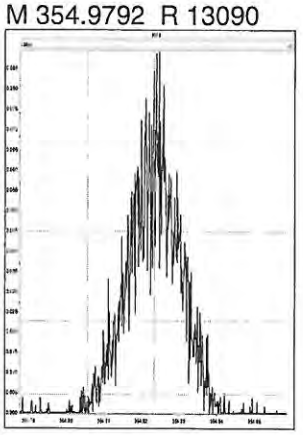

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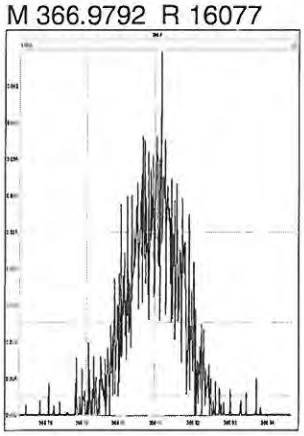

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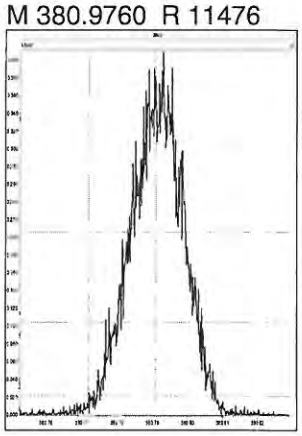

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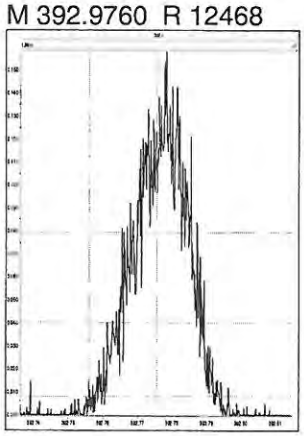

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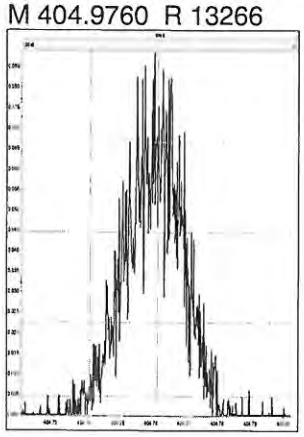

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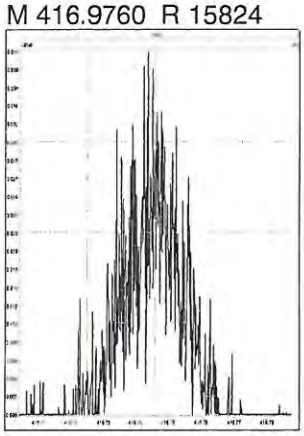

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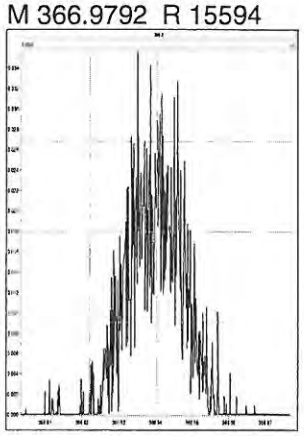

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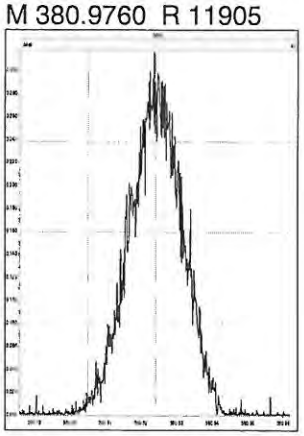

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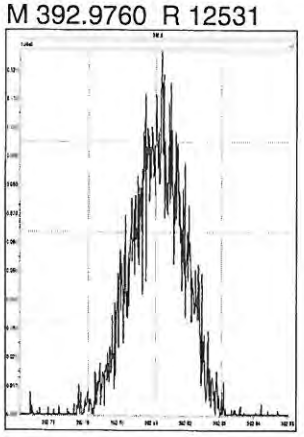

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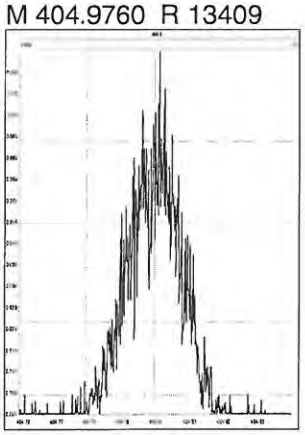

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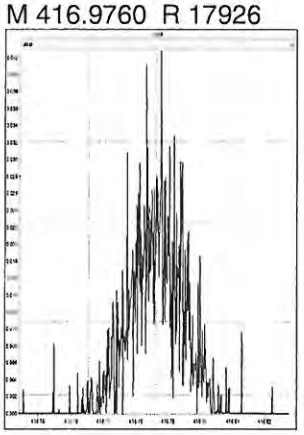

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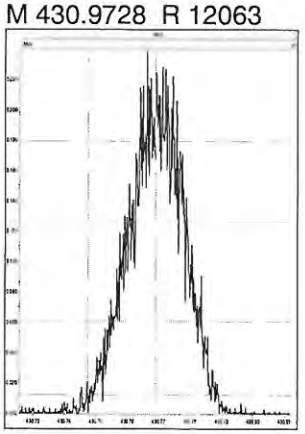

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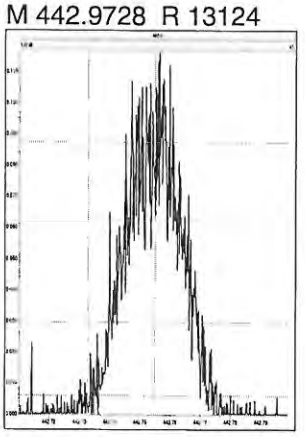

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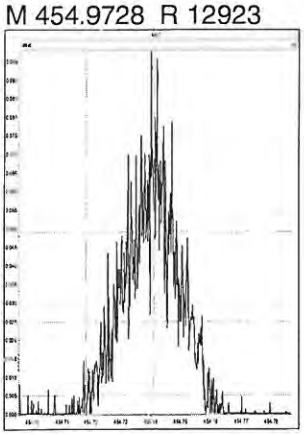

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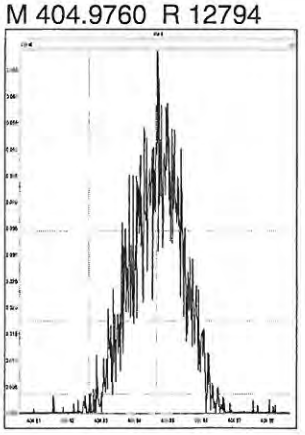

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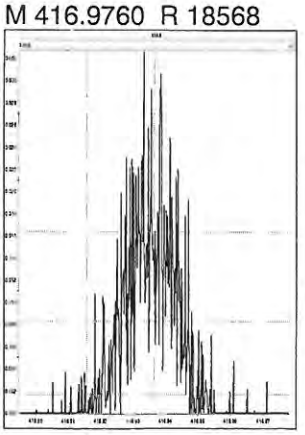

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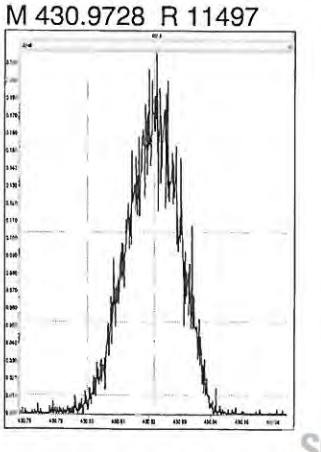

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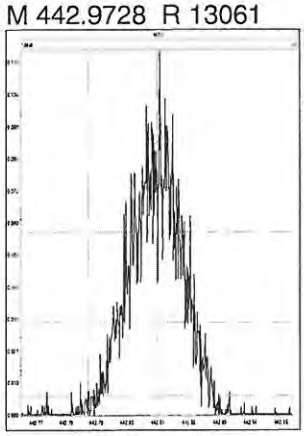

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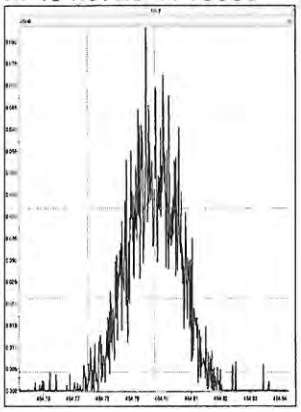

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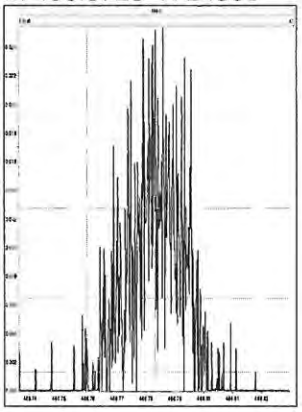

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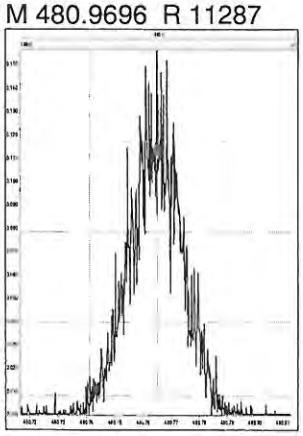

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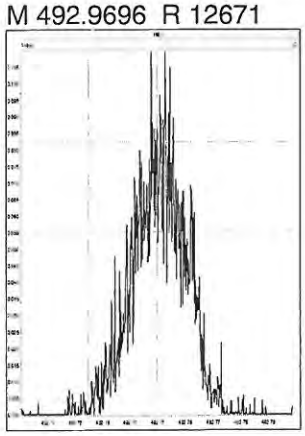

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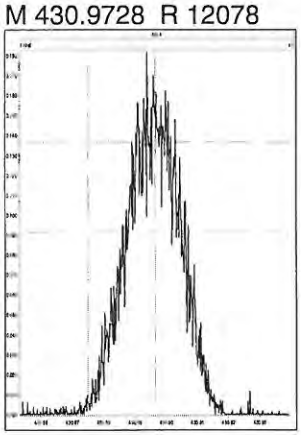

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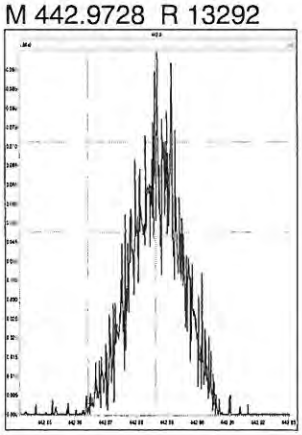

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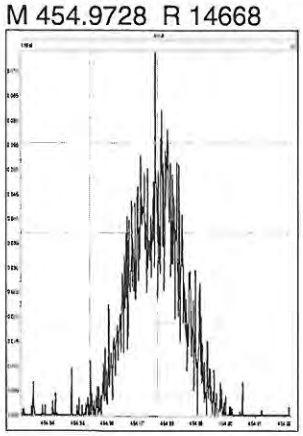

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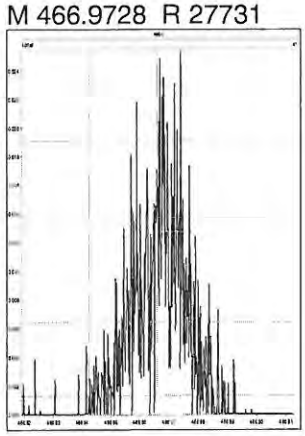

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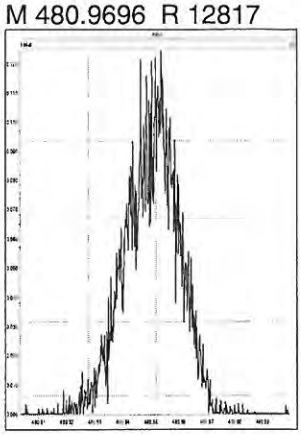

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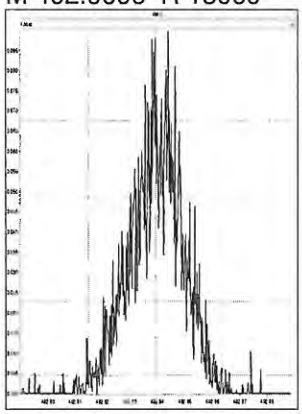

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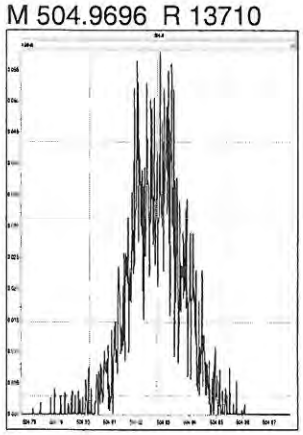

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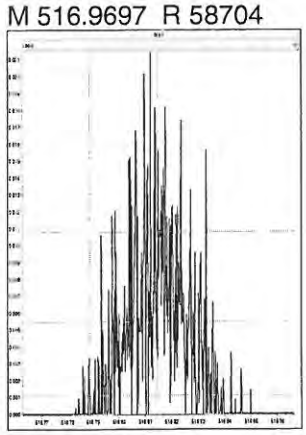

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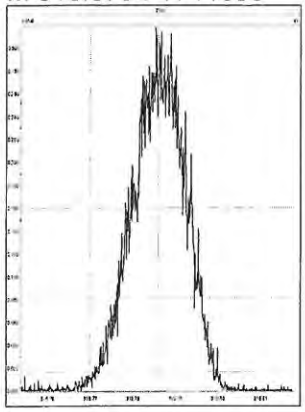

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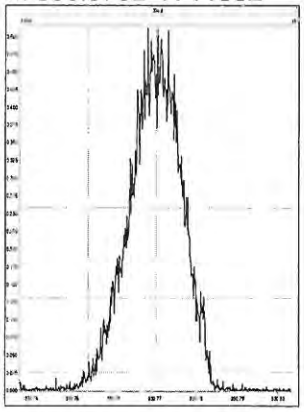

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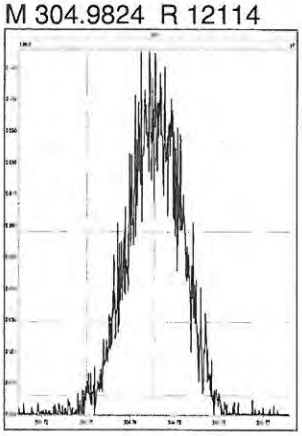

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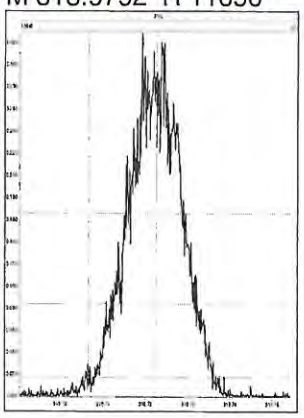

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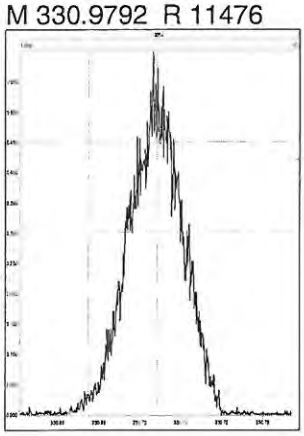

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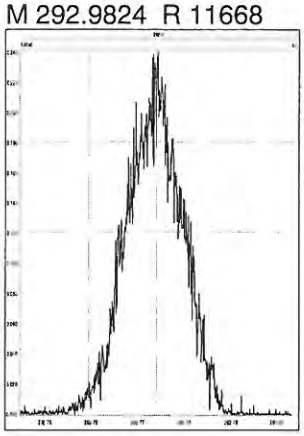

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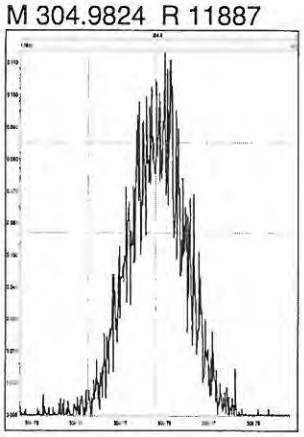

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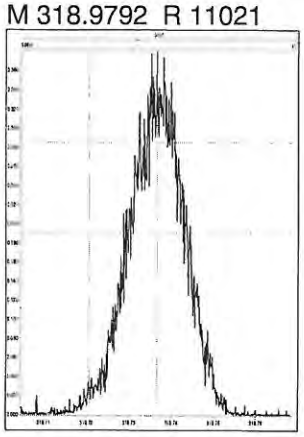

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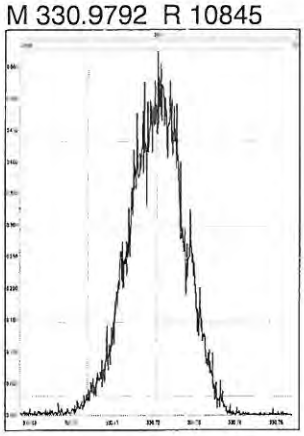

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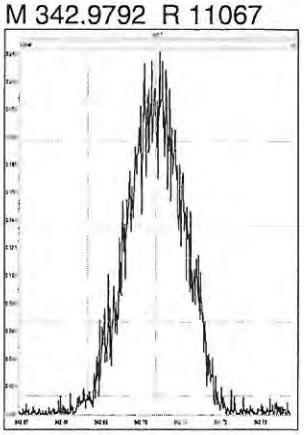

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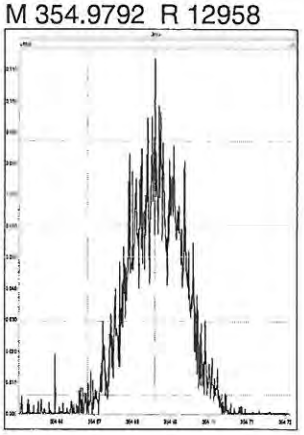

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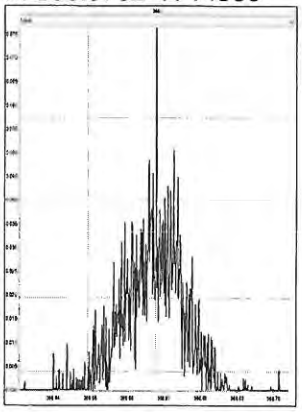

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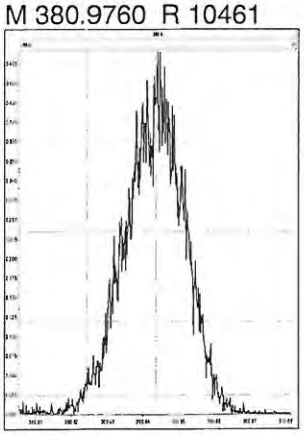

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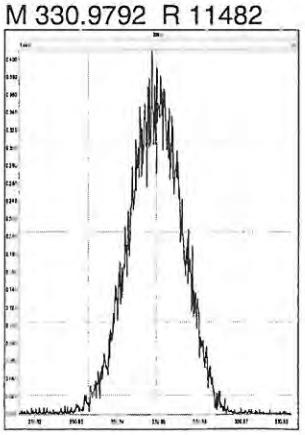

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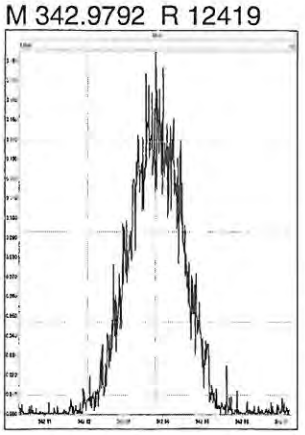

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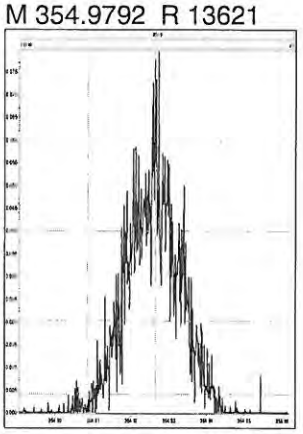

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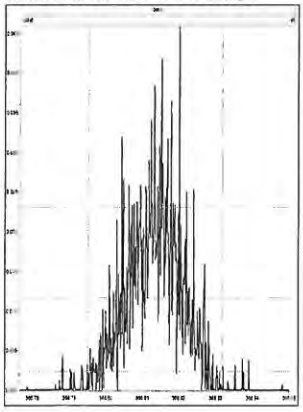

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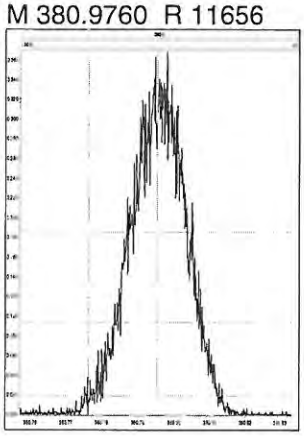

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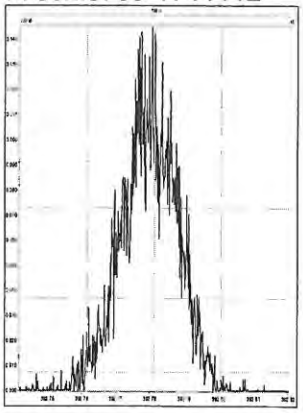

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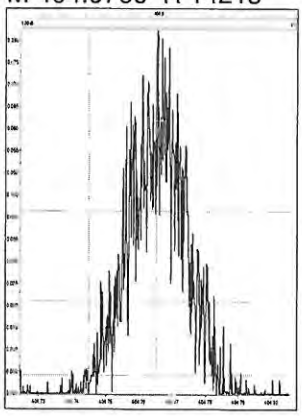

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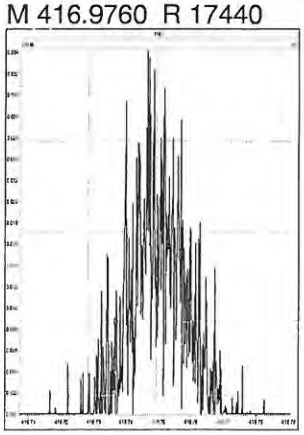

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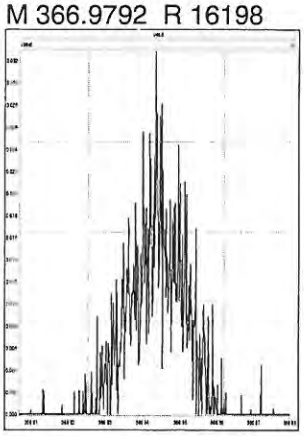

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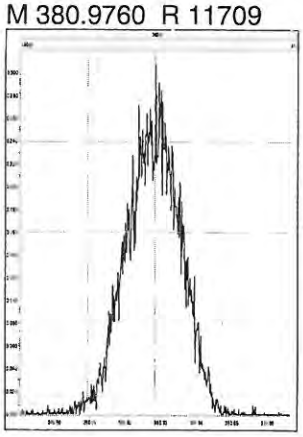

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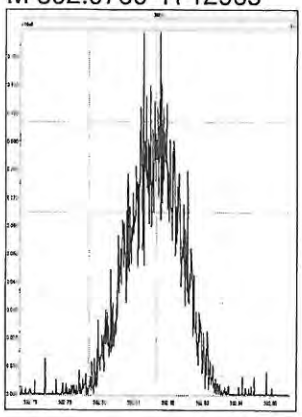

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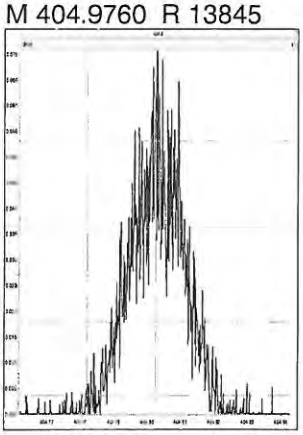

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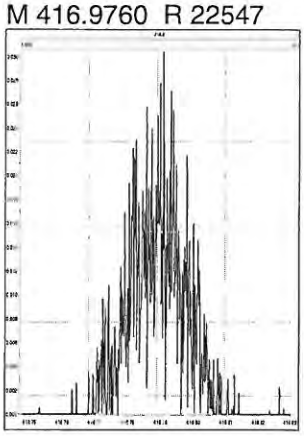

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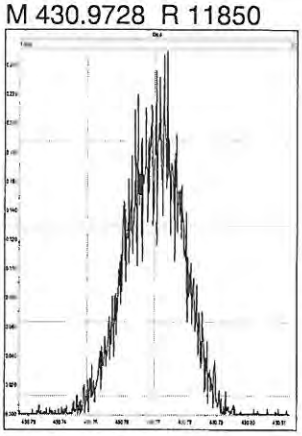

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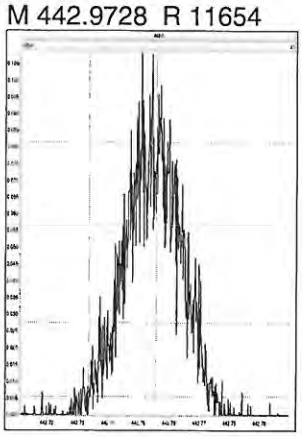

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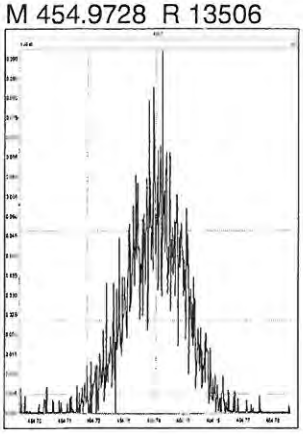

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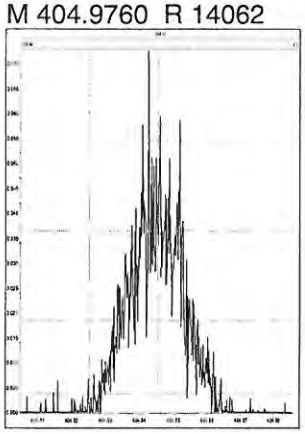

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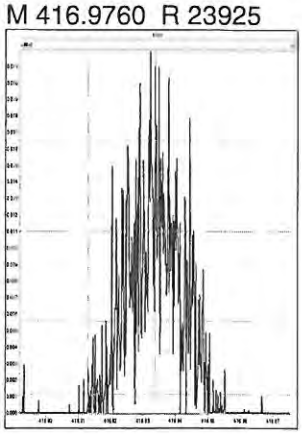

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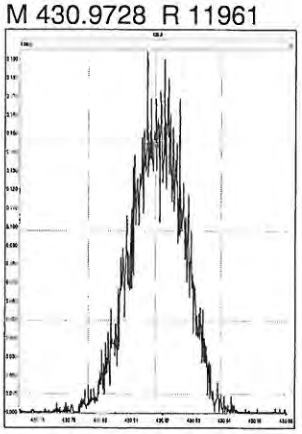

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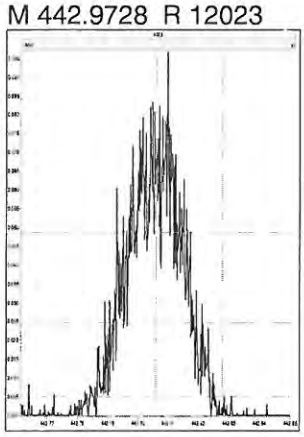

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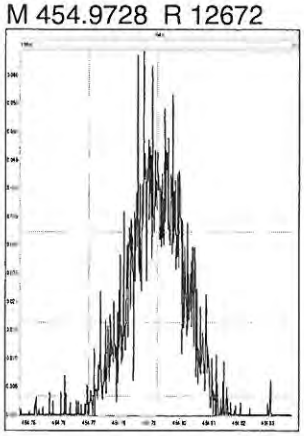
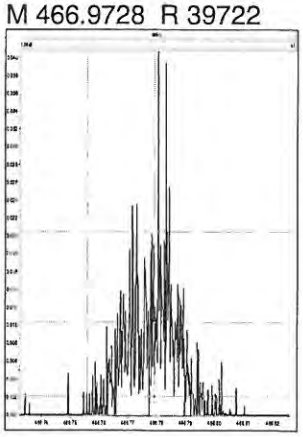
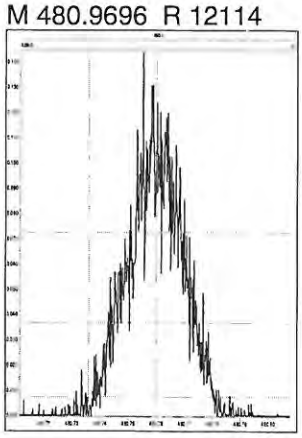


M 466.9728 R 39722



M 480.9696 R 12114



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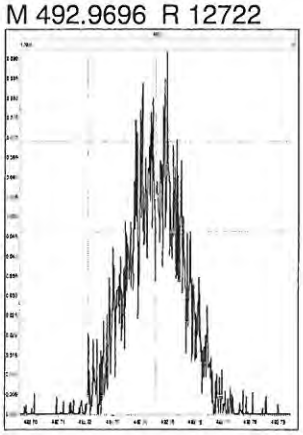
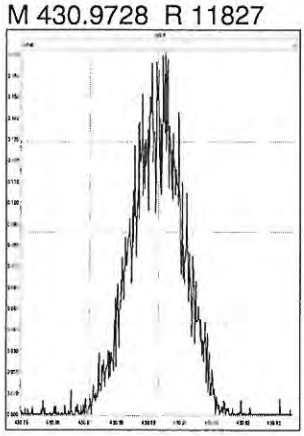
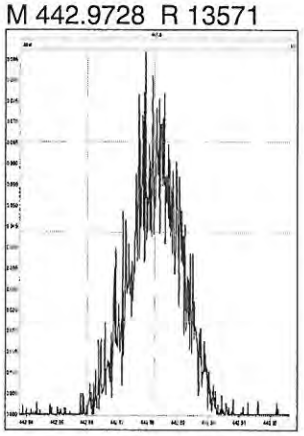


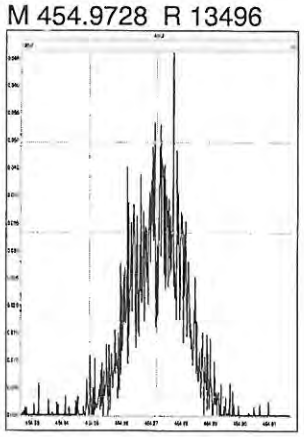
M 430.9728 R 11827



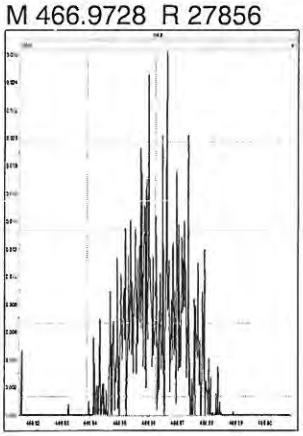
M 442.9728 R 13571



M 454.9728 R 13496



M 466.9728 R 27856



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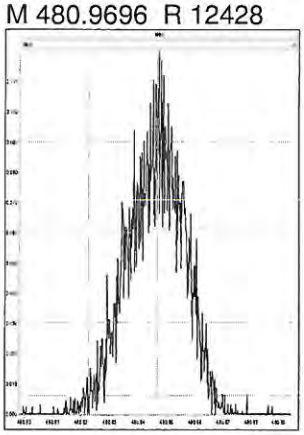
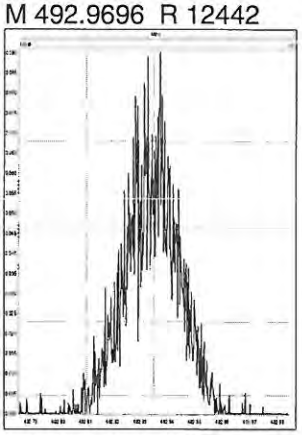


M 492.9696 R 12442



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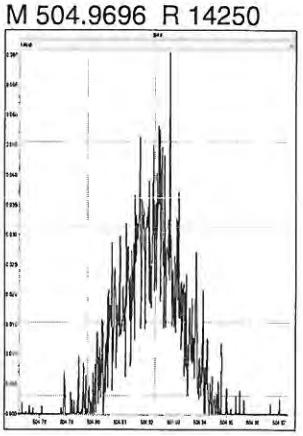

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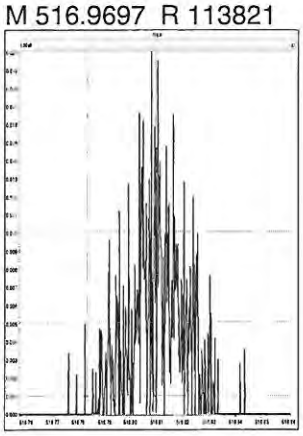

Sample List Report **MassLynx MassLynx V4.1 SCN909**

Sample List: G:\Masslynx\Inst_M\Projects\190510DX.PRO\SampleDB\DX9M_095A-B.SPL
Last Modified: Wednesday, September 18, 2019 08:11:22 Pacific Daylight Time
Printed: Thursday, September 19, 2019 13:30:28 Pacific Daylight Time

Page Position (1, 1)

	File Name	Sample ID	File Text	Sample Type	Subject Text	Samp Size	13C-Te-Hp	13C-OCDD	Rec Std	C/Up
1	DX9M_095AS8	DX042D-CAL,,/01	1,,1.0uL Cal Win/Res	QC	DB5,ng/mL	1.000	100	200	100	10
2	DX9M_095AS9	DX051A-SUR,,/02	1,,1.0uL Inst Blank	Blank	DB5,pg/sam	1.000	200	400	200	---
3	DX9M_095AS10	DX051A-SUR,,/02	1,,1.0uL Inst Blank	Blank	DB5,pg/sam	1.000	200	400	200	---
4	DX9M_095AS11	L31683-1,I,	1,WG69303,1.0/20uL	Analyte	DB5,pg/g	8.654	2000	4000	2000	200
5	DX9M_095AS12	L31654-1,I2,	1,WG69303,1.0/20uL	Analyte	DB5,pg/g	10.056	2000	4000	2000	200
6	DX9M_095AS13	L31654-9,W,	5,WG69303,1.0/100uL	Analyte	DB5,pg/g	10.406	2000	4000	2000	200
7	DX9M_095AS14	L31654-10,W,	5,WG69303,1.0/100uL	Analyte	DB5,pg/g	10.172	2000	4000	2000	200
8	DX9M_095AS15	L31654-11,W,	5,WG69303,1.0/100uL	Analyte	DB5,pg/g	10.327	2000	4000	2000	200
9	DX9M_095AS16	L31654-12,W,	5,WG69303,1.0/100uL	Analyte	DB5,pg/g	10.449	2000	4000	2000	200
10	DX9M_095AS17	WG69303-104,I,CRM	1,WG69303,1.0/20uL	Analyte	DB5,pg/g	9.500	2000	4000	2000	200
11	DX9M_095AS18	WG69303-105,I,CRM	1,WG69303,1.0/20uL	Analyte	DB5,pg/g	9.480	2000	4000	2000	200
12	DX9M_095AS19	DX042D-CAL,,/01	1,,1.0uL Cal Win/Res	QC	DB5,ng/mL	1.000	100	200	100	10

SGS AXYS METHOD MLA-017 Rev 20

Form 4A
PCDD/PCDF CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	25-Jun-2019	**VER Data Filename:**	DX9M_095A S: 8
Instrument ID:	HR GC/MS	**Analysis Date:**	17-Sep-2019
GC Column ID:	DB5	**Analysis Time:**	16:05:42

COMPOUND	LAB FLAG [1]	MZ's FORMING RATIO [2]	ION ABUND. RATIO	QC LIMITS [3]	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL) [4]
2,3,7,8-TCDD		**M/M+2**	0.76	0.65-0.89	10.2	7.8 - 12.9
1,2,3,7,8-PECDD [5]		**M/M+2**	0.61	0.52-0.70	48.6	39 - 65
1,2,3,4,7,8-HXCDD		**M+2/M+4**	1.20	1.05-1.43	48.1	39 - 64
1,2,3,6,7,8-HXCDD		**M+2/M+4**	1.27	1.05-1.43	49.2	39 - 64
1,2,3,7,8,9-HXCDD		**M+2/M+4**	1.24	1.05-1.43	50.7	41 - 61
1,2,3,4,6,7,8-HPCDD		**M+2/M+4**	1.04	0.88-1.20	50.4	43 - 58
OCDD		**M+2/M+4**	0.89	0.76-1.02	100	79 - 126
2,3,7,8-TCDF		**M/M+2**	0.81	0.65-0.89	10.3	8.4 - 12
1,2,3,7,8-PECDF		**M+2/M+4**	1.58	1.32-1.78	51.9	41 - 60
2,3,4,7,8-PECDF		**M+2/M+4**	1.57	1.32-1.78	51.3	41 - 61
1,2,3,4,7,8-HXCDF		**M+2/M+4**	1.25	1.05-1.43	52.7	45 - 56
1,2,3,6,7,8-HXCDF		**M+2/M+4**	1.21	1.05-1.43	52.5	44 - 57
1,2,3,7,8,9-HXCDF		**M+2/M+4**	1.25	1.05-1.43	47.4	45 - 56
2,3,4,6,7,8-HXCDF		**M+2/M+4**	1.25	1.05-1.43	51.2	44 - 57
1,2,3,4,6,7,8-HPCDF		**M+2/M+4**	1.00	0.88-1.20	53.2	45 - 55
1,2,3,4,7,8,9-HPCDF		**M+2/M+4**	1.03	0.88-1.20	53.0	43 - 58
OCDF		**M+2/M+4**	0.94	0.76-1.02	100	63 - 159

(1) Where applicable, custom lab flags have been used on this report.
(2) See Table 8, Method 1613, for m/z specifications.
(3) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.
(4) Contract-required concentration range as determined from the percent of the test concentration in Table 6, Method 1613, under VER.
(5) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Elleanor Andaya_____

For Axys Internal Use Only [XSL Template: Form4A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15; Report Filename: 1613_DIOXINS_DX9M_095AS8__Form4A_SJ2621568.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 4B
PCDD/PCDF CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	25-Jun-2019	**VER Data Filename:**	DX9M_095A S: 8
Instrument ID:	HR GC/MS	**Analysis Date:**	17-Sep-2019
GC Column ID:	DB5	**Analysis Time:**	16:05:42

	LAB FLAG [1]	MZ's FORMING RATIO [2]	ION ABUND. RATIO	QC LIMITS [3]	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL) [4]
LABELED COMPOUND						
13C-2,3,7,8-TCDD		**M/M+2**	0.80	0.65-0.89	95.9	82 - 121
13C-1,2,3,7,8-PECDD [5]		**M/M+2**	0.62	0.52-0.70	96.9	62 - 160
13C-1,2,3,4,7,8-HXCDD		**M+2/M+4**	1.23	1.05-1.43	91.2	85 - 117
13C-1,2,3,6,7,8-HXCDD		**M+2/M+4**	1.23	1.05-1.43	97.1	85 - 118
13C-1,2,3,4,6,7,8-HPCDD		**M+2/M+4**	1.06	0.88-1.20	89.5	72 - 138
13C-OCDD		**M+2/M+4**	0.90	0.76-1.02	180	96 - 415
13C-2,3,7,8-TCDF		**M/M+2**	0.76	0.65-0.89	91.6	71 - 140
13C-1,2,3,7,8-PECDF		**M+2/M+4**	1.60	1.32-1.78	94.0	76 - 130
13C-2,3,4,7,8-PECDF		**M+2/M+4**	1.55	1.32-1.78	96.1	77 - 130
13C-1,2,3,4,7,8-HXCDF		**M/M+2**	0.51	0.43-0.59	90.6	76 - 131
13C-1,2,3,6,7,8-HXCDF		**M/M+2**	0.53	0.43-0.59	92.1	70 - 143
13C-1,2,3,7,8,9-HXCDF		**M/M+2**	0.51	0.43-0.59	88.6	74 - 135
13C-2,3,4,6,7,8-HXCDF		**M/M+2**	0.53	0.43-0.59	92.8	73 - 137
13C-1,2,3,4,6,7,8-HPCDF		**M/M+2**	0.44	0.37-0.51	90.2	78 - 129
13C-1,2,3,4,7,8,9-HPCDF		**M/M+2**	0.46	0.37-0.51	88.1	77 - 129
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD [6]					9.90	7.9 - 12.7

(1) Where applicable, custom lab flags have been used on this report.
(2) See Table 8, Method 1613, for m/z specifications.
(3) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.
(4) Contract-required concentration range as determined from the percent of the test concentration in Table 6, Method 1613, under VER.
(5) Alternate confirmation and quantitation ions used for native and labeled PECDD.
(6) No ion abundance ratio for 37Cl4-2,3,7,8-TCDD; concentration reported.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Elleanor Andaya_____

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SGS AXYS METHOD MLA-017 Rev 20

Form 6A
PCDD/PCDF RELATIVE RETENTION TIMES

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	25-Jun-2019	**VER Data Filename:**	DX9M_095A S: 8
Instrument ID:	HR GC/MS	**Analysis Date:**	17-Sep-2019
GC Column ID:	DB5	**Analysis Time:**	16:05:42

COMPOUND	LAB FLAG [1]	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS [2]
2,3,7,8-TCDD		13C-2,3,7,8-TCDD	1.001	0.999-1.002
1,2,3,7,8-PECDD [3]		13C-1,2,3,7,8-PECDD	1.001	0.999-1.002
1,2,3,4,7,8-HXCDD		13C-1,2,3,4,7,8-HXCDD	1.000	0.999-1.001
1,2,3,6,7,8-HXCDD		13C-1,2,3,6,7,8-HXCDD	1.000	0.998-1.004
1,2,3,7,8,9-HXCDD		13C-1,2,3,6,7,8-HXCDD	1.011	1.000-1.019
1,2,3,4,6,7,8-HPCDD		13C-1,2,3,4,6,7,8-HPCDD	1.000	0.999-1.001
OCDD		13C-OCDD	1.000	0.999-1.001
2,3,7,8-TCDF		13C-2,3,7,8-TCDF	1.001	0.999-1.003
1,2,3,7,8-PECDF		13C-1,2,3,7,8-PECDF	1.001	0.999-1.002
2,3,4,7,8-PECDF		13C-2,3,4,7,8-PECDF	1.001	0.999-1.002
1,2,3,4,7,8-HXCDF		13C-1,2,3,4,7,8-HXCDF	1.000	0.999-1.001
1,2,3,6,7,8-HXCDF		13C-1,2,3,6,7,8-HXCDF	1.001	0.997-1.005
1,2,3,7,8,9-HXCDF		13C-1,2,3,7,8,9-HXCDF	1.000	0.999-1.001
2,3,4,6,7,8-HXCDF		13C-2,3,4,6,7,8-HXCDF	1.000	0.999-1.001
1,2,3,4,6,7,8-HPCDF		13C-1,2,3,4,6,7,8-HPCDF	1.000	0.999-1.001
1,2,3,4,7,8,9-HPCDF		13C-1,2,3,4,7,8,9-HPCDF	1.000	0.999-1.001
OCDF		13C-OCDD	1.002	0.999-1.008

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Elleanor Andaya_____

For Axys Internal Use Only [XSL Template: Form6A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15; Report Filename: 1613_DIOXINS_DX9M_095AS8__Form6A_SJ2621568.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

Form 6B
PCDD/PCDF RELATIVE RETENTION TIMES

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	25-Jun-2019	**VER Data Filename:**	DX9M_095A S: 8
Instrument ID:	HR GC/MS	**Analysis Date:**	17-Sep-2019
GC Column ID:	DB5	**Analysis Time:**	16:05:42

	LAB FLAG [1]	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS [2]
LABELED COMPOUND				
13C-2,3,7,8-TCDD		13C-1,2,3,4-TCDD	1.013	0.976-1.043
13C-1,2,3,7,8-PECDD		13C-1,2,3,4-TCDD	1.384	1.000-1.567
13C-1,2,3,4,7,8-HXCDD		13C-1,2,3,7,8,9-HXCDD	0.987	0.977-1.000
13C-1,2,3,6,7,8-HXCDD		13C-1,2,3,7,8,9-HXCDD	0.990	0.981-1.003
13C-1,2,3,4,6,7,8-HPCDD		13C-1,2,3,7,8,9-HXCDD	1.095	1.086-1.110
13C-OCDD		13C-1,2,3,7,8,9-HXCDD	1.180	1.032-1.311
13C-2,3,7,8-TCDF		13C-1,2,3,4-TCDD	0.967	0.923-1.103
13C-1,2,3,7,8-PECDF		13C-1,2,3,4-TCDD	1.284	1.000-1.425
13C-2,3,4,7,8-PECDF		13C-1,2,3,4-TCDD	1.352	1.011-1.526
13C-1,2,3,4,7,8-HXCDF		13C-1,2,3,7,8,9-HXCDD	0.954	0.944-0.970
13C-1,2,3,6,7,8-HXCDF		13C-1,2,3,7,8,9-HXCDD	0.958	0.949-0.975
13C-1,2,3,7,8,9-HXCDF		13C-1,2,3,7,8,9-HXCDD	1.005	0.977-1.047
13C-2,3,4,6,7,8-HXCDF		13C-1,2,3,7,8,9-HXCDD	0.980	0.959-1.021
13C-1,2,3,4,6,7,8-HPCDF		13C-1,2,3,7,8,9-HXCDD	1.063	1.043-1.085
13C-1,2,3,4,7,8,9-HPCDF		13C-1,2,3,7,8,9-HXCDD	1.105	1.057-1.151
CLEANUP STANDARD				
37CL-2,3,7,8-TCDD		13C-1,2,3,4-TCDD	1.001	0.989-1.052

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Elleanor Andaya_____

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SGS AXYS METHOD MLA-017 Rev 20

Form 5

PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Instrument ID:	HR GC/MS	**Initial Calibration Date:**		25-Jun-2019
RT Window Data Filename:	DX9M_095A S: 8	**Analysis Date:**	17-Sep-2019	**Time:** 16:05:42
DB-5 IS Data Filename:	DX9M_095A S: 8	**Analysis Date:**	17-Sep-2019	**Time:** 16:05:42
DB-225 IS Data Filename:		**Analysis Date:**		**Time:**

DB5 RT WINDOW DEFINING STANDARDS RESULT

ISOMERS	ABSOLUTE RT	ISOMERS	ABSOLUTE RT
1,3,6,8-TCDD (F)	22:54	**1,3,6,8-TCDF (F)**	21:23
1,2,8,9-TCDD (L)	28:14	**1,2,8,9-TCDF (L)**	28:05
1,2,4,7,9-PECDD (F)	31:55	**1,3,4,6,8-PECDF (F)**	28:46
1,2,3,8,9-PECDD (L)	36:59	**1,2,3,8,9-PECDF (L)**	37:04
1,2,4,6,7,9-HXCDD (F)	39:59	**1,2,3,4,6,8-HXCDF (F)**	38:56
1,2,3,4,6,7-HXCDD (L)	42:40	**1,2,3,4,8,9-HXCDF (L)**	43:00
1,2,3,4,6,7,9-HPCDD (F)	45:48	**1,2,3,4,6,7,8-HPCDF (F)**	45:20
1,2,3,4,6,7,8-HPCDD (L)	46:43	**1,2,3,4,7,8,9-HPCDF (L)**	47:08

(F) = First eluting isomer (DB-5); (L) = Last eluting isomer (DB-5)

ISOMER SPECIFICITY (IS) TEST STANDARDS RESULT

Isomers	% Valley Height Between Compared Peaks	Isomers	% Valley Height Between Compared Peaks
1,2,3,4-TCDD **1,2,7,8-TCDD**	0	**1,2,3,8-TCDD** **2,3,7,8-TCDD**	16
1,2,7,8-TCDD **1,4,7,8-TCDD**	0	**2,3,4,7-TCDF** **2,3,7,8-TCDF**	N/A
1,4,7,8-TCDD **1,2,3,7-TCDD**	0	**2,3,7,8-TCDF** **1,2,3,9-TCDF**	N/A
1,2,3,7-TCDD **1,2,3,8-TCDD**	DB-5 column; co-elute as per Figure 6 in Method		

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

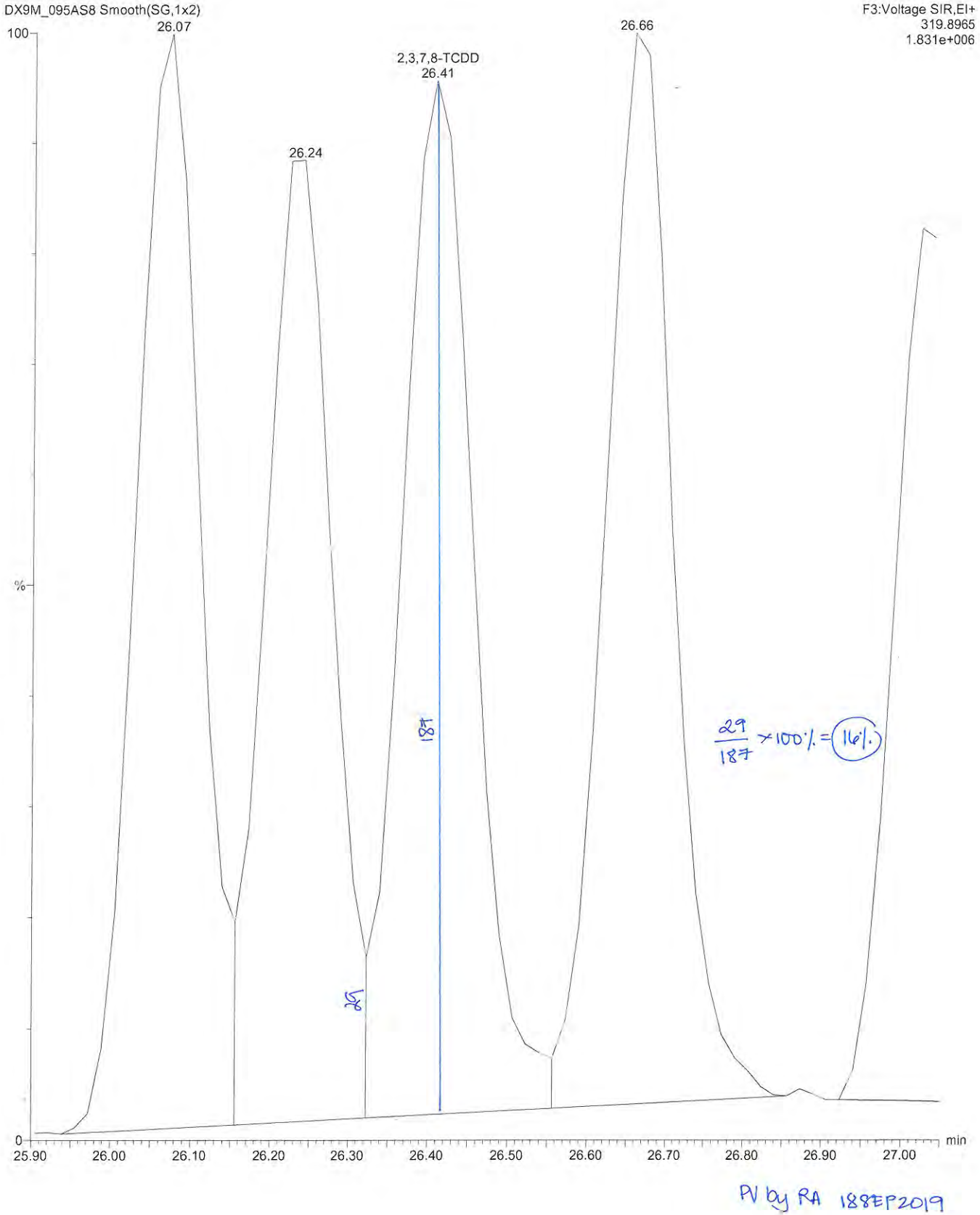
Signed: _____Elleanor Andaya_____

For Axys Internal Use Only [XSL Template: DXForm5.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15; Report Filename: 1613_DIOXINS__DX9M_095AS8_Form5_SJ2621572.html; Workgroup: WG69303; Design ID: 3698]

Method: G:\Masslynx\Inst_M\Master methods and layouts\Current Methods\DX_Win_ResC.mdb 13 Mar 2017 14:40:23
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

Name: DX9M_095AS8, Date: 17-Sep-2019, Time: 16:05:42, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

2,3,7,8-TCDD



PV by RA 18SEP2019

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
D6-SC-108to123-102118
Sample Collection:
21-Oct-2018 18:00

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-1 i2
Sample Data Filename:	**DX9M_095A S: 12**	**Instrument ID:**	HR GC/MS
Analysis Date:	17-Sep-2019 **Time:** 19:53:29	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

COMPOUND	ORIG. CONC.	FINAL CONC.	CHANGE CONC. (Final/Orig.)	ORIG. AREA	FINAL AREA	CHANGE AREA (Final/Orig.)	ORIG. RATIO	FINAL RATIO
2,3,7,8-TCDF								
1,2,3,7,8-PECDF								
2,3,4,7,8-PECDF								
1,2,3,4,7,8-HXCDF								
1,2,3,6,7,8-HXCDF								
2,3,4,6,7,8-HXCDF								
1,2,3,4,7,8,9-HPCDF								

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_L31654-1_Audit1A_DX9M_095AS12_SJ2621560.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
D6-SC-108to123-102118
Sample Collection:
21-Oct-2018 18:00

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No. SWAN ISLAND LAGOON SED INVESTIGATION

Contract No.: 5055

Lab Sample I.D.: L31654-1 i2

Sample Data Filename: **DX9M_095A S: 12**

Instrument ID: HR GC/MS

Analysis Date: 17-Sep-2019 **Time:** 19:53:29

GC Column ID: DB5

Extract Volume (uL): 20

Injection Volume (uL): 1.0

COMPOUND	ORIG. SDL	FINAL SDL	CHANGE SDL (Final/Orig.)	ORIG. QUAL	FINAL QUAL	ORIG. RT	FINAL RT	REVIEWED BY	REVIEWED DATE
2,3,7,8-TCDF					ND			EANDAYA	19-SEP-2019
1,2,3,7,8-PECDF					ND			EANDAYA	19-SEP-2019
2,3,4,7,8-PECDF				NDR	ND(R)			EANDAYA	19-SEP-2019
1,2,3,4,7,8-HXCDF					ND			EANDAYA	19-SEP-2019
1,2,3,6,7,8-HXCDF					ND			EANDAYA	19-SEP-2019
2,3,4,6,7,8-HXCDF					ND			EANDAYA	19-SEP-2019
1,2,3,4,7,8,9-HPCDF				NDR	ND(R)			EANDAYA	19-SEP-2019

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1B.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_L31654-1_Audit1B_DX9M_095AS12_SJ2621560.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

CLIENT SAMPLE NO.
D6-SC-108to123-102118
Sample Collection:
21-Oct-2018 18:00

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-1 i2
Sample Data Filename:	**DX9M_095A S: 12**	**Instrument ID:**	HR GC/MS
Analysis Date:	17-Sep-2019 **Time:** 19:53:29	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

There were no differences found between the parsed and reported data.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit2A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_L31654-1_Audit2A_DX9M_095AS12_SJ2621560.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
D6-SC-108to123-102118
Sample Collection:
21-Oct-2018 18:00

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-1 i2
Sample Data Filename:	**DX9M_095A S: 12**	**Instrument ID:**	HR GC/MS
Analysis Date:	17-Sep-2019 **Time:** 19:53:29	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

There were no differences found between the parsed and reported data.

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Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit2B.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_L31654-1_Audit2B_DX9M_095AS12_SJ2621560.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
D6-SC-108to123-102118
Sample Collection:
21-Oct-2018 18:00

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-1
Sample Data Filename:	**DB9T_084 S: 5**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 22:42:57	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

There were no differences found between the parsed and reported data.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1A.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB225_L31654-1_Audit1A_DB9T_084S5_SJ2620829.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
D6-SC-108to123-102118
Sample Collection:
21-Oct-2018 18:00

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-1
Sample Data Filename:	**DB9T_084 S: 5**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 22:42:57	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

There were no differences found between the parsed and reported data.

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Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1B.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB225_L31654-1_Audit1B_DB9T_084S5_SJ2620829.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

CLIENT SAMPLE NO.
D6-SC-108to123-102118
Sample Collection:
21-Oct-2018 18:00

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-1
Sample Data Filename:	**DB9T_084 S: 5**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 22:42:57	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

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Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit2A.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB225_L31654-1_Audit2A_DB9T_084S5_SJ2620829.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
D6-SC-108to123-102118
Sample Collection:
21-Oct-2018 18:00

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-1
Sample Data Filename:	**DB9T_084 S: 5**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 22:42:57	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

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For Axys Internal Use Only [XSL Template: Audit2B.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB225_L31654-1_Audit2B_DB9T_084S5_SJ2620829.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
R1-0to30-101518
Sample Collection:
15-Oct-2018 14:37

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-2 i
Sample Data Filename:	**DX9M_093 S: 7**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 14:35:04	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

COMPOUND	ORIG. CONC.	FINAL CONC.	CHANGE CONC. (Final/Orig.)	ORIG. AREA	FINAL AREA	CHANGE AREA (Final/Orig.)	ORIG. RATIO	FINAL RATIO
2,3,7,8-TCDD								

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_L31654-2_Audit1A_DX9M_093S7_SJ2619891.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
R1-0to30-101518
Sample Collection:
15-Oct-2018 14:37

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No. SWAN ISLAND LAGOON SED INVESTIGATION

Contract No.:	5055	**Lab Sample I.D.:**	L31654-2 i
Sample Data Filename:	**DX9M_093 S: 7**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 14:35:04	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

COMPOUND	ORIG. SDL	FINAL SDL	CHANGE SDL (Final/Orig.)	ORIG. QUAL	FINAL QUAL	ORIG. RT	FINAL RT	REVIEWED BY	REVIEWED DATE
2,3,7,8-TCDD	0.0610	0.0625	1.02	NDR	ND(R)			EANDAYA	19-SEP-2019

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1B.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_L31654-2_Audit1B_DX9M_093S7_SJ2619891.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

CLIENT SAMPLE NO.
R1-0to30-101518
Sample Collection:
15-Oct-2018 14:37

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-2 i
Sample Data Filename:	**DX9M_093 S: 7**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 14:35:04	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

There were no differences found between the parsed and reported data.

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Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit2A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_L31654-2_Audit2A_DX9M_093S7_SJ2619891.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
R1-0to30-101518
Sample Collection:
15-Oct-2018 14:37

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-2 i
Sample Data Filename:	**DX9M_093 S: 7**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 14:35:04	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

There were no differences found between the parsed and reported data.

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Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit2B.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_L31654-2_Audit2B_DX9M_093S7_SJ2619891.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
R1-0to30-101518
Sample Collection:
15-Oct-2018 14:37

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-2
Sample Data Filename:	**DB9T_084 S: 6**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 23:27:43	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

There were no differences found between the parsed and reported data.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1A.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB225_L31654-2_Audit1A_DB9T_084S6_SJ2620830.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
R1-0to30-101518
Sample Collection:
15-Oct-2018 14:37

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-2
Sample Data Filename:	**DB9T_084 S: 6**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 23:27:43	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

There were no differences found between the parsed and reported data.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1B.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB225_L31654-2_Audit1B_DB9T_084S6_SJ2620830.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

CLIENT SAMPLE NO.
R1-0to30-101518
Sample Collection:
15-Oct-2018 14:37

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-2
Sample Data Filename:	**DB9T_084 S: 6**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 23:27:43	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

There were no differences found between the parsed and reported data.

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Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit2A.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB225_L31654-2_Audit2A_DB9T_084S6_SJ2620830.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
R1-0to30-101518
Sample Collection:
15-Oct-2018 14:37

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-2
Sample Data Filename:	**DB9T_084 S: 6**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 23:27:43	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

There were no differences found between the parsed and reported data.

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Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit2B.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB225_L31654-2_Audit2B_DB9T_084S6_SJ2620830.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
B1-0to20-101418
Sample Collection:
14-Oct-2018 12:58

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-3 i
Sample Data Filename:	**DX9M_093 S: 8**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 15:30:12	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

There were no differences found between the parsed and reported data.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_L31654-3_Audit1A_DX9M_093S8_SJ2619892.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
B1-0to20-101418
Sample Collection:
14-Oct-2018 12:58

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-3 i
Sample Data Filename:	**DX9M_093 S: 8**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 15:30:12	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

There were no differences found between the parsed and reported data.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1B.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_L31654-3_Audit1B_DX9M_093S8_SJ2619892.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

CLIENT SAMPLE NO.
B1-0to20-101418
Sample Collection:
14-Oct-2018 12:58

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-3 i
Sample Data Filename:	**DX9M_093 S: 8**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 15:30:12	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

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Report Filename: AUDIT_DIOXINS_1613DB5_L31654-3_Audit2A_DX9M_093S8_SJ2619892.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
B1-0to20-101418
Sample Collection:
14-Oct-2018 12:58

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-3 i
Sample Data Filename:	**DX9M_093 S: 8**	**Instrument ID:**	HR GC/MS
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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
B1-0to20-101418
Sample Collection:
14-Oct-2018 12:58

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-3
Sample Data Filename:	**DB9T_084 S: 7**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 00:12:26	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

There were no differences found between the parsed and reported data.

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Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1A.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB225_L31654-3_Audit1A_DB9T_084S7_SJ2620831.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
B1-0to20-101418
Sample Collection:
14-Oct-2018 12:58

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-3
Sample Data Filename:	**DB9T_084 S: 7**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 00:12:26	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

CLIENT SAMPLE NO.
B1-0to20-101418
Sample Collection:
14-Oct-2018 12:58

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-3
Sample Data Filename:	**DB9T_084 S: 7**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 00:12:26	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
B1-0to20-101418
Sample Collection:
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SGS AXYS ANALYTICAL SERVICES
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		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-3
Sample Data Filename:	**DB9T_084 S: 7**	**Instrument ID:**	HR GC/MS
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Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
L3-SC-00to10-102218
Sample Collection:
22-Oct-2018 10:45

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-4 i
Sample Data Filename:	**DX9M_093 S: 9**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 16:25:13	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

There were no differences found between the parsed and reported data.

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Report Filename: AUDIT_DIOXINS_1613DB5_L31654-4_Audit1A_DX9M_093S9_SJ2619893.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
L3-SC-00to10-102218
Sample Collection:
22-Oct-2018 10:45

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-4 i
Sample Data Filename:	**DX9M_093 S: 9**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 16:25:13	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

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SGS AXYS METHOD MLA-017 Rev 20

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SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

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SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
L3-SC-00to10-102218
Sample Collection:
22-Oct-2018 10:45

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-4
Sample Data Filename:	**DB9T_084 S: 8**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 00:57:10	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

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Report Filename: AUDIT_DIOXINS_1613DB225_L31654-4_Audit1A_DB9T_084S8_SJ2620832.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
L3-SC-00to10-102218
Sample Collection:
22-Oct-2018 10:45

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-4
Sample Data Filename:	**DB9T_084 S: 8**	**Instrument ID:**	HR GC/MS
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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

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Sample Collection:
22-Oct-2018 10:45

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		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

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		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-4
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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
F1-0to23-101418
Sample Collection:
14-Oct-2018 11:08

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-5 i
Sample Data Filename:	**DX9M_093 S: 10**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 17:20:16	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

There were no differences found between the parsed and reported data.

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Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_L31654-5_Audit1A_DX9M_093S10_SJ2619881.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
F1-0to23-101418
Sample Collection:
14-Oct-2018 11:08

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-5 i
Sample Data Filename:	**DX9M_093 S: 10**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 17:20:16	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

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2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-5 i
Sample Data Filename:	**DX9M_093 S: 10**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 17:20:16	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
F1-0to23-101418
Sample Collection:
14-Oct-2018 11:08

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-5 i
Sample Data Filename:	**DX9M_093 S: 10**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 17:20:16	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
F1-0to23-101418
Sample Collection:
14-Oct-2018 11:08

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-5
Sample Data Filename:	**DB9T_084 S: 9**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 01:41:53	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

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Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1A.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB225_L31654-5_Audit1A_DB9T_084S9_SJ2620833.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
F1-0to23-101418
Sample Collection:
14-Oct-2018 11:08

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-5
Sample Data Filename:	**DB9T_084 S: 9**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 01:41:53	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

There were no differences found between the parsed and reported data.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1B.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB225_L31654-5_Audit1B_DB9T_084S9_SJ2620833.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

CLIENT SAMPLE NO.
F1-0to23-101418
Sample Collection:
14-Oct-2018 11:08

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-5
Sample Data Filename:	**DB9T_084 S: 9**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 01:41:53	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
F1-0to23-101418
Sample Collection:
14-Oct-2018 11:08

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-5
Sample Data Filename:	**DB9T_084 S: 9**	**Instrument ID:**	HR GC/MS
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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
R4-SC-120to138-102118
Sample Collection:
21-Oct-2018 20:45

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-6 i
Sample Data Filename:	**DX9M_093 S: 11**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 18:15:23	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

There were no differences found between the parsed and reported data.

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Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_L31654-6_Audit1A_DX9M_093S11_SJ2619882.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
R4-SC-120to138-102118
Sample Collection:
21-Oct-2018 20:45

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-6 i
Sample Data Filename:	**DX9M_093 S: 11**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 18:15:23	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

CLIENT SAMPLE NO.
R4-SC-120to138-102118
Sample Collection:
21-Oct-2018 20:45

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-6 i
Sample Data Filename:	**DX9M_093 S: 11**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 18:15:23	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
R4-SC-120to138-102118
Sample Collection:
21-Oct-2018 20:45

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-6 i
Sample Data Filename:	**DX9M_093 S: 11**	**Instrument ID:**	HR GC/MS
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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
R4-SC-120to138-102118
Sample Collection:
21-Oct-2018 20:45

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-6
Sample Data Filename:	**DB9T_084 S: 10**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 02:26:36	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
R4-SC-120to138-102118
Sample Collection:
21-Oct-2018 20:45

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-6
Sample Data Filename:	**DB9T_084 S: 10**	**Instrument ID:**	HR GC/MS
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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

CLIENT SAMPLE NO.
R4-SC-120to138-102118
Sample Collection:
21-Oct-2018 20:45

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-6
Sample Data Filename:	**DB9T_084 S: 10**	**Instrument ID:**	HR GC/MS
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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
R4-SC-120to138-102118
Sample Collection:
21-Oct-2018 20:45

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-6
Sample Data Filename:	**DB9T_084 S: 10**	**Instrument ID:**	HR GC/MS
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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
B5-0to26-100818
Sample Collection:
08-Oct-2018 15:07

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-7 i
Sample Data Filename:	**DX9M_093 S: 16**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 23:06:41	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

There were no differences found between the parsed and reported data.

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For Axys Internal Use Only [XSL Template: Audit1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_L31654-7_Audit1A_DX9M_093S16_SJ2619984.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
B5-0to26-100818
Sample Collection:
08-Oct-2018 15:07

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-7 i
Sample Data Filename:	**DX9M_093 S: 16**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 23:06:41	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

CLIENT SAMPLE NO.
B5-0to26-100818
Sample Collection:
08-Oct-2018 15:07

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-7 i
Sample Data Filename:	**DX9M_093 S: 16**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 23:06:41	**GC Column ID:**	DB5
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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
B5-0to26-100818
Sample Collection:
08-Oct-2018 15:07

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-7 i
Sample Data Filename:	**DX9M_093 S: 16**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 23:06:41	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

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Report Filename: AUDIT_DIOXINS_1613DB5_L31654-7_Audit2B_DX9M_093S16_SJ2619984.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
B5-0to26-100818
Sample Collection:
08-Oct-2018 15:07

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-7
Sample Data Filename:	**DB9T_083 S: 7**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 11:55:36	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

There were no differences found between the parsed and reported data.

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Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1A.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB225_L31654-7_Audit1A_DB9T_083S7_SJ2620857.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
B5-0to26-100818
Sample Collection:
08-Oct-2018 15:07

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-7
Sample Data Filename:	**DB9T_083 S: 7**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 11:55:36	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

CLIENT SAMPLE NO.
B5-0to26-100818
Sample Collection:
08-Oct-2018 15:07

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-7
Sample Data Filename:	**DB9T_083 S: 7**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 11:55:36	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
B5-0to26-100818
Sample Collection:
08-Oct-2018 15:07

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-7
Sample Data Filename:	**DB9T_083 S: 7**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 11:55:36	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
R4-SC-8to10-102118
Sample Collection:
21-Oct-2018 19:40

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-8
Sample Data Filename:	**DX9M_093 S: 17**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 00:01:49	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

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Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_L31654-8_Audit1A_DX9M_093S17_SJ2619985.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
R4-SC-8to10-102118
Sample Collection:
21-Oct-2018 19:40

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-8
Sample Data Filename:	**DX9M_093 S: 17**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 00:01:49	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

There were no differences found between the parsed and reported data.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1B.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_L31654-8_Audit1B_DX9M_093S17_SJ2619985.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

CLIENT SAMPLE NO.
R4-SC-8to10-102118
Sample Collection:
21-Oct-2018 19:40

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-8
Sample Data Filename:	**DX9M_093 S: 17**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 00:01:49	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

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Report Filename: AUDIT_DIOXINS_1613DB5_L31654-8_Audit2A_DX9M_093S17_SJ2619985.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
R4-SC-8to10-102118
Sample Collection:
21-Oct-2018 19:40

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-8
Sample Data Filename:	**DX9M_093 S: 17**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 00:01:49	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
R4-SC-8to10-102118
Sample Collection:
21-Oct-2018 19:40

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-8
Sample Data Filename:	**DB9T_083 S: 8**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 12:40:20	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

There were no differences found between the parsed and reported data.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1A.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB225_L31654-8_Audit1A_DB9T_083S8_SJ2620858.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
R4-SC-8to10-102118
Sample Collection:
21-Oct-2018 19:40

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-8
Sample Data Filename:	**DB9T_083 S: 8**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 12:40:20	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

There were no differences found between the parsed and reported data.

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Signed: _____Henry Huang_____

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Report Filename: AUDIT_DIOXINS_1613DB225_L31654-8_Audit1B_DB9T_083S8_SJ2620858.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

CLIENT SAMPLE NO.
R4-SC-8to10-102118
Sample Collection:
21-Oct-2018 19:40

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-8
Sample Data Filename:	**DB9T_083 S: 8**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 12:40:20	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

There were no differences found between the parsed and reported data.

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Signed: _____Henry Huang_____

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Report Filename: AUDIT_DIOXINS_1613DB225_L31654-8_Audit2A_DB9T_083S8_SJ2620858.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
R4-SC-8to10-102118
Sample Collection:
21-Oct-2018 19:40

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-8
Sample Data Filename:	**DB9T_083 S: 8**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 12:40:20	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

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Report Filename: AUDIT_DIOXINS_1613DB225_L31654-8_Audit2B_DB9T_083S8_SJ2620858.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
J6-SC-40to60-102218
Sample Collection:
22-Oct-2018 18:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-9
Sample Data Filename:	**DX9M_093 S: 18**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 00:56:57	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

There were no differences found between the parsed and reported data.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_L31654-9_Audit1A_DX9M_093S18_SJ2619986.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
J6-SC-40to60-102218
Sample Collection:
22-Oct-2018 18:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-9
Sample Data Filename:	**DX9M_093 S: 18**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 00:56:57	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

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Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1B.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_L31654-9_Audit1B_DX9M_093S18_SJ2619986.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

CLIENT SAMPLE NO.
J6-SC-40to60-102218
Sample Collection:
22-Oct-2018 18:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-9
Sample Data Filename:	**DX9M_093 S: 18**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 00:56:57	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

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Report Filename: AUDIT_DIOXINS_1613DB5_L31654-9_Audit2A_DX9M_093S18_SJ2619986.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
J6-SC-40to60-102218
Sample Collection:
22-Oct-2018 18:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-9
Sample Data Filename:	**DX9M_093 S: 18**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 00:56:57	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

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Report Filename: AUDIT_DIOXINS_1613DB5_L31654-9_Audit2B_DX9M_093S18_SJ2619986.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
J6-SC-40to60-102218
Sample Collection:
22-Oct-2018 18:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-9 W
Sample Data Filename:	**DX9M_095A S: 13**	**Instrument ID:**	HR GC/MS
Analysis Date:	17-Sep-2019 **Time:** 20:48:37	**GC Column ID:**	DB5
Extract Volume (uL):	100	**Injection Volume (uL):**	1.0

There were no differences found between the parsed and reported data.

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Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_L31654-9_Audit1A_DX9M_095AS13_SJ2621561.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
J6-SC-40to60-102218
Sample Collection:
22-Oct-2018 18:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-9 W
Sample Data Filename:	**DX9M_095A S: 13**	**Instrument ID:**	HR GC/MS
Analysis Date:	17-Sep-2019 **Time:** 20:48:37	**GC Column ID:**	DB5
Extract Volume (uL):	100	**Injection Volume (uL):**	1.0

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Report Filename: AUDIT_DIOXINS_1613DB5_L31654-9_Audit1B_DX9M_095AS13_SJ2621561.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

CLIENT SAMPLE NO.
J6-SC-40to60-102218
Sample Collection:
22-Oct-2018 18:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-9 W
Sample Data Filename:	**DX9M_095A S: 13**	**Instrument ID:**	HR GC/MS
Analysis Date:	17-Sep-2019 **Time:** 20:48:37	**GC Column ID:**	DB5
Extract Volume (uL):	100	**Injection Volume (uL):**	1.0

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Report Filename: AUDIT_DIOXINS_1613DB5_L31654-9_Audit2A_DX9M_095AS13_SJ2621561.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
J6-SC-40to60-102218
Sample Collection:
22-Oct-2018 18:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-9 W
Sample Data Filename:	**DX9M_095A S: 13**	**Instrument ID:**	HR GC/MS
Analysis Date:	17-Sep-2019 **Time:** 20:48:37	**GC Column ID:**	DB5
Extract Volume (uL):	100	**Injection Volume (uL):**	1.0

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Report Filename: AUDIT_DIOXINS_1613DB5_L31654-9_Audit2B_DX9M_095AS13_SJ2621561.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
J6-SC-40to60-102218
Sample Collection:
22-Oct-2018 18:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-9
Sample Data Filename:	**DB9T_083 S: 9**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 13:25:03	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

There were no differences found between the parsed and reported data.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1A.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB225_L31654-9_Audit1A_DB9T_083S9_SJ2620859.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
J6-SC-40to60-102218
Sample Collection:
22-Oct-2018 18:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-9
Sample Data Filename:	**DB9T_083 S: 9**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 13:25:03	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

CLIENT SAMPLE NO.
J6-SC-40to60-102218
Sample Collection:
22-Oct-2018 18:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-9
Sample Data Filename:	**DB9T_083 S: 9**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 13:25:03	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

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Report Filename: AUDIT_DIOXINS_1613DB225_L31654-9_Audit2A_DB9T_083S9_SJ2620859.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
J6-SC-40to60-102218
Sample Collection:
22-Oct-2018 18:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-9
Sample Data Filename:	**DB9T_083 S: 9**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 13:25:03	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

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For Axys Internal Use Only [XSL Template: Audit2B.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB225_L31654-9_Audit2B_DB9T_083S9_SJ2620859.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
D6-SC-2to4-102118
Sample Collection:
21-Oct-2018 16:30

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-10
Sample Data Filename:	**DX9M_093 S: 19**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 01:52:05	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

There were no differences found between the parsed and reported data.

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Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_L31654-10_Audit1A_DX9M_093S19_SJ2619987.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
D6-SC-2to4-102118
Sample Collection:
21-Oct-2018 16:30

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-10
Sample Data Filename:	**DX9M_093 S: 19**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 01:52:05	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

There were no differences found between the parsed and reported data.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1B.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_L31654-10_Audit1B_DX9M_093S19_SJ2619987.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

CLIENT SAMPLE NO.
D6-SC-2to4-102118
Sample Collection:
21-Oct-2018 16:30

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-10
Sample Data Filename:	**DX9M_093 S: 19**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 01:52:05	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

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Report Filename: AUDIT_DIOXINS_1613DB5_L31654-10_Audit2A_DX9M_093S19_SJ2619987.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
D6-SC-2to4-102118
Sample Collection:
21-Oct-2018 16:30

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-10
Sample Data Filename:	**DX9M_093 S: 19**	**Instrument ID:**	HR GC/MS
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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
D6-SC-2to4-102118
Sample Collection:
21-Oct-2018 16:30

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-10 W
Sample Data Filename:	**DX9M_095A S: 14**	**Instrument ID:**	HR GC/MS
Analysis Date:	17-Sep-2019 **Time:** 21:43:45	**GC Column ID:**	DB5
Extract Volume (uL):	100	**Injection Volume (uL):**	1.0

There were no differences found between the parsed and reported data.

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Signed: _____Henry Huang_____

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Report Filename: AUDIT_DIOXINS_1613DB5_L31654-10_Audit1A_DX9M_095AS14_SJ2621562.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
D6-SC-2to4-102118
Sample Collection:
21-Oct-2018 16:30

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-10 W
Sample Data Filename:	**DX9M_095A S: 14**	**Instrument ID:**	HR GC/MS
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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

CLIENT SAMPLE NO.
D6-SC-2to4-102118
Sample Collection:
21-Oct-2018 16:30

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-10 W
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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
D6-SC-2to4-102118
Sample Collection:
21-Oct-2018 16:30

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
D6-SC-2to4-102118
Sample Collection:
21-Oct-2018 16:30

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-10
Sample Data Filename:	**DB9T_083 S: 10**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 14:09:46	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

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Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1A.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB225_L31654-10_Audit1A_DB9T_083S10_SJ2620860.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
D6-SC-2to4-102118
Sample Collection:
21-Oct-2018 16:30

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-10
Sample Data Filename:	**DB9T_083 S: 10**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 14:09:46	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

CLIENT SAMPLE NO.
D6-SC-2to4-102118
Sample Collection:
21-Oct-2018 16:30

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-10
Sample Data Filename:	**DB9T_083 S: 10**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 14:09:46	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
D6-SC-2to4-102118
Sample Collection:
21-Oct-2018 16:30

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-10
Sample Data Filename:	**DB9T_083 S: 10**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 14:09:46	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
J5-SC-60to80-102218
Sample Collection:
22-Oct-2018 16:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-11
Sample Data Filename:	**DX9M_093 S: 20**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 02:47:12	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

There were no differences found between the parsed and reported data.

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For Axys Internal Use Only [XSL Template: Audit1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_L31654-11_Audit1A_DX9M_093S20_SJ2619988.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
J5-SC-60to80-102218
Sample Collection:
22-Oct-2018 16:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-11
Sample Data Filename:	**DX9M_093 S: 20**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 02:47:12	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

CLIENT SAMPLE NO.
J5-SC-60to80-102218
Sample Collection:
22-Oct-2018 16:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
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Sample Data Filename:	**DX9M_093 S: 20**	**Instrument ID:**	HR GC/MS
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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
J5-SC-60to80-102218
Sample Collection:
22-Oct-2018 16:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-11
Sample Data Filename:	**DX9M_093 S: 20**	**Instrument ID:**	HR GC/MS
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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
J5-SC-60to80-102218
Sample Collection:
22-Oct-2018 16:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-11 W
Sample Data Filename:	**DX9M_095A S: 15**	**Instrument ID:**	HR GC/MS
Analysis Date:	17-Sep-2019 **Time:** 22:38:52	**GC Column ID:**	DB5
Extract Volume (uL):	100	**Injection Volume (uL):**	1.0

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Report Filename: AUDIT_DIOXINS_1613DB5_L31654-11_Audit1A_DX9M_095AS15_SJ2621563.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
J5-SC-60to80-102218
Sample Collection:
22-Oct-2018 16:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-11 W
Sample Data Filename:	**DX9M_095A S: 15**	**Instrument ID:**	HR GC/MS
Analysis Date:	17-Sep-2019 **Time:** 22:38:52	**GC Column ID:**	DB5
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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

CLIENT SAMPLE NO.
J5-SC-60to80-102218
Sample Collection:
22-Oct-2018 16:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-11 W
Sample Data Filename:	**DX9M_095A S: 15**	**Instrument ID:**	HR GC/MS
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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
J5-SC-60to80-102218
Sample Collection:
22-Oct-2018 16:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-11 W
Sample Data Filename:	**DX9M_095A S: 15**	**Instrument ID:**	HR GC/MS
Analysis Date:	17-Sep-2019 **Time:** 22:38:52	**GC Column ID:**	DB5
Extract Volume (uL):	100	**Injection Volume (uL):**	1.0

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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
J5-SC-60to80-102218
Sample Collection:
22-Oct-2018 16:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-11
Sample Data Filename:	**DB9T_083 S: 11**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 14:54:30	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

There were no differences found between the parsed and reported data.

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Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1A.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB225_L31654-11_Audit1A_DB9T_083S11_SJ2620861.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
J5-SC-60to80-102218
Sample Collection:
22-Oct-2018 16:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-11
Sample Data Filename:	**DB9T_083 S: 11**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 14:54:30	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

There were no differences found between the parsed and reported data.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1B.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB225_L31654-11_Audit1B_DB9T_083S11_SJ2620861.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

CLIENT SAMPLE NO.
J5-SC-60to80-102218
Sample Collection:
22-Oct-2018 16:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-11
Sample Data Filename:	**DB9T_083 S: 11**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 14:54:30	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

There were no differences found between the parsed and reported data.

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Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit2A.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB225_L31654-11_Audit2A_DB9T_083S11_SJ2620861.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
J5-SC-60to80-102218
Sample Collection:
22-Oct-2018 16:50

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-11
Sample Data Filename:	**DB9T_083 S: 11**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 14:54:30	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

There were no differences found between the parsed and reported data.

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Report Filename: AUDIT_DIOXINS_1613DB225_L31654-11_Audit2B_DB9T_083S11_SJ2620861.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
J7-0to26-101218
Sample Collection:
12-Oct-2018 15:52

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-12
Sample Data Filename:	**DX9M_093 S: 21**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 03:42:14	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

There were no differences found between the parsed and reported data.

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Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_L31654-12_Audit1A_DX9M_093S21_SJ2619989.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
J7-0to26-101218
Sample Collection:
12-Oct-2018 15:52

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-12
Sample Data Filename:	**DX9M_093 S: 21**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 03:42:14	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

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For Axys Internal Use Only [XSL Template: Audit1B.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_L31654-12_Audit1B_DX9M_093S21_SJ2619989.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

CLIENT SAMPLE NO.
J7-0to26-101218
Sample Collection:
12-Oct-2018 15:52

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-12
Sample Data Filename:	**DX9M_093 S: 21**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 03:42:14	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

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Report Filename: AUDIT_DIOXINS_1613DB5_L31654-12_Audit2A_DX9M_093S21_SJ2619989.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
J7-0to26-101218
Sample Collection:
12-Oct-2018 15:52

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-12
Sample Data Filename:	**DX9M_093 S: 21**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 03:42:14	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

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Report Filename: AUDIT_DIOXINS_1613DB5_L31654-12_Audit2B_DX9M_093S21_SJ2619989.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
J7-0to26-101218
Sample Collection:
12-Oct-2018 15:52

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-12 W
Sample Data Filename:	**DX9M_095A S: 16**	**Instrument ID:**	HR GC/MS
Analysis Date:	17-Sep-2019 **Time:** 23:34:00	**GC Column ID:**	DB5
Extract Volume (uL):	100	**Injection Volume (uL):**	1.0

There were no differences found between the parsed and reported data.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_L31654-12_Audit1A_DX9M_095AS16_SJ2621564.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
J7-0to26-101218
Sample Collection:
12-Oct-2018 15:52

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-12 W
Sample Data Filename:	**DX9M_095A S: 16**	**Instrument ID:**	HR GC/MS
Analysis Date:	17-Sep-2019 **Time:** 23:34:00	**GC Column ID:**	DB5
Extract Volume (uL):	100	**Injection Volume (uL):**	1.0

There were no differences found between the parsed and reported data.

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Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1B.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_L31654-12_Audit1B_DX9M_095AS16_SJ2621564.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

CLIENT SAMPLE NO.
J7-0to26-101218
Sample Collection:
12-Oct-2018 15:52

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-12 W
Sample Data Filename:	**DX9M_095A S: 16**	**Instrument ID:**	HR GC/MS
Analysis Date:	17-Sep-2019 **Time:** 23:34:00	**GC Column ID:**	DB5
Extract Volume (uL):	100	**Injection Volume (uL):**	1.0

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Report Filename: AUDIT_DIOXINS_1613DB5_L31654-12_Audit2A_DX9M_095AS16_SJ2621564.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
J7-0to26-101218
Sample Collection:
12-Oct-2018 15:52

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-12 W
Sample Data Filename:	**DX9M_095A S: 16**	**Instrument ID:**	HR GC/MS
Analysis Date:	17-Sep-2019 **Time:** 23:34:00	**GC Column ID:**	DB5
Extract Volume (uL):	100	**Injection Volume (uL):**	1.0

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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
J7-0to26-101218
Sample Collection:
12-Oct-2018 15:52

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-12
Sample Data Filename:	**DB9T_083 S: 12**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 15:39:12	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

There were no differences found between the parsed and reported data.

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Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1A.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB225_L31654-12_Audit1A_DB9T_083S12_SJ2620862.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
J7-0to26-101218
Sample Collection:
12-Oct-2018 15:52

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-12
Sample Data Filename:	**DB9T_083 S: 12**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 15:39:12	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

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Report Filename: AUDIT_DIOXINS_1613DB225_L31654-12_Audit1B_DB9T_083S12_SJ2620862.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

CLIENT SAMPLE NO.
J7-0to26-101218
Sample Collection:
12-Oct-2018 15:52

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-12
Sample Data Filename:	**DB9T_083 S: 12**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 15:39:12	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

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Report Filename: AUDIT_DIOXINS_1613DB225_L31654-12_Audit2A_DB9T_083S12_SJ2620862.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
J7-0to26-101218
Sample Collection:
12-Oct-2018 15:52

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	SWAN ISLAND LAGOON SED INVESTIGATION
Contract No.:	5055	**Lab Sample I.D.:**	L31654-12
Sample Data Filename:	**DB9T_083 S: 12**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 15:39:12	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

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Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit2B.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB225_L31654-12_Audit2B_DB9T_083S12_SJ2620862.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No. N/A

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-101 i
Sample Data Filename:	**DX9M_093 S: 5**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 12:44:54	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

COMPOUND	ORIG. CONC.	FINAL CONC.	CHANGE CONC. (Final/Orig.)	ORIG. AREA	FINAL AREA	CHANGE AREA (Final/Orig.)	ORIG. RATIO	FINAL RATIO
2,3,7,8-TCDD								
1,2,3,7,8-PECDD								
2,3,7,8-TCDF								
2,3,4,7,8-PECDF								
2,3,4,6,7,8-HXCDF								

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_WG69303-101_Audit1A_DX9M_093S5_SJ2619888.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No. N/A

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-101 i
Sample Data Filename:	**DX9M_093 S: 5**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 12:44:54	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

COMPOUND	ORIG. SDL	FINAL SDL	CHANGE SDL (Final/Orig.)	ORIG. QUAL	FINAL QUAL	ORIG. RT	FINAL RT	REVIEWED BY	REVIEWED DATE
2,3,7,8-TCDD				NDR	ND(R)			EANDAYA	19-SEP-2019
1,2,3,7,8-PECDD				NDR	ND(R)			EANDAYA	19-SEP-2019
2,3,7,8-TCDF				NDR	ND(R)			EANDAYA	19-SEP-2019
2,3,4,7,8-PECDF				NDR	ND(R)			EANDAYA	19-SEP-2019
2,3,4,6,7,8-HXCDF				NDR	ND(R)			EANDAYA	19-SEP-2019

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Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1B.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_WG69303-101_Audit1B_DX9M_093S5_SJ2619888.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	N/A		
Contract No.:	5055	**Lab Sample I.D.:**	WG69303-101 i
Sample Data Filename:	**DX9M_093 S: 5**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 12:44:54	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

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Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit2A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_WG69303-101_Audit2A_DX9M_093S5_SJ2619888.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	N/A		
Contract No.:	5055	**Lab Sample I.D.:**	WG69303-101 i
Sample Data Filename:	**DX9M_093 S: 5**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 12:44:54	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

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For Axys Internal Use Only [XSL Template: Audit2B.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_WG69303-101_Audit2B_DX9M_093S5_SJ2619888.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
Spiked Matrix
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-102 i
Sample Data Filename:	**DX9M_093 S: 2**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 10:01:18	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

COMPOUND	ORIG. CONC.	FINAL CONC.	CHANGE CONC. (Final/Orig.)	ORIG. AREA	FINAL AREA	CHANGE AREA (Final/Orig.)	ORIG. RATIO	FINAL RATIO
2,3,7,8-TCDD								
1,2,3,7,8-PECDD								
1,2,3,4,7,8-HXCDD								
1,2,3,6,7,8-HXCDD								
1,2,3,7,8,9-HXCDD								
OCDD								
2,3,7,8-TCDF								
1,2,3,4,7,8-HXCDF								
2,3,4,6,7,8-HXCDF								
OCDF								

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_WG69303-102_Audit1A_DX9M_093S2_SJ2619884.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
Spiked Matrix
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-102 i
Sample Data Filename:	**DX9M_093 S: 2**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 10:01:18	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

COMPOUND	ORIG. SDL	FINAL SDL	CHANGE SDL (Final/Orig.)	ORIG. QUAL	FINAL QUAL	ORIG. RT	FINAL RT	REVIEWED BY	REVIEWED DATE
2,3,7,8-TCDD								EANDAYA	19-SEP-2019
1,2,3,7,8-PECDD								EANDAYA	19-SEP-2019
1,2,3,4,7,8-HXCDD								EANDAYA	19-SEP-2019
1,2,3,6,7,8-HXCDD								EANDAYA	19-SEP-2019
1,2,3,7,8,9-HXCDD								EANDAYA	19-SEP-2019
OCDD								EANDAYA	19-SEP-2019
2,3,7,8-TCDF								EANDAYA	19-SEP-2019
1,2,3,4,7,8-HXCDF								EANDAYA	19-SEP-2019
2,3,4,6,7,8-HXCDF								EANDAYA	19-SEP-2019
OCDF								EANDAYA	19-SEP-2019

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1B.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_WG69303-102_Audit1B_DX9M_093S2_SJ2619884.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

CLIENT SAMPLE NO.
Spiked Matrix
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-102 i
Sample Data Filename:	**DX9M_093 S: 2**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 10:01:18	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

There were no differences found between the parsed and reported data.

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Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit2A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_WG69303-102_Audit2A_DX9M_093S2_SJ2619884.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
Spiked Matrix
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-102 i
Sample Data Filename:	**DX9M_093 S: 2**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 10:01:18	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

There were no differences found between the parsed and reported data.

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Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit2B.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_WG69303-102_Audit2B_DX9M_093S2_SJ2619884.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
Certified Reference Material
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-103
Sample Data Filename:	**DX9M_093 S: 23**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 05:32:31	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

There were no differences found between the parsed and reported data.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_WG69303-103_Audit1A_DX9M_093S23_SJ2619991.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
Certified Reference Material
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-103
Sample Data Filename:	**DX9M_093 S: 23**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 05:32:31	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

There were no differences found between the parsed and reported data.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1B.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_WG69303-103_Audit1B_DX9M_093S23_SJ2619991.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

CLIENT SAMPLE NO.
Certified Reference Material
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-103
Sample Data Filename:	**DX9M_093 S: 23**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 05:32:31	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

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Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit2A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_WG69303-103_Audit2A_DX9M_093S23_SJ2619991.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
Certified Reference Material
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-103
Sample Data Filename:	**DX9M_093 S: 23**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 05:32:31	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

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Signed: _____Henry Huang_____

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Report Filename: AUDIT_DIOXINS_1613DB5_WG69303-103_Audit2B_DX9M_093S23_SJ2619991.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
Certified Reference Material
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-103
Sample Data Filename:	**DB9T_082 S: 12**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 03:42:55	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

There were no differences found between the parsed and reported data.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1A.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB225_WG69303-103_Audit1A_DB9T_082S12_SJ2620909.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
Certified Reference Material
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-103
Sample Data Filename:	**DB9T_082 S: 12**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 03:42:55	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

There were no differences found between the parsed and reported data.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1B.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB225_WG69303-103_Audit1B_DB9T_082S12_SJ2620909.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

CLIENT SAMPLE NO.
Certified Reference Material
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-103
Sample Data Filename:	**DB9T_082 S: 12**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 03:42:55	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

There were no differences found between the parsed and reported data.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit2A.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB225_WG69303-103_Audit2A_DB9T_082S12_SJ2620909.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
Certified Reference Material
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-103
Sample Data Filename:	**DB9T_082 S: 12**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 03:42:55	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

There were no differences found between the parsed and reported data.

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Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit2B.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB225_WG69303-103_Audit2B_DB9T_082S12_SJ2620909.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
Certified Reference Material
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-104
Sample Data Filename:	**DX9M_093 S: 34**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 15:56:38	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

There were no differences found between the parsed and reported data.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_WG69303-104_Audit1A_DX9M_093S34_SJ2620050.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
Certified Reference Material
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-104
Sample Data Filename:	**DX9M_093 S: 34**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 15:56:38	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

There were no differences found between the parsed and reported data.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1B.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_WG69303-104_Audit1B_DX9M_093S34_SJ2620050.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

CLIENT SAMPLE NO.
Certified Reference Material
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-104
Sample Data Filename:	**DX9M_093 S: 34**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 15:56:38	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

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Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit2A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_WG69303-104_Audit2A_DX9M_093S34_SJ2620050.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
Certified Reference Material
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-104
Sample Data Filename:	**DX9M_093 S: 34**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 15:56:38	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

There were no differences found between the parsed and reported data.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit2B.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_WG69303-104_Audit2B_DX9M_093S34_SJ2620050.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
Certified Reference Material
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-104
Sample Data Filename:	**DB9T_082 S: 13**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 04:27:39	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

There were no differences found between the parsed and reported data.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1A.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB225_WG69303-104_Audit1A_DB9T_082S13_SJ2620910.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
Certified Reference Material
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-104
Sample Data Filename:	**DB9T_082 S: 13**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 04:27:39	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

There were no differences found between the parsed and reported data.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1B.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB225_WG69303-104_Audit1B_DB9T_082S13_SJ2620910.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

CLIENT SAMPLE NO.
Certified Reference Material
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-104
Sample Data Filename:	**DB9T_082 S: 13**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 04:27:39	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

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These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit2A.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB225_WG69303-104_Audit2A_DB9T_082S13_SJ2620910.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
Certified Reference Material
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-104
Sample Data Filename:	**DB9T_082 S: 13**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 04:27:39	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

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Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit2B.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB225_WG69303-104_Audit2B_DB9T_082S13_SJ2620910.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
Certified Reference Material
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-105
Sample Data Filename:	**DX9M_093 S: 35**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 16:51:40	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

There were no differences found between the parsed and reported data.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1A.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_WG69303-105_Audit1A_DX9M_093S35_SJ2620051.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
Certified Reference Material
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-105
Sample Data Filename:	**DX9M_093 S: 35**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 16:51:40	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

There were no differences found between the parsed and reported data.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1B.xsl; Created: 22-Sep-2019 12:39:35; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB5_WG69303-105_Audit1B_DX9M_093S35_SJ2620051.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

CLIENT SAMPLE NO.
Certified Reference Material
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-105
Sample Data Filename:	**DX9M_093 S: 35**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 16:51:40	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

There were no differences found between the parsed and reported data.

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Report Filename: AUDIT_DIOXINS_1613DB5_WG69303-105_Audit2A_DX9M_093S35_SJ2620051.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
Certified Reference Material
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-105
Sample Data Filename:	**DX9M_093 S: 35**	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Sep-2019 **Time:** 16:51:40	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Injection Volume (uL):**	1.0

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Report Filename: AUDIT_DIOXINS_1613DB5_WG69303-105_Audit2B_DX9M_093S35_SJ2620051.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1A CHANGE REPORT

CLIENT SAMPLE NO.
Certified Reference Material
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-105
Sample Data Filename:	**DB9T_082 S: 14**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 05:12:22	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

There were no differences found between the parsed and reported data.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Audit1A.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB225_WG69303-105_Audit1A_DB9T_082S14_SJ2620911.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 1B CHANGE REPORT

CLIENT SAMPLE NO.
Certified Reference Material
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-105
Sample Data Filename:	**DB9T_082 S: 14**	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Sep-2019 **Time:** 05:12:22	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Injection Volume (uL):**	2.0

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For Axys Internal Use Only [XSL Template: Audit1B.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB225_WG69303-105_Audit1B_DB9T_082S14_SJ2620911.html; Workgroup: WG69303; Design ID: 3698]

SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2A CHANGE REPORT

CLIENT SAMPLE NO.
Certified Reference Material
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-105
Sample Data Filename:	**DB9T_082 S: 14**	**Instrument ID:**	HR GC/MS
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SGS AXYS METHOD MLA-017 Rev 20

AUDIT 2B CHANGE REPORT

CLIENT SAMPLE NO.
Certified Reference Material
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	5055	**Lab Sample I.D.:**	WG69303-105
Sample Data Filename:	**DB9T_082 S: 14**	**Instrument ID:**	HR GC/MS
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For Axys Internal Use Only [XSL Template: Audit2B.xsl; Created: 22-Sep-2019 12:37:42; Application: XMLTransformer-1.17.15;
Report Filename: AUDIT_DIOXINS_1613DB225_WG69303-105_Audit2B_DB9T_082S14_SJ2620911.html; Workgroup: WG69303; Design ID: 3698]

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

Name: DX9M_095AS12, Date: 17-Sep-2019, Time: 19:53:29, ID: L31654-1,I2,, Description: 1,WG69303,1.0/20uL

	Name	Sample Size	Resp	Ratio	fails?	RT	pg	DL	%Rec	Noise 1	Noise 2
1	2,3,7,8-TCDF	10.056	7.47e2	0.75	NO	25.27	0.024	0.0137		7.99e2	9.96e2
2	1,2,3,7,8-PeCDF	10.056	1.03e3	1.61	NO	33.57	0.036	0.0334		1.14e3	2.20e3
3	2,3,4,7,8-PeCDF	10.056	9.68e2	0.84	YES	35.37	0.033	0.0281		1.14e3	2.20e3
4	1,2,3,4,7,8-HxCDF	10.056	1.10e3	1.20	NO	40.73	0.044	0.0108		5.71e2	9.10e2
5	1,2,3,6,7,8-HxCDF	10.056	8.18e2	1.30	NO	40.90	0.029	0.0103		5.71e2	9.10e2
6	2,3,4,6,7,8-HxCDF	10.056	7.40e2	1.14	NO	41.87	0.028	0.0108		5.71e2	9.10e2
7	1,2,3,7,8,9-HxCDF	10.056	1.50e3	1.12	NO	42.92	0.071	0.0140		5.71e2	9.10e2
8	1,2,3,4,6,7,8-HpCDF	10.056	1.29e4	0.93	NO	45.37	0.521	0.0149		7.49e2	1.45e3
9	1,2,3,4,7,8,9-HpCDF	10.056	9.23e2	1.32	YES	47.18	0.043	0.0185		7.49e2	1.45e3
10	OCDF	10.056	2.25e4	0.99	NO	50.44	1.237	0.0065		3.84e2	2.43e2
11	2,3,7,8-TCDD	10.056	1.27e3	0.68	NO	26.47	0.052	0.0244		1.37e3	1.06e3
12	1,2,3,7,8-PeCDD	10.056	1.25e3	0.70	NO	36.13	0.061	0.0244		1.19e3	8.88e2
13	1,2,3,4,7,8-HxCDD	10.056	1.91e3	1.11	NO	42.14	0.097	0.0168		1.09e3	8.38e2
14	1,2,3,6,7,8-HxCDD	10.056	3.29e3	1.12	NO	42.27	0.164	0.0172		1.09e3	8.38e2
15	1,2,3,7,8,9-HxCDD	10.056	5.07e3	1.34	NO	42.70	0.257	0.0172		1.09e3	8.38e2
16	1,2,3,4,6,7,8-HpCDD	10.056	6.31e4	0.95	NO	46.76	3.372	0.0349		1.54e3	2.10e3
17	OCDD	10.056	6.65e5	0.89	NO	50.36	42.412	0.0062		1.00e0	5.13e2
18	13C-2,3,7,8-TCDF	10.056	6.56e6	0.77	NO	25.22	156.575	0.1324	78.7	1.51e4	8.55e3
19	13C-1,2,3,7,8-PeCDF	10.056	6.09e6	1.55	NO	33.50	179.016	0.2035	90.0	1.22e4	1.74e4
20	13C-2,3,4,7,8-PeCDF	10.056	6.10e6	1.54	NO	35.28	173.872	0.1973	87.4	1.22e4	1.74e4
21	13C-1,2,3,4,7,8-HxCDF	10.056	4.55e6	0.51	NO	40.71	158.491	0.1865	79.7	1.26e4	1.58e4
22	13C-1,2,3,6,7,8-HxCDF	10.056	5.19e6	0.51	NO	40.88	164.568	0.1696	82.7	1.26e4	1.58e4
23	13C-2,3,4,6,7,8-HxCDF	10.056	4.56e6	0.52	NO	41.85	160.229	0.1882	80.6	1.26e4	1.58e4
24	13C-1,2,3,7,8,9-HxCDF	10.056	4.00e6	0.53	NO	42.88	158.194	0.2116	79.5	1.26e4	1.58e4
25	13C-1,2,3,4,6,7,8-HpCDF	10.056	3.95e6	0.45	NO	45.35	166.874	0.2172	83.9	1.87e4	8.59e3
26	13C-1,2,3,4,7,8,9-HpCDF	10.056	3.39e6	0.45	NO	47.16	176.803	0.2676	88.9	1.87e4	8.59e3
27	13C-2,3,7,8-TCDD	10.056	4.41e6	0.76	NO	26.44	165.408	0.2956	83.2	1.92e4	1.44e4
28	13C-1,2,3,7,8-PeCDD	10.056	4.11e6	0.62	NO	36.11	194.200	0.1196	97.6	7.11e3	3.71e3
29	13C-1,2,3,4,7,8-HxCDD	10.056	3.81e6	1.27	NO	42.12	166.264	0.2134	83.6	8.95e3	1.70e4
30	13C-1,2,3,6,7,8-HxCDD	10.056	4.24e6	1.19	NO	42.26	167.457	0.1930	84.2	8.95e3	1.70e4
31	13C-1,2,3,4,6,7,8-HpCDD	10.056	4.78e6	1.05	NO	46.74	186.266	0.1145	93.7	9.26e3	6.30e3
32	13C-OCDD	10.056	6.36e6	0.86	NO	50.34	337.084	0.0123	84.7	1.75e0	1.23e3
33	13C-1,2,3,4-TCDD	10.056	5.47e6	0.78	NO	26.11	13.516	0.0195	6.8	1.92e4	1.44e4
34	13C-1,2,3,7,8,9-HxCDD	10.056	4.71e6	1.20	NO	42.68	16.116	0.0167	8.1	8.95e3	1.70e4
35	37Cl-2,3,7,8-TCDD	10.056	4.84e5			26.47	16.488	0.0393	82.9		4.93e3
36	Total Tetra-Furans	10.056					0.152	0.0137			9.96e2
37	Total Tetra-Dioxins	10.056					1.059	0.0244			1.06e3
38	Total Penta-Furans	10.056					0.233	0.0311			2.20e3
39	Total Penta-Dioxins	10.056					0.473	0.0244			8.88e2
40	Total Hexa-Furans	10.056					0.655	0.0112			9.10e2
41	Total Hexa-Dioxins	10.056					2.581	0.0162			8.38e2
42	Total Hepta-Furans	10.056					1.501	0.0166			1.45e3
43	Total Hepta-Dioxins	10.056					8.137	0.0349			2.10e3
44	Hexa DPE	1.000	3.09e2			23.92					5.41e0
45	Hepta DPE	1.000	1.86e2			33.87					1.81e2
46	Octa DPE	1.000	8.86e1			42.46					4.83e0
47	Nona DPE	1.000	1.72e2			48.09					5.55e0
48	Deca DPE	1.000	1.92e2			49.52					3.25e0
49	Tetra Lock	1.000	3.48e4			21.72					3.60e5
50	Penta Lock	1.000	1.11e4			32.60					3.28e5
51	Hexa Lock	1.000	3.66e6			38.92					1.81e6
52	Hepta Lock	1.000									5.87e5
53	Octa Lock	1.000	3.21e4			48.81					4.07e5
54	13C-Tetra-Furans	10.056					156.575	0.1324			8.55e3
55	13C-Tetra-Dioxins	10.056					178.924	0.3150			1.44e4

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

SV HH 22 Sept. 2019

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

Name: DX9M_095AS12, Date: 17-Sep-2019, Time: 19:53:29, ID: L31654-1,I2,, Description: 1,WG69303,1.0/20uL

Tetrafurans

	RT	Ratio	Fails?	pg
1	24.62	0.390	YES	0.018
2	24.17	1.109	YES	0.019
3	23.60	0.518	YES	0.004
4	23.43	0.602	YES	0.020
5	22.25	0.898	YES	0.067
6	25.27	0.749	NO	0.024

Tetradioxins

	RT	Ratio	Fails?	pg
1	26.47	0.681	NO	0.052
2	26.07	0.738	NO	0.087
3	25.24	3.466	YES	0.127
4	24.60	0.778	NO	0.650
5	22.95	0.876	NO	0.039
6	23.77	0.409	YES	0.047
7	23.37	0.679	NO	0.057

Pentafurans

	RT	Ratio	Fails?	pg
1	28.91	1.287	YES	0.110
2	31.49	2.321	YES	0.046
3	34.35	1.417	NO	0.007
4	33.57	1.608	NO	0.036
5	35.37	0.840	YES	0.033

Pentadioxins

	RT	Ratio	Fails?	pg
1	33.15	0.652	NO	0.160
2	32.00	0.617	NO	0.117
3	37.06	1.305	YES	0.046
4	36.13	0.698	NO	0.061
5	35.12	0.722	YES	0.088

Hexafurans

	RT	Ratio	Fails?	pg
1	39.36	0.609	YES	0.011
2	39.26	1.182	NO	0.144
3	39.02	1.286	NO	0.062
4	43.07	3.023	YES	0.018
5	42.92	1.115	NO	0.071
6	41.87	1.137	NO	0.028
7	41.73	1.160	NO	0.016
8	40.90	1.296	NO	0.029
9	40.73	1.196	NO	0.044
10	40.60	0.789	YES	0.009
11	40.09	1.075	NO	0.223

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

Name: DX9M_095AS12, Date: 17-Sep-2019, Time: 19:53:29, ID: L31654-1,I2,, Description: 1,WG69303,1.0/20uL

Hexadioxins

	RT	Ratio	Fails?	pg
1	41.24	1.124	NO	0.531
2	40.87	2.192	YES	0.313
3	40.04	1.292	NO	1.131
4	42.70	1.338	NO	0.257
5	42.27	1.124	NO	0.164
6	42.14	1.111	NO	0.097
7	41.44	1.008	YES	0.088

Heptafurans

	RT	Ratio	Fails?	pg
1	47.18	1.315	YES	0.043
2	45.90	1.009	NO	0.937
3	45.37	0.928	NO	0.521

Heptadioxins

	RT	Ratio	Fails?	pg
1	45.84	1.079	NO	4.765
2	46.76	0.955	NO	3.372

13C-TF

	RT	Ratio	Fails?	pg
1	25.22	0.772	NO	156.575

13C-TD

	RT	Ratio	Fails?	pg
1	26.44	0.757	NO	165.408
2	26.11	0.784	NO	13.516

13C-PF

	RT	Ratio	Fails?	pg
1	33.50	1.549	NO	179.016
2	35.28	1.539	NO	173.872

13C-PD

	RT	Ratio	Fails?	pg
1	36.11	0.622	NO	194.200

13C-HxF

	RT	Ratio	Fails?	pg
1	40.88	0.509	NO	164.568
2	40.71	0.512	NO	158.491
3	42.88	0.529	NO	158.194
4	41.85	0.521	NO	160.229

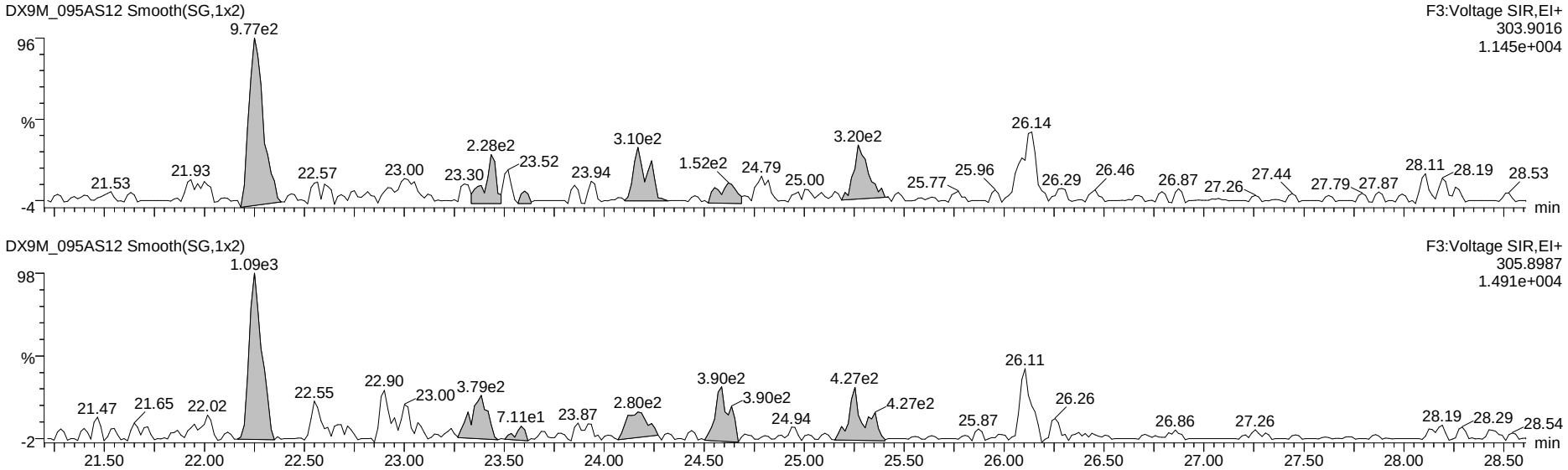
PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

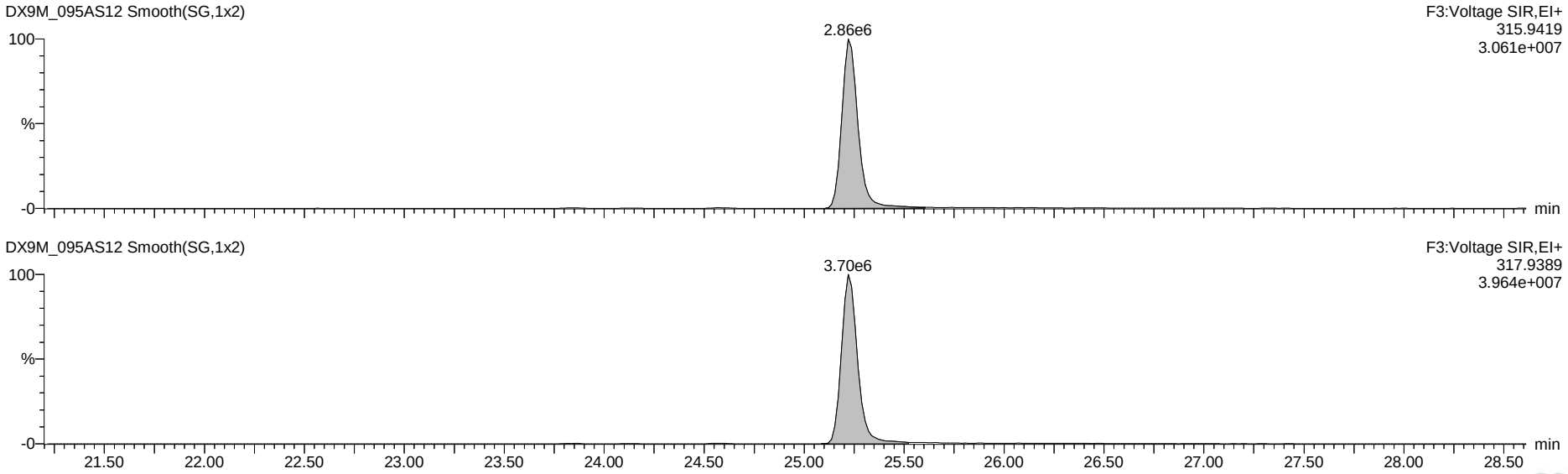
Method: G:\Masslynx\Inst_M\Master methods and layouts\Current Methods\DX_1613B_16.mdb 07 Sep 2017 16:45:23
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

Name: DX9M_095AS12, Date: 17-Sep-2019, Time: 19:53:29, ID: L31654-1,I2,, Description: 1,WG69303,1.0/20uL

Total Tetra-Furans



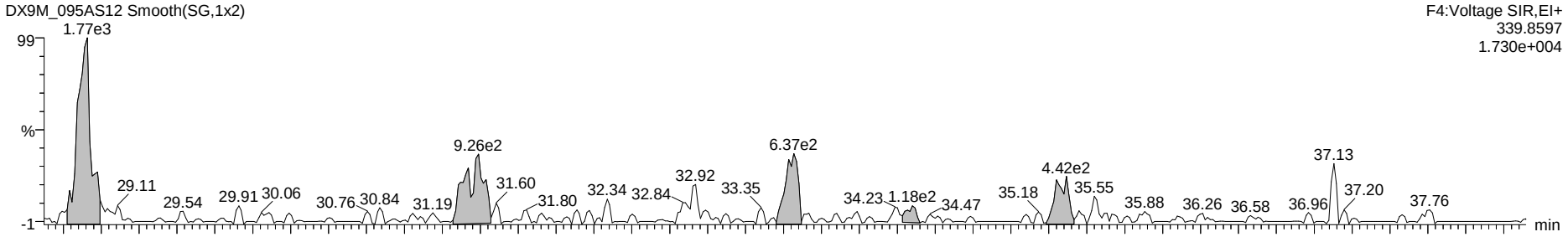
13C-Tetra-Furans

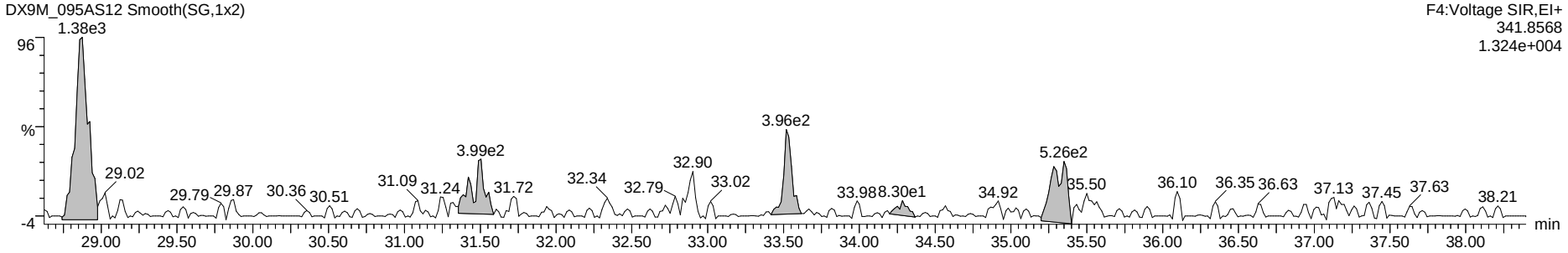


Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

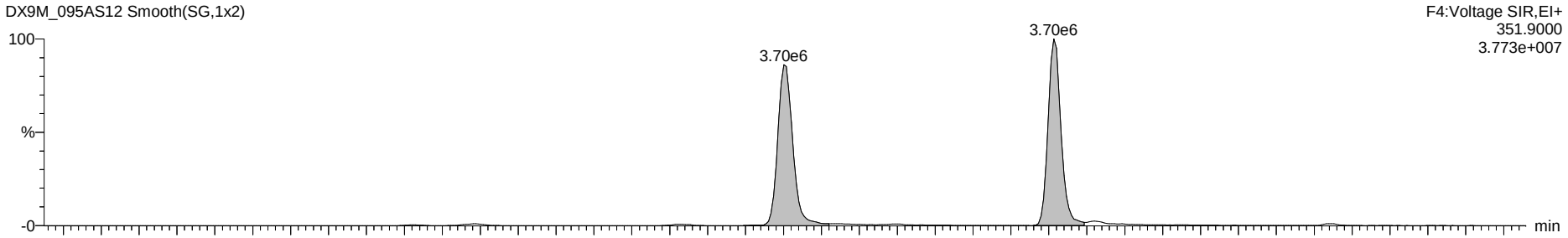
Name: DX9M_095AS12, Date: 17-Sep-2019, Time: 19:53:29, ID: L31654-1,I2,, Description: 1,WG69303,1.0/20uL

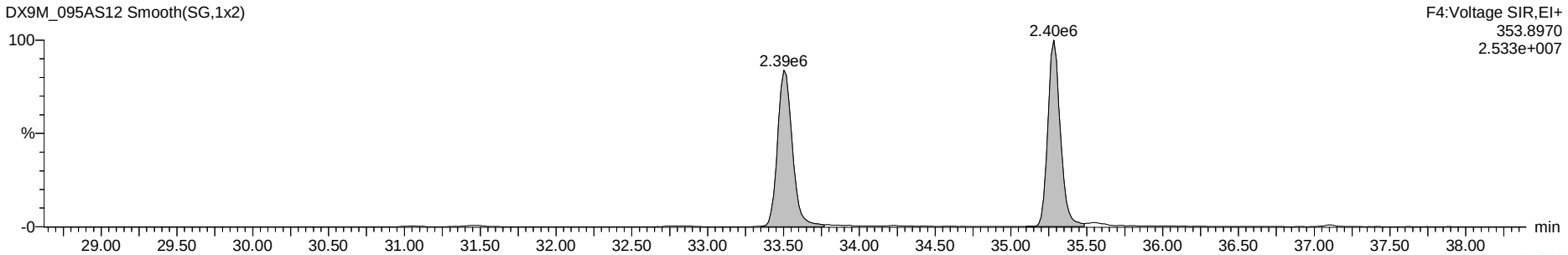
Total Penta-Furans





13C-Penta-Furans

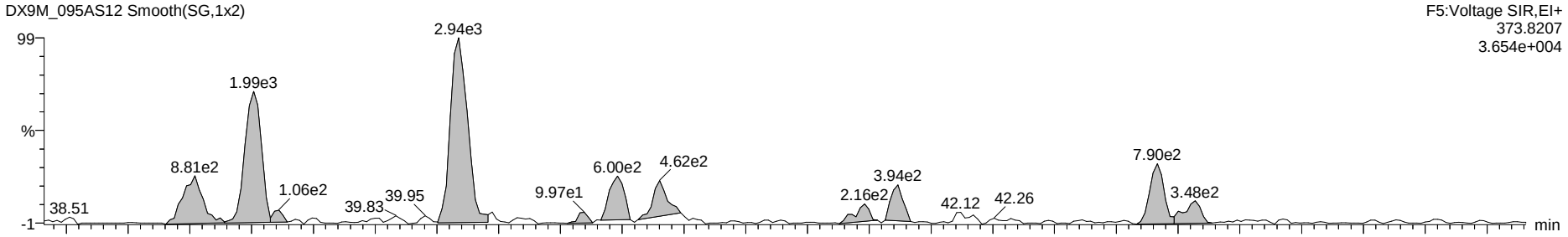


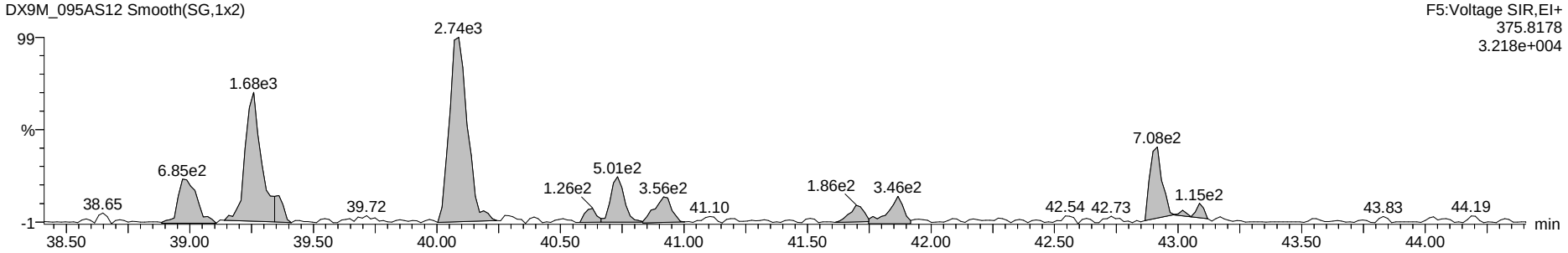


Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

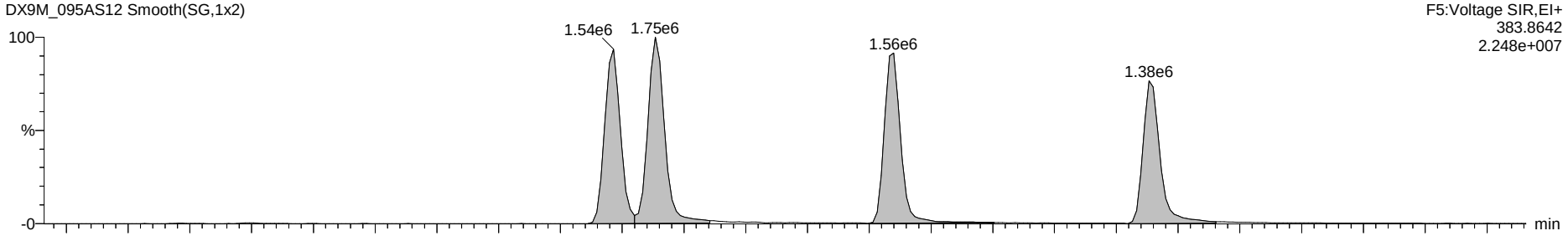
Name: DX9M_095AS12, Date: 17-Sep-2019, Time: 19:53:29, ID: L31654-1,I2,, Description: 1,WG69303,1.0/20uL

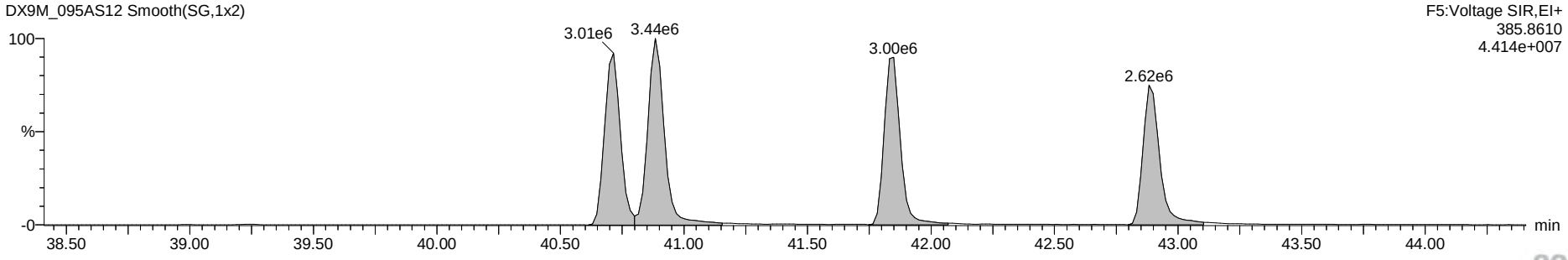
Total Hexa-Furans





13C-Hexa-Furans





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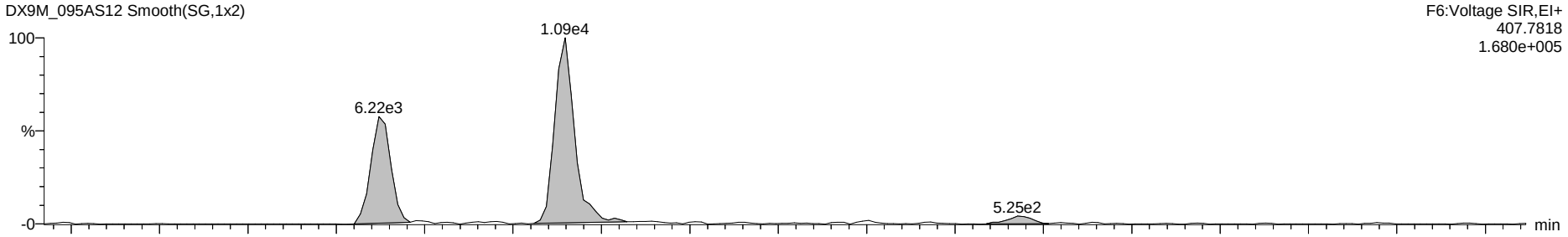
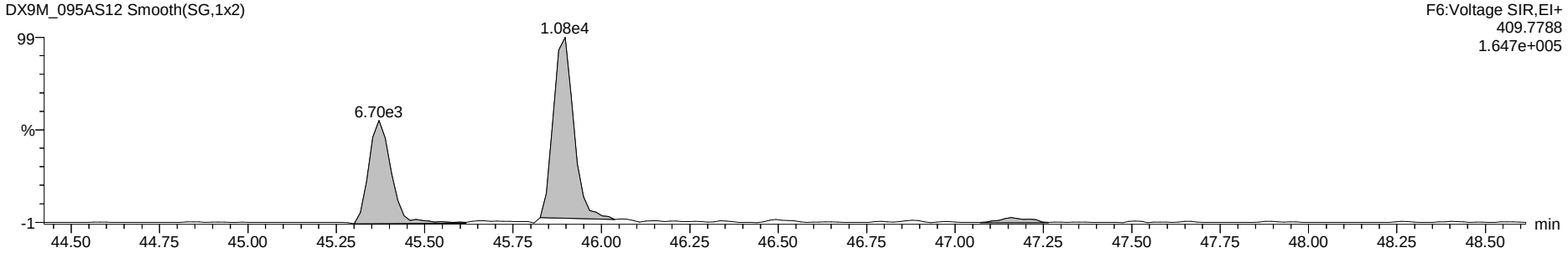
Name: DX9M_095AS12, Date: 17-Sep-2019, Time: 19:53:29, ID: L31654-1,I2,, Description: 1,WG69303,1.0/20uL

Total Hepta-Furans





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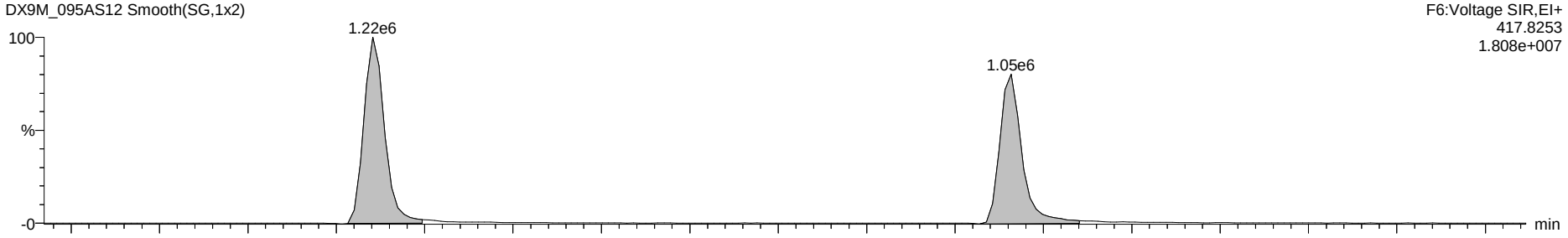
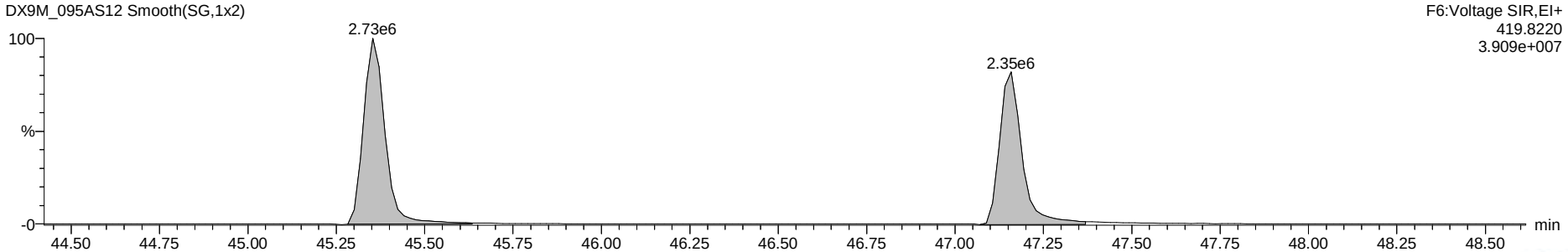
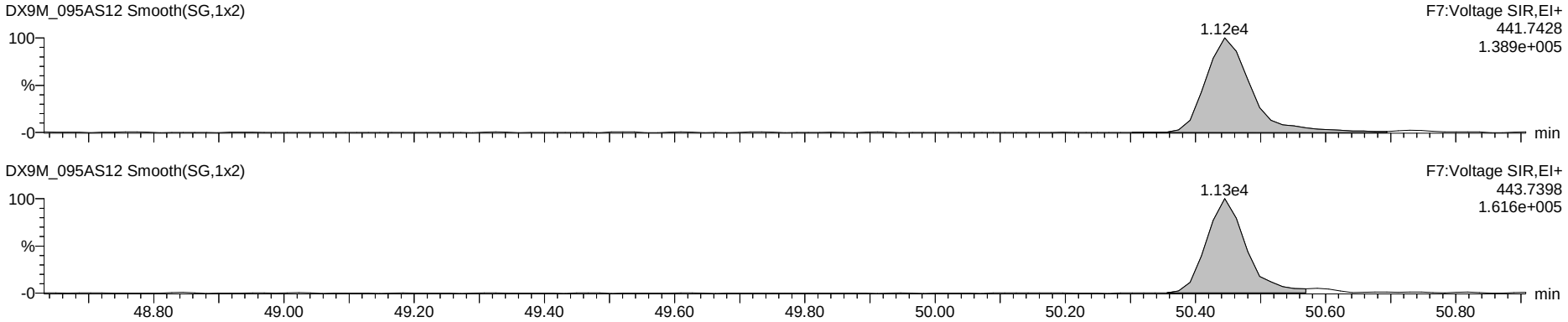




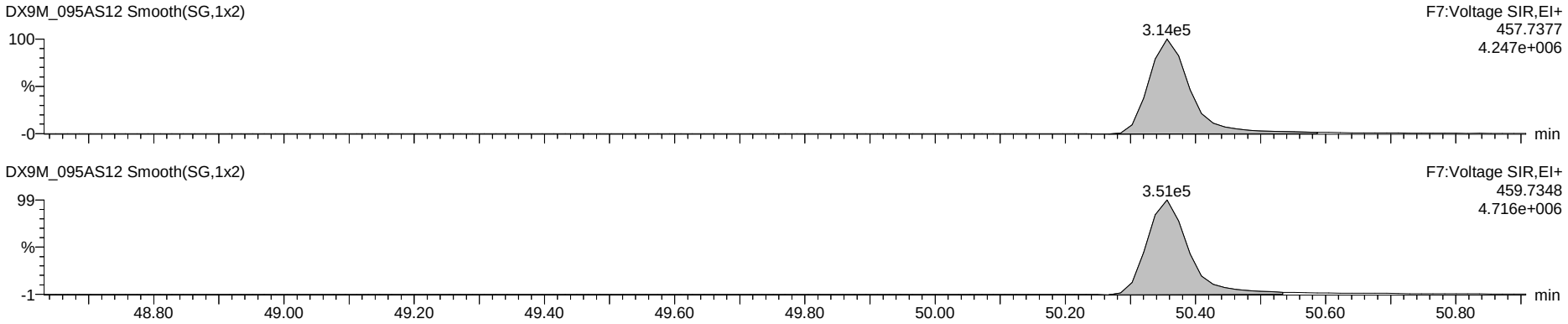
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

Name: DX9M_095AS12, Date: 17-Sep-2019, Time: 19:53:29, ID: L31654-1,I2,, Description: 1,WG69303,1.0/20uL

OCDF



OCDD



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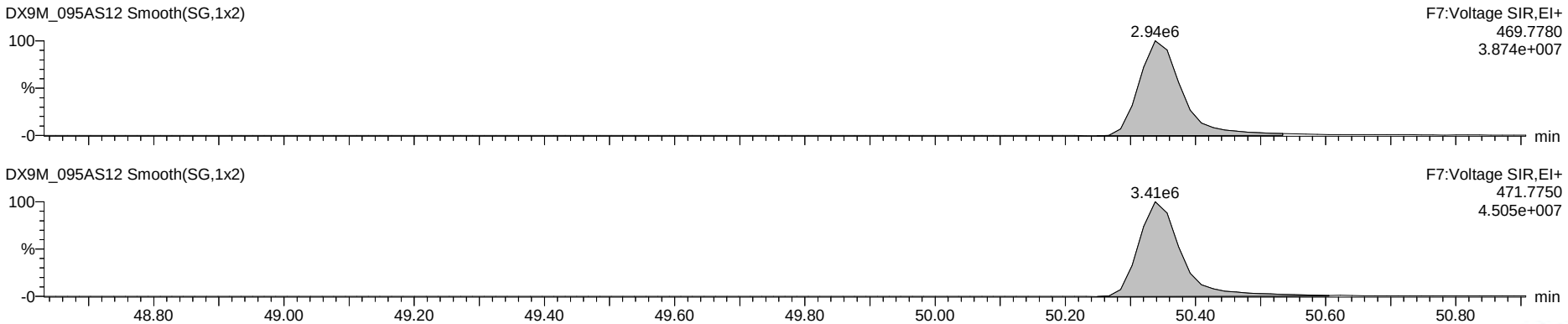

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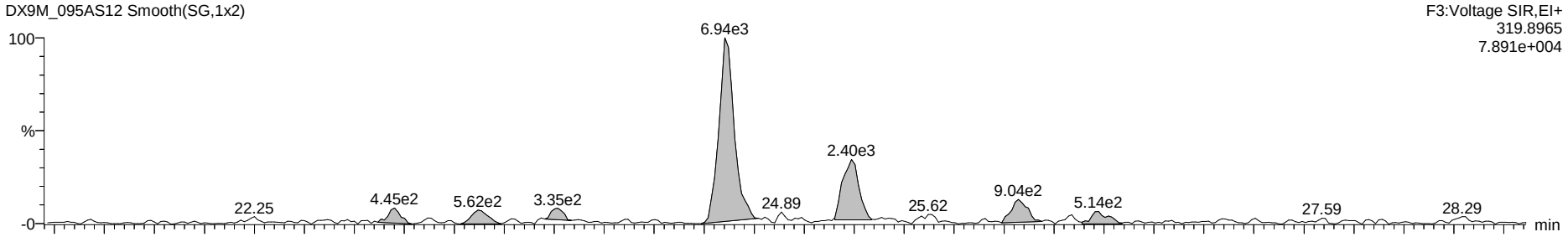
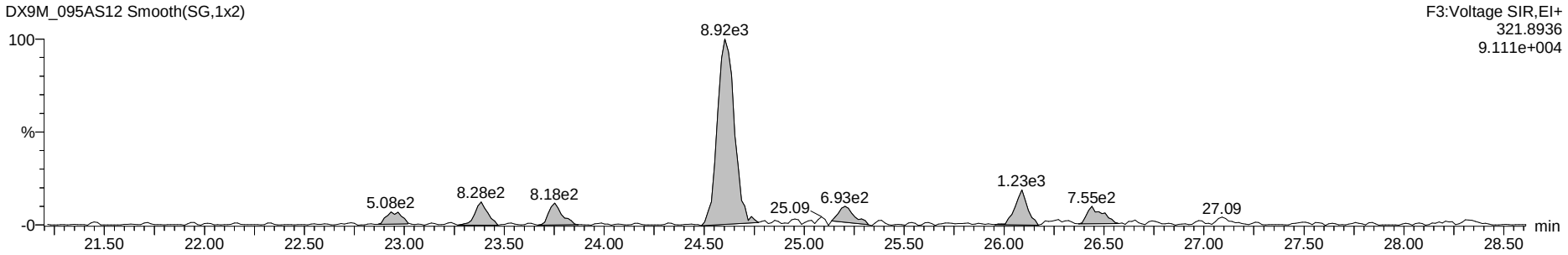
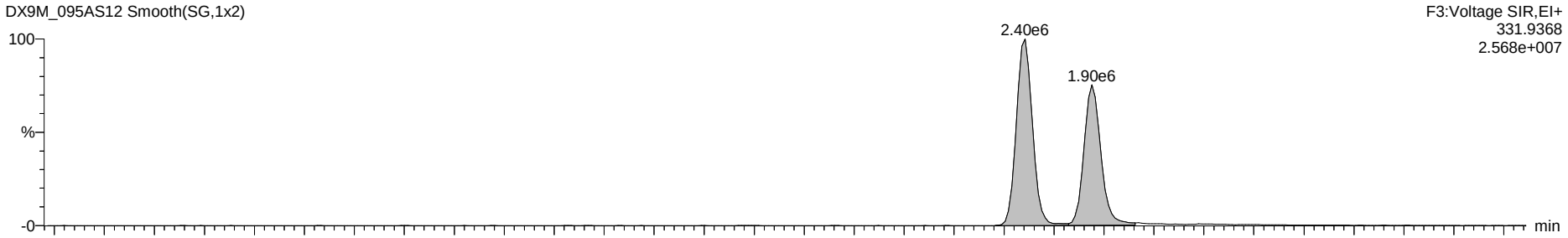
Name: DX9M_095AS12, Date: 17-Sep-2019, Time: 19:53:29, ID: L31654-1,I2,, Description: 1,WG69303,1.0/20uL

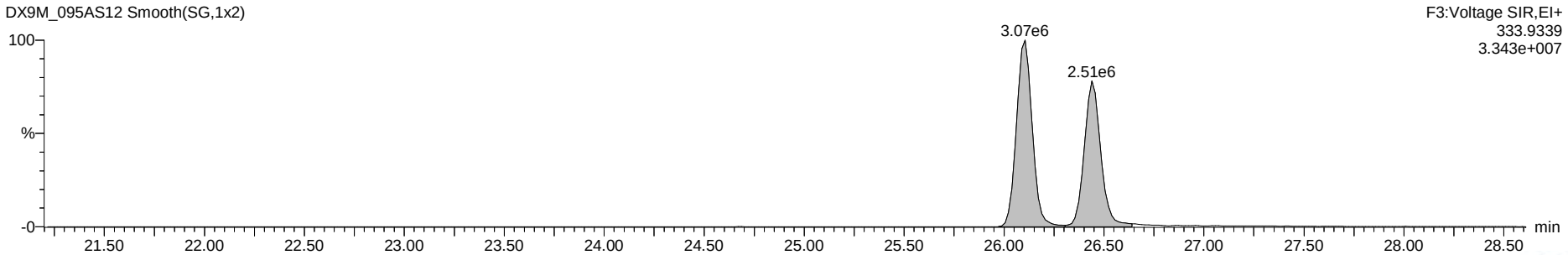
Total Tetra-Dioxins





13C-Tetra-Dioxins

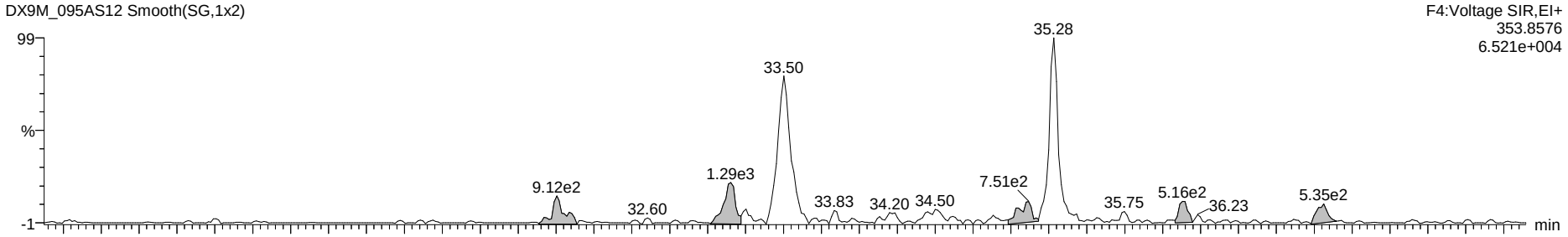


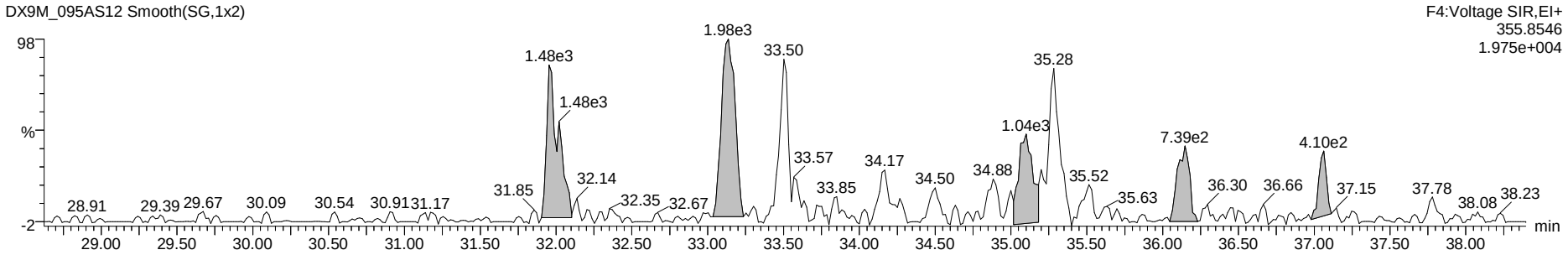


Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

Name: DX9M_095AS12, Date: 17-Sep-2019, Time: 19:53:29, ID: L31654-1,I2,, Description: 1,WG69303,1.0/20uL

Total Penta-Dioxins





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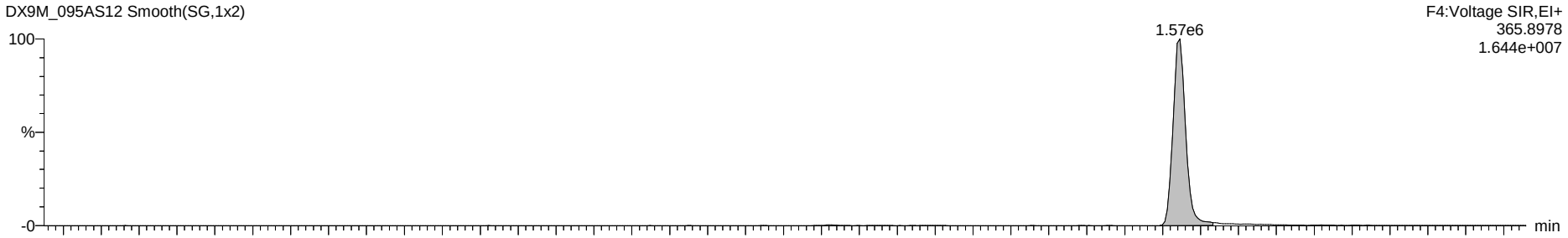

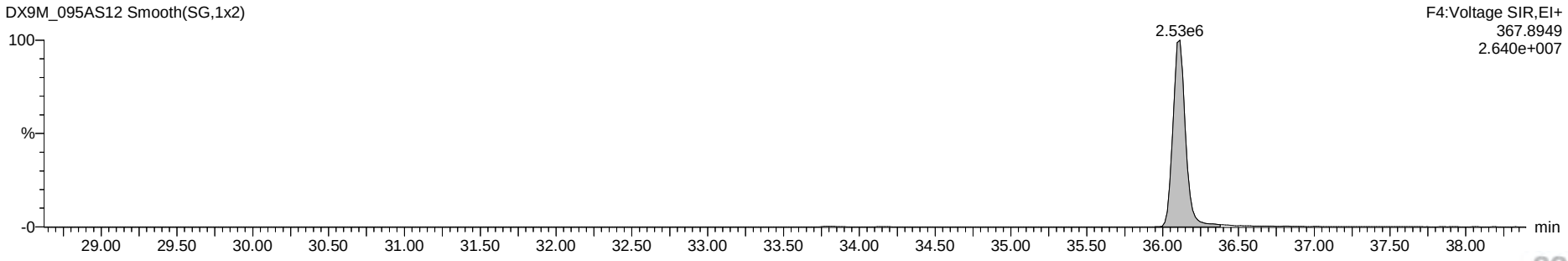

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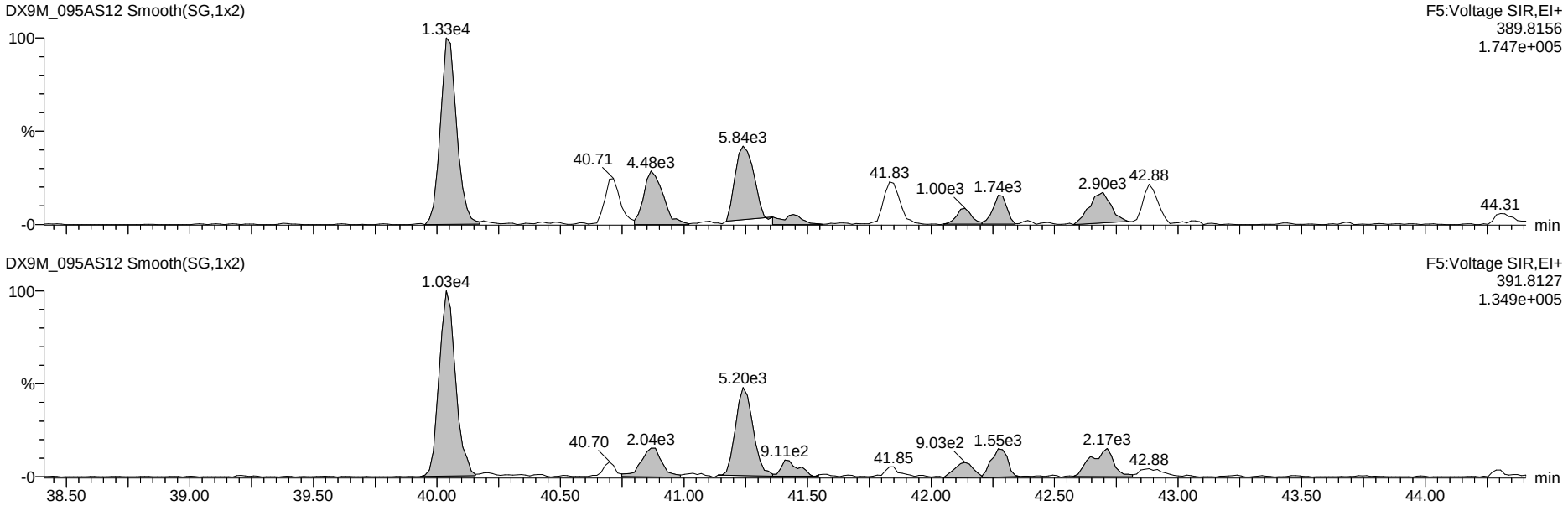
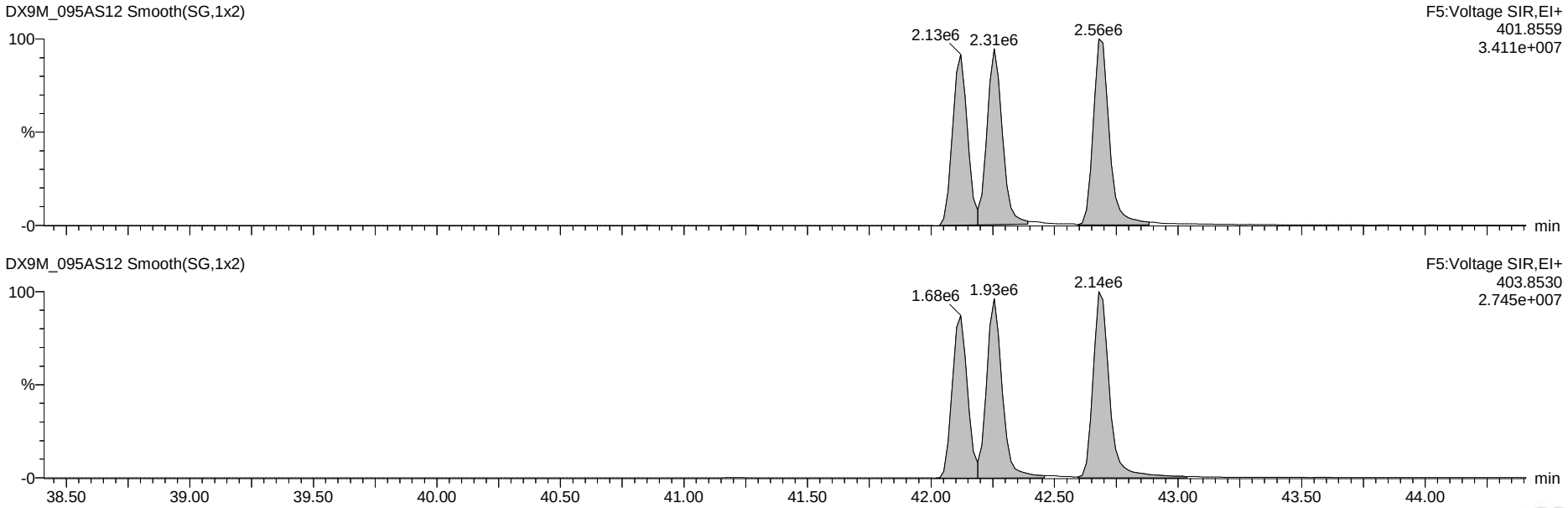
Name: DX9M_095AS12, Date: 17-Sep-2019, Time: 19:53:29, ID: L31654-1,I2,, Description: 1,WG69303,1.0/20uL

Total Hexa-Dioxins



13C-Hexa-Dioxins



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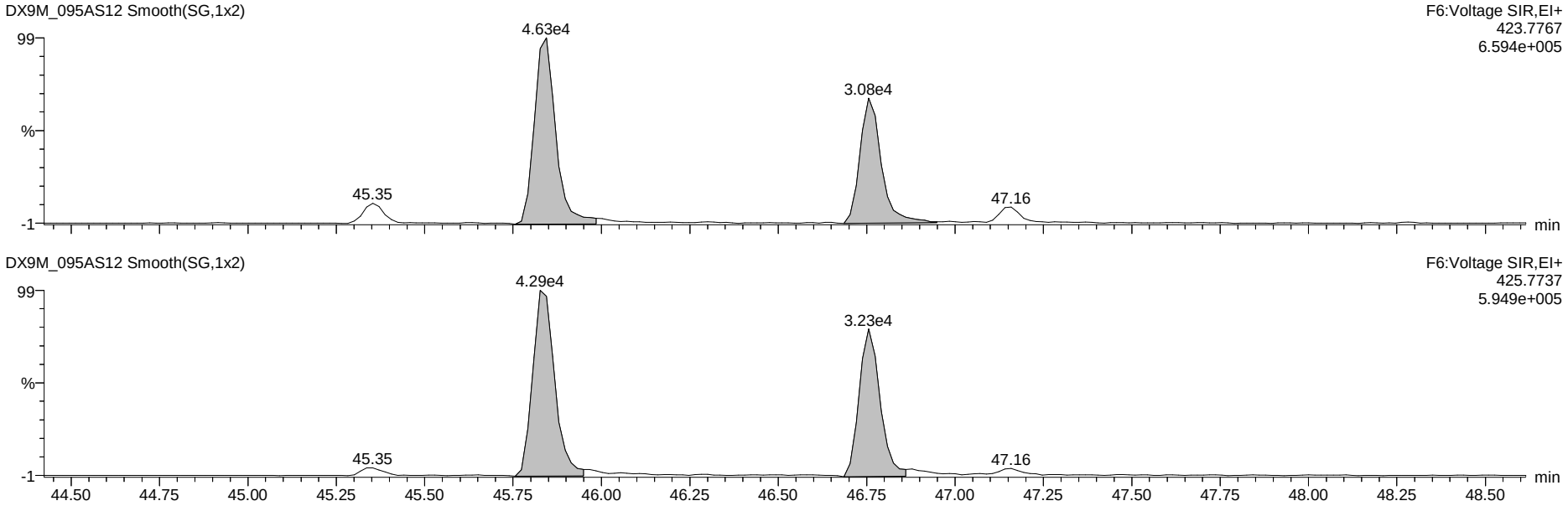
Name: DX9M_095AS12, Date: 17-Sep-2019, Time: 19:53:29, ID: L31654-1,I2,, Description: 1,WG69303,1.0/20uL

Total Hepta-Dioxins



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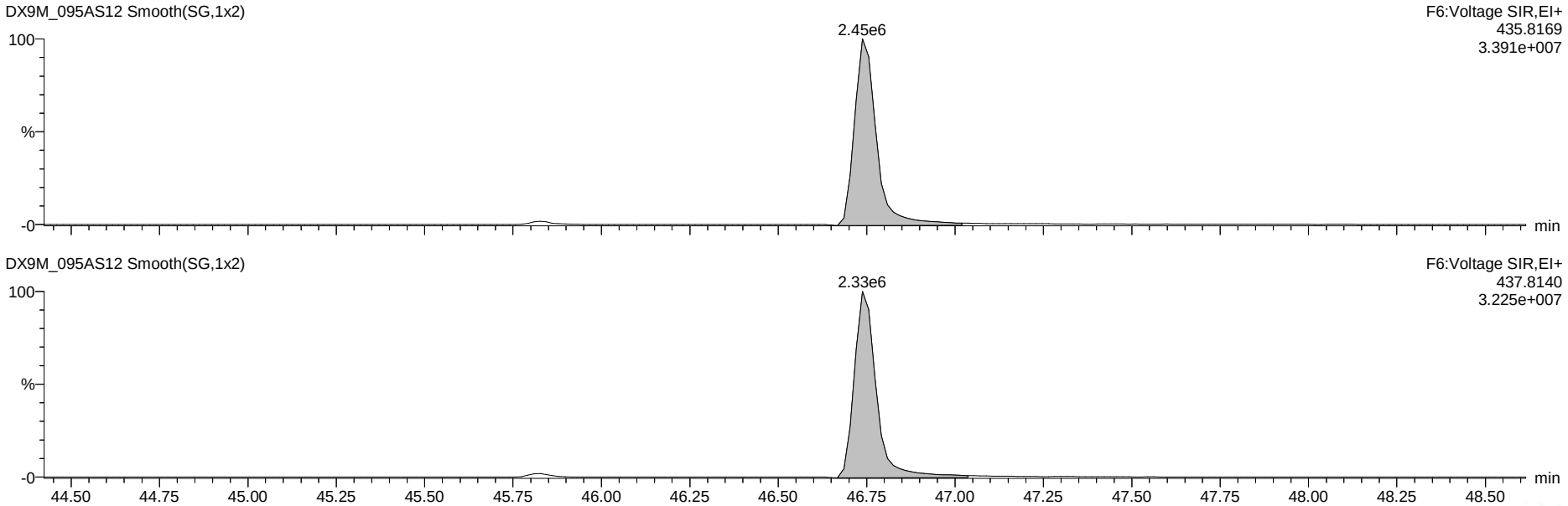

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Name: DX9M_095AS12, Date: 17-Sep-2019, Time: 19:53:29, ID: L31654-1,I2,, Description: 1,WG69303,1.0/20uL

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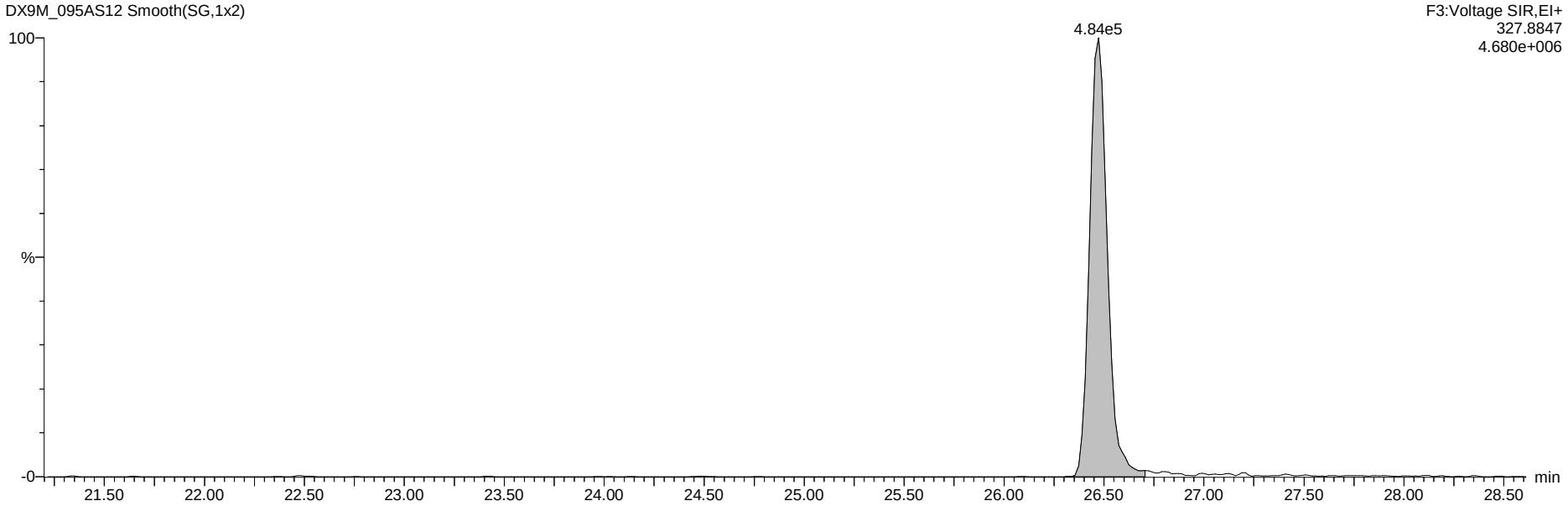

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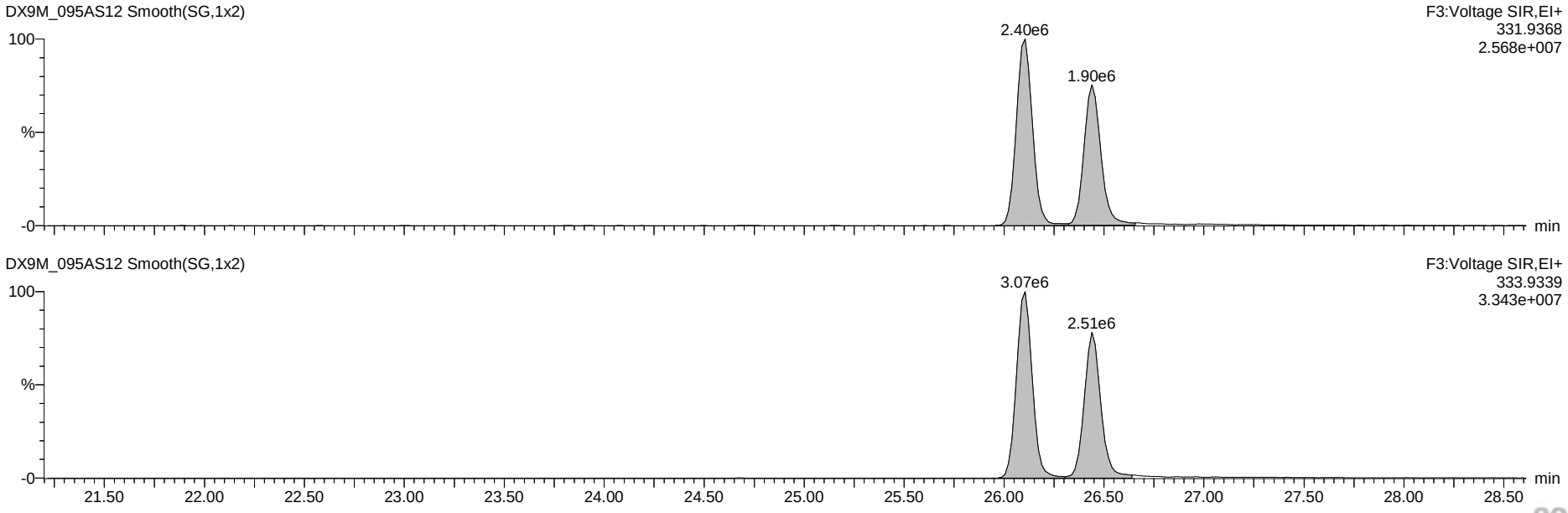

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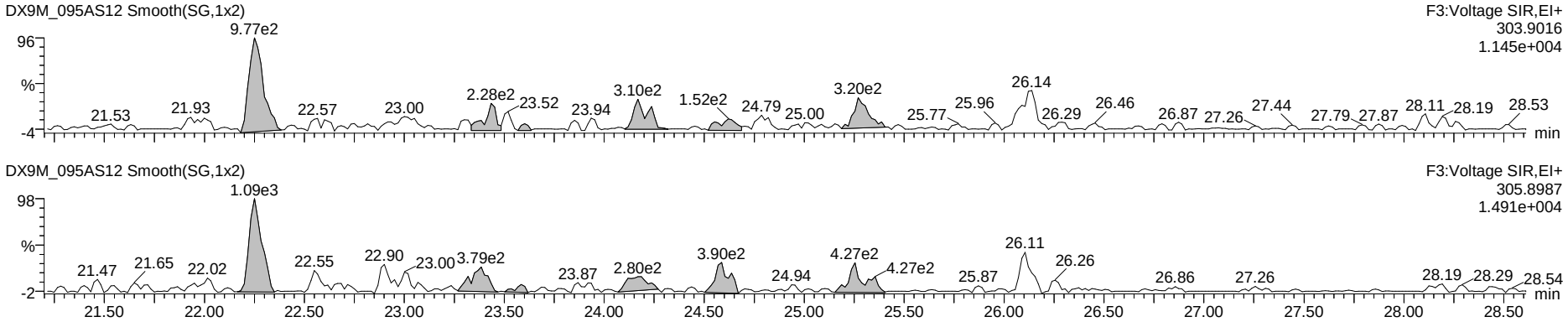
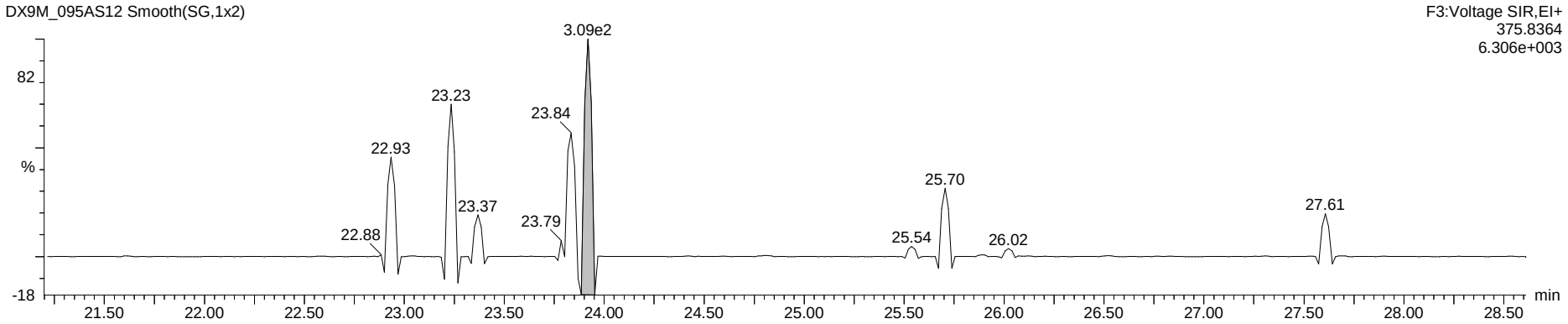
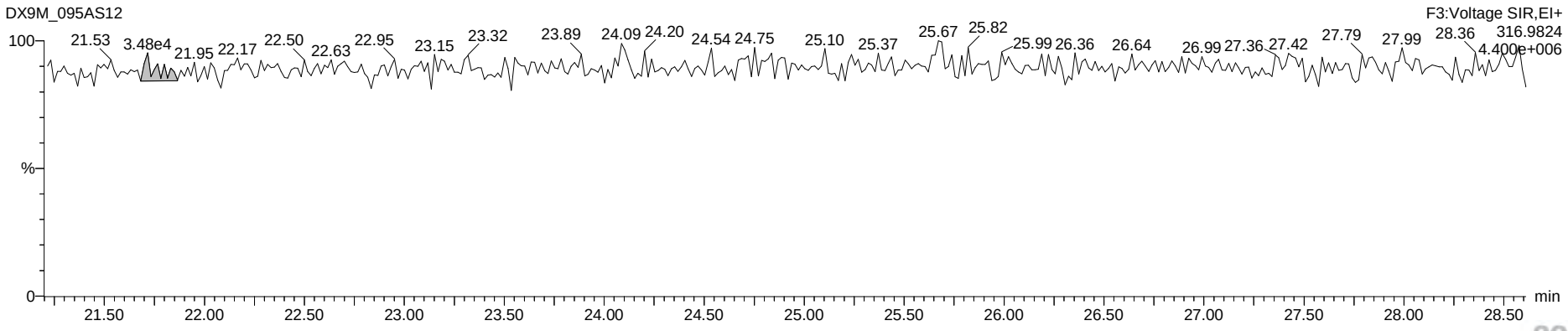
Total Tetra-Furans



Hexa DPE



Tetra Lock



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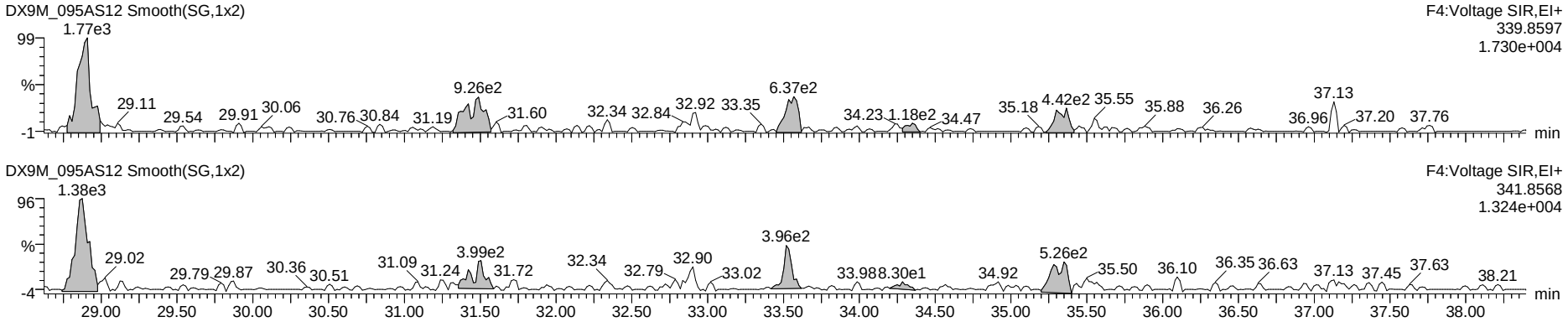
Total Penta-Furans



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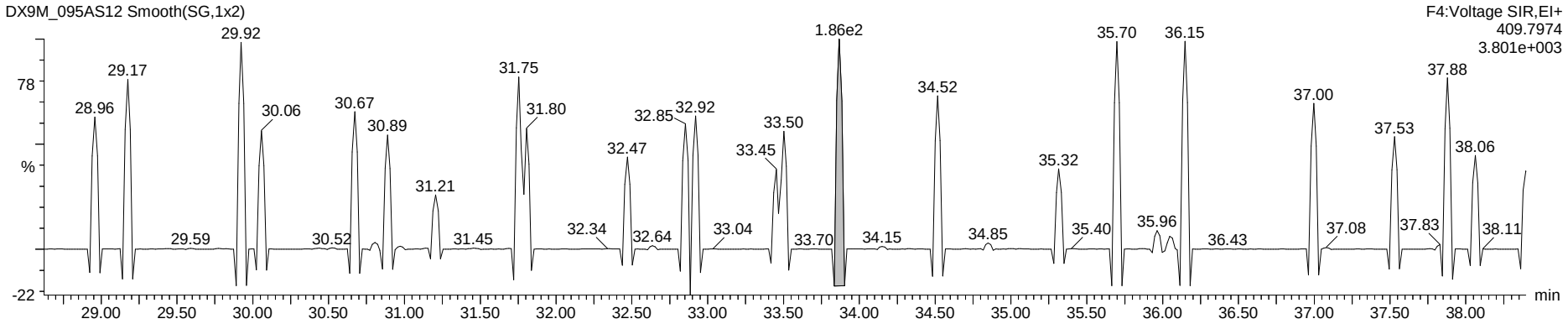

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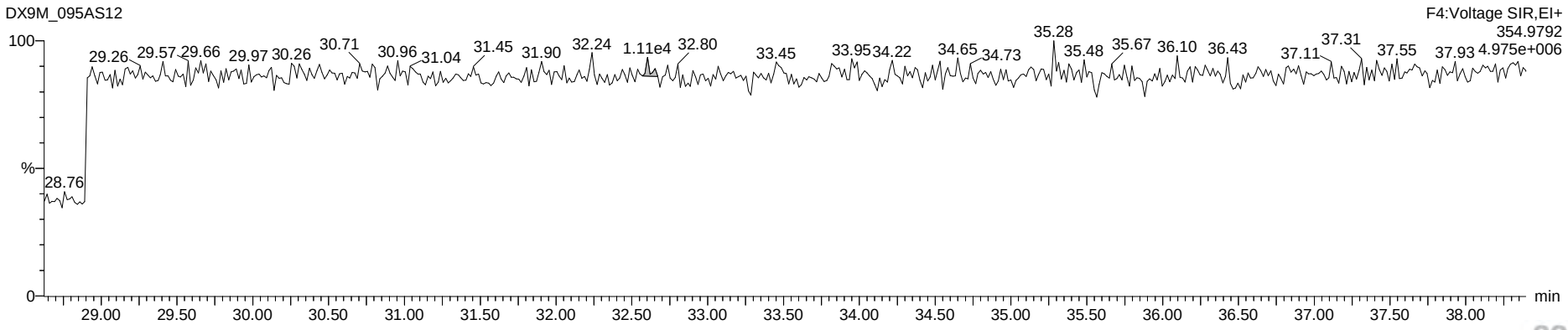

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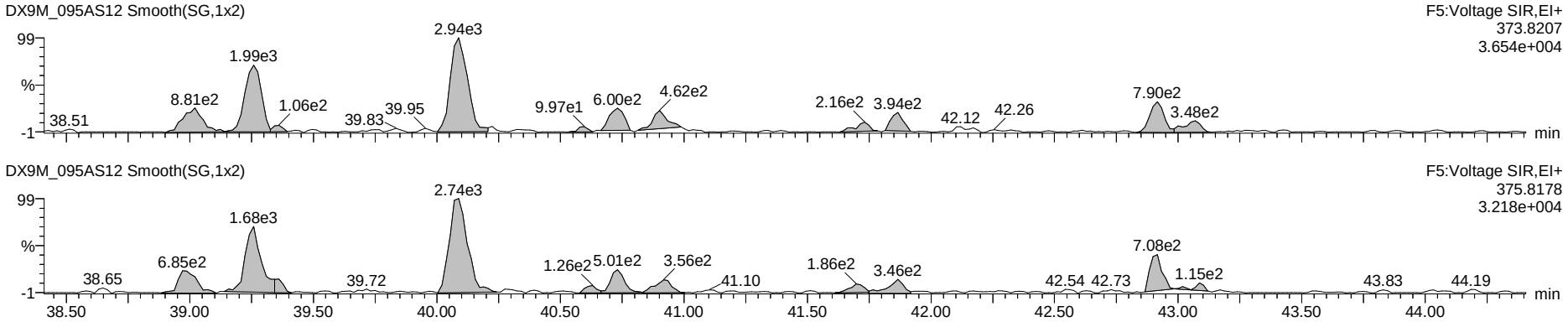
Total Hexa-Furans



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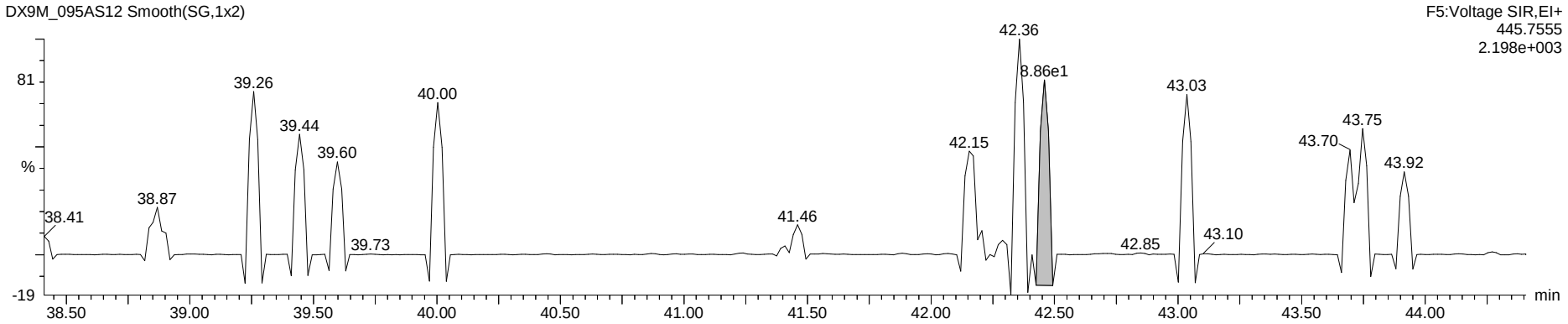

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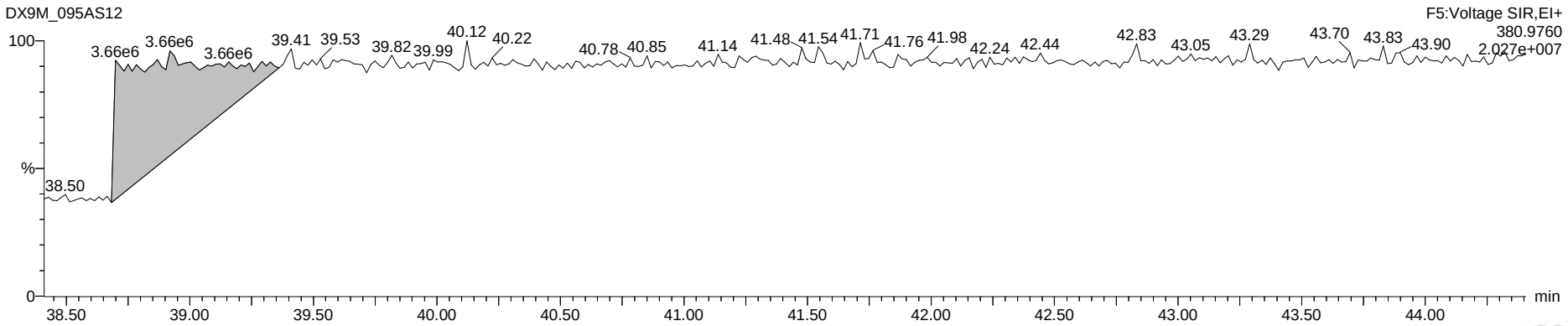

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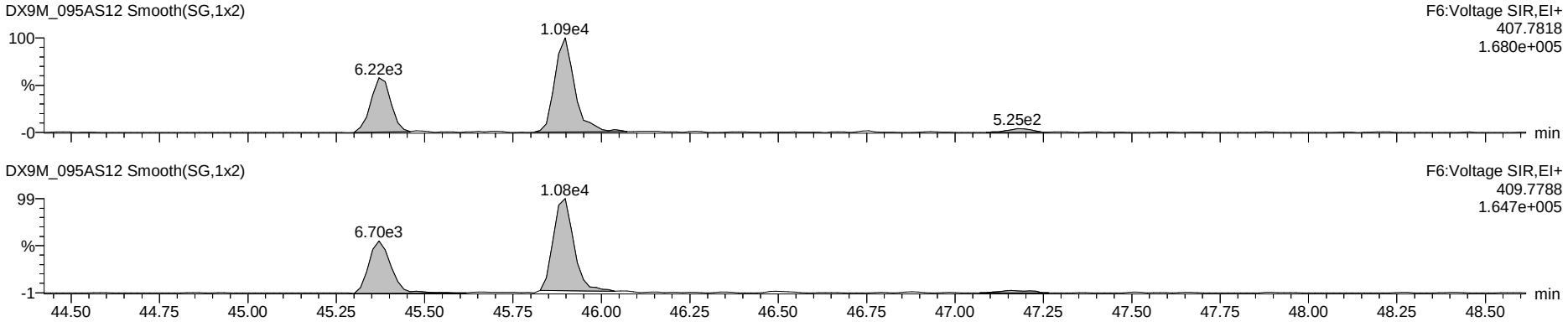
Total Hepta-Furans



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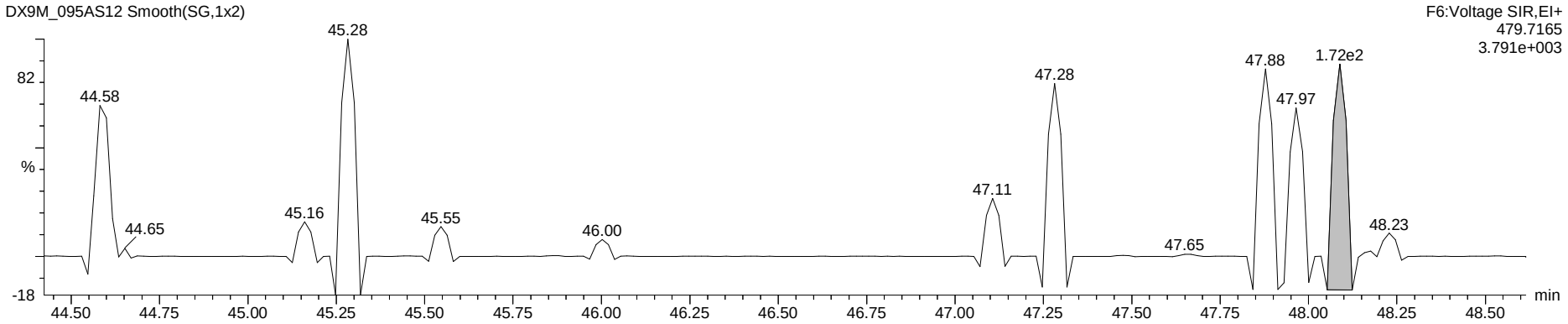
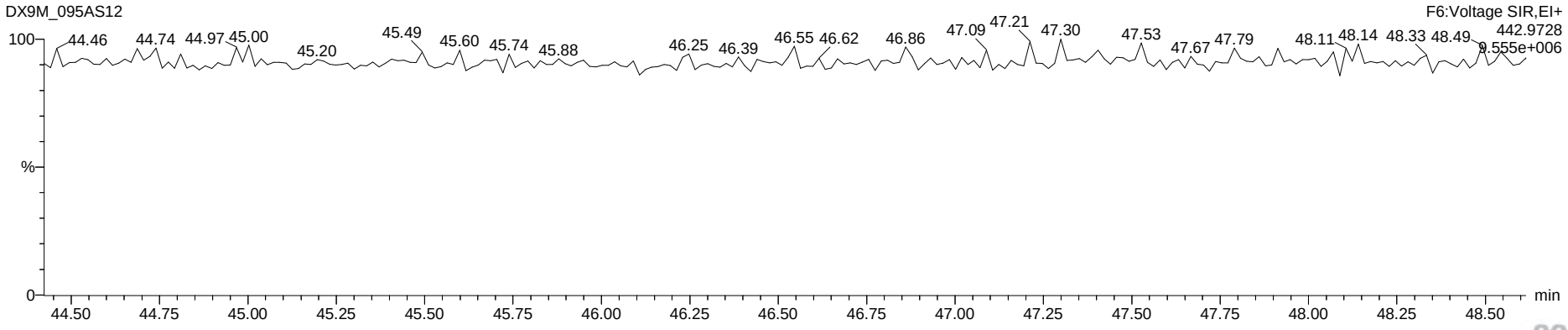


Hepta Lock



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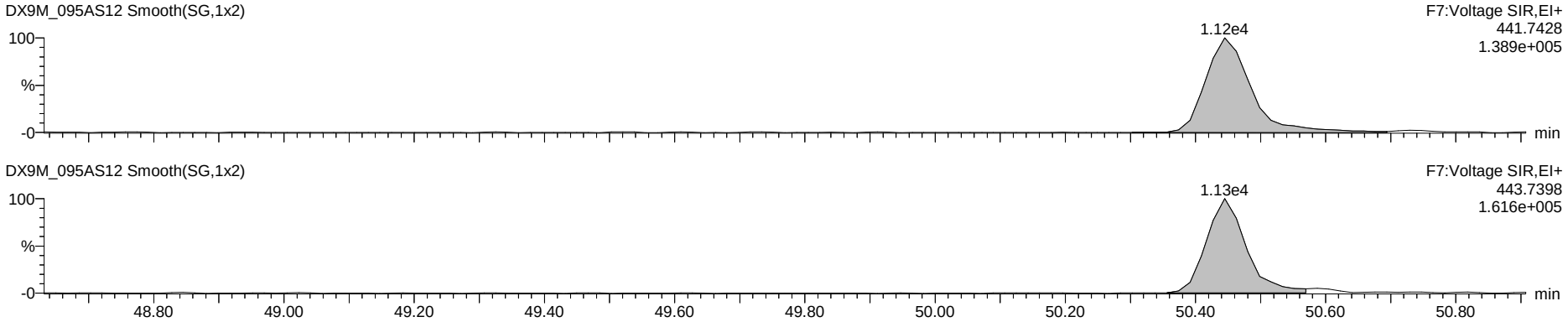
Name: DX9M_095AS12, Date: 17-Sep-2019, Time: 19:53:29, ID: L31654-1,I2,, Description: 1,WG69303,1.0/20uL

OCDF



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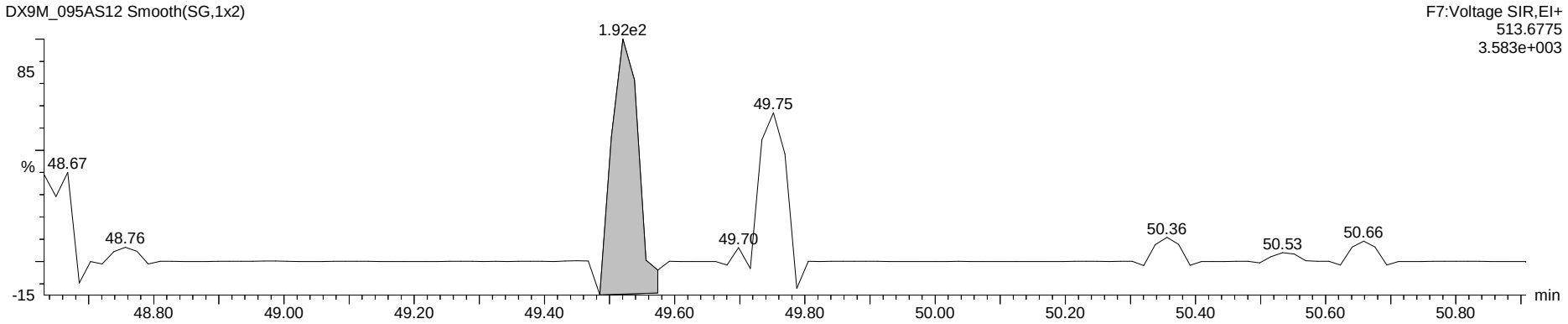

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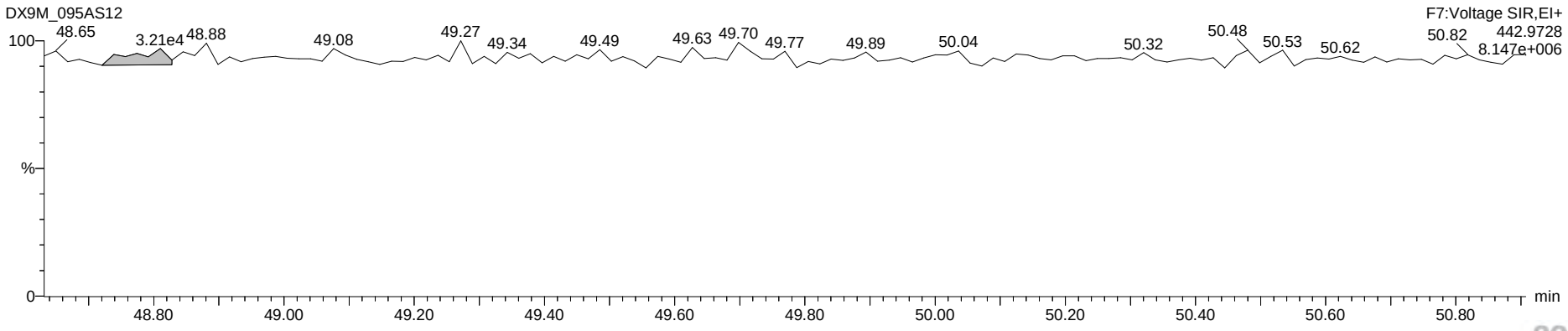

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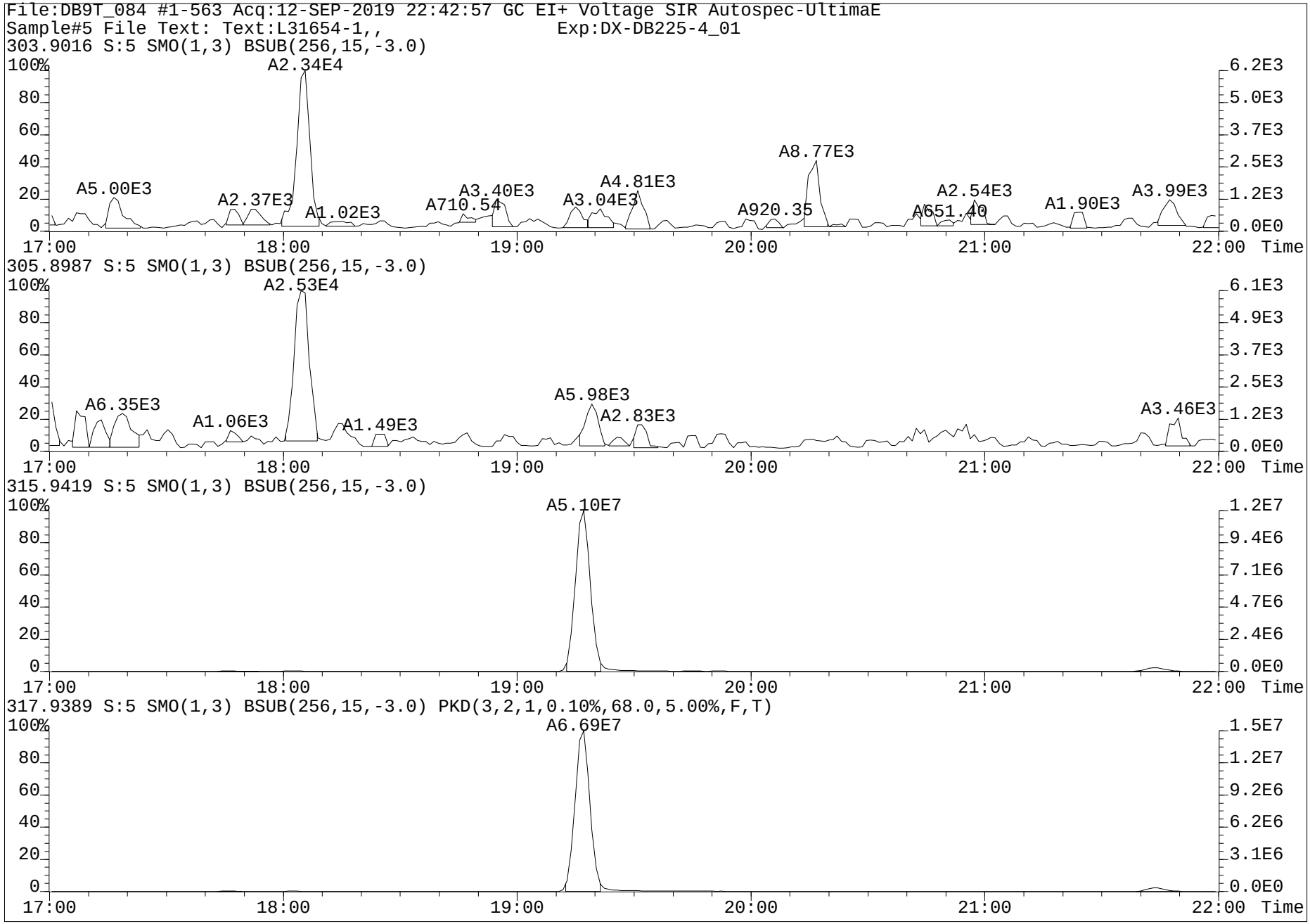
Sample text: L31654-1,, Comments: 1,WG69303,2.0/20uL
sample size: 10.056000 conc units: pg/g total toxicity: 0.02 F1: 1.0000 F2: 1.0000

	Typ	Name	#Hom	Resp	RA		RT	Conc	Tox #1	DL	Rec	M?
1	Unk	2,3,7,8-TCDF	1	9.02e+03	0.51	n	19:20	0.020	0	0.0178	-	y
2	Unk	1,2,3,7,8,9-HxCDD	1	4.15e+04	1.83	n	33:18	0.191	0	0.0616	-	n
3	IS/RT	13C-2,3,7,8-TCDF	1	1.18e+08	0.76	y	19:16	162.710	-	0.0025	81.8	n
4	IS/RT	13C-1,2,3,4,7,8-HxCDD	1	5.24e+07	1.26	y	31:05	169.040	-	0.0204	85.0	n
5	IS/RT	13C-1,2,3,6,7,8-HxCDD	1	5.46e+07	1.29	y	31:28	168.426	-	0.0196	84.7	n
6	RS	13C-1,2,3,4-TCDD	1	1.02e+08	0.81	y	18:05	8.805	-	-	-	n
7	RS	13C-1,2,3,7,8,9-HxCDD	1	6.00e+07	1.23	y	33:16	10.396	-	-	-	n
8	Tot	Hexa DPE	0	*			NotFnd	*	-	-	-	n
9	Tot	Tetra Lock	-	-			-	-	-	-	-	n
10	Tot	Hexa Lock	-	-			-	-	-	-	-	n

PV by RA 20SEP2019
SV HH 22Sept2019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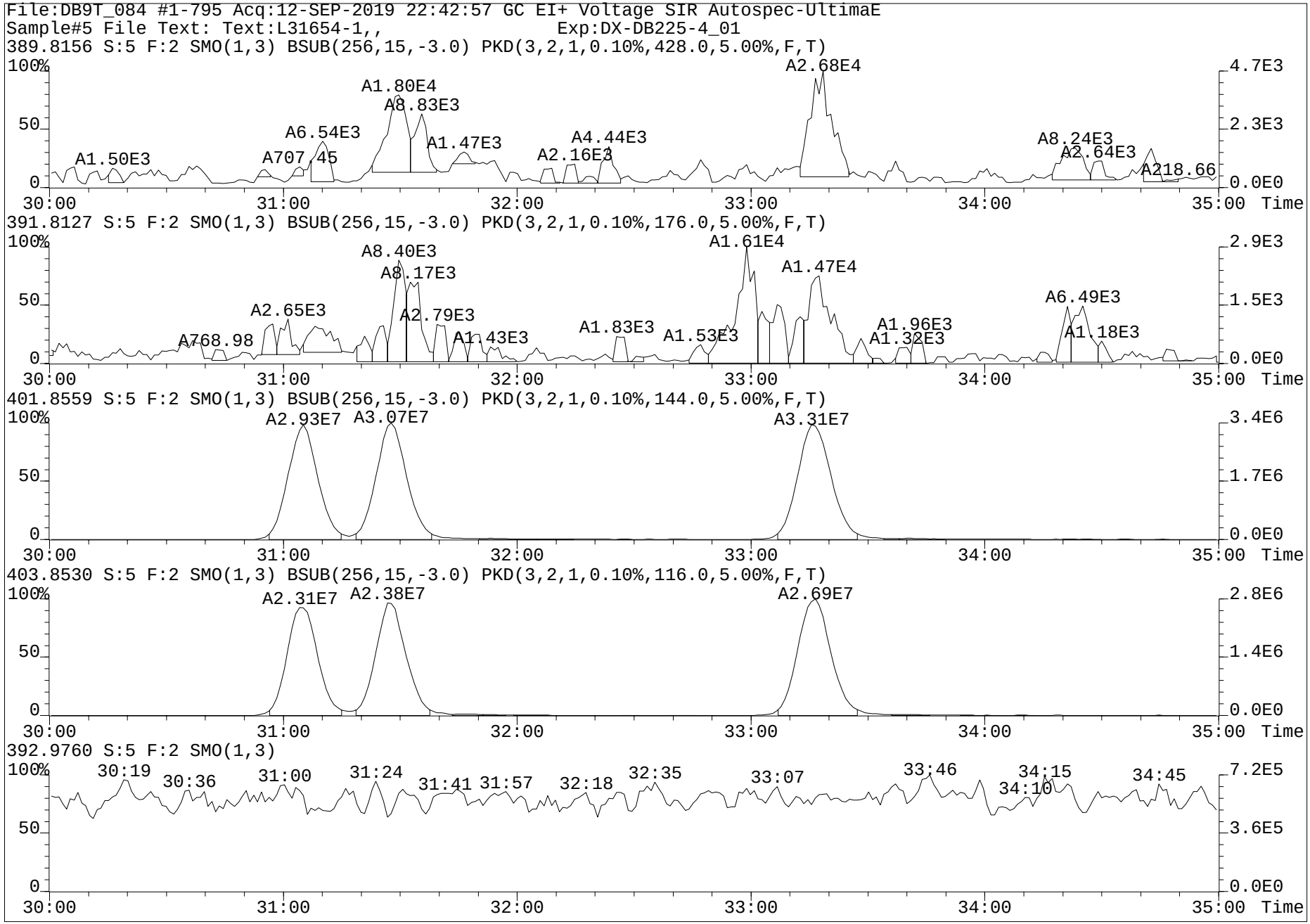
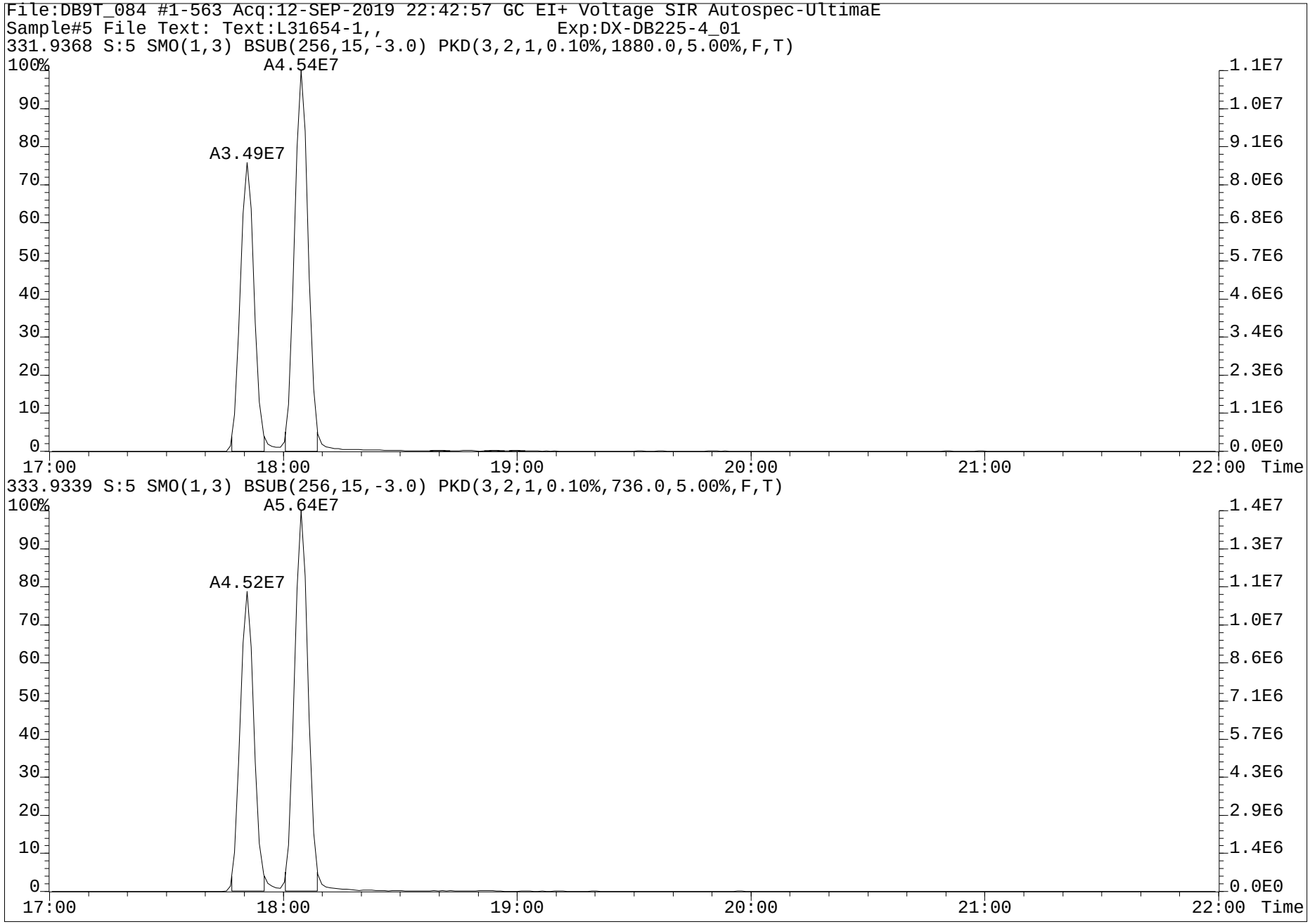
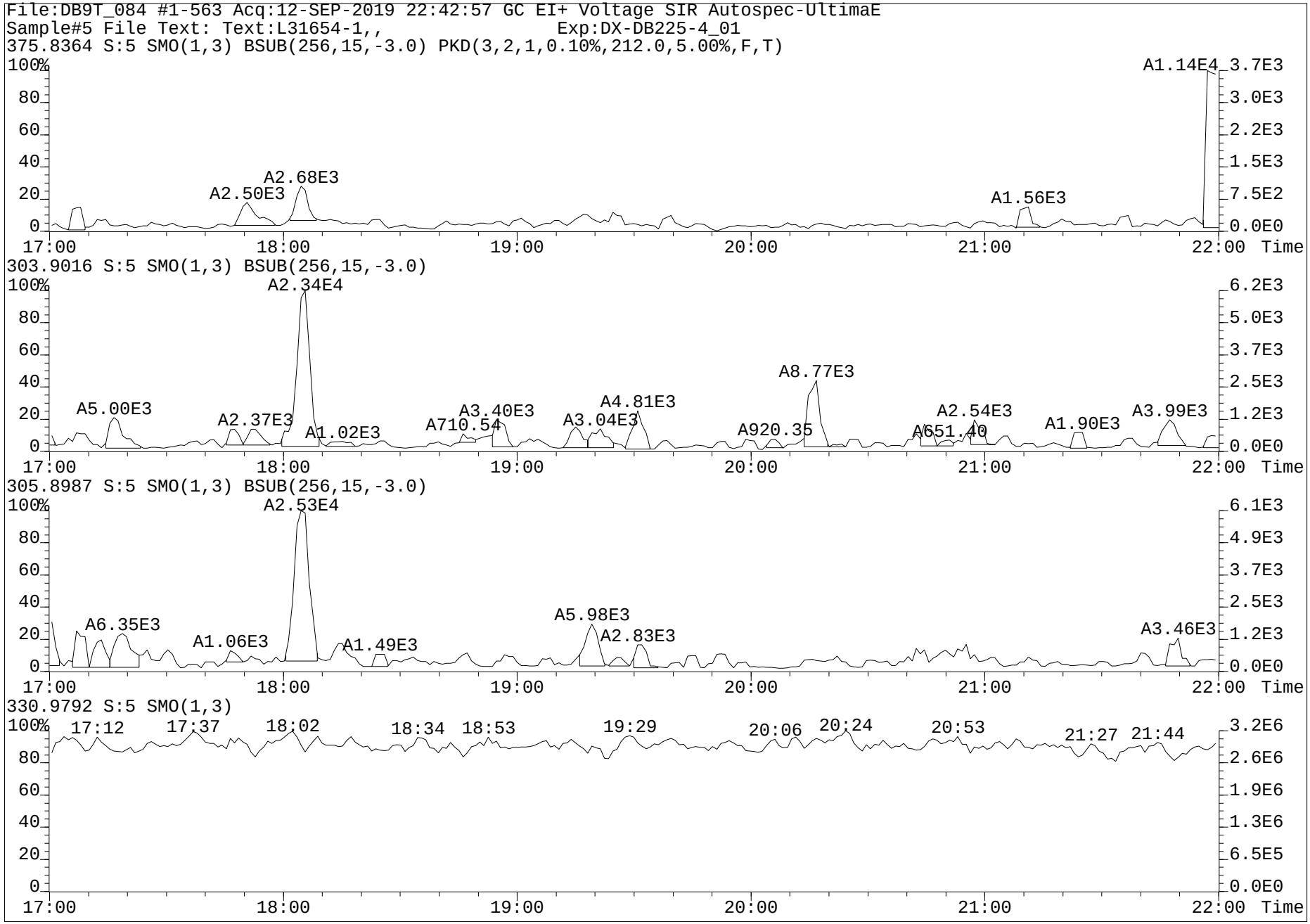
A5.00E3
A2.37E3
A1.02E3
A710.54
A3.40E3
A3.04E3
A4.81E3
A8.77E3
A920.35
A651.40
A2.54E3
A1.90E3
A3.99E3
305.8987 S:5 SMO(1,3) BSUB(256,15,-3.0)
A2.53E4
A6.35E3
A1.06E3
A1.49E3
A5.98E3
A2.83E3
A3.46E3
315.9419 S:5 SMO(1,3) BSUB(256,15,-3.0)
A5.10E7
317.9389 S:5 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,68.0,5.00%,F,T)
A6.69E7
Time


File:DB9T_084 #1-795 Acq:12-SEP-2019 22:42:57 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text: Text:L31654-1,, Exp:DX-DB225-4_01
389.8156 S:5 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,428.0,5.00%,F,T)
A1.50E3
A6.54E3
A707.45
A1.80E4
A8.83E3
A1.47E3
A2.16E3
A4.44E3
A2.68E4
A8.24E3
A2.64E3
A218.66
391.8127 S:5 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,176.0,5.00%,F,T)
A768.98
A2.65E3
A8.40E3
A8.17E3
A2.79E3
A1.43E3
A1.83E3
A1.53E3
A1.61E4
A1.47E4
A1.96E3
A1.32E3
A6.49E3
A1.18E3
401.8559 S:5 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,144.0,5.00%,F,T)
A2.93E7
A3.07E7
A3.31E7
403.8530 S:5 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,116.0,5.00%,F,T)
A2.31E7
A2.38E7
A2.69E7
392.9760 S:5 F:2 SMO(1,3)
30:19
30:36
31:00
31:24
31:41
31:57
32:18
32:35
33:07
33:46
34:10
34:15
34:45
100%
50
0
30:00
31:00
32:00
33:00
34:00
35:00
Time
4.7E3
2.3E3
0.0E0
2.9E3
1.5E3
0.0E0
3.4E6
1.7E6
0.0E0
2.8E6
1.4E6
0.0E0
7.2E5
3.6E5
0.0E0


File:DB9T_084 #1-563 Acq:12-SEP-2019 22:42:57 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text: Text:L31654-1,, Exp:DX-DB225-4_01
331.9368 S:5 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1880.0,5.00%,F,T)
A4.54E7
A3.49E7
100%
90
80
70
60
50
40
30
20
10
0
1.1E7
1.0E7
9.1E6
8.0E6
6.8E6
5.7E6
4.6E6
3.4E6
2.3E6
1.1E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time
333.9339 S:5 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,736.0,5.00%,F,T)
A5.64E7
A4.52E7
100%
90
80
70
60
50
40
30
20
10
0
1.4E7
1.3E7
1.1E7
1.0E7
8.6E6
7.1E6
5.7E6
4.3E6
2.9E6
1.4E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time


File:DB9T_084 #1-563 Acq:12-SEP-2019 22:42:57 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text: Text:L31654-1,, Exp:DX-DB225-4_01
375.8364 S:5 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,212.0,5.00%,F,T)
A1.14E4
A2.68E3
A2.50E3
A1.56E3
303.9016 S:5 SMO(1,3) BSUB(256,15,-3.0)
A2.34E4
A8.77E3
A5.00E3
A2.37E3
A1.02E3
A710.54
A3.40E3
A3.04E3
A4.81E3
A920.35
A651.40
A2.54E3
A1.90E3
A3.99E3
305.8987 S:5 SMO(1,3) BSUB(256,15,-3.0)
A2.53E4
A6.35E3
A1.06E3
A1.49E3
A5.98E3
A2.83E3
A3.46E3
330.9792 S:5 SMO(1,3)
17:12
17:37
18:02
18:34
18:53
19:29
20:06
20:24
20:53
21:27
21:44
Time

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S7, Date: 12-Sep-2019, Time: 14:35:04, ID: L31654-2,I,, Description: 1,WG69303,1.0/20uL

	Name	Sample Size	Resp	Ratio	fails?	RT	pg	DL	%Rec	Noise 1	Noise 2
1	2,3,7,8-TCDF	10.072	1.91e3	0.71	NO	25.25	0.195	0.0862		2.56e3	1.21e3
2	1,2,3,7,8-PeCDF	10.072	9.67e2	1.62	NO	33.50	0.119	0.0469		6.70e2	7.94e2
3	2,3,4,7,8-PeCDF	10.072	1.10e3	1.54	NO	35.23	0.136	0.0438		6.70e2	7.94e2
4	1,2,3,4,7,8-HxCDF	10.072	2.57e3	1.15	NO	40.71	0.383	0.0332		4.20e2	8.32e2
5	1,2,3,6,7,8-HxCDF	10.072	1.96e3	0.92	YES	40.88	0.265	0.0306		4.20e2	8.32e2
6	2,3,4,6,7,8-HxCDF	10.072	1.38e3	2.62	YES	41.85	0.196	0.0307		4.20e2	8.32e2
7	1,2,3,7,8,9-HxCDF	10.072	5.57e2	2.02	YES	42.92	0.089	0.0345		4.20e2	8.32e2
8	1,2,3,4,6,7,8-HpCDF	10.072	2.79e4	0.94	NO	45.35	3.792	0.0375		1.03e3	6.92e2
9	1,2,3,4,7,8,9-HpCDF	10.072	1.67e3	1.16	NO	47.16	0.253	0.0429		1.03e3	6.92e2
10	OCDF	10.072	6.04e4	0.92	NO	50.41	8.693	0.1080		1.90e3	2.56e3
11	2,3,7,8-TCDD	10.072	4.66e2	0.32	YES	26.47	~~0.062~~	~~0.0610~~	0.0625	7.75e2	1.07e3
12	1,2,3,7,8-PeCDD	10.072	1.03e3	0.42	YES	36.11	0.162	0.0885		1.72e3	9.30e2
13	1,2,3,4,7,8-HxCDD	10.072	1.04e3	1.10	NO	42.12	0.205	0.0611		1.53e3	2.96e2
14	1,2,3,6,7,8-HxCDD	10.072	3.76e3	1.27	NO	42.27	0.713	0.0601		1.53e3	2.96e2
15	1,2,3,7,8,9-HxCDD	10.072	2.82e3	1.21	NO	42.68	0.550	0.0612		1.53e3	2.96e2
16	1,2,3,4,6,7,8-HpCDD	10.072	1.03e5	1.00	NO	46.74	20.662	0.0841		1.08e3	1.70e3
17	OCDD	10.072	9.53e5	0.88	NO	50.32	159.096	0.1270		2.36e3	2.16e3
18	13C-2,3,7,8-TCDF	10.072	2.10e6	0.81	NO	25.19	140.887	0.1793	71.0	5.07e3	6.33e3
19	13C-1,2,3,7,8-PeCDF	10.072	1.73e6	1.57	NO	33.47	143.254	0.2783	72.1	5.93e3	8.44e3
20	13C-2,3,4,7,8-PeCDF	10.072	1.69e6	1.49	NO	35.27	135.752	0.2698	68.4	5.93e3	8.44e3
21	13C-1,2,3,4,7,8-HxCDF	10.072	1.20e6	0.52	NO	40.70	137.274	0.2243	69.1	5.74e3	5.60e3
22	13C-1,2,3,6,7,8-HxCDF	10.072	1.37e6	0.53	NO	40.87	141.914	0.2041	71.5	5.74e3	5.60e3
23	13C-2,3,4,6,7,8-HxCDF	10.072	1.23e6	0.50	NO	41.82	141.678	0.2264	71.3	5.74e3	5.60e3
24	13C-1,2,3,7,8,9-HxCDF	10.072	1.18e6	0.52	NO	42.87	152.993	0.2546	77.0	5.74e3	5.60e3
25	13C-1,2,3,4,6,7,8-HpCDF	10.072	1.17e6	0.46	NO	45.34	162.072	0.3026	81.6	7.62e3	4.99e3
26	13C-1,2,3,4,7,8,9-HpCDF	10.072	1.04e6	0.45	NO	47.12	178.121	0.3730	89.7	7.62e3	4.99e3
27	13C-2,3,7,8-TCDD	10.072	1.35e6	0.82	NO	26.41	142.273	0.3368	71.6	7.06e3	6.56e3
28	13C-1,2,3,7,8-PeCDD	10.072	1.27e6	0.63	NO	36.08	169.068	0.1532	85.1	1.97e3	2.95e3
29	13C-1,2,3,4,7,8-HxCDD	10.072	9.78e5	1.23	NO	42.10	139.779	0.3191	70.4	1.33e3	1.15e4
30	13C-1,2,3,6,7,8-HxCDD	10.072	1.11e6	1.23	NO	42.24	143.965	0.2887	72.5	1.33e3	1.15e4
31	13C-1,2,3,4,6,7,8-HpCDD	10.072	1.27e6	1.02	NO	46.72	162.410	0.1793	81.8	4.90e3	3.20e3
32	13C-OCDD	10.072	2.42e6	0.87	NO	50.32	421.054	0.6809	106.0	1.51e4	7.46e3
33	13C-1,2,3,4-TCDD	10.072	1.94e6	0.78	NO	26.07	4.787	0.0079	2.4	7.06e3	6.56e3
34	13C-1,2,3,7,8,9-HxCDD	10.072	1.43e6	1.26	NO	42.66	4.904	0.0076	2.5	1.33e3	1.15e4
35	37Cl-2,3,7,8-TCDD	10.072	1.49e5			26.44	14.310	0.0312	72.1		1.39e3
36	Total Tetra-Furans	10.072					2.014	0.0861			1.21e3
37	Total Tetra-Dioxins	10.072					0.822	0.0610			1.07e3
38	Total Penta-Furans	10.072					4.013	0.0459			7.94e2
39	Total Penta-Dioxins	10.072					1.091	0.0885			9.30e2
40	Total Hexa-Furans	10.072					7.237	0.0318			8.32e2
41	Total Hexa-Dioxins	10.072					6.550	0.0579			2.96e2
42	Total Hepta-Furans	10.072					11.753	0.0401			6.92e2
43	Total Hepta-Dioxins	10.072					53.090	0.0841			1.70e3
44	Hexa DPE	1.000	1.17e2			22.00					1.80e0
45	Hepta DPE	1.000	1.48e2			37.63					2.15e0
46	Octa DPE	1.000	1.36e2			41.66					3.78e2
47	Nona DPE	1.000	9.99e1			47.54					1.63e0
48	Deca DPE	1.000	1.04e2			48.93					1.98e0
49	Tetra Lock	1.000	4.91e4			21.12					1.48e5
50	Penta Lock	1.000	6.88e3			33.34					1.22e5
51	Hexa Lock	1.000	1.43e5			38.90					2.46e5
52	Hepta Lock	1.000	7.65e3			44.55					1.61e5
53	Octa Lock	1.000	1.08e4			48.90					1.35e5
54	13C-Tetra-Furans	10.072					140.887	0.1793			6.33e3
55	13C-Tetra-Dioxins	10.072					147.060	0.3446			6.56e3

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

HH 22 Sept 2019

SV HH 22 Sept. 2019

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S7, Date: 12-Sep-2019, Time: 14:35:04, ID: L31654-2,I,, Description: 1,WG69303,1.0/20uL

Tetrafurans

	RT	Ratio	Fails?	pg
1	24.14	1.078	YES	0.120
2	23.84	0.759	NO	0.219
3	23.67	0.937	YES	0.024
4	23.32	0.665	NO	0.434
5	22.97	0.712	NO	0.257
6	22.23	0.559	YES	0.421
7	21.93	0.363	YES	0.064
8	26.27	0.866	NO	0.051
9	25.89	0.817	NO	0.075
10	25.25	0.707	NO	0.195
11	24.57	0.809	NO	0.099
12	24.25	0.496	YES	0.056

Tetradioxins

	RT	Ratio	Fails?	pg
1	22.92	0.936	YES	0.197
2	25.62	0.554	YES	0.030
3	25.20	2.820	YES	0.152
4	24.60	0.449	YES	0.118
5	23.74	1.980	YES	0.042
6	23.33	0.636	YES	0.067
7	26.47	0.318	YES	0.062
8	26.31	0.862	NO	0.125
9	26.02	0.663	NO	0.028

Pentafurans

	RT	Ratio	Fails?	pg
1	32.85	1.693	NO	0.326
2	31.44	1.579	NO	1.243
3	28.84	1.734	NO	1.640
4	35.57	1.546	NO	0.328
5	35.23	1.540	NO	0.136
6	34.27	1.299	YES	0.177
7	33.50	1.620	NO	0.119
8	33.35	6.406	YES	0.044

Pentadioxins

	RT	Ratio	Fails?	pg
1	31.95	0.385	YES	0.305
2	34.17	0.597	NO	0.159
3	33.77	0.899	YES	0.138
4	33.05	0.544	NO	0.098
5	35.03	0.958	YES	0.086
6	34.92	0.318	YES	0.008
7	34.42	0.730	YES	0.036
8	37.01	3.146	YES	0.054
9	36.45	0.496	YES	0.044
10	36.11	0.416	YES	0.162

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S7, Date: 12-Sep-2019, Time: 14:35:04, ID: L31654-2,I,, Description: 1,WG69303,1.0/20uL

Hexafurans

	RT	Ratio	Fails?	pg
1	39.46	1.179	NO	0.029
2	39.24	1.311	NO	2.302
3	38.99	1.131	NO	0.776
4	43.03	1.606	YES	0.108
5	42.92	2.020	YES	0.089
6	41.85	2.619	YES	0.196
7	41.68	0.872	YES	0.183
8	40.88	0.924	YES	0.265
9	40.71	1.151	NO	0.383
10	40.07	1.253	NO	2.849
11	40.63	0.626	YES	0.057

Hexadioxins

	RT	Ratio	Fails?	pg
1	40.85	1.661	YES	0.529
2	40.02	1.190	NO	2.236
3	42.68	1.212	NO	0.550
4	42.27	1.270	NO	0.713
5	42.12	1.097	NO	0.205
6	41.43	0.926	YES	0.314
7	41.21	1.227	NO	2.004

Heptafurans

	RT	Ratio	Fails?	pg
1	47.16	1.160	NO	0.253
2	45.86	1.039	NO	7.584
3	45.65	0.918	NO	0.124
4	45.35	0.941	NO	3.792

Heptadioxins

	RT	Ratio	Fails?	pg
1	46.74	1.005	NO	20.662
2	45.81	1.042	NO	32.427

13C-TF

	RT	Ratio	Fails?	pg
1	25.19	0.805	NO	140.887

13C-TD

	RT	Ratio	Fails?	pg
1	26.41	0.820	NO	142.273
2	26.07	0.776	NO	4.787

13C-PF

	RT	Ratio	Fails?	pg
1	33.47	1.567	NO	143.254
2	35.27	1.491	NO	135.752

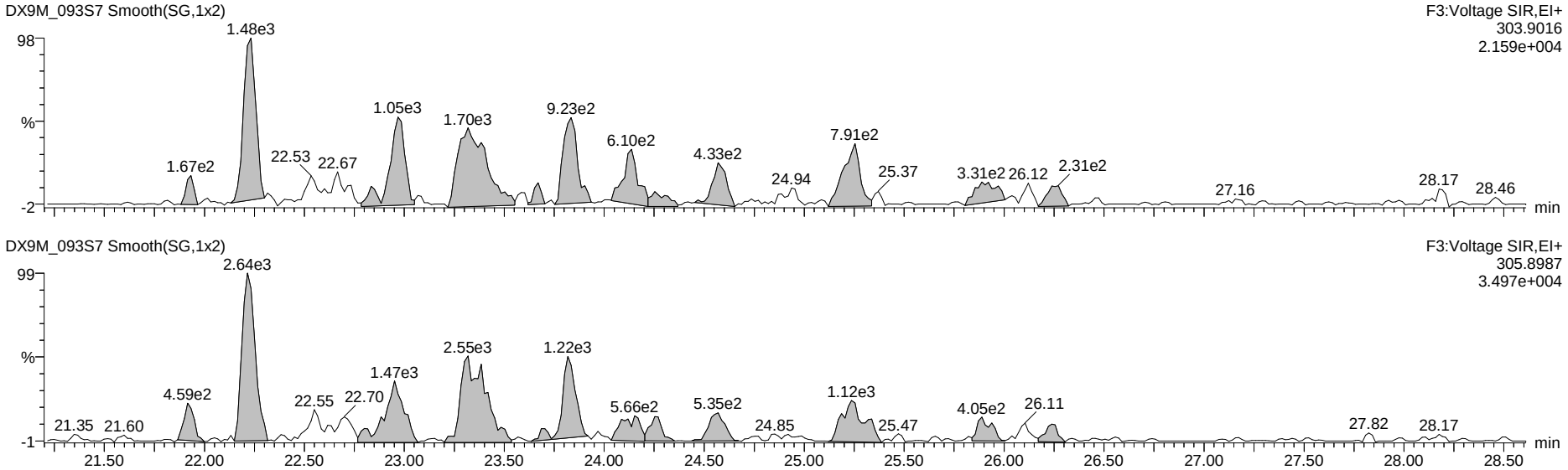
PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

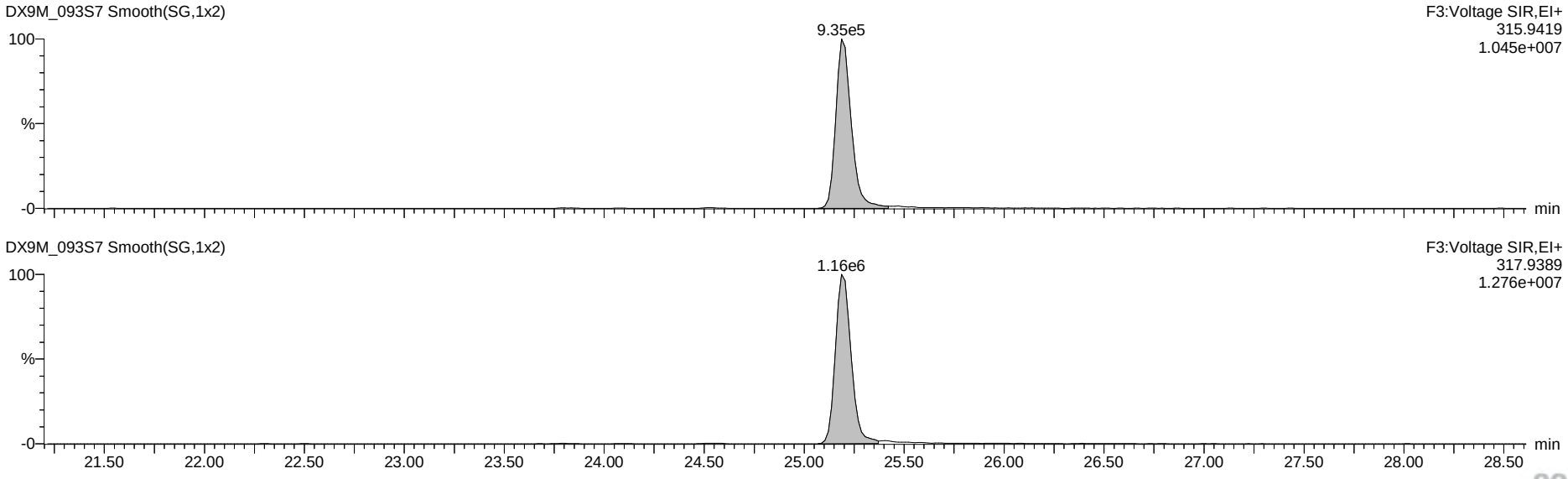
Method: G:\Masslynx\Inst_M\Exported_methods\DX_1613B_16.mdb 07 Sep 2017 16:45:23
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

Name: DX9M_093S7, Date: 12-Sep-2019, Time: 14:35:04, ID: L31654-2,I,, Description: 1,WG69303,1.0/20uL

Total Tetra-Furans



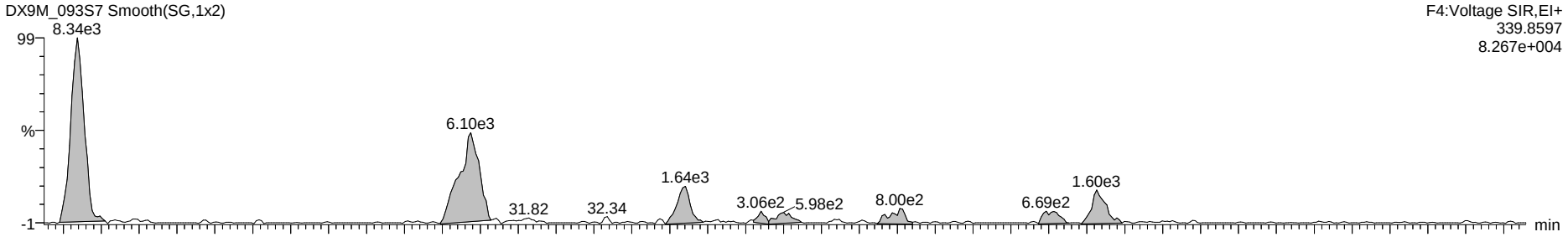
13C-Tetra-Furans

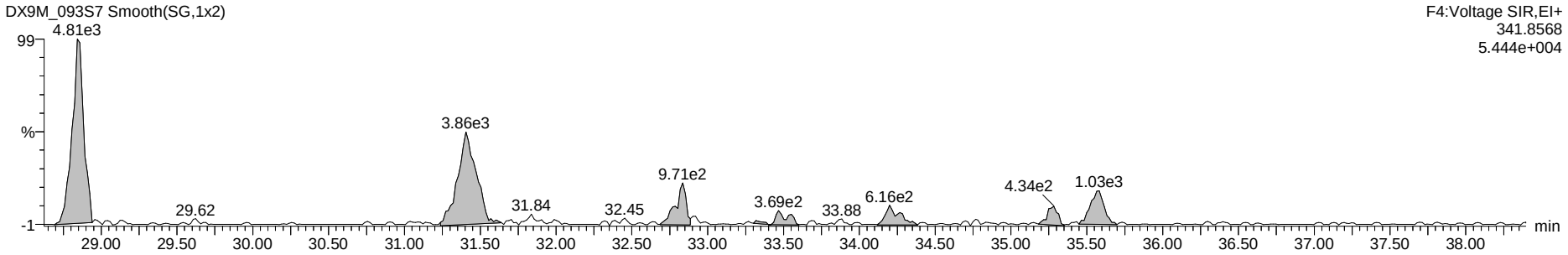


Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

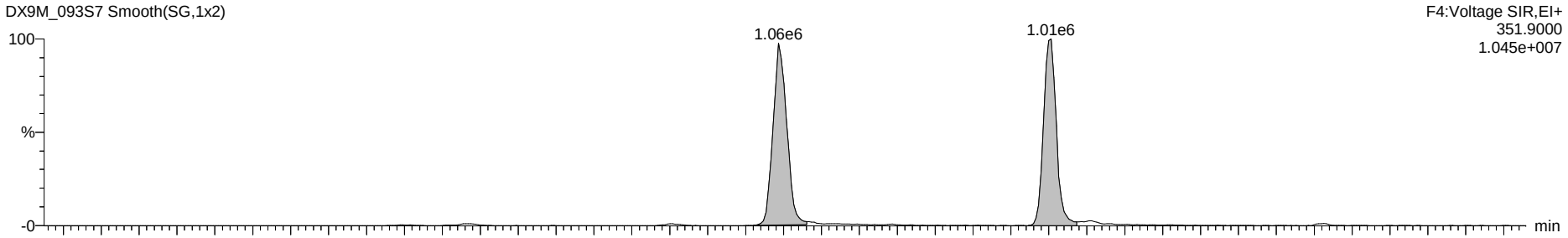
Name: DX9M_093S7, Date: 12-Sep-2019, Time: 14:35:04, ID: L31654-2,I,, Description: 1,WG69303,1.0/20uL

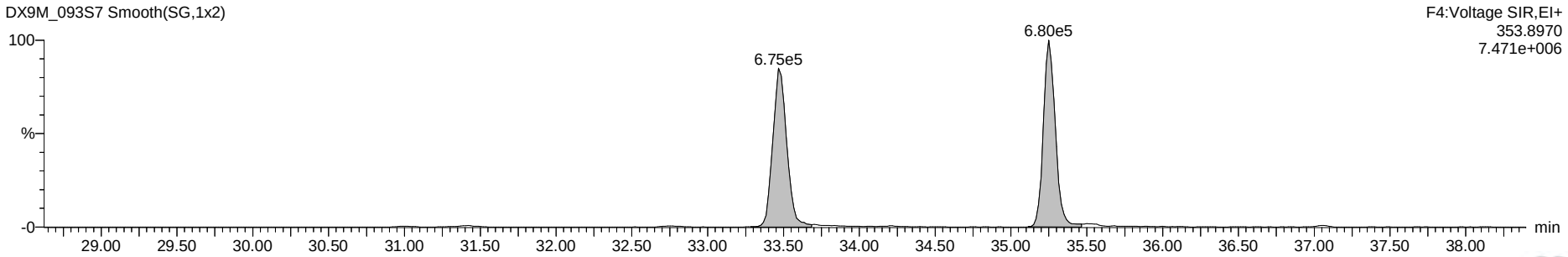
Total Penta-Furans





13C-Penta-Furans

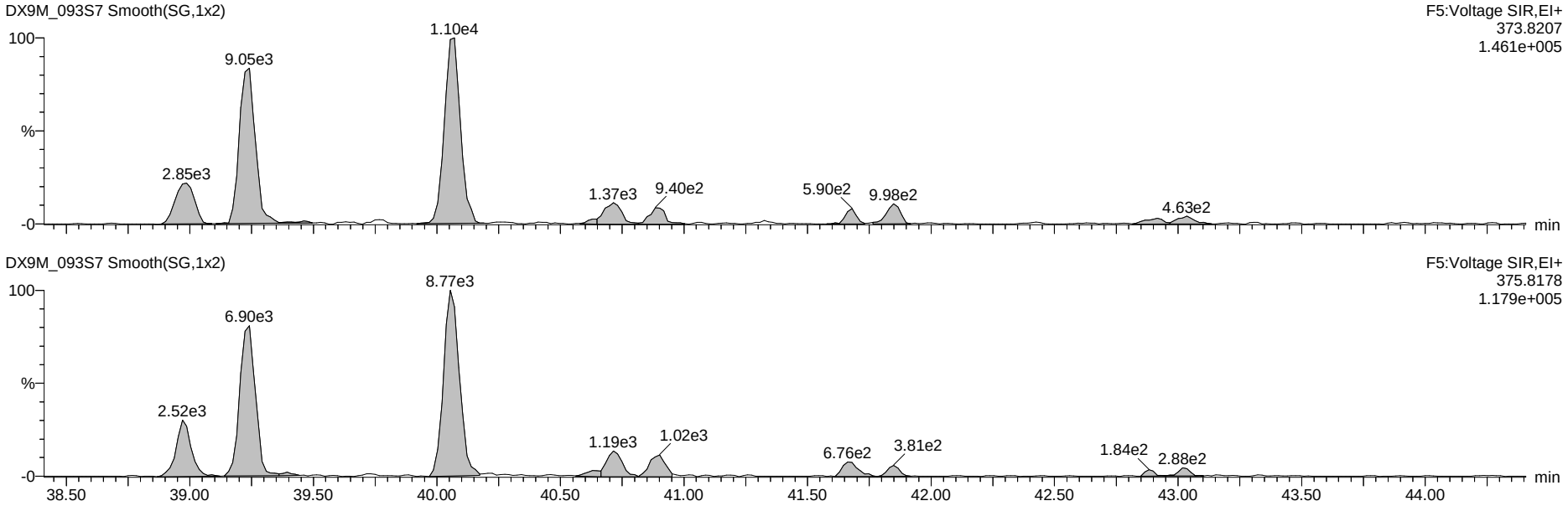




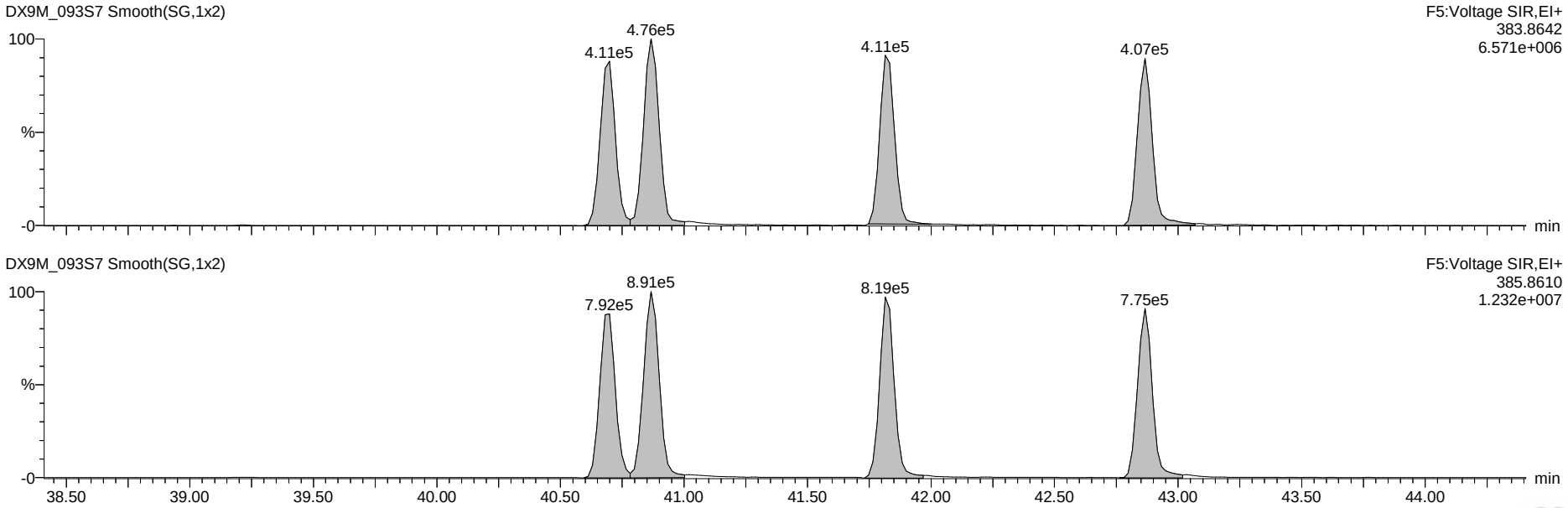
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S7, Date: 12-Sep-2019, Time: 14:35:04, ID: L31654-2,I,, Description: 1,WG69303,1.0/20uL

Total Hexa-Furans



13C-Hexa-Furans



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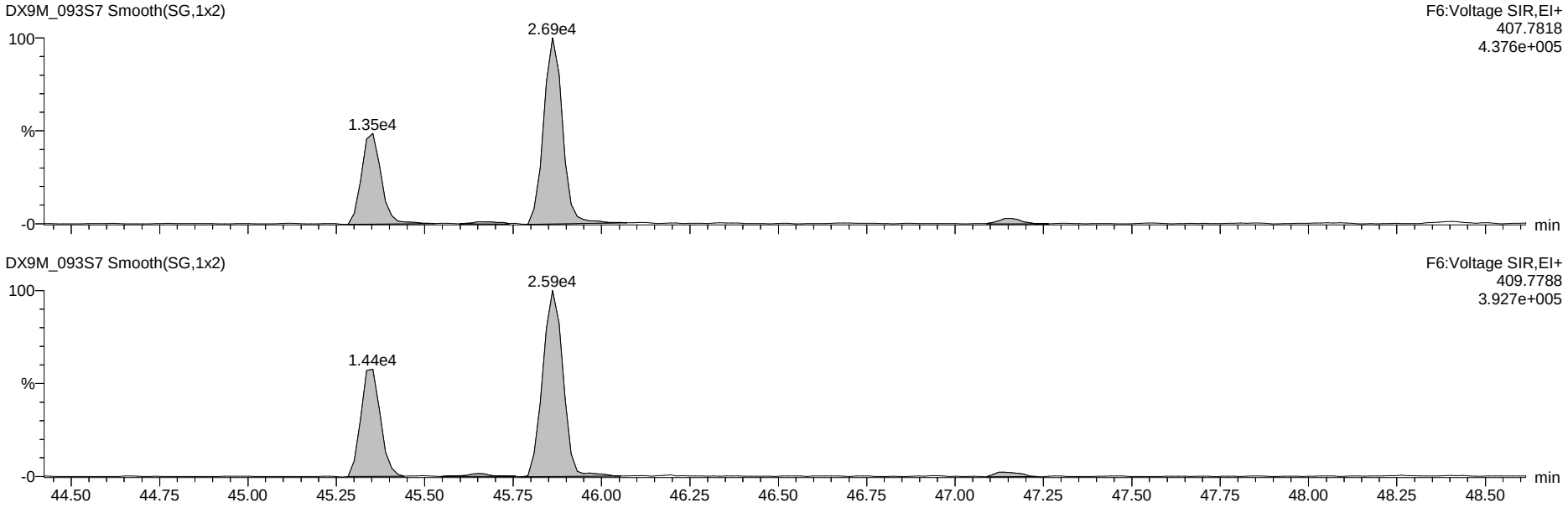
Total Hepta-Furans



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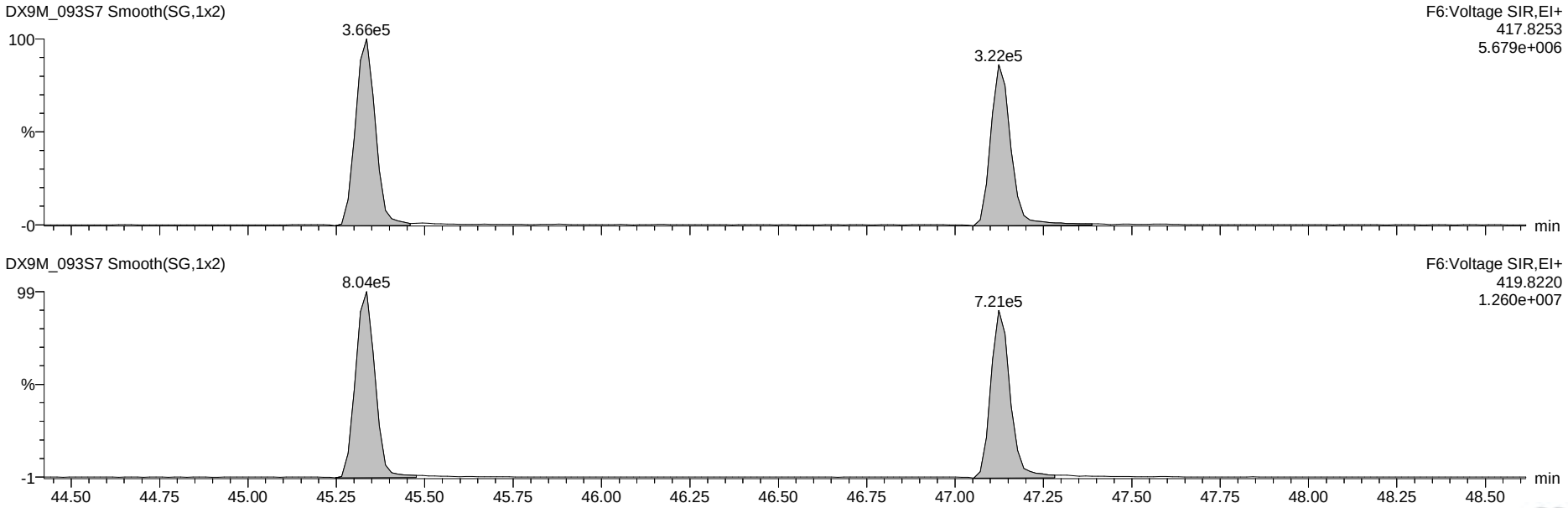

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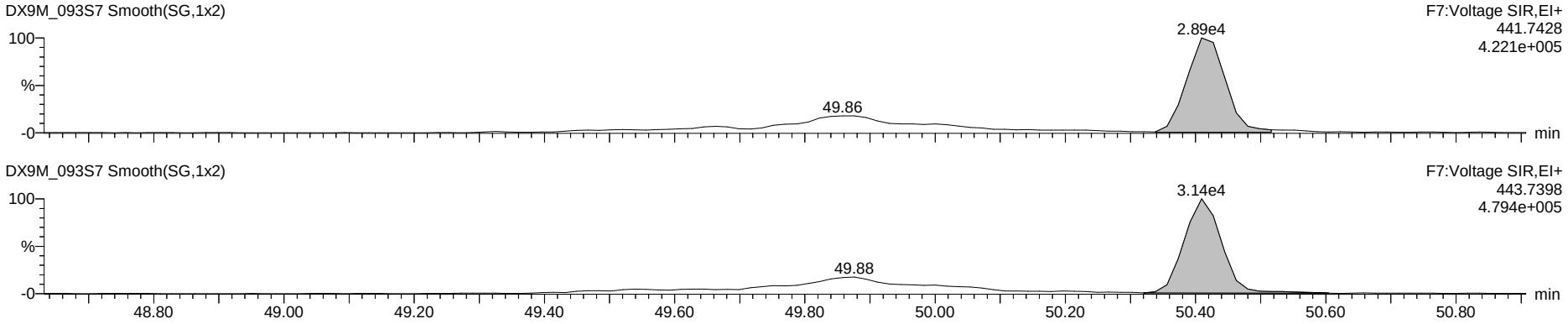
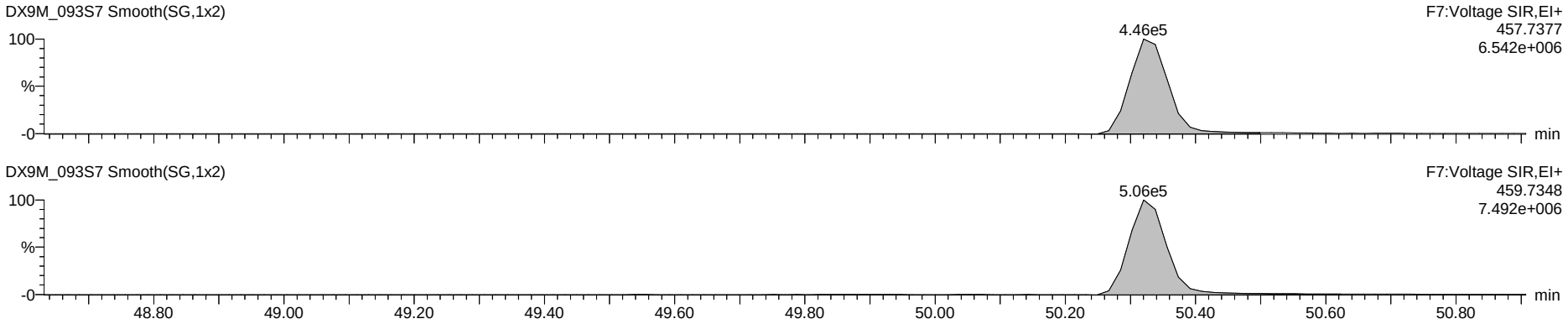
Name: DX9M_093S7, Date: 12-Sep-2019, Time: 14:35:04, ID: L31654-2,I,, Description: 1,WG69303,1.0/20uL

OCDF



OCDD



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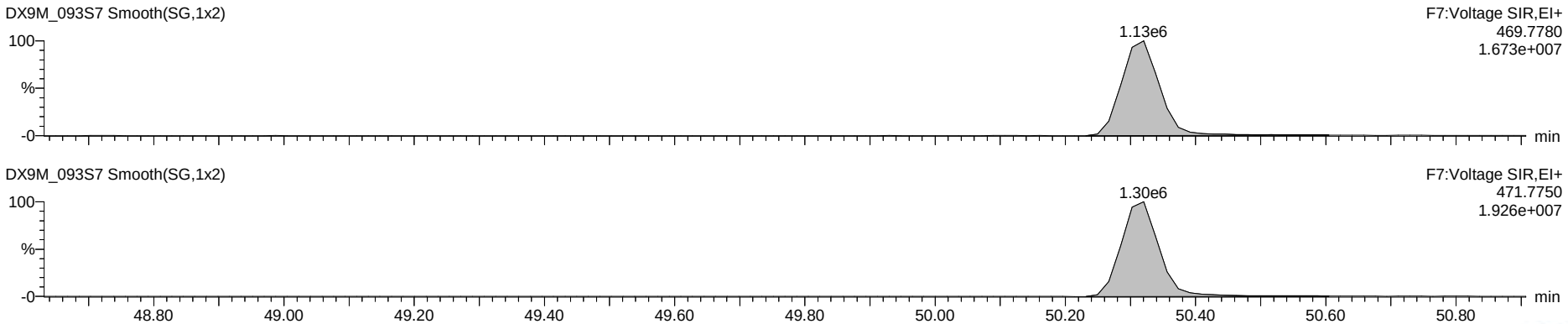

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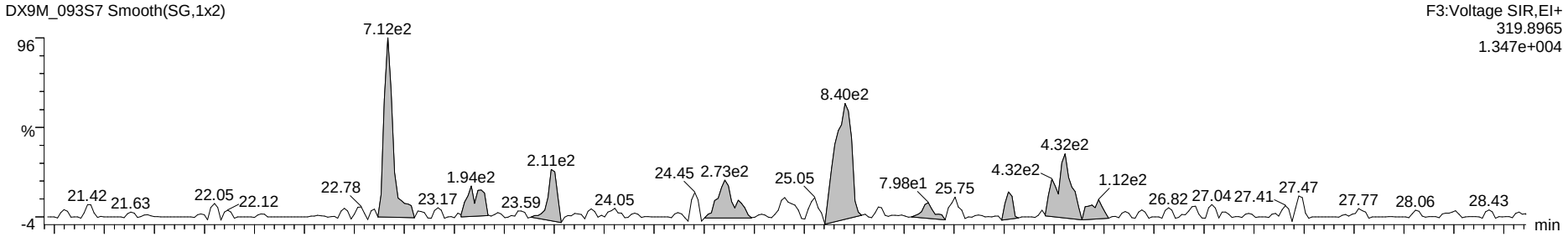
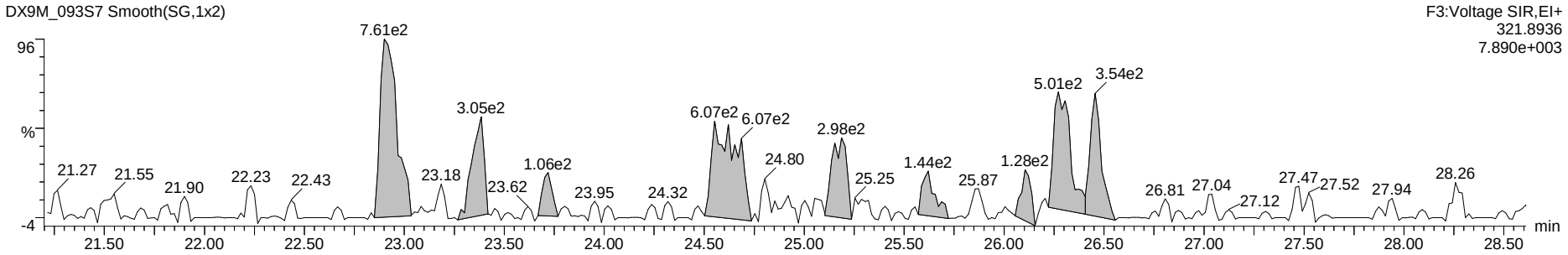
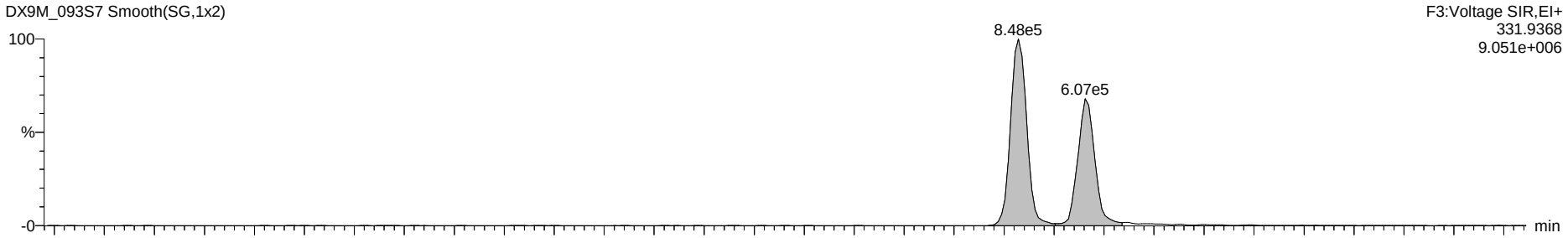
Name: DX9M_093S7, Date: 12-Sep-2019, Time: 14:35:04, ID: L31654-2,I,, Description: 1,WG69303,1.0/20uL

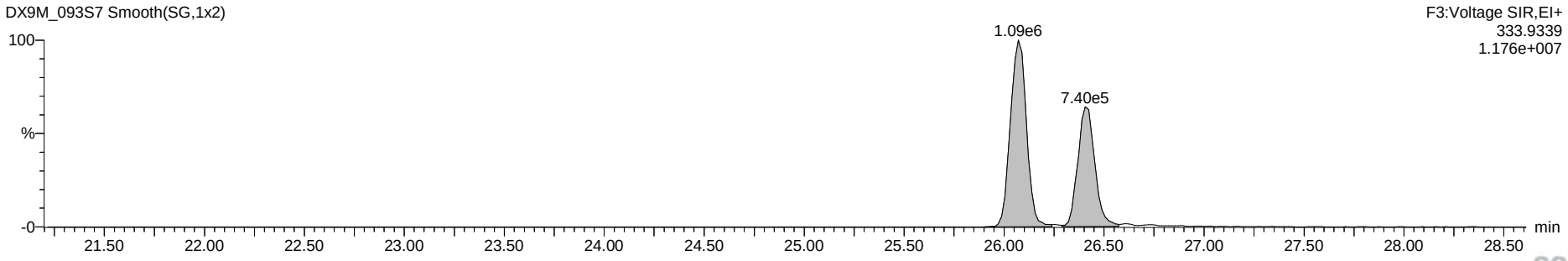
Total Tetra-Dioxins





13C-Tetra-Dioxins





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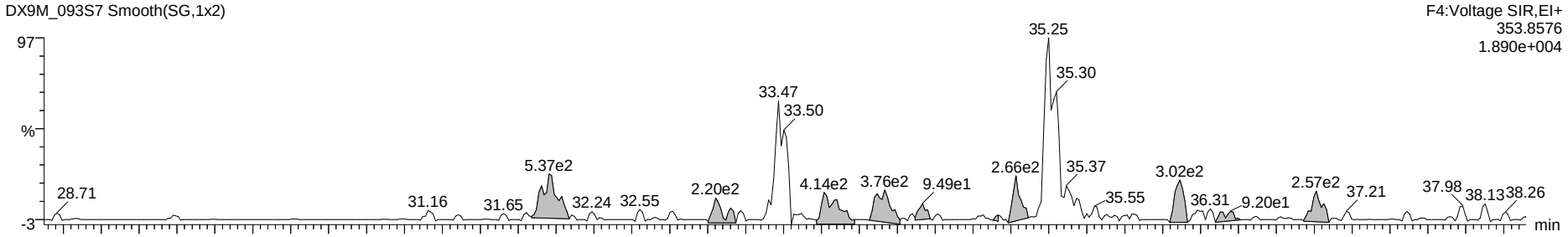
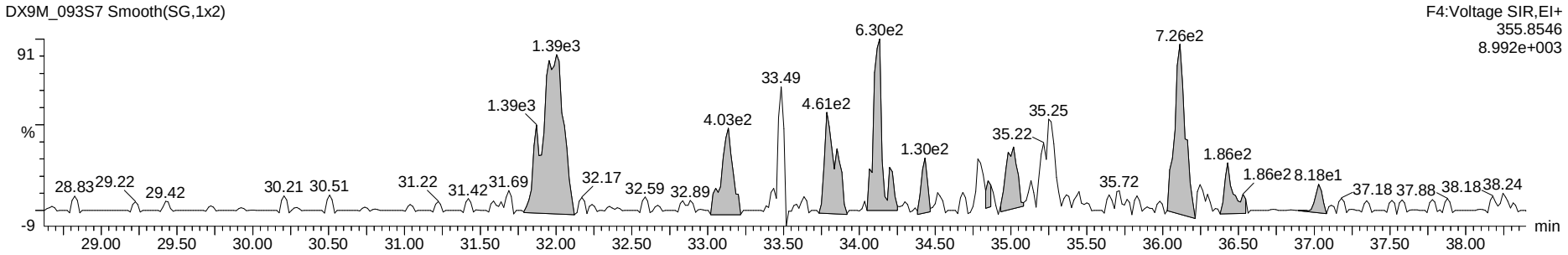
Name: DX9M_093S7, Date: 12-Sep-2019, Time: 14:35:04, ID: L31654-2,I,, Description: 1,WG69303,1.0/20uL

Total Penta-Dioxins





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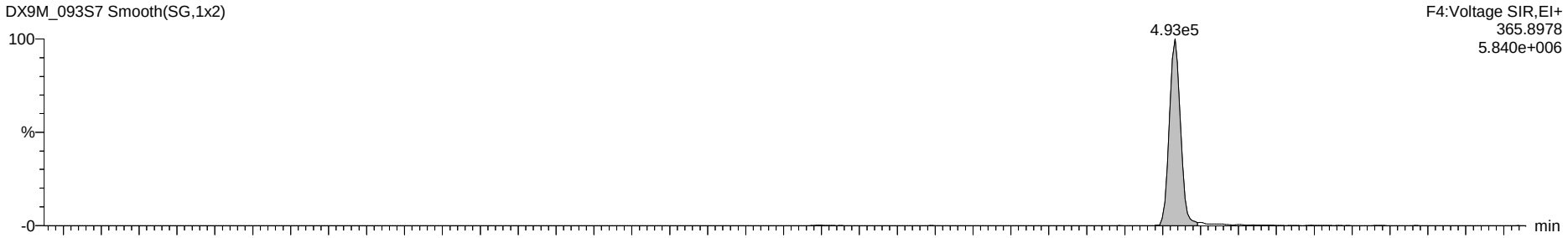
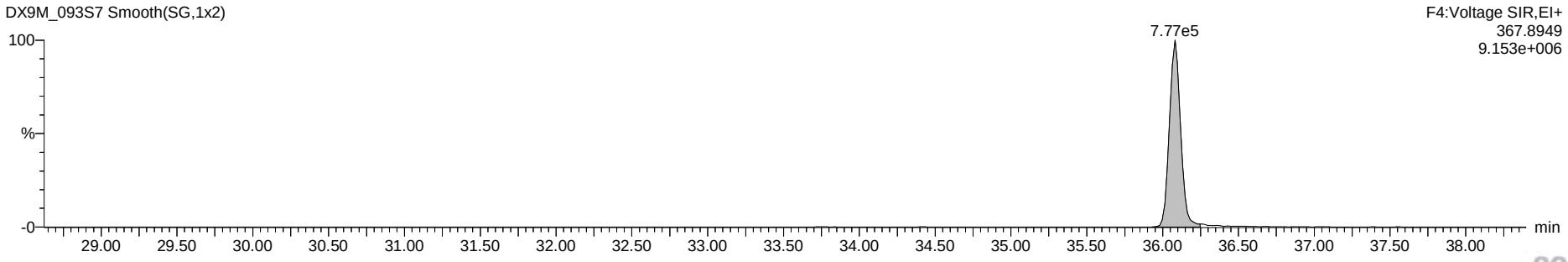
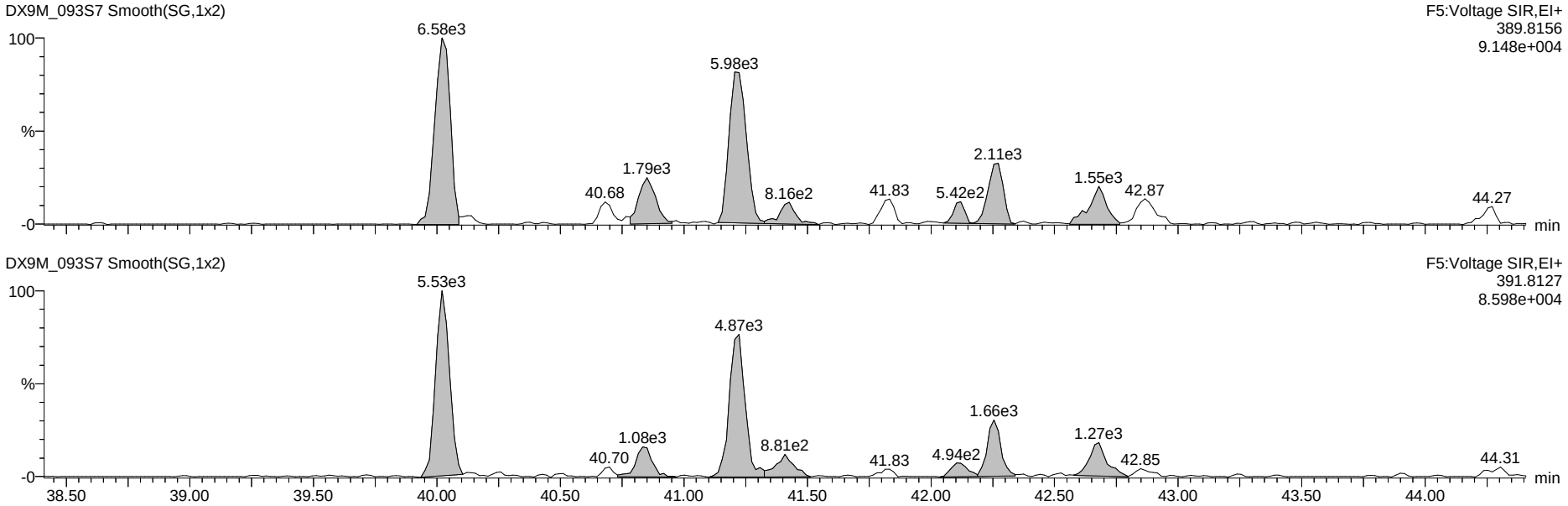




Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S7, Date: 12-Sep-2019, Time: 14:35:04, ID: L31654-2,I,, Description: 1,WG69303,1.0/20uL

Total Hexa-Dioxins



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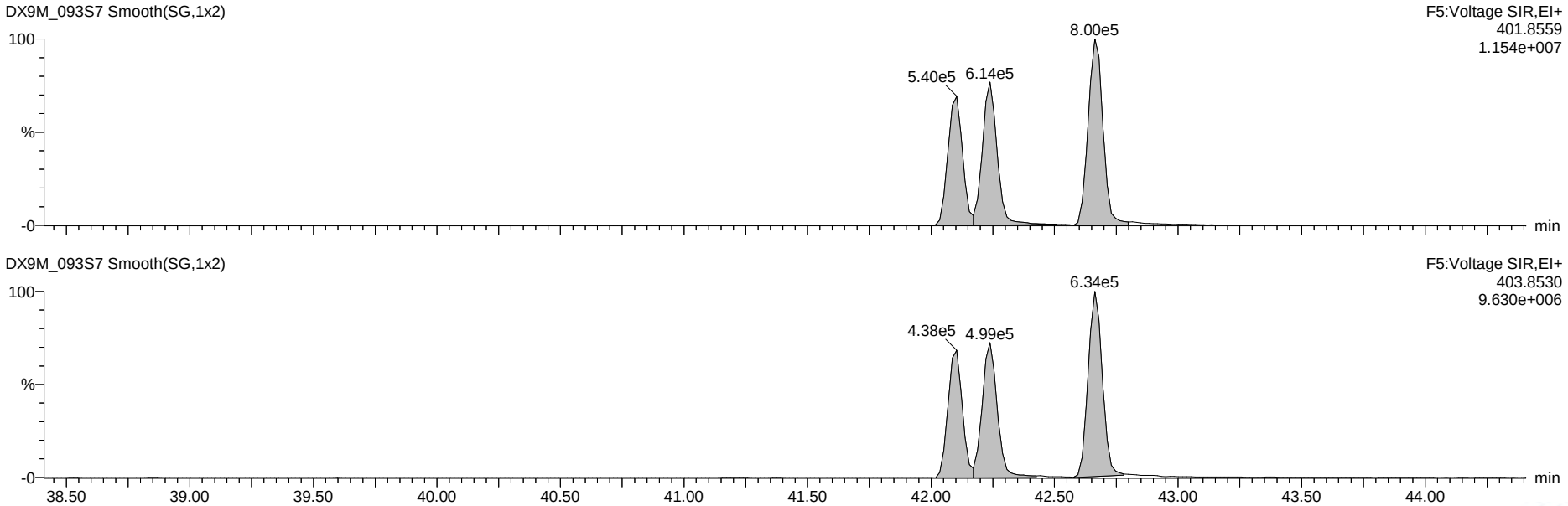

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

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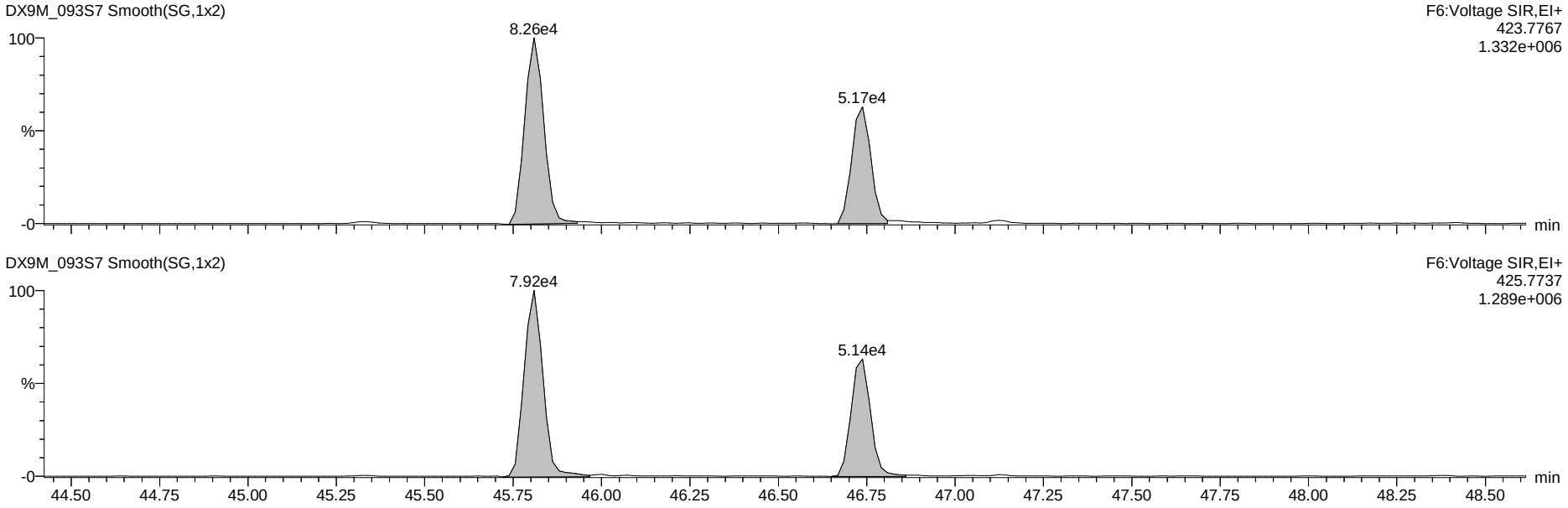
Total Hepta-Dioxins



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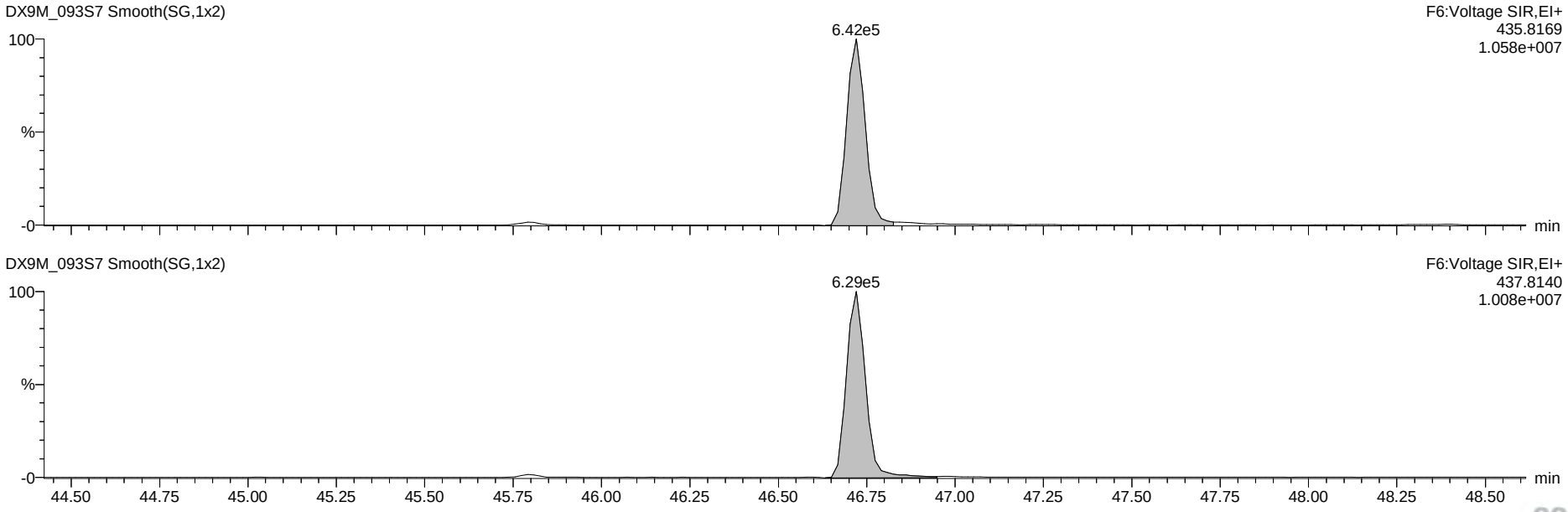

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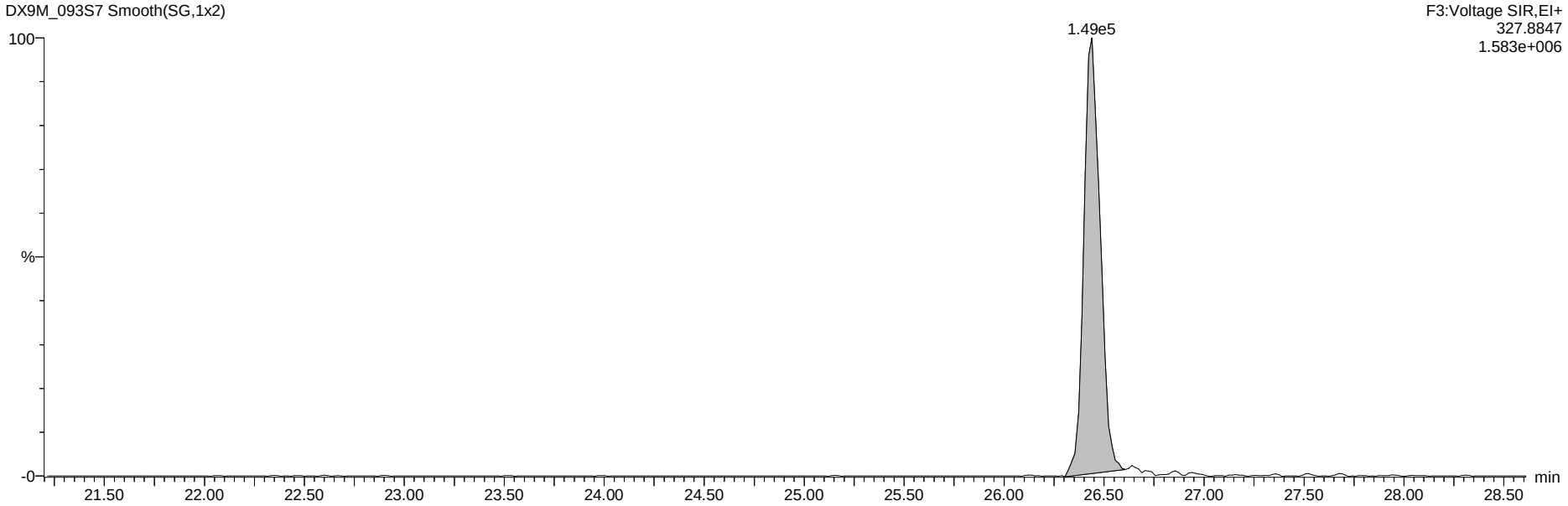
Name: DX9M_093S7, Date: 12-Sep-2019, Time: 14:35:04, ID: L31654-2,I,, Description: 1,WG69303,1.0/20uL

37Cl-2,3,7,8-TCDD



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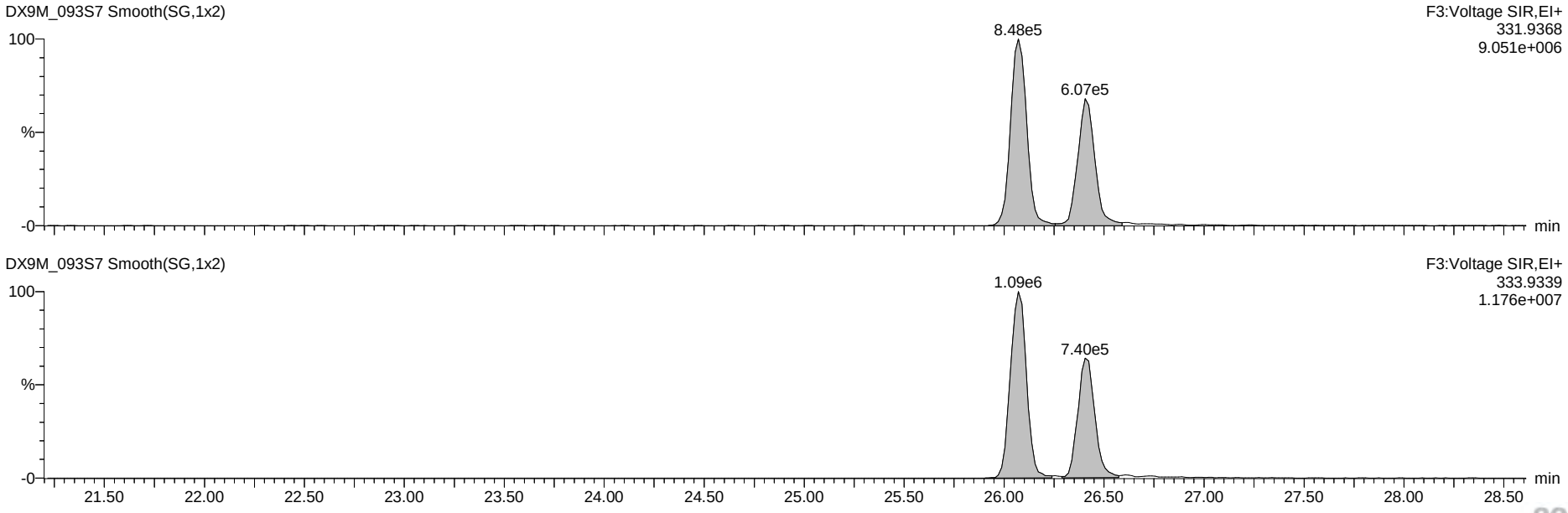

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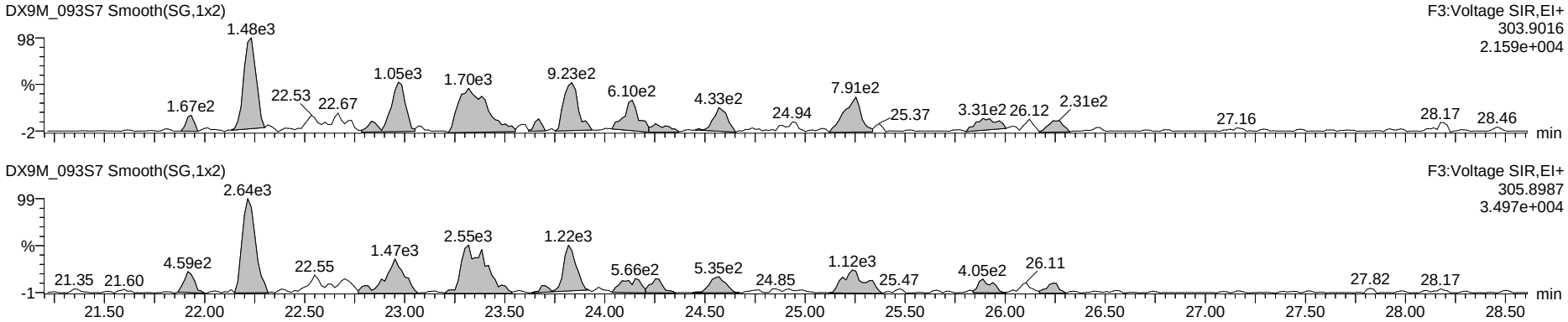
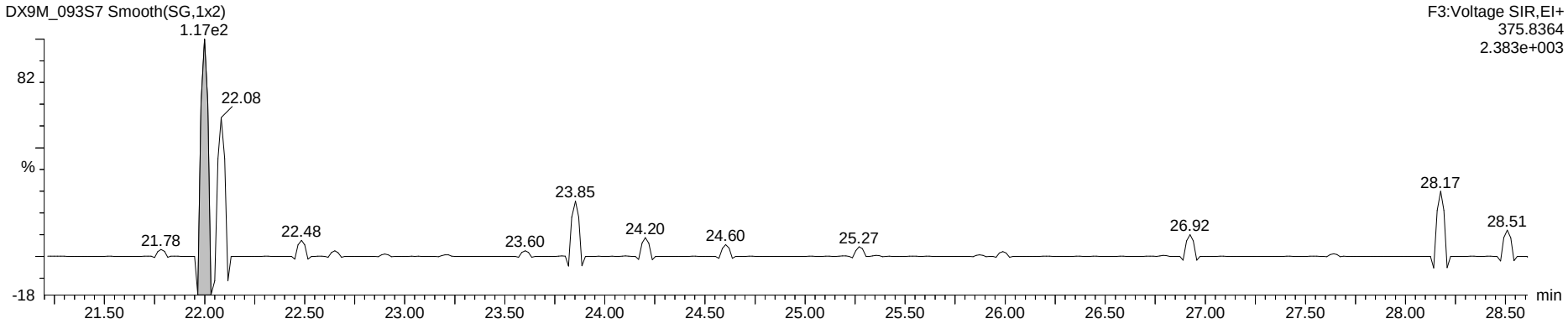
Total Tetra-Furans



Hexa DPE



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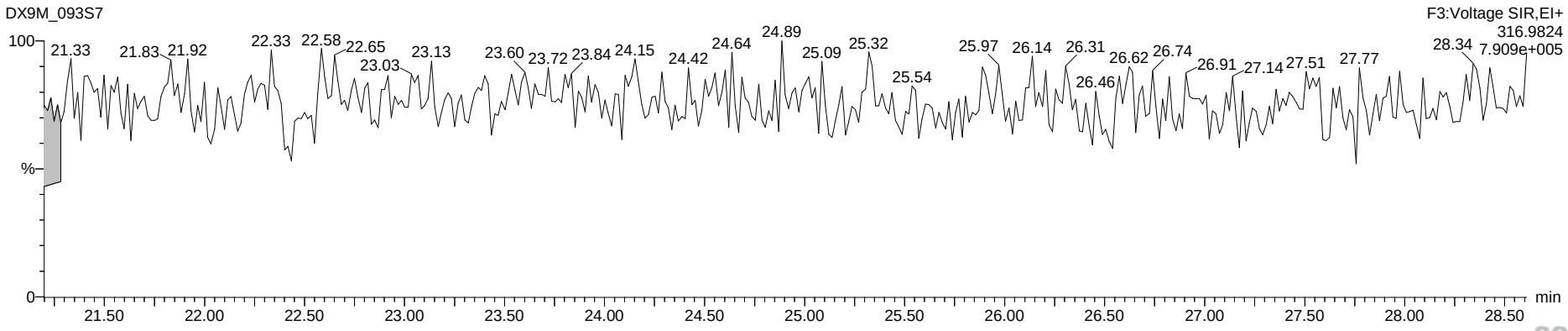

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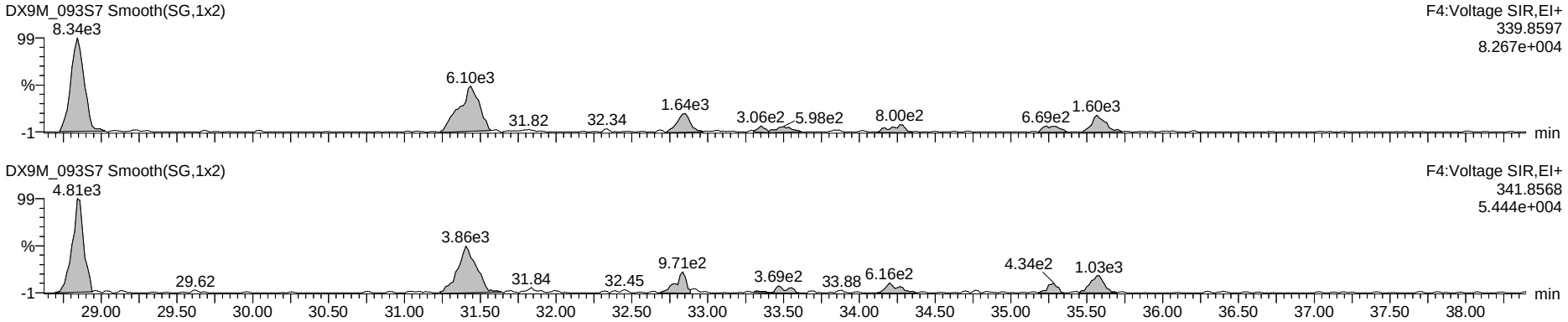
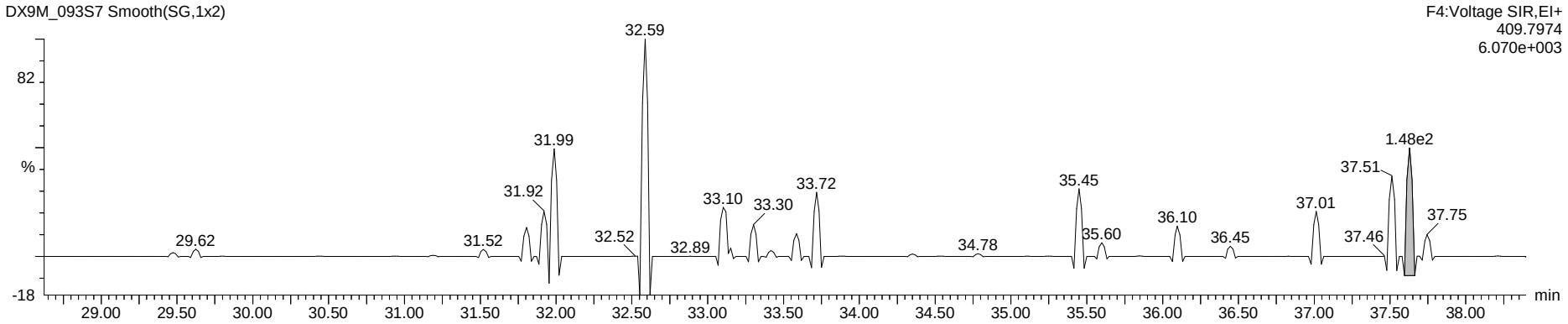
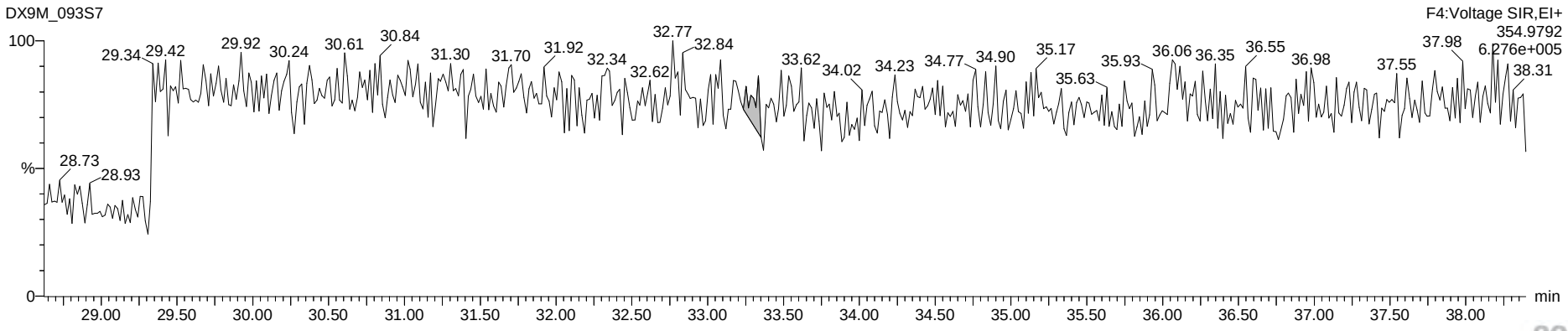
Total Penta-Furans



Hepta DPE



Penta Lock



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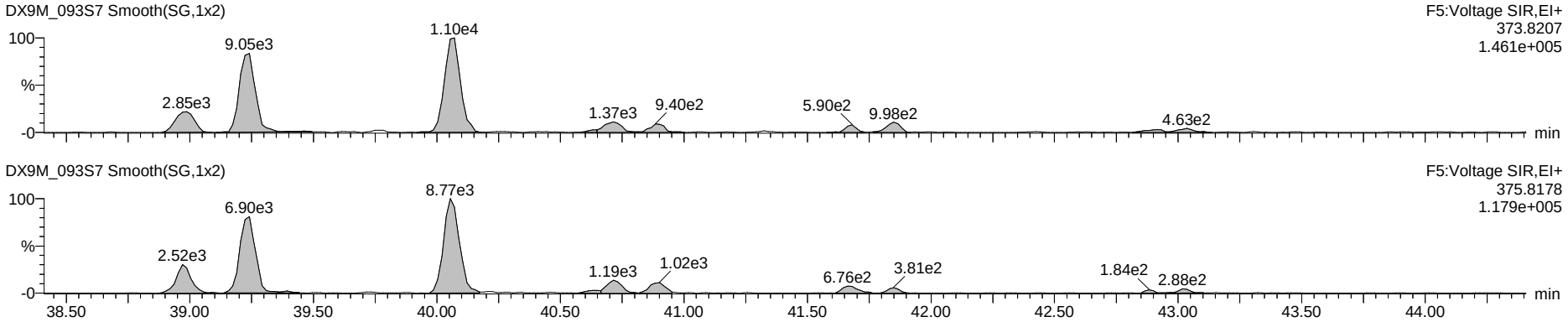
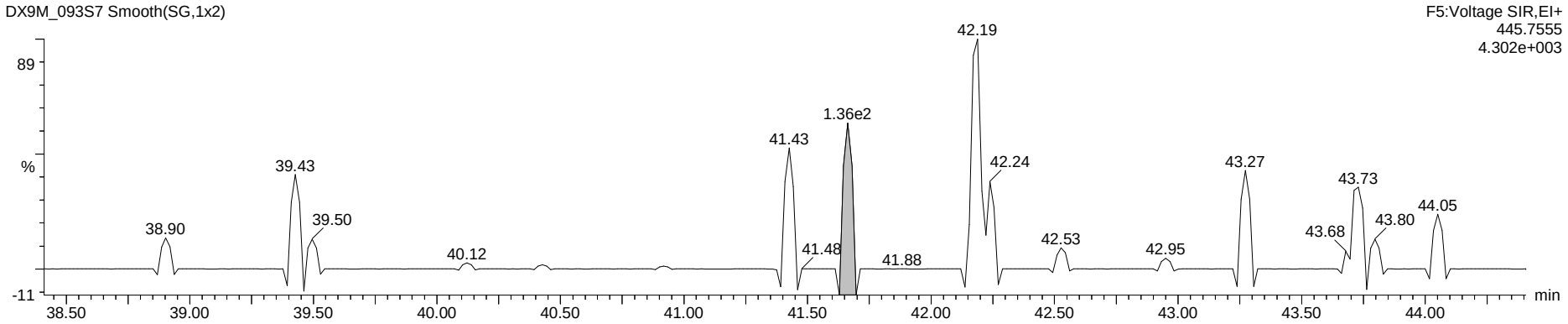
Total Hexa-Furans



Octa DPE



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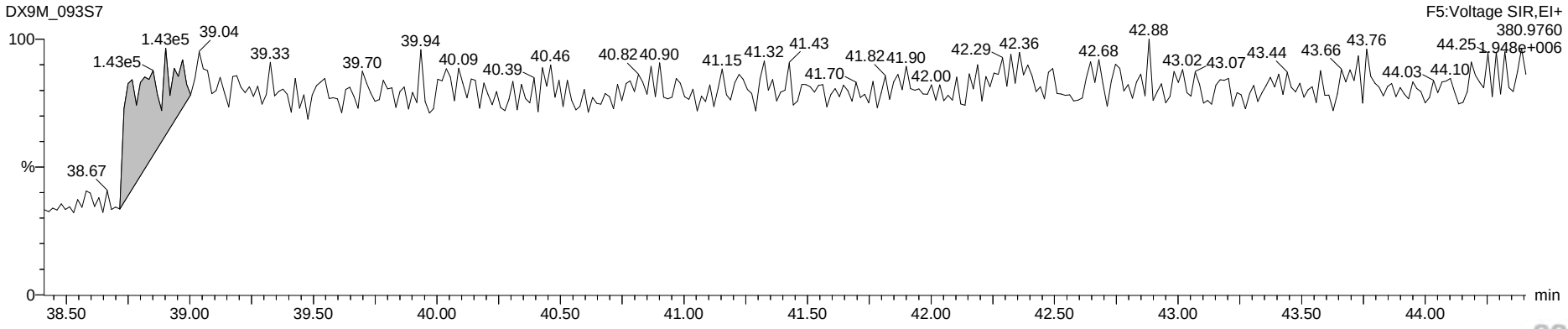

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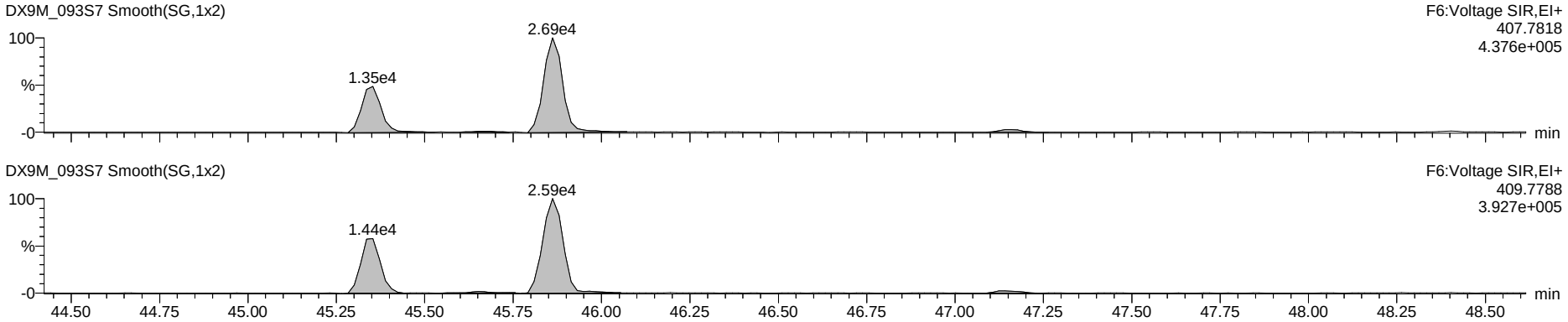
Total Hepta-Furans



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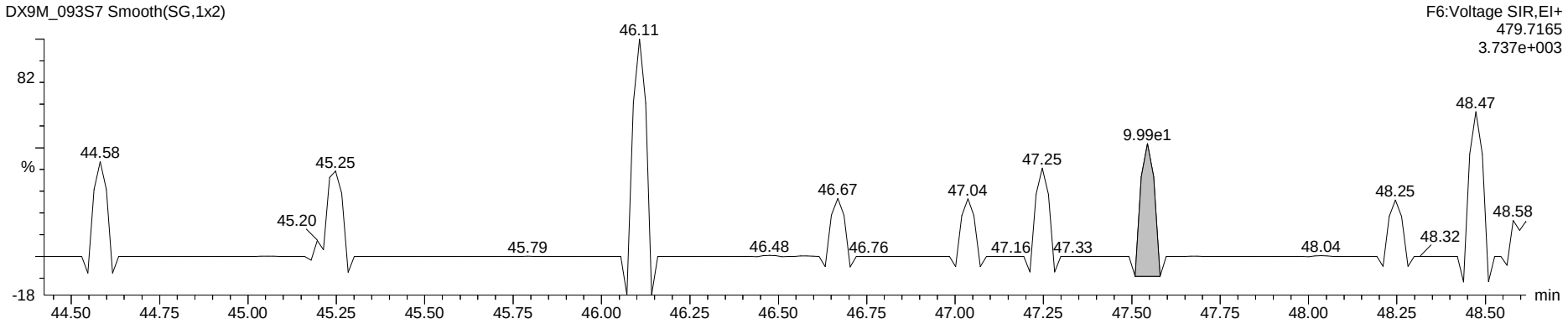

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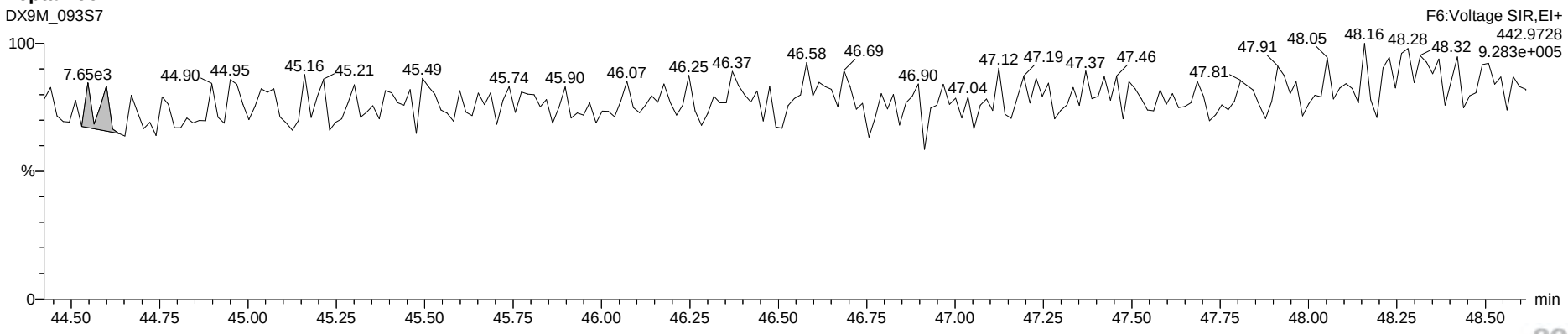

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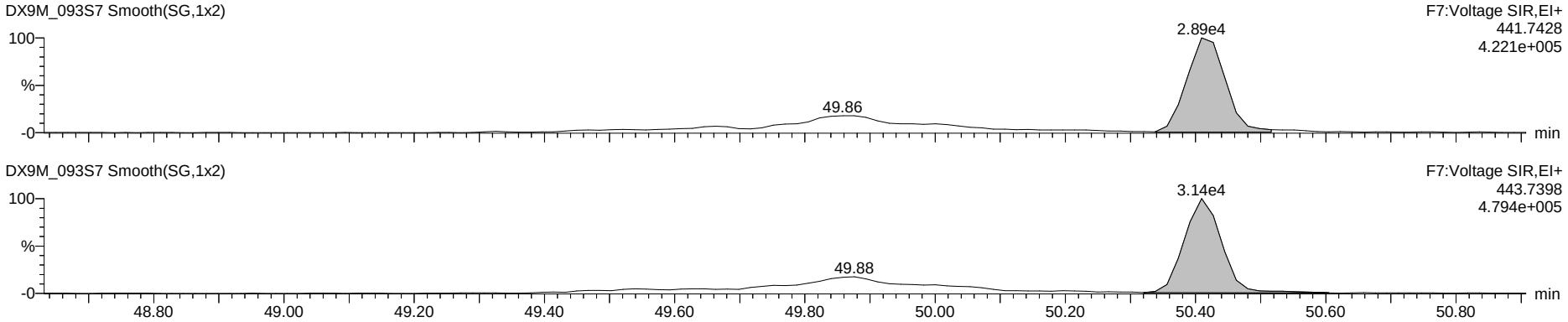
OCDF



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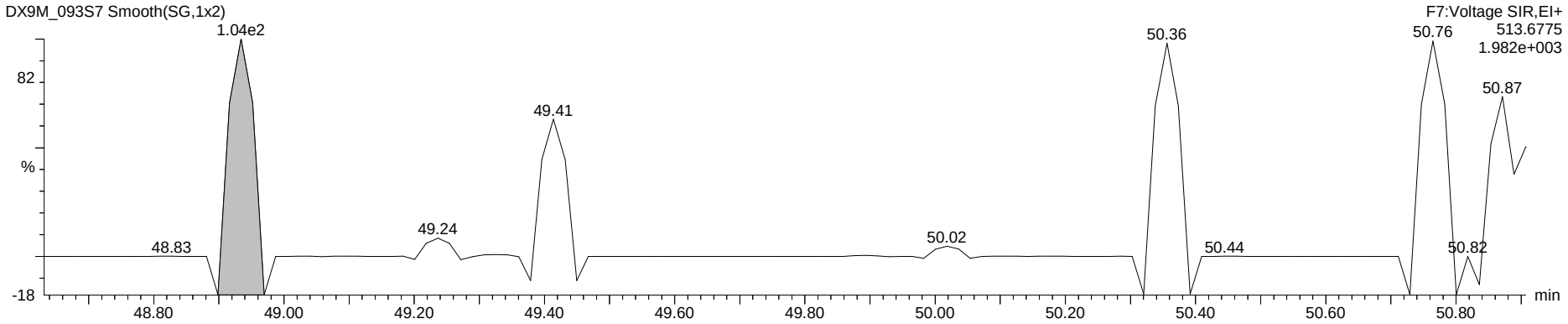
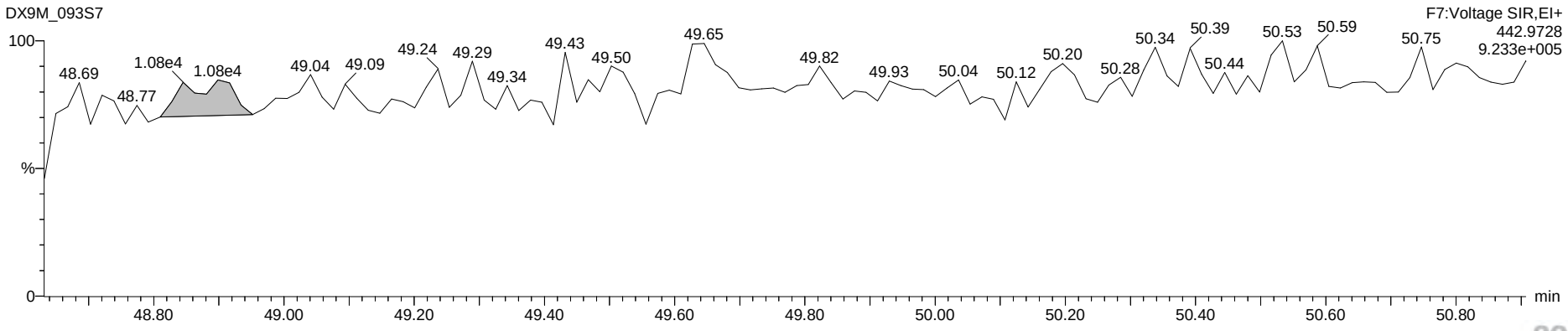


Octa Lock

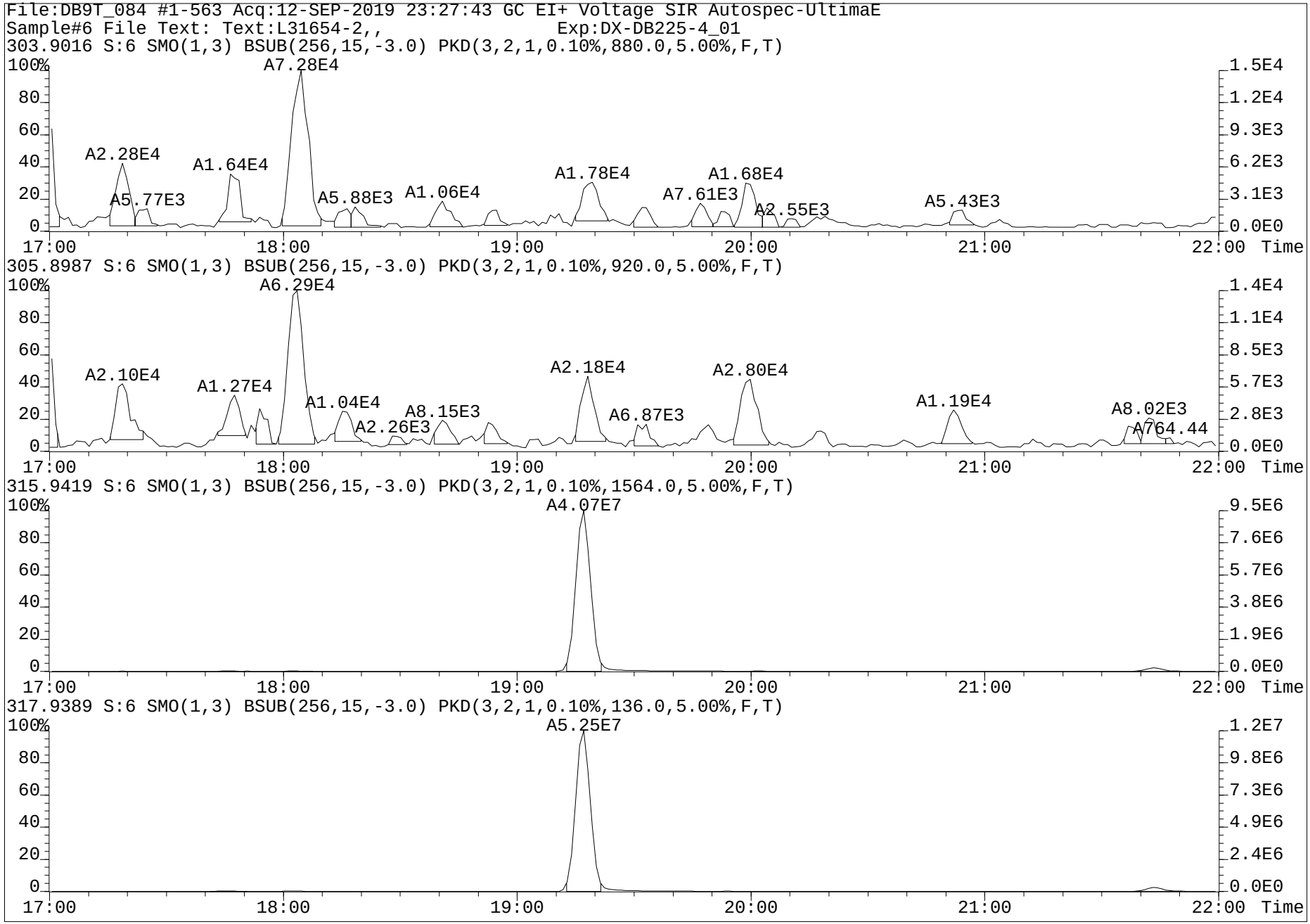


Run #11 Filename DB9T_084 S: 6 I: 1 Acquired: 12-SEP-19 23:27:43 Processed: 17-SEP-19 09:55:57
Run: db9t_084-a Analyte: db-hxd-s2 Cal: db9t_055-5a Results: db9t_084-a Version: V3.6 6-JAN-2000 17:51:42
Sample text: L31654-2,, Comments: 1,WG69303,2.0/20uL
sample size: 10.072000 conc units: pg/g total toxicity: 0.06 F1: 1.0000 F2: 1.0000

	Typ	Name	#Hom	Resp	RA		RT	Conc	Tox #1	DL	Rec	M?
1	Unk	2,3,7,8-TCDF	1	3.96e+04	0.82	y	19:19	0.109	0	0.0532	-	n
2	Unk	1,2,3,7,8,9-HxCDD	1	7.99e+04	1.16	y	33:19	0.448	0	0.0697	-	y
3	IS/RT	13C-2,3,7,8-TCDF	1	9.32e+07	0.78	y	19:17	138.264	-	0.0251	69.6	n
4	IS/RT	13C-1,2,3,4,7,8-HxCDD	1	4.33e+07	1.25	y	31:05	141.242	-	0.0153	71.1	n
5	IS/RT	13C-1,2,3,6,7,8-HxCDD	1	4.43e+07	1.25	y	31:28	138.411	-	0.0146	69.7	n
6	RS	13C-1,2,3,4-TCDD	1	9.46e+07	0.79	y	18:05	8.161	-	-	-	n
7	RS	13C-1,2,3,7,8,9-HxCDD	1	5.92e+07	1.22	y	33:17	10.233	-	-	-	n
8	Tot	Hexa DPE	0	*			NotFnd	*	-	-	-	n
9	Tot	Tetra Lock	-	-			-	-	-	-	-	n
10	Tot	Hexa Lock	-	-			-	-	-	-	-	n

PV by RA 20SEP2019

SV by HH 22 Sept 2019


File:DB9T_084 #1-563 Acq:12-SEP-2019 23:27:43 GC EI+ Voltage SIR Autospec-UltimaE
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303.9016 S:6 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,880.0,5.00%,F,T)
A7.28E4
A2.28E4
A1.64E4
A5.77E3
A5.88E3
A1.06E4
A1.78E4
A7.61E3
A1.68E4
A2.55E3
A5.43E3
305.8987 S:6 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,920.0,5.00%,F,T)
A6.29E4
A2.10E4
A1.27E4
A1.04E4
A2.26E3
A8.15E3
A2.18E4
A6.87E3
A2.80E4
A1.19E4
A8.02E3
A764.44
315.9419 S:6 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1564.0,5.00%,F,T)
A4.07E7
317.9389 S:6 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,136.0,5.00%,F,T)
A5.25E7
100%
80
60
40
20
0
17:00
18:00
19:00
20:00
21:00
22:00
Time
1.5E4
1.2E4
9.3E3
6.2E3
3.1E3
0.0E0
1.4E4
1.1E4
8.5E3
5.7E3
2.8E3
0.0E0
9.5E6
7.6E6
5.7E6
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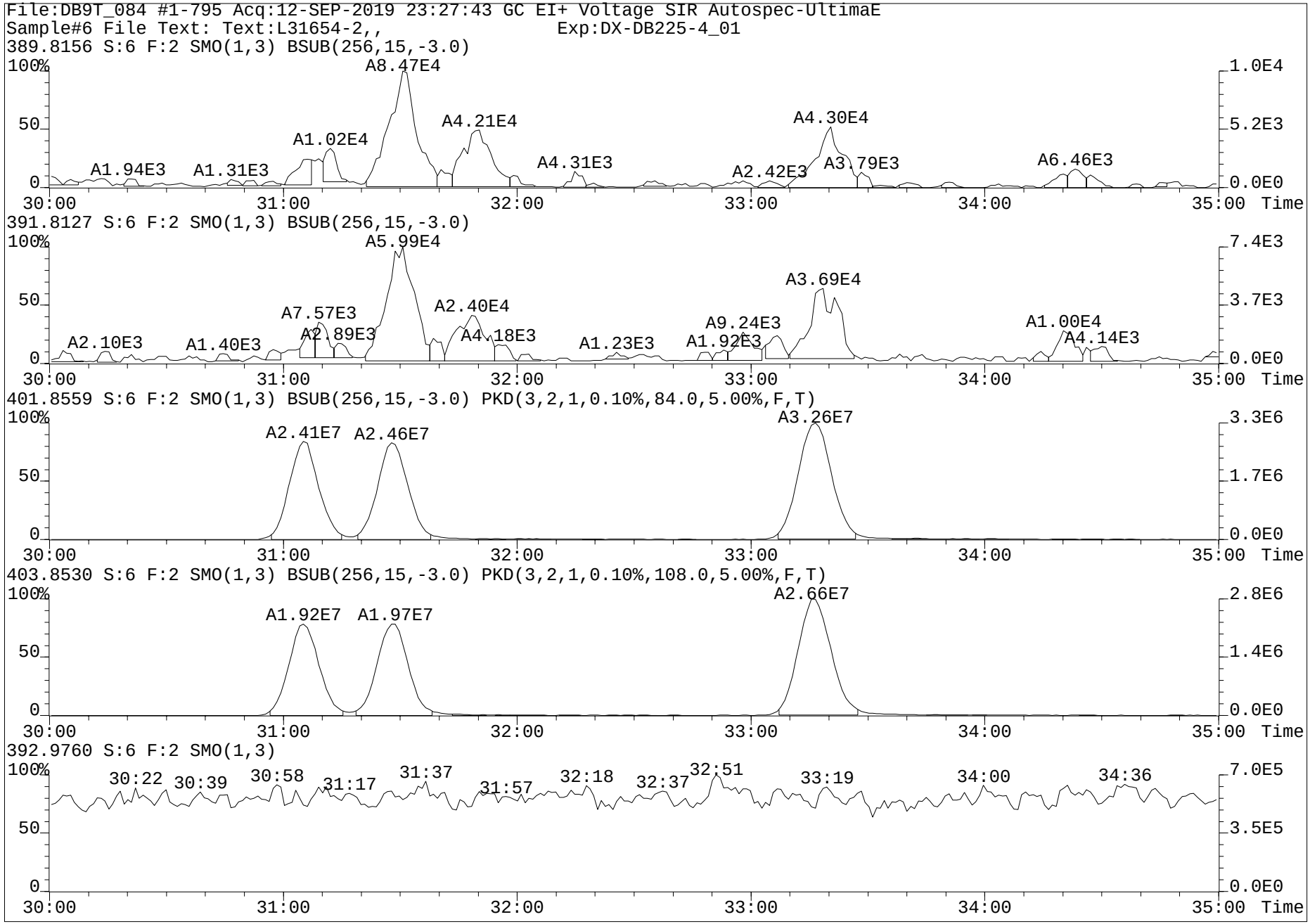
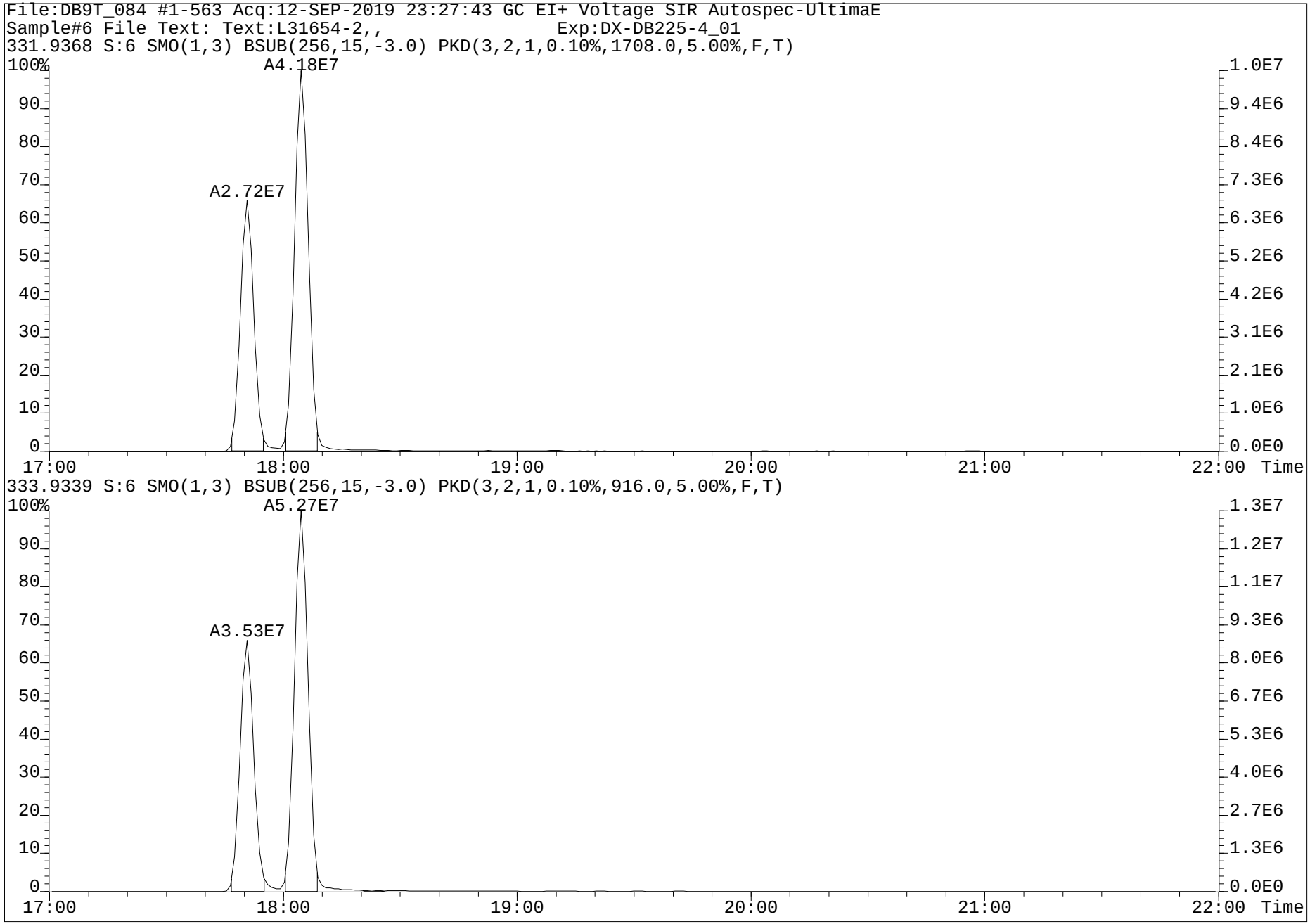
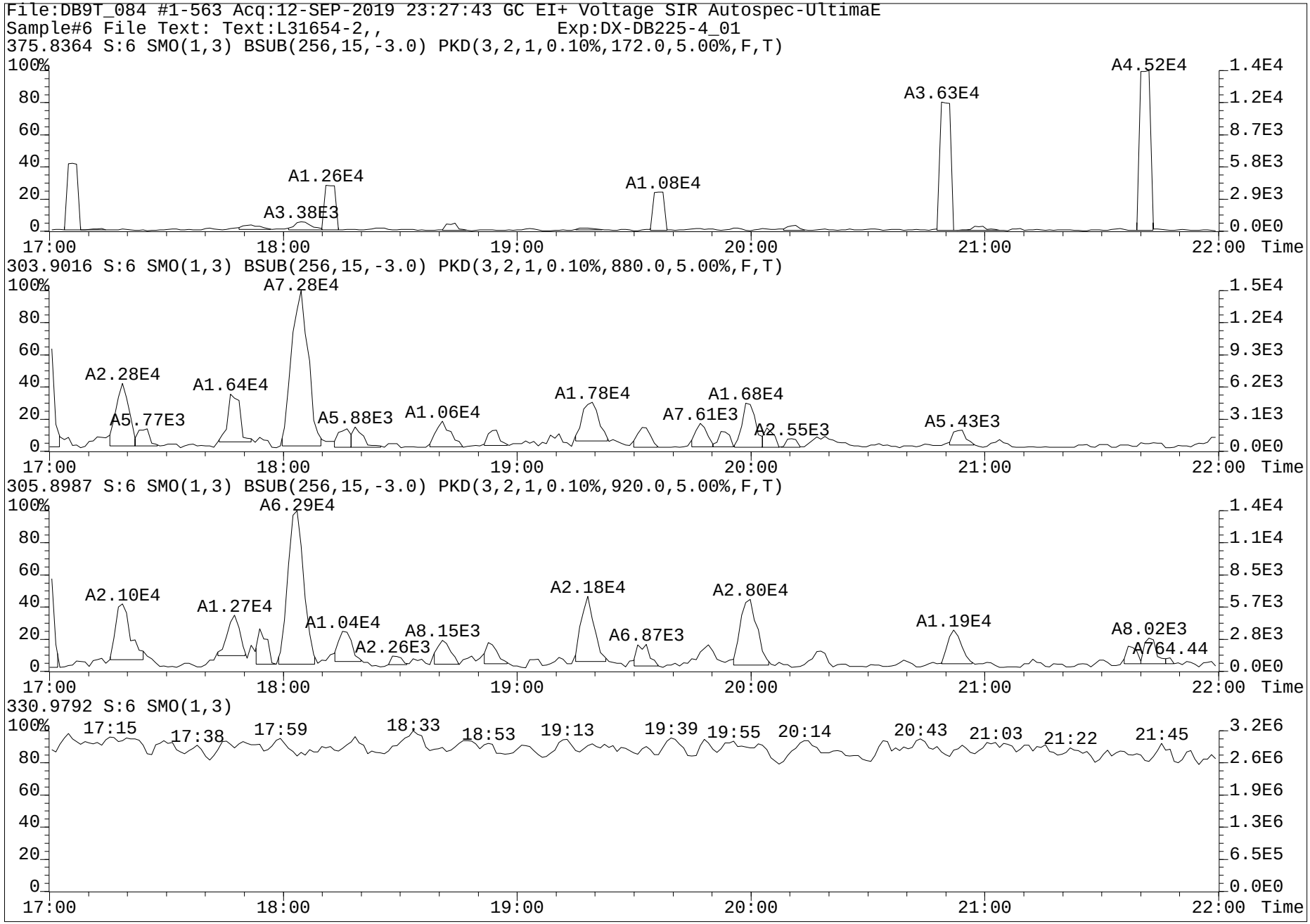
0.0E0


File:DB9T_084 #1-795 Acq:12-SEP-2019 23:27:43 GC EI+ Voltage SIR Autospec-UltimaE
Sample#6 File Text: Text:L31654-2,, Exp:DX-DB225-4_01
389.8156 S:6 F:2 SMO(1,3) BSUB(256,15,-3.0)
A8.47E4
A4.21E4
A1.02E4
A4.30E4
A1.94E3
A1.31E3
A4.31E3
A2.42E3
A3.79E3
A6.46E3
391.8127 S:6 F:2 SMO(1,3) BSUB(256,15,-3.0)
A5.99E4
A3.69E4
A7.57E3
A2.40E4
A9.24E3
A1.00E4
A2.10E3
A1.40E3
A2.89E3
A4.18E3
A1.23E3
A1.92E3
A4.14E3
401.8559 S:6 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,84.0,5.00%,F,T)
A3.26E7
A2.41E7
A2.46E7
403.8530 S:6 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,108.0,5.00%,F,T)
A2.66E7
A1.92E7
A1.97E7
392.9760 S:6 F:2 SMO(1,3)
30:22
30:39
30:58
31:17
31:37
31:57
32:18
32:37
32:51
33:19
34:00
34:36
100%
50
0
30:00
31:00
32:00
33:00
34:00
35:00
Time
1.0E4
5.2E3
0.0E0
7.4E3
3.7E3
3.3E6
1.7E6
2.8E6
1.4E6
7.0E5
3.5E5


File:DB9T_084 #1-563 Acq:12-SEP-2019 23:27:43 GC EI+ Voltage SIR Autospec-UltimaE
Sample#6 File Text: Text:L31654-2,, Exp:DX-DB225-4_01
331.9368 S:6 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1708.0,5.00%,F,T)
A4.18E7
A2.72E7
100%
90
80
70
60
50
40
30
20
10
0
1.0E7
9.4E6
8.4E6
7.3E6
6.3E6
5.2E6
4.2E6
3.1E6
2.1E6
1.0E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time
333.9339 S:6 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,916.0,5.00%,F,T)
A5.27E7
A3.53E7
100%
90
80
70
60
50
40
30
20
10
0
1.3E7
1.2E7
1.1E7
9.3E6
8.0E6
6.7E6
5.3E6
4.0E6
2.7E6
1.3E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time


File:DB9T_084 #1-563 Acq:12-SEP-2019 23:27:43 GC EI+ Voltage SIR Autospec-UltimaE
Sample#6 File Text: Text:L31654-2,, Exp:DX-DB225-4_01
375.8364 S:6 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,172.0,5.00%,F,T)
A4.52E4
A3.63E4
A1.26E4
A1.08E4
A3.38E3
303.9016 S:6 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,880.0,5.00%,F,T)
A7.28E4
A2.28E4
A1.64E4
A1.78E4
A1.68E4
A5.77E3
A5.88E3
A1.06E4
A7.61E3
A2.55E3
A5.43E3
305.8987 S:6 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,920.0,5.00%,F,T)
A6.29E4
A2.10E4
A1.27E4
A2.18E4
A2.80E4
A1.04E4
A8.15E3
A2.26E3
A6.87E3
A1.19E4
A8.02E3
A764.44
330.9792 S:6 SMO(1,3)
17:15
17:38
17:59
18:33
18:53
19:13
19:39
19:55
20:14
20:43
21:03
21:22
21:45
Time

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S8, Date: 12-Sep-2019, Time: 15:30:12, ID: L31654-3,I,, Description: 1,WG69303,1.0/20uL

	Name	Sample Size	Resp	Ratio	fails?	RT	pg	DL	%Rec	Noise 1	Noise 2
1	2,3,7,8-TCDF	10.240	5.76e3	0.87	NO	25.22	0.316	0.0405		8.93e2	2.42e3
2	1,2,3,7,8-PeCDF	10.240	2.58e3	1.43	NO	33.50	0.169	0.0399		1.15e3	1.15e3
3	2,3,4,7,8-PeCDF	10.240	4.05e3	1.53	NO	35.27	0.254	0.0325		1.15e3	1.15e3
4	1,2,3,4,7,8-HxCDF	10.240	1.91e4	1.26	NO	40.71	1.361	0.0247		1.01e3	9.84e2
5	1,2,3,6,7,8-HxCDF	10.240	7.05e3	1.20	NO	40.88	0.491	0.0245		1.01e3	9.84e2
6	2,3,4,6,7,8-HxCDF	10.240	4.30e3	1.53	YES	41.85	0.292	0.0227		1.01e3	9.84e2
7	1,2,3,7,8,9-HxCDF	10.240	9.83e2	1.85	YES	42.92	0.078	0.0260		1.01e3	9.84e2
8	1,2,3,4,6,7,8-HpCDF	10.240	2.04e5	1.04	NO	45.35	14.292	0.0421		2.52e3	1.42e3
9	1,2,3,4,7,8,9-HpCDF	10.240	1.30e4	0.97	NO	47.14	0.894	0.0453		2.52e3	1.42e3
10	OCDF	10.240	8.80e5	0.90	NO	50.43	57.450	0.0273		1.08e3	1.43e3
11	2,3,7,8-TCDD	10.240	1.08e3	0.41	YES	26.41	0.078	0.0328		7.96e2	1.16e3
12	1,2,3,7,8-PeCDD	10.240	2.86e3	0.76	YES	36.11	0.233	0.0252		8.56e2	5.78e2
13	1,2,3,4,7,8-HxCDD	10.240	4.18e3	1.26	NO	42.12	0.385	0.0211		8.39e2	6.10e2
14	1,2,3,6,7,8-HxCDD	10.240	2.46e4	1.33	NO	42.26	1.802	0.0174		8.39e2	6.10e2
15	1,2,3,7,8,9-HxCDD	10.240	8.82e3	1.06	NO	42.68	0.723	0.0191		8.39e2	6.10e2
16	1,2,3,4,6,7,8-HpCDD	10.240	7.68e5	1.04	NO	46.74	67.740	0.0902		3.61e3	2.77e3
17	OCDD	10.240	6.82e6	0.90	NO	50.34	516.534	0.0456		1.80e3	1.82e3
18	13C-2,3,7,8-TCDF	10.240	3.84e6	0.80	NO	25.19	158.950	0.1172	81.4	6.90e3	5.57e3
19	13C-1,2,3,7,8-PeCDF	10.240	3.22e6	1.54	NO	33.47	163.781	0.1841	83.9	7.10e3	8.81e3
20	13C-2,3,4,7,8-PeCDF	10.240	3.28e6	1.58	NO	35.25	161.990	0.1785	82.9	7.10e3	8.81e3
21	13C-1,2,3,4,7,8-HxCDF	10.240	2.48e6	0.51	NO	40.70	154.492	0.1733	79.1	9.97e3	6.12e3
22	13C-1,2,3,6,7,8-HxCDF	10.240	2.62e6	0.52	NO	40.87	148.337	0.1577	75.9	9.97e3	6.12e3
23	13C-2,3,4,6,7,8-HxCDF	10.240	2.53e6	0.52	NO	41.83	159.296	0.1749	81.6	9.97e3	6.12e3
24	13C-1,2,3,7,8,9-HxCDF	10.240	2.34e6	0.53	NO	42.87	165.848	0.1967	84.9	9.97e3	6.12e3
25	13C-1,2,3,4,6,7,8-HpCDF	10.240	2.23e6	0.46	NO	45.34	168.779	0.2184	86.4	1.15e4	5.21e3
26	13C-1,2,3,4,7,8,9-HpCDF	10.240	2.26e6	0.46	NO	47.14	210.856	0.2691	108.0	1.15e4	5.21e3
27	13C-2,3,7,8-TCDD	10.240	2.48e6	0.76	NO	26.41	161.379	0.2040	82.6	6.63e3	7.17e3
28	13C-1,2,3,7,8-PeCDD	10.240	2.42e6	0.62	NO	36.08	198.644	0.0921	101.7	3.08e3	1.87e3
29	13C-1,2,3,4,7,8-HxCDD	10.240	2.06e6	1.27	NO	42.10	161.117	0.1591	82.5	4.48e3	7.30e3
30	13C-1,2,3,6,7,8-HxCDD	10.240	2.83e6	1.26	NO	42.24	200.091	0.1439	102.4	4.48e3	7.30e3
31	13C-1,2,3,4,6,7,8-HpCDD	10.240	2.84e6	1.04	NO	46.72	198.434	0.0933	101.6	4.17e3	3.56e3
32	13C-OCDD	10.240	5.26e6	0.89	NO	50.32	499.138	0.1109	127.8	3.86e3	2.90e3
33	13C-1,2,3,4-TCDD	10.240	3.10e6	0.78	NO	26.07	7.519	0.0076	3.8	6.63e3	7.17e3
34	13C-1,2,3,7,8,9-HxCDD	10.240	2.58e6	1.25	NO	42.66	8.682	0.0069	4.4	4.48e3	7.30e3
35	37Cl-2,3,7,8-TCDD	10.240	2.73e5			26.44	16.125	0.0714	82.6		5.32e3
36	Total Tetra-Furans	10.240					3.259	0.0404			2.42e3
37	Total Tetra-Dioxins	10.240					0.978	0.0328			1.16e3
38	Total Penta-Furans	10.240					8.842	0.0365			1.15e3
39	Total Penta-Dioxins	10.240					1.484	0.0252			5.78e2
40	Total Hexa-Furans	10.240					20.011	0.0241			9.84e2
41	Total Hexa-Dioxins	10.240					10.467	0.0181			6.10e2
42	Total Hepta-Furans	10.240					57.078	0.0437			1.42e3
43	Total Hepta-Dioxins	10.240					124.897	0.0902			2.77e3
44	Hexa DPE	1.000	5.03e1			21.22					1.83e0
45	Hepta DPE	1.000	1.58e2			37.01					7.52e1
46	Octa DPE	1.000	1.05e2			42.19					1.88e0
47	Nona DPE	1.000	1.23e2			46.98					1.55e0
48	Deca DPE	1.000	1.05e2			48.74					4.96e0
49	Tetra Lock	1.000	1.57e4			21.40					1.40e5
50	Penta Lock	1.000	4.97e3			32.92					1.07e5
51	Hexa Lock	1.000	1.63e5			39.41					2.76e5
52	Hepta Lock	1.000									1.36e5
53	Octa Lock	1.000									1.65e5
54	13C-Tetra-Furans	10.240					158.950	0.1172			5.57e3
55	13C-Tetra-Dioxins	10.240					168.898	0.2116			7.17e3

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

SVHH 22 Sept. 2019

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S8, Date: 12-Sep-2019, Time: 15:30:12, ID: L31654-3,I,, Description: 1,WG69303,1.0/20uL

Tetrafurans

	RT	Ratio	Fails?	pg
1	23.67	0.514	YES	0.032
2	23.30	0.732	NO	0.592
3	22.95	0.718	NO	0.445
4	22.52	0.682	NO	0.213
5	22.22	0.661	NO	0.626
6	21.93	1.060	YES	0.134
7	21.38	0.405	YES	0.027
8	26.24	1.067	YES	0.055
9	25.91	0.694	NO	0.103
10	25.22	0.865	NO	0.316
11	24.90	1.103	YES	0.057
12	24.55	0.918	YES	0.130
13	24.22	1.445	YES	0.089
14	24.10	0.790	NO	0.096
15	23.84	0.827	NO	0.290
16	28.14	1.960	YES	0.054

Tetradioxins

	RT	Ratio	Fails?	pg
1	26.27	0.714	NO	0.254
2	25.17	4.215	YES	0.127
3	25.04	0.375	YES	0.021
4	24.62	0.852	NO	0.129
5	23.35	0.618	YES	0.096
6	22.92	0.933	YES	0.182
7	26.41	0.410	YES	0.078
8	26.04	0.580	YES	0.030
9	23.72	0.755	NO	0.061

Pentafurans

	RT	Ratio	Fails?	pg
1	31.44	1.582	NO	2.163
2	28.84	1.607	NO	4.614
3	35.57	1.369	NO	0.680
4	35.27	1.532	NO	0.254
5	34.20	1.523	NO	0.277
6	33.90	2.096	YES	0.029
7	33.50	1.431	NO	0.169
8	33.37	1.638	NO	0.063
9	32.85	1.286	YES	0.594

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S8, Date: 12-Sep-2019, Time: 15:30:12, ID: L31654-3,I,, Description: 1,WG69303,1.0/20uL

Pentadioxins

	RT	Ratio	Fails?	pg
1	33.12	0.670	NO	0.137
2	31.97	0.648	NO	0.440
3	36.41	0.534	NO	0.023
4	36.11	0.762	YES	0.233
5	35.60	2.695	YES	0.009
6	35.47	3.153	YES	0.028
7	35.07	0.709	YES	0.092
8	34.83	0.172	YES	0.032
9	34.45	0.697	NO	0.116
10	34.13	0.449	YES	0.168
11	33.80	0.597	NO	0.152
12	37.00	0.592	NO	0.053

Hexafurans

	RT	Ratio	Fails?	pg
1	40.07	1.248	NO	10.437
2	39.77	3.726	YES	0.074
3	39.24	1.301	NO	5.080
4	38.99	1.349	NO	1.384
5	43.03	1.352	NO	0.217
6	42.92	1.851	YES	0.078
7	41.85	1.528	YES	0.292
8	41.68	1.196	NO	0.454
9	40.88	1.201	NO	0.491
10	40.71	1.265	NO	1.361
11	40.66	1.223	NO	0.143

Hexadioxins

	RT	Ratio	Fails?	pg
1	42.68	1.057	NO	0.723
2	42.26	1.331	NO	1.802
3	42.12	1.258	NO	0.385
4	41.41	1.398	NO	0.309
5	41.22	1.219	NO	3.607
6	40.85	1.829	YES	0.560
7	40.02	1.299	NO	3.081

Heptafurans

	RT	Ratio	Fails?	pg
1	47.14	0.971	NO	0.894
2	45.86	1.042	NO	41.891
3	45.35	1.043	NO	14.292

Heptadioxins

	RT	Ratio	Fails?	pg
1	46.74	1.037	NO	67.740
2	45.81	1.023	NO	57.157

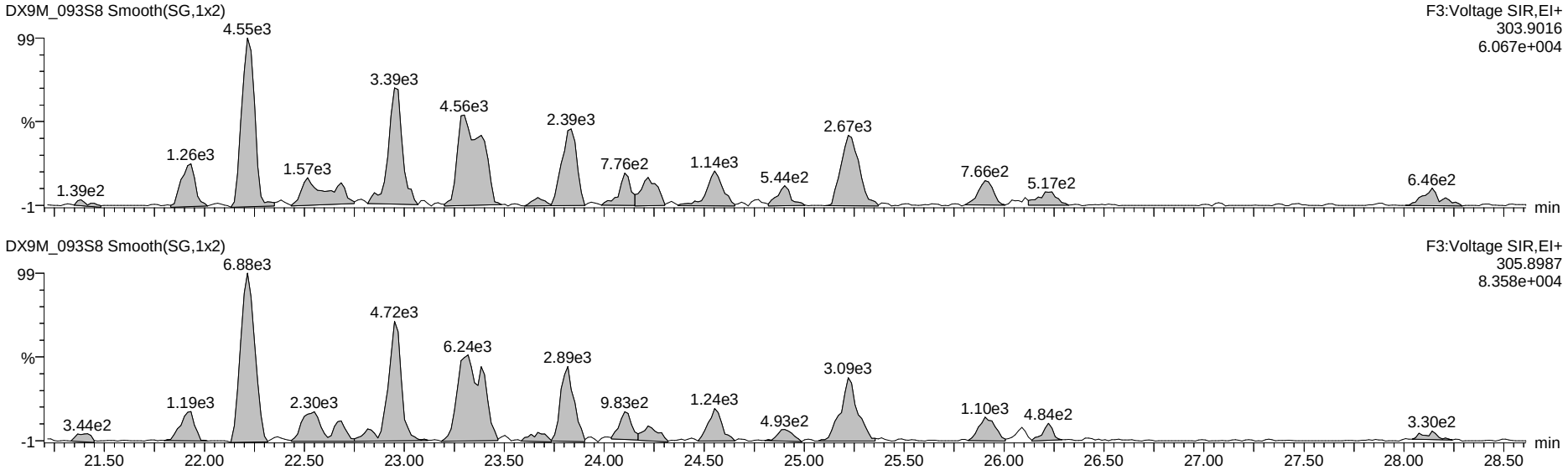
PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

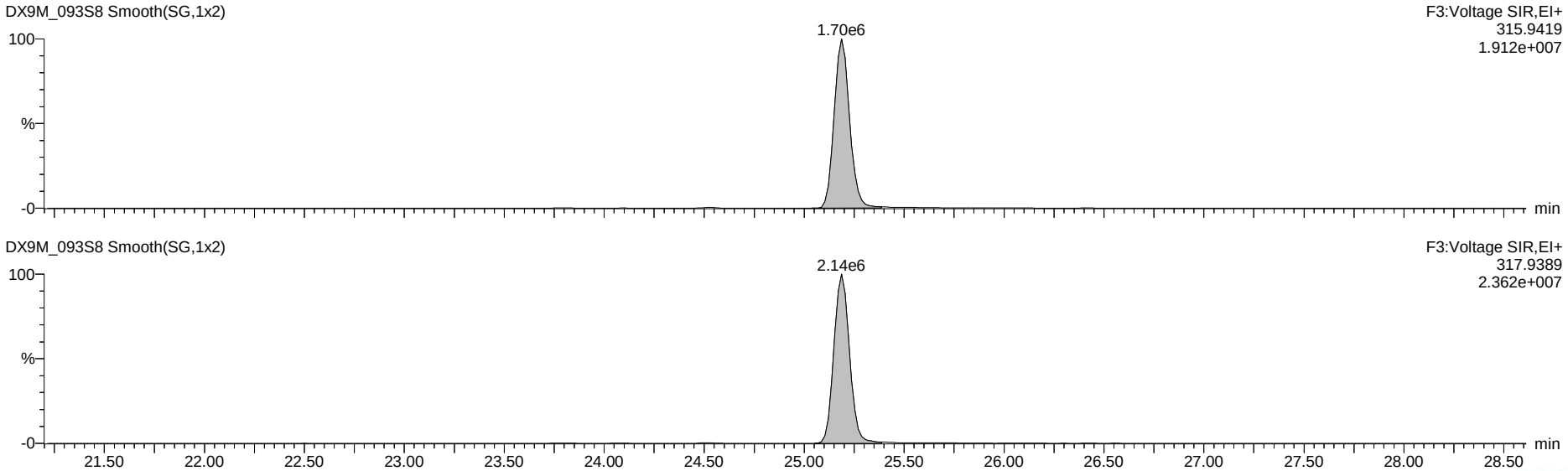
Method: G:\Masslynx\Inst_M\Exported_methods\DX_1613B_16.mdb 07 Sep 2017 16:45:23
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

Name: DX9M_093S8, Date: 12-Sep-2019, Time: 15:30:12, ID: L31654-3,I,, Description: 1,WG69303,1.0/20uL

Total Tetra-Furans



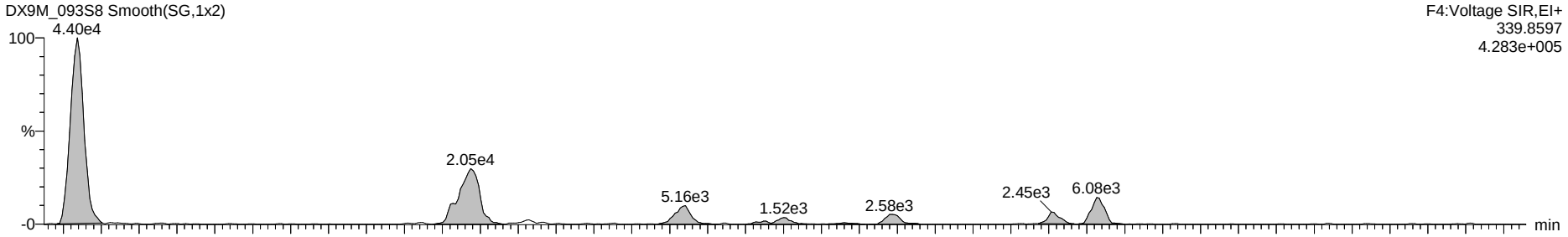
13C-Tetra-Furans

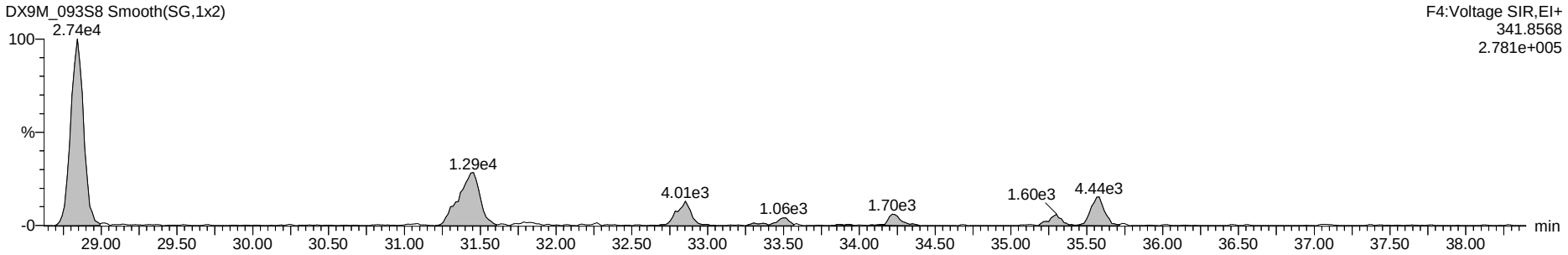


Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

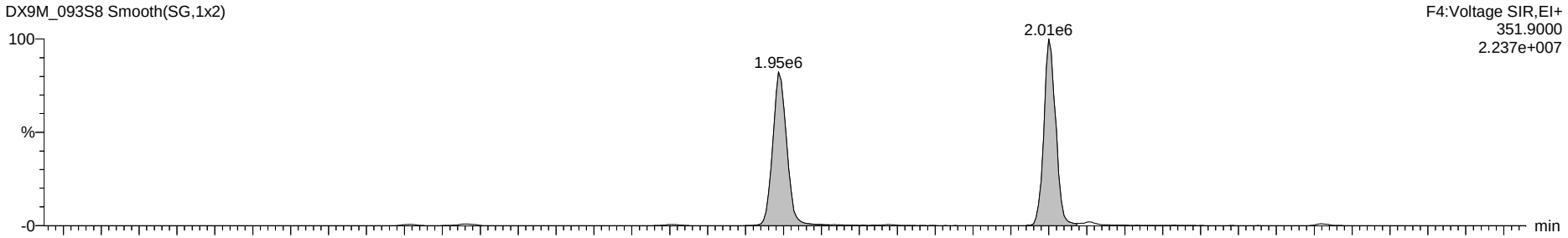
Name: DX9M_093S8, Date: 12-Sep-2019, Time: 15:30:12, ID: L31654-3,I,, Description: 1,WG69303,1.0/20uL

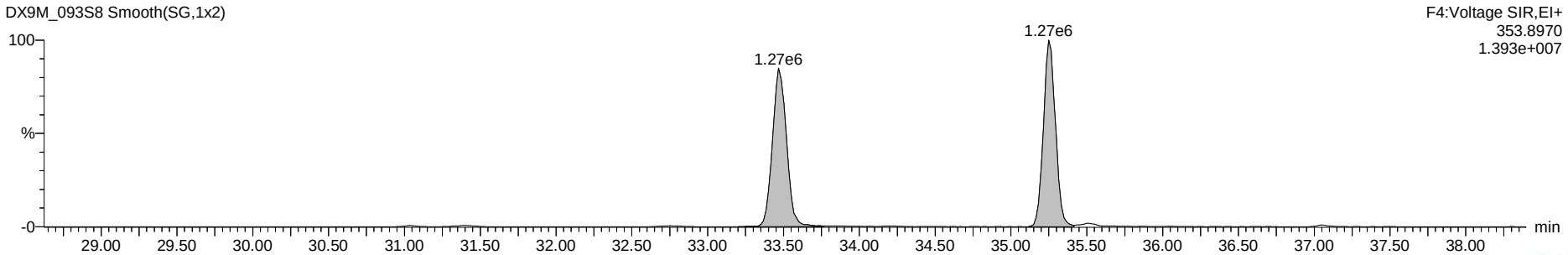
Total Penta-Furans





13C-Penta-Furans

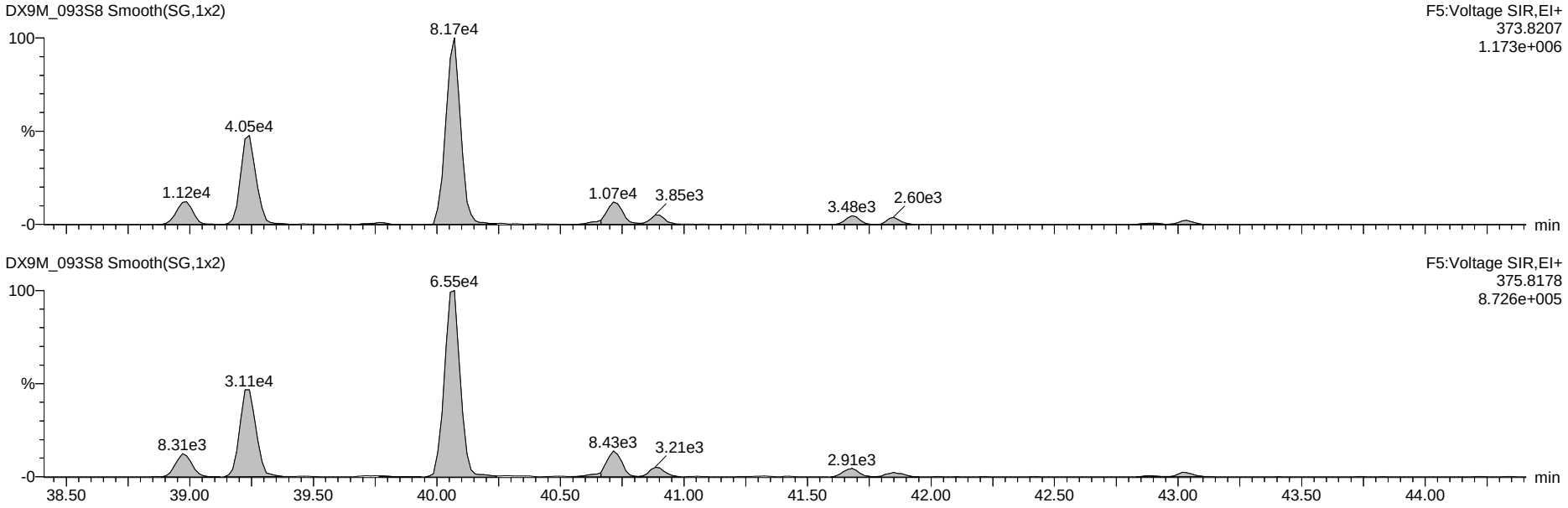




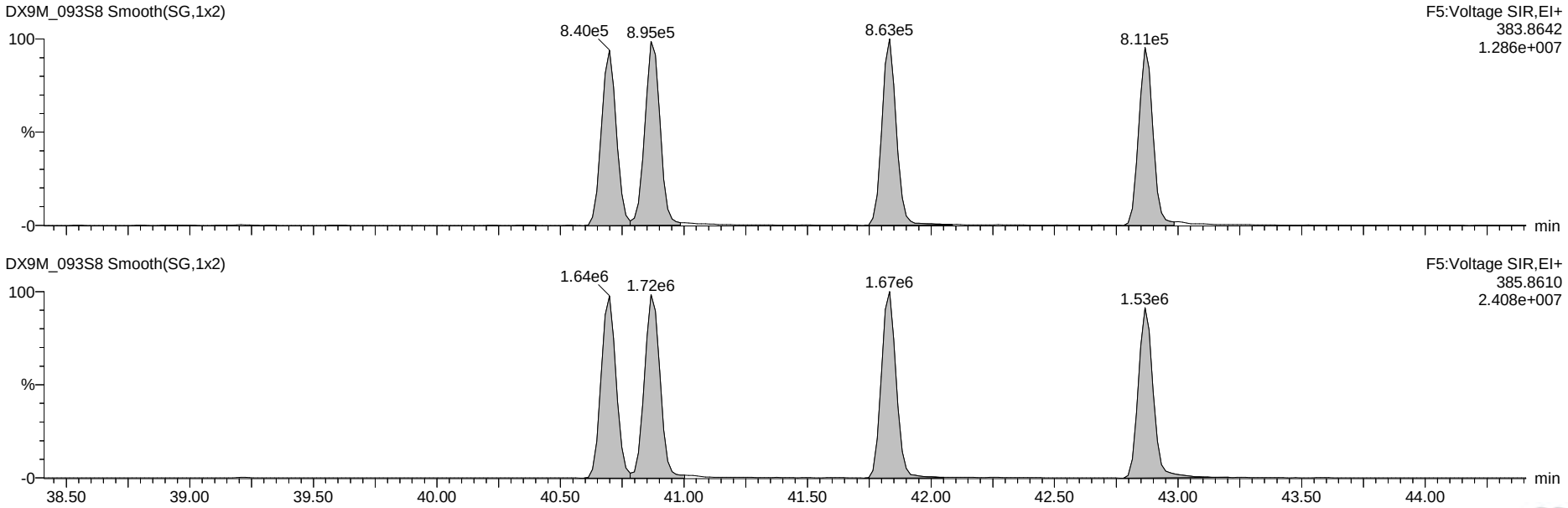
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S8, Date: 12-Sep-2019, Time: 15:30:12, ID: L31654-3,I,, Description: 1,WG69303,1.0/20uL

Total Hexa-Furans



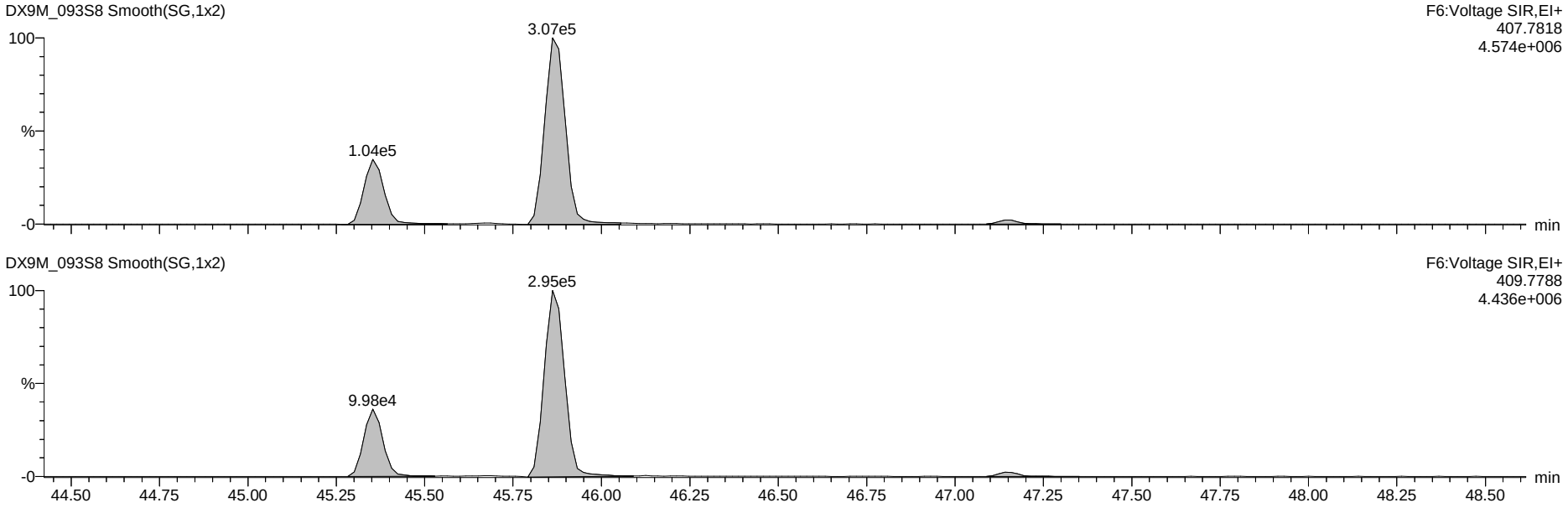
13C-Hexa-Furans



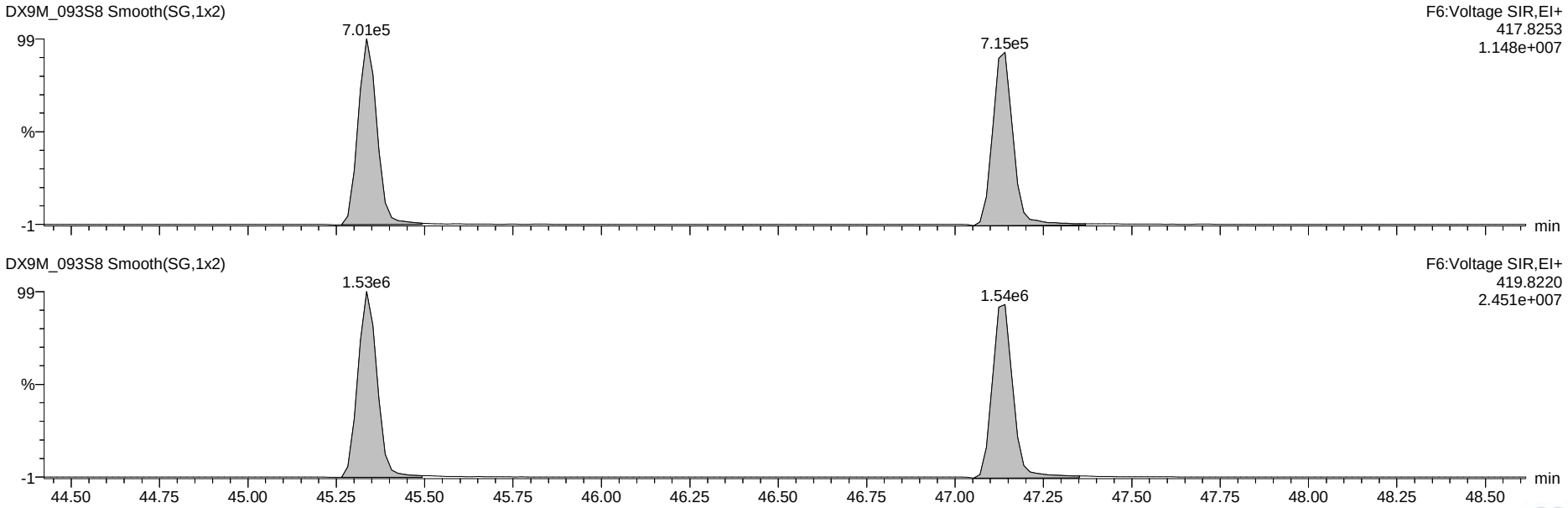
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S8, Date: 12-Sep-2019, Time: 15:30:12, ID: L31654-3,I,, Description: 1,WG69303,1.0/20uL

Total Hepta-Furans



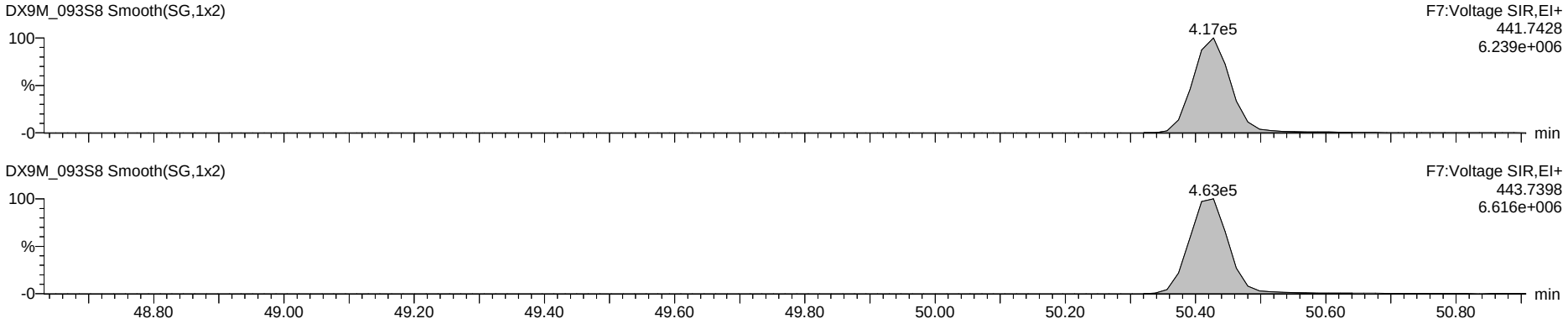
13C-Hepta-Furans



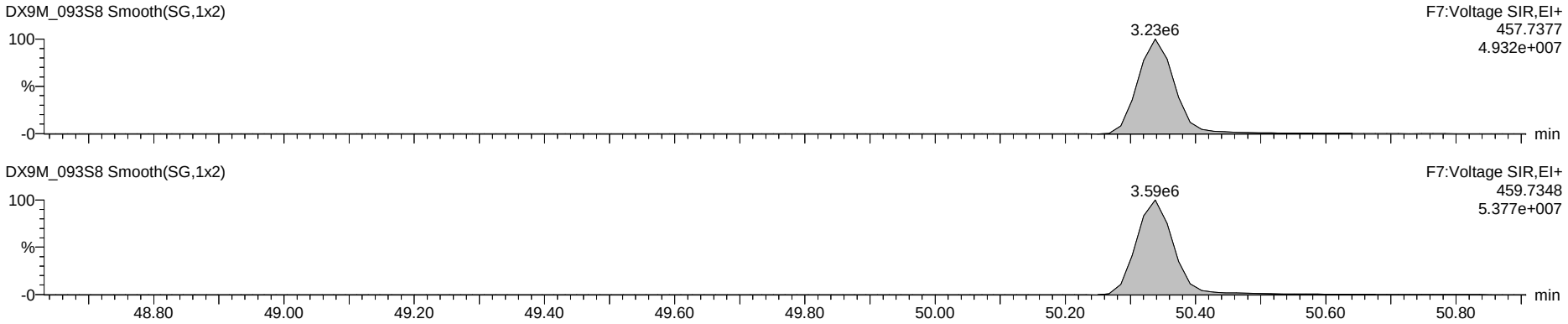
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S8, Date: 12-Sep-2019, Time: 15:30:12, ID: L31654-3,I,, Description: 1,WG69303,1.0/20uL

OCDF



OCDD



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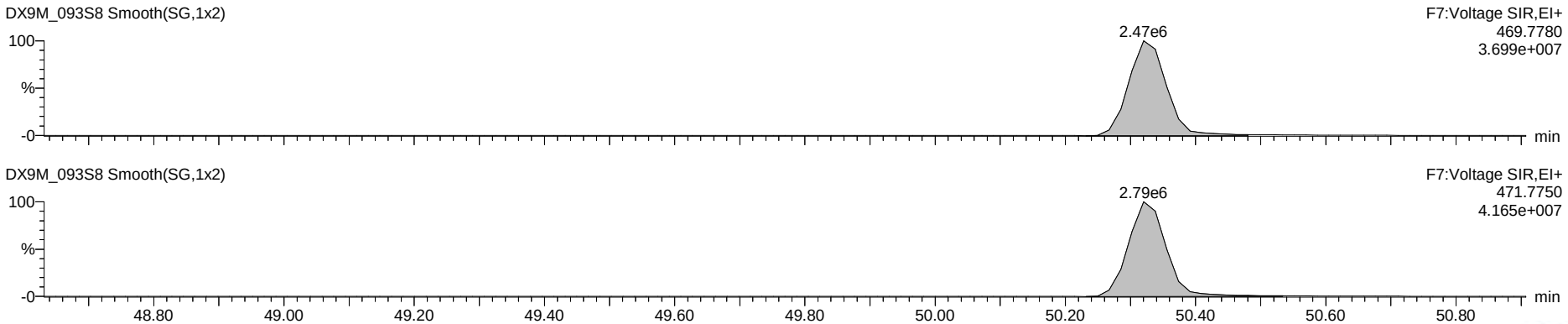

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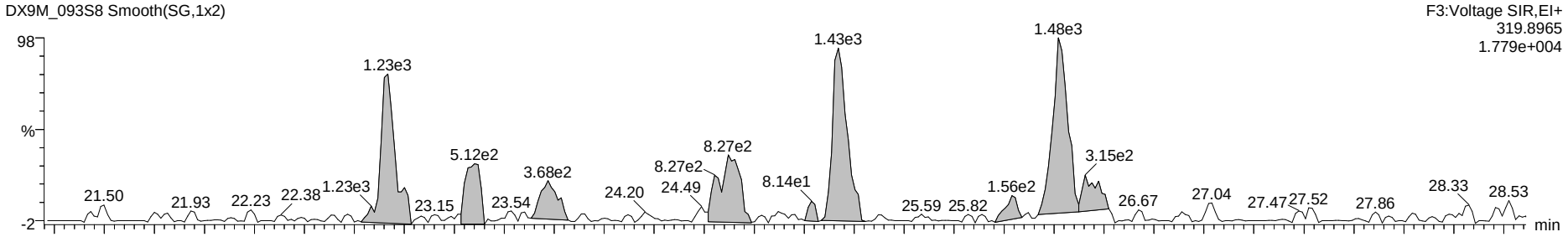
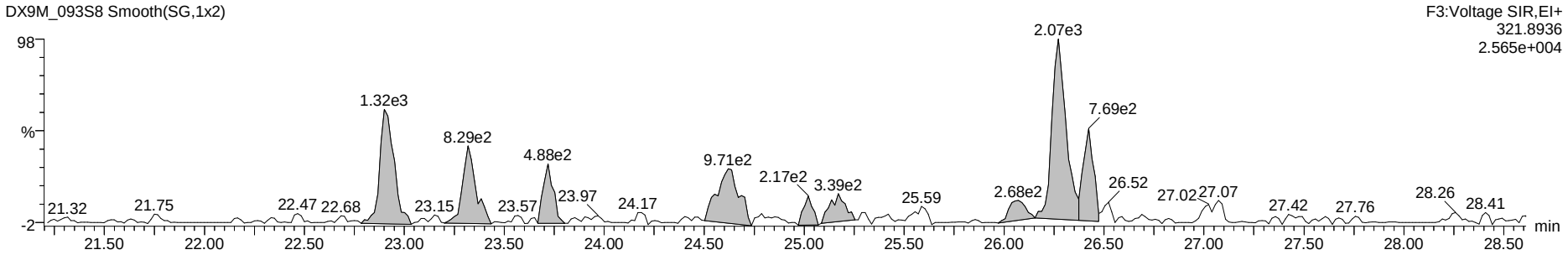
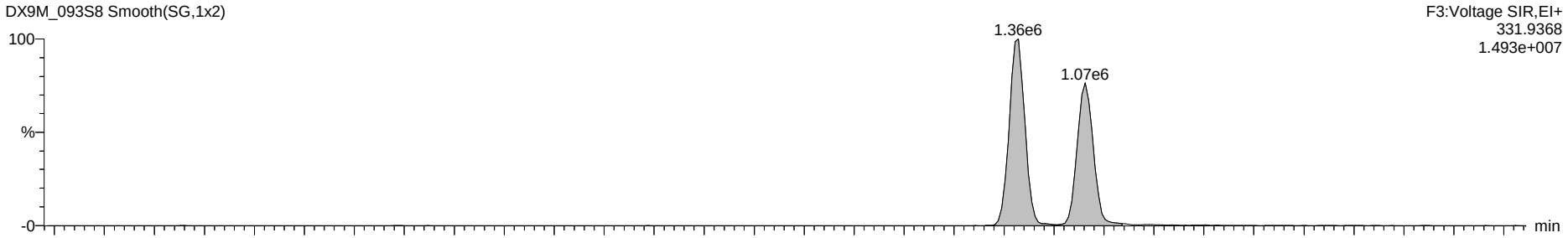
Name: DX9M_093S8, Date: 12-Sep-2019, Time: 15:30:12, ID: L31654-3,I,, Description: 1,WG69303,1.0/20uL

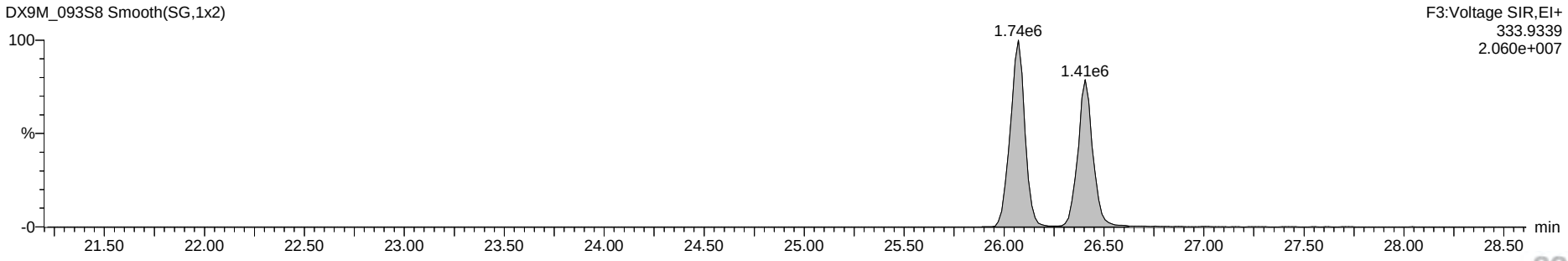
Total Tetra-Dioxins





13C-Tetra-Dioxins

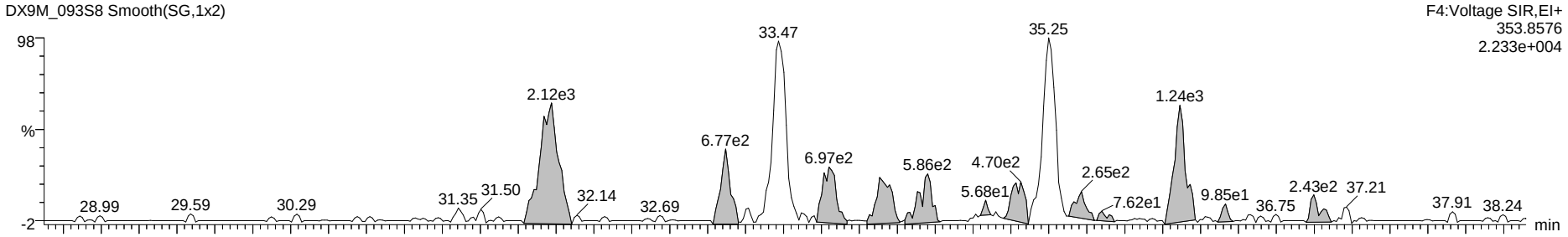


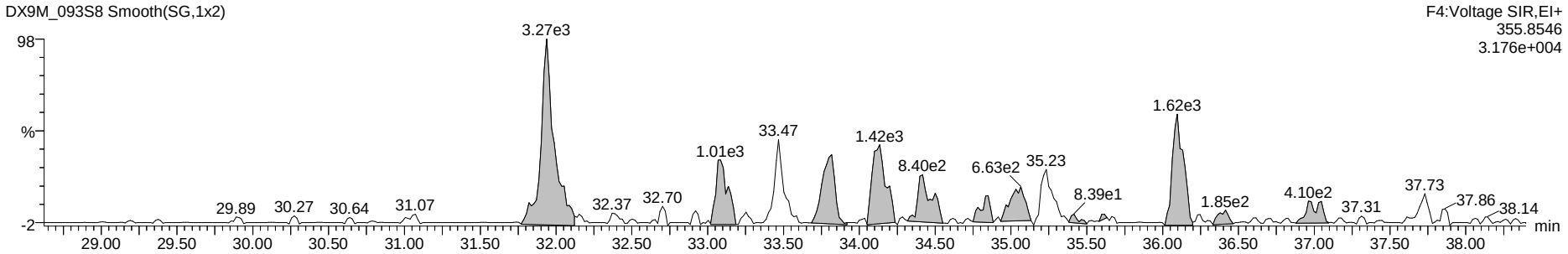


Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S8, Date: 12-Sep-2019, Time: 15:30:12, ID: L31654-3,I,, Description: 1,WG69303,1.0/20uL

Total Penta-Dioxins





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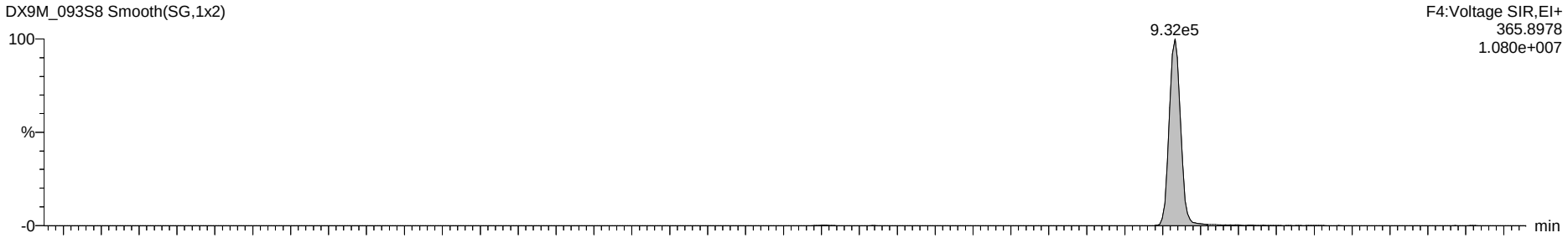
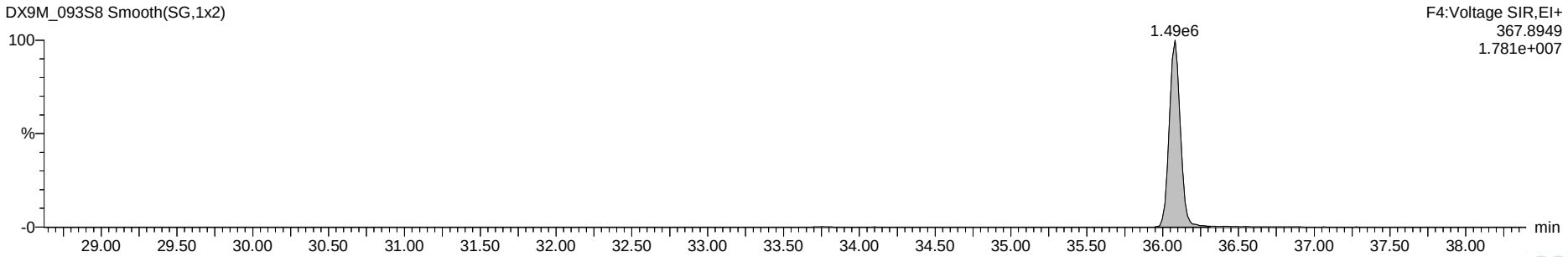
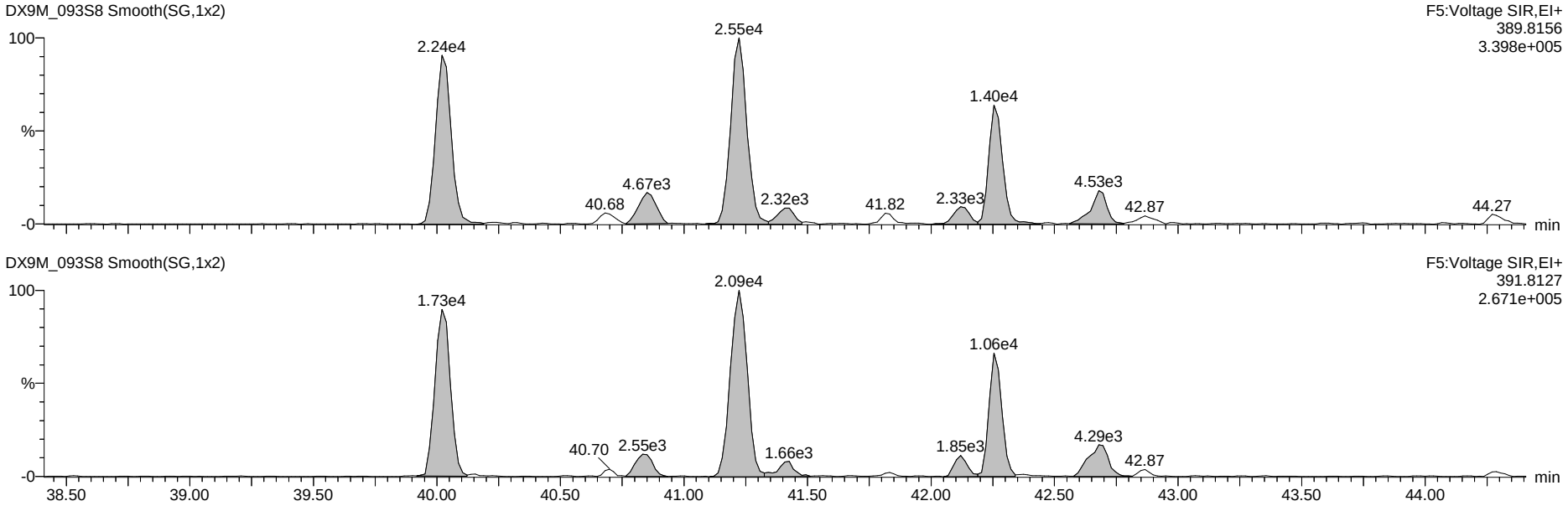




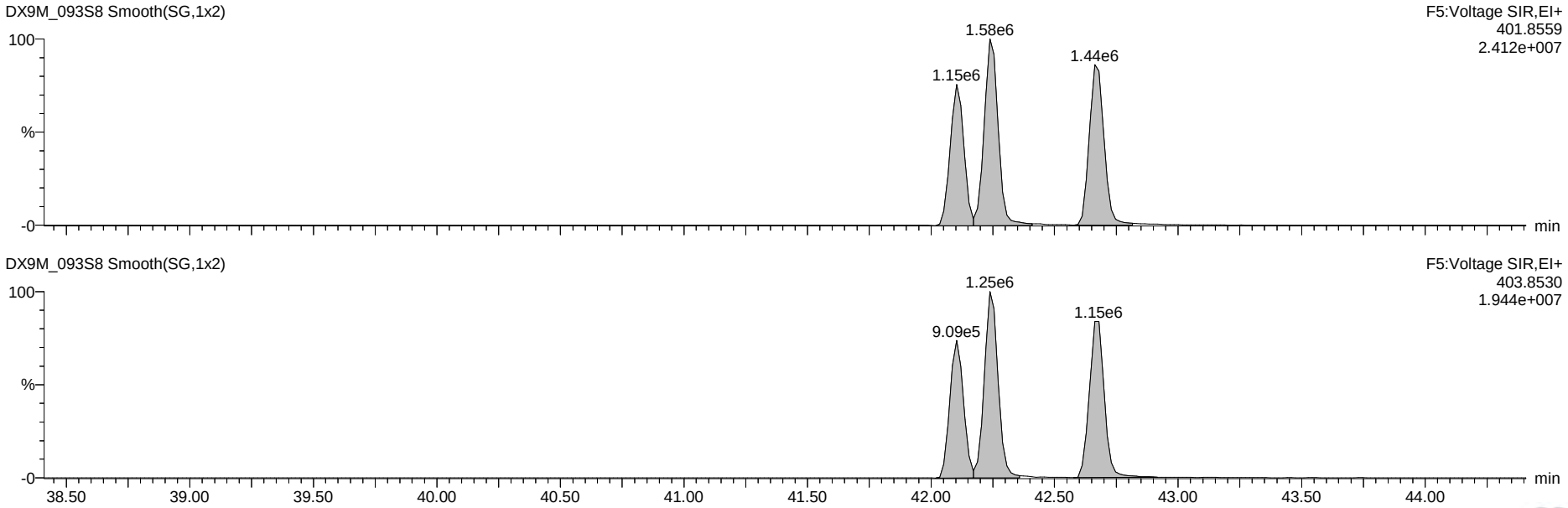
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S8, Date: 12-Sep-2019, Time: 15:30:12, ID: L31654-3,I,, Description: 1,WG69303,1.0/20uL

Total Hexa-Dioxins



13C-Hexa-Dioxins



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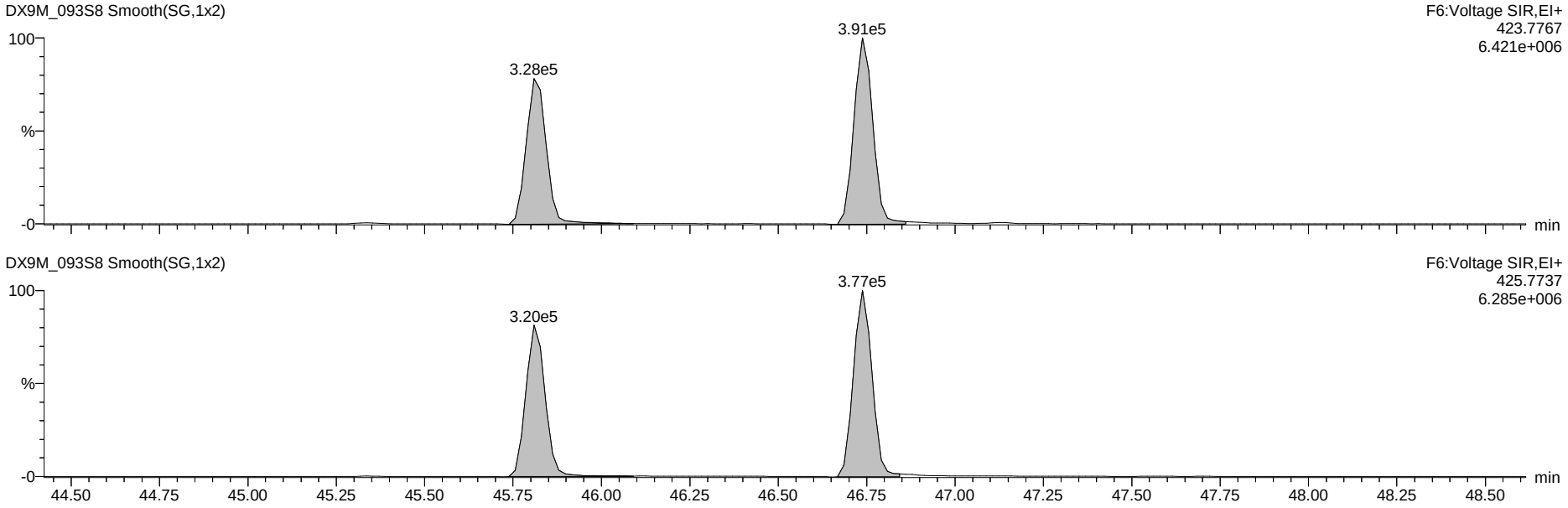
Name: DX9M_093S8, Date: 12-Sep-2019, Time: 15:30:12, ID: L31654-3,I,, Description: 1,WG69303,1.0/20uL

Total Hepta-Dioxins



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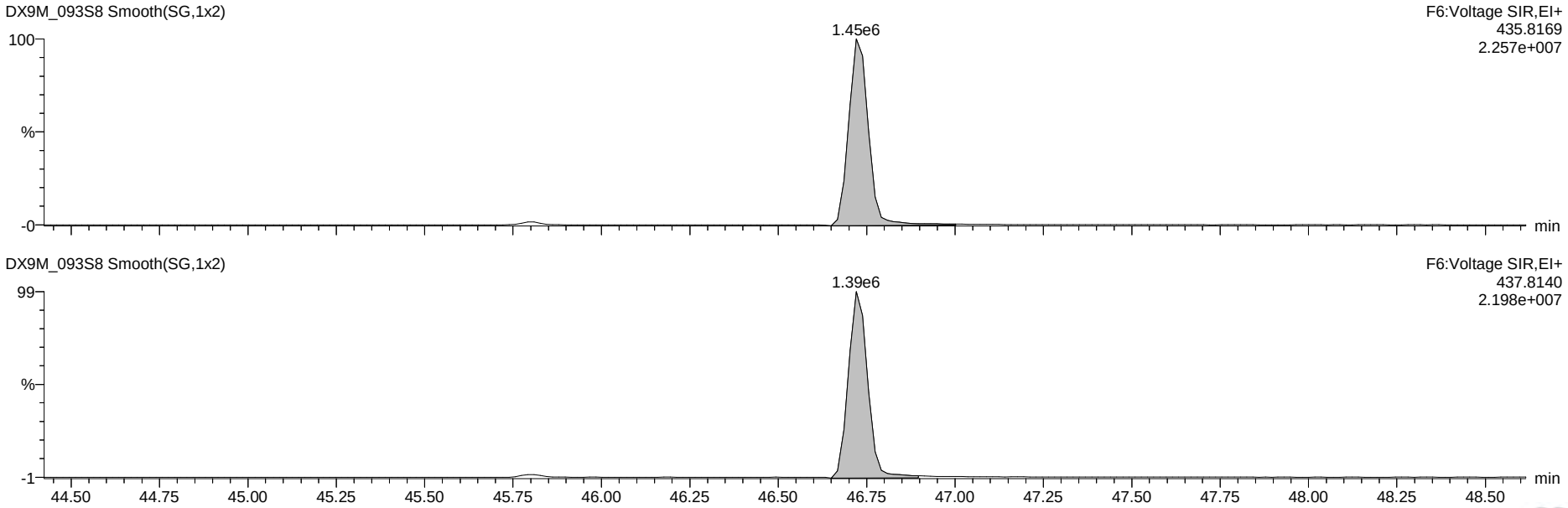
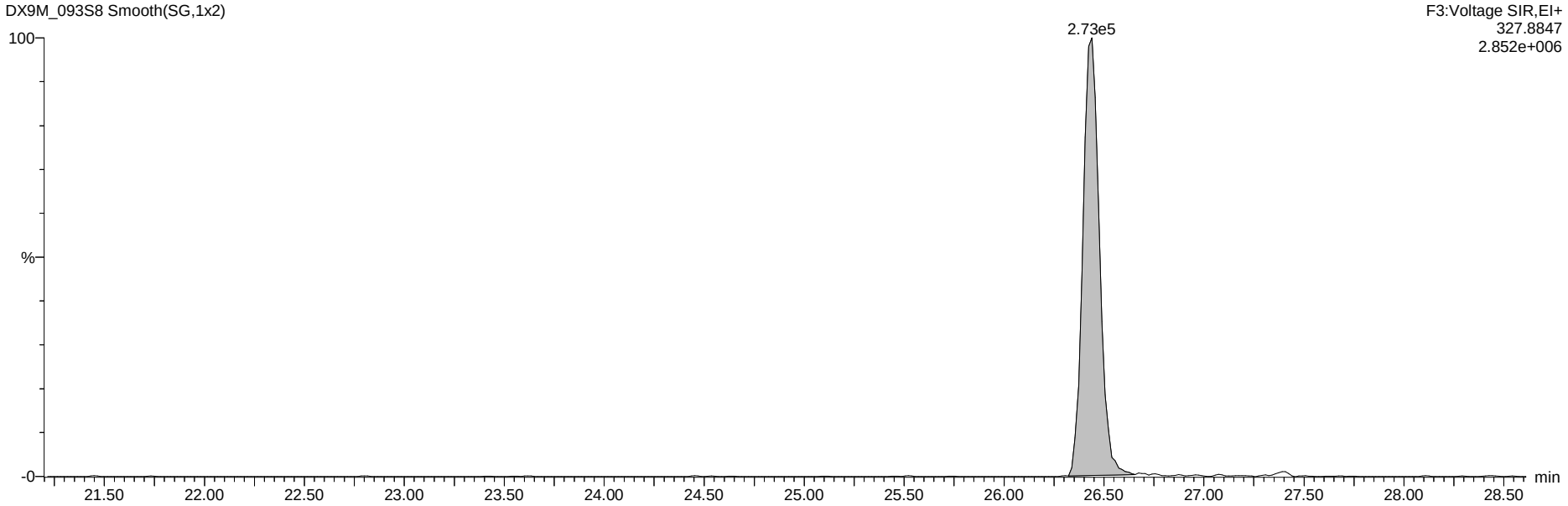


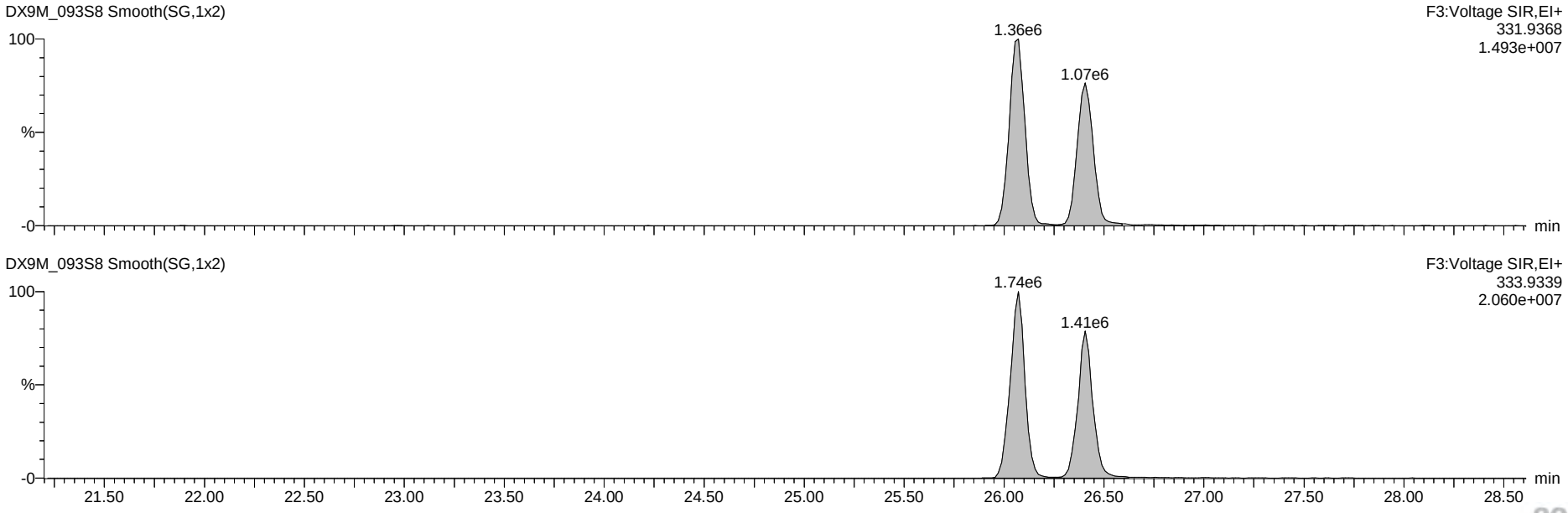
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S8, Date: 12-Sep-2019, Time: 15:30:12, ID: L31654-3,I,, Description: 1,WG69303,1.0/20uL

37Cl-2,3,7,8-TCDD



13C-Tetra-Dioxins



Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

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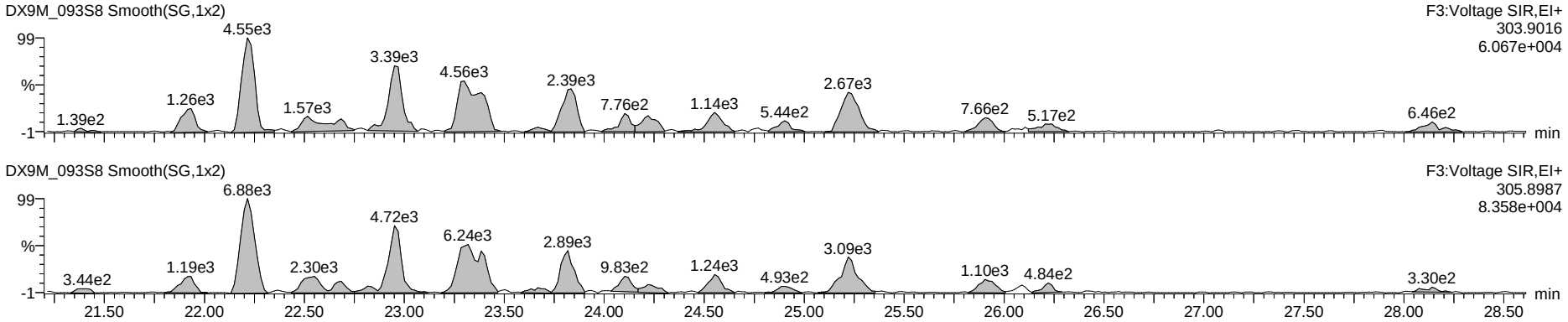
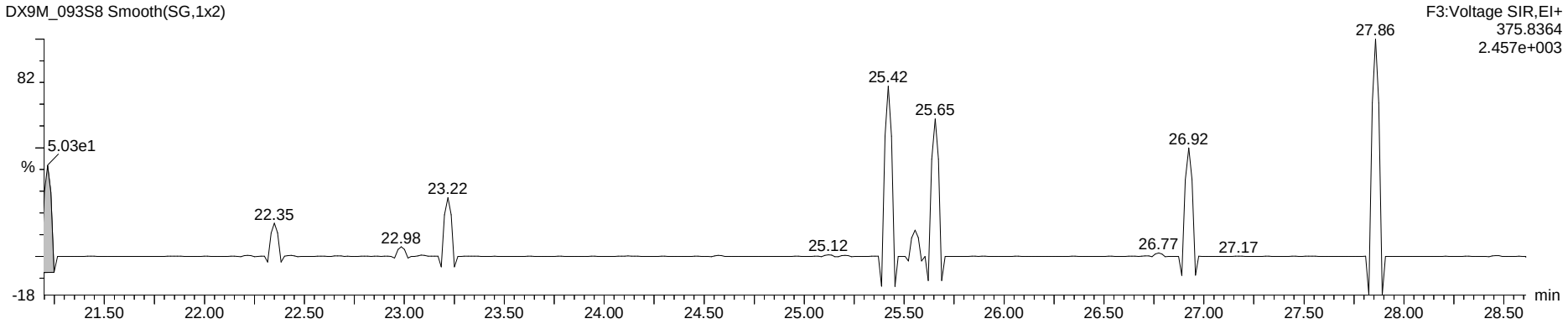
Total Tetra-Furans



Hexa DPE



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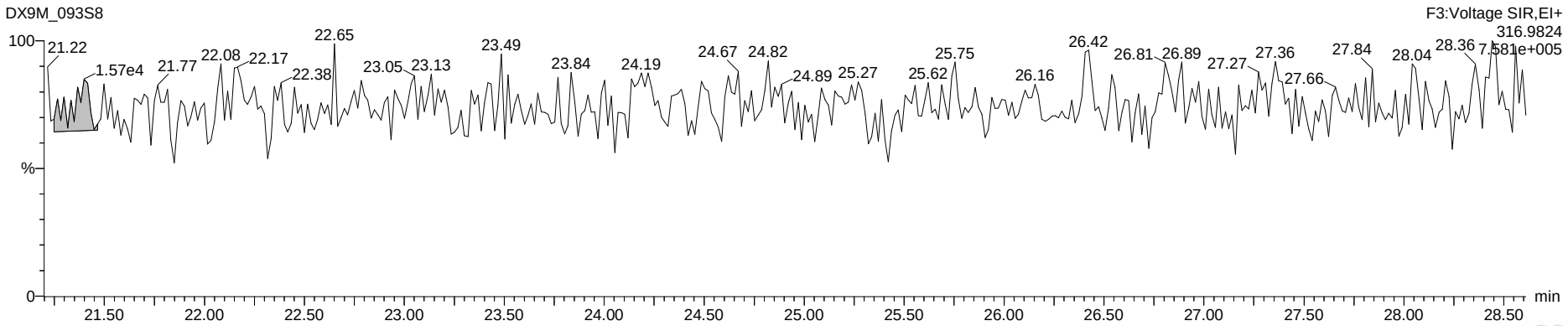

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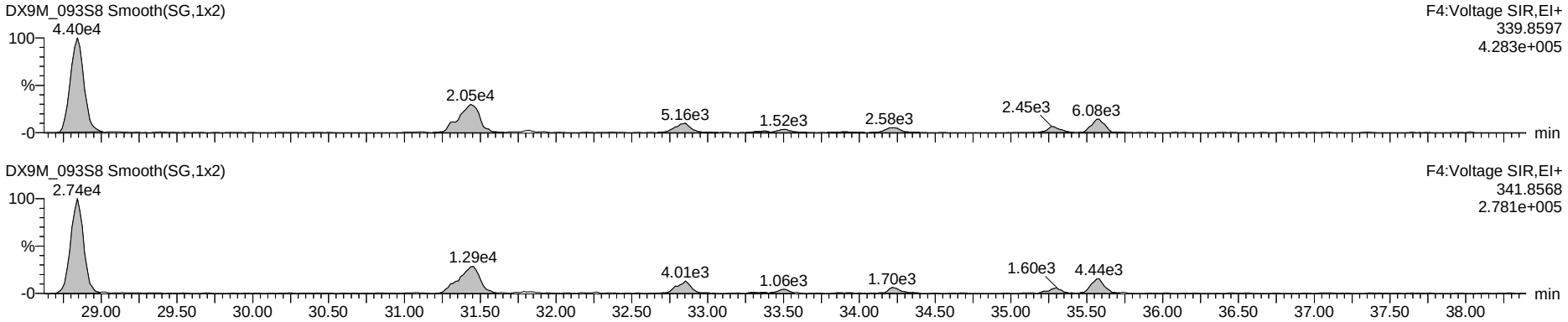
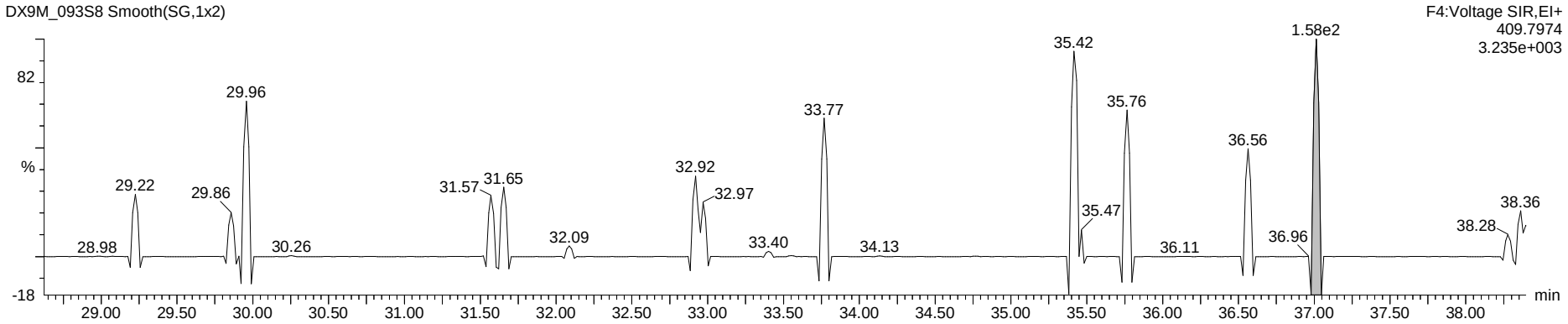
Total Penta-Furans



Hepta DPE



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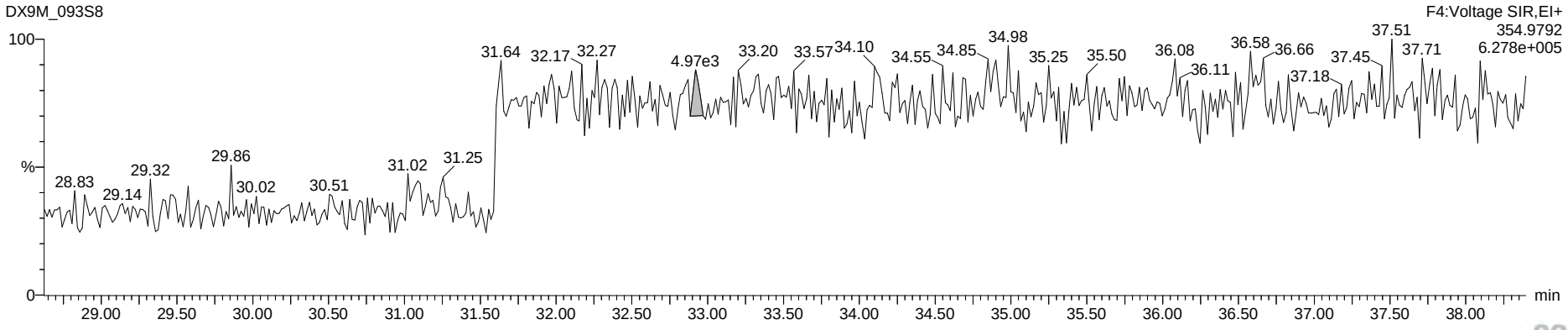

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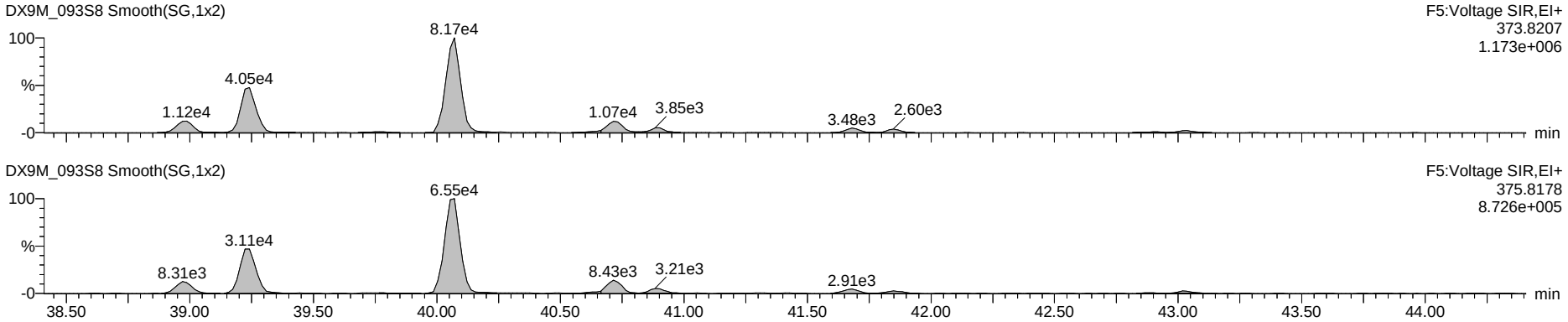
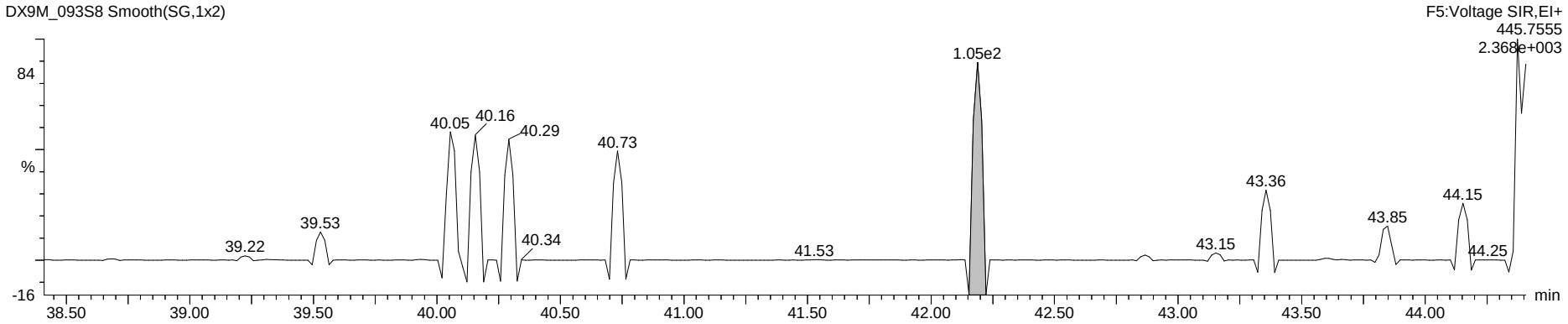
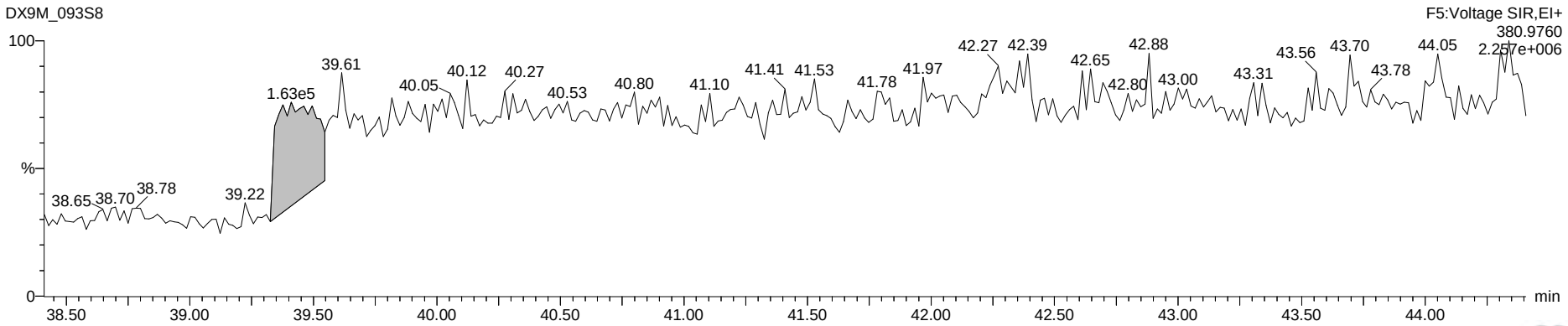
Total Hexa-Furans



Octa DPE



Hexa Lock



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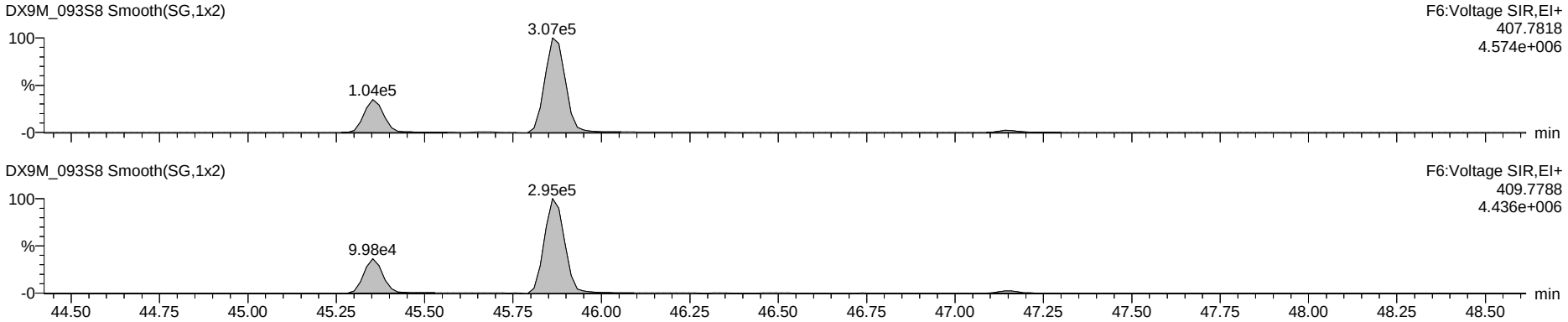
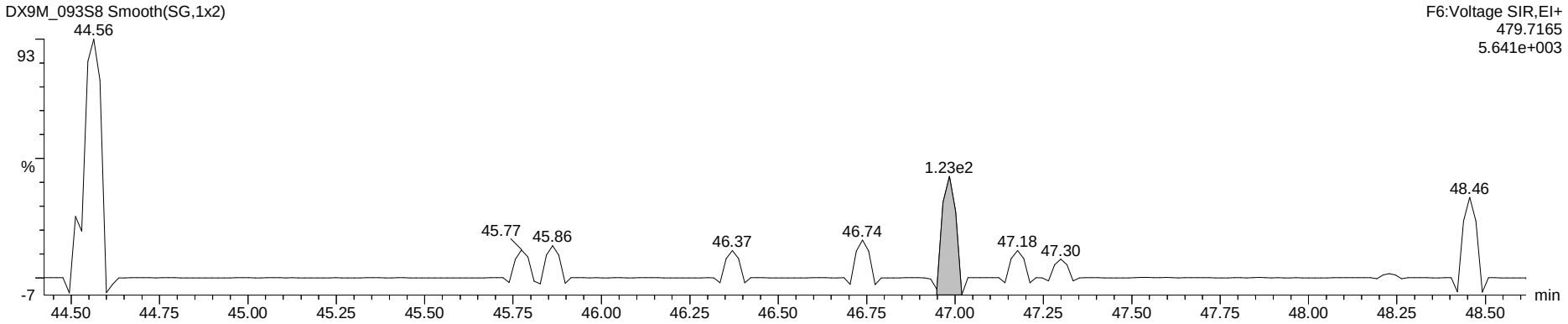
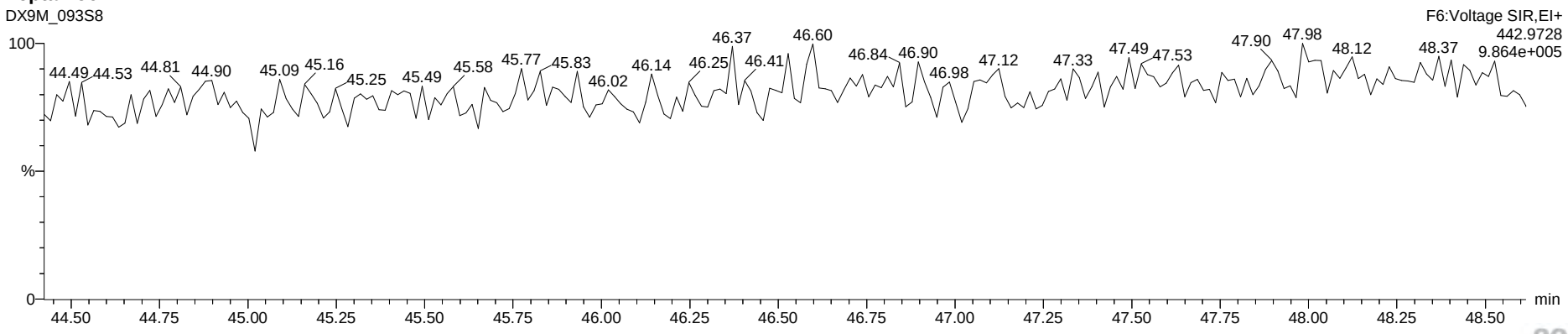
Total Hepta-Furans



Nona DPE



Hepta Lock



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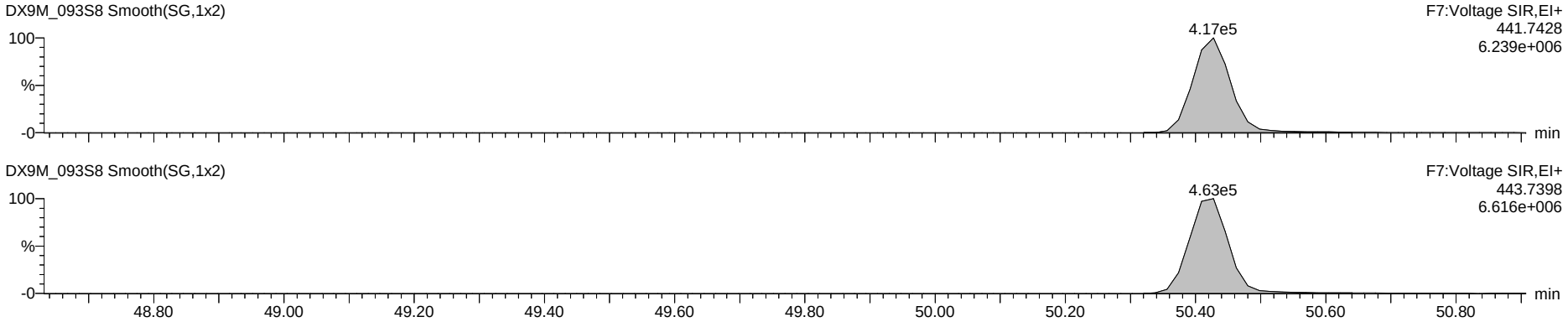
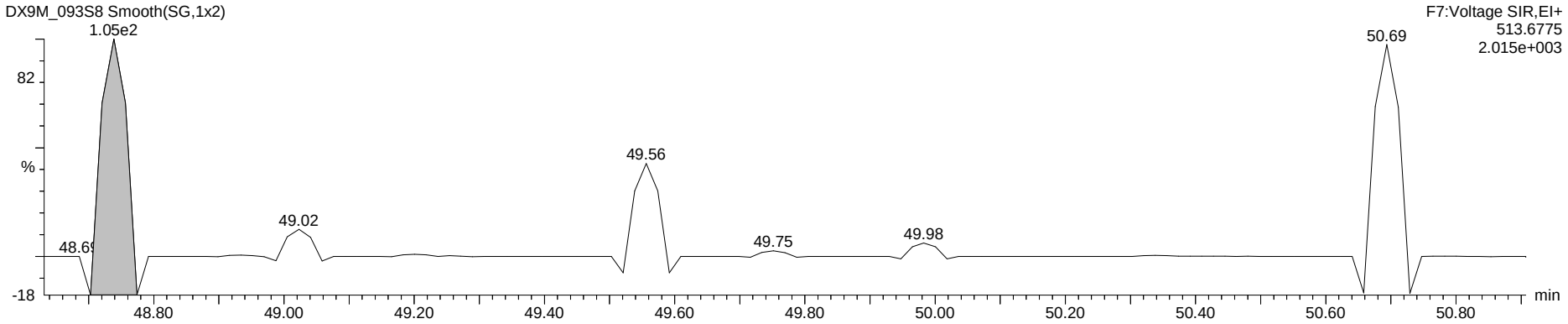
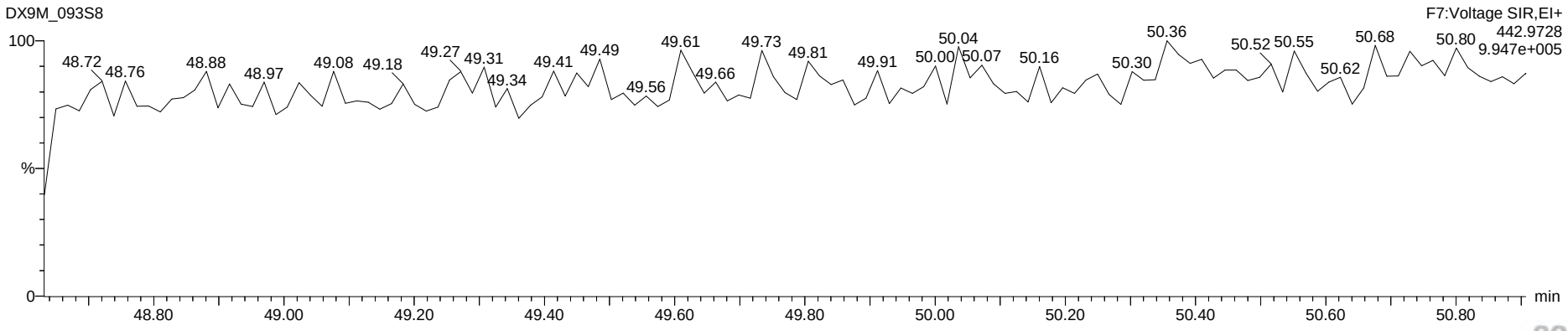
OCDF



Deca DPE



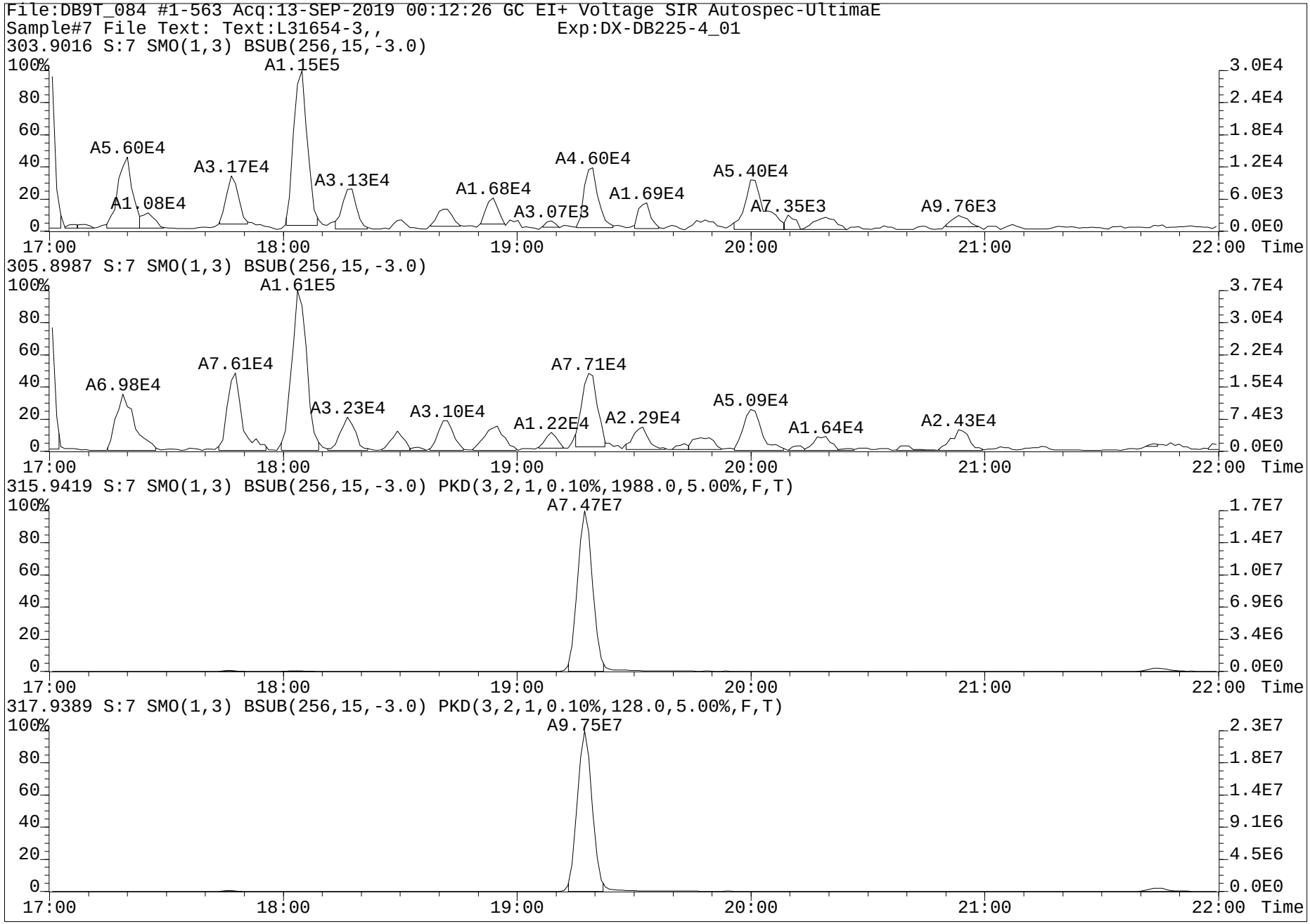
Octa Lock

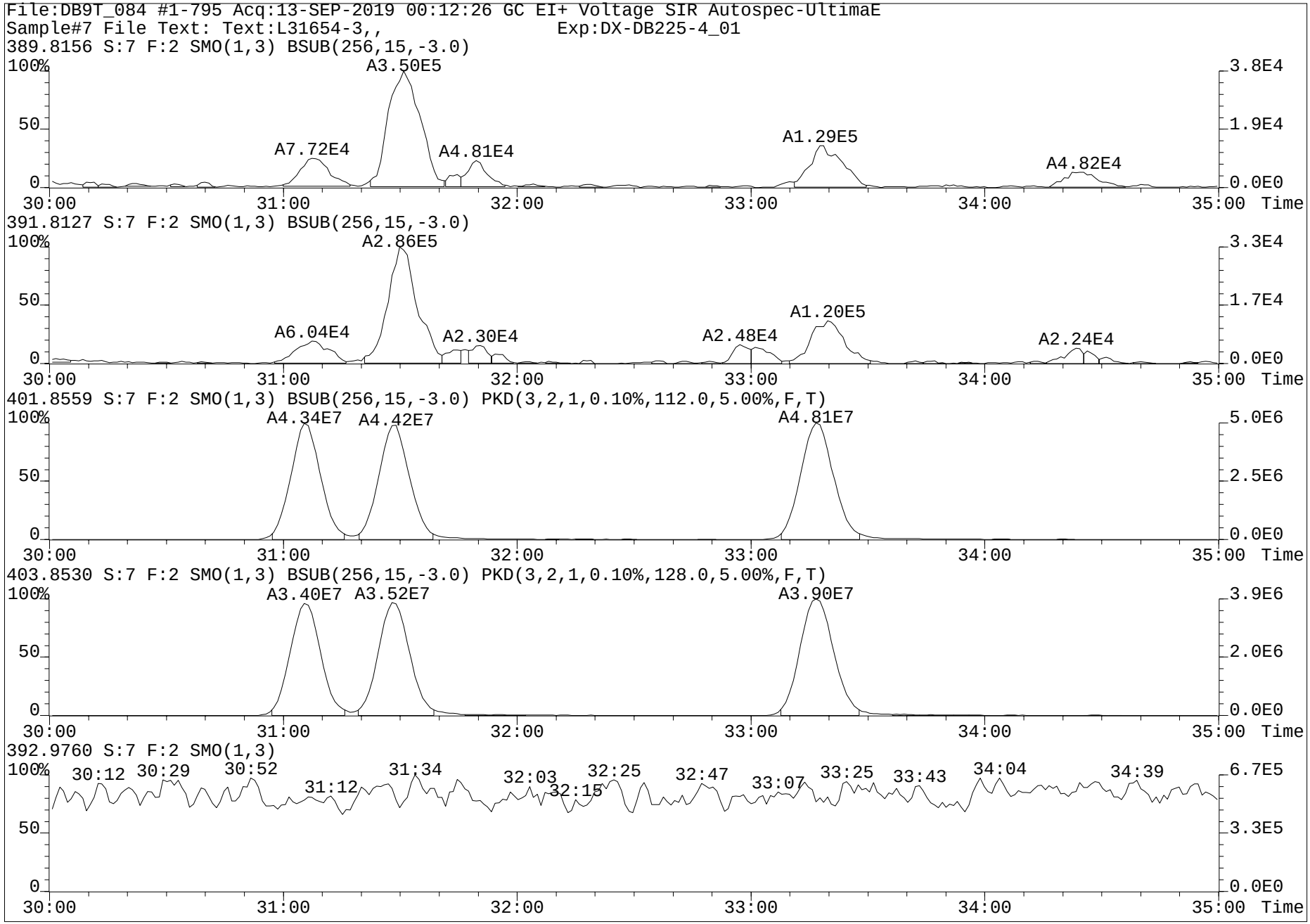


Run #12 Filename DB9T_084 S: 7 I: 1 Acquired: 13-SEP-19 00:12:26 Processed: 17-SEP-19 09:55:57
Run: db9t_084-a Analyte: db-hxd-s2 Cal: db9t_055-5a Results: db9t_084-a Version: V3.6 6-JAN-2000 17:51:42
Sample text: L31654-3,, Comments: 1,WG69303,2.0/20uL
sample size: 10.240000 conc units: pg/g total toxicity: 0.09 F1: 1.0000 F2: 1.0000

	Typ	Name	#Hom	Resp	RA		RT	Conc	Tox #1	DL	Rec	M?
1	Unk	2,3,7,8-TCDF	1	1.23e+05	0.60	n	19:18	0.180	0	0.0270	-	y
2	Unk	1,2,3,7,8,9-HxCDD	1	2.48e+05	1.08	y	33:20	0.765	0	0.0467	-	y
3	IS/RT	13C-2,3,7,8-TCDF	1	1.72e+08	0.77	y	19:17	159.043	-	0.0199	81.4	n
4	IS/RT	13C-1,2,3,4,7,8-HxCDD	1	7.74e+07	1.28	y	31:05	168.873	-	0.0128	86.5	n
5	IS/RT	13C-1,2,3,6,7,8-HxCDD	1	7.94e+07	1.26	y	31:29	165.634	-	0.0122	84.8	n
6	RS	13C-1,2,3,4-TCDD	1	1.49e+08	0.81	y	18:05	12.686	-	-	-	n
7	RS	13C-1,2,3,7,8,9-HxCDD	1	8.71e+07	1.23	y	33:17	14.820	-	-	-	n
8	Tot	Hexa DPE	0	*			NotFnd	*	-	-	-	n
9	Tot	Tetra Lock	-	-			-	-	-	-	-	n
10	Tot	Hexa Lock	-	-			-	-	-	-	-	n

PV by RA 20 SEP 2019
SV HH 22 Sept 2019


File:DB9T_084 #1-563 Acq:13-SEP-2019 00:12:26 GC EI+ Voltage SIR Autospec-UltimaE
Sample#7 File Text: Text:L31654-3,, Exp:DX-DB225-4_01
303.9016 S:7 SMO(1,3) BSUB(256,15,-3.0)
A1.15E5
A5.60E4
A3.17E4
A3.13E4
A1.68E4
A4.60E4
A5.40E4
A1.08E4
A1.69E4
A7.35E3
A3.07E3
A9.76E3
305.8987 S:7 SMO(1,3) BSUB(256,15,-3.0)
A1.61E5
A7.61E4
A7.71E4
A6.98E4
A3.23E4
A3.10E4
A5.09E4
A1.22E4
A2.29E4
A1.64E4
A2.43E4
315.9419 S:7 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1988.0,5.00%,F,T)
A7.47E7
317.9389 S:7 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,128.0,5.00%,F,T)
A9.75E7
Time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Sample#7 File Text: Text:L31654-3,, Exp:DX-DB225-4_01
389.8156 S:7 F:2 SMO(1,3) BSUB(256,15,-3.0)
A3.50E5
A7.72E4
A4.81E4
A1.29E5
A4.82E4
391.8127 S:7 F:2 SMO(1,3) BSUB(256,15,-3.0)
A2.86E5
A6.04E4
A2.30E4
A2.48E4
A1.20E5
A2.24E4
401.8559 S:7 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,112.0,5.00%,F,T)
A4.34E7
A4.42E7
A4.81E7
403.8530 S:7 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,128.0,5.00%,F,T)
A3.40E7
A3.52E7
A3.90E7
392.9760 S:7 F:2 SMO(1,3)
30:12
30:29
30:52
31:12
31:34
32:03
32:15
32:25
32:47
33:07
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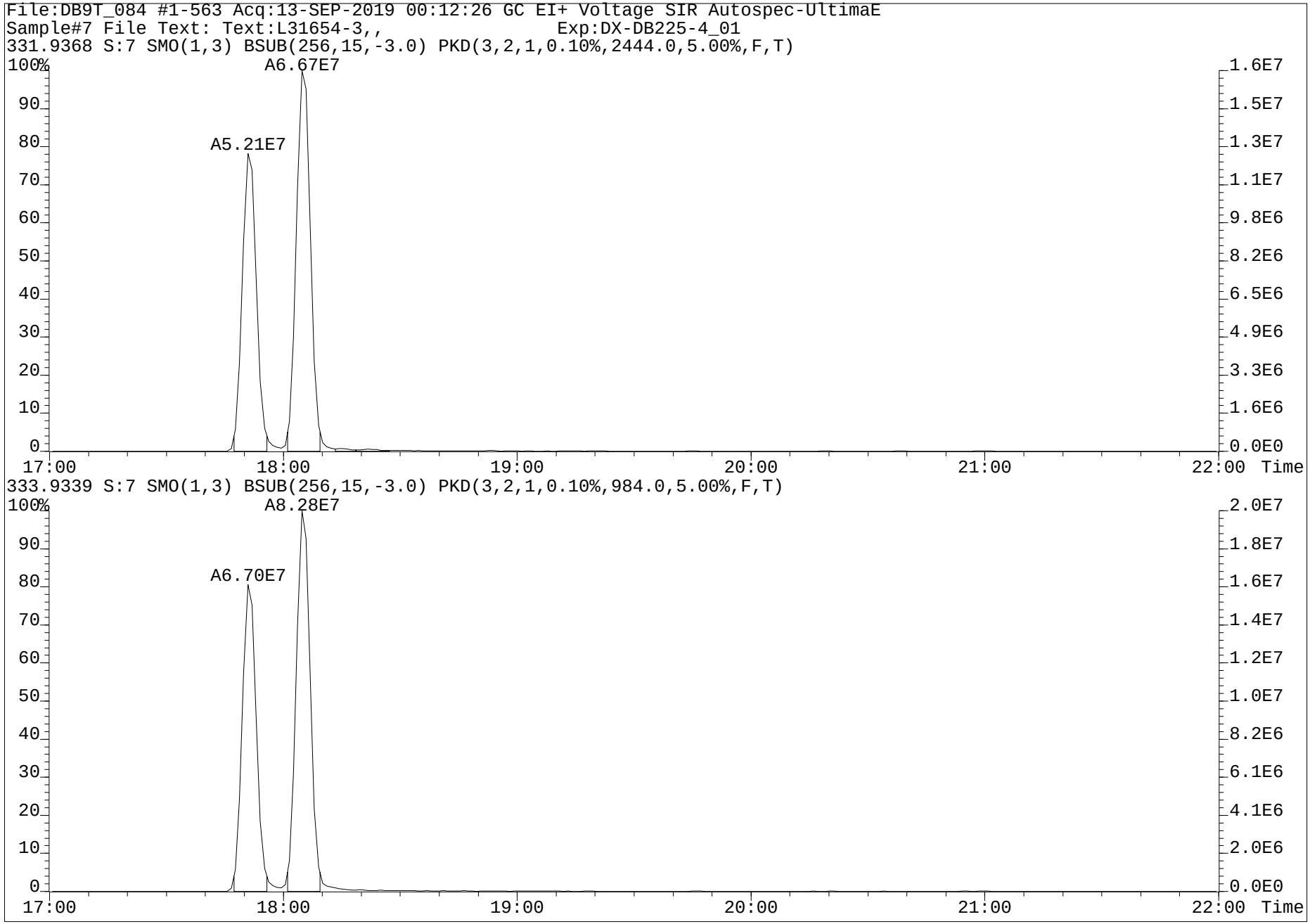
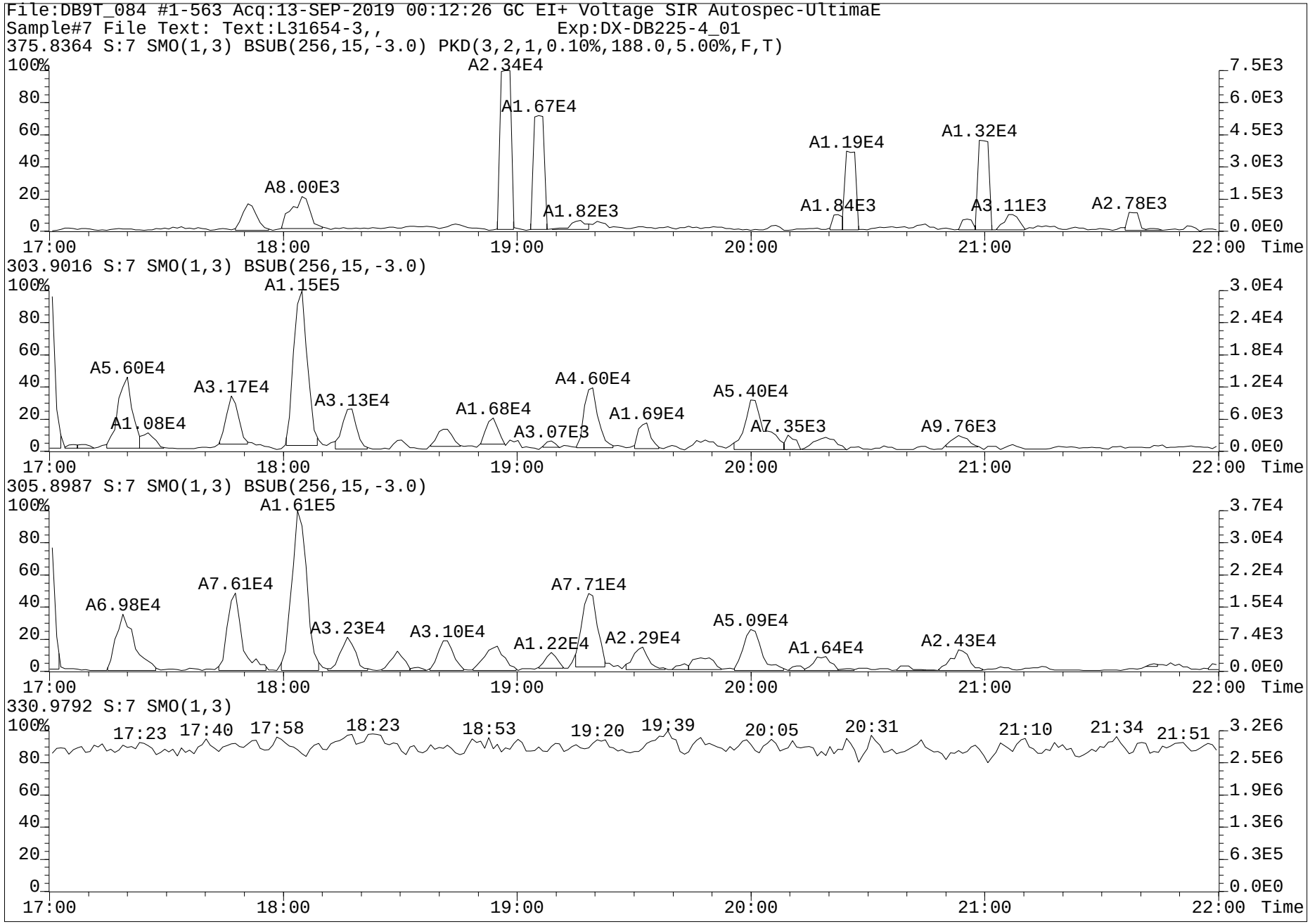
34:00
35:00
Time


File:DB9T_084 #1-563 Acq:13-SEP-2019 00:12:26 GC EI+ Voltage SIR Autospec-UltimaE
Sample#7 File Text: Text:L31654-3,, Exp:DX-DB225-4_01
331.9368 S:7 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,2444.0,5.00%,F,T)
A6.67E7
A5.21E7
100%
90
80
70
60
50
40
30
20
10
0
1.6E7
1.5E7
1.3E7
1.1E7
9.8E6
8.2E6
6.5E6
4.9E6
3.3E6
1.6E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time
333.9339 S:7 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,984.0,5.00%,F,T)
A8.28E7
A6.70E7
100%
90
80
70
60
50
40
30
20
10
0
2.0E7
1.8E7
1.6E7
1.4E7
1.2E7
1.0E7
8.2E6
6.1E6
4.1E6
2.0E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time


File:DB9T_084 #1-563 Acq:13-SEP-2019 00:12:26 GC EI+ Voltage SIR Autospec-UltimaE
Sample#7 File Text: Text:L31654-3,, Exp:DX-DB225-4_01
375.8364 S:7 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,188.0,5.00%,F,T)
A2.34E4
A1.67E4
A1.19E4
A1.32E4
A8.00E3
A1.82E3
A1.84E4
A3.11E3
A2.78E3
303.9016 S:7 SMO(1,3) BSUB(256,15,-3.0)
A1.15E5
A5.60E4
A3.17E4
A3.13E4
A4.60E4
A5.40E4
A1.68E4
A1.69E4
A1.08E4
A3.07E3
A7.35E3
A9.76E3
305.8987 S:7 SMO(1,3) BSUB(256,15,-3.0)
A1.61E5
A7.61E4
A7.71E4
A6.98E4
A3.23E4
A3.10E4
A5.09E4
A1.22E4
A2.29E4
A1.64E4
A2.43E4
330.9792 S:7 SMO(1,3)
17:23
17:40
17:58
18:23
18:53
19:20
19:39
20:05
20:31
21:10
21:34
21:51
Time

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S9, Date: 12-Sep-2019, Time: 16:25:13, ID: L31654-4,I,, Description: 1,WG69303,1.0/20uL

	Name	Sample Size	Resp	Ratio	fails?	RT	pg	DL	%Rec	Noise 1	Noise 2
1	2,3,7,8-TCDF	9.853	1.04e4	0.68	NO	25.24	0.776	0.0447		1.00e3	1.60e3
2	1,2,3,7,8-PeCDF	9.853	6.44e3	1.37	NO	33.50	0.528	0.0592		1.15e3	1.67e3
3	2,3,4,7,8-PeCDF	9.853	7.23e3	1.64	NO	35.30	0.568	0.0545		1.15e3	1.67e3
4	1,2,3,4,7,8-HxCDF	9.853	3.50e4	1.36	NO	40.73	3.413	0.0404		1.21e3	1.18e3
5	1,2,3,6,7,8-HxCDF	9.853	1.58e4	1.24	NO	40.90	1.483	0.0397		1.21e3	1.18e3
6	2,3,4,6,7,8-HxCDF	9.853	7.48e3	1.11	NO	41.87	0.644	0.0350		1.21e3	1.18e3
7	1,2,3,7,8,9-HxCDF	9.853	1.61e3	1.19	NO	42.90	0.164	0.0429		1.21e3	1.18e3
8	1,2,3,4,6,7,8-HpCDF	9.853	3.76e5	1.04	NO	45.37	34.091	0.0513		1.55e3	1.91e3
9	1,2,3,4,7,8,9-HpCDF	9.853	2.22e4	0.98	NO	47.16	2.166	0.0565		1.55e3	1.91e3
10	OCDF	9.853	1.11e6	0.91	NO	50.44	91.016	0.0430		6.70e2	2.58e3
11	2,3,7,8-TCDD	9.853	1.58e3	0.58	YES	26.47	0.157	0.0644		1.25e3	1.34e3
12	1,2,3,7,8-PeCDD	9.853	3.32e3	0.89	YES	36.13	0.326	0.0781		1.65e3	2.09e3
13	1,2,3,4,7,8-HxCDD	9.853	5.08e3	1.21	NO	42.14	0.611	0.0385		7.66e2	1.23e3
14	1,2,3,6,7,8-HxCDD	9.853	2.98e4	1.22	NO	42.27	3.467	0.0395		7.66e2	1.23e3
15	1,2,3,7,8,9-HxCDD	9.853	1.44e4	1.14	NO	42.70	1.714	0.0394		7.66e2	1.23e3
16	1,2,3,4,6,7,8-HpCDD	9.853	7.50e5	1.06	NO	46.76	87.046	0.0816		1.81e3	2.76e3
17	OCDD	9.853	9.25e6	0.89	NO	50.36	876.452	0.0509		1.12e3	2.20e3
18	13C-2,3,7,8-TCDF	9.853	2.93e6	0.77	NO	25.20	156.354	0.2090	77.0	9.36e3	8.06e3
19	13C-1,2,3,7,8-PeCDF	9.853	2.66e6	1.58	NO	33.50	174.905	0.1592	86.2	4.23e3	6.57e3
20	13C-2,3,4,7,8-PeCDF	9.853	2.72e6	1.56	NO	35.27	173.450	0.1544	85.5	4.23e3	6.57e3
21	13C-1,2,3,4,7,8-HxCDF	9.853	1.88e6	0.52	NO	40.71	142.355	0.1908	70.1	8.71e3	5.75e3
22	13C-1,2,3,6,7,8-HxCDF	9.853	2.02e6	0.53	NO	40.88	138.824	0.1736	68.4	8.71e3	5.75e3
23	13C-2,3,4,6,7,8-HxCDF	9.853	2.07e6	0.53	NO	41.85	158.181	0.1926	77.9	8.71e3	5.75e3
24	13C-1,2,3,7,8,9-HxCDF	9.853	1.88e6	0.53	NO	42.88	161.180	0.2166	79.4	8.71e3	5.75e3
25	13C-1,2,3,4,6,7,8-HpCDF	9.853	1.79e6	0.45	NO	45.35	164.178	0.1762	80.9	6.49e3	4.51e3
26	13C-1,2,3,4,7,8,9-HpCDF	9.853	1.66e6	0.45	NO	47.14	187.372	0.2172	92.3	6.49e3	4.51e3
27	13C-2,3,7,8-TCDD	9.853	1.85e6	0.82	NO	26.42	155.681	0.3138	76.7	1.08e4	5.83e3
28	13C-1,2,3,7,8-PeCDD	9.853	2.09e6	0.63	NO	36.10	220.937	0.0938	108.8	1.95e3	2.00e3
29	13C-1,2,3,4,7,8-HxCDD	9.853	1.64e6	1.30	NO	42.12	155.647	0.1276	76.7	3.43e3	4.28e3
30	13C-1,2,3,6,7,8-HxCDD	9.853	1.85e6	1.28	NO	42.26	158.651	0.1155	78.2	3.43e3	4.28e3
31	13C-1,2,3,4,6,7,8-HpCDD	9.853	2.24e6	1.02	NO	46.74	189.940	0.0751	93.6	2.67e3	2.41e3
32	13C-OCDD	9.853	4.36e6	0.92	NO	50.34	502.279	0.1502	123.7	4.34e3	3.14e3
33	13C-1,2,3,4-TCDD	9.853	2.49e6	0.77	NO	26.09	6.292	0.0094	3.1	1.08e4	5.83e3
34	13C-1,2,3,7,8,9-HxCDD	9.853	2.21e6	1.25	NO	42.68	7.735	0.0047	3.8	3.43e3	4.28e3
35	37Cl-2,3,7,8-TCDD	9.853	2.19e5			26.46	16.660	0.0494	82.1		2.89e3
36	Total Tetra-Furans	9.853					7.557	0.0447			1.60e3
37	Total Tetra-Dioxins	9.853					2.790	0.0644			1.34e3
38	Total Penta-Furans	9.853					9.729	0.0575			1.67e3
39	Total Penta-Dioxins	9.853					3.222	0.0781			2.09e3 T
40	Total Hexa-Furans	9.853					40.181	0.0389			1.18e3
41	Total Hexa-Dioxins	9.853					21.889	0.0373			1.23e3
42	Total Hepta-Furans	9.853					126.417	0.0538			1.91e3
43	Total Hepta-Dioxins	9.853					174.470	0.0816			2.76e3
44	Hexa DPE	1.000	3.78e2			25.25					1.58e0
45	Hepta DPE	1.000	3.46e2			33.07					1.61e0
46	Octa DPE	1.000	9.08e1			43.61					4.95e1
47	Nona DPE	1.000	4.95e2			47.75					3.62e2
48	Deca DPE	1.000	1.31e2			50.00					1.02e2
49	Tetra Lock	1.000	2.00e4			21.17					1.46e5
50	Penta Lock	1.000	1.33e4			33.12					1.07e5
51	Hexa Lock	1.000	1.31e5			38.89					2.38e5
52	Hepta Lock	1.000	1.42e4			44.74					1.63e5
53	Octa Lock	1.000									1.29e5
54	13C-Tetra-Furans	9.853					156.354	0.2090			8.06e3
55	13C-Tetra-Dioxins	9.853					161.972	0.3232			5.83e3

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

SVmm 22Sept. 2019

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S9, Date: 12-Sep-2019, Time: 16:25:13, ID: L31654-4,I,, Description: 1,WG69303,1.0/20uL

Tetrafurans

	RT	Ratio	Fails?	pg
1	23.67	0.595	YES	0.032
2	23.40	0.738	NO	1.327
3	22.98	0.730	NO	1.002
4	22.53	0.882	NO	0.622
5	22.23	0.748	NO	1.511
6	21.95	0.899	YES	0.111
7	21.43	0.404	YES	0.014
8	28.14	1.131	YES	0.108
9	26.56	0.334	YES	0.015
10	26.24	0.778	NO	0.249
11	25.92	1.065	YES	0.223
12	25.24	0.675	NO	0.776
13	24.94	0.938	YES	0.161
14	24.57	0.692	NO	0.462
15	24.25	0.945	YES	0.226
16	24.12	0.825	NO	0.300
17	23.84	0.873	NO	0.420

Tetradioxins

	RT	Ratio	Fails?	pg
1	23.74	0.751	NO	0.305
2	23.37	0.746	NO	0.268
3	22.93	0.670	NO	0.830
4	27.06	0.604	YES	0.062
5	26.47	0.582	YES	0.157
6	26.32	0.681	NO	0.503
7	26.04	0.784	NO	0.081
8	25.62	0.652	YES	0.086
9	25.20	1.961	YES	0.201
10	24.64	1.073	YES	0.297

Pentafurans

	RT	Ratio	Fails?	pg
1	28.86	1.480	NO	3.057
2	35.58	1.672	NO	0.696
3	35.30	1.637	NO	0.568
4	34.27	1.353	NO	0.326
5	33.90	2.686	YES	0.083
6	33.50	1.365	NO	0.528
7	33.35	0.935	YES	0.090
8	32.85	1.532	NO	0.816
9	32.19	3.340	YES	0.057
10	31.90	1.058	YES	0.142
11	31.82	3.501	YES	0.044
12	31.45	1.622	NO	3.281
13	37.10	1.519	NO	0.041

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S9, Date: 12-Sep-2019, Time: 16:25:13, ID: L31654-4,I,, Description: 1,WG69303,1.0/20uL

Pentadioxins

	RT	Ratio	Fails?	pg
1	33.14	0.560	NO	0.446
2	31.97	0.568	NO	1.097
3	35.50	0.394	YES	0.048
4	35.08	0.433	YES	0.233
5	34.87	0.855	YES	0.136
6	34.47	0.692	NO	0.124
7	34.15	0.714	YES	0.250
8	33.83	0.370	YES	0.406
9	37.03	1.373	YES	0.087
10	36.45	0.796	YES	0.070
11	36.13	0.888	YES	0.326

Hexafurans

	RT	Ratio	Fails?	pg
1	40.73	1.361	NO	3.413
2	40.09	1.254	NO	18.879
3	39.77	1.791	YES	0.268
4	39.48	1.266	NO	0.054
5	39.26	1.217	NO	10.228
6	38.99	1.192	NO	3.125
7	43.05	1.164	NO	0.456
8	42.90	1.192	NO	0.164
9	41.87	1.113	NO	0.644
10	41.70	1.132	NO	0.894
11	41.34	1.129	NO	0.169
12	41.10	0.970	YES	0.020
13	40.90	1.235	NO	1.483
14	40.68	1.417	NO	0.382

Hexadioxins

	RT	Ratio	Fails?	pg
1	40.87	1.239	NO	0.982
2	40.04	1.240	NO	7.076
3	42.70	1.137	NO	1.714
4	42.27	1.224	NO	3.467
5	42.14	1.212	NO	0.611
6	41.44	1.393	NO	0.373
7	41.24	1.156	NO	7.666

Heptafurans

	RT	Ratio	Fails?	pg
1	47.16	0.984	NO	2.166
2	45.88	1.031	NO	89.372
3	45.69	1.769	YES	0.789
4	45.37	1.035	NO	34.091

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S9, Date: 12-Sep-2019, Time: 16:25:13, ID: L31654-4,I,, Description: 1,WG69303,1.0/20uL

Heptadioxins

	RT	Ratio	Fails?	pg
1	45.83	1.034	NO	87.425
2	46.76	1.057	NO	87.046

13C-TF

	RT	Ratio	Fails?	pg
1	25.20	0.769	NO	156.354

13C-TD

	RT	Ratio	Fails?	pg
1	26.42	0.824	NO	155.681
2	26.09	0.768	NO	6.292

13C-PF

	RT	Ratio	Fails?	pg
1	33.50	1.577	NO	174.905
2	35.27	1.564	NO	173.450

13C-PD

	RT	Ratio	Fails?	pg
1	36.10	0.625	NO	220.937

13C-HxF

	RT	Ratio	Fails?	pg
1	41.85	0.525	NO	158.181
2	40.88	0.528	NO	138.824
3	40.71	0.524	NO	142.355
4	42.88	0.527	NO	161.180

13C-HxD

	RT	Ratio	Fails?	pg
1	42.68	1.252	NO	7.735
2	42.26	1.284	NO	158.651
3	42.12	1.299	NO	155.647

13C-HpF

	RT	Ratio	Fails?	pg
1	45.35	0.449	NO	164.178
2	47.14	0.454	NO	187.372

13C-HpD

	RT	Ratio	Fails?	pg
1	46.74	1.020	NO	189.940

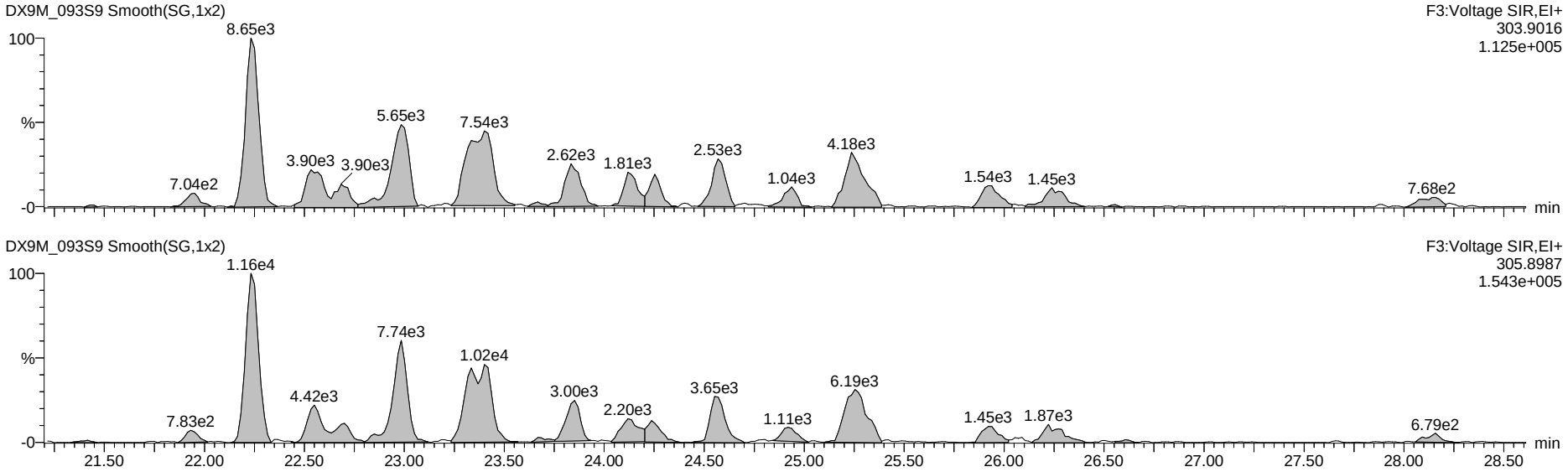
PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

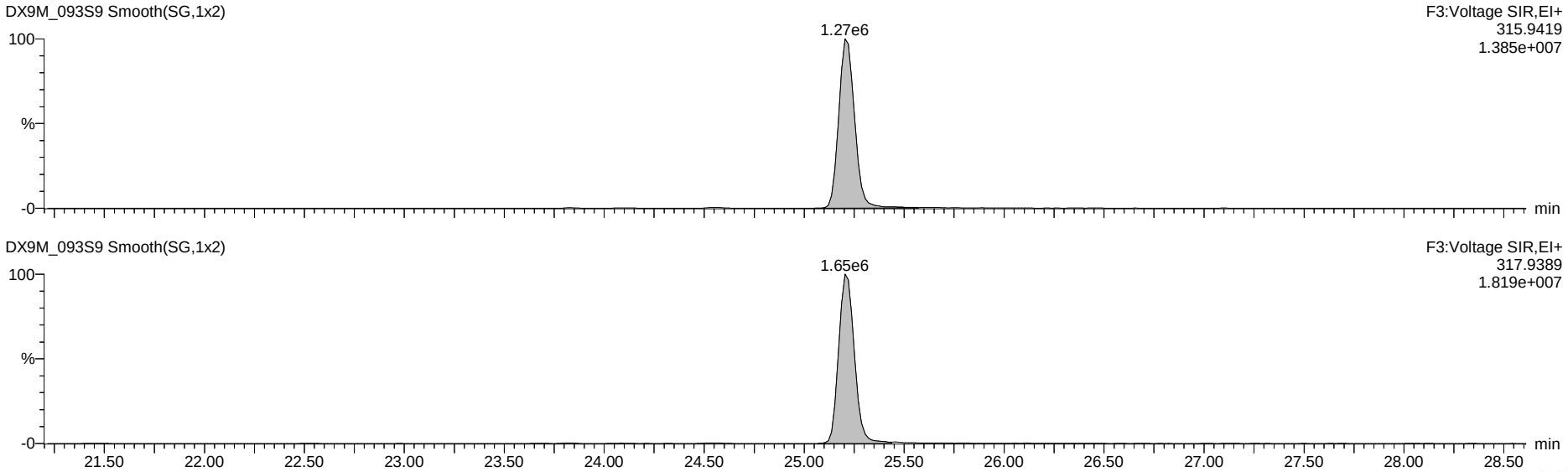
Method: G:\Masslynx\Inst_M\Exported_methods\DX_1613B_16.mdb 07 Sep 2017 16:45:23
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

Name: DX9M_093S9, Date: 12-Sep-2019, Time: 16:25:13, ID: L31654-4,I,, Description: 1,WG69303,1.0/20uL

Total Tetra-Furans



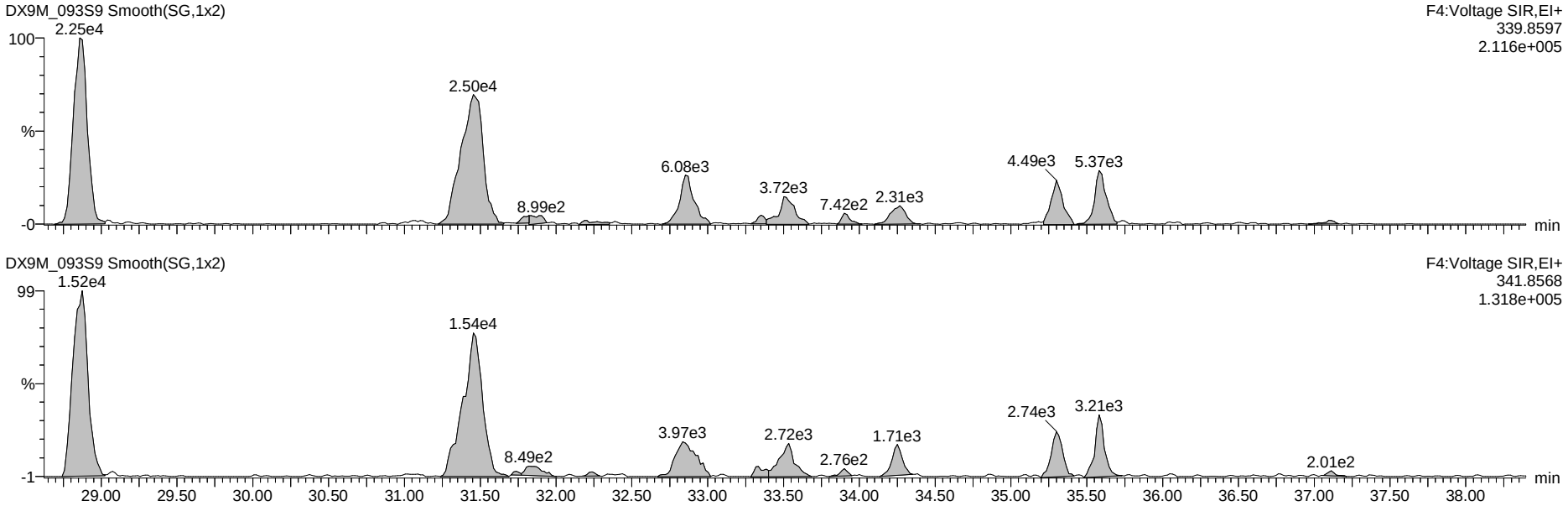
13C-Tetra-Furans



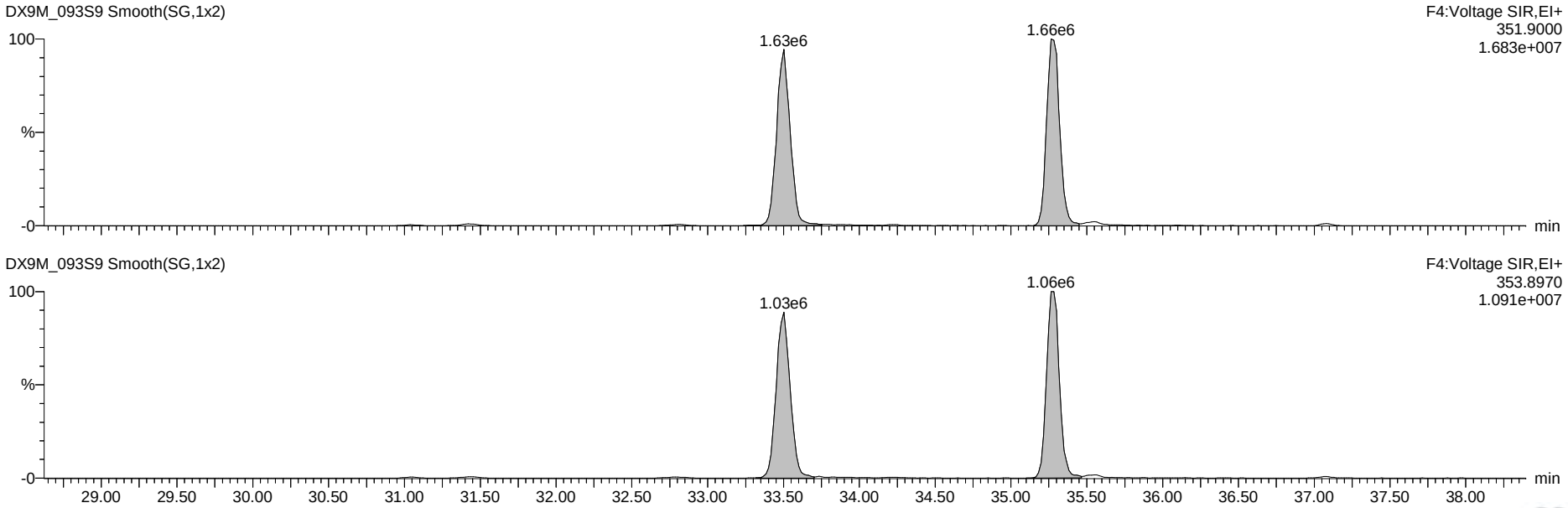
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S9, Date: 12-Sep-2019, Time: 16:25:13, ID: L31654-4,I,, Description: 1,WG69303,1.0/20uL

Total Penta-Furans



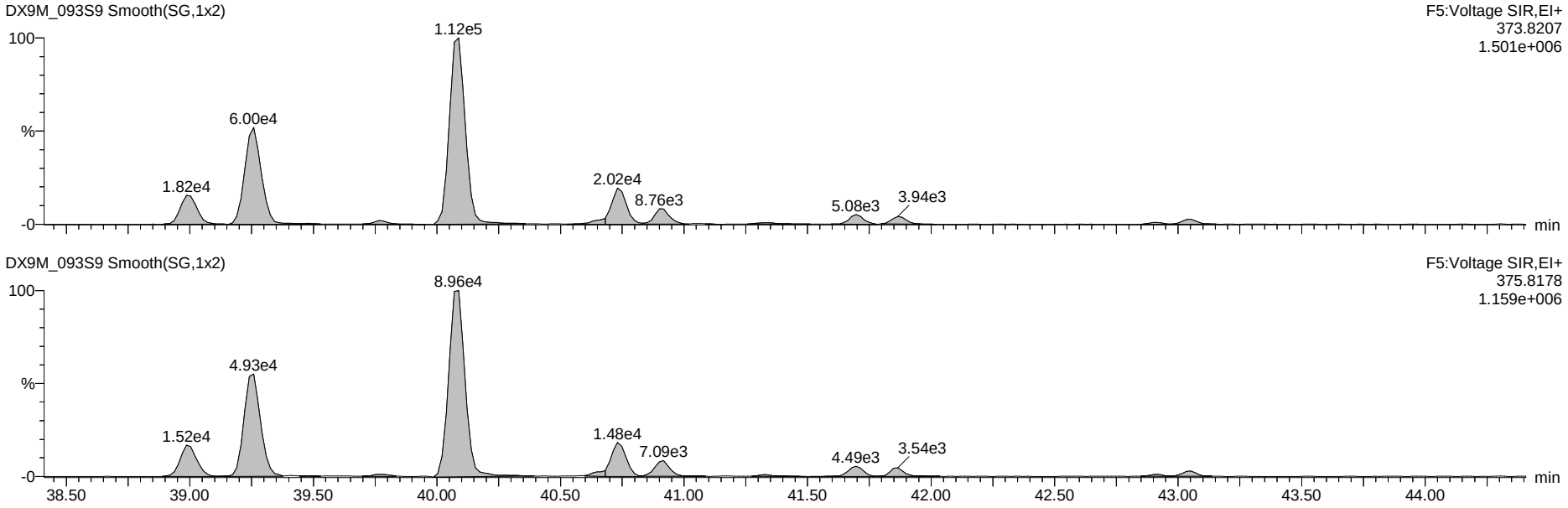
13C-Penta-Furans



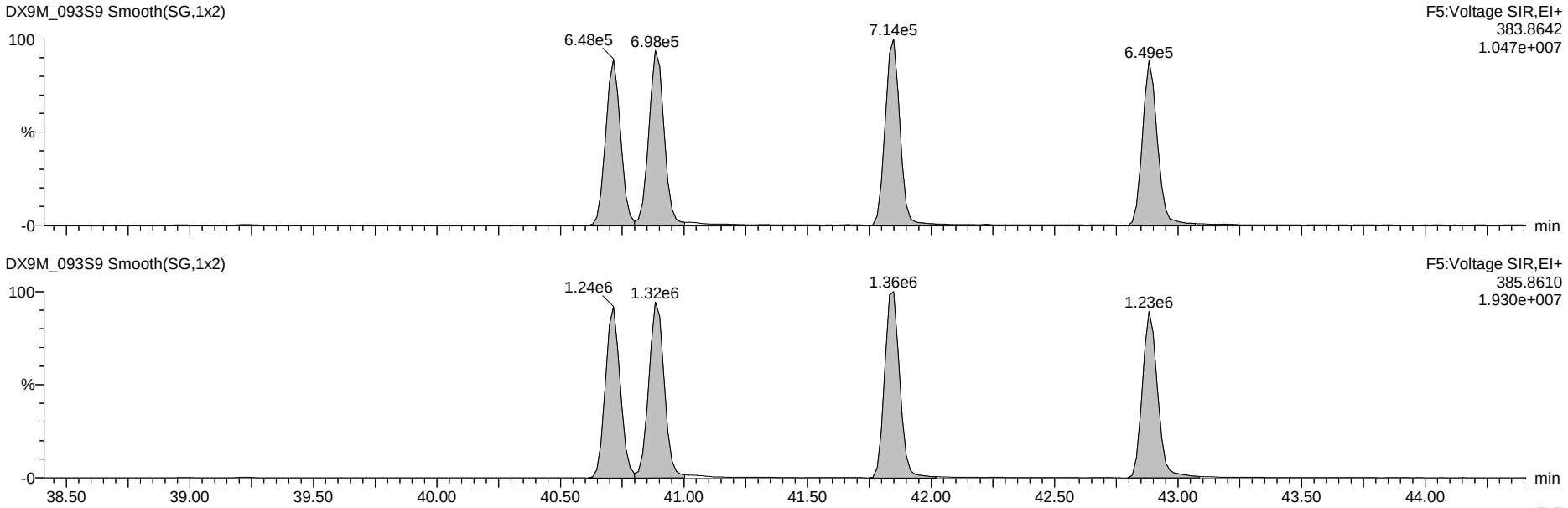
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S9, Date: 12-Sep-2019, Time: 16:25:13, ID: L31654-4,I,, Description: 1,WG69303,1.0/20uL

Total Hexa-Furans



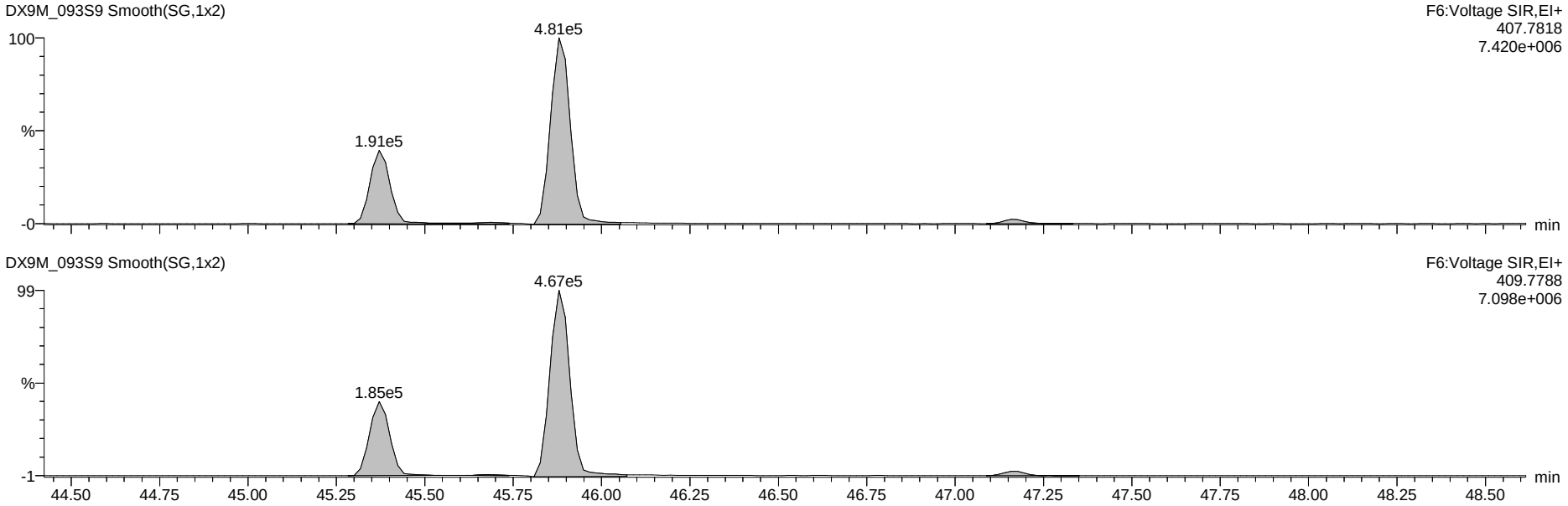
13C-Hexa-Furans



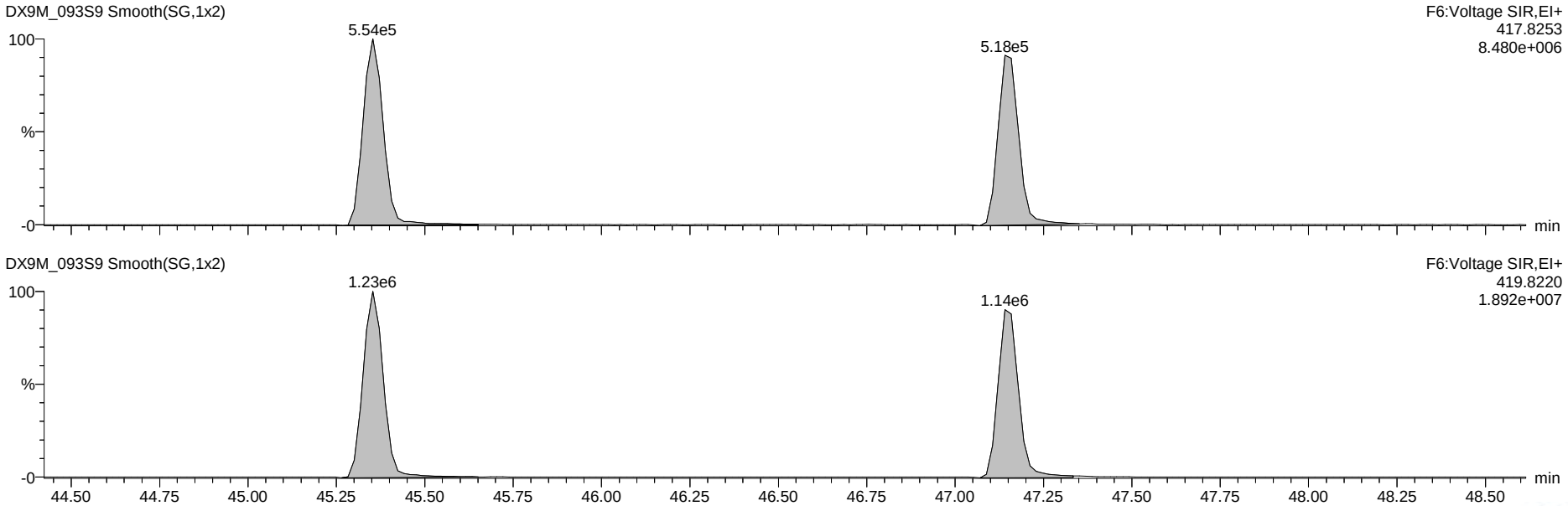
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S9, Date: 12-Sep-2019, Time: 16:25:13, ID: L31654-4,I,, Description: 1,WG69303,1.0/20uL

Total Hepta-Furans



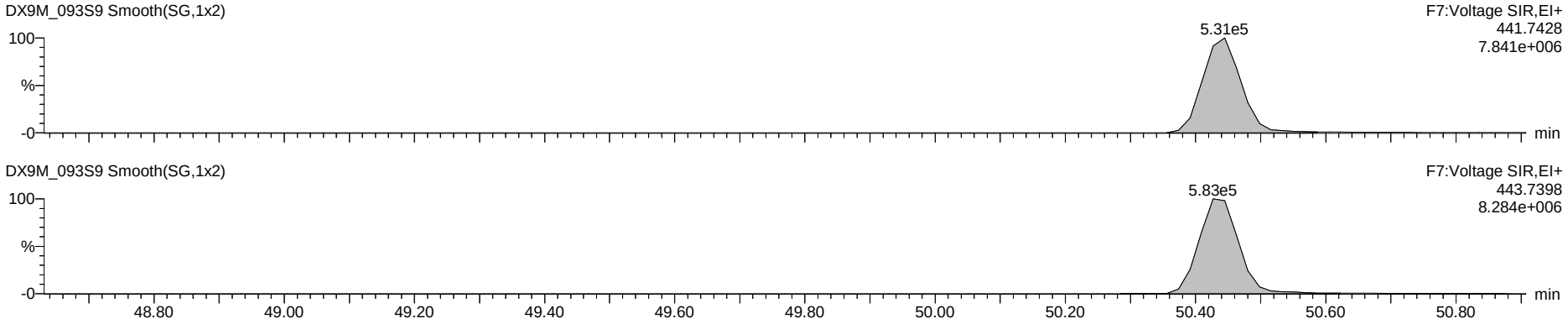
13C-Hepta-Furans



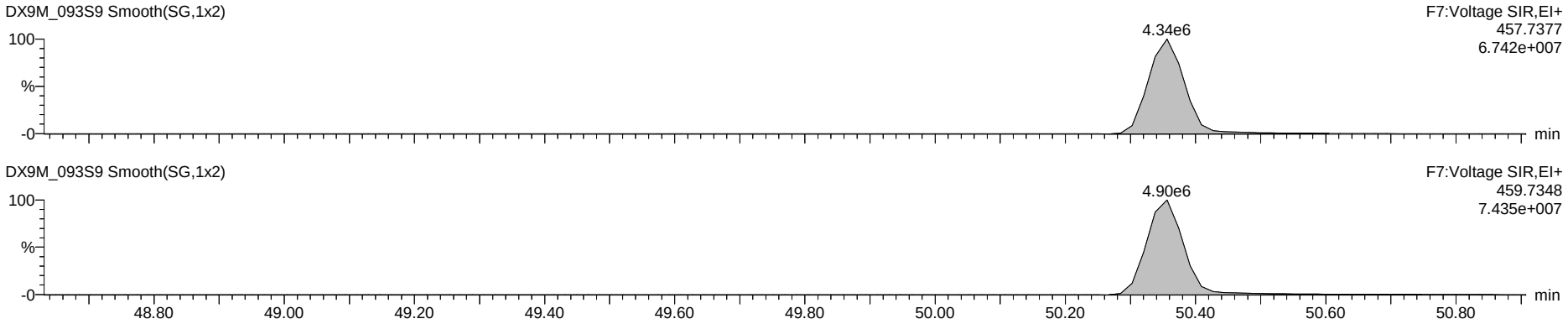
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S9, Date: 12-Sep-2019, Time: 16:25:13, ID: L31654-4,I,, Description: 1,WG69303,1.0/20uL

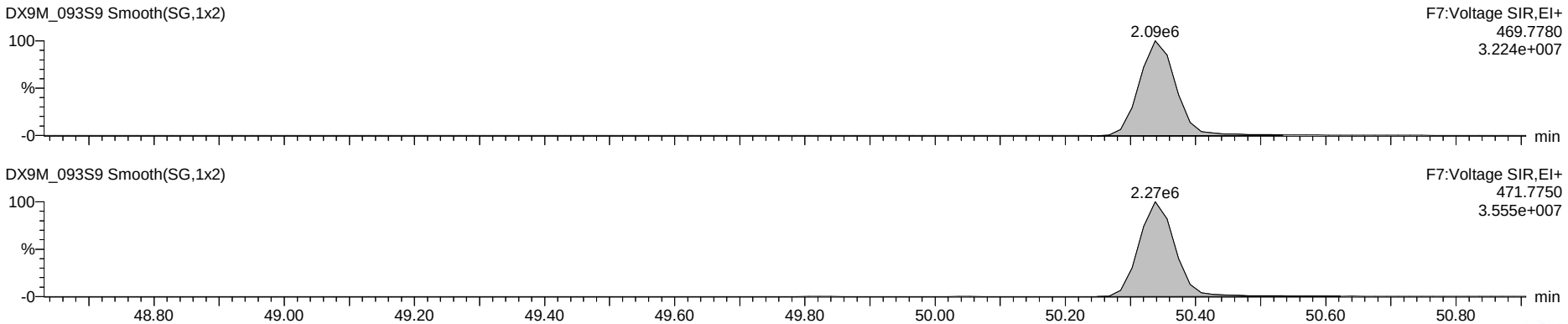
OCDF



OCDD



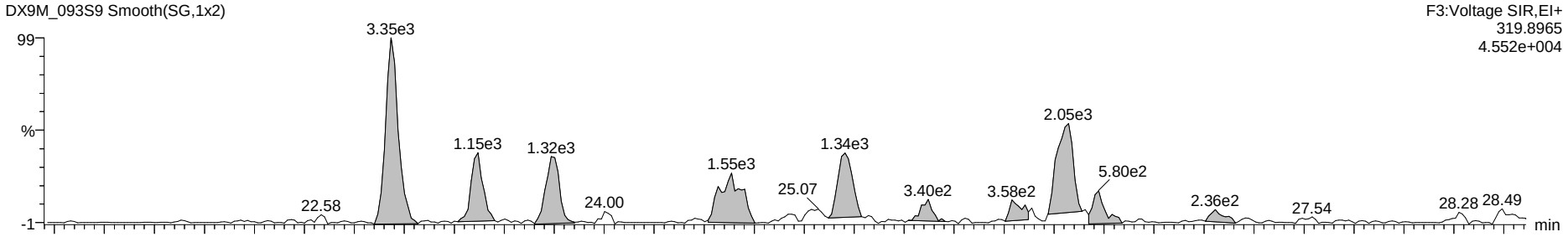
13C-OCDD

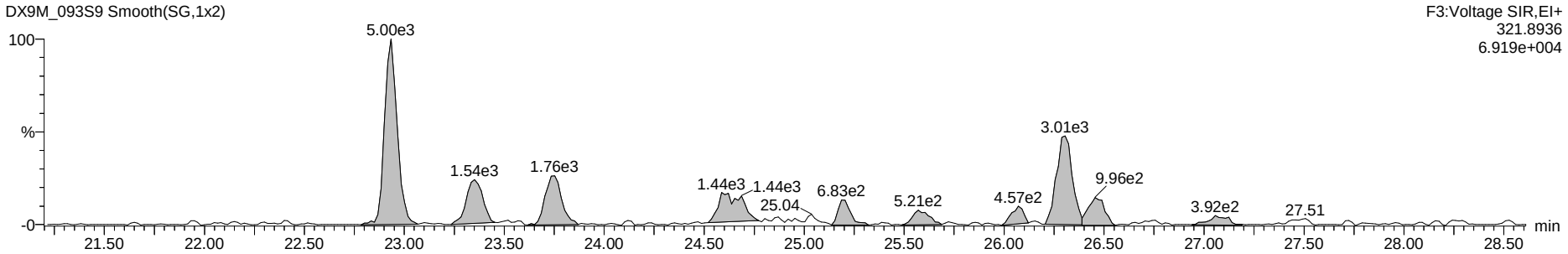


Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

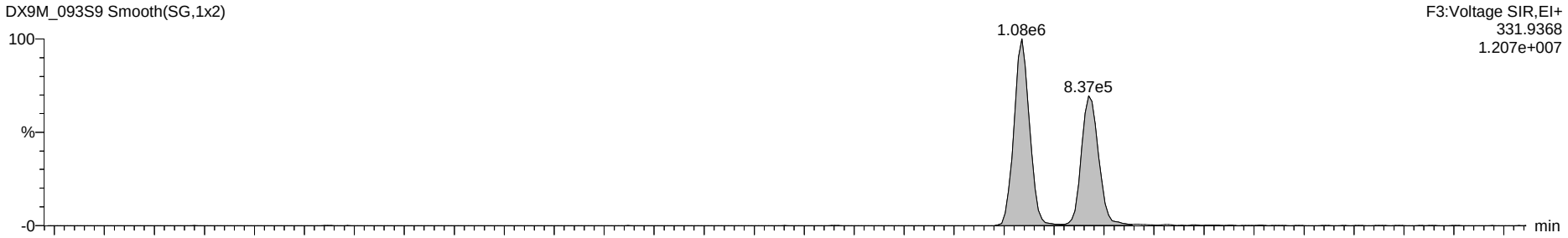
Name: DX9M_093S9, Date: 12-Sep-2019, Time: 16:25:13, ID: L31654-4,I,, Description: 1,WG69303,1.0/20uL

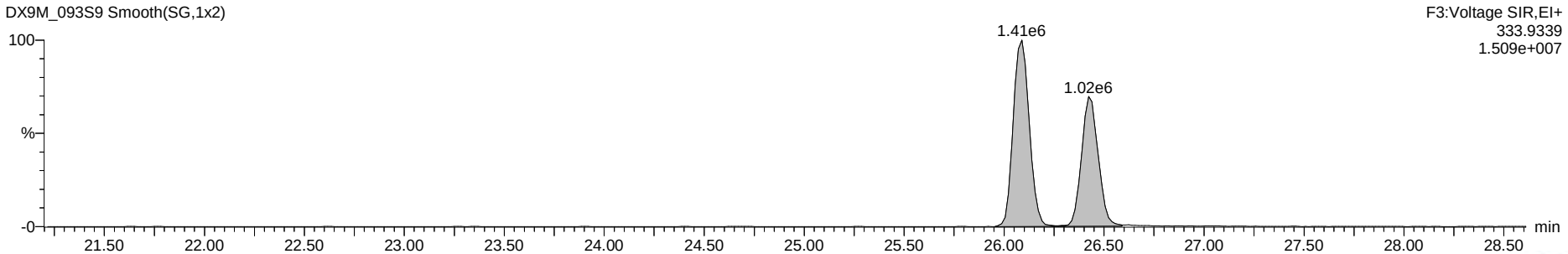
Total Tetra-Dioxins





13C-Tetra-Dioxins

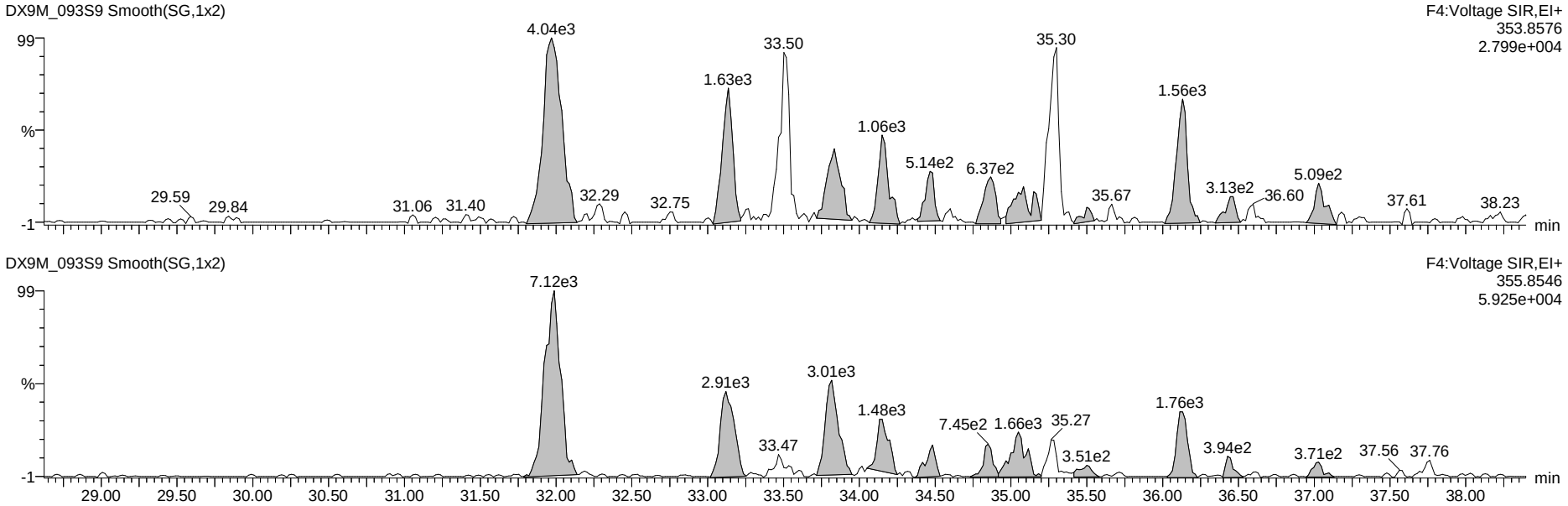




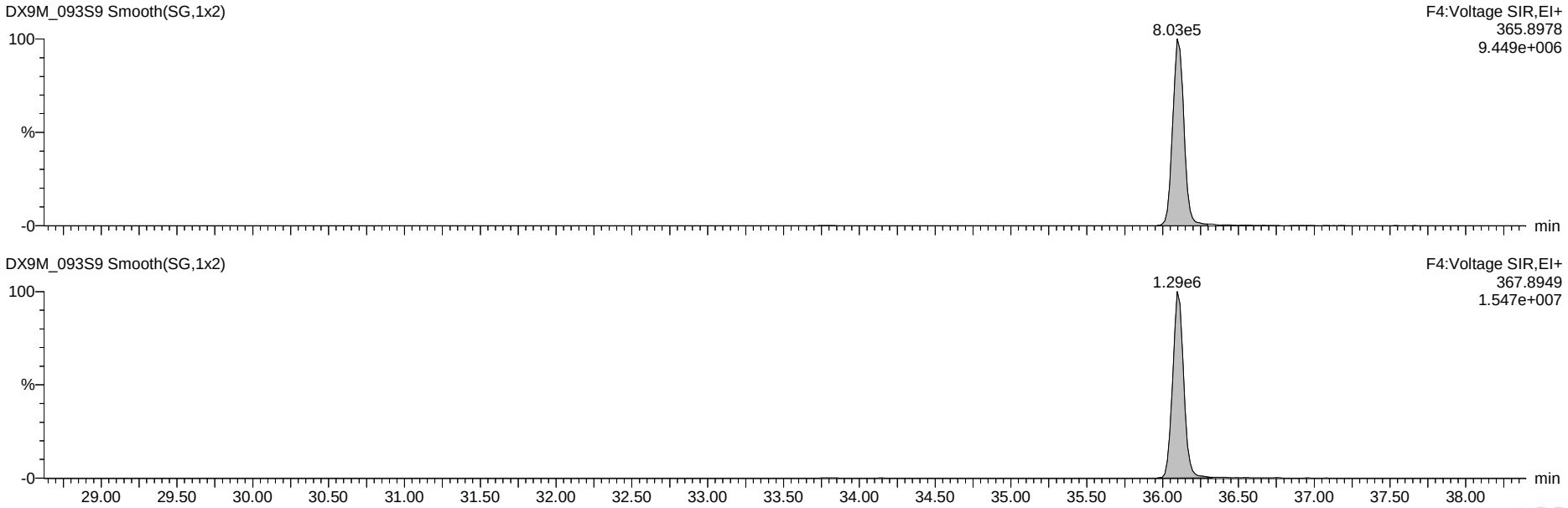
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S9, Date: 12-Sep-2019, Time: 16:25:13, ID: L31654-4,I,, Description: 1,WG69303,1.0/20uL

Total Penta-Dioxins



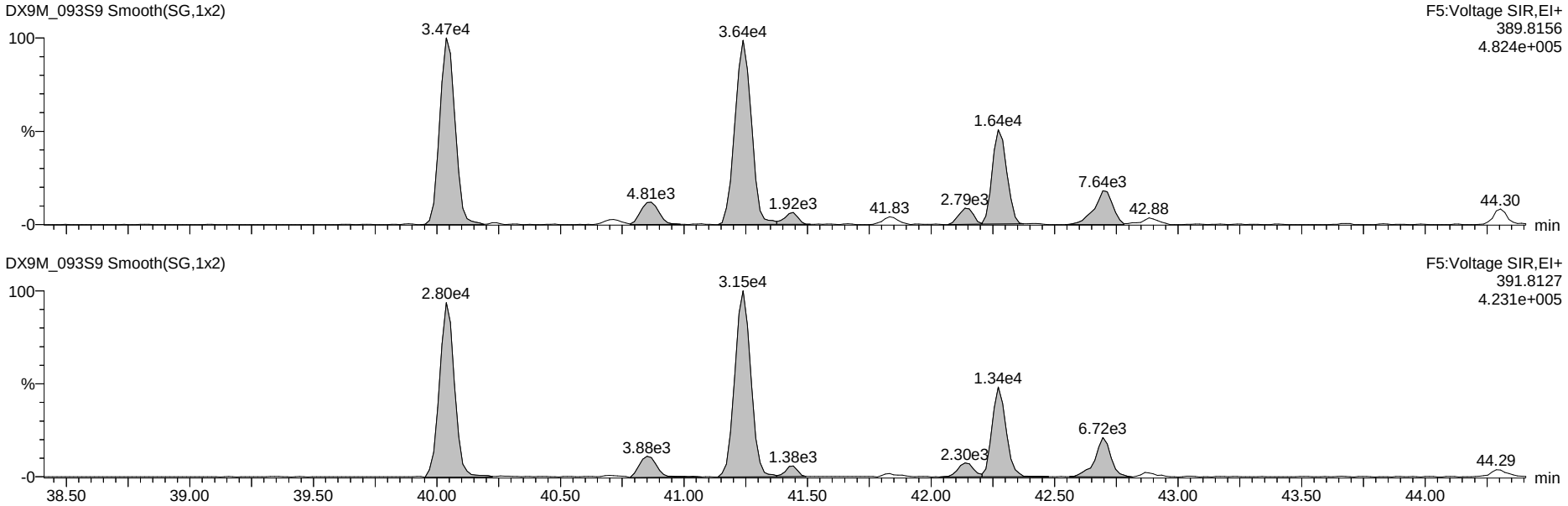
13C-Penta-Dioxins



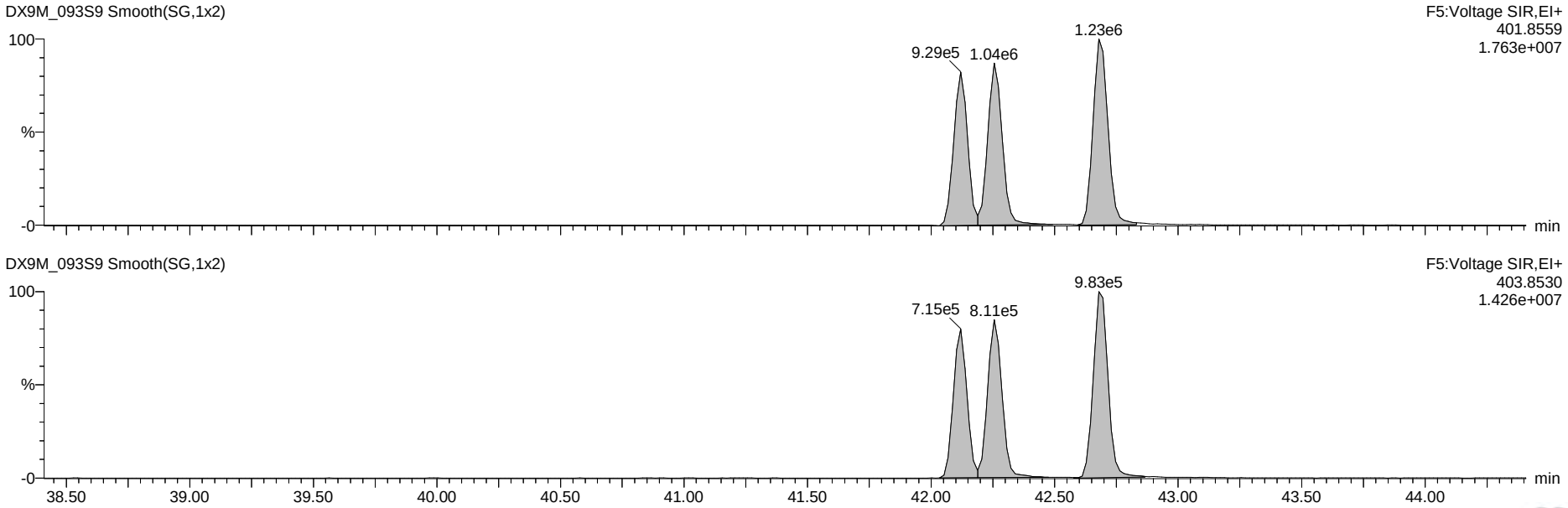
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S9, Date: 12-Sep-2019, Time: 16:25:13, ID: L31654-4,I,, Description: 1,WG69303,1.0/20uL

Total Hexa-Dioxins



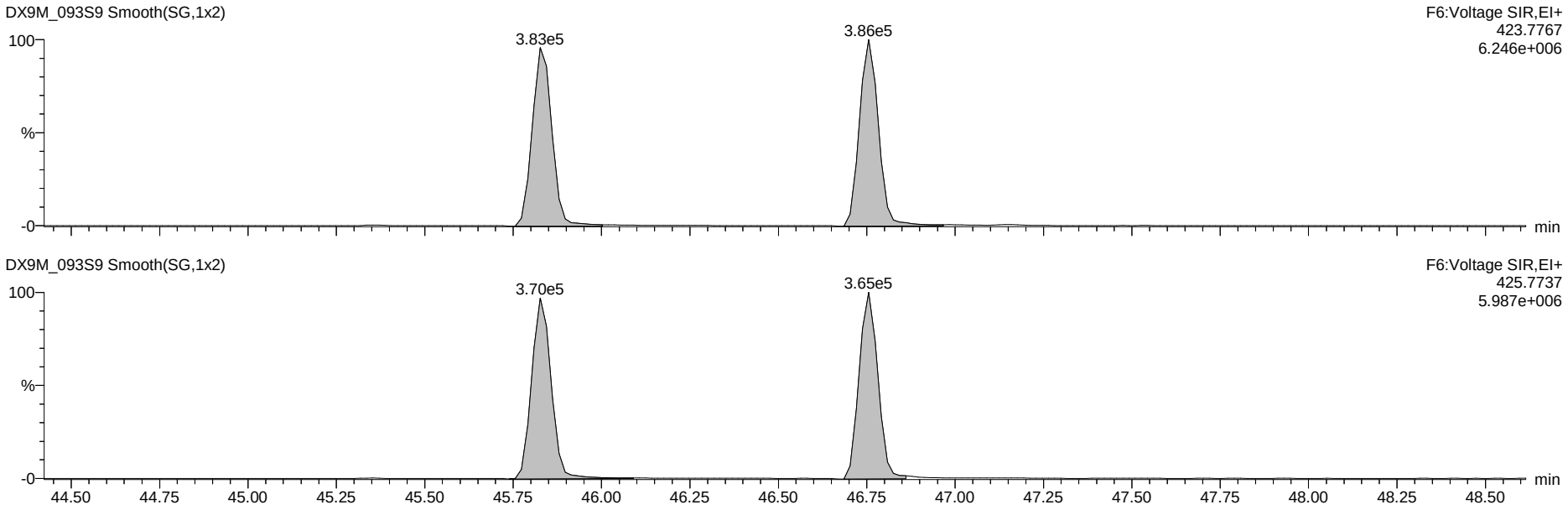
13C-Hexa-Dioxins



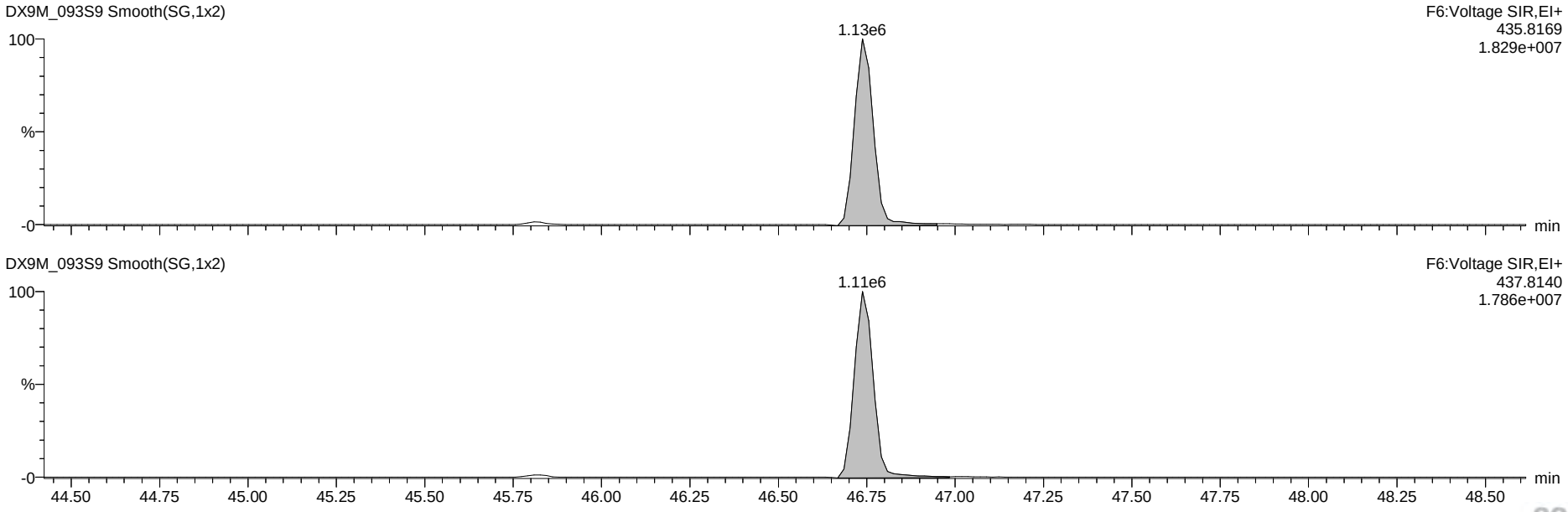
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S9, Date: 12-Sep-2019, Time: 16:25:13, ID: L31654-4,I,, Description: 1,WG69303,1.0/20uL

Total Hepta-Dioxins



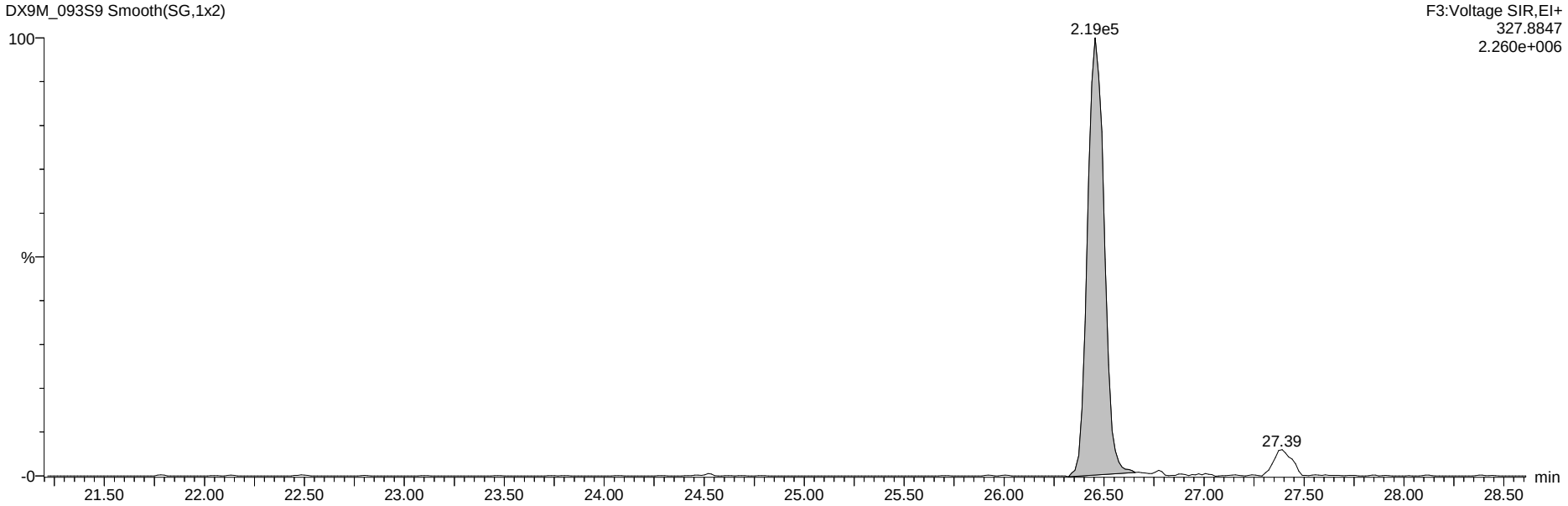
13C-Hepta-Dioxins



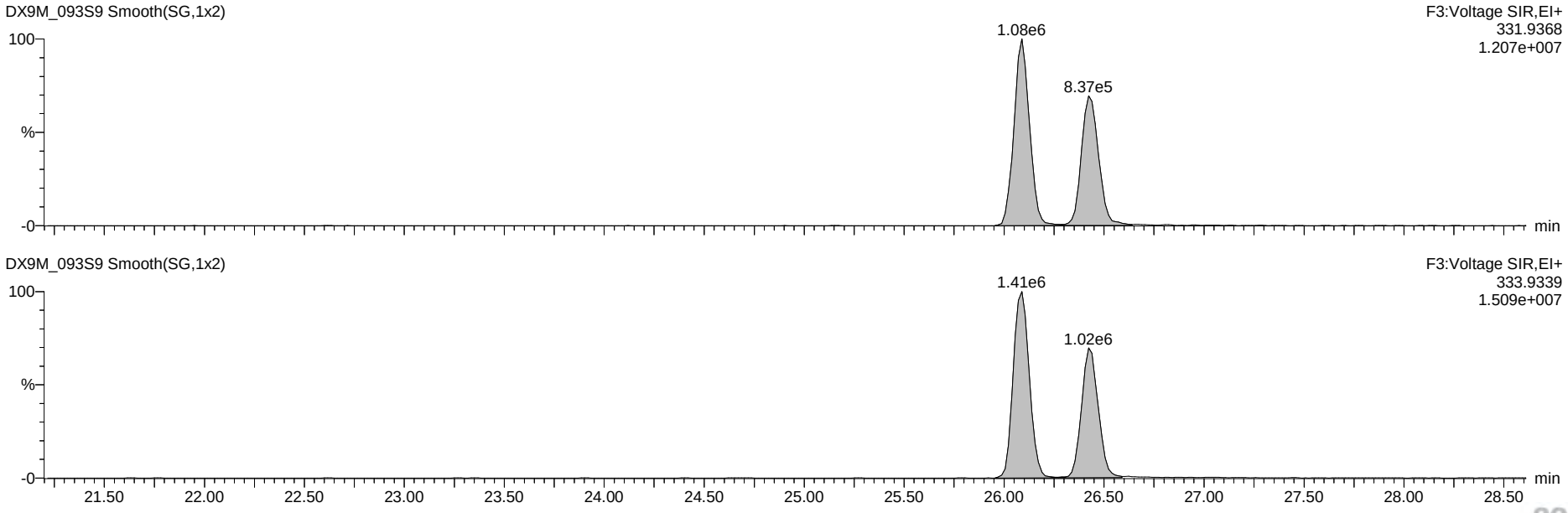
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S9, Date: 12-Sep-2019, Time: 16:25:13, ID: L31654-4,I,, Description: 1,WG69303,1.0/20uL

37Cl-2,3,7,8-TCDD



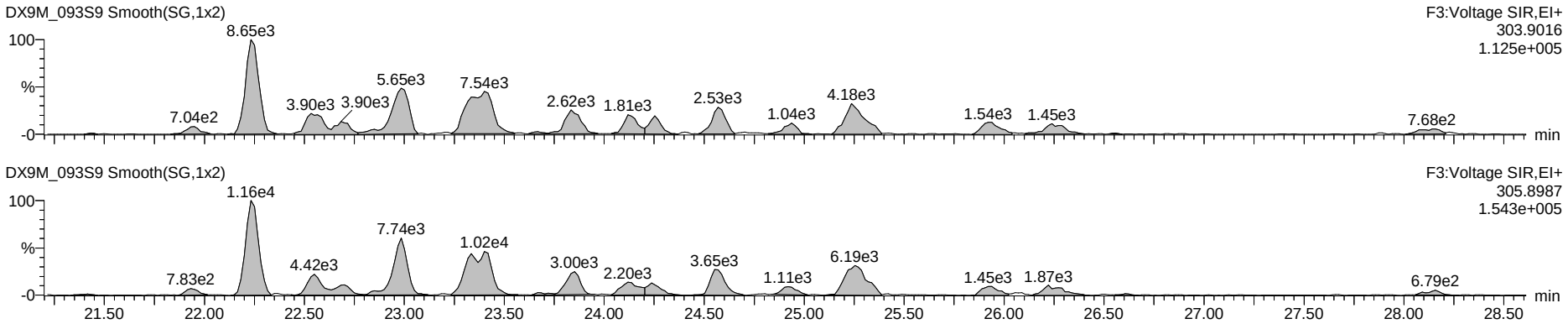
13C-Tetra-Dioxins



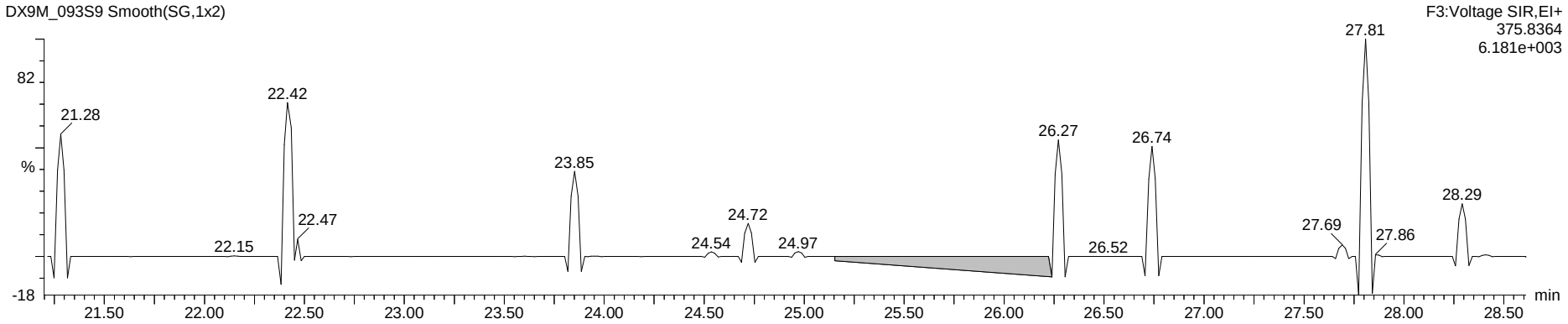
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S9, Date: 12-Sep-2019, Time: 16:25:13, ID: L31654-4,I,, Description: 1,WG69303,1.0/20uL

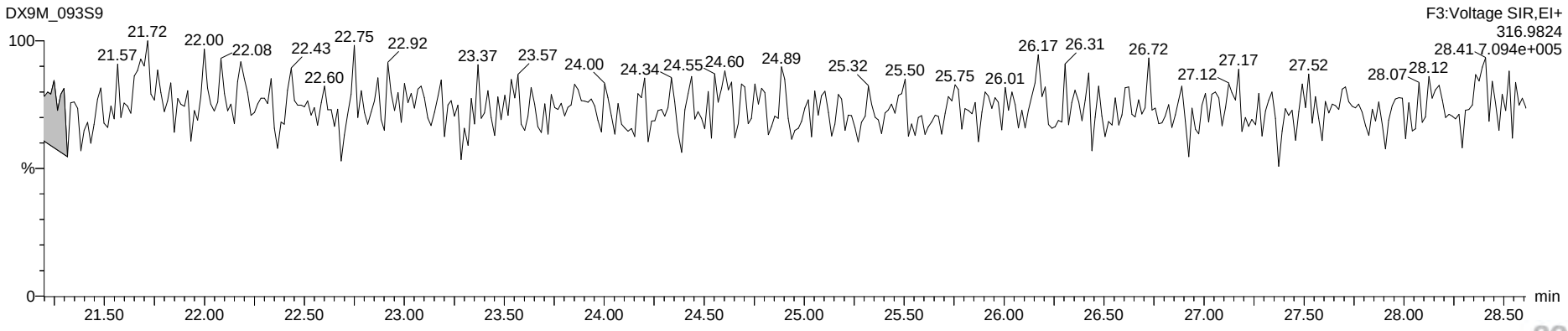
Total Tetra-Furans



Hexa DPE



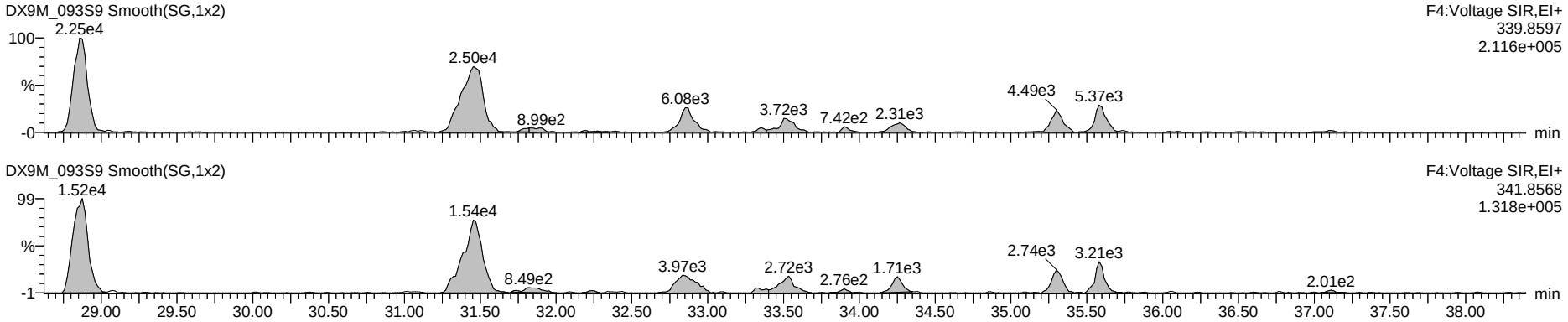
Tetra Lock



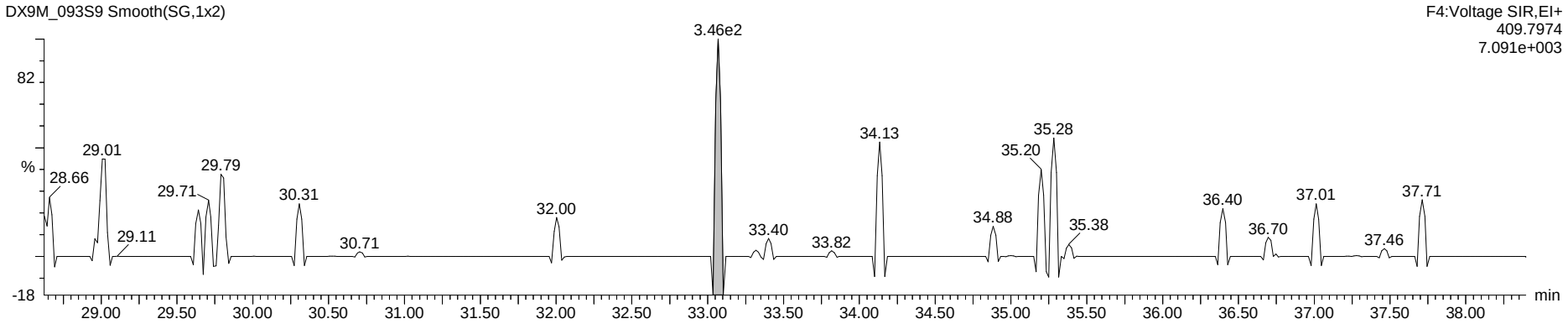
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S9, Date: 12-Sep-2019, Time: 16:25:13, ID: L31654-4,I,, Description: 1,WG69303,1.0/20uL

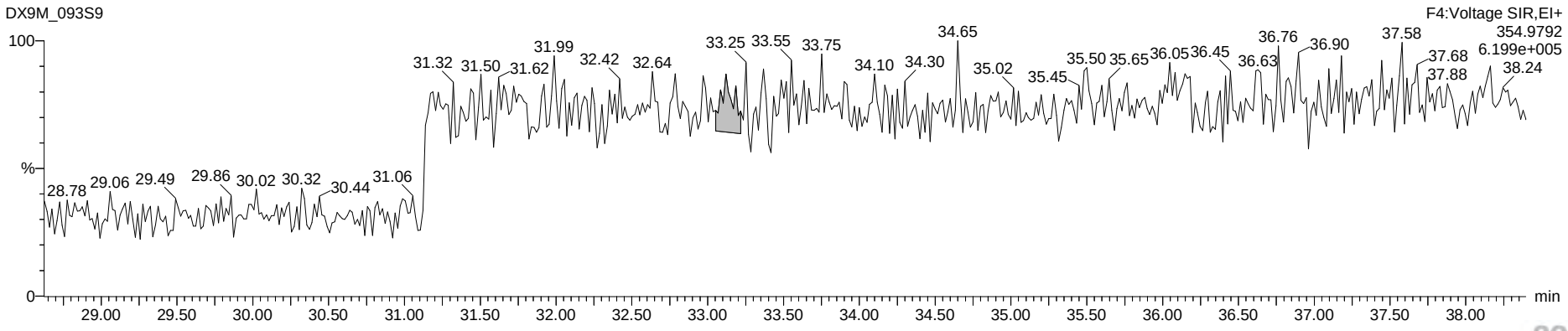
Total Penta-Furans



Hepta DPE



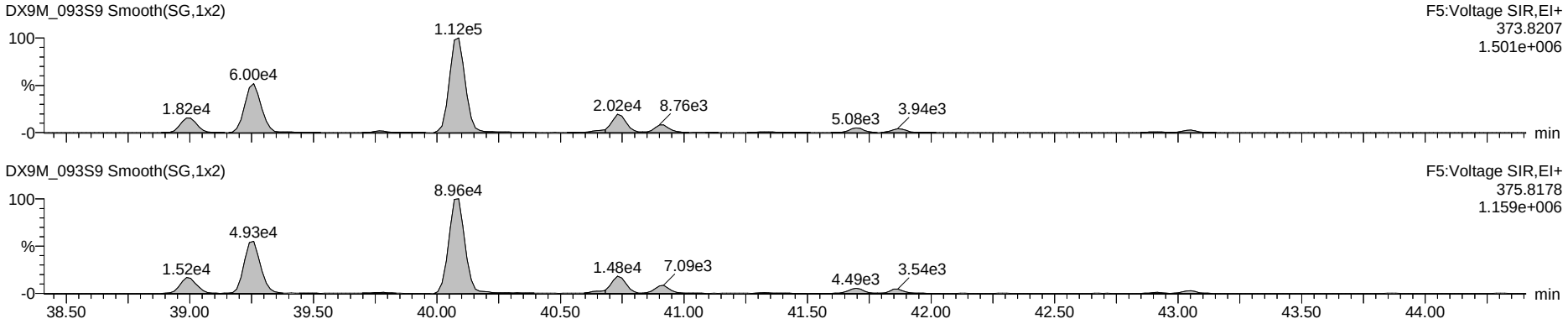
Penta Lock



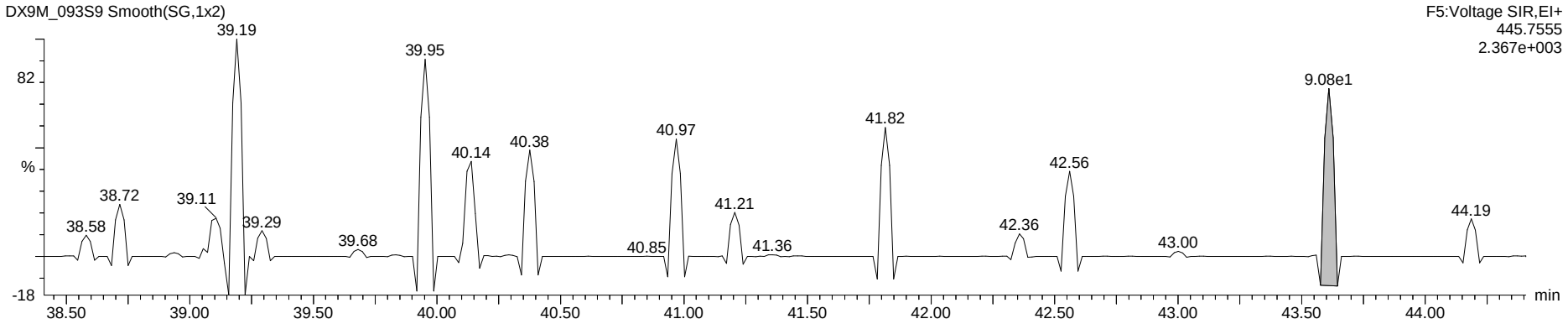
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S9, Date: 12-Sep-2019, Time: 16:25:13, ID: L31654-4,I,, Description: 1,WG69303,1.0/20uL

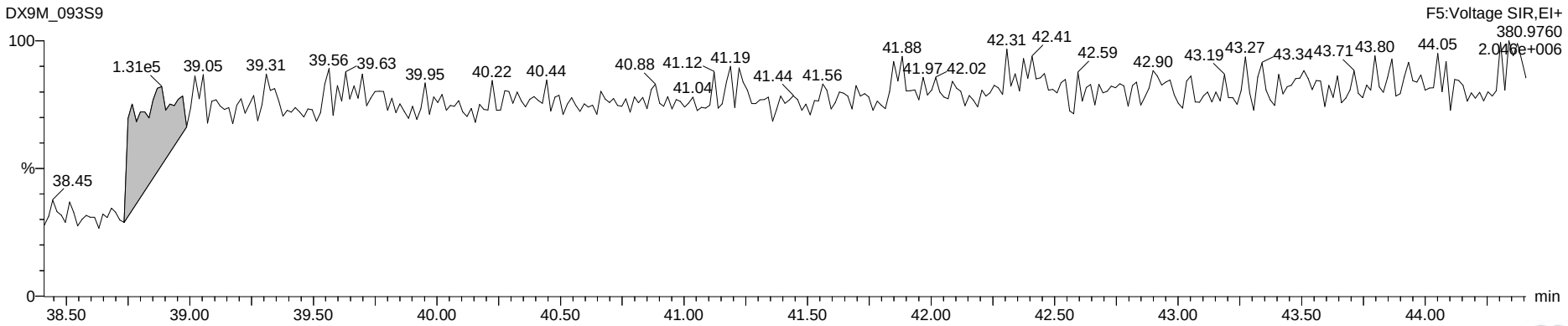
Total Hexa-Furans



Octa DPE



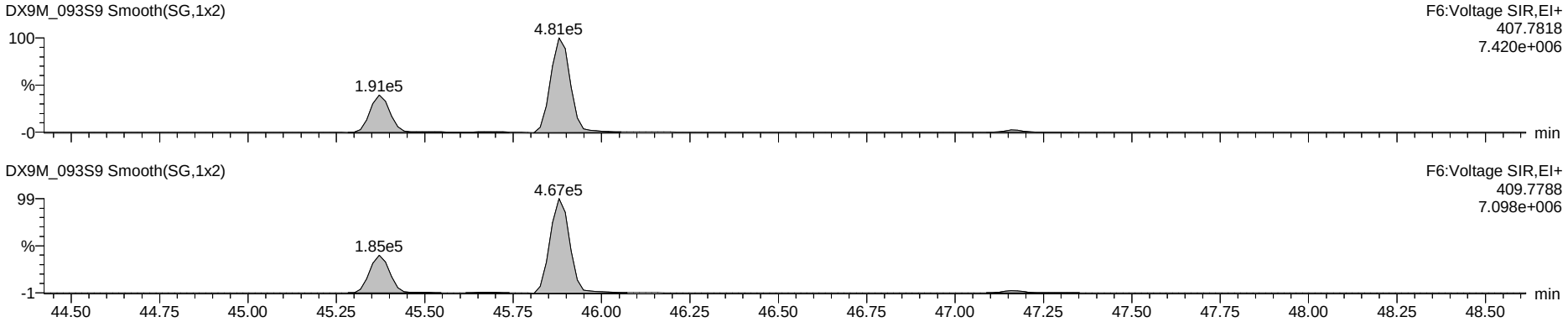
Hexa Lock



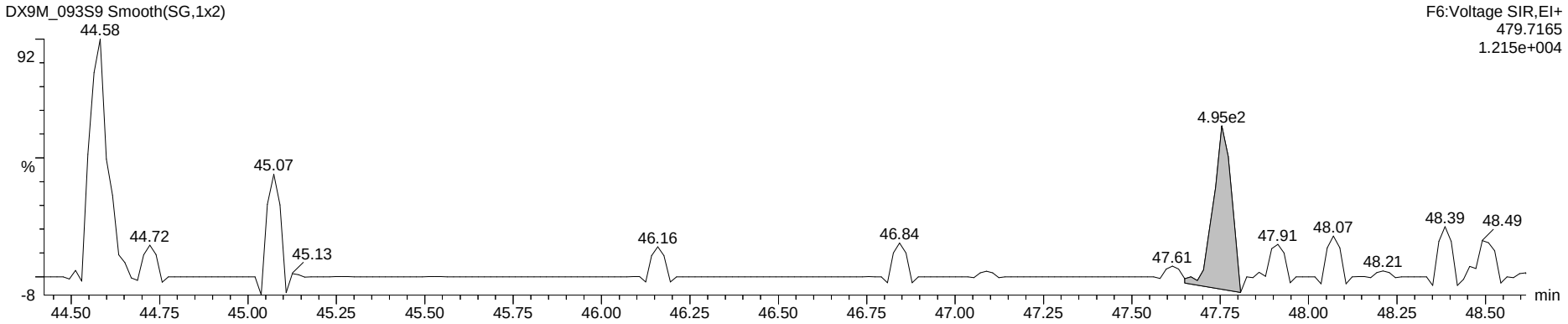
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S9, Date: 12-Sep-2019, Time: 16:25:13, ID: L31654-4,I,, Description: 1,WG69303,1.0/20uL

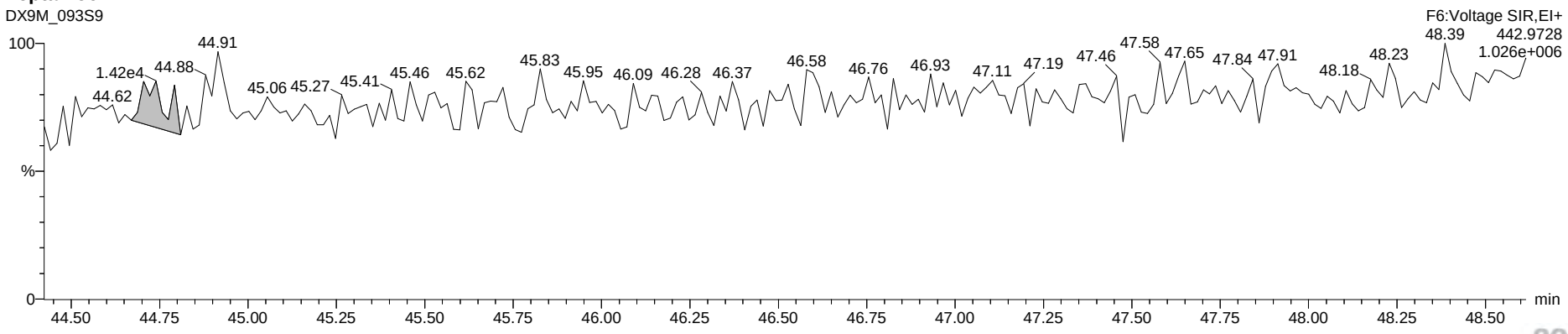
Total Hepta-Furans



Nona DPE



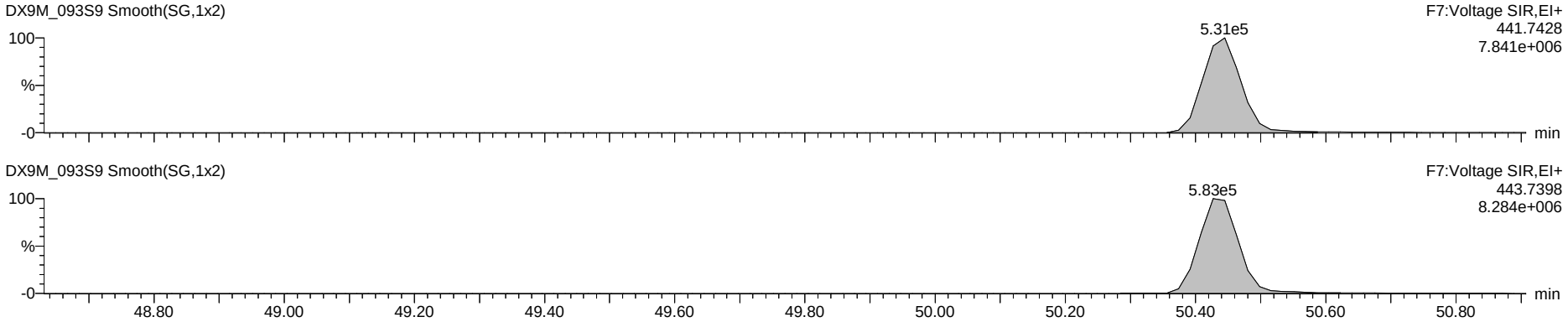
Hepta Lock



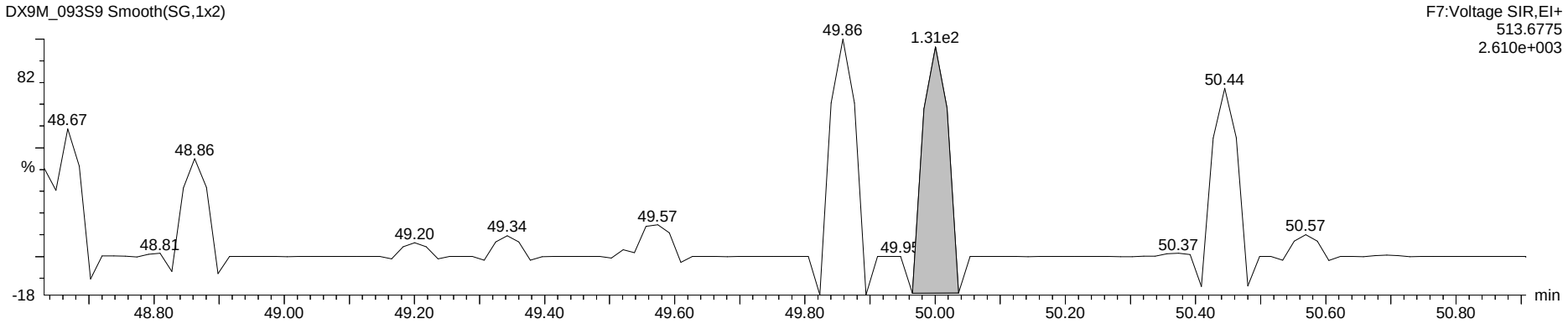
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S9, Date: 12-Sep-2019, Time: 16:25:13, ID: L31654-4,I,, Description: 1,WG69303,1.0/20uL

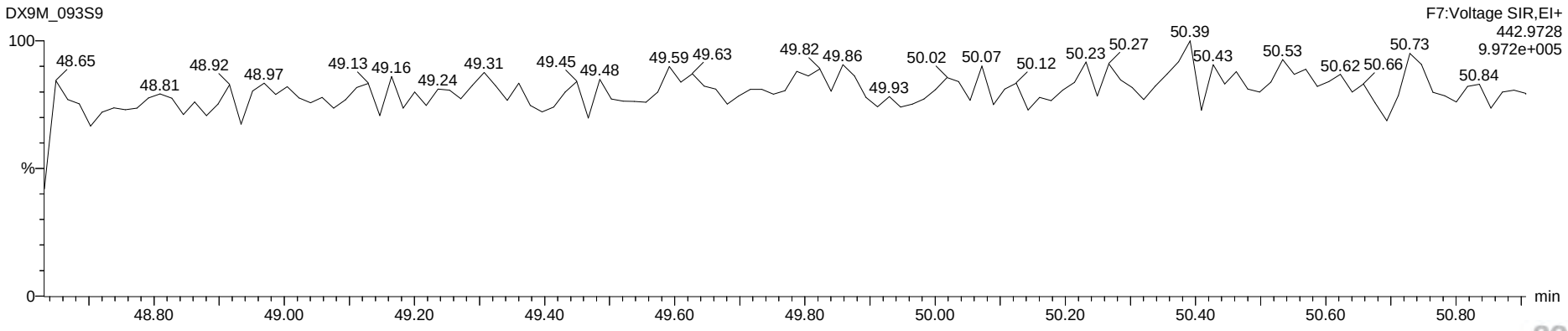
OCDF



Deca DPE



Octa Lock



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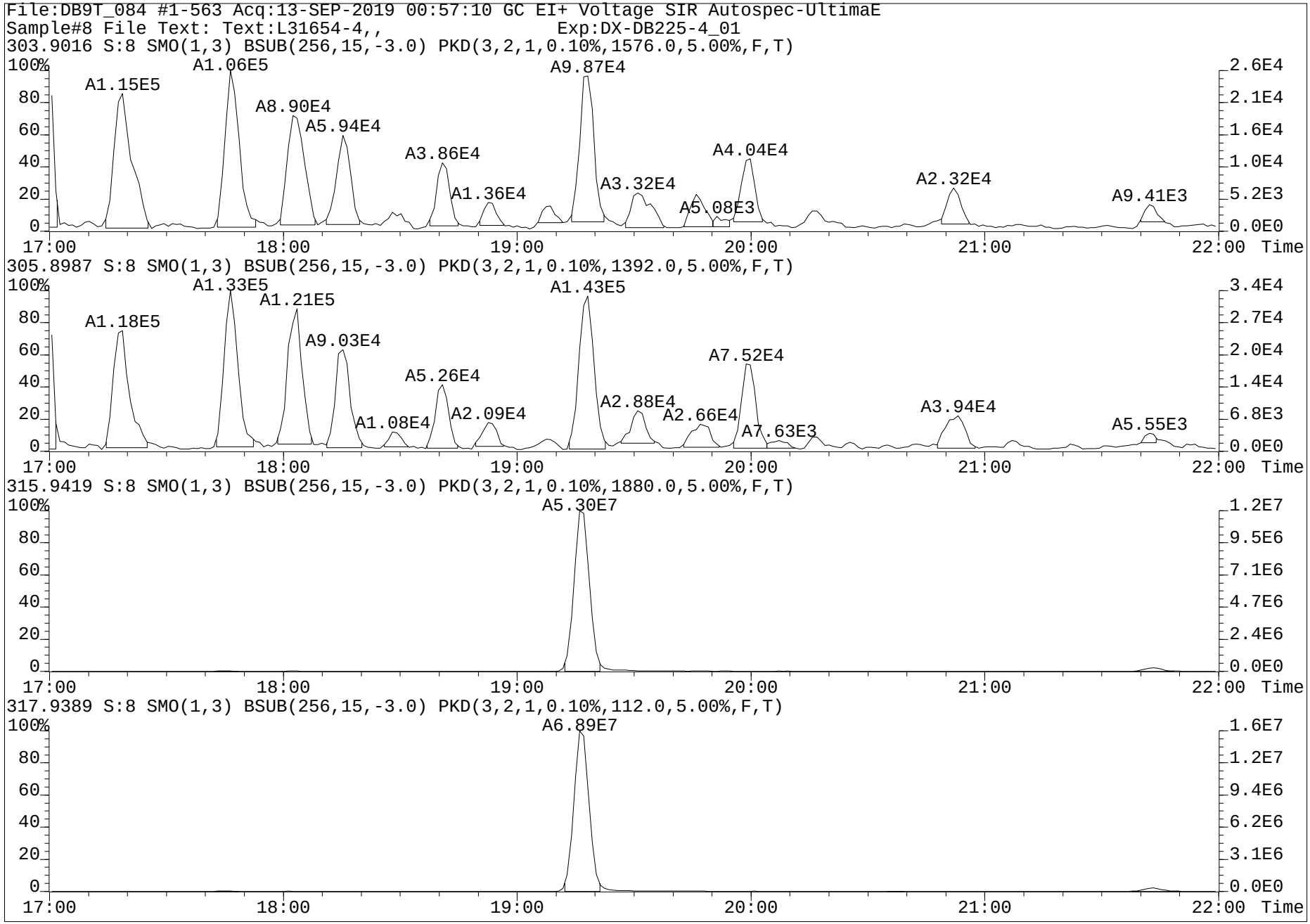
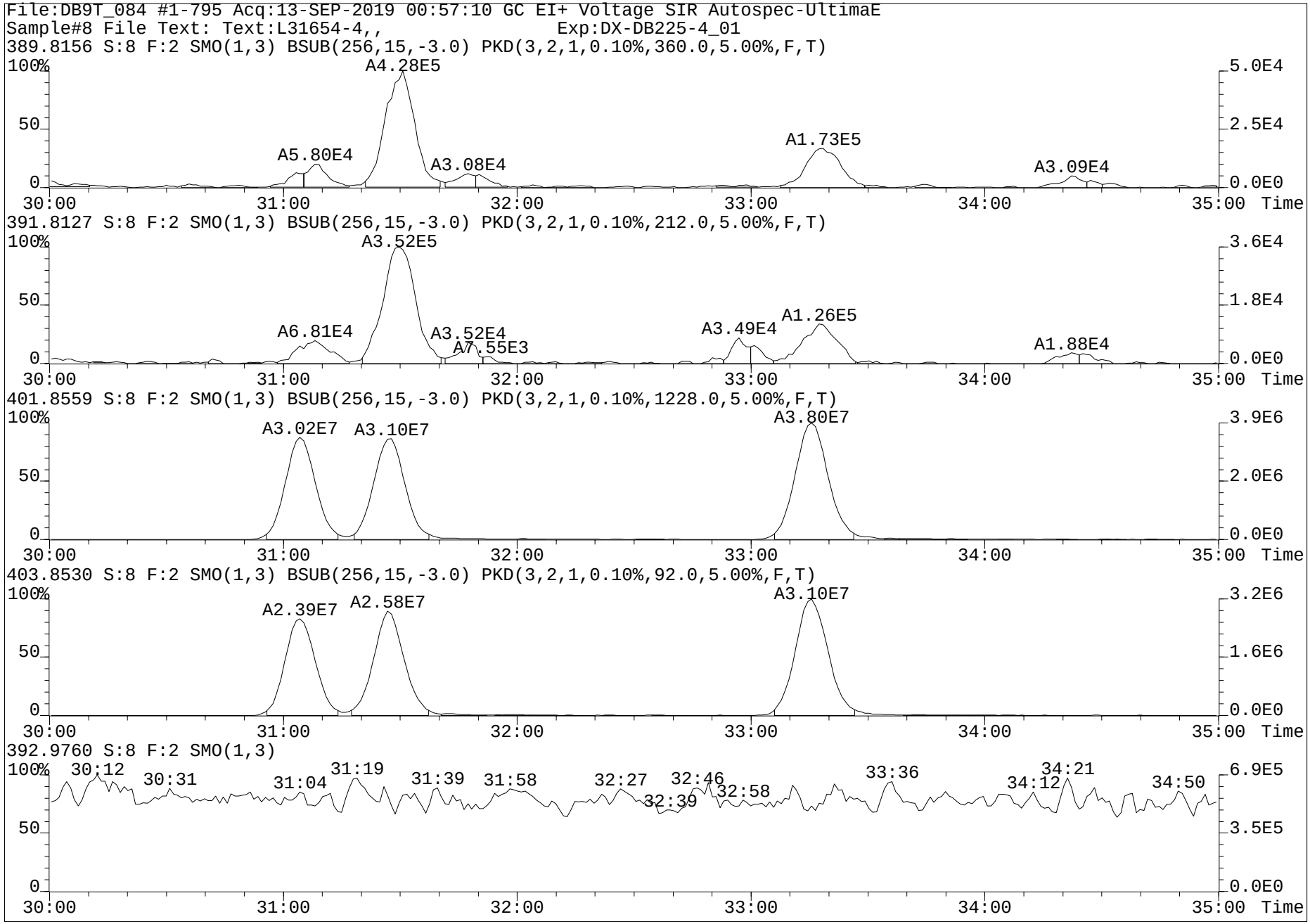
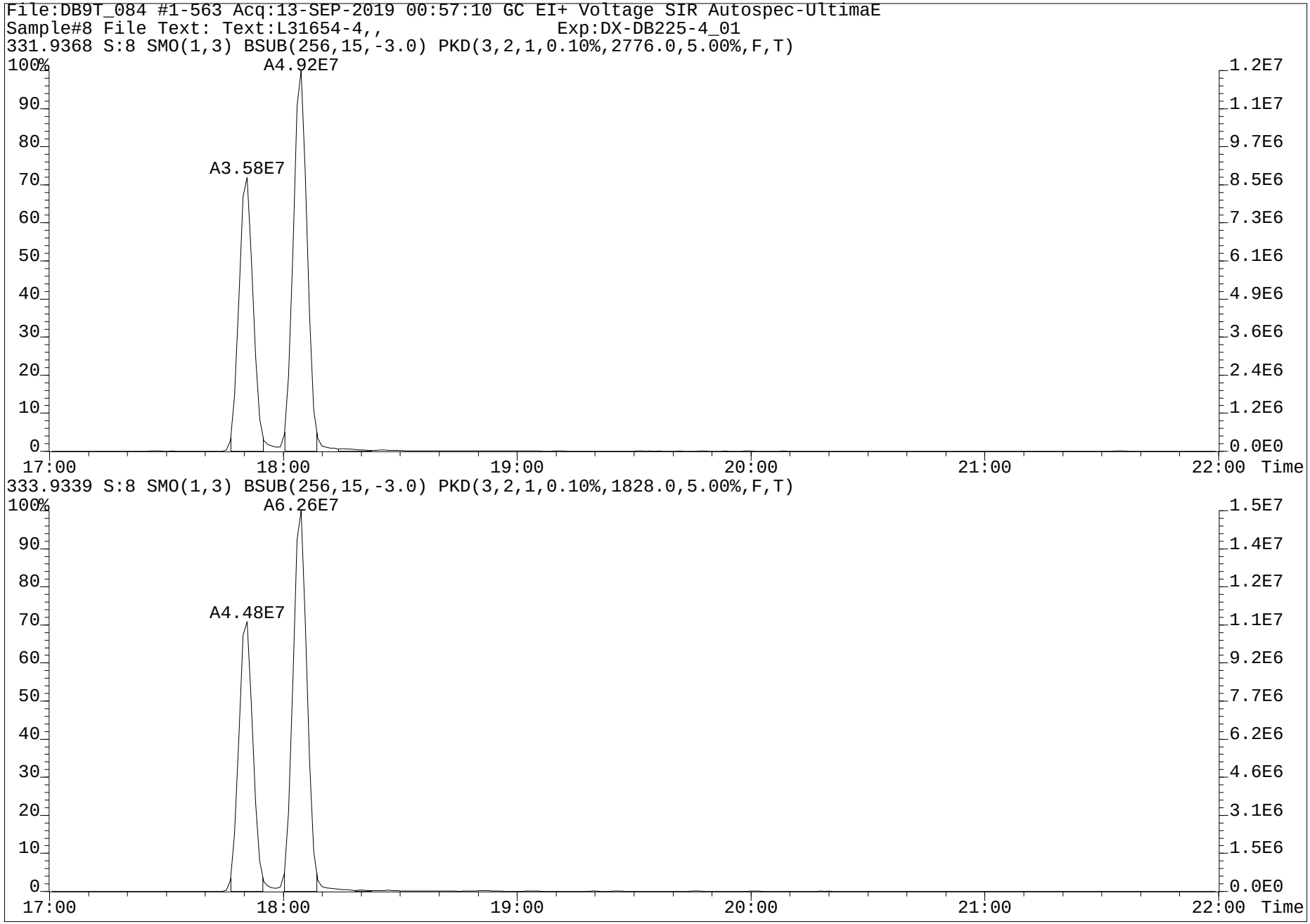
Run #13 Filename DB9T_084 S: 8 I: 1 Acquired: 13-SEP-19 00:57:10 Processed: 17-SEP-19 09:55:57
Run: db9t_084-a Analyte: db-hxd-s2 Cal: db9t_055-5a Results: db9t_084-a Version: V3.6 6-JAN-2000 17:51:42
Sample text: L31654-4,, Comments: 1,WG69303,2.0/20uL
sample size: 9.853300 conc units: pg/g total toxicity: 0.19 F1: 1.0000 F2: 1.0000

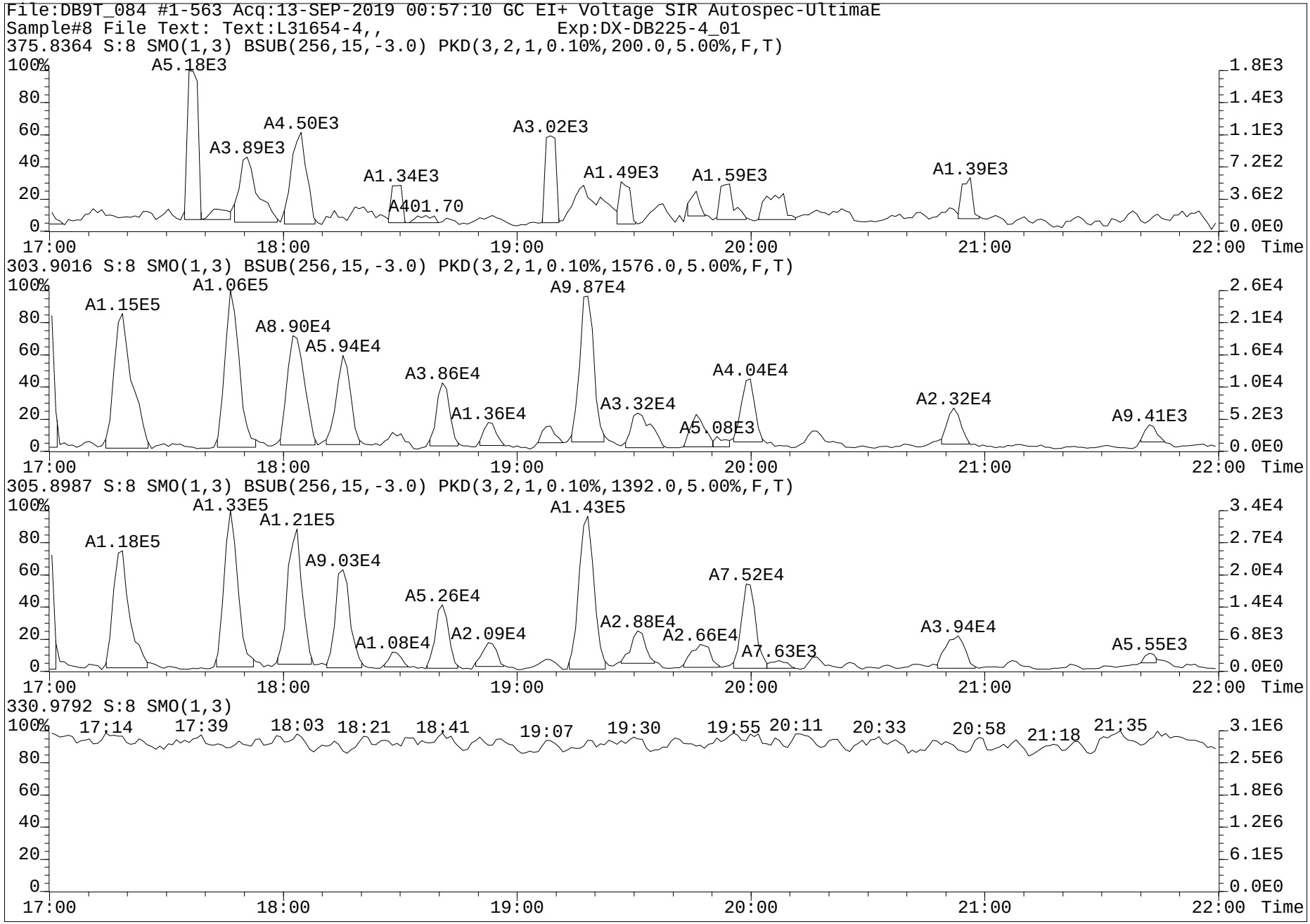
	Typ	Name	#Hom	Resp	RA		RT	Conc	Tox #1	DL	Rec	M?
1	Unk	2,3,7,8-TCDF	1	2.42e+05	0.69	y	19:18	0.519	0	0.0709	-	n
2	Unk	1,2,3,7,8,9-HxCDD	1	2.98e+05	1.38	y	33:18	1.351	0	0.0579	-	n
3	IS/RT	13C-2,3,7,8-TCDF	1	1.22e+08	0.77	y	19:17	156.432	-	0.0260	77.1	n
4	IS/RT	13C-1,2,3,4,7,8-HxCDD	1	5.40e+07	1.26	y	31:04	154.622	-	0.0912	76.2	n
5	IS/RT	13C-1,2,3,6,7,8-HxCDD	1	5.68e+07	1.20	y	31:27	155.752	-	0.0872	76.7	n
6	RS	13C-1,2,3,4-TCDD	1	1.12e+08	0.79	y	18:04	9.858	-	-	-	n
7	RS	13C-1,2,3,7,8,9-HxCDD	1	6.90e+07	1.22	y	33:16	12.195	-	-	-	n
8	Tot	Hexa DPE	0	*			NotFnd	*	-	-	-	n
9	Tot	Tetra Lock	-	-			-	-	-	-	-	n
10	Tot	Hexa Lock	-	-			-	-	-	-	-	n

PV by RA 20SEP2019
SV HH 22Sept. 2019


File:DB9T_084 #1-563 Acq:13-SEP-2019 00:57:10 GC EI+ Voltage SIR Autospec-UltimaE
Sample#8 File Text: Text:L31654-4,, Exp:DX-DB225-4_01
303.9016 S:8 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1576.0,5.00%,F,T)
A1.15E5
A1.06E5
A8.90E4
A5.94E4
A3.86E4
A1.36E4
A9.87E4
A3.32E4
A5.08E3
A4.04E4
A2.32E4
A9.41E3
305.8987 S:8 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1392.0,5.00%,F,T)
A1.18E5
A1.33E5
A1.21E5
A9.03E4
A1.08E4
A5.26E4
A2.09E4
A1.43E5
A2.88E4
A2.66E4
A7.52E4
A7.63E3
A3.94E4
A5.55E3
315.9419 S:8 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1880.0,5.00%,F,T)
A5.30E7
317.9389 S:8 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,112.0,5.00%,F,T)
A6.89E7
Time


File:DB9T_084 #1-795 Acq:13-SEP-2019 00:57:10 GC EI+ Voltage SIR Autospec-UltimaE
Sample#8 File Text: Text:L31654-4,, Exp:DX-DB225-4_01
389.8156 S:8 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,360.0,5.00%,F,T)
A4.28E5
A5.80E4
A3.08E4
A1.73E5
A3.09E4
391.8127 S:8 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,212.0,5.00%,F,T)
A3.52E5
A6.81E4
A3.52E4
A7.55E3
A3.49E4
A1.26E5
A1.88E4
401.8559 S:8 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1228.0,5.00%,F,T)
A3.02E7
A3.10E7
A3.80E7
403.8530 S:8 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,92.0,5.00%,F,T)
A2.39E7
A2.58E7
A3.10E7
392.9760 S:8 F:2 SMO(1,3)
30:12
30:31
31:04
31:19
31:39
31:58
32:27
32:39
32:46
32:58
33:36
34:12
34:21
34:50
100%
50
0
30:00
31:00
32:00
33:00
34:00
35:00
Time
5.0E4
2.5E4
0.0E0
3.6E4
1.8E4
3.9E6
2.0E6
3.2E6
1.6E6
6.9E5
3.5E5


File:DB9T_084 #1-563 Acq:13-SEP-2019 00:57:10 GC EI+ Voltage SIR Autospec-UltimaE
Sample#8 File Text: Text:L31654-4,, Exp:DX-DB225-4_01
331.9368 S:8 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,2776.0,5.00%,F,T)
A4.92E7
A3.58E7
100%
90
80
70
60
50
40
30
20
10
0
1.2E7
1.1E7
9.7E6
8.5E6
7.3E6
6.1E6
4.9E6
3.6E6
2.4E6
1.2E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time
333.9339 S:8 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1828.0,5.00%,F,T)
A6.26E7
A4.48E7
100%
90
80
70
60
50
40
30
20
10
0
1.5E7
1.4E7
1.2E7
1.1E7
9.2E6
7.7E6
6.2E6
4.6E6
3.1E6
1.5E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time


File:DB9T_084 #1-563 Acq:13-SEP-2019 00:57:10 GC EI+ Voltage SIR Autospec-UltimaE
Sample#8 File Text: Text:L31654-4,, Exp:DX-DB225-4_01
375.8364 S:8 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,200.0,5.00%,F,T)
A5.18E3
A4.50E3
A3.89E3
A3.02E3
A1.34E3
A401.70
A1.49E3
A1.59E3
A1.39E3
303.9016 S:8 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1576.0,5.00%,F,T)
A1.15E5
A1.06E5
A8.90E4
A5.94E4
A3.86E4
A1.36E4
A9.87E4
A3.32E4
A5.08E3
A4.04E4
A2.32E4
A9.41E3
305.8987 S:8 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1392.0,5.00%,F,T)
A1.18E5
A1.33E5
A1.21E5
A9.03E4
A1.08E4
A5.26E4
A2.09E4
A1.43E5
A2.88E4
A2.66E4
A7.52E4
A7.63E3
A3.94E4
A5.55E3
330.9792 S:8 SMO(1,3)
17:14
17:39
18:03
18:21
18:41
19:07
19:30
19:55
20:11
20:33
20:58
21:18
21:35
100%
80
60
40
20
0
17:00
18:00
19:00
20:00
21:00
22:00
Time
1.8E3
1.4E3
1.1E3
7.2E2
3.6E2
0.0E0
2.6E4
2.1E4
1.6E4
1.0E4
5.2E3
3.4E4
2.7E4
2.0E4
1.4E4
6.8E3
3.1E6
2.5E6
1.8E6
1.2E6
6.1E5

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S10, Date: 12-Sep-2019, Time: 17:20:16, ID: L31654-5,I,, Description: 1,WG69303,1.0/20uL

	Name	Sample Size	Resp	Ratio	fails?	RT	pg	DL	%Rec	Noise 1	Noise 2
1	2,3,7,8-TCDF	9.873	3.55e3	0.75	NO	25.24	0.252	0.0423		8.95e2	1.77e3
2	1,2,3,7,8-PeCDF	9.873	1.51e3	1.25	YES	33.55	0.118	0.0686		9.97e2	2.06e3
3	2,3,4,7,8-PeCDF	9.873	2.15e3	2.15	YES	35.32	0.158	0.0526		9.97e2	2.06e3
4	1,2,3,4,7,8-HxCDF	9.873	9.44e3	1.40	NO	40.75	0.819	0.0241		6.60e2	9.42e2
5	1,2,3,6,7,8-HxCDF	9.873	4.75e3	1.28	NO	40.94	0.386	0.0246		6.60e2	9.42e2
6	2,3,4,6,7,8-HxCDF	9.873	2.19e3	2.10	YES	41.90	0.176	0.0239		6.60e2	9.42e2
7	1,2,3,7,8,9-HxCDF	9.873	1.15e3	1.06	NO	42.93	0.105	0.0250		6.60e2	9.42e2
8	1,2,3,4,6,7,8-HpCDF	9.873	1.14e5	1.05	NO	45.39	9.183	0.0378		2.17e3	8.70e2
9	1,2,3,4,7,8,9-HpCDF	9.873	6.34e3	1.09	NO	47.18	0.568	0.0427		2.17e3	8.70e2
10	OCDF	9.873	4.19e5	0.91	NO	50.46	39.796	0.0210		9.56e2	3.74e2
11	2,3,7,8-TCDD	9.873	1.24e3	0.43	YES	26.49	0.093	0.0405		1.22e3	1.05e3
12	1,2,3,7,8-PeCDD	9.873	2.11e3	0.62	NO	36.15	0.135	0.0315		1.25e3	1.16e3
13	1,2,3,4,7,8-HxCDD	9.873	2.30e3	1.31	NO	42.17	0.268	0.0367		7.37e2	1.24e3
14	1,2,3,6,7,8-HxCDD	9.873	1.84e4	1.20	NO	42.29	1.427	0.0244		7.37e2	1.24e3
15	1,2,3,7,8,9-HxCDD	9.873	7.44e3	1.16	NO	42.73	0.693	0.0294		7.37e2	1.24e3
16	1,2,3,4,6,7,8-HpCDD	9.873	4.41e5	0.99	NO	46.77	48.149	0.0660		2.05e3	1.96e3
17	OCDD	9.873	3.87e6	0.88	NO	50.37	426.691	0.0519		1.59e3	1.24e3
18	13C-2,3,7,8-TCDF	9.873	3.07e6	0.76	NO	25.22	121.137	0.0984	59.8	6.66e3	4.58e3
19	13C-1,2,3,7,8-PeCDF	9.873	2.78e6	1.57	NO	33.52	134.692	0.1126	66.5	5.35e3	5.11e3
20	13C-2,3,4,7,8-PeCDF	9.873	2.90e6	1.60	NO	35.30	136.404	0.1092	67.3	5.35e3	5.11e3
21	13C-1,2,3,4,7,8-HxCDF	9.873	2.11e6	0.52	NO	40.73	128.361	0.1328	63.4	8.52e3	4.08e3
22	13C-1,2,3,6,7,8-HxCDF	9.873	2.32e6	0.54	NO	40.92	128.323	0.1208	63.3	8.52e3	4.08e3
23	13C-2,3,4,6,7,8-HxCDF	9.873	2.21e6	0.53	NO	41.87	135.807	0.1341	67.0	8.52e3	4.08e3
24	13C-1,2,3,7,8,9-HxCDF	9.873	2.09e6	0.52	NO	42.90	144.452	0.1508	71.3	8.52e3	4.08e3
25	13C-1,2,3,4,6,7,8-HpCDF	9.873	2.02e6	0.45	NO	45.37	148.909	0.1450	73.5	7.33e3	3.99e3
26	13C-1,2,3,4,7,8,9-HpCDF	9.873	1.80e6	0.45	NO	47.16	163.928	0.1787	80.9	7.33e3	3.99e3
27	13C-2,3,7,8-TCDD	9.873	2.46e6	0.79	NO	26.44	152.584	0.2884	75.3	1.24e4	8.52e3
28	13C-1,2,3,7,8-PeCDD	9.873	3.20e6	0.63	NO	36.13	250.041	0.0956	123.4	2.17e3	3.35e3
29	13C-1,2,3,4,7,8-HxCDD	9.873	1.69e6	1.25	NO	42.15	128.825	0.1526	63.6	5.93e3	5.61e3
30	13C-1,2,3,6,7,8-HxCDD	9.873	2.78e6	1.19	NO	42.27	191.330	0.1380	94.5	5.93e3	5.61e3
31	13C-1,2,3,4,6,7,8-HpCDD	9.873	2.38e6	1.04	NO	46.76	162.110	0.0854	80.0	3.23e3	4.00e3
32	13C-OCDD	9.873	3.74e6	0.89	NO	50.36	346.447	0.1203	85.5	1.01e3	6.48e3
33	13C-1,2,3,4-TCDD	9.873	3.37e6	0.82	NO	26.09	8.488	0.0117	4.2	1.24e4	8.52e3
34	13C-1,2,3,7,8,9-HxCDD	9.873	2.75e6	1.26	NO	42.71	9.581	0.0070	4.7	5.93e3	5.61e3
35	37Cl-2,3,7,8-TCDD	9.873	2.79e5			26.47	15.710	0.0173	77.6		1.38e3
36	Total Tetra-Furans	9.873					2.480	0.0423			1.77e3
37	Total Tetra-Dioxins	9.873					0.919	0.0405			1.05e3
38	Total Penta-Furans	9.873					4.387	0.0610			2.06e3
39	Total Penta-Dioxins	9.873					0.860	0.0315			1.16e3 T
40	Total Hexa-Furans	9.873					12.676	0.0241			9.42e2
41	Total Hexa-Dioxins	9.873					9.637	0.0278			1.24e3
42	Total Hepta-Furans	9.873					39.792	0.0402			8.70e2
43	Total Hepta-Dioxins	9.873					108.426	0.0660			1.96e3
44	Hexa DPE	1.000	1.13e2			26.37					5.73e0
45	Hepta DPE	1.000	1.36e2			36.65					1.44e0
46	Octa DPE	1.000	2.23e2			42.22					1.86e2
47	Nona DPE	1.000	1.74e2			48.26					4.83e2
48	Deca DPE	1.000	3.35e1			50.37					1.50e0
49	Tetra Lock	1.000	1.07e4			21.20					1.39e5
50	Penta Lock	1.000	5.80e3			32.64					8.12e4
51	Hexa Lock	1.000	1.46e5			39.04					2.51e5
52	Hepta Lock	1.000	2.27e3			44.76					1.60e5
53	Octa Lock	1.000	1.03e4			48.85					1.21e5
54	13C-Tetra-Furans	9.873					121.137	0.0984			4.58e3
55	13C-Tetra-Dioxins	9.873					161.072	0.3001			8.52e3

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

SVHH 22 Sept. 2019

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S10, Date: 12-Sep-2019, Time: 17:20:16, ID: L31654-5,I,, Description: 1,WG69303,1.0/20uL

Tetrafurans

	RT	Ratio	Fails?	pg
1	24.17	0.830	NO	0.099
2	23.85	0.692	NO	0.184
3	23.70	0.975	YES	0.035
4	23.42	0.670	NO	0.408
5	22.98	0.646	YES	0.359
6	22.57	0.802	NO	0.210
7	22.25	0.803	NO	0.359
8	21.95	0.695	NO	0.102
9	21.40	0.571	YES	0.046
10	26.26	1.116	YES	0.094
11	25.94	0.657	NO	0.103
12	25.24	0.754	NO	0.252
13	24.94	1.196	YES	0.049
14	24.55	1.013	YES	0.113
15	24.25	0.242	YES	0.068

Tetradioxins

	RT	Ratio	Fails?	pg
1	22.93	0.700	NO	0.144
2	26.49	0.425	YES	0.093
3	26.31	0.725	NO	0.274
4	26.19	0.137	YES	0.017
5	25.22	3.046	YES	0.145
6	24.59	1.608	YES	0.109
7	23.75	0.748	NO	0.061
8	23.35	0.729	NO	0.077

Pentafurans

	RT	Ratio	Fails?	pg
1	34.27	1.500	NO	0.131
2	33.97	1.511	NO	0.037
3	33.55	1.248	YES	0.118
4	33.35	2.328	YES	0.042
5	32.87	1.377	NO	0.284
6	31.90	0.880	YES	0.065
7	31.50	1.579	NO	1.134
8	31.16	1.373	NO	0.012
9	28.91	1.422	NO	2.162
10	35.62	1.276	YES	0.228
11	35.32	2.153	YES	0.158
12	35.12	0.376	YES	0.017

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S10, Date: 12-Sep-2019, Time: 17:20:16, ID: L31654-5,I,, Description: 1,WG69303,1.0/20uL

Pentadioxins

	RT	Ratio	Fails?	pg
1	33.17	0.554	NO	0.096
2	31.99	0.626	NO	0.228
3	35.70	0.887	YES	0.010
4	35.57	0.736	YES	0.028
5	35.05	1.009	YES	0.071
6	34.93	1.273	YES	0.032
7	34.45	0.381	YES	0.038
8	34.13	0.757	YES	0.090
9	33.83	0.547	NO	0.088
10	37.06	1.222	YES	0.021
11	36.50	0.424	YES	0.023
12	36.15	0.617	NO	0.135

Hexafurans

	RT	Ratio	Fails?	pg
1	39.28	1.366	NO	3.194
2	39.02	1.266	NO	1.078
3	41.90	2.098	YES	0.176
4	41.71	1.135	NO	0.219
5	40.94	1.276	NO	0.386
6	40.75	1.403	NO	0.819
7	40.68	1.075	NO	0.067
8	40.11	1.293	NO	6.366
9	39.82	1.492	YES	0.071
10	39.53	2.583	YES	0.017
11	43.07	1.079	NO	0.177
12	42.93	1.058	NO	0.105

Hexadioxins

	RT	Ratio	Fails?	pg
1	41.26	1.191	NO	2.923
2	40.88	1.502	YES	0.455
3	40.07	1.201	NO	3.554
4	42.73	1.161	NO	0.693
5	42.29	1.197	NO	1.427
6	42.17	1.308	NO	0.268
7	41.46	0.824	YES	0.316

Heptafurans

	RT	Ratio	Fails?	pg
1	45.90	1.044	NO	29.830
2	45.69	0.800	YES	0.211
3	45.39	1.048	NO	9.183
4	47.18	1.087	NO	0.568

Heptadioxins

	RT	Ratio	Fails?	pg
1	46.77	0.990	NO	48.149
2	45.84	1.043	NO	60.277

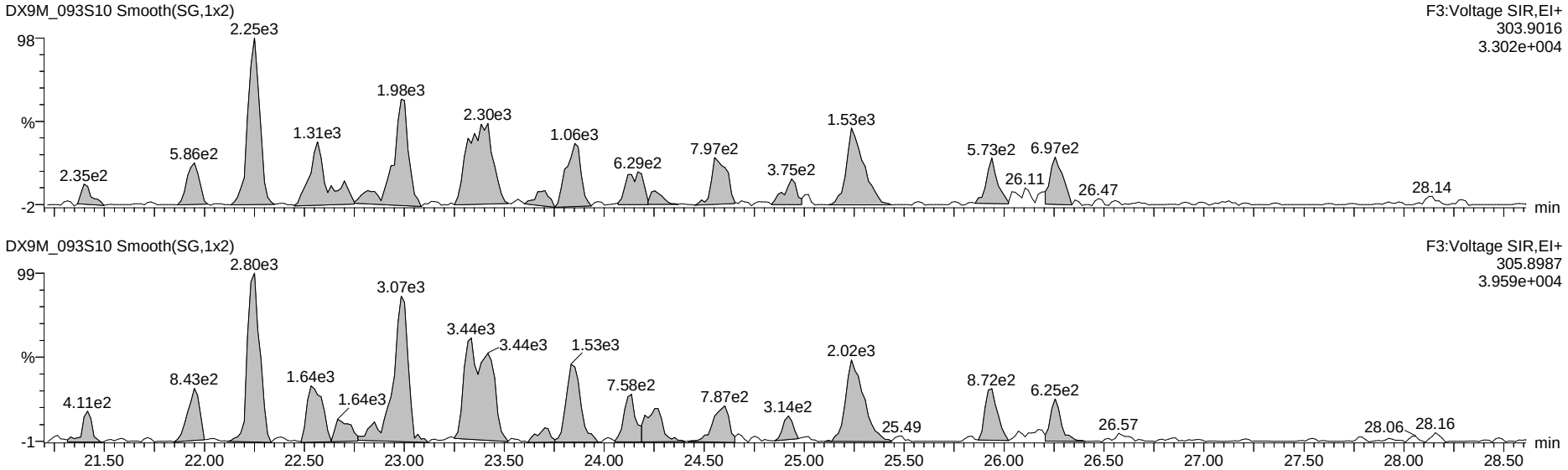
PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

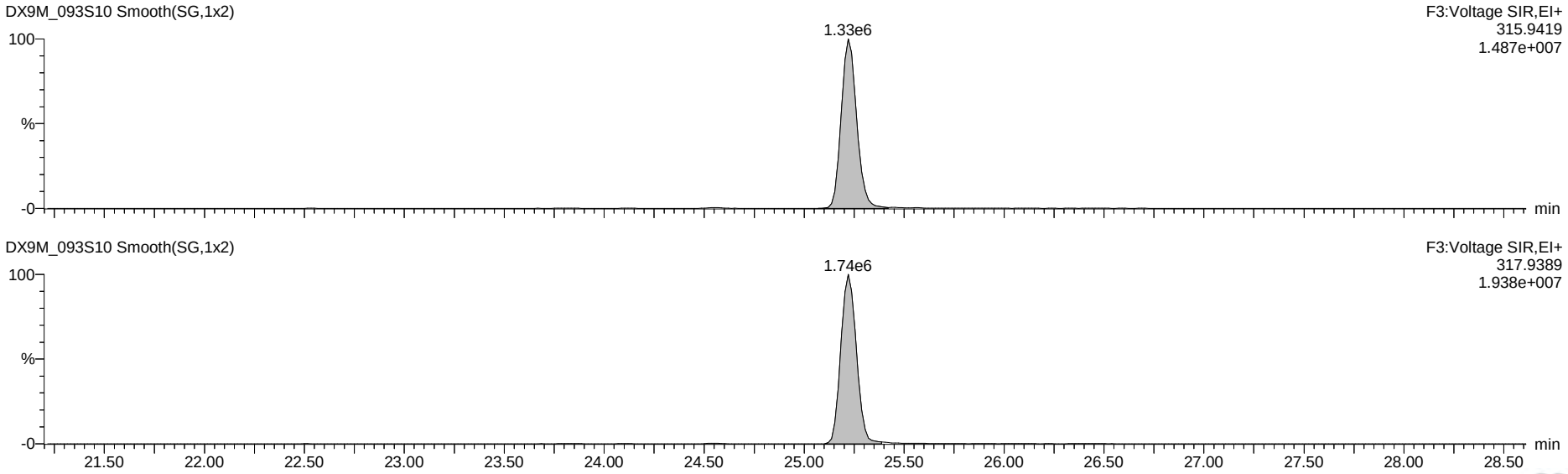
Method: G:\Masslynx\Inst_M\Exported_methods\DX_1613B_16.mdb 07 Sep 2017 16:45:23
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

Name: DX9M_093S10, Date: 12-Sep-2019, Time: 17:20:16, ID: L31654-5,I,, Description: 1,WG69303,1.0/20uL

Total Tetra-Furans



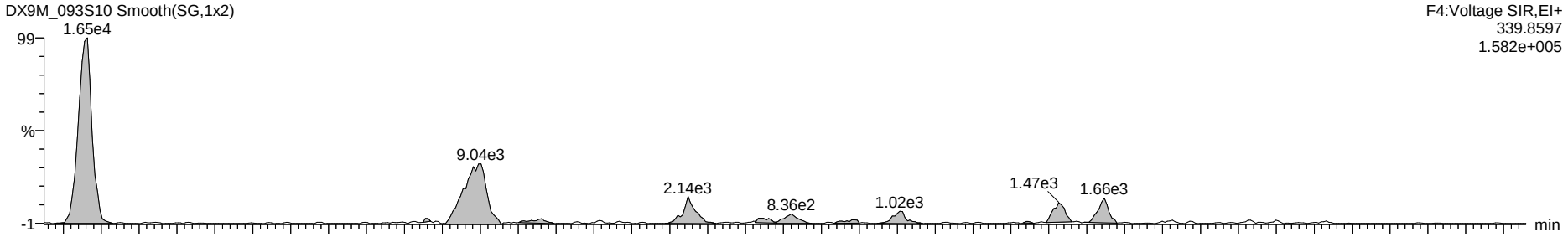
13C-Tetra-Furans

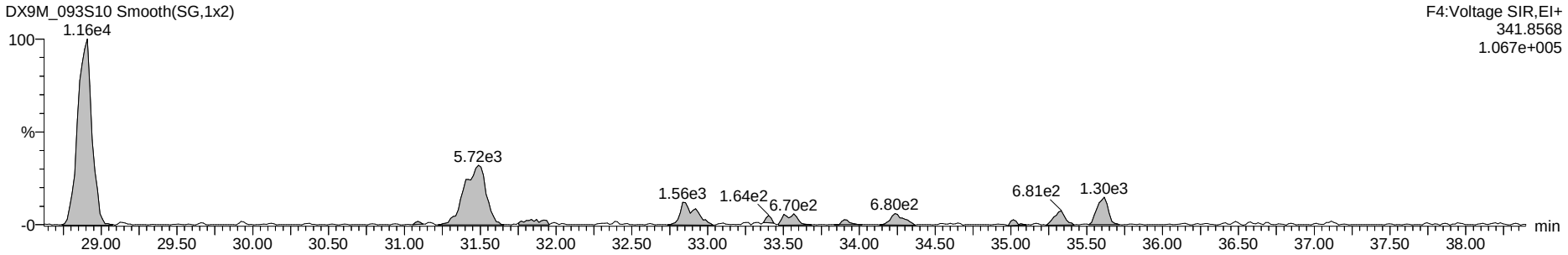


Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

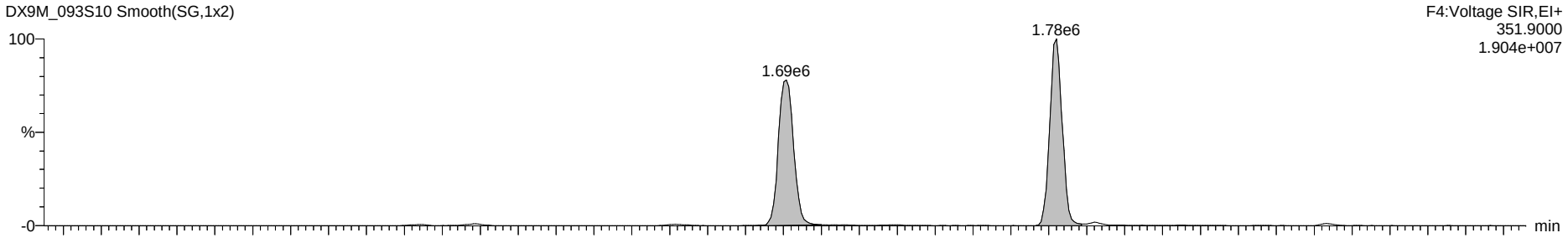
Name: DX9M_093S10, Date: 12-Sep-2019, Time: 17:20:16, ID: L31654-5,I,, Description: 1,WG69303,1.0/20uL

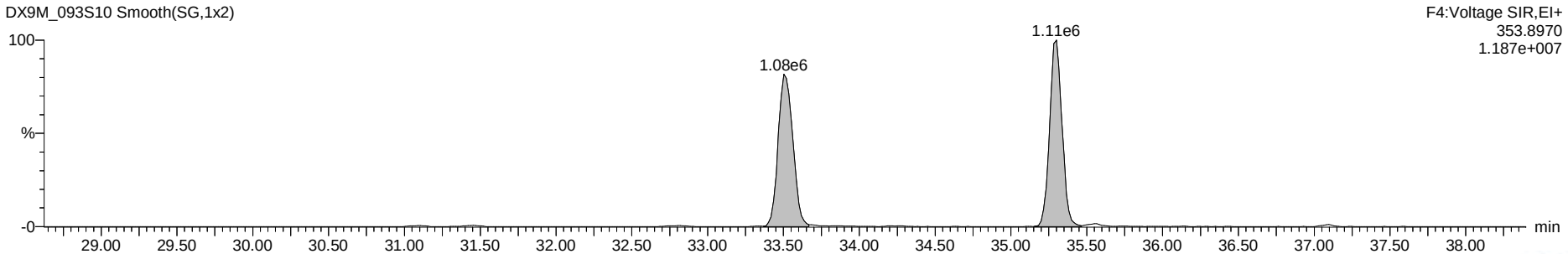
Total Penta-Furans





13C-Penta-Furans

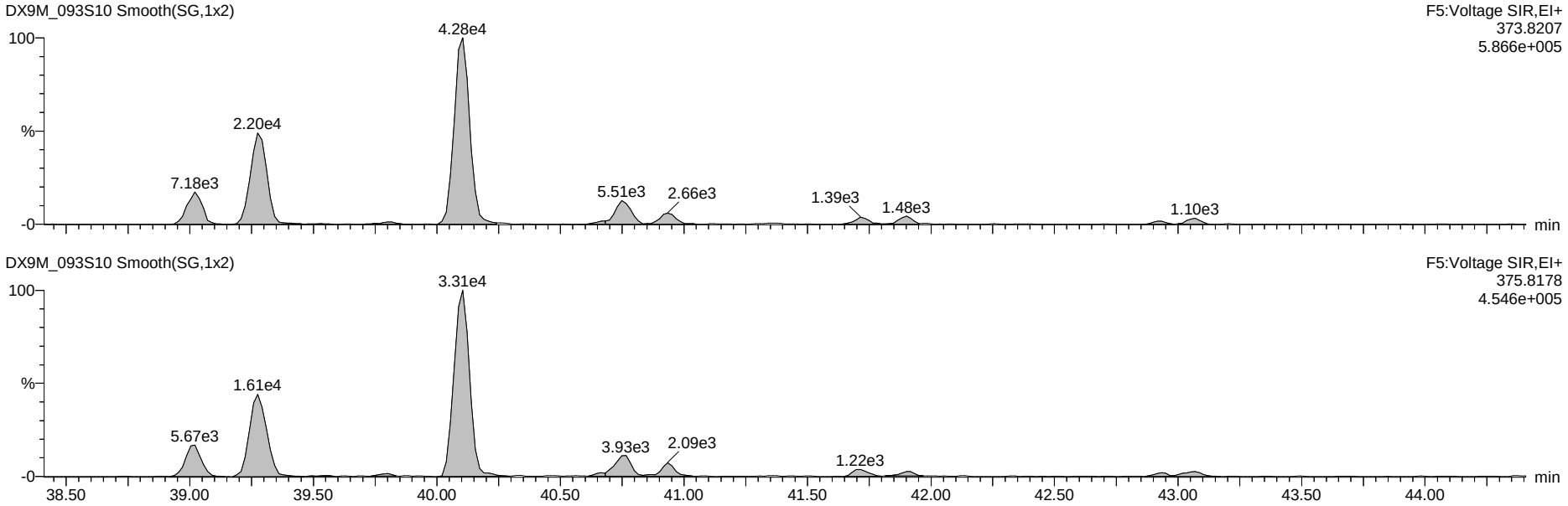




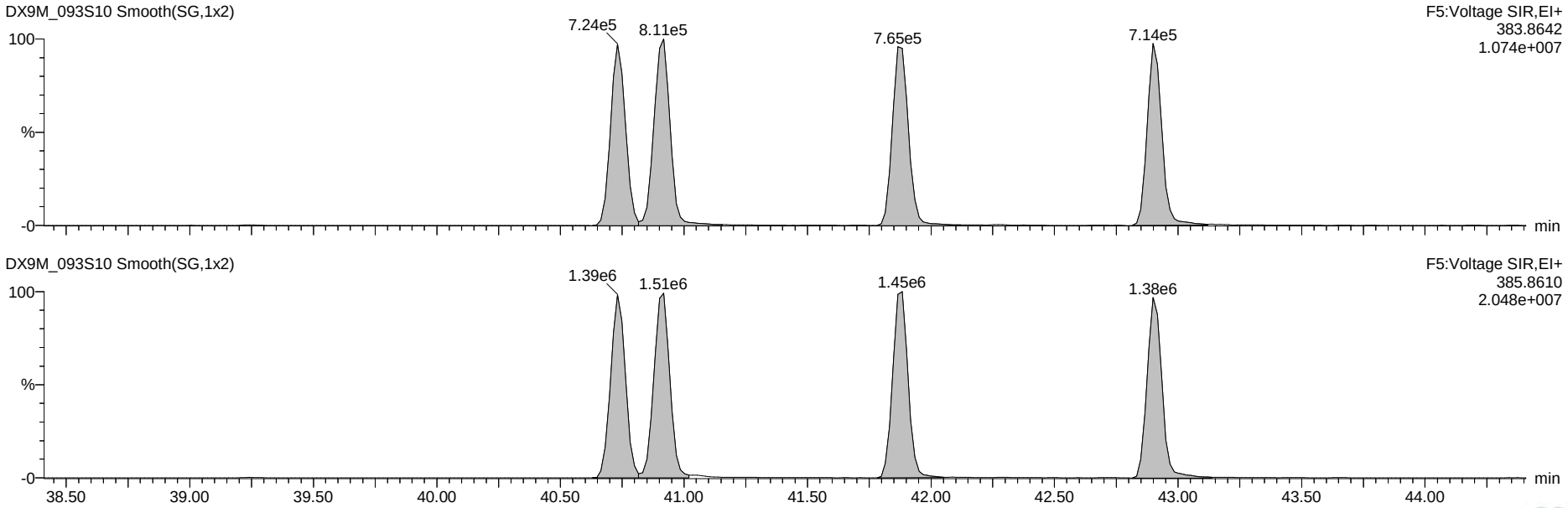
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S10, Date: 12-Sep-2019, Time: 17:20:16, ID: L31654-5,I,, Description: 1,WG69303,1.0/20uL

Total Hexa-Furans



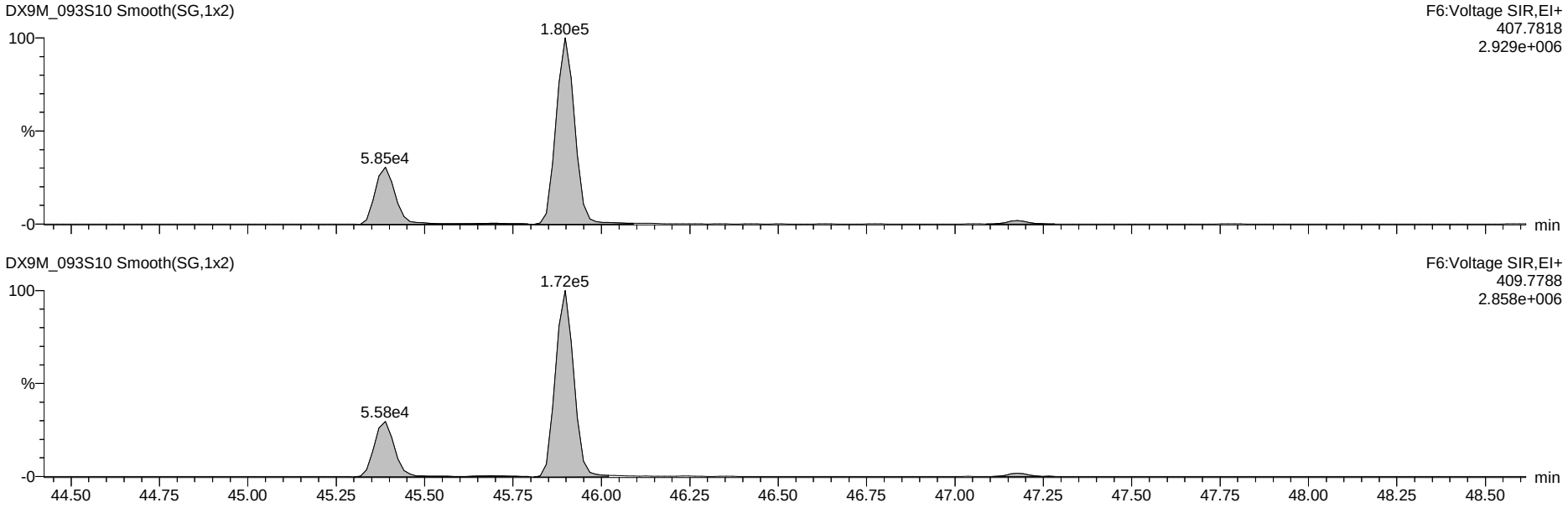
13C-Hexa-Furans



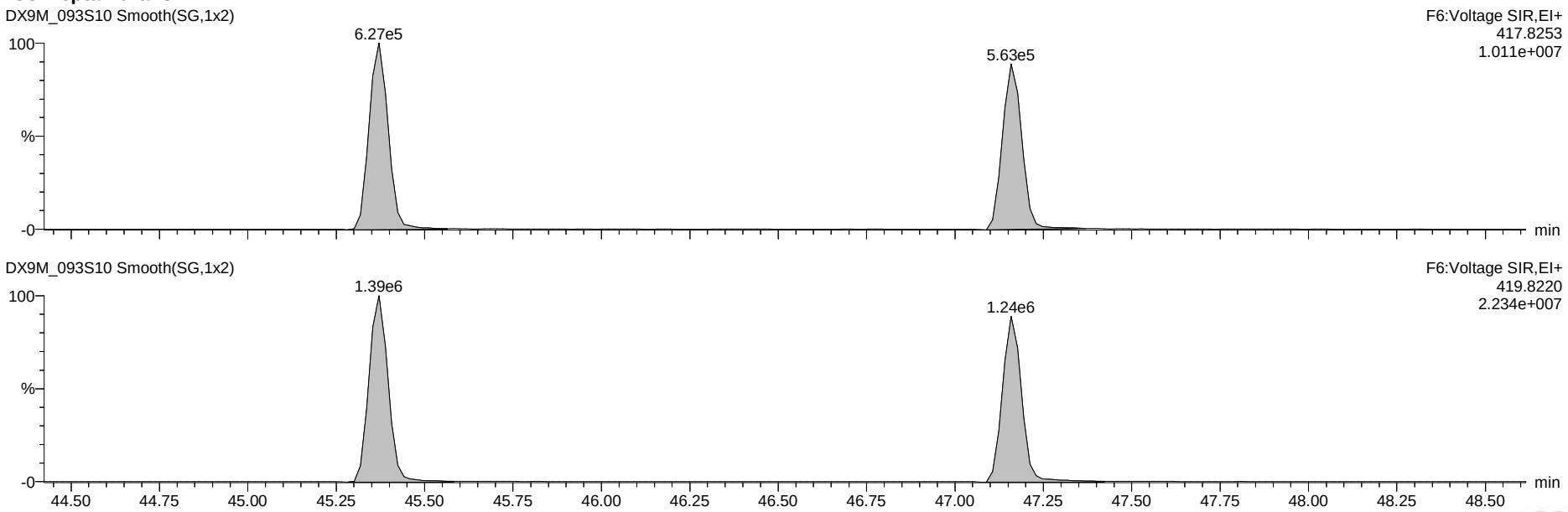
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S10, Date: 12-Sep-2019, Time: 17:20:16, ID: L31654-5,I,, Description: 1,WG69303,1.0/20uL

Total Hepta-Furans



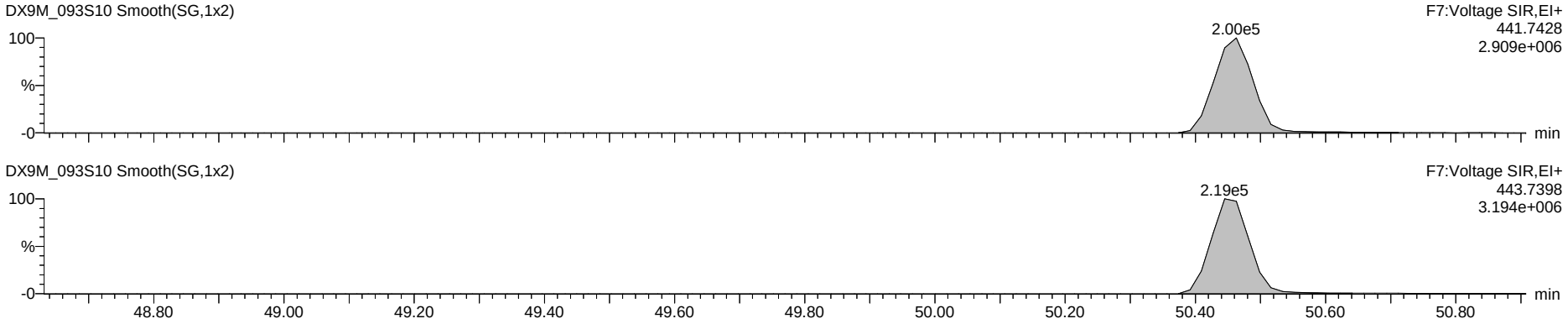
13C-Hepta-Furans



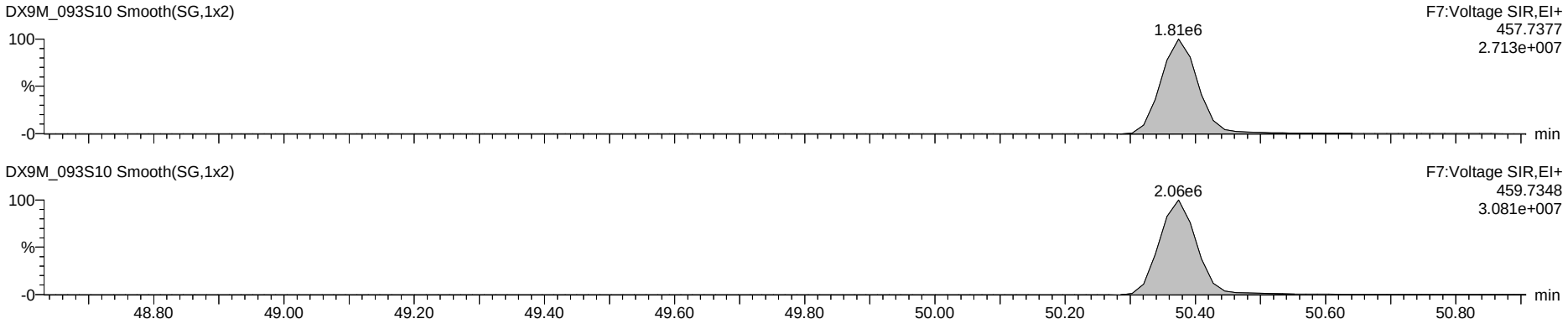
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S10, Date: 12-Sep-2019, Time: 17:20:16, ID: L31654-5,I,, Description: 1,WG69303,1.0/20uL

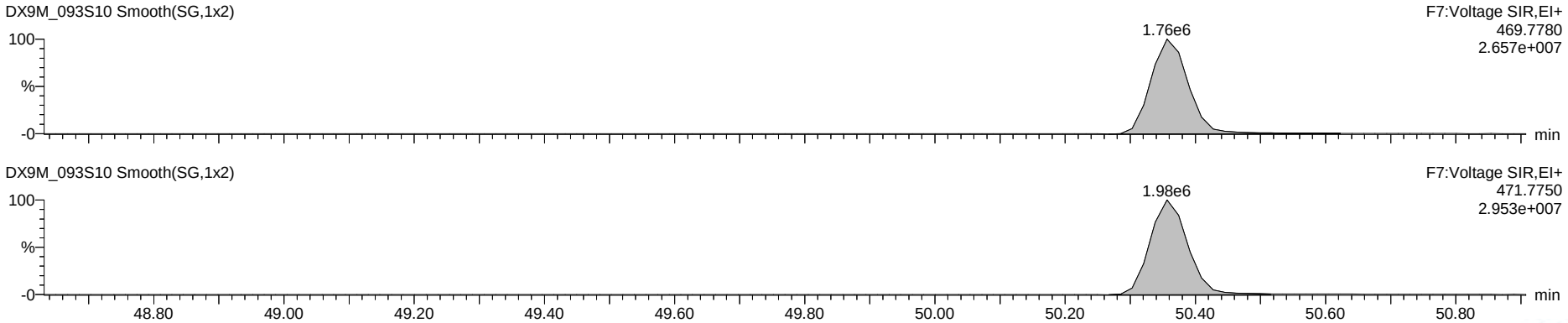
OCDF



OCDD



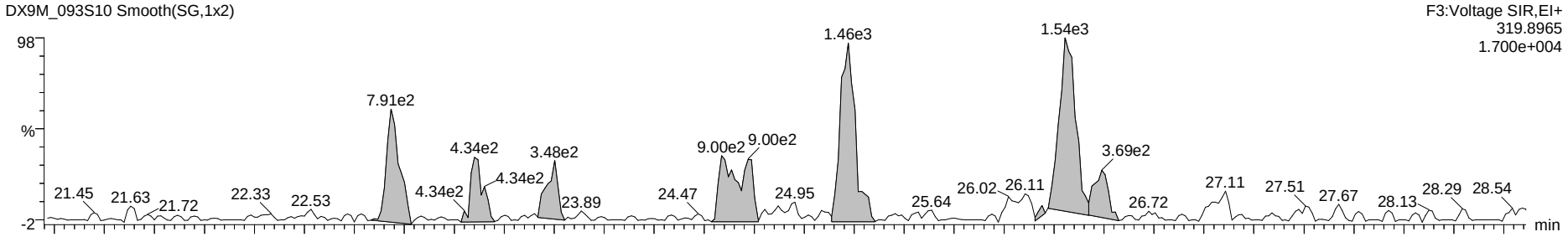
13C-OCDD

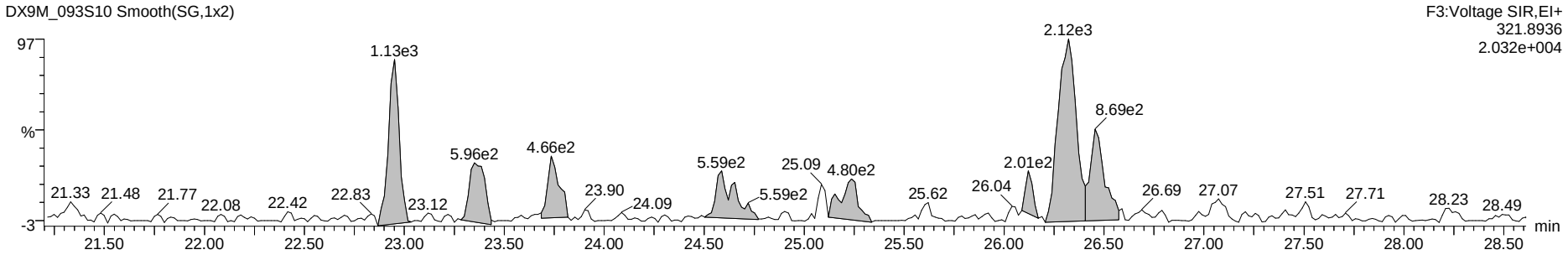


Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

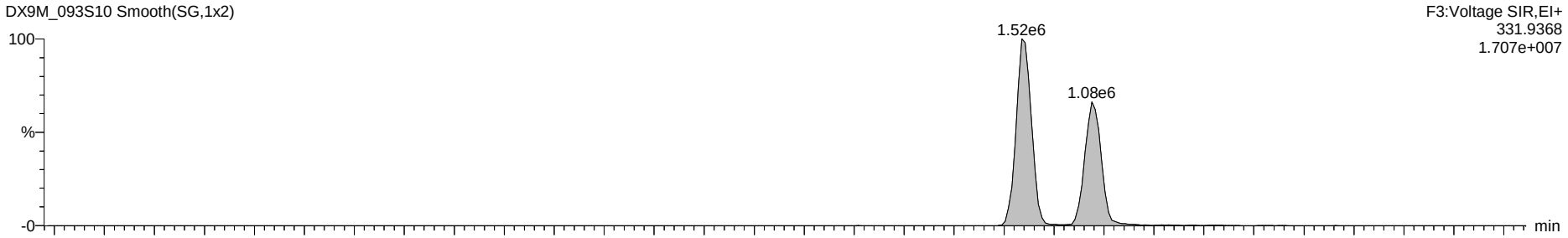
Name: DX9M_093S10, Date: 12-Sep-2019, Time: 17:20:16, ID: L31654-5,I,, Description: 1,WG69303,1.0/20uL

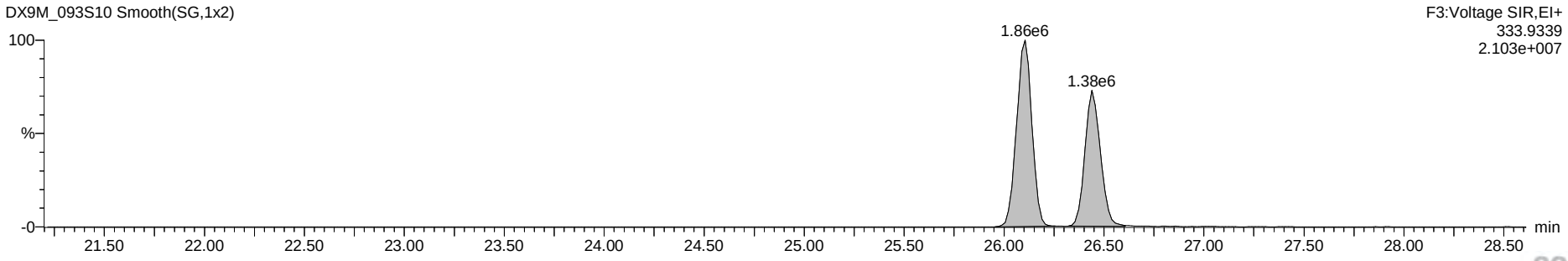
Total Tetra-Dioxins





13C-Tetra-Dioxins

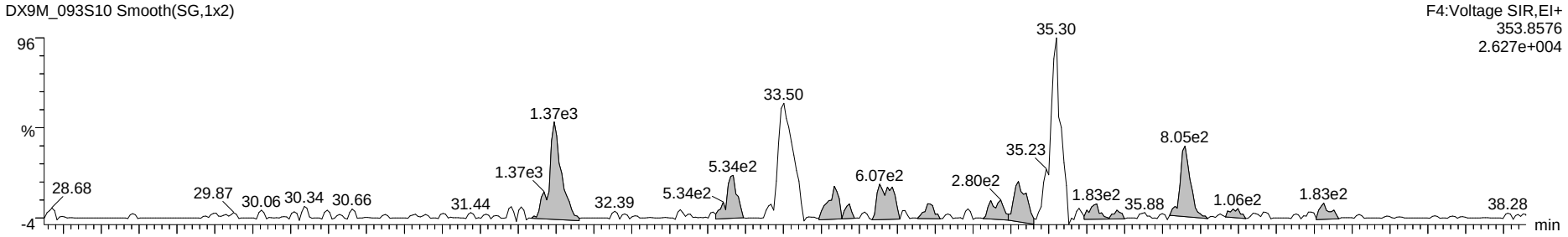


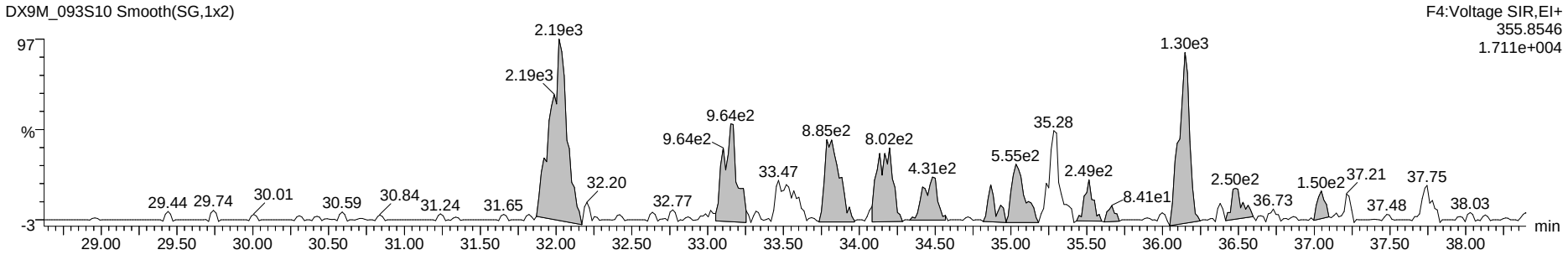


Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

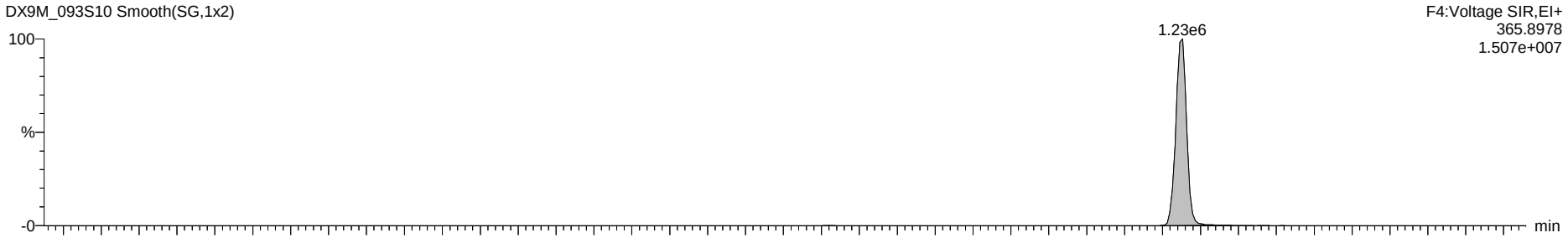
Name: DX9M_093S10, Date: 12-Sep-2019, Time: 17:20:16, ID: L31654-5,I,, Description: 1,WG69303,1.0/20uL

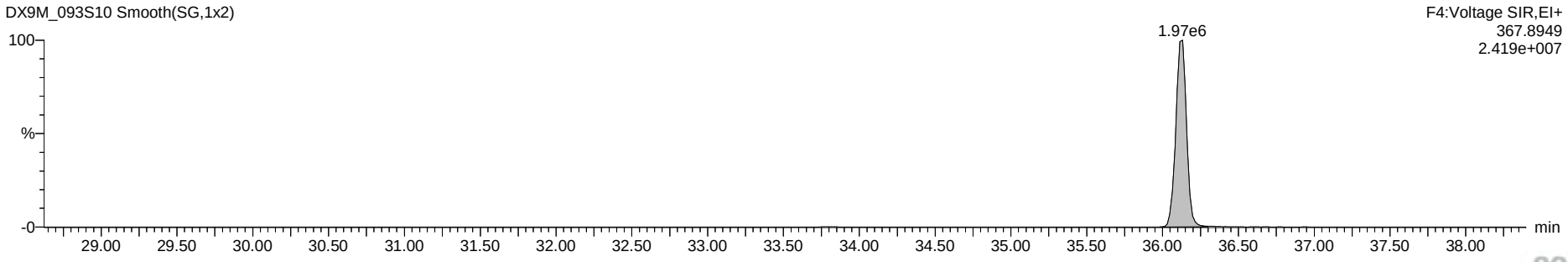
Total Penta-Dioxins





13C-Penta-Dioxins

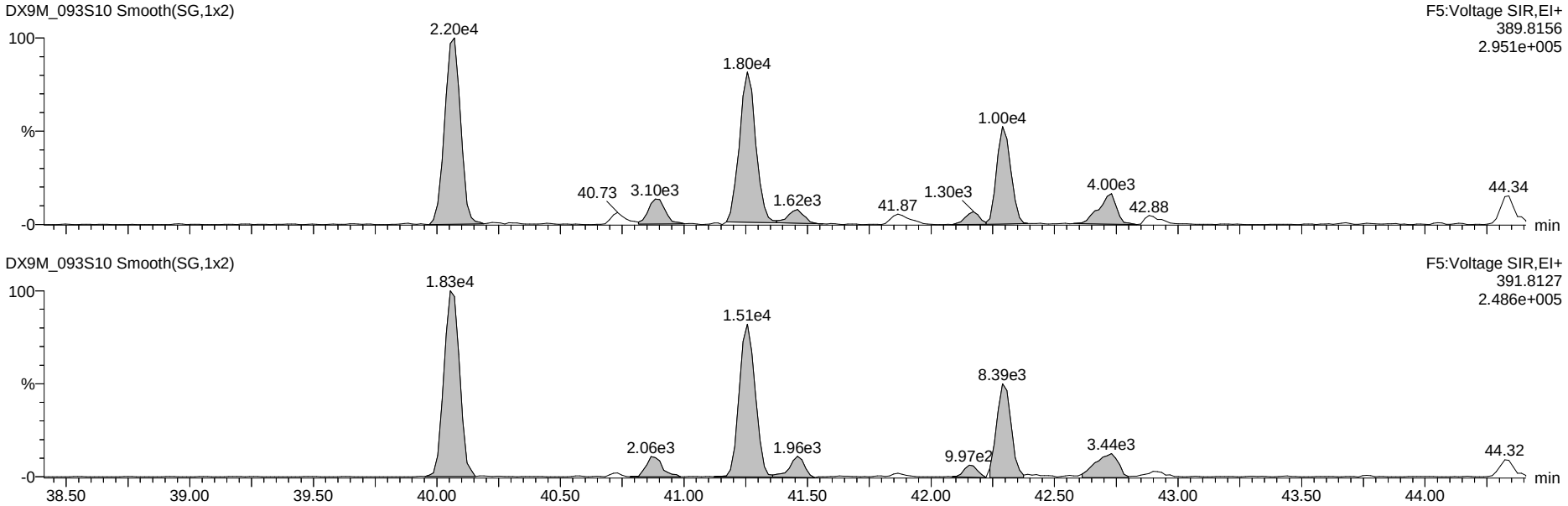




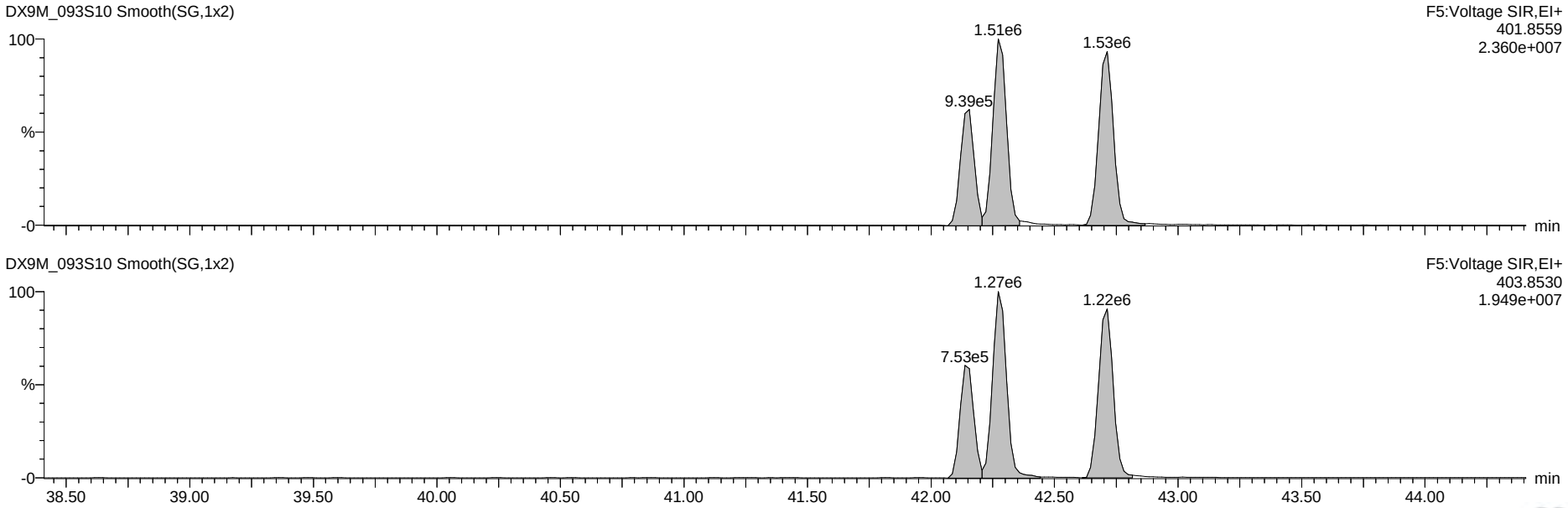
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S10, Date: 12-Sep-2019, Time: 17:20:16, ID: L31654-5,I,, Description: 1,WG69303,1.0/20uL

Total Hexa-Dioxins



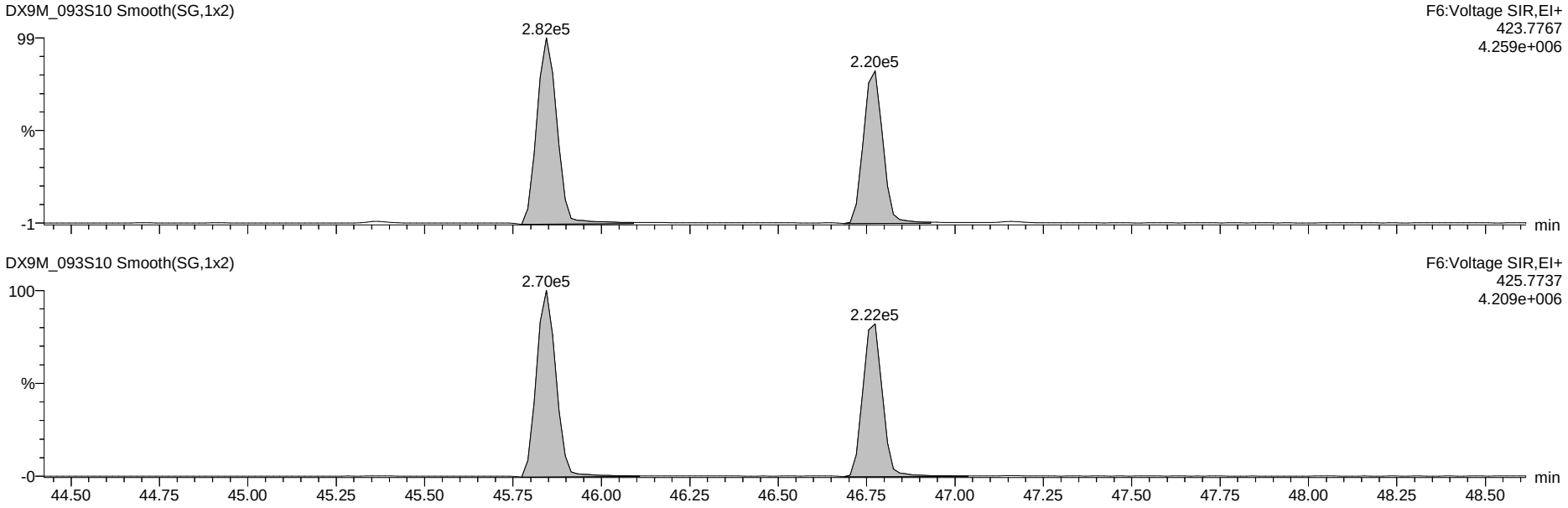
13C-Hexa-Dioxins



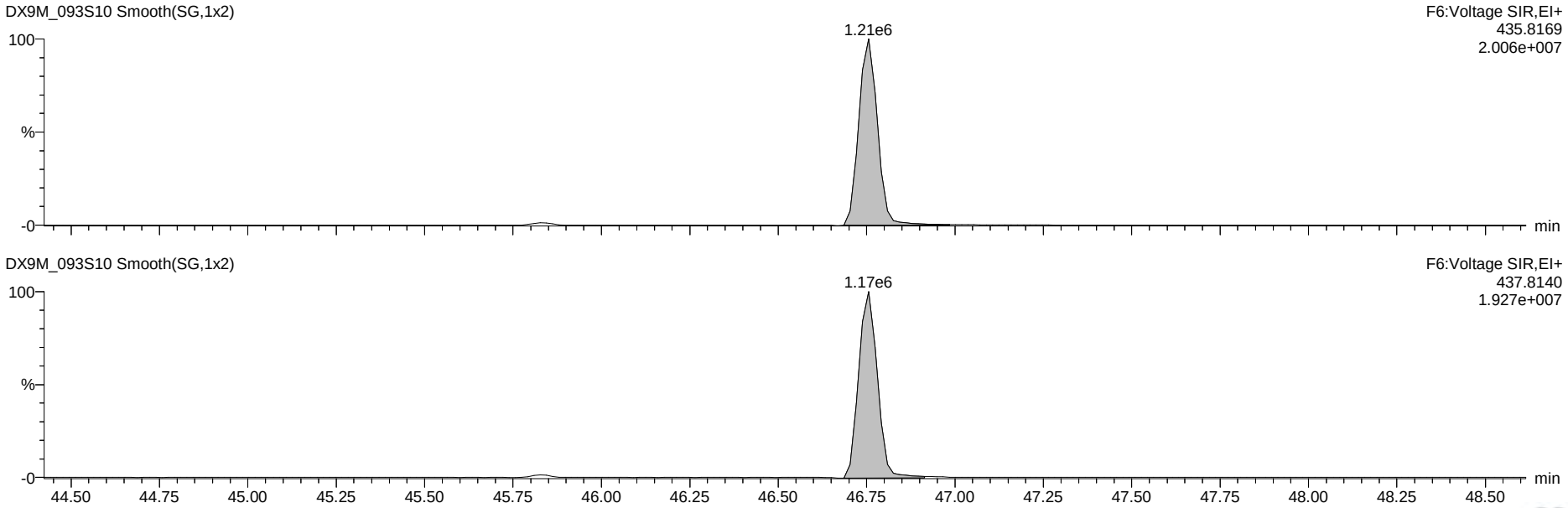
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S10, Date: 12-Sep-2019, Time: 17:20:16, ID: L31654-5,I,, Description: 1,WG69303,1.0/20uL

Total Hepta-Dioxins



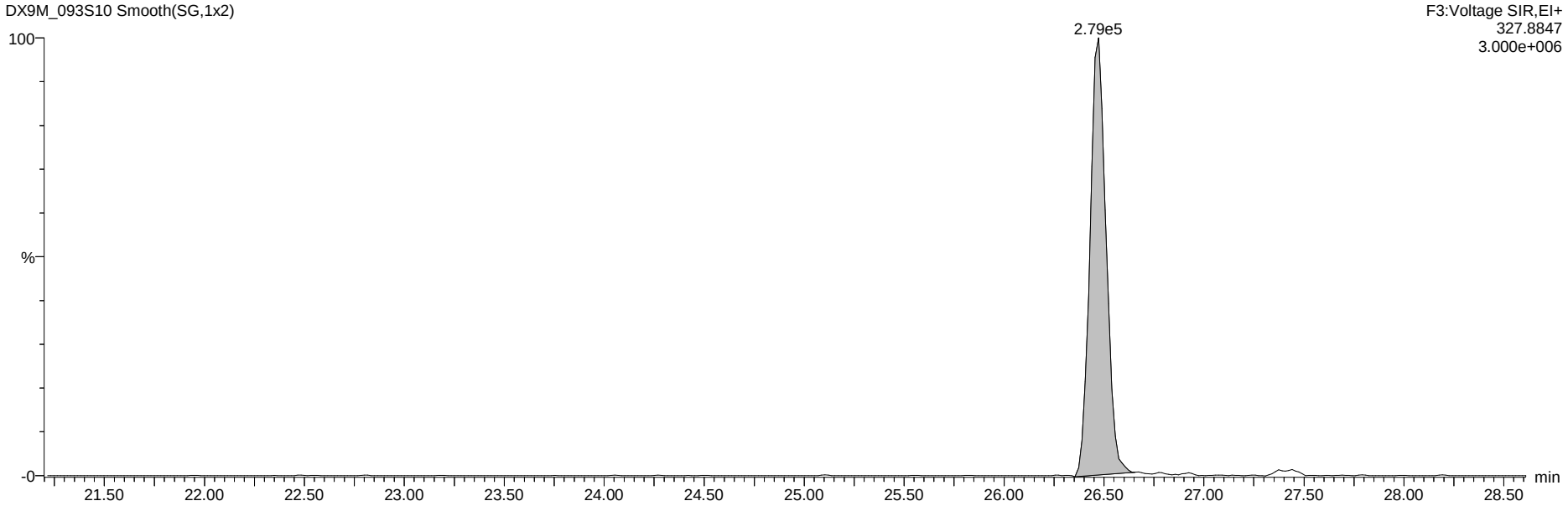
13C-Hepta-Dioxins



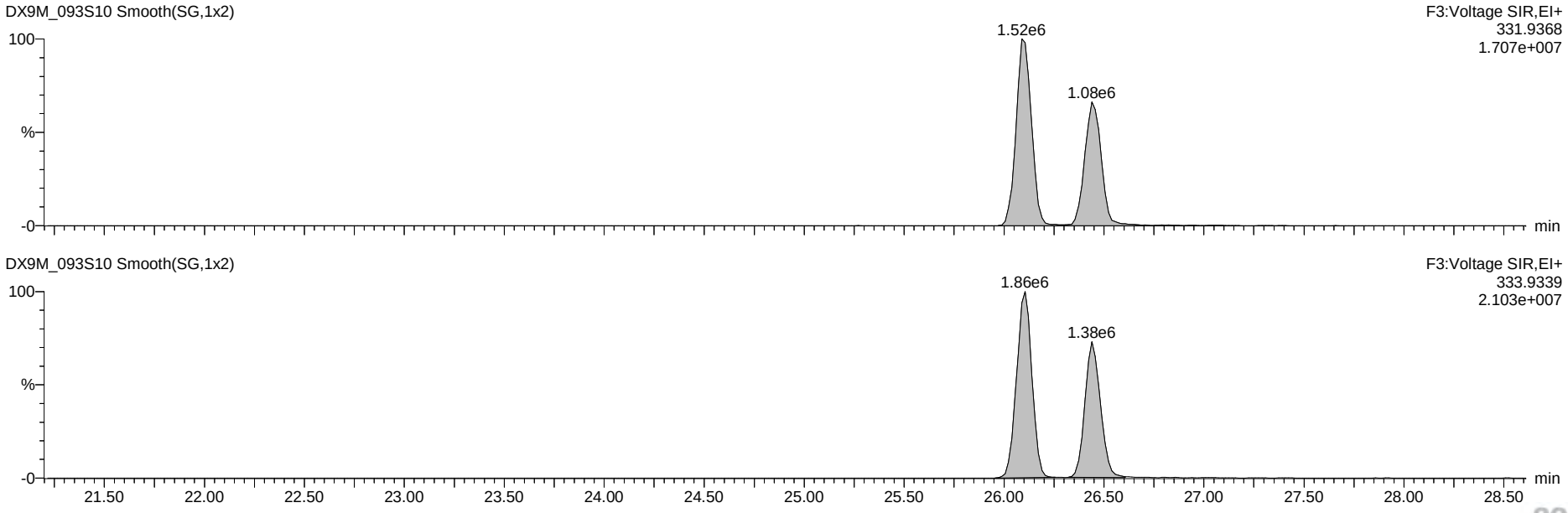
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S10, Date: 12-Sep-2019, Time: 17:20:16, ID: L31654-5,I,, Description: 1,WG69303,1.0/20uL

37Cl-2,3,7,8-TCDD



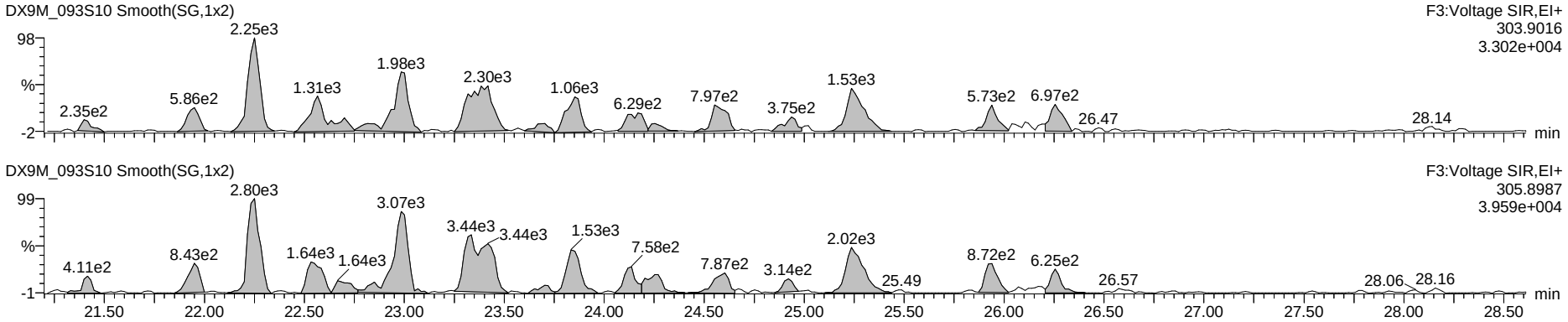
13C-Tetra-Dioxins



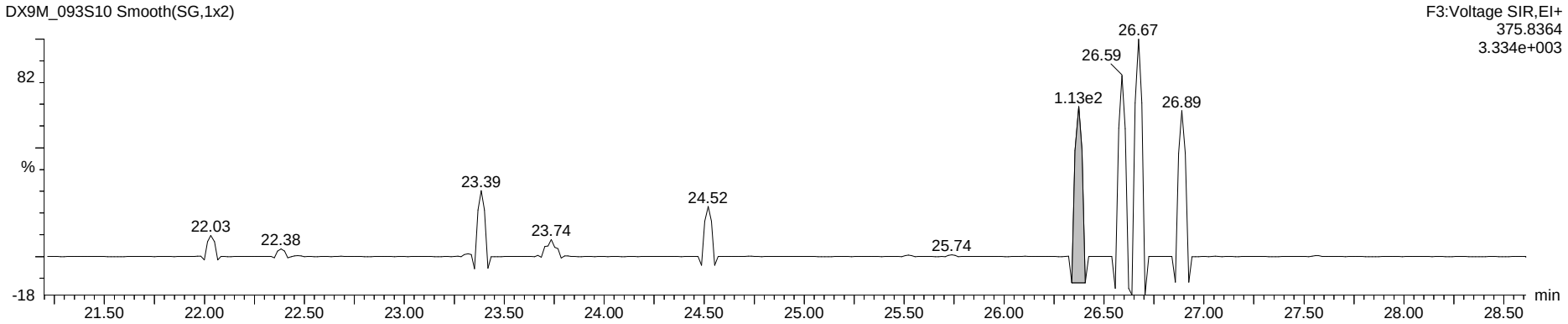
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S10, Date: 12-Sep-2019, Time: 17:20:16, ID: L31654-5,I,, Description: 1,WG69303,1.0/20uL

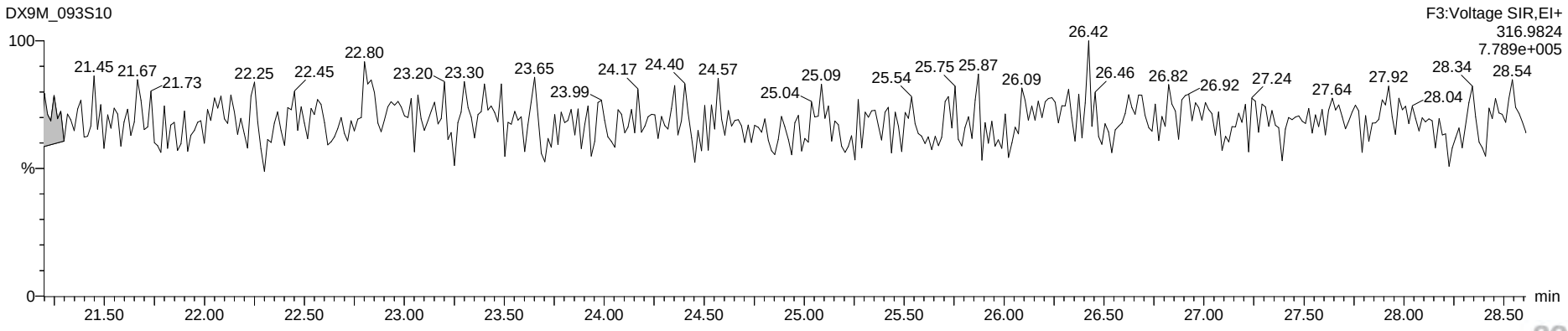
Total Tetra-Furans



Hexa DPE



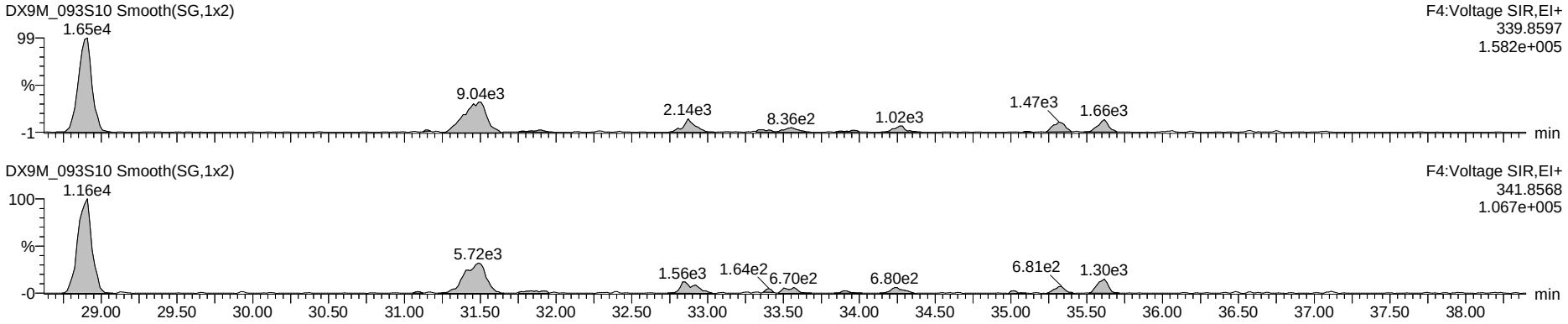
Tetra Lock



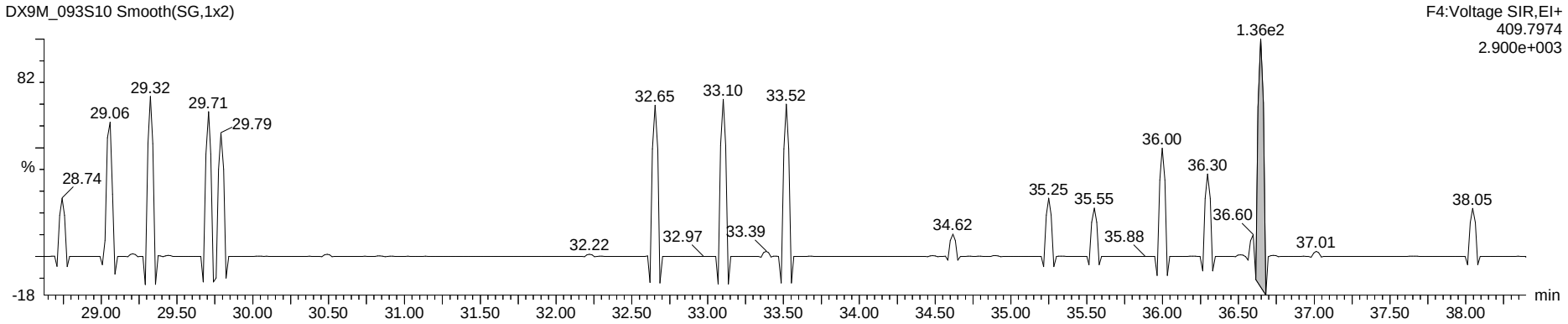
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S10, Date: 12-Sep-2019, Time: 17:20:16, ID: L31654-5,I,, Description: 1,WG69303,1.0/20uL

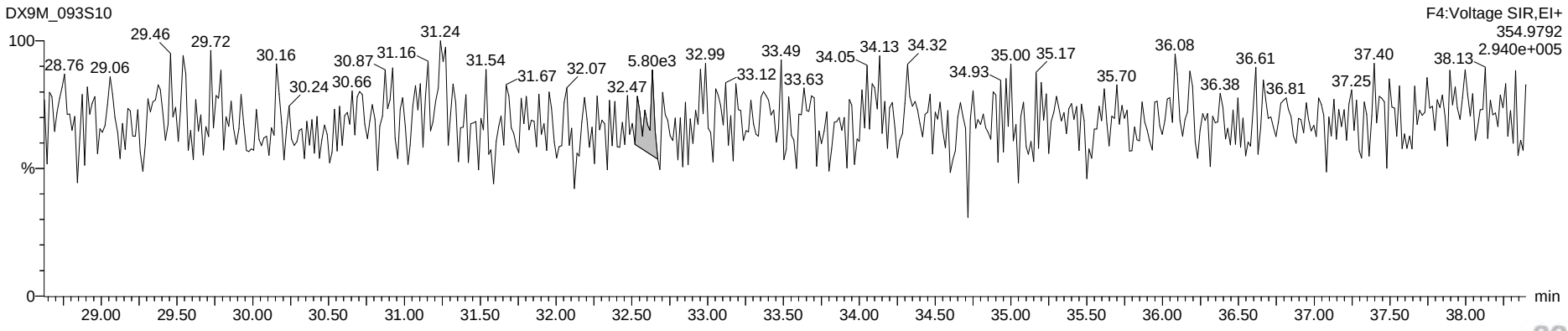
Total Penta-Furans



Hepta DPE



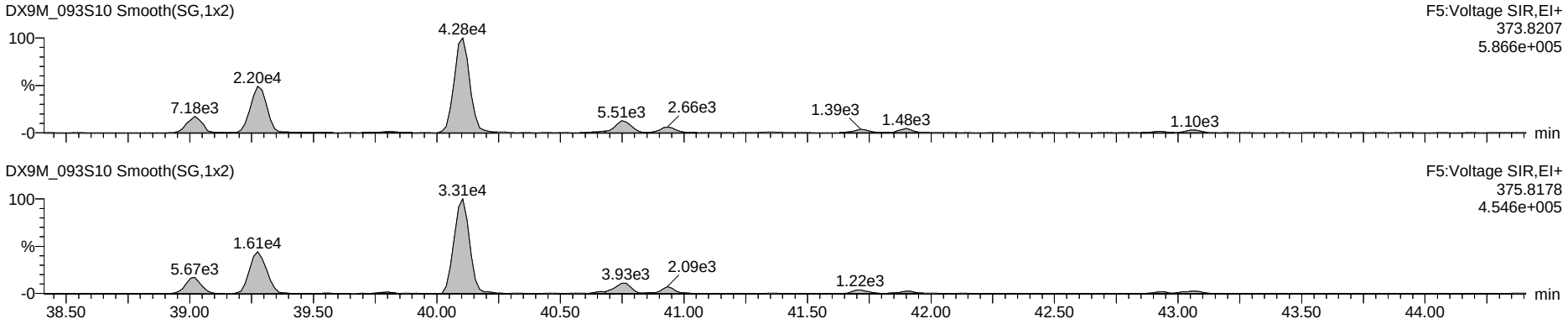
Penta Lock



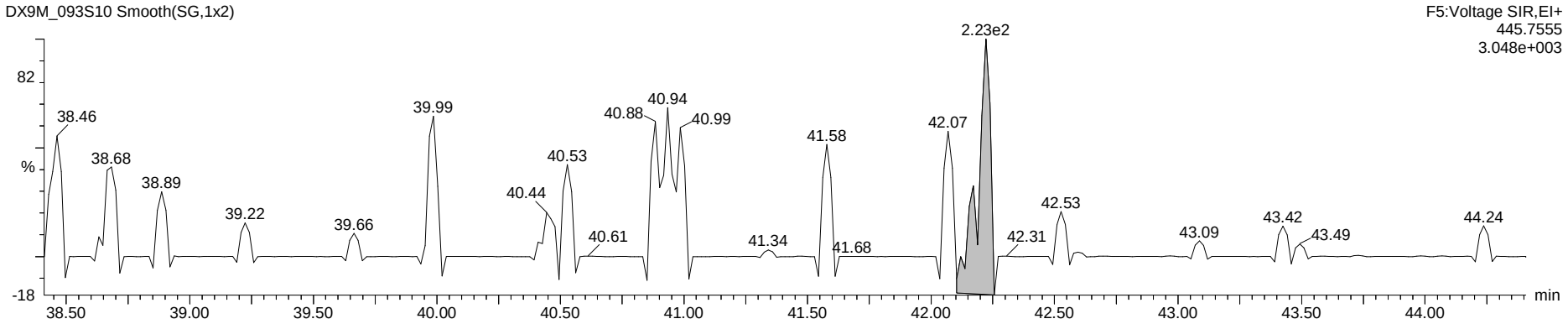
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S10, Date: 12-Sep-2019, Time: 17:20:16, ID: L31654-5,I,, Description: 1,WG69303,1.0/20uL

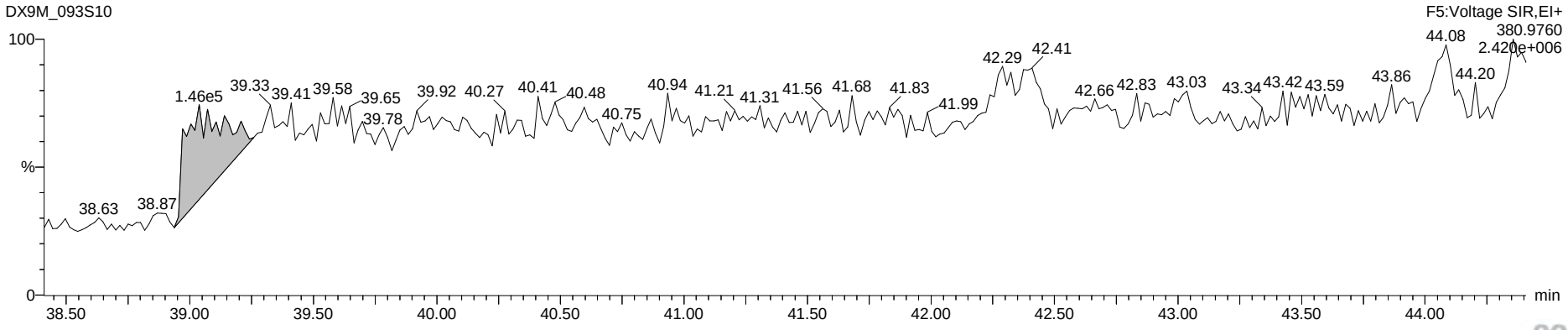
Total Hexa-Furans



Octa DPE



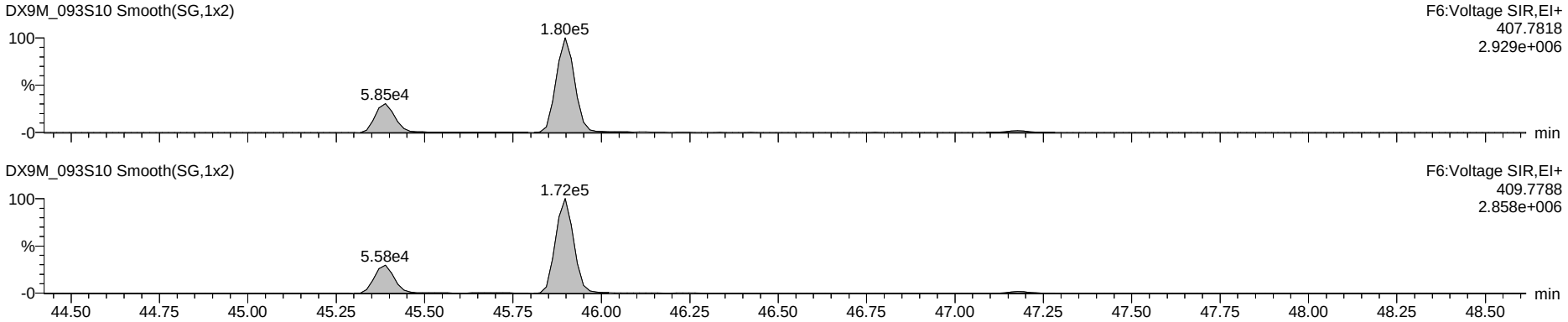
Hexa Lock



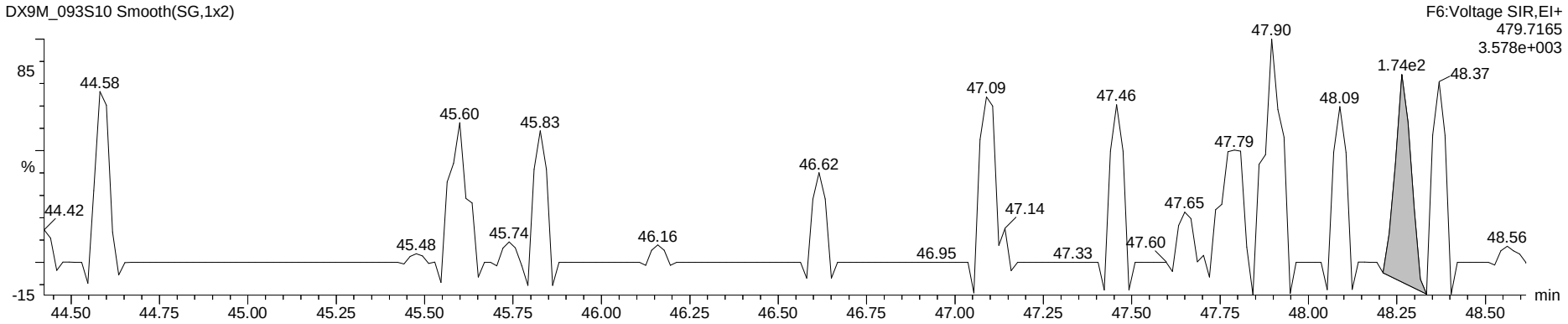
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S10, Date: 12-Sep-2019, Time: 17:20:16, ID: L31654-5,I,, Description: 1,WG69303,1.0/20uL

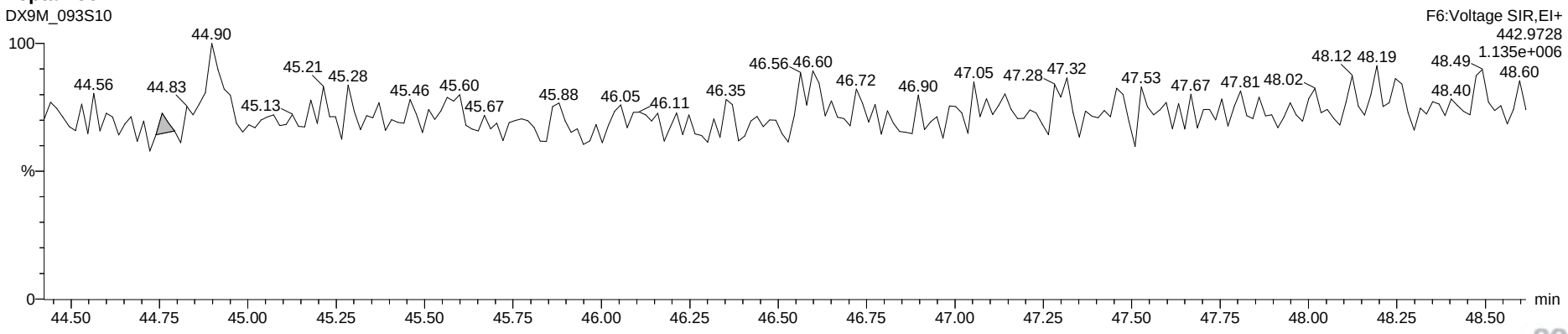
Total Hepta-Furans



Nona DPE



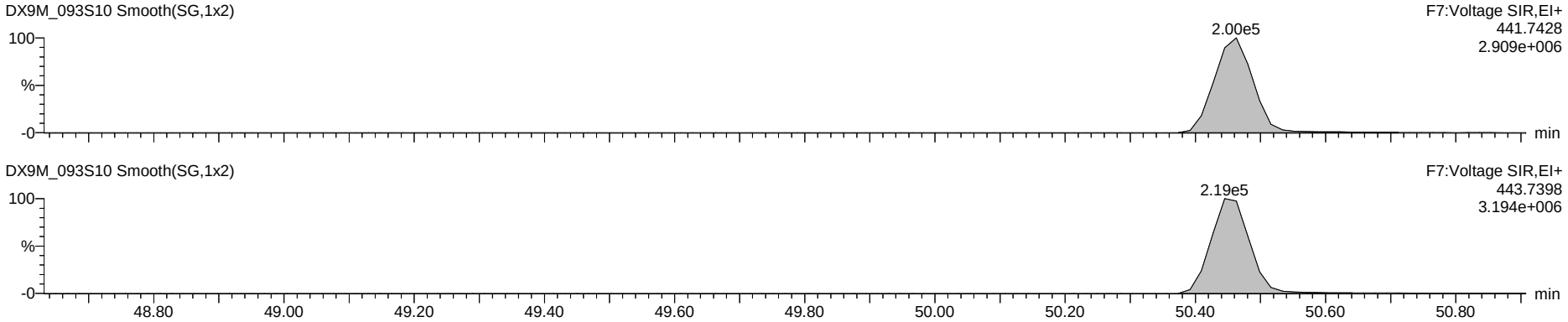
Hepta Lock



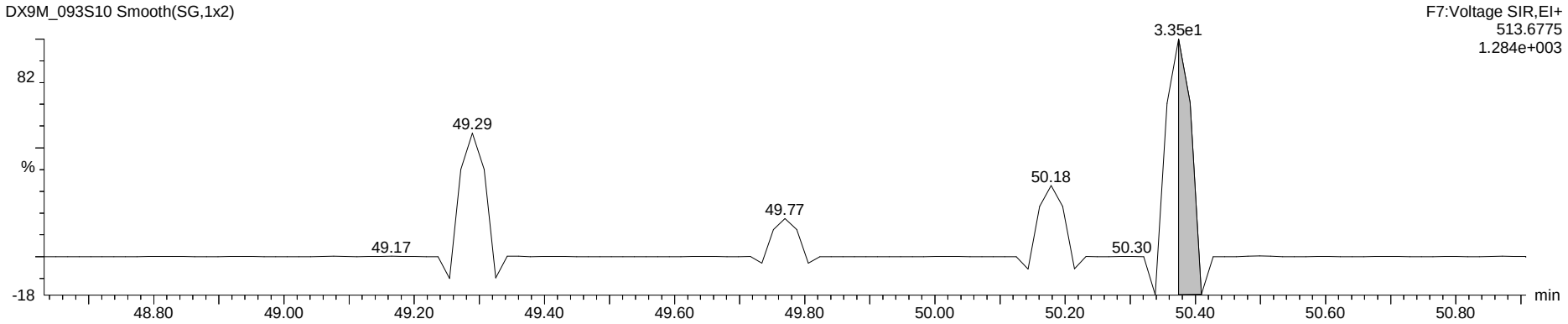
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S10, Date: 12-Sep-2019, Time: 17:20:16, ID: L31654-5,I,, Description: 1,WG69303,1.0/20uL

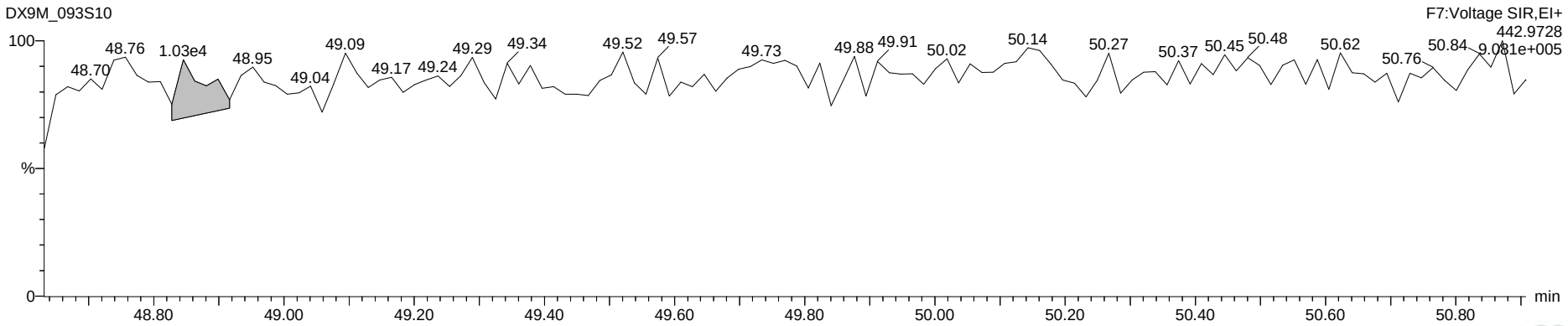
OCDF



Deca DPE



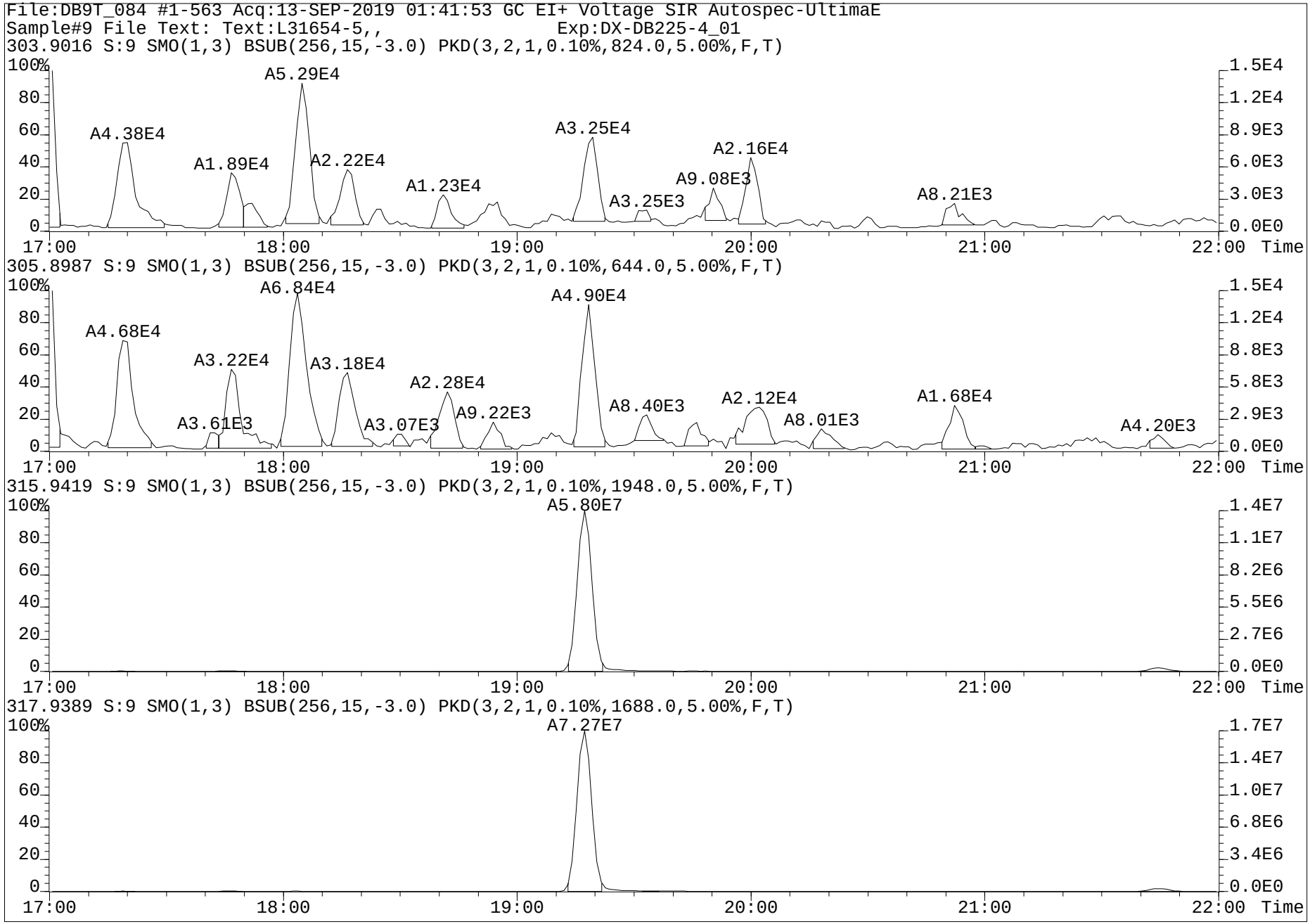
Octa Lock

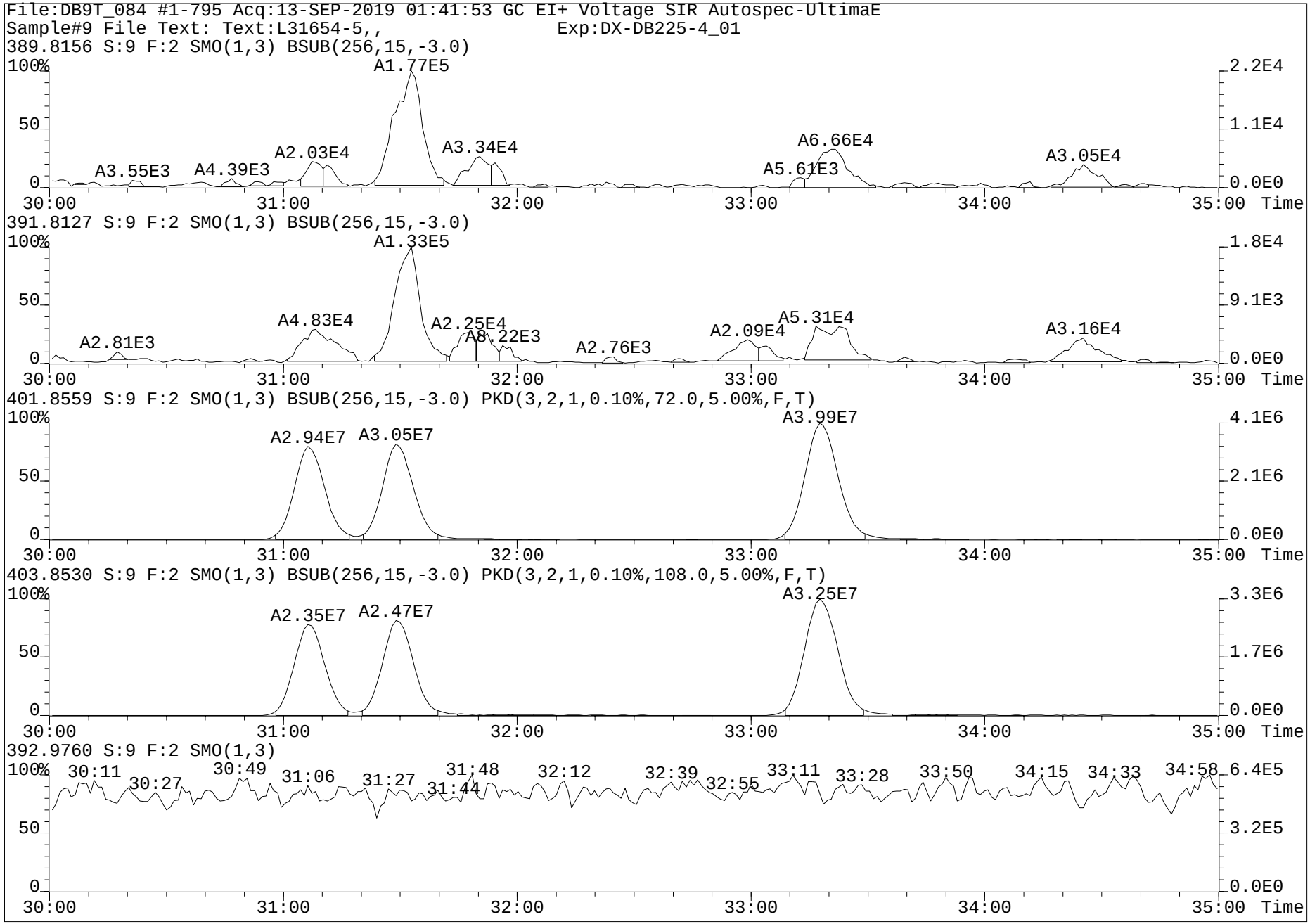


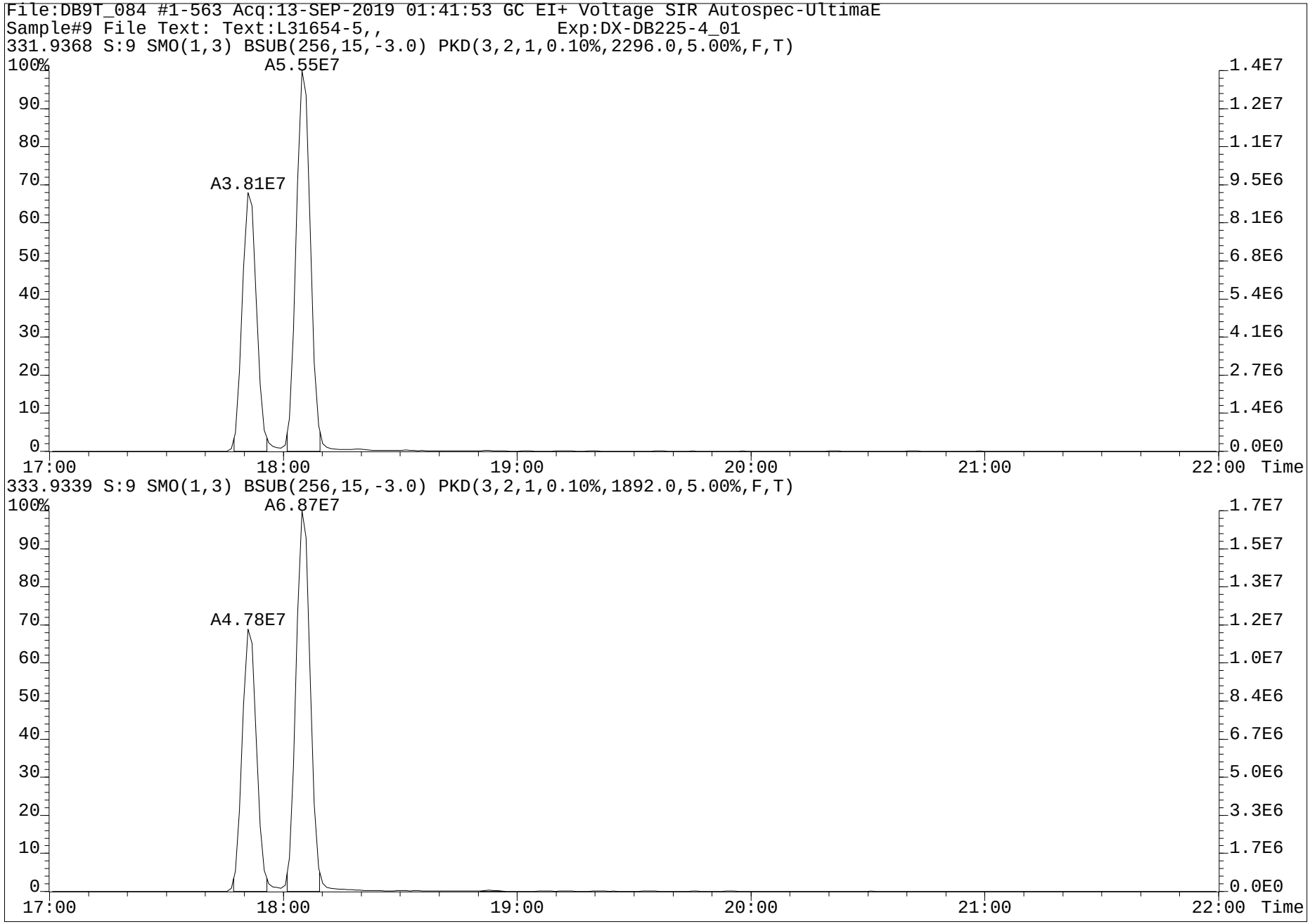
Run #14 Filename DB9T_084 S: 9 I: 1 Acquired: 13-SEP-19 01:41:53 Processed: 17-SEP-19 09:55:57
Run: db9t_084-a Analyte: db-hxd-s2 Cal: db9t_055-5a Results: db9t_084-a Version: V3.6 6-JAN-2000 17:51:42
Sample text: L31654-5,, Comments: 1,WG69303,2.0/20uL
sample size: 9.873100 conc units: pg/g total toxicity: 0.07 F1: 1.0000 F2: 1.0000

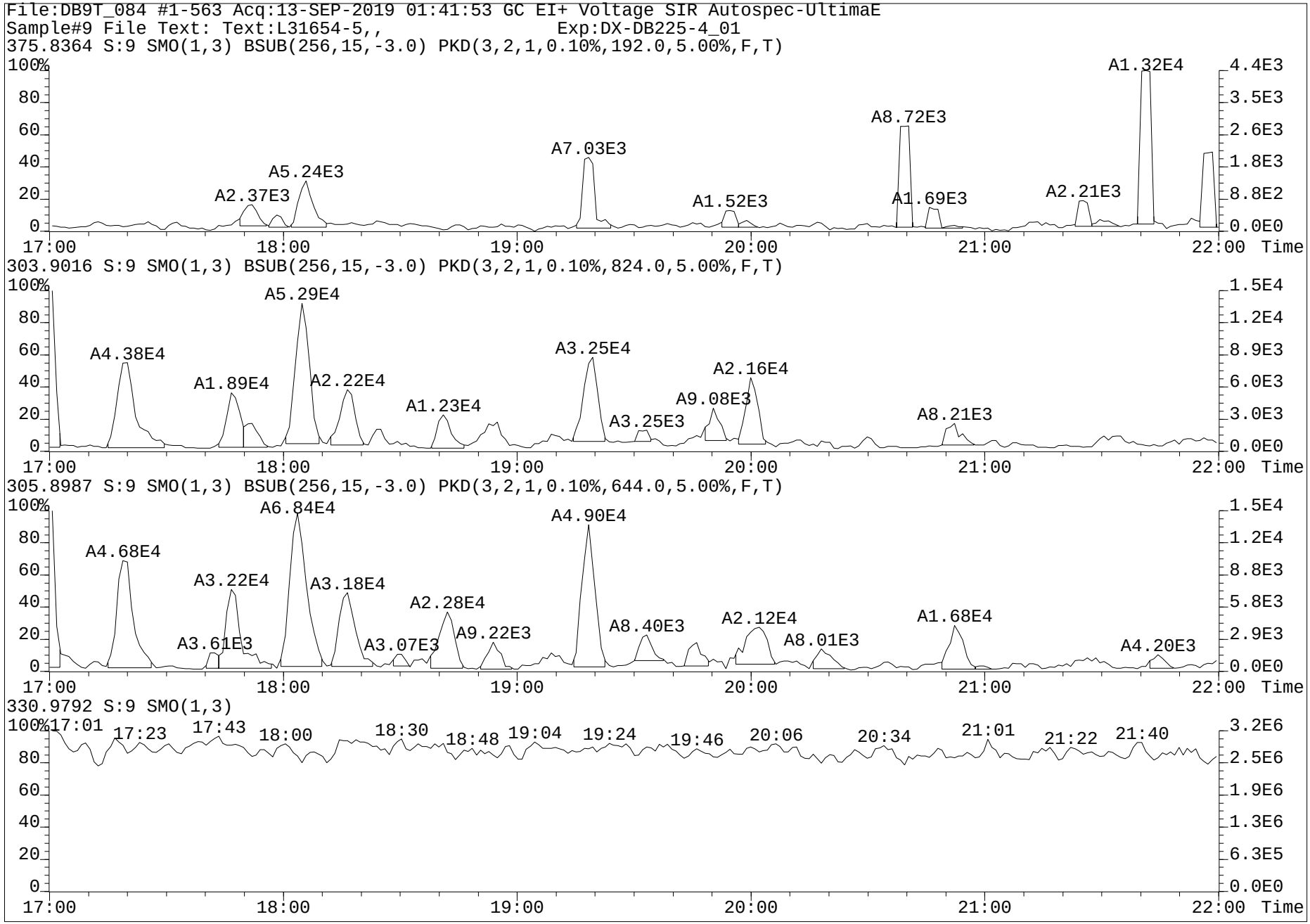
	Typ	Name	#Hom	Resp	RA		RT	Conc	Tox #1	DL	Rec	M?
1	Unk	2,3,7,8-TCDF	1	8.16e+04	0.66	y	19:18	0.163	0	0.0313	-	n
2	Unk	1,2,3,7,8,9-HxCDD	1	1.20e+05	1.25	y	33:21	0.554	0	0.0780	-	y
3	IS/RT	13C-2,3,7,8-TCDF	1	1.31e+08	0.80	y	19:17	150.707	-	0.0430	74.4	n
4	IS/RT	13C-1,2,3,4,7,8-HxCDD	1	5.29e+07	1.25	y	31:07	144.238	-	0.0119	71.2	n
5	IS/RT	13C-1,2,3,6,7,8-HxCDD	1	5.52e+07	1.23	y	31:30	143.928	-	0.0114	71.1	n
6	RS	13C-1,2,3,4-TCDD	1	1.24e+08	0.81	y	18:05	10.928	-	-	-	n
7	RS	13C-1,2,3,7,8,9-HxCDD	1	7.23e+07	1.23	y	33:18	12.762	-	-	-	n
8	Tot	Hexa DPE	0	*			NotFnd	*	-	-	-	n
9	Tot	Tetra Lock	-	-			-	-	-	-	-	n
10	Tot	Hexa Lock	-	-			-	-	-	-	-	n

PV by RA 20SEP2019
SV HH 22Sept.2019


File:DB9T_084 #1-563 Acq:13-SEP-2019 01:41:53 GC EI+ Voltage SIR Autospec-UltimaE
Sample#9 File Text: Text:L31654-5,, Exp:DX-DB225-4_01
303.9016 S:9 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,824.0,5.00%,F,T)
A4.38E4
A1.89E4
A5.29E4
A2.22E4
A1.23E4
A3.25E4
A3.25E3
A9.08E3
A2.16E4
A8.21E3
305.8987 S:9 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,644.0,5.00%,F,T)
A4.68E4
A3.22E4
A3.61E3
A6.84E4
A3.18E4
A3.07E3
A2.28E4
A9.22E3
A4.90E4
A8.40E3
A2.12E4
A8.01E3
A1.68E4
A4.20E3
315.9419 S:9 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1948.0,5.00%,F,T)
A5.80E7
317.9389 S:9 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1688.0,5.00%,F,T)
A7.27E7
Time


File:DB9T_084 #1-795 Acq:13-SEP-2019 01:41:53 GC EI+ Voltage SIR Autospec-UltimaE
Sample#9 File Text: Text:L31654-5,, Exp:DX-DB225-4_01
389.8156 S:9 F:2 SMO(1,3) BSUB(256,15,-3.0)
A1.77E5
A3.55E3
A4.39E3
A2.03E4
A3.34E4
A6.66E4
A5.61E3
A3.05E4
391.8127 S:9 F:2 SMO(1,3) BSUB(256,15,-3.0)
A1.33E5
A2.81E3
A4.83E4
A2.25E4
A8.22E3
A2.76E3
A2.09E4
A5.31E4
A3.16E4
401.8559 S:9 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,72.0,5.00%,F,T)
A2.94E7
A3.05E7
A3.99E7
403.8530 S:9 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,108.0,5.00%,F,T)
A2.35E7
A2.47E7
A3.25E7
392.9760 S:9 F:2 SMO(1,3)
30:11
30:27
30:49
31:06
31:27
31:44
31:48
32:12
32:39
32:55
33:11
33:28
33:50
34:15
34:33
34:58
100%
50
0
30:00
31:00
32:00
33:00
34:00
35:00
Time
2.2E4
1.1E4
0.0E0
1.8E4
9.1E3
4.1E6
2.1E6
3.3E6
1.7E6
6.4E5
3.2E5


File:DB9T_084 #1-563 Acq:13-SEP-2019 01:41:53 GC EI+ Voltage SIR Autospec-UltimaE
Sample#9 File Text: Text:L31654-5,, Exp:DX-DB225-4_01
331.9368 S:9 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,2296.0,5.00%,F,T)
A5.55E7
A3.81E7
100%
90
80
70
60
50
40
30
20
10
0
1.4E7
1.2E7
1.1E7
9.5E6
8.1E6
6.8E6
5.4E6
4.1E6
2.7E6
1.4E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time
333.9339 S:9 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1892.0,5.00%,F,T)
A6.87E7
A4.78E7
100%
90
80
70
60
50
40
30
20
10
0
1.7E7
1.5E7
1.3E7
1.2E7
1.0E7
8.4E6
6.7E6
5.0E6
3.3E6
1.7E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time


File:DB9T_084 #1-563 Acq:13-SEP-2019 01:41:53 GC EI+ Voltage SIR Autospec-UltimaE
Sample#9 File Text: Text:L31654-5,, Exp:DX-DB225-4_01
375.8364 S:9 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,192.0,5.00%,F,T)
A2.37E3
A5.24E3
A7.03E3
A1.52E3
A8.72E3
A1.69E3
A2.21E3
A1.32E4
303.9016 S:9 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,824.0,5.00%,F,T)
A4.38E4
A1.89E4
A5.29E4
A2.22E4
A1.23E4
A3.25E4
A3.25E3
A9.08E3
A2.16E4
A8.21E3
305.8987 S:9 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,644.0,5.00%,F,T)
A4.68E4
A3.22E4
A3.61E3
A6.84E4
A3.18E4
A3.07E3
A2.28E4
A9.22E3
A4.90E4
A8.40E3
A2.12E4
A8.01E3
A1.68E4
A4.20E3
330.9792 S:9 SMO(1,3)
17:01
17:23
17:43
18:00
18:30
18:48
19:04
19:24
19:46
20:06
20:34
21:01
21:22
21:40
Time

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S11, Date: 12-Sep-2019, Time: 18:15:23, ID: L31654-6,I,, Description: 1,WG69303,1.0/20uL

	Name	Sample Size	Resp	Ratio	fails?	RT	pg	DL	%Rec	Noise 1	Noise 2
1	2,3,7,8-TCDF	10.297	3.03e4	0.72	NO	25.25	1.888	0.0434		2.11e3	1.10e3
2	1,2,3,7,8-PeCDF	10.297	1.45e4	1.42	NO	33.55	0.941	0.0494		1.19e3	1.72e3
3	2,3,4,7,8-PeCDF	10.297	1.99e4	1.46	NO	35.32	1.245	0.0394		1.19e3	1.72e3
4	1,2,3,4,7,8-HxCDF	10.297	5.49e4	1.18	NO	40.77	3.917	0.0428		1.41e3	2.05e3
5	1,2,3,6,7,8-HxCDF	10.297	1.56e5	1.28	NO	40.93	10.639	0.0439		1.41e3	2.05e3
6	2,3,4,6,7,8-HxCDF	10.297	3.64e4	1.25	NO	41.88	2.416	0.0401		1.41e3	2.05e3
7	1,2,3,7,8,9-HxCDF	10.297	4.02e3	1.26	NO	42.92	0.310	0.0462		1.41e3	2.05e3
8	1,2,3,4,6,7,8-HpCDF	10.297	2.17e6	1.04	NO	45.39	143.592	0.0540		2.19e3	2.91e3
9	1,2,3,4,7,8,9-HpCDF	10.297	4.60e4	1.02	NO	47.18	3.417	0.0616		2.19e3	2.91e3
10	OCDF	10.297	2.19e6	0.90	NO	50.46	148.462	0.0333		2.31e3	5.80e2
11	2,3,7,8-TCDD	10.297	5.22e3	0.66	NO	26.47	0.391	0.0469		8.86e2	1.75e3
12	1,2,3,7,8-PeCDD	10.297	1.21e4	0.61	NO	36.15	0.917	0.0454		1.84e3	1.08e3
13	1,2,3,4,7,8-HxCDD	10.297	1.38e4	1.23	NO	42.17	1.265	0.0290		8.87e2	1.05e3
14	1,2,3,6,7,8-HxCDD	10.297	9.73e4	1.23	NO	42.29	7.644	0.0252		8.87e2	1.05e3
15	1,2,3,7,8,9-HxCDD	10.297	4.26e4	1.23	NO	42.73	3.632	0.0272		8.87e2	1.05e3
16	1,2,3,4,6,7,8-HpCDD	10.297	1.57e6	1.02	NO	46.77	140.718	0.0917		3.84e3	2.88e3
17	OCDD	10.297	2.81e7	0.87	NO	50.37	2207.981	0.0324		1.06e3	1.36e3
18	13C-2,3,7,8-TCDF	10.297	3.37e6	0.83	NO	25.22	136.075	0.1068	70.1	5.71e3	6.17e3
19	13C-1,2,3,7,8-PeCDF	10.297	3.22e6	1.56	NO	33.52	159.953	0.1131	82.4	4.11e3	6.12e3
20	13C-2,3,4,7,8-PeCDF	10.297	3.27e6	1.55	NO	35.30	157.773	0.1096	81.2	4.11e3	6.12e3
21	13C-1,2,3,4,7,8-HxCDF	10.297	2.46e6	0.52	NO	40.73	138.649	0.1768	71.4	1.25e4	5.87e3
22	13C-1,2,3,6,7,8-HxCDF	10.297	2.65e6	0.52	NO	40.92	135.720	0.1608	69.9	1.25e4	5.87e3
23	13C-2,3,4,6,7,8-HxCDF	10.297	2.57e6	0.52	NO	41.87	146.277	0.1784	75.3	1.25e4	5.87e3
24	13C-1,2,3,7,8,9-HxCDF	10.297	2.39e6	0.53	NO	42.90	152.744	0.2007	78.6	1.25e4	5.87e3
25	13C-1,2,3,4,6,7,8-HpCDF	10.297	2.34e6	0.45	NO	45.37	160.335	0.1077	82.5	5.85e3	3.38e3
26	13C-1,2,3,4,7,8,9-HpCDF	10.297	2.09e6	0.45	NO	47.16	175.707	0.1327	90.5	5.85e3	3.38e3
27	13C-2,3,7,8-TCDD	10.297	2.35e6	0.76	NO	26.44	149.540	0.2769	77.0	5.45e3	1.42e4
28	13C-1,2,3,7,8-PeCDD	10.297	2.60e6	0.61	NO	36.11	207.940	0.0723	107.1	2.03e3	2.03e3
29	13C-1,2,3,4,7,8-HxCDD	10.297	2.06e6	1.27	NO	42.14	145.315	0.1144	74.8	3.09e3	6.41e3
30	13C-1,2,3,6,7,8-HxCDD	10.297	2.62e6	1.30	NO	42.27	167.554	0.1035	86.3	3.09e3	6.41e3
31	13C-1,2,3,4,6,7,8-HpCDD	10.297	2.79e6	1.04	NO	46.76	175.812	0.1028	90.5	5.84e3	3.71e3
32	13C-OCDD	10.297	5.04e6	0.87	NO	50.37	432.504	0.1128	111.3	5.05e3	2.66e3
33	13C-1,2,3,4-TCDD	10.297	3.15e6	0.85	NO	26.11	7.613	0.0105	3.9	5.45e3	1.42e4
34	13C-1,2,3,7,8,9-HxCDD	10.297	2.84e6	1.25	NO	42.71	9.505	0.0054	4.9	3.09e3	6.41e3
35	37Cl-2,3,7,8-TCDD	10.297	2.54e5			26.47	14.658	0.0360	75.5		2.81e3
36	Total Tetra-Furans	10.297					28.603	0.0434			1.10e3
37	Total Tetra-Dioxins	10.297					11.538	0.0469			1.75e3
38	Total Penta-Furans	10.297					66.366	0.0448			1.72e3
39	Total Penta-Dioxins	10.297					11.715	0.0454			1.08e3 T
40	Total Hexa-Furans	10.297					127.738	0.0427			2.05e3
41	Total Hexa-Dioxins	10.297					56.181	0.0257			1.05e3
42	Total Hepta-Furans	10.297					326.749	0.0577			2.91e3
43	Total Hepta-Dioxins	10.297					351.040	0.0917			2.88e3
44	Hexa DPE	1.000	1.05e2			24.54					1.60e0
45	Hepta DPE	1.000	1.30e2			33.17					8.72e0
46	Octa DPE	1.000	1.13e2			43.93					4.32e0
47	Nona DPE	1.000	7.74e2			48.28					1.00e0
48	Deca DPE	1.000	3.08e2			50.34					2.13e0
49	Tetra Lock	1.000	2.47e4			21.00					1.32e5
50	Penta Lock	1.000									7.74e4
51	Hexa Lock	1.000	1.30e5			38.87					2.85e5
52	Hepta Lock	1.000	1.47e4			44.74					1.61e5
53	Octa Lock	1.000									1.46e5
54	13C-Tetra-Furans	10.297					136.075	0.1068			6.17e3
55	13C-Tetra-Dioxins	10.297					157.154	0.2874			1.42e4

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

SV HH 22 Sept 2019

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S11, Date: 12-Sep-2019, Time: 18:15:23, ID: L31654-6,I,, Description: 1,WG69303,1.0/20uL

Tetrafurans

	RT	Ratio	Fails?	pg
1	23.70	0.624	YES	0.090
2	23.33	0.828	NO	6.824
3	22.98	0.763	NO	4.712
4	22.57	0.833	NO	1.308
5	22.25	0.742	NO	6.710
6	21.95	0.814	NO	1.141
7	21.42	0.598	YES	0.062
8	26.29	0.940	YES	0.374
9	25.94	0.997	YES	0.262
10	25.25	0.722	NO	1.888
11	24.94	0.731	NO	0.300
12	24.57	0.729	NO	1.128
13	24.25	0.731	NO	0.457
14	24.14	0.679	NO	1.001
15	23.85	0.763	NO	2.147
16	28.14	0.785	NO	0.199

Tetradioxins

	RT	Ratio	Fails?	pg
1	26.07	1.046	YES	0.340
2	25.64	0.724	NO	0.279
3	25.20	1.033	YES	0.424
4	25.09	0.983	YES	0.161
5	24.92	1.339	YES	0.106
6	24.62	0.763	NO	1.494
7	23.75	0.707	NO	0.682
8	23.37	0.820	NO	0.725
9	22.95	0.808	NO	5.706
10	28.28	0.953	YES	0.125
11	27.49	0.972	YES	0.047
12	27.07	0.672	NO	0.220
13	26.71	0.628	YES	0.018
14	26.47	0.659	NO	0.391
15	26.32	0.876	NO	0.821

Pentafurans

	RT	Ratio	Fails?	pg
1	32.89	1.460	NO	5.846
2	32.30	0.792	YES	0.090
3	31.87	1.375	NO	0.609
4	31.50	1.528	NO	16.209
5	31.14	0.666	YES	0.108
6	28.89	1.573	NO	35.948
7	37.11	1.037	YES	0.085
8	35.62	1.541	NO	3.423
9	35.32	1.461	NO	1.245
10	34.25	1.554	NO	1.373
11	33.93	1.064	YES	0.075
12	33.92	1.926	YES	0.071
13	33.55	1.423	NO	0.941
14	33.39	1.675	NO	0.344

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S11, Date: 12-Sep-2019, Time: 18:15:23, ID: L31654-6,I,, Description: 1,WG69303,1.0/20uL

Pentadioxins

	RT	Ratio	Fails?	pg
1	33.17	0.667	NO	0.869
2	32.02	0.594	NO	3.554
3	35.68	1.161	YES	0.047
4	35.53	1.028	YES	0.095
5	35.10	0.676	NO	0.780
6	34.88	0.686	NO	0.654
7	34.50	0.594	NO	0.597
8	34.18	0.647	NO	0.786
9	33.83	0.654	NO	2.722
10	37.06	0.635	NO	0.510
11	36.46	0.625	NO	0.184
12	36.15	0.606	NO	0.917

Hexafurans

	RT	Ratio	Fails?	pg
1	40.10	1.253	NO	51.276
2	39.80	1.370	NO	0.787
3	39.53	4.790	YES	0.153
4	39.28	1.280	NO	38.352
5	39.02	1.234	NO	14.462
6	43.07	1.259	NO	0.758
7	42.92	1.261	NO	0.310
8	41.88	1.252	NO	2.416
9	41.71	1.151	NO	3.263
10	41.36	1.218	NO	0.667
11	41.09	0.570	YES	0.145
12	40.93	1.281	NO	10.639
13	40.77	1.179	NO	3.917
14	40.66	1.550	YES	0.594

Hexadioxins

	RT	Ratio	Fails?	pg
1	41.46	1.157	NO	0.930
2	41.26	1.238	NO	19.748
3	40.87	1.265	NO	2.574
4	40.07	1.239	NO	20.389
5	42.73	1.235	NO	3.632
6	42.29	1.226	NO	7.644
7	42.17	1.226	NO	1.265

Heptafurans

	RT	Ratio	Fails?	pg
1	45.90	1.023	NO	178.141
2	45.70	1.013	NO	1.599
3	45.39	1.045	NO	143.592
4	47.18	1.023	NO	3.417

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S11, Date: 12-Sep-2019, Time: 18:15:23, ID: L31654-6,I,, Description: 1,WG69303,1.0/20uL

Heptadioxins

	RT	Ratio	Fails?	pg
1	46.77	1.024	NO	140.718
2	45.84	1.033	NO	210.321

13C-TF

	RT	Ratio	Fails?	pg
1	25.22	0.825	NO	136.075

13C-TD

	RT	Ratio	Fails?	pg
1	26.44	0.755	NO	149.540
2	26.11	0.851	NO	7.613

13C-PF

	RT	Ratio	Fails?	pg
1	33.52	1.555	NO	159.953
2	35.30	1.545	NO	157.773

13C-PD

	RT	Ratio	Fails?	pg
1	36.11	0.613	NO	207.940

13C-HxF

	RT	Ratio	Fails?	pg
1	41.87	0.520	NO	146.277
2	40.92	0.519	NO	135.720
3	40.73	0.522	NO	138.649
4	42.90	0.530	NO	152.744

13C-HxD

	RT	Ratio	Fails?	pg
1	42.71	1.253	NO	9.505
2	42.27	1.297	NO	167.554
3	42.14	1.272	NO	145.315

13C-HpF

	RT	Ratio	Fails?	pg
1	47.16	0.451	NO	175.707
2	45.37	0.452	NO	160.335

13C-HpD

	RT	Ratio	Fails?	pg
1	46.76	1.040	NO	175.812

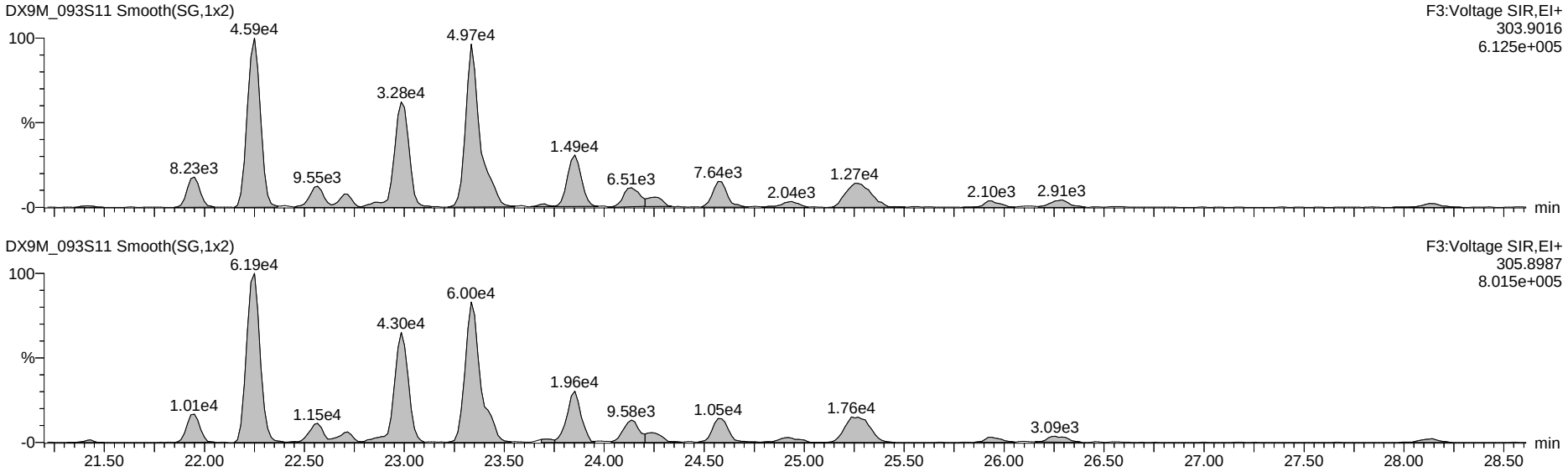
PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

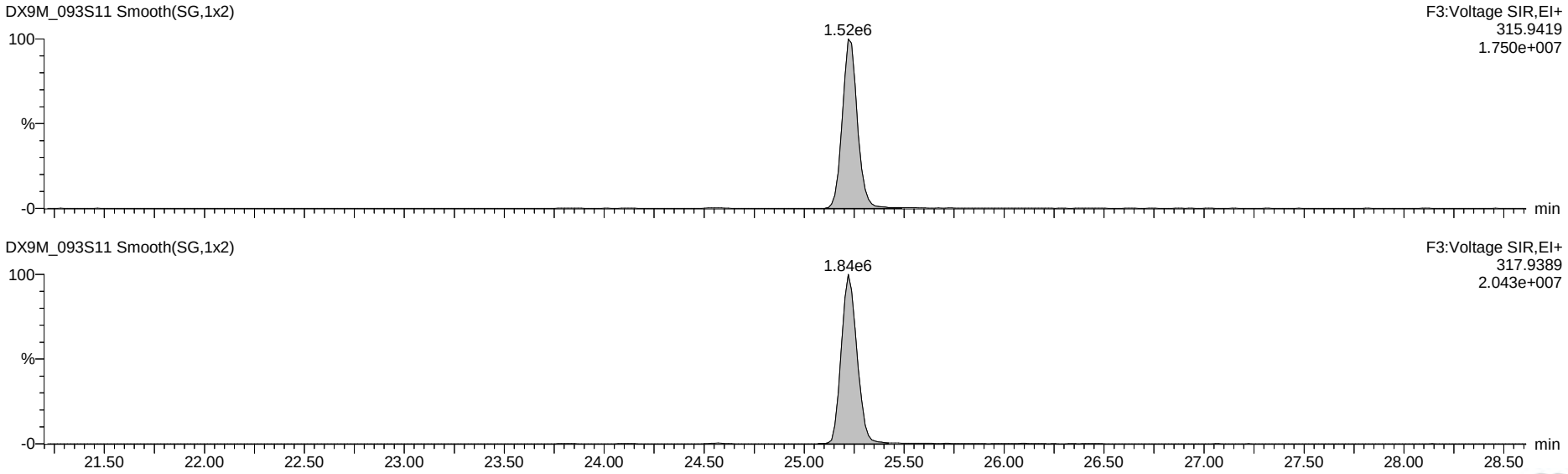
Method: G:\Masslynx\Inst_M\Exported_methods\DX_1613B_16.mdb 07 Sep 2017 16:45:23
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

Name: DX9M_093S11, Date: 12-Sep-2019, Time: 18:15:23, ID: L31654-6,I,, Description: 1,WG69303,1.0/20uL

Total Tetra-Furans



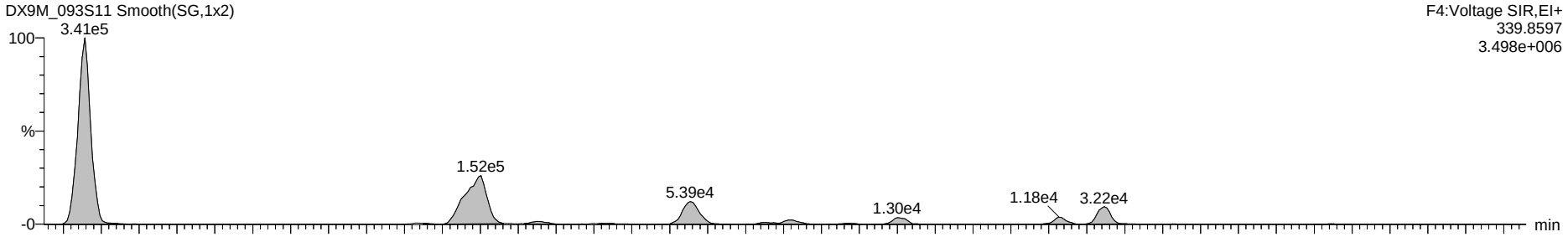
13C-Tetra-Furans

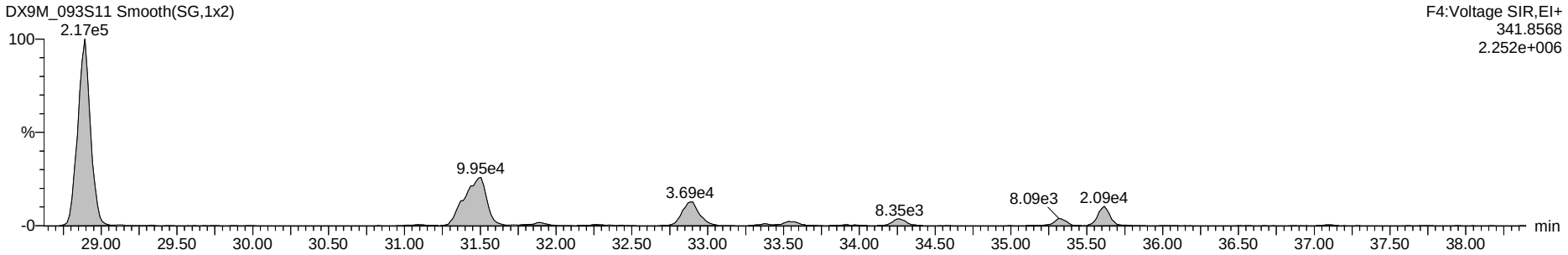


Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

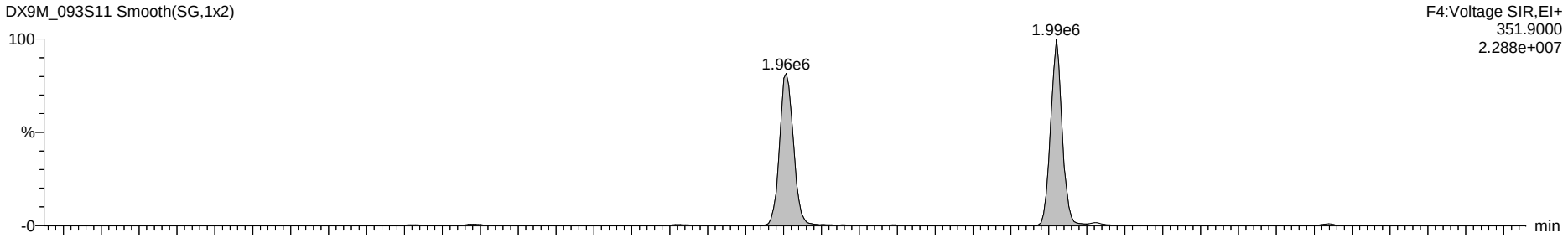
Name: DX9M_093S11, Date: 12-Sep-2019, Time: 18:15:23, ID: L31654-6,I,, Description: 1,WG69303,1.0/20uL

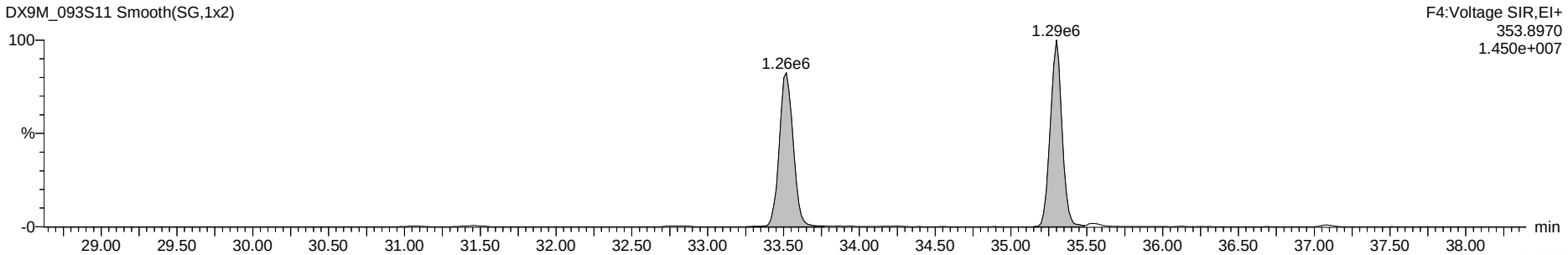
Total Penta-Furans





13C-Penta-Furans

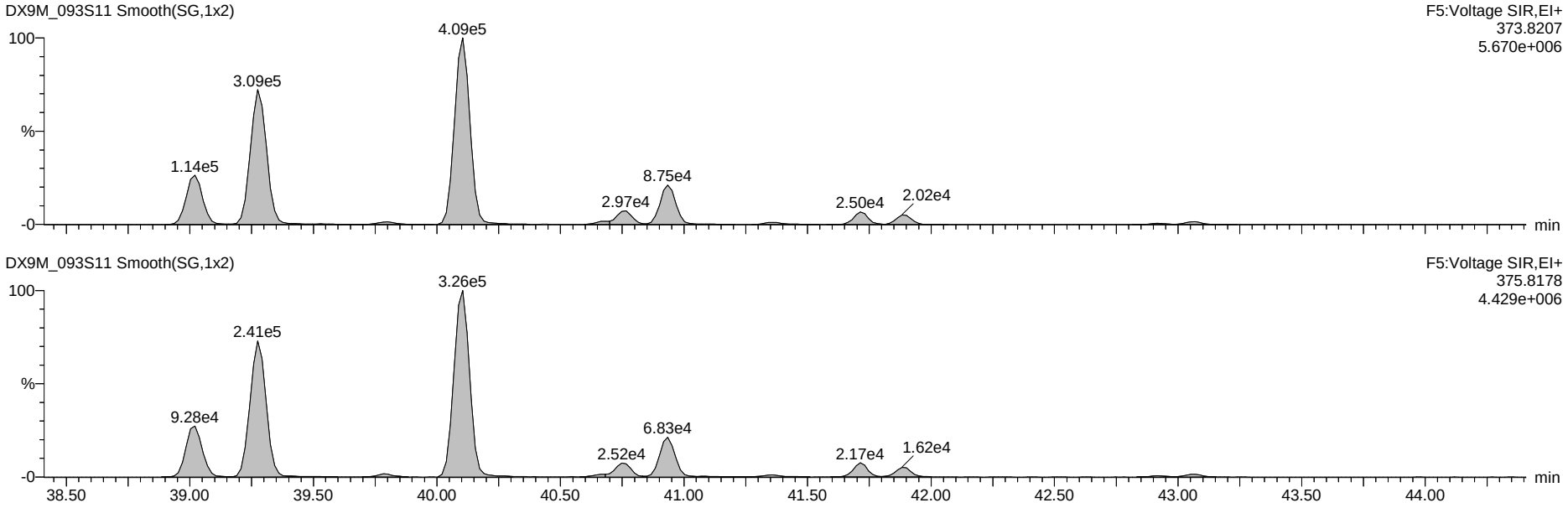




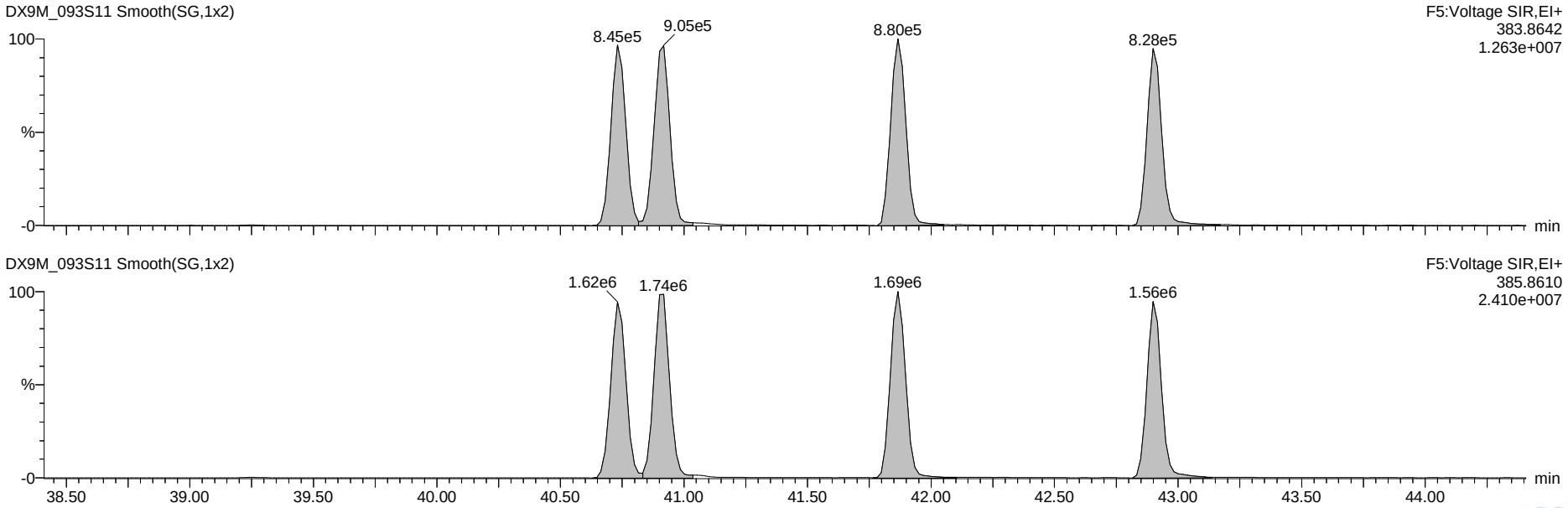
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S11, Date: 12-Sep-2019, Time: 18:15:23, ID: L31654-6,I,, Description: 1,WG69303,1.0/20uL

Total Hexa-Furans



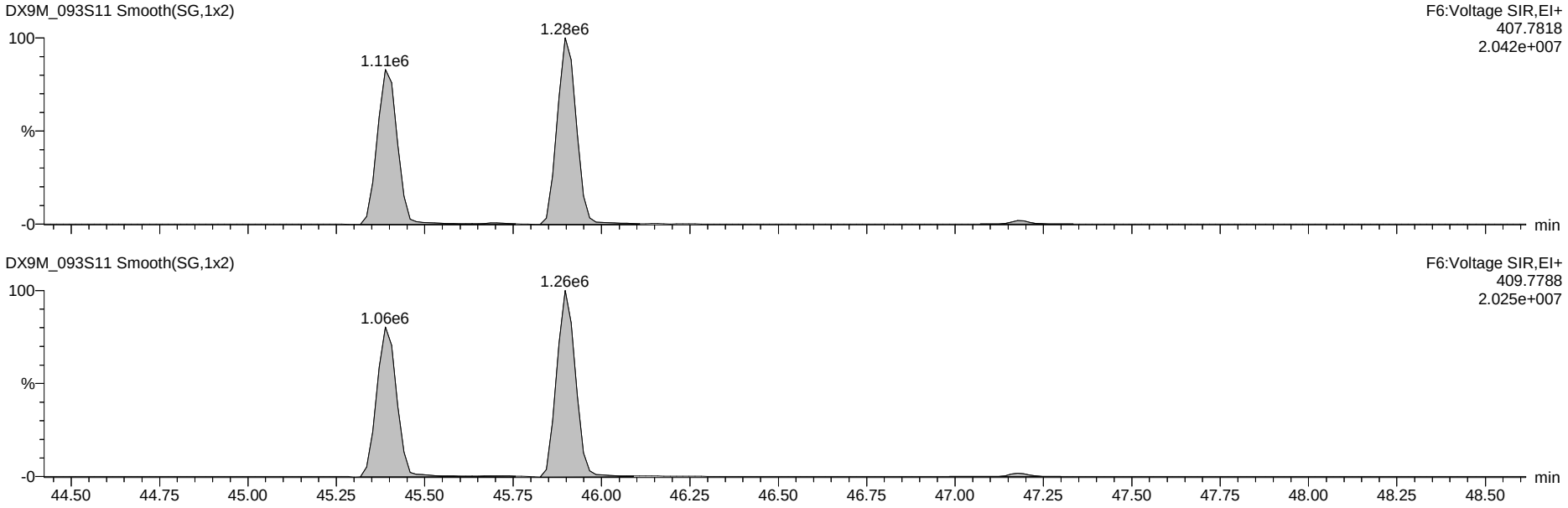
13C-Hexa-Furans



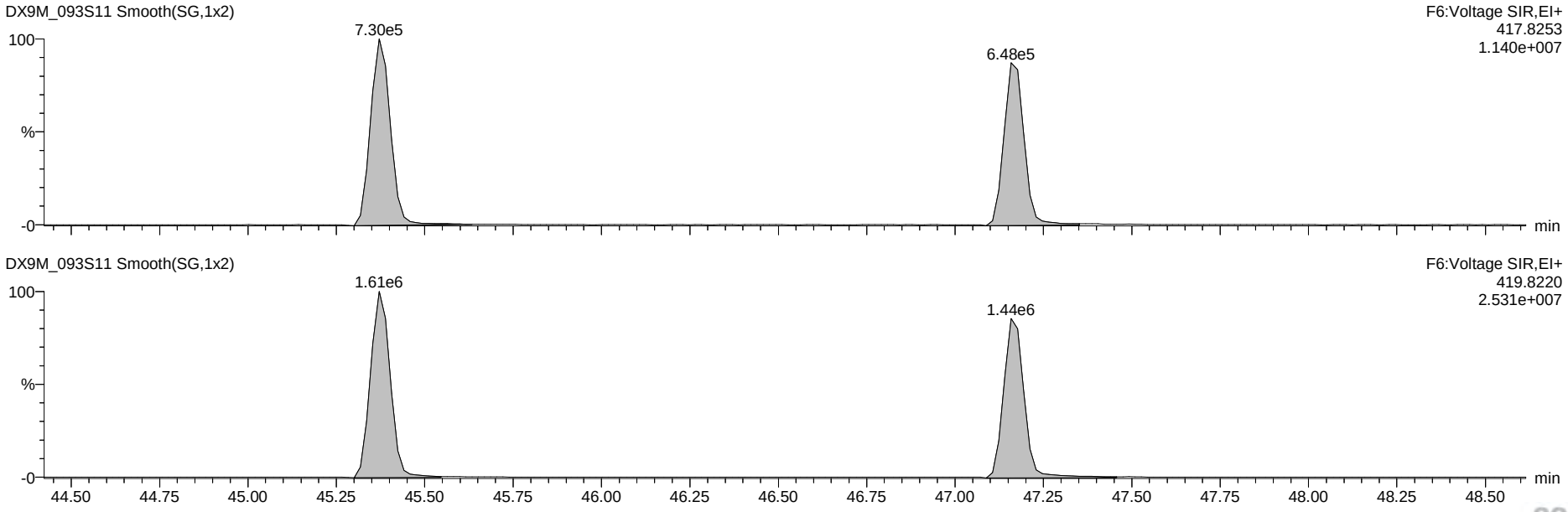
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S11, Date: 12-Sep-2019, Time: 18:15:23, ID: L31654-6,I,, Description: 1,WG69303,1.0/20uL

Total Hepta-Furans



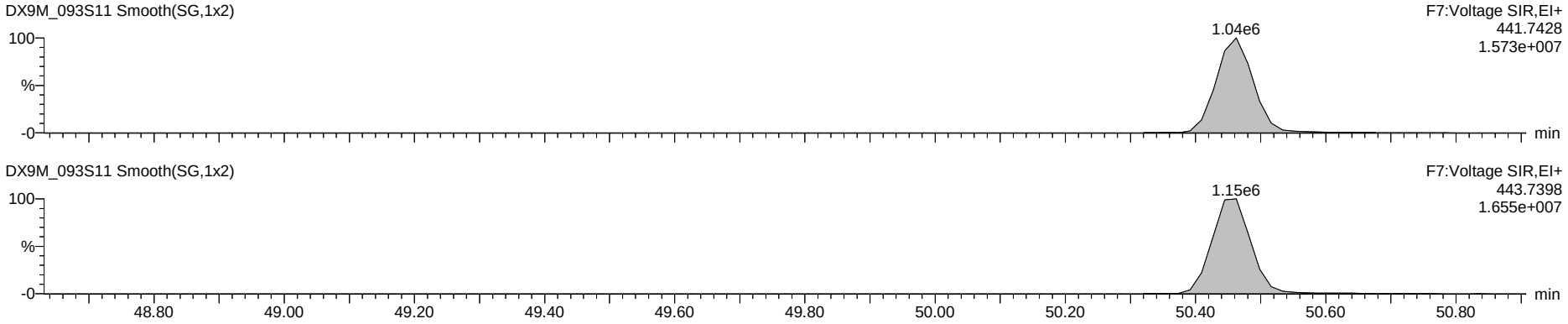
13C-Hepta-Furans



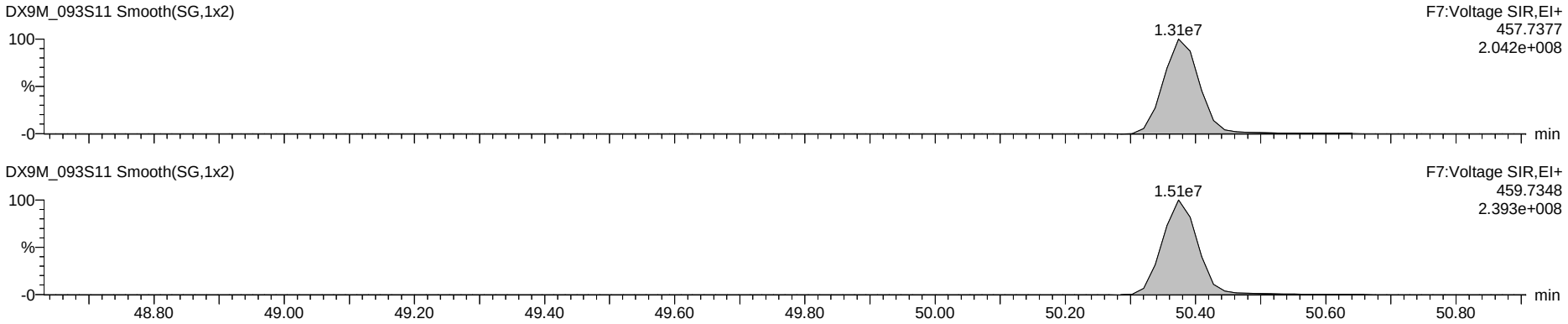
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S11, Date: 12-Sep-2019, Time: 18:15:23, ID: L31654-6,I,, Description: 1,WG69303,1.0/20uL

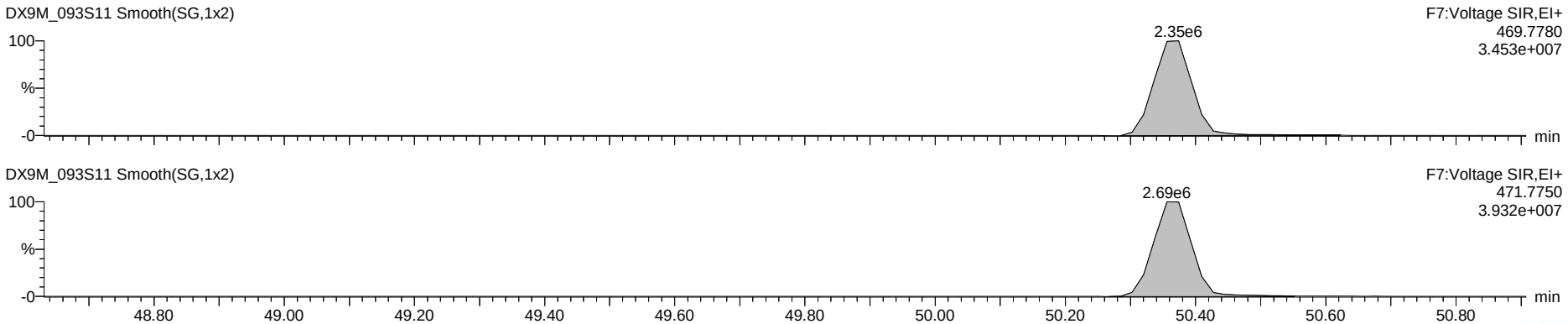
OCDF



OCDD



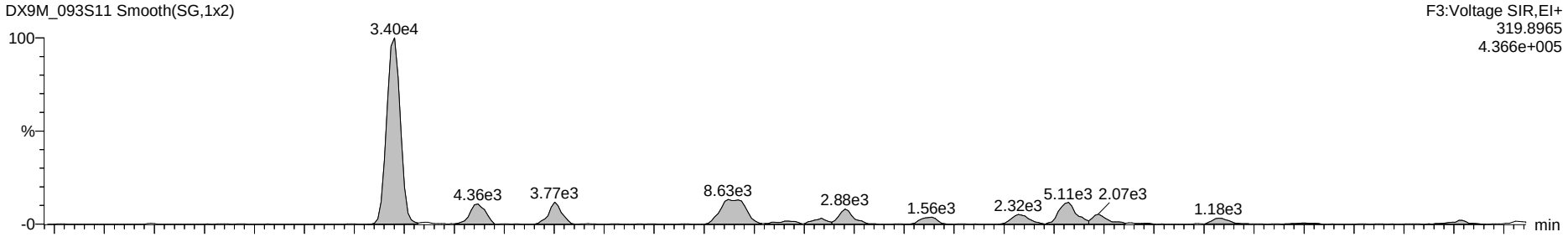
13C-OCDD

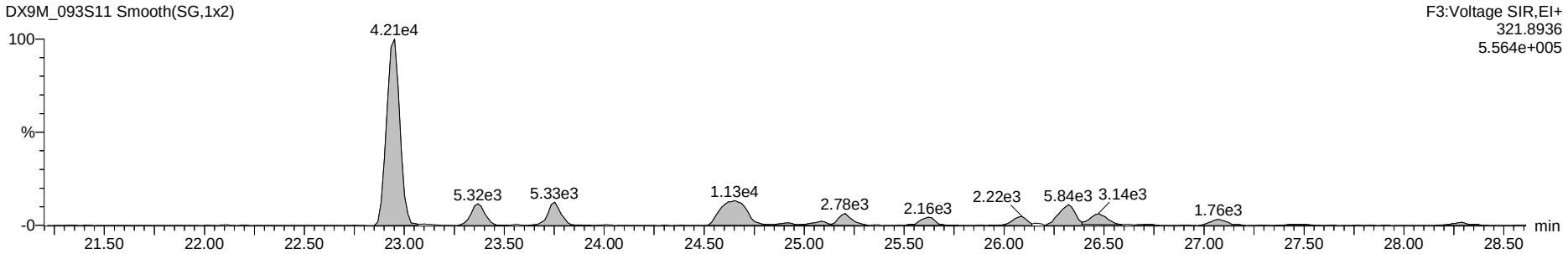


Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

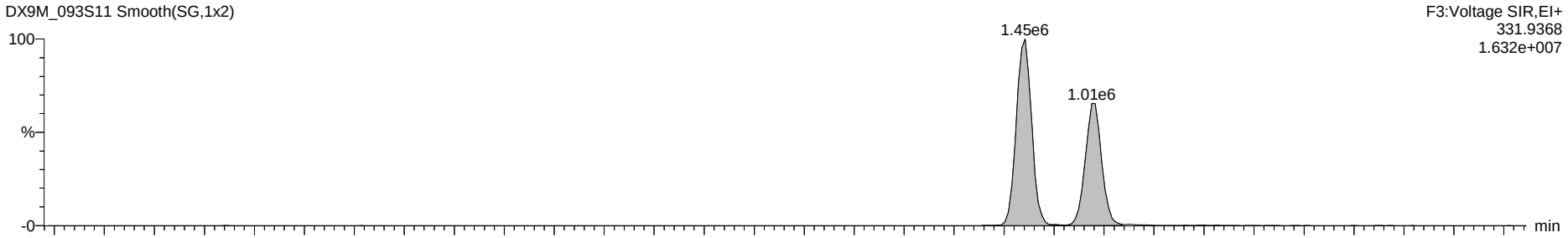
Name: DX9M_093S11, Date: 12-Sep-2019, Time: 18:15:23, ID: L31654-6,I,, Description: 1,WG69303,1.0/20uL

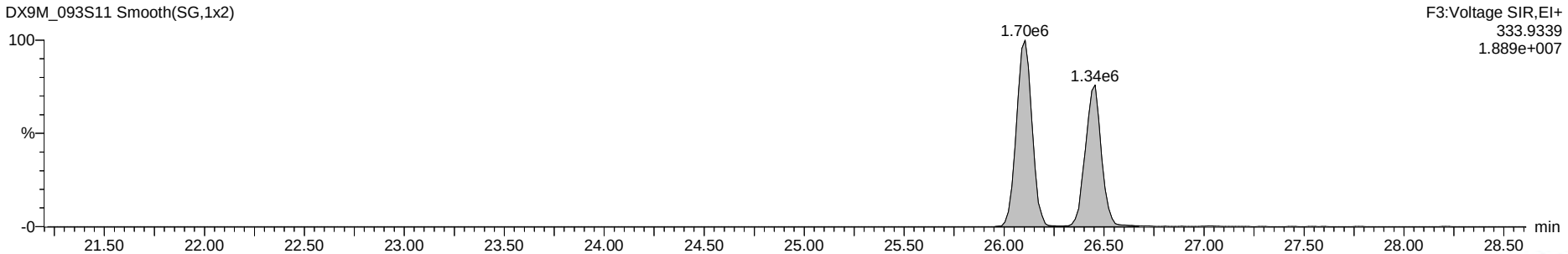
Total Tetra-Dioxins





13C-Tetra-Dioxins

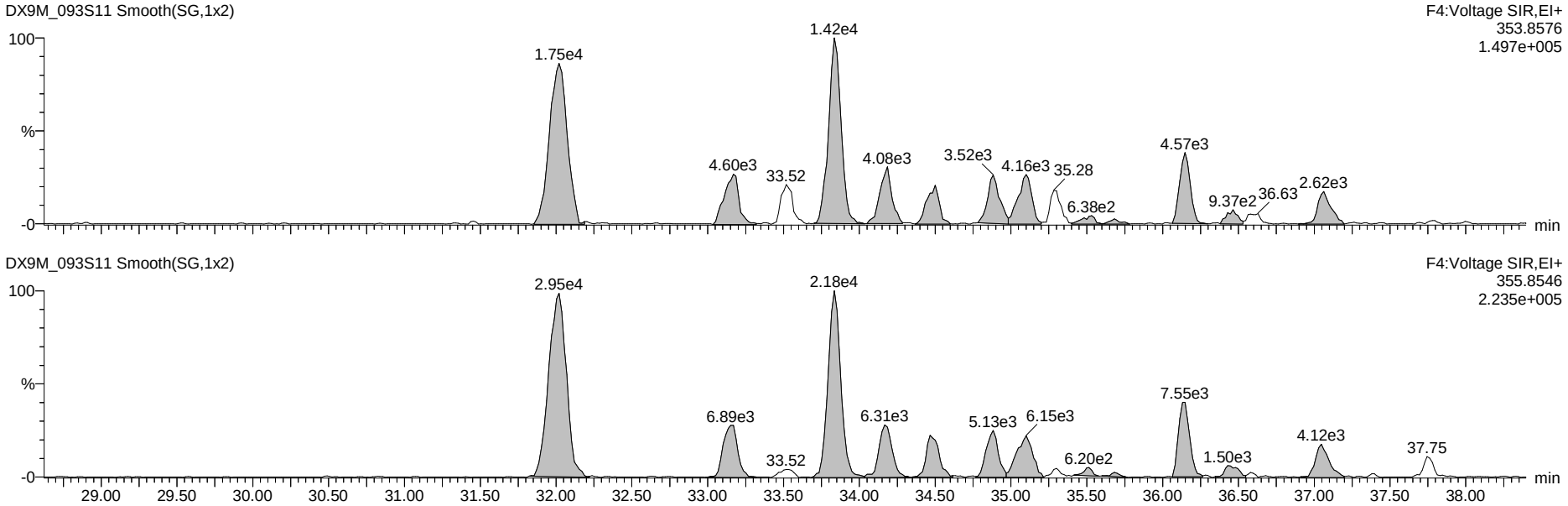




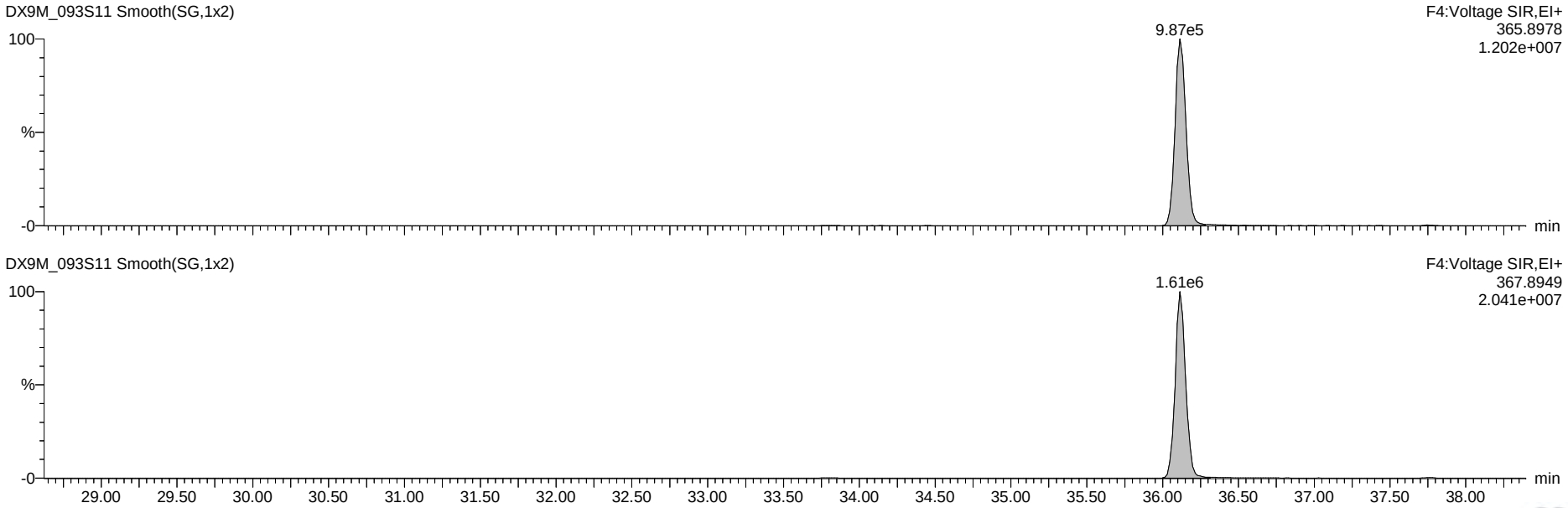
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S11, Date: 12-Sep-2019, Time: 18:15:23, ID: L31654-6,I,, Description: 1,WG69303,1.0/20uL

Total Penta-Dioxins



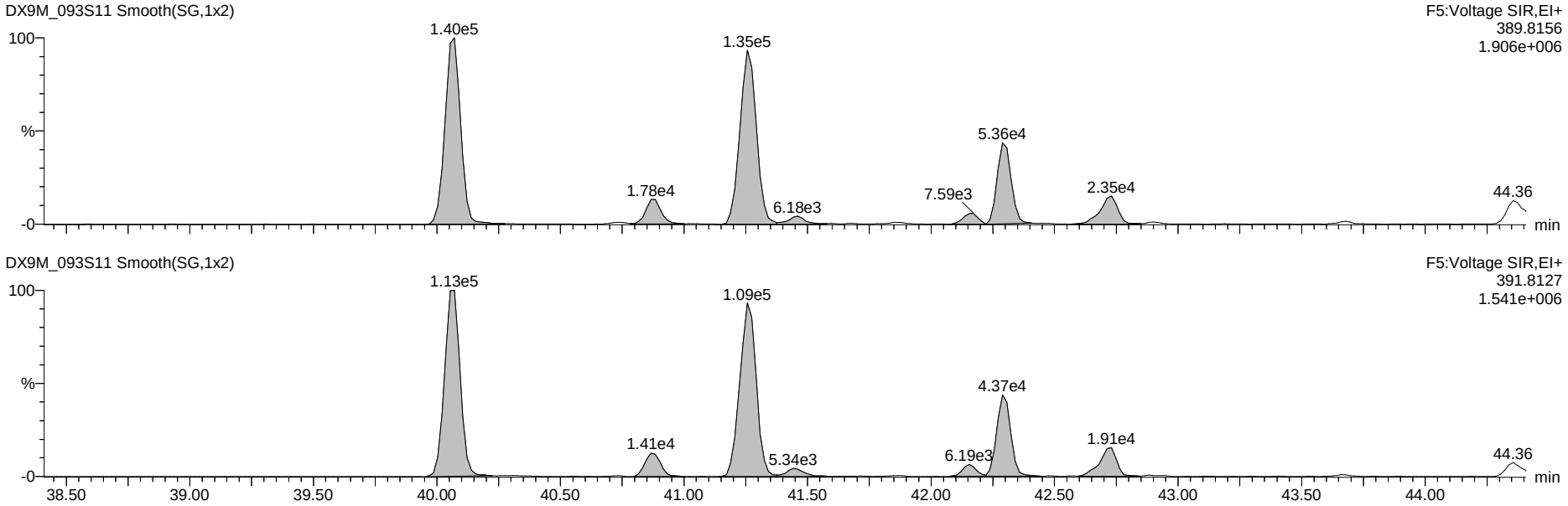
13C-Penta-Dioxins



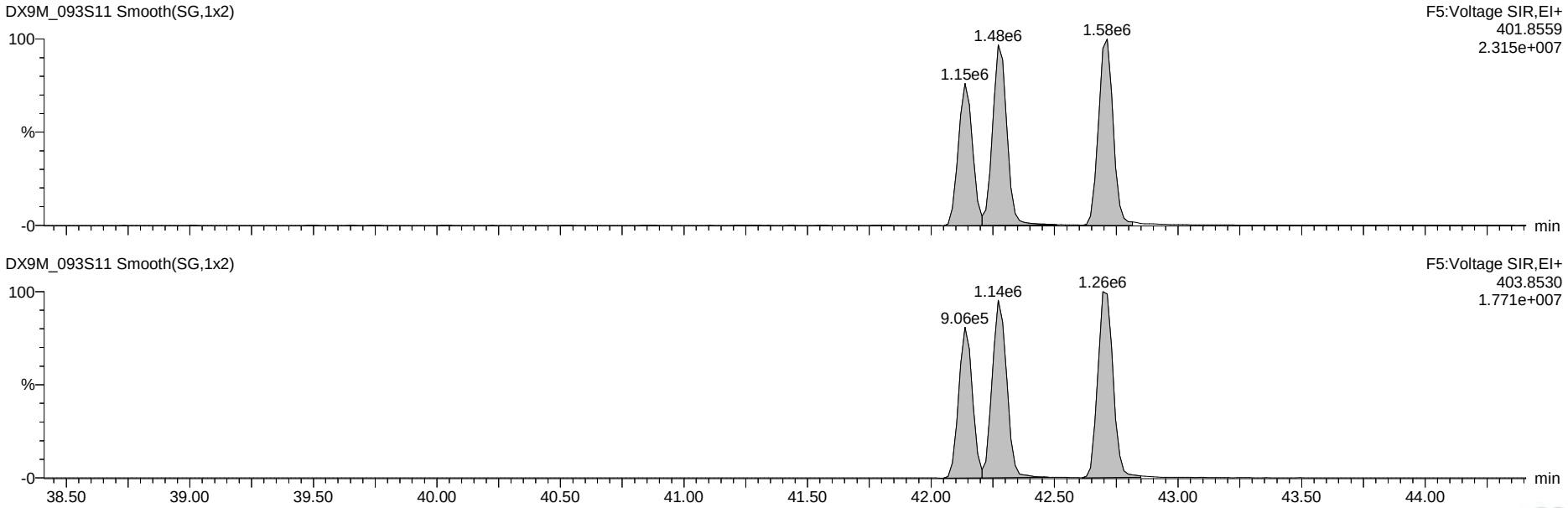
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S11, Date: 12-Sep-2019, Time: 18:15:23, ID: L31654-6,I,, Description: 1,WG69303,1.0/20uL

Total Hexa-Dioxins



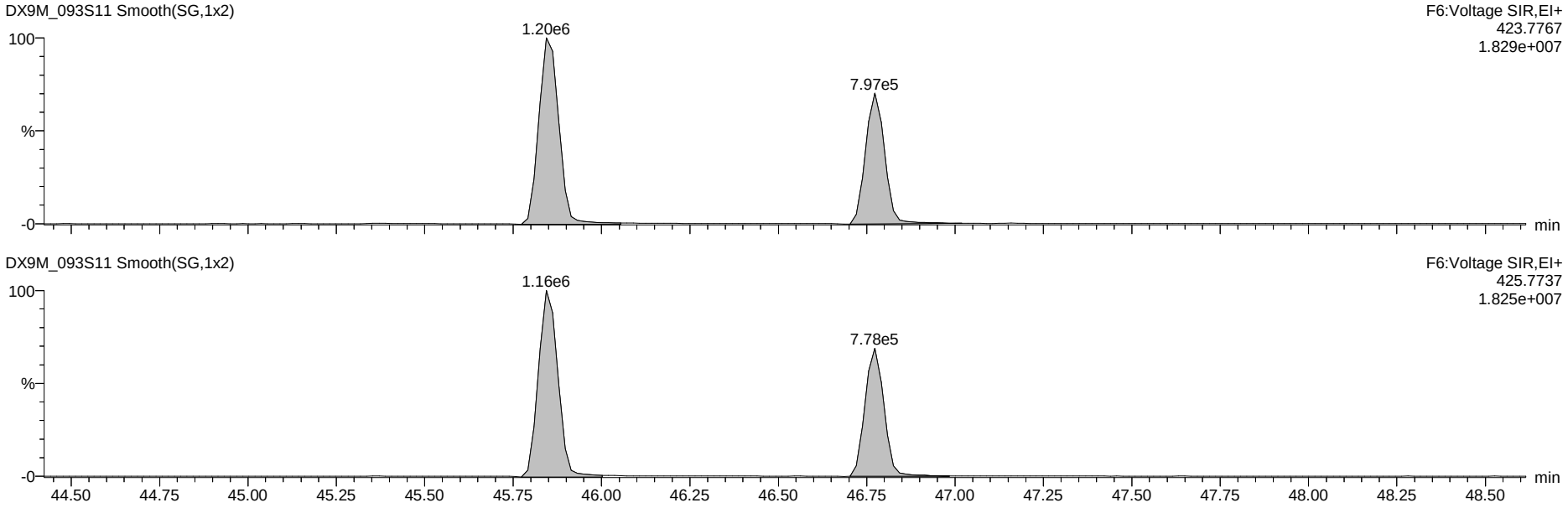
13C-Hexa-Dioxins



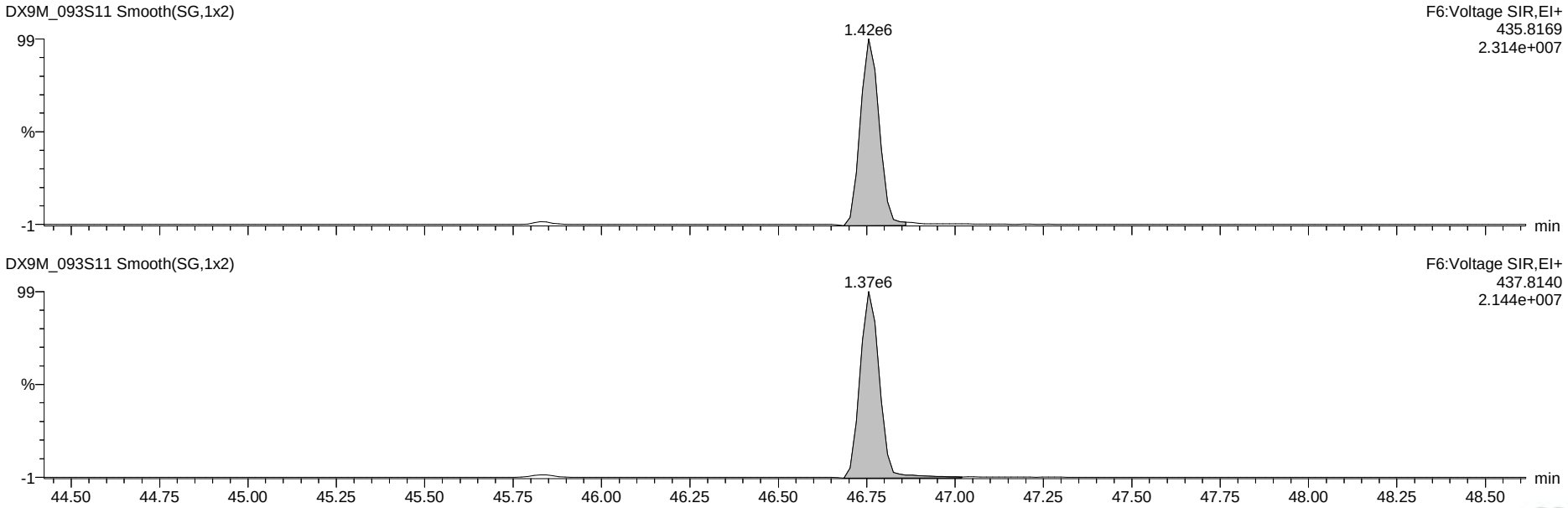
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S11, Date: 12-Sep-2019, Time: 18:15:23, ID: L31654-6,I,, Description: 1,WG69303,1.0/20uL

Total Hepta-Dioxins



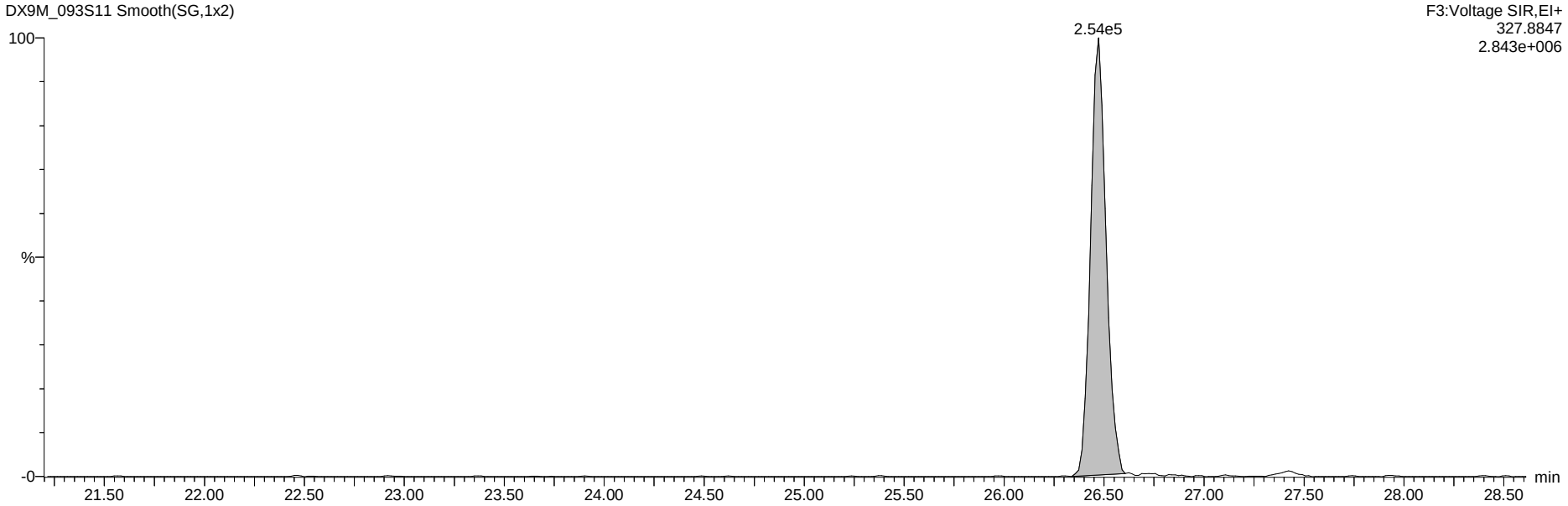
13C-Hepta-Dioxins



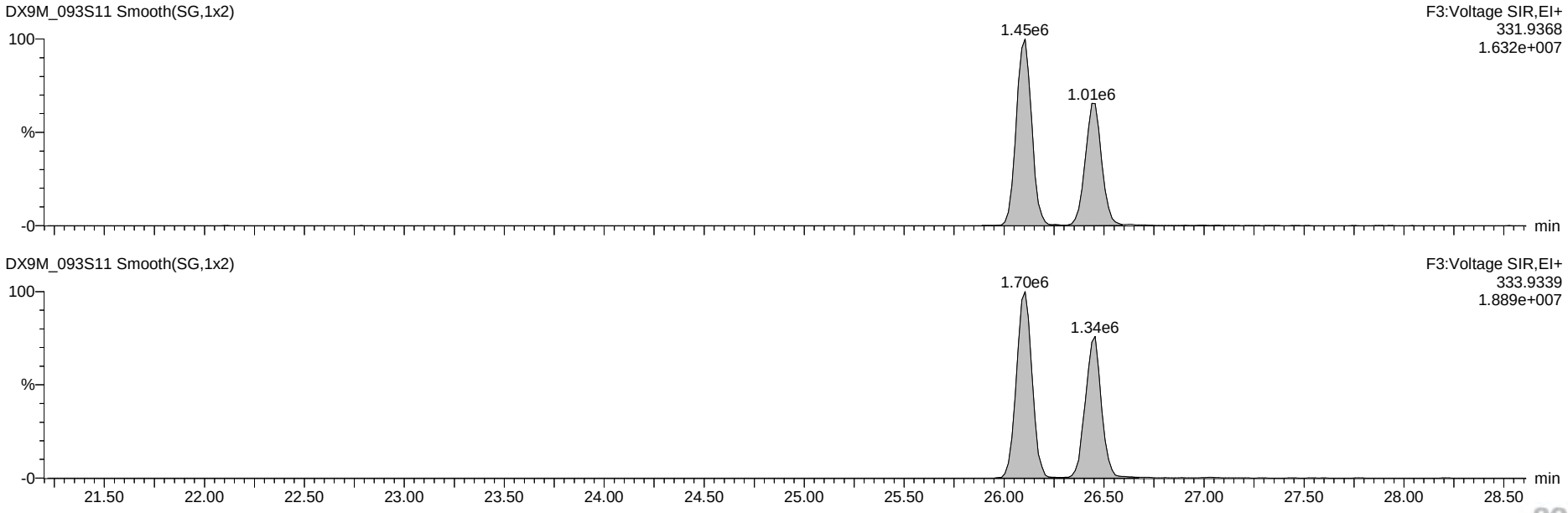
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S11, Date: 12-Sep-2019, Time: 18:15:23, ID: L31654-6,I,, Description: 1,WG69303,1.0/20uL

37Cl-2,3,7,8-TCDD



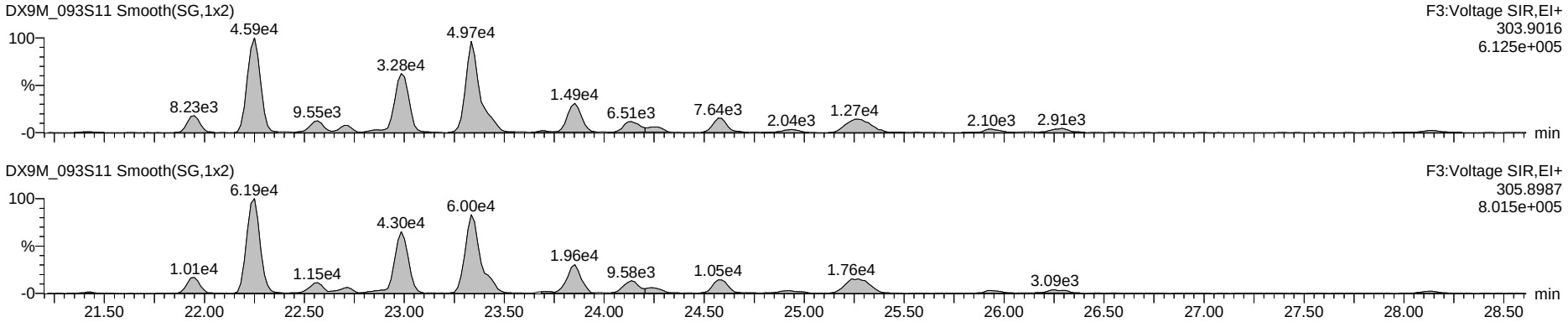
13C-Tetra-Dioxins



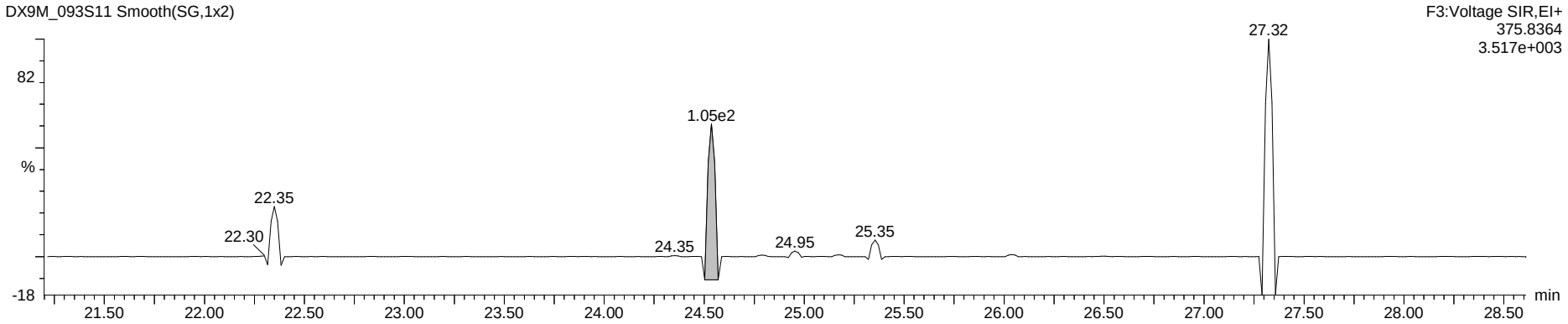
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S11, Date: 12-Sep-2019, Time: 18:15:23, ID: L31654-6,I,, Description: 1,WG69303,1.0/20uL

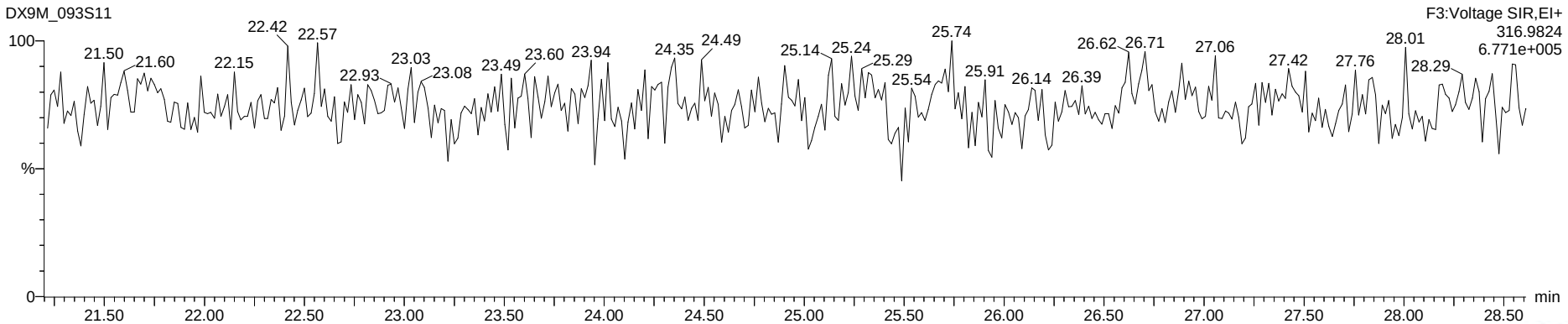
Total Tetra-Furans



Hexa DPE



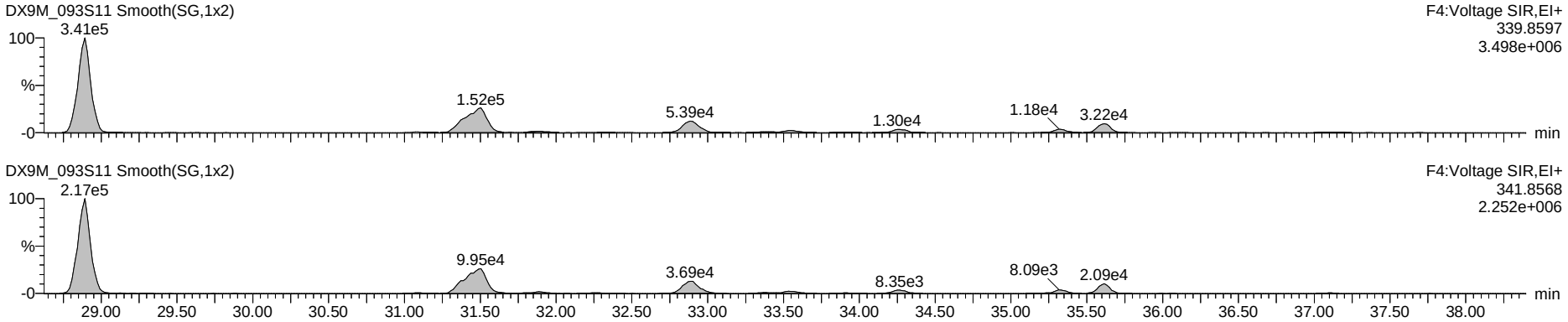
Tetra Lock



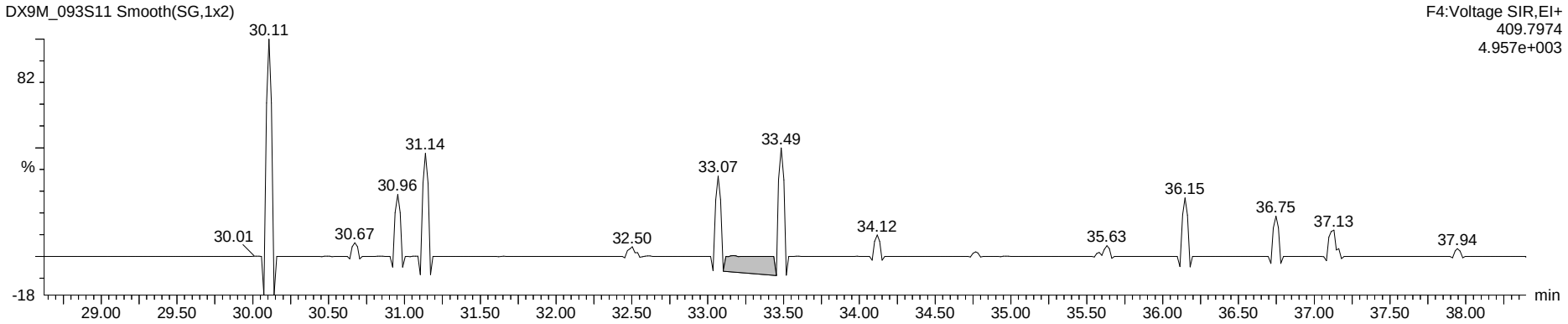
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S11, Date: 12-Sep-2019, Time: 18:15:23, ID: L31654-6,I,, Description: 1,WG69303,1.0/20uL

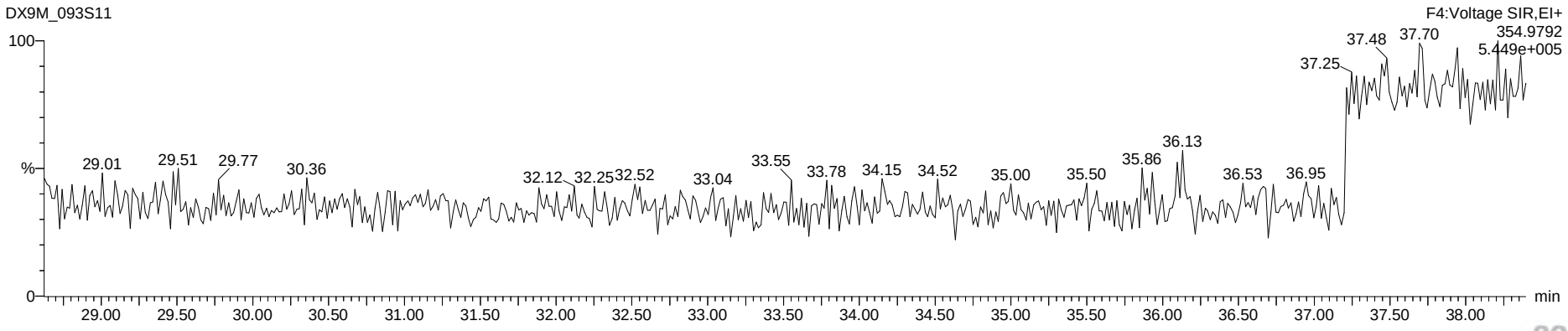
Total Penta-Furans



Hepta DPE



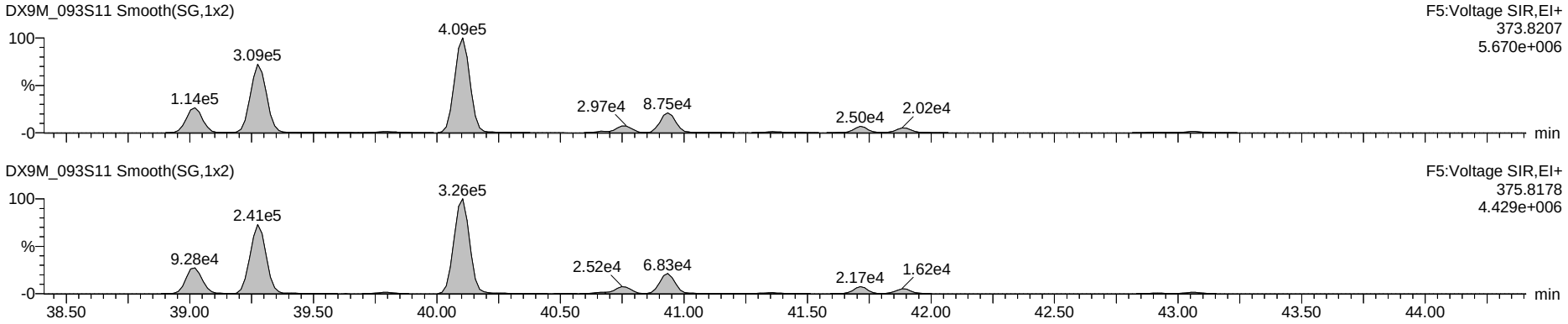
Penta Lock



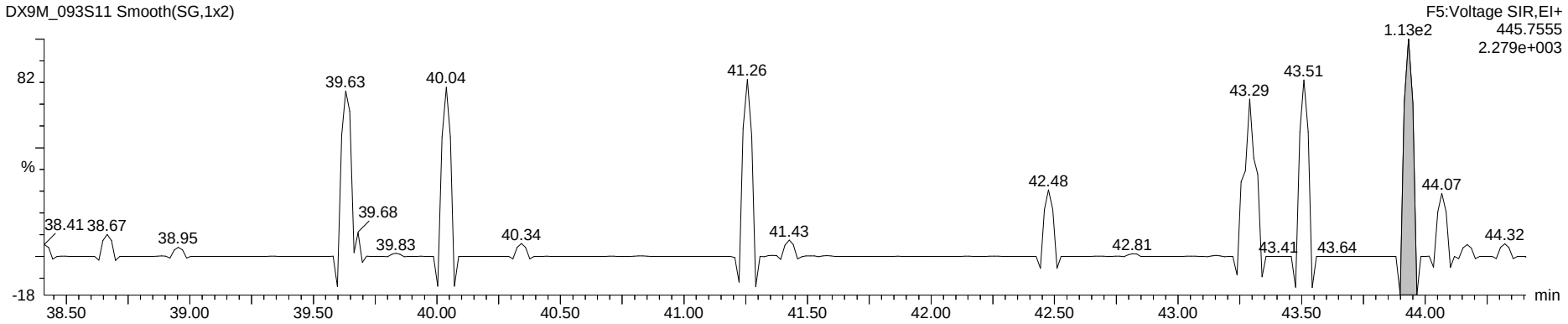
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S11, Date: 12-Sep-2019, Time: 18:15:23, ID: L31654-6,I,, Description: 1,WG69303,1.0/20uL

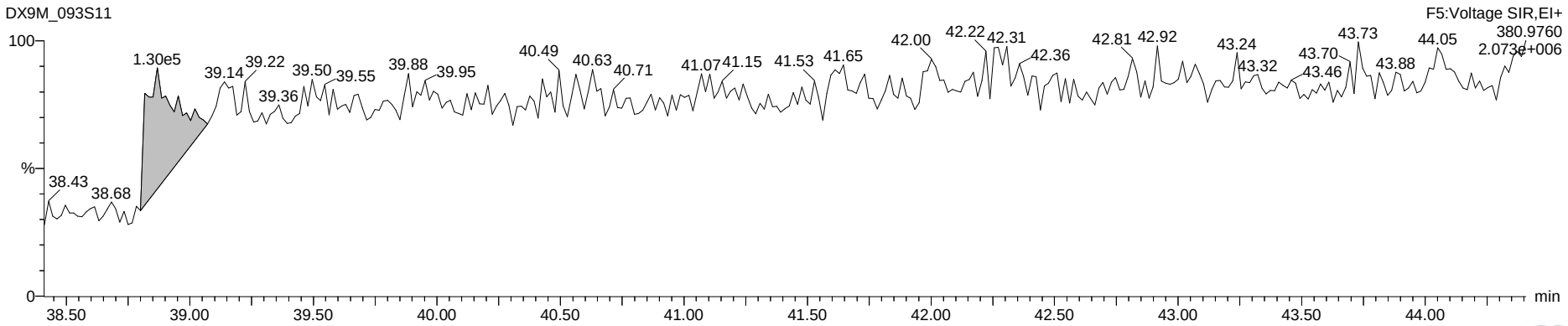
Total Hexa-Furans



Octa DPE



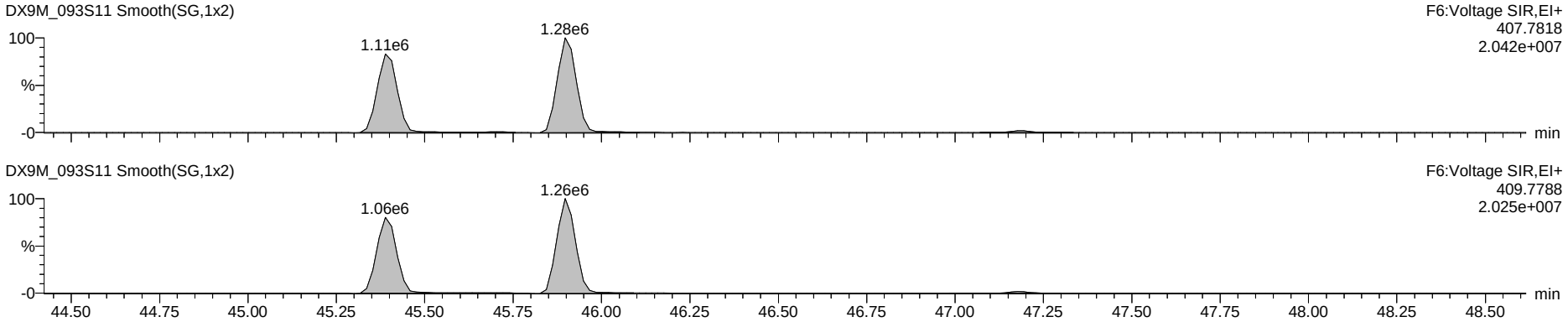
Hexa Lock



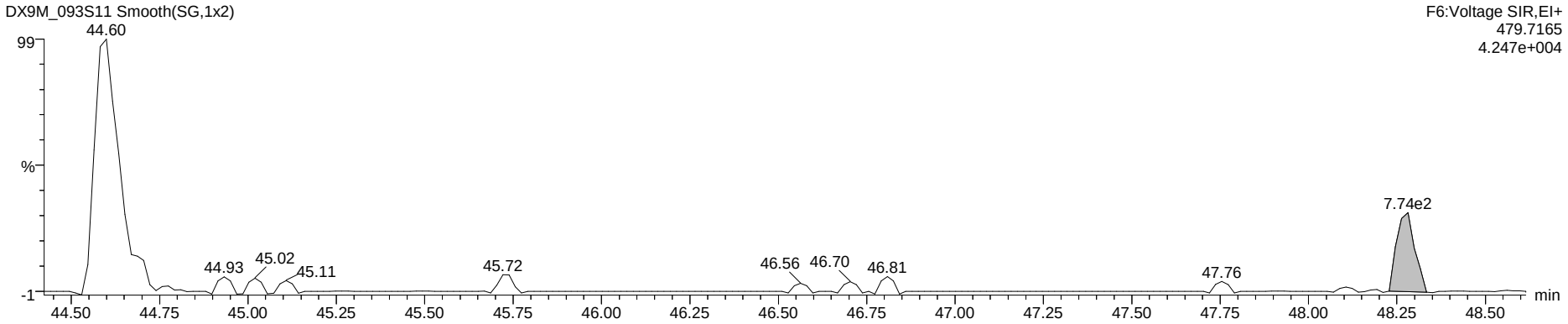
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S11, Date: 12-Sep-2019, Time: 18:15:23, ID: L31654-6,I,, Description: 1,WG69303,1.0/20uL

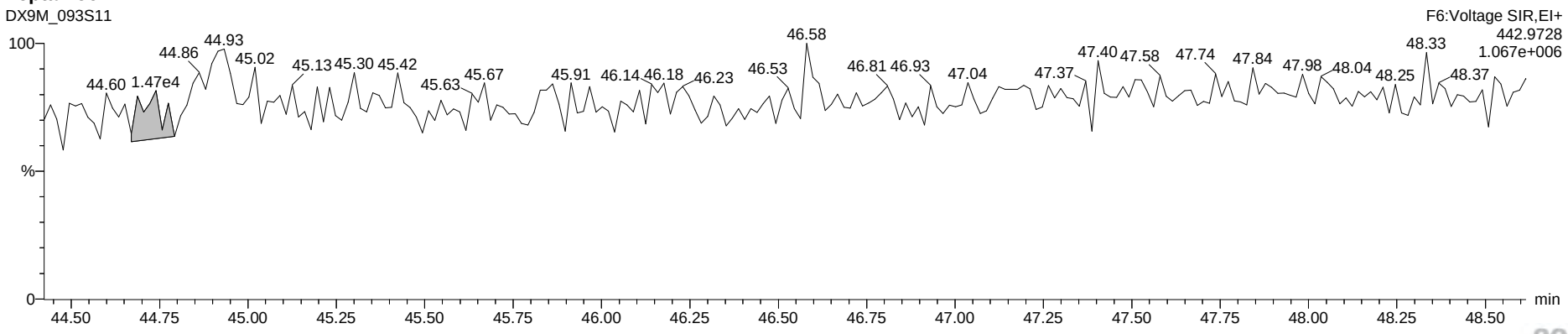
Total Hepta-Furans



Nona DPE



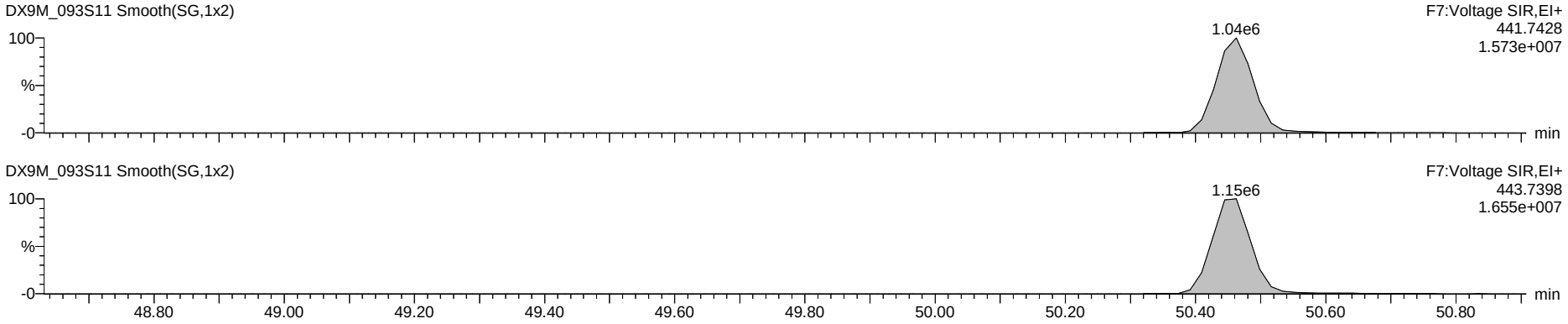
Hepta Lock



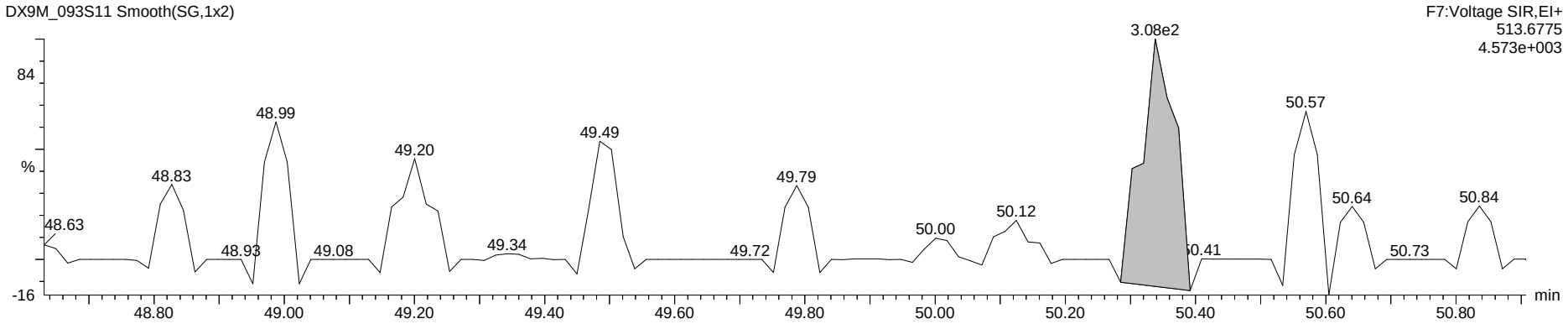
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S11, Date: 12-Sep-2019, Time: 18:15:23, ID: L31654-6,I,, Description: 1,WG69303,1.0/20uL

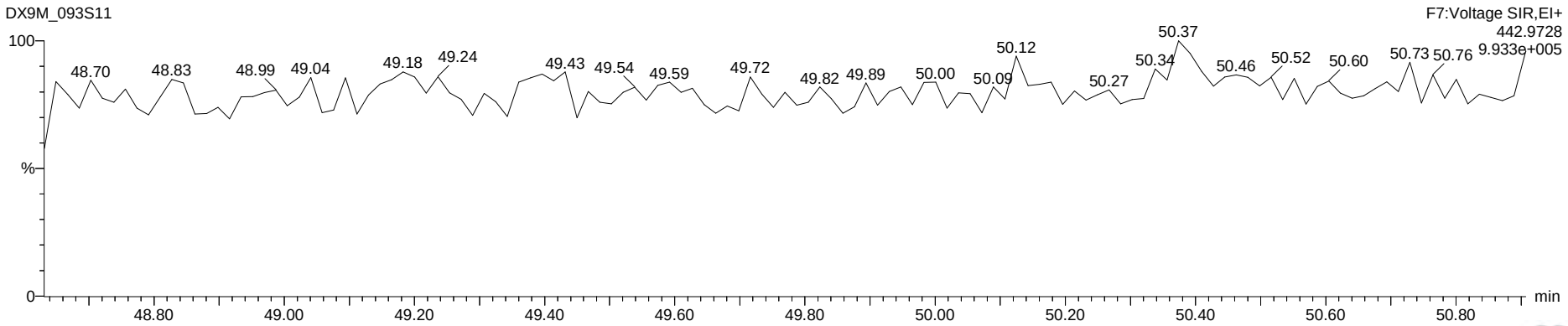
OCDF



Deca DPE



Octa Lock



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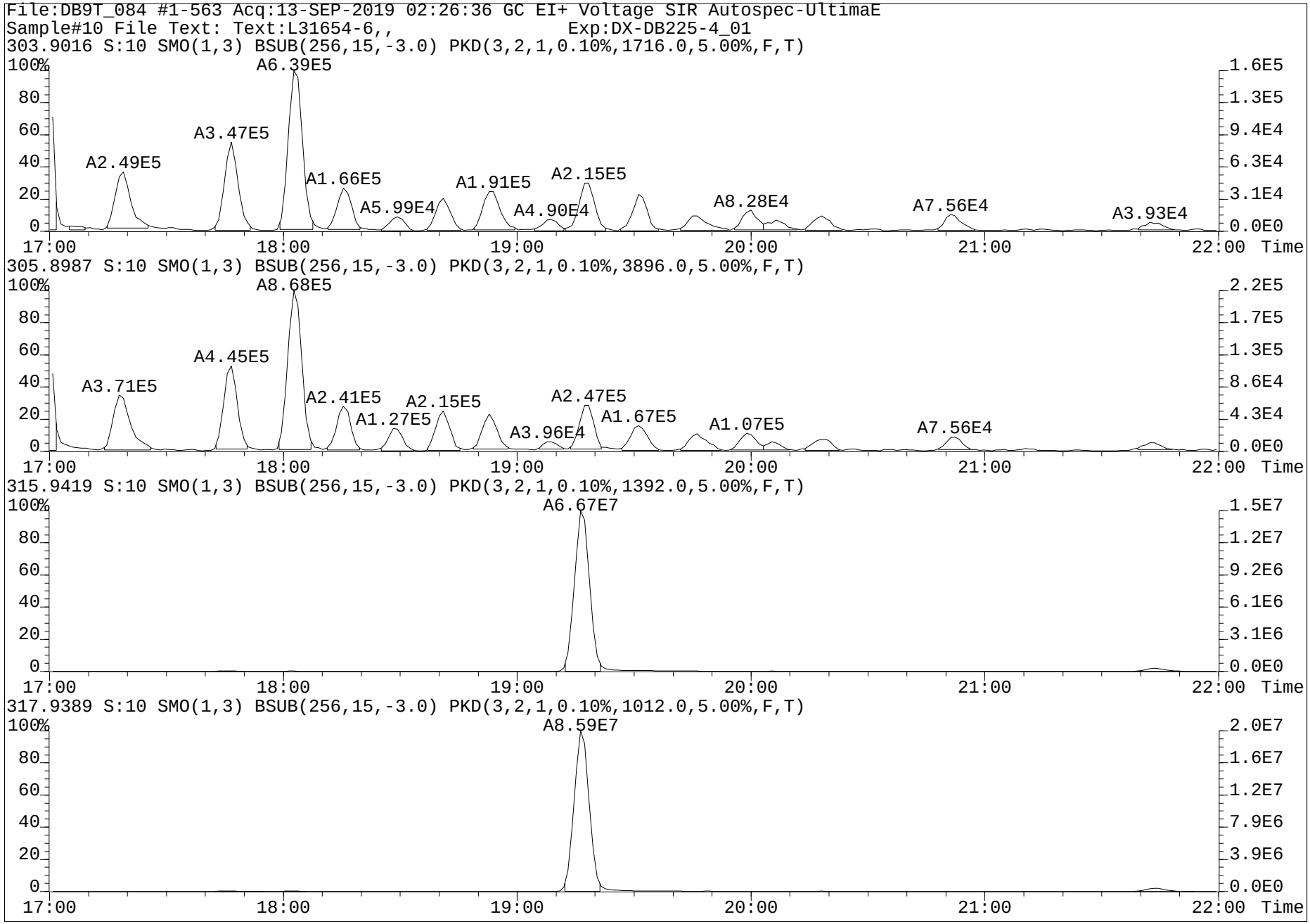
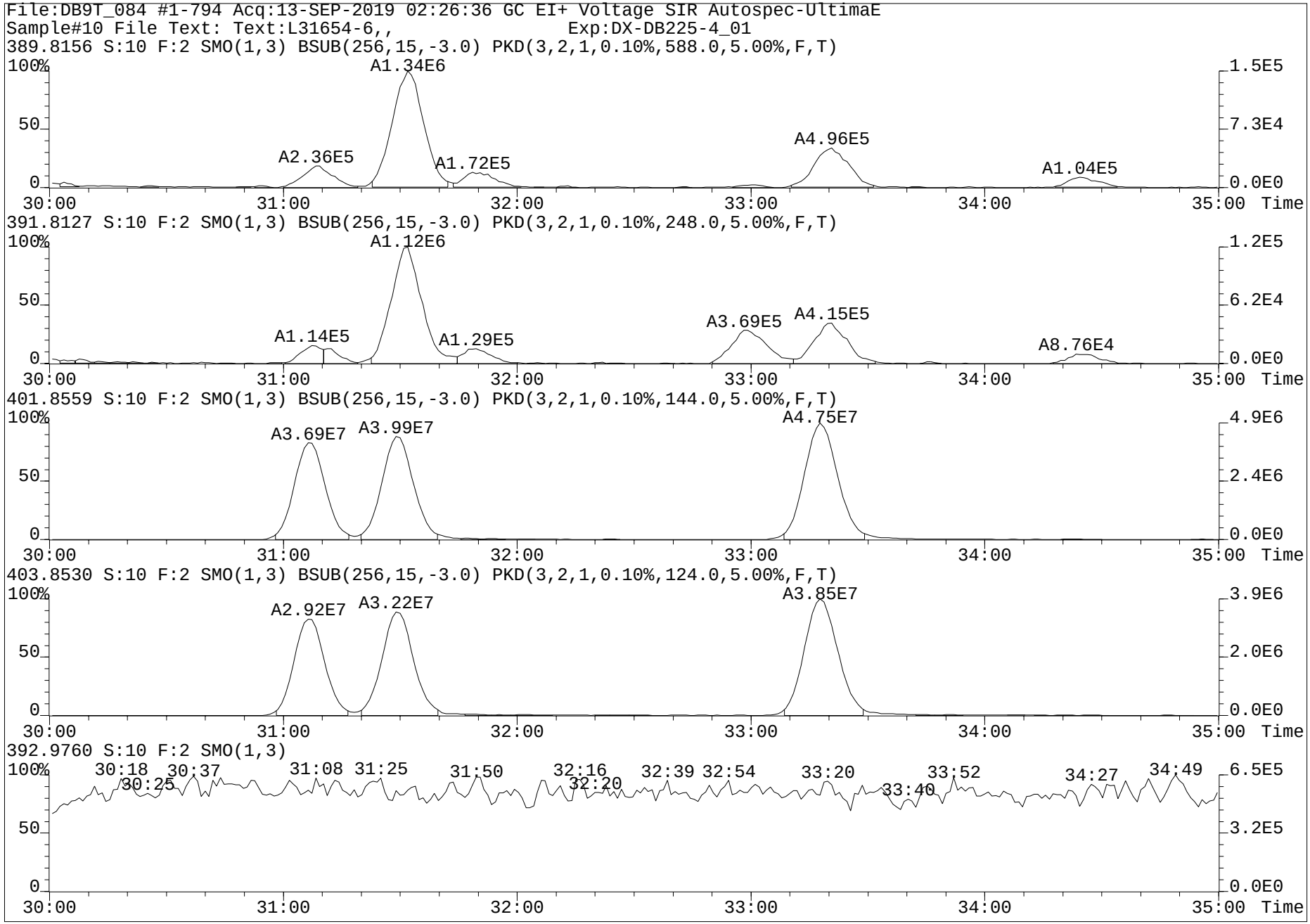
Run #15 Filename DB9T_084 S: 10 I: 1 Acquired: 13-SEP-19 02:26:36 Processed: 17-SEP-19 09:55:57
Run: db9t_084-a Analyte: db-hxd-s2 Cal: db9t_055-5a Results: db9t_084-a Version: V3.6 6-JAN-2000 17:51:42
Sample text: L31654-6,, Comments: 1,WG69303,2.0/20uL
sample size: 10.297000 conc units: pg/g total toxicity: 0.39 F1: 1.0000 F2: 1.0000

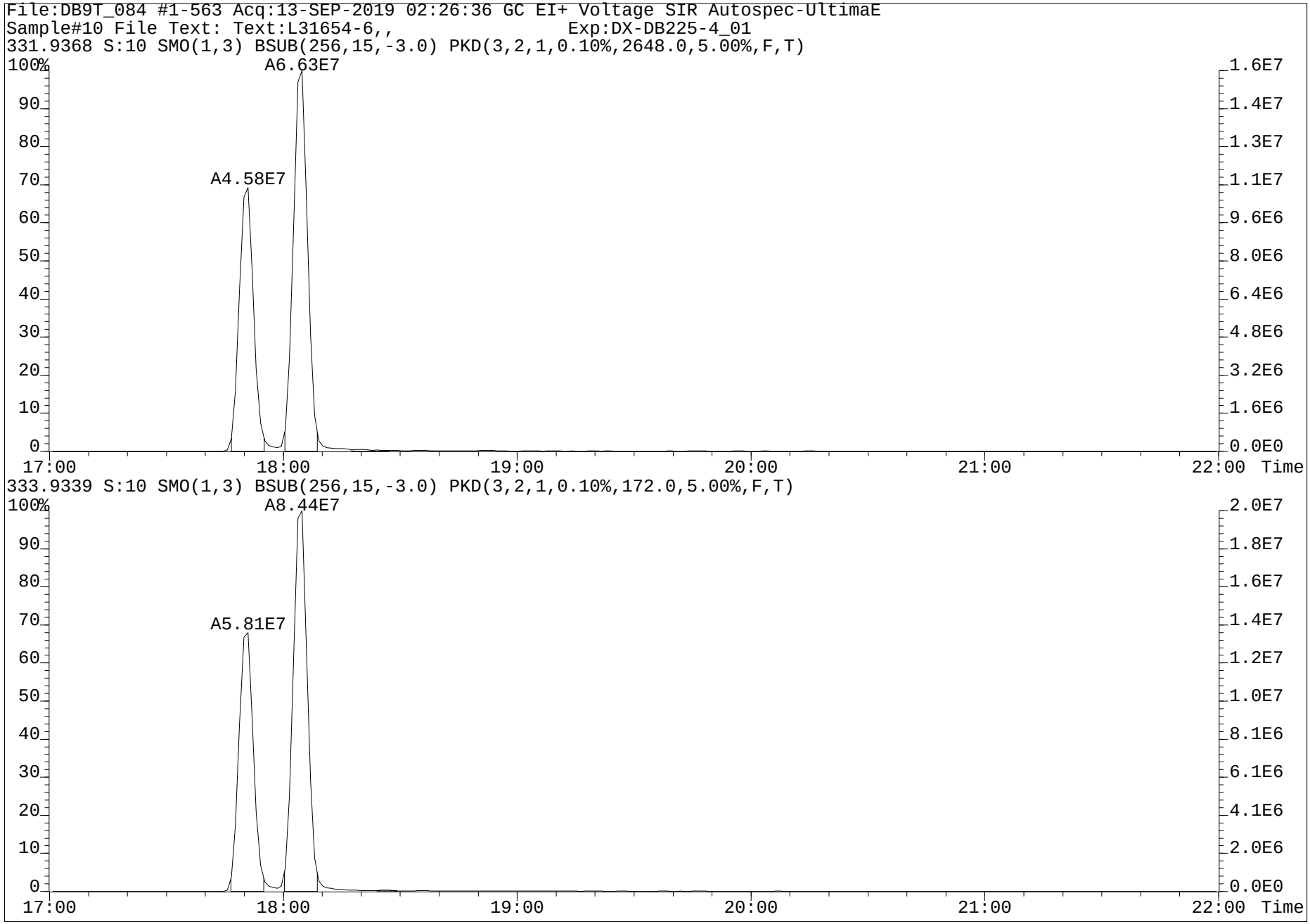
	Typ	Name	#Hom	Resp	RA		RT	Conc	Tox #1	DL	Rec	M?
1	Unk	2,3,7,8-TCDF	1	4.61e+05	0.87	y	19:17	0.757	0	0.1004	-	n
2	Unk	1,2,3,7,8,9-HxCDD	1	9.11e+05	1.19	y	33:21	3.167	0	0.0664	-	n
3	IS/RT	13C-2,3,7,8-TCDF	1	1.53e+08	0.78	y	19:16	139.073	-	0.0228	71.6	n
4	IS/RT	13C-1,2,3,4,7,8-HxCDD	1	6.61e+07	1.26	y	31:07	145.353	-	0.0144	74.8	n
5	IS/RT	13C-1,2,3,6,7,8-HxCDD	1	7.20e+07	1.24	y	31:29	151.603	-	0.0138	78.1	n
6	RS	13C-1,2,3,4-TCDD	1	1.51e+08	0.79	y	18:04	12.715	-	-	-	n
7	RS	13C-1,2,3,7,8,9-HxCDD	1	8.59e+07	1.23	y	33:18	14.536	-	-	-	n
8	Tot	Hexa DPE	0	*			NotFnd	*	-	-	-	n
9	Tot	Tetra Lock	-	-			-	-	-	-	-	n
10	Tot	Hexa Lock	-	-			-	-	-	-	-	n

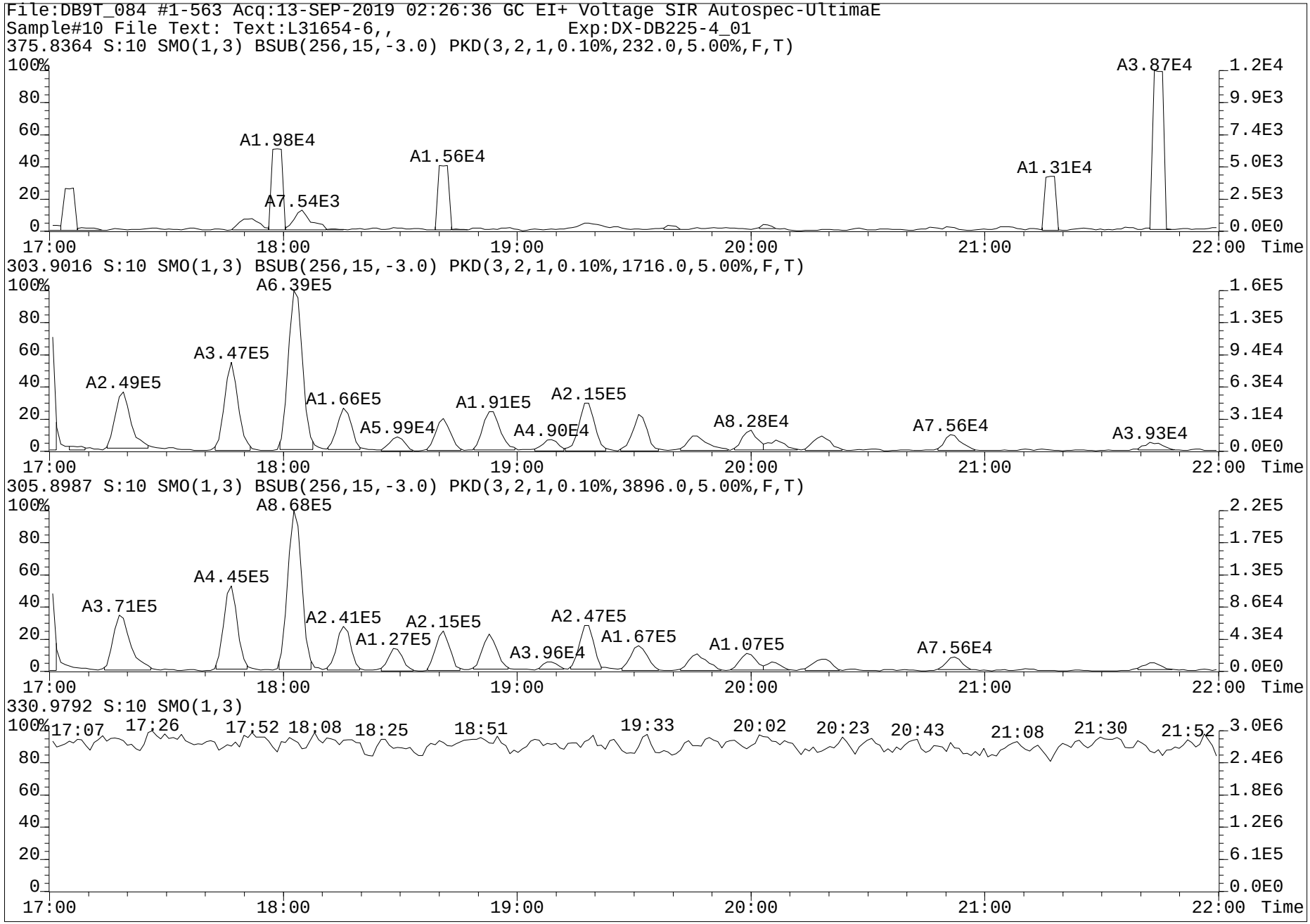
PV by RA 20SEP2019
SV HH 22-Sept 2019

SGS AXYS


File:DB9T_084 #1-563 Acq:13-SEP-2019 02:26:36 GC EI+ Voltage SIR Autospec-UltimaE
Sample#10 File Text: Text:L31654-6,, Exp:DX-DB225-4_01
303.9016 S:10 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1716.0,5.00%,F,T)
A6.39E5
A3.47E5
A2.49E5
A1.66E5
A5.99E4
A1.91E5
A4.90E4
A2.15E5
A8.28E4
A7.56E4
A3.93E4
305.8987 S:10 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,3896.0,5.00%,F,T)
A8.68E5
A4.45E5
A3.71E5
A2.41E5
A2.15E5
A1.27E5
A3.96E4
A2.47E5
A1.67E5
A1.07E5
A7.56E4
315.9419 S:10 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1392.0,5.00%,F,T)
A6.67E7
317.9389 S:10 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1012.0,5.00%,F,T)
A8.59E7
Time


File:DB9T_084 #1-794 Acq:13-SEP-2019 02:26:36 GC EI+ Voltage SIR Autospec-UltimaE
Sample#10 File Text: Text:L31654-6,, Exp:DX-DB225-4_01
389.8156 S:10 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,588.0,5.00%,F,T)
A1.34E6
A2.36E5
A1.72E5
A4.96E5
A1.04E5
391.8127 S:10 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,248.0,5.00%,F,T)
A1.12E6
A1.14E5
A1.29E5
A3.69E5
A4.15E5
A8.76E4
401.8559 S:10 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,144.0,5.00%,F,T)
A3.69E7
A3.99E7
A4.75E7
403.8530 S:10 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,124.0,5.00%,F,T)
A2.92E7
A3.22E7
A3.85E7
392.9760 S:10 F:2 SMO(1,3)
30:18 30:37 31:08 31:25 31:50 32:16 32:39 32:54 33:20 33:52 34:27 34:49
30:25 32:20 33:40
100%
50
0
30:00 31:00 32:00 33:00 34:00 35:00 Time
1.5E5 7.3E4 0.0E0
1.2E5 6.2E4 0.0E0
4.9E6 2.4E6 0.0E0
3.9E6 2.0E6 0.0E0
6.5E5 3.2E5 0.0E0


File:DB9T_084 #1-563 Acq:13-SEP-2019 02:26:36 GC EI+ Voltage SIR Autospec-UltimaE
Sample#10 File Text: Text:L31654-6,, Exp:DX-DB225-4_01
331.9368 S:10 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,2648.0,5.00%,F,T)
A6.63E7
A4.58E7
333.9339 S:10 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,172.0,5.00%,F,T)
A8.44E7
A5.81E7
Time


File:DB9T_084 #1-563 Acq:13-SEP-2019 02:26:36 GC EI+ Voltage SIR Autospec-UltimaE
Sample#10 File Text: Text:L31654-6,, Exp:DX-DB225-4_01
375.8364 S:10 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,232.0,5.00%,F,T)
A1.98E4
A7.54E3
A1.56E4
A1.31E4
A3.87E4
303.9016 S:10 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1716.0,5.00%,F,T)
A2.49E5
A3.47E5
A6.39E5
A1.66E5
A5.99E4
A1.91E5
A4.90E4
A2.15E5
A8.28E4
A7.56E4
A3.93E4
305.8987 S:10 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,3896.0,5.00%,F,T)
A3.71E5
A4.45E5
A8.68E5
A2.41E5
A1.27E5
A2.15E5
A3.96E4
A2.47E5
A1.67E5
A1.07E5
A7.56E4
330.9792 S:10 SMO(1,3)
17:07
17:26
17:52
18:08
18:25
18:51
19:33
20:02
20:23
20:43
21:08
21:30
21:52
Time

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S16, Date: 12-Sep-2019, Time: 23:06:41, ID: L31654-7,I,, Description: 1,WG69303,1.0/20uL

	Name	Sample Size	Resp	Ratio	fails?	RT	pg	DL	%Rec	Noise 1	Noise 2
1	2,3,7,8-TCDF	10.877	4.75e4	0.81	NO	25.34	2.733	0.0581		1.33e3	2.64e3
2	1,2,3,7,8-PeCDF	10.877	2.17e4	1.55	NO	33.70	1.292	0.0635		1.49e3	1.91e3
3	2,3,4,7,8-PeCDF	10.877	3.46e4	1.70	NO	35.47	2.202	0.0721		1.49e3	1.91e3
4	1,2,3,4,7,8-HxCDF	10.877	2.71e5	1.27	NO	40.95	18.545	0.0594		2.06e3	2.19e3
5	1,2,3,6,7,8-HxCDF	10.877	8.49e4	1.16	NO	41.12	5.689	0.0574		2.06e3	2.19e3
6	2,3,4,6,7,8-HxCDF	10.877	5.04e4	1.14	NO	42.12	3.550	0.0540		2.06e3	2.19e3
7	1,2,3,7,8,9-HxCDF	10.877	9.12e3	1.15	NO	43.09	0.601	0.0502		2.06e3	2.19e3
8	1,2,3,4,6,7,8-HpCDF	10.877	6.56e6	1.03	NO	45.60	436.769	0.1283		4.44e3	5.55e3
9	1,2,3,4,7,8,9-HpCDF	10.877	3.01e5	1.01	NO	47.33	22.661	0.1296		4.44e3	5.55e3
10	OCDF	10.877	3.20e7	0.91	NO	50.69	2019.418	0.1337		7.72e3	3.39e3
11	2,3,7,8-TCDD	10.877	1.09e4	0.79	NO	26.57	0.771	0.0719		2.15e3	1.64e3
12	1,2,3,7,8-PeCDD	10.877	2.95e4	0.57	NO	36.26	2.502	0.1024		3.37e3	5.84e2
13	1,2,3,4,7,8-HxCDD	10.877	1.28e5	1.25	NO	42.34	7.498	0.0385		1.75e3	2.12e3
14	1,2,3,6,7,8-HxCDD	10.877	7.39e5	1.22	NO	42.46	43.322	0.0399		1.75e3	2.12e3
15	1,2,3,7,8,9-HxCDD	10.877	1.86e5	1.20	NO	42.90	11.034	0.0396		1.75e3	2.12e3
16	1,2,3,4,6,7,8-HpCDD	10.877	1.93e7	1.02	NO	46.95	1627.931	0.1466		5.41e3	5.12e3
17	OCDD	10.877	1.55e8	0.91	NO	50.62	11341.620	0.2769		1.05e4	9.33e3
18	13C-2,3,7,8-TCDF	10.877	3.45e6	0.79	NO	25.30	109.892	0.0665	59.8	4.57e3	4.10e3
19	13C-1,2,3,7,8-PeCDF	10.877	3.32e6	1.55	NO	33.67	130.109	0.1463	70.8	7.74e3	7.77e3
20	13C-2,3,4,7,8-PeCDF	10.877	3.04e6	1.56	NO	35.45	115.491	0.1418	62.8	7.74e3	7.77e3
21	13C-1,2,3,4,7,8-HxCDF	10.877	2.43e6	0.52	NO	40.93	112.108	0.1095	61.0	5.79e3	7.01e3
22	13C-1,2,3,6,7,8-HxCDF	10.877	2.55e6	0.52	NO	41.10	107.086	0.0996	58.2	5.79e3	7.01e3
23	13C-2,3,4,6,7,8-HxCDF	10.877	2.30e6	0.51	NO	42.10	106.863	0.1105	58.1	5.79e3	7.01e3
24	13C-1,2,3,7,8,9-HxCDF	10.877	2.65e6	0.53	NO	43.07	138.430	0.1243	75.3	5.79e3	7.01e3
25	13C-1,2,3,4,6,7,8-HpCDF	10.877	2.21e6	0.46	NO	45.58	123.587	0.1125	67.2	4.60e3	6.22e3
26	13C-1,2,3,4,7,8,9-HpCDF	10.877	1.95e6	0.44	NO	47.32	134.617	0.1386	73.2	4.60e3	6.22e3
27	13C-2,3,7,8-TCDD	10.877	2.36e6	0.77	NO	26.54	118.306	0.1146	64.3	4.30e3	5.21e3
28	13C-1,2,3,7,8-PeCDD	10.877	2.19e6	0.63	NO	36.25	138.230	0.0665	75.2	2.87e3	1.52e3
29	13C-1,2,3,4,7,8-HxCDD	10.877	3.05e6	1.29	NO	42.32	176.435	0.1079	96.0	5.56e3	4.50e3
30	13C-1,2,3,6,7,8-HxCDD	10.877	3.33e6	1.26	NO	42.44	173.846	0.0976	94.5	5.56e3	4.50e3
31	13C-1,2,3,4,6,7,8-HpCDD	10.877	2.79e6	1.02	NO	46.93	143.992	0.0779	78.3	3.54e3	4.59e3
32	13C-OCDD	10.877	5.12e6	0.90	NO	50.62	359.055	0.1068	97.6	5.15e3	3.04e3
33	13C-1,2,3,4-TCDD	10.877	3.79e6	0.77	NO	26.17	8.659	0.0052	4.7	4.30e3	5.21e3
34	13C-1,2,3,7,8,9-HxCDD	10.877	3.29e6	1.24	NO	42.88	10.408	0.0059	5.7	5.56e3	4.50e3
35	37Cl-2,3,7,8-TCDD	10.877	3.61e5			26.56	16.403	0.0493	89.2		4.51e3
36	Total Tetra-Furans	10.877					15.922	0.0581			2.64e3
37	Total Tetra-Dioxins	10.877					12.140	0.0719			1.64e3
38	Total Penta-Furans	10.877					47.494	0.0684			1.91e3
39	Total Penta-Dioxins	10.877					23.502	0.1024			5.84e2
40	Total Hexa-Furans	10.877					398.074	0.0545			2.19e3
41	Total Hexa-Dioxins	10.877					178.475	0.0375			2.12e3
42	Total Hepta-Furans	10.877					2336.231	0.1291			5.55e3
43	Total Hepta-Dioxins	10.877					3102.758	0.1466			5.12e3
44	Hexa DPE	1.000	2.31e2			25.52					1.37e0
45	Hepta DPE	1.000	9.19e2			37.15					3.41e2
46	Octa DPE	1.000	2.15e2			44.20					4.08e2
47	Nona DPE	1.000	1.70e4			48.35					2.76e3
48	Deca DPE	1.000	3.51e2			50.64					4.52e2
49	Tetra Lock	1.000	1.01e4			21.73					1.17e5
50	Penta Lock	1.000	4.33e4			32.82					9.06e4
51	Hexa Lock	1.000	3.00e5			38.92					2.65e5
52	Hepta Lock	1.000	3.34e3			44.48					1.58e5
53	Octa Lock	1.000	4.74e3			49.27					1.52e5
54	13C-Tetra-Furans	10.877					109.892	0.0665			4.10e3
55	13C-Tetra-Dioxins	10.877					126.965	0.1198			5.21e3

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

SV HH 22Sept.2019

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S16, Date: 12-Sep-2019, Time: 23:06:41, ID: L31654-7,I,, Description: 1,WG69303,1.0/20uL

Tetrafurans

	RT	Ratio	Fails?	pg
1	24.17	0.855	NO	0.846
2	23.90	0.841	NO	0.703
3	23.74	0.789	NO	0.227
4	23.45	0.752	NO	2.738
5	23.02	0.825	NO	1.969
6	22.60	0.727	NO	1.239
7	22.30	0.761	NO	1.187
8	21.97	0.792	NO	0.302
9	26.59	1.880	YES	0.028
10	26.32	0.784	NO	0.599
11	26.02	0.833	NO	1.061
12	25.34	0.809	NO	2.733
13	24.99	0.662	NO	0.377
14	24.64	0.794	NO	1.080
15	24.30	0.655	NO	0.651
16	28.24	0.703	NO	0.182

Tetradioxins

	RT	Ratio	Fails?	pg
1	25.29	1.719	YES	0.317
2	25.14	0.417	YES	0.100
3	24.97	1.013	YES	0.115
4	24.72	0.774	NO	0.907
5	23.80	0.840	NO	0.745
6	23.42	0.838	NO	0.775
7	22.98	0.677	NO	0.747
8	28.38	1.202	YES	0.094
9	27.16	0.734	NO	0.293
10	26.57	0.790	NO	0.771
11	26.39	0.784	NO	6.815
12	26.17	0.782	NO	0.250
13	25.67	0.934	YES	0.210

Pentafurans

	RT	Ratio	Fails?	pg
1	31.31	1.433	NO	0.548
2	29.04	1.518	NO	21.418
3	35.72	1.449	NO	2.743
4	35.47	1.699	NO	2.202
5	35.33	1.502	NO	0.198
6	34.38	1.702	NO	1.563
7	34.07	1.568	NO	0.388
8	33.70	1.554	NO	1.292
9	33.50	1.186	YES	0.722
10	33.05	1.456	NO	3.042
11	32.55	8.121	YES	0.069
12	32.42	0.732	YES	0.111
13	32.02	1.811	YES	0.665
14	31.65	1.536	NO	12.396
15	37.21	1.214	YES	0.136

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S16, Date: 12-Sep-2019, Time: 23:06:41, ID: L31654-7,I,, Description: 1,WG69303,1.0/20uL

Pentadioxins

	RT	Ratio	Fails?	pg
1	32.15	0.636	NO	8.614
2	35.83	0.398	YES	0.139
3	35.70	0.148	YES	0.152
4	35.18	0.700	NO	1.152
5	35.02	0.607	NO	0.777
6	34.63	0.544	NO	0.957
7	34.30	0.565	NO	2.172
8	33.97	0.598	NO	1.691
9	33.29	0.614	NO	4.468
10	37.16	0.677	NO	0.569
11	36.58	0.650	NO	0.311
12	36.26	0.573	NO	2.502

Hexafurans

	RT	Ratio	Fails?	pg
1	42.12	1.136	NO	3.550
2	41.90	1.170	NO	5.369
3	41.63	0.769	YES	0.148
4	41.53	1.201	NO	0.630
5	41.12	1.164	NO	5.689
6	40.95	1.273	NO	18.545
7	40.27	1.273	NO	258.935
8	39.97	1.304	NO	1.404
9	39.46	1.221	NO	76.447
10	39.21	1.227	NO	21.783
11	43.22	1.266	NO	2.649
12	43.09	1.146	NO	0.601
13	40.88	1.202	NO	2.324

Hexadioxins

	RT	Ratio	Fails?	pg
1	40.26	1.228	NO	51.611
2	42.90	1.203	NO	11.034
3	42.46	1.224	NO	43.322
4	42.34	1.251	NO	7.498
5	41.65	1.318	NO	3.018
6	41.44	1.211	NO	57.033
7	41.05	1.315	NO	4.959

Heptafurans

	RT	Ratio	Fails?	pg
1	46.07	1.048	NO	1847.893
2	45.98	0.915	NO	28.909
3	45.60	1.032	NO	436.769
4	47.33	1.011	NO	22.661

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S16, Date: 12-Sep-2019, Time: 23:06:41, ID: L31654-7,I,, Description: 1,WG69303,1.0/20uL

Heptadioxins

	RT	Ratio	Fails?	pg
1	46.95	1.017	NO	1627.931
2	46.04	1.021	NO	1474.827

13C-TF

	RT	Ratio	Fails?	pg
1	25.30	0.786	NO	109.892

13C-TD

	RT	Ratio	Fails?	pg
1	26.54	0.767	NO	118.306
2	26.17	0.772	NO	8.659

13C-PF

	RT	Ratio	Fails?	pg
1	35.45	1.562	NO	115.491
2	33.67	1.547	NO	130.109

13C-PD

	RT	Ratio	Fails?	pg
1	36.25	0.629	NO	138.230

13C-HxF

	RT	Ratio	Fails?	pg
1	41.10	0.518	NO	107.086
2	40.93	0.522	NO	112.108
3	43.07	0.527	NO	138.430
4	42.10	0.514	NO	106.863

13C-HxD

	RT	Ratio	Fails?	pg
1	42.44	1.261	NO	173.846
2	42.32	1.288	NO	176.435
3	42.88	1.242	NO	10.408

13C-HpF

	RT	Ratio	Fails?	pg
1	47.32	0.440	NO	134.617
2	45.58	0.463	NO	123.587

13C-HpD

	RT	Ratio	Fails?	pg
1	46.93	1.022	NO	143.992

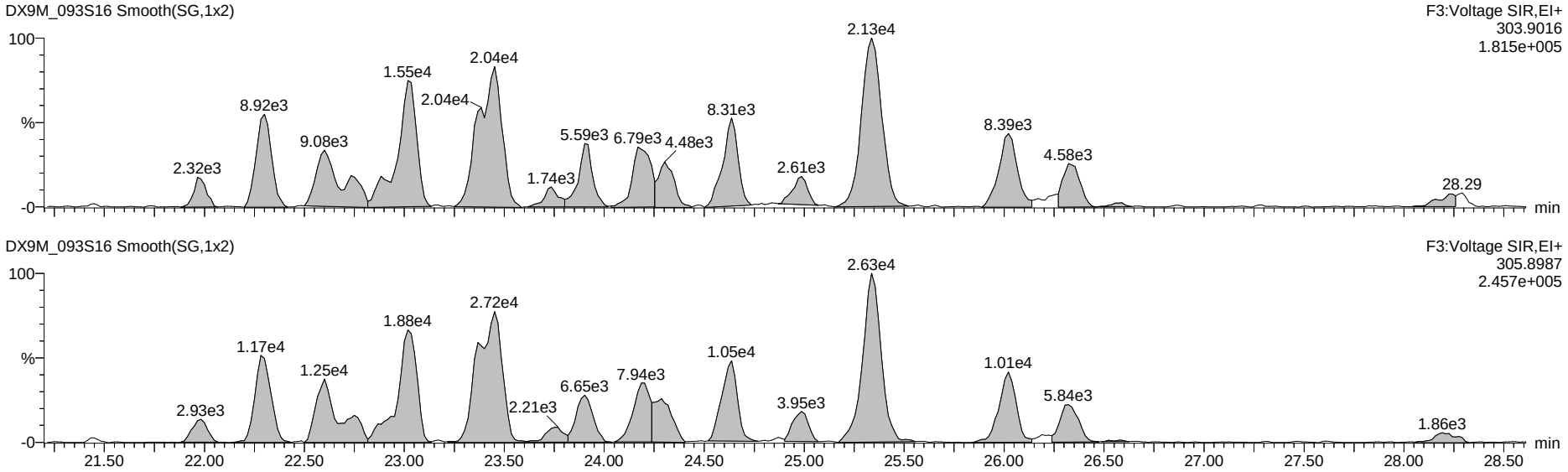
PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

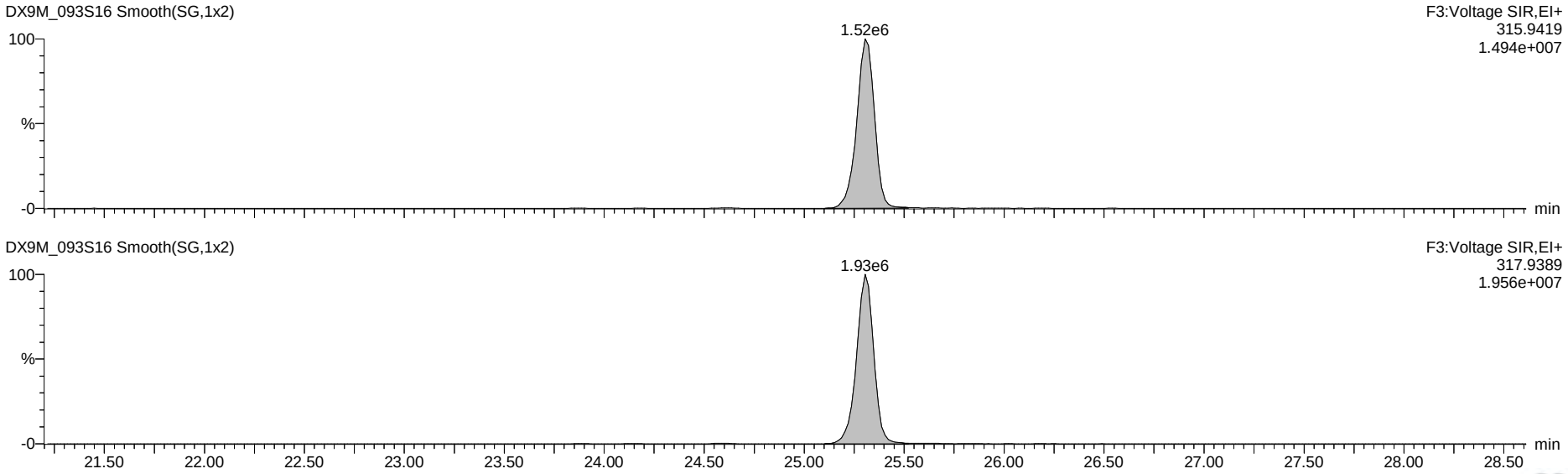
Method: G:\Masslynx\Inst_M\Exported_methods\DX_1613B_16.mdb 07 Sep 2017 16:45:23
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

Name: DX9M_093S16, Date: 12-Sep-2019, Time: 23:06:41, ID: L31654-7,I,, Description: 1,WG69303,1.0/20uL

Total Tetra-Furans



13C-Tetra-Furans



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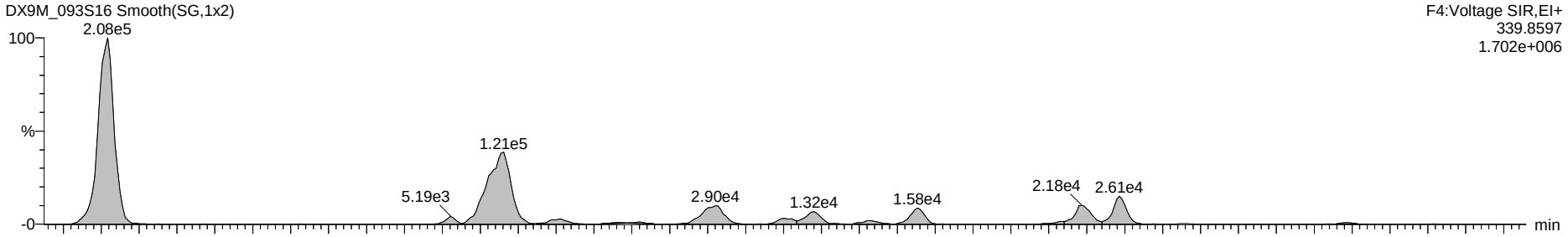
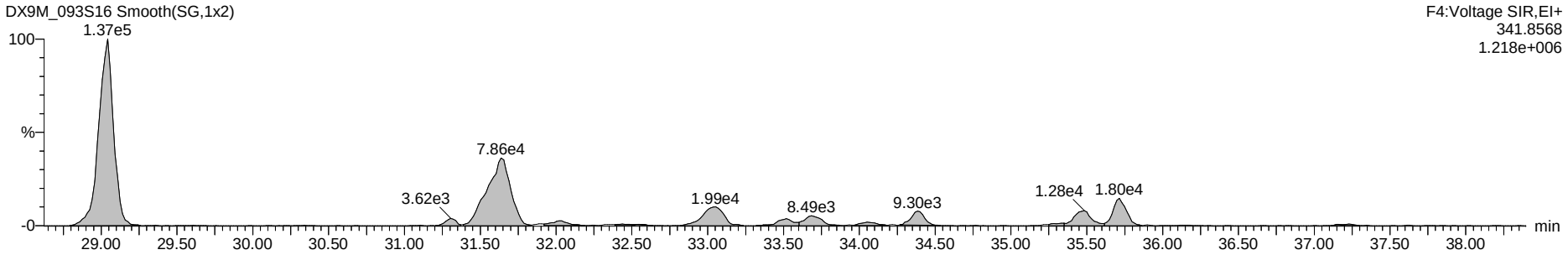
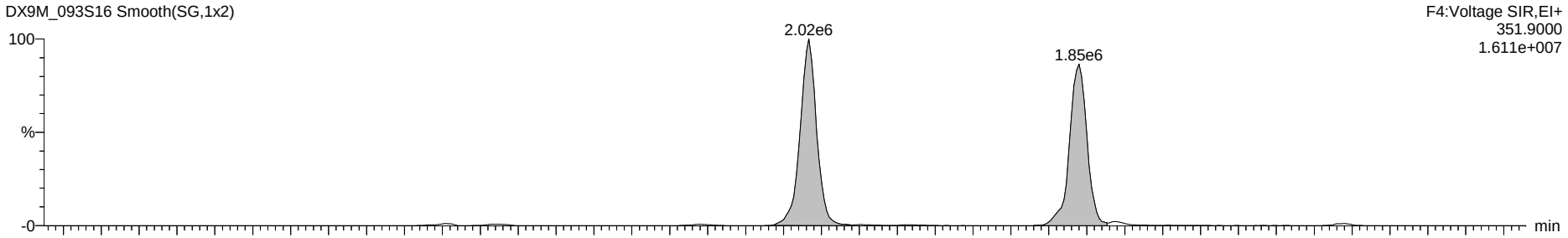
Name: DX9M_093S16, Date: 12-Sep-2019, Time: 23:06:41, ID: L31654-7,I,, Description: 1,WG69303,1.0/20uL

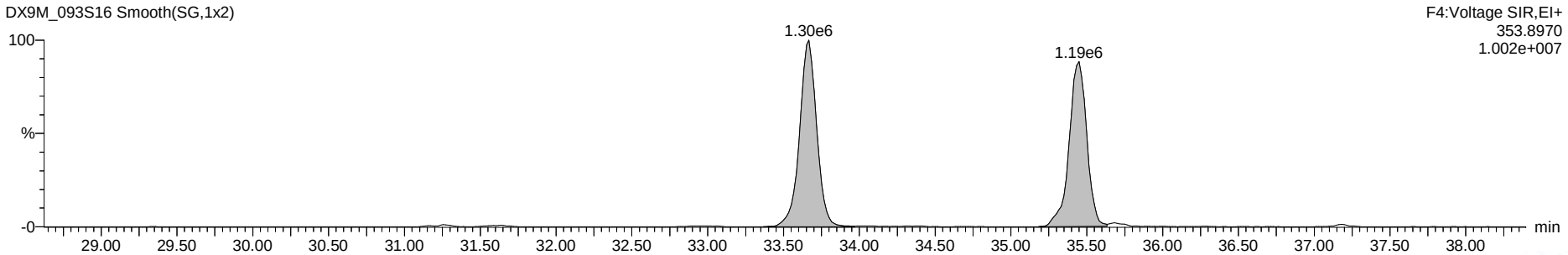
Total Penta-Furans





13C-Penta-Furans





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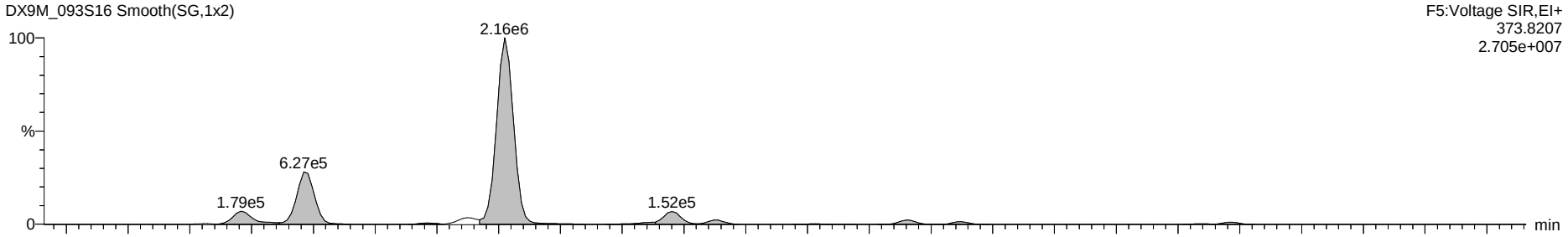
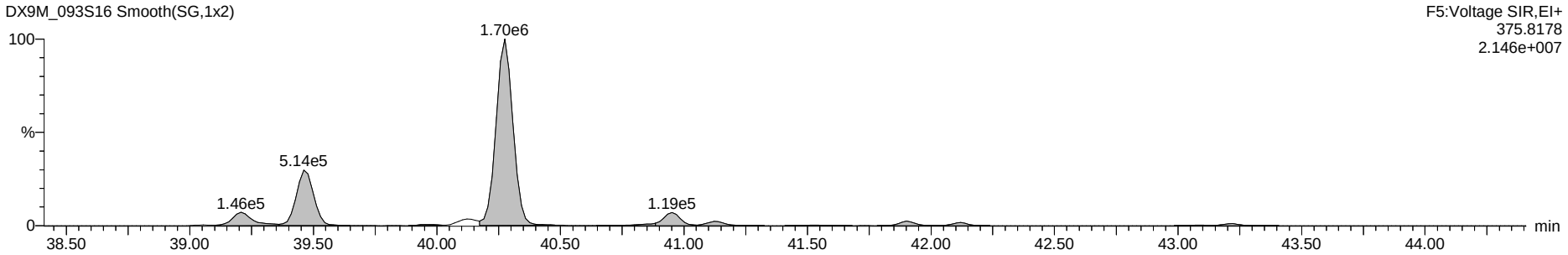
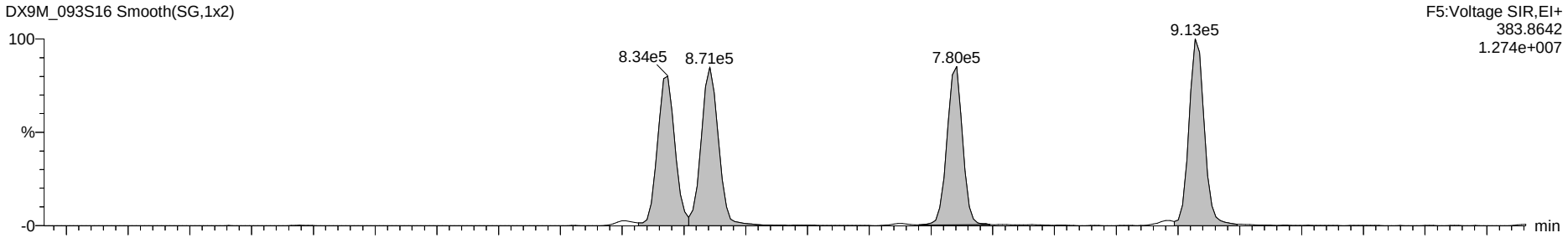
Name: DX9M_093S16, Date: 12-Sep-2019, Time: 23:06:41, ID: L31654-7,I,, Description: 1,WG69303,1.0/20uL

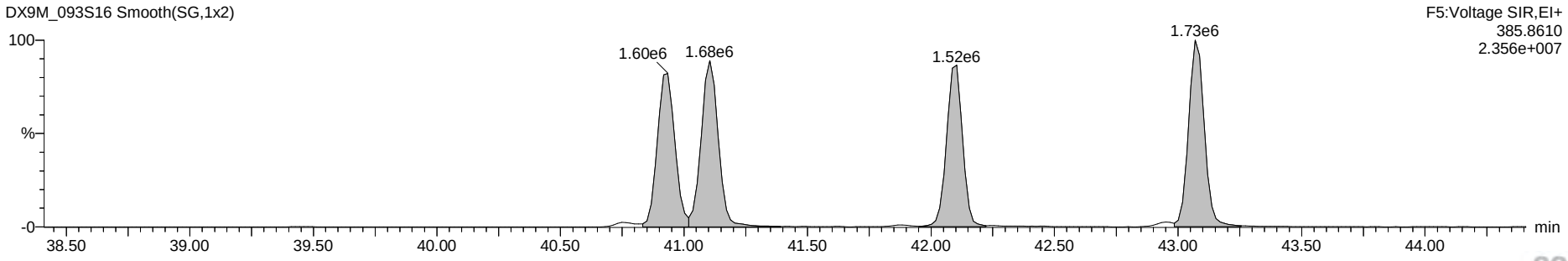
Total Hexa-Furans





13C-Hexa-Furans

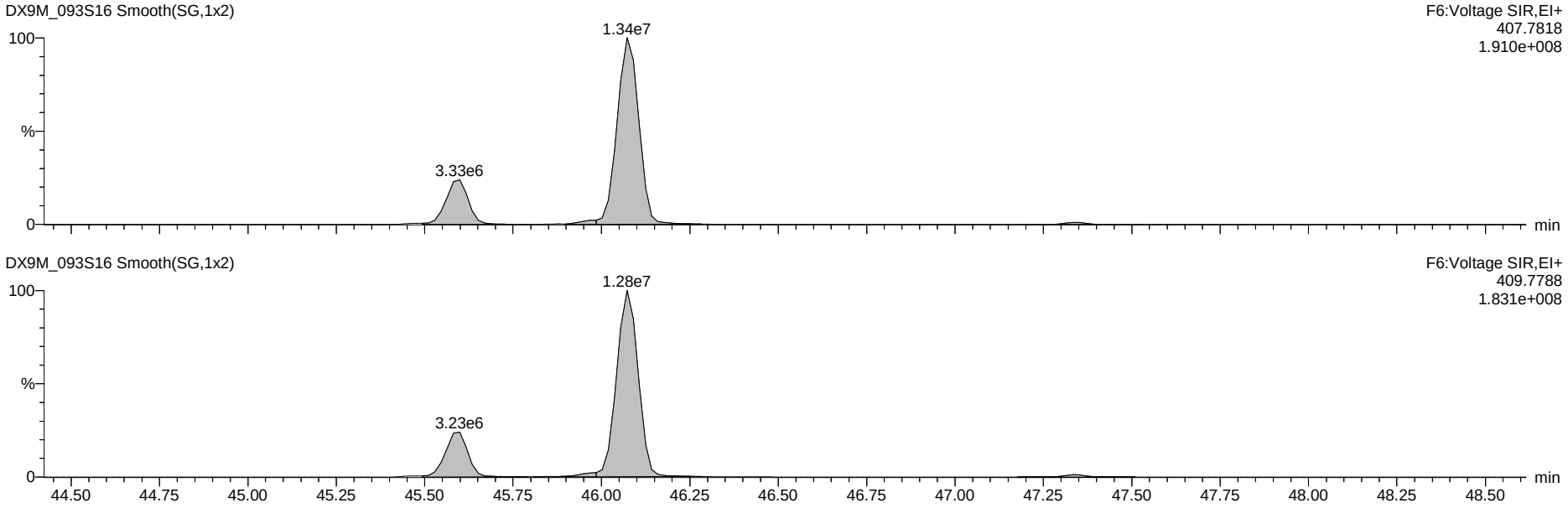




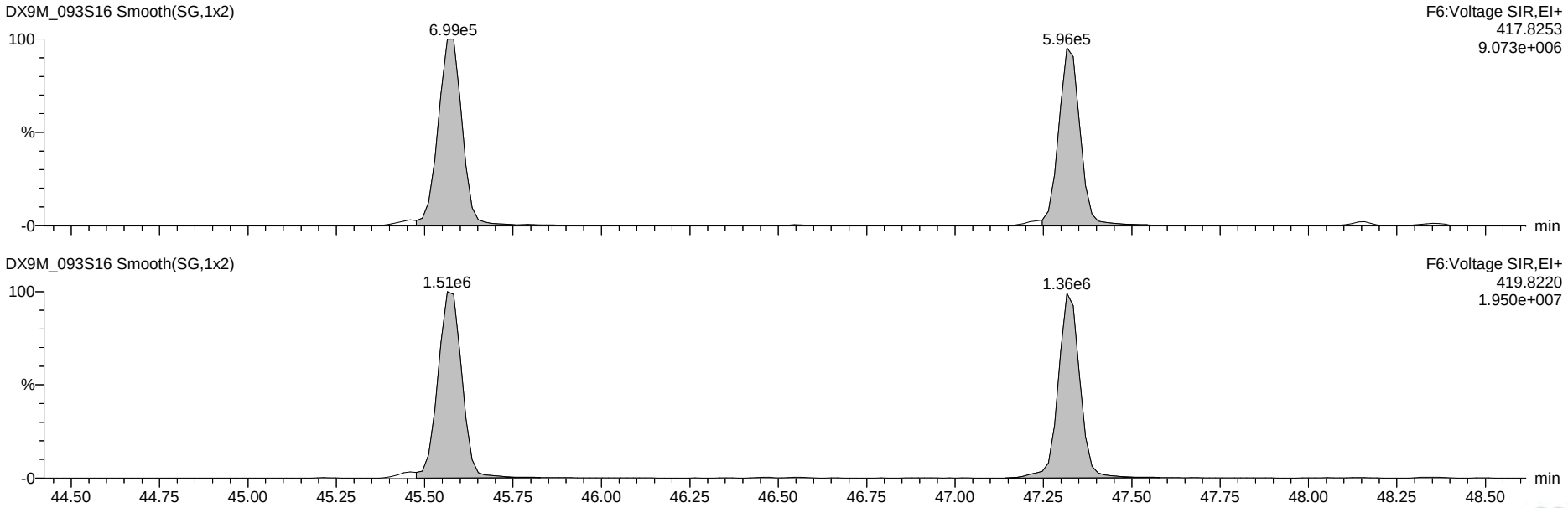
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S16, Date: 12-Sep-2019, Time: 23:06:41, ID: L31654-7,I,, Description: 1,WG69303,1.0/20uL

Total Hepta-Furans



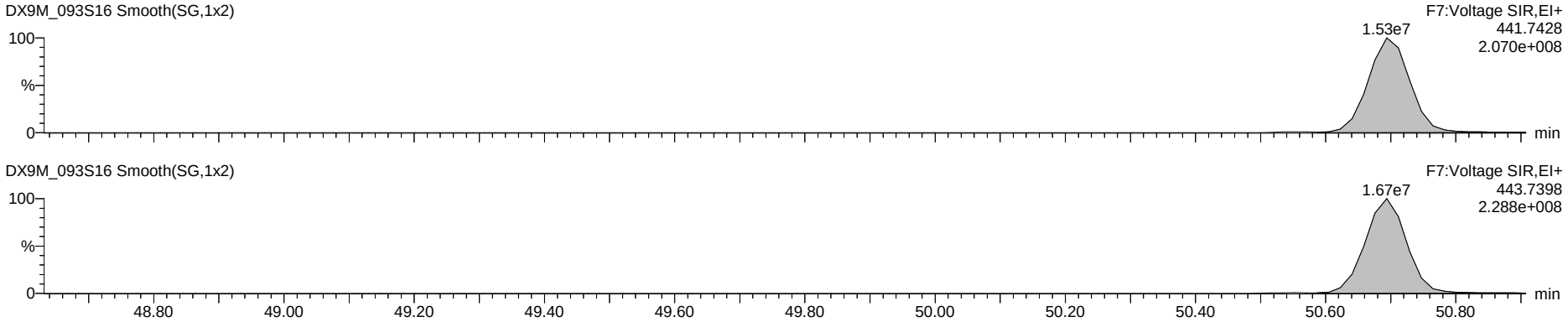
13C-Hepta-Furans



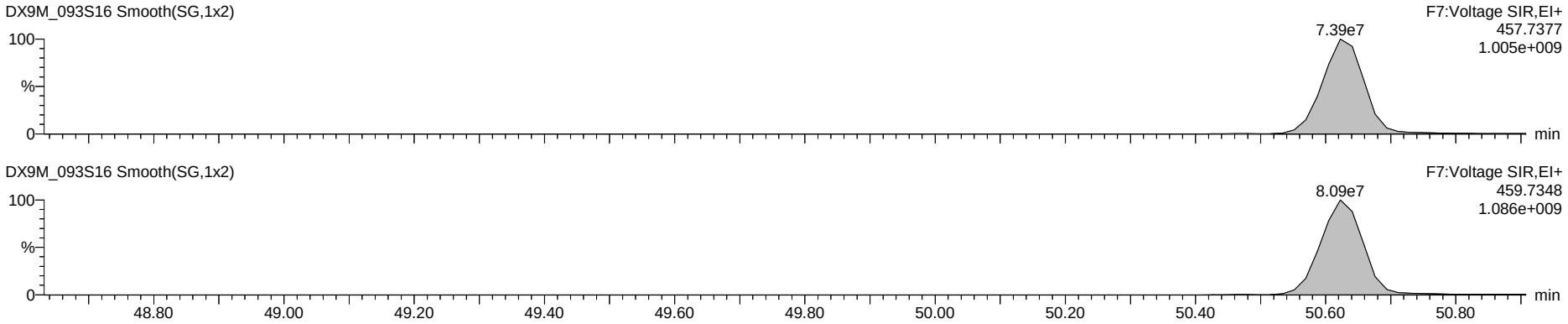
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S16, Date: 12-Sep-2019, Time: 23:06:41, ID: L31654-7,I,, Description: 1,WG69303,1.0/20uL

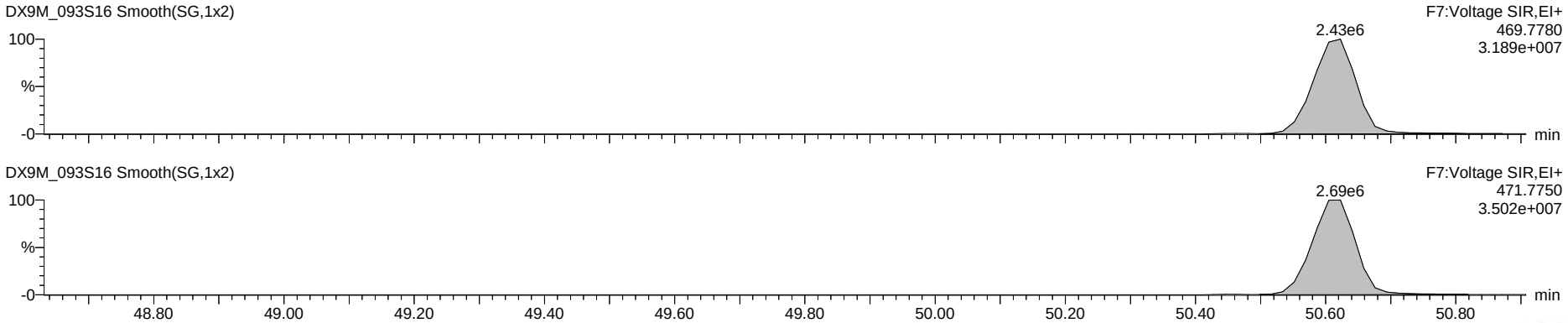
OCDF



OCDD



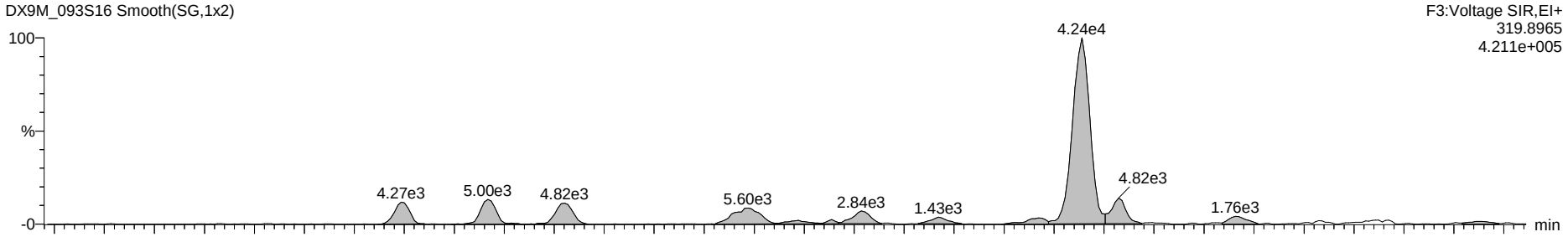
13C-OCDD

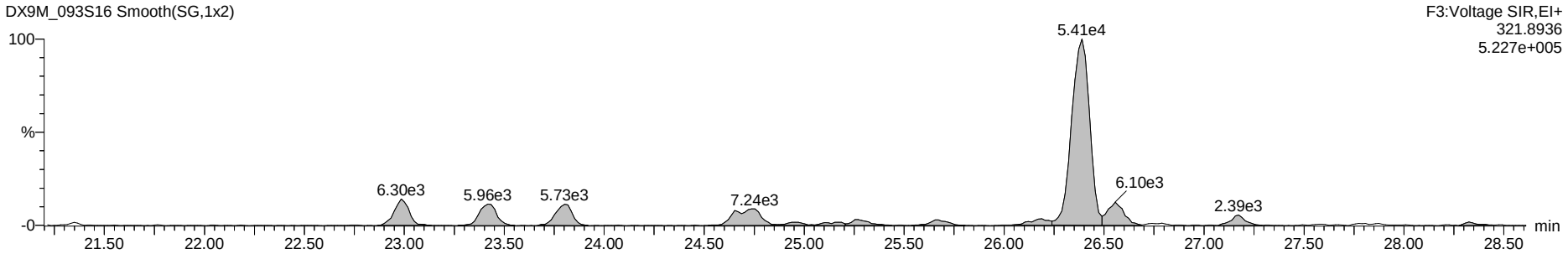


Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

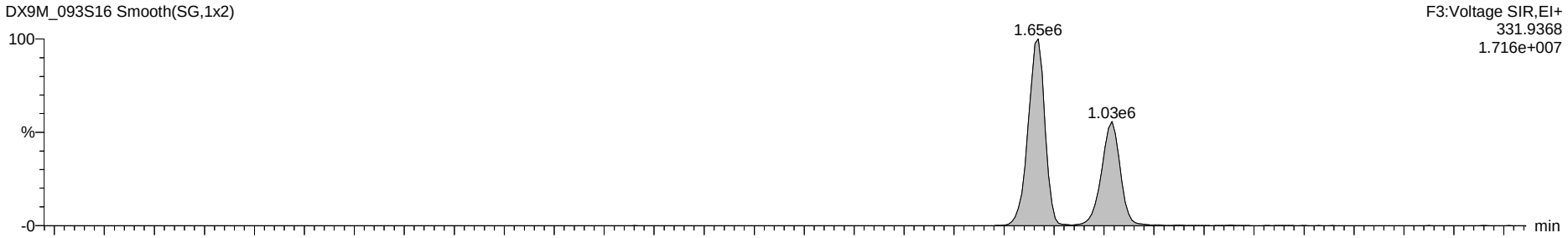
Name: DX9M_093S16, Date: 12-Sep-2019, Time: 23:06:41, ID: L31654-7,I,, Description: 1,WG69303,1.0/20uL

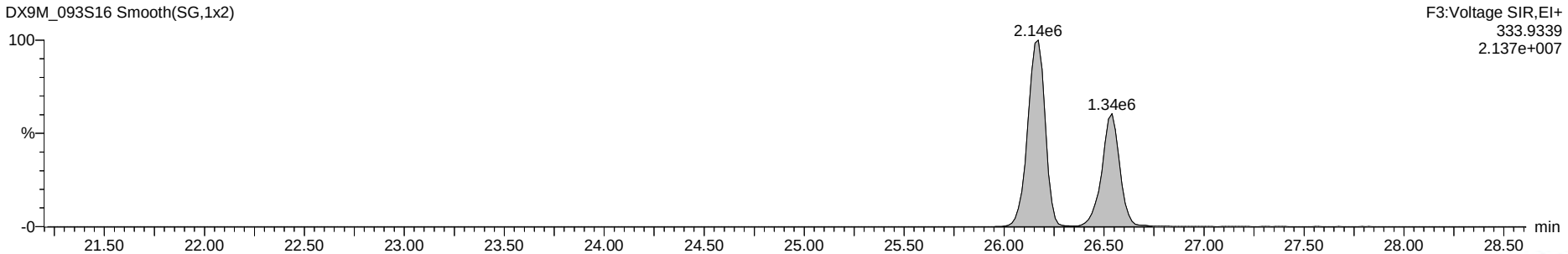
Total Tetra-Dioxins





13C-Tetra-Dioxins

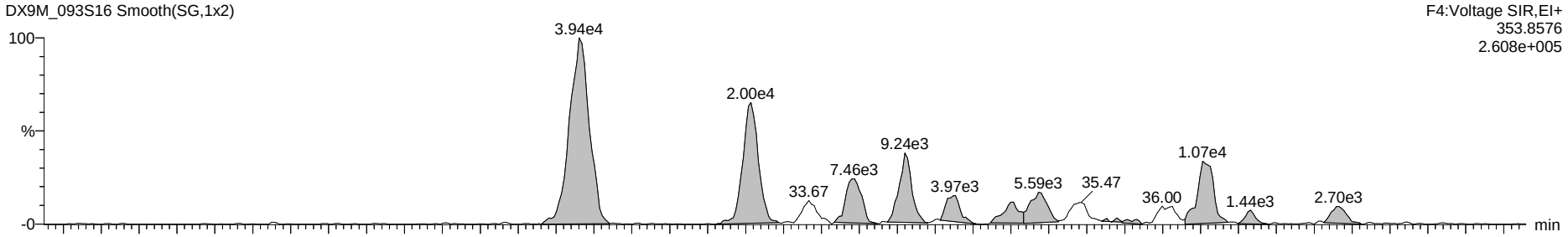


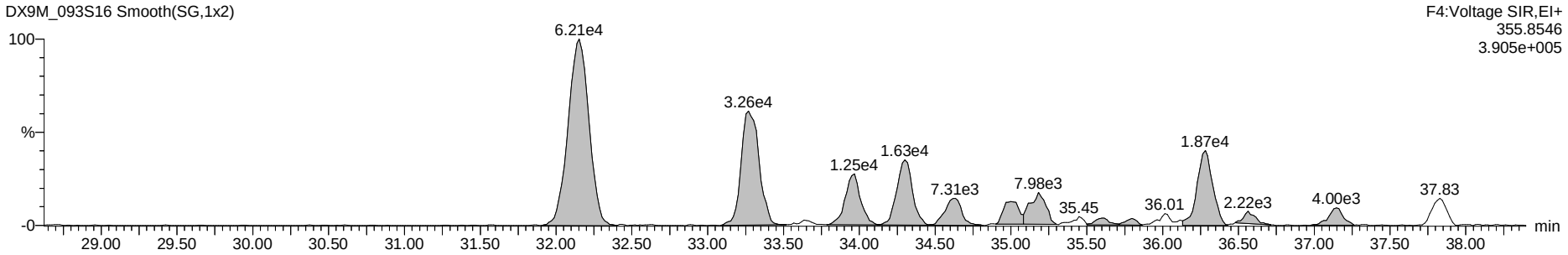


Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S16, Date: 12-Sep-2019, Time: 23:06:41, ID: L31654-7,I,, Description: 1,WG69303,1.0/20uL

Total Penta-Dioxins





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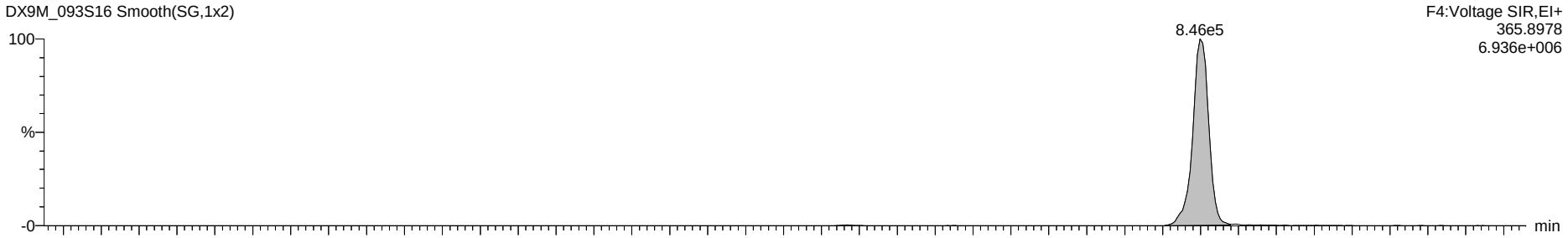
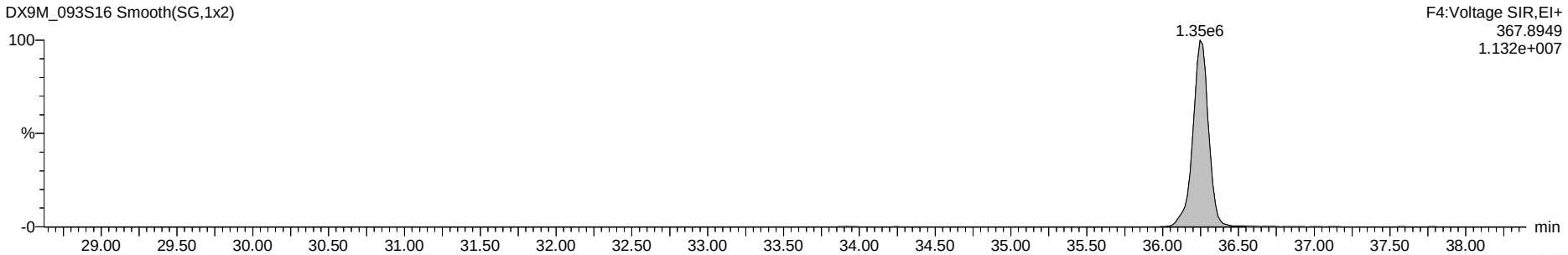
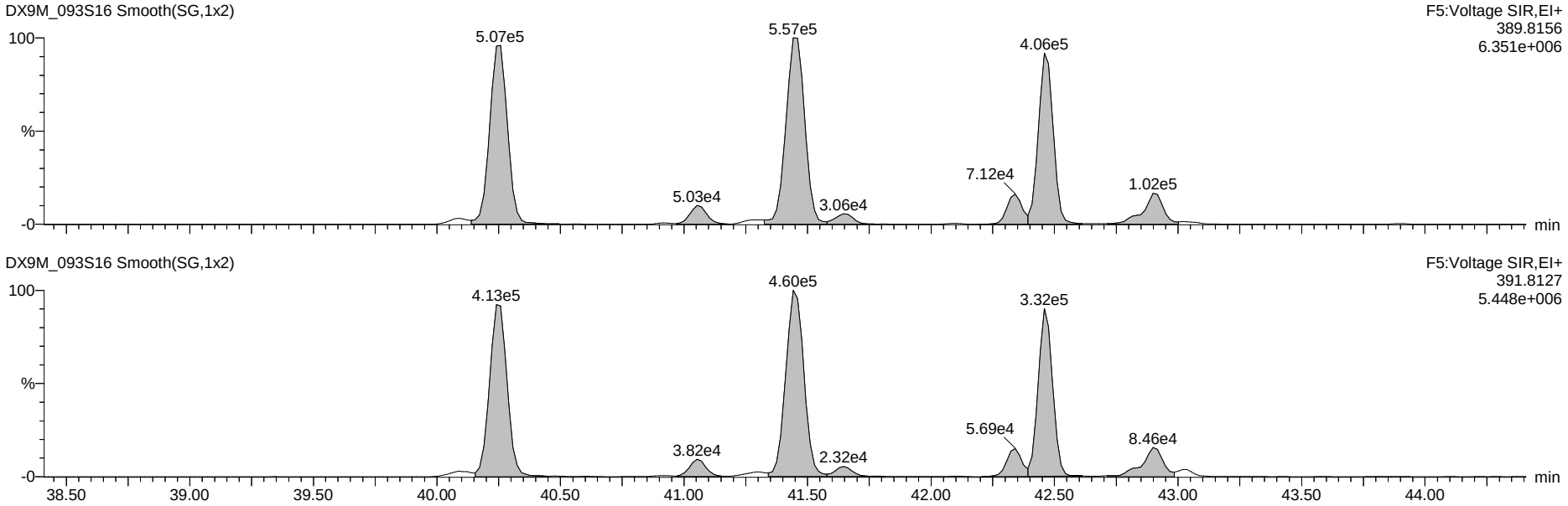




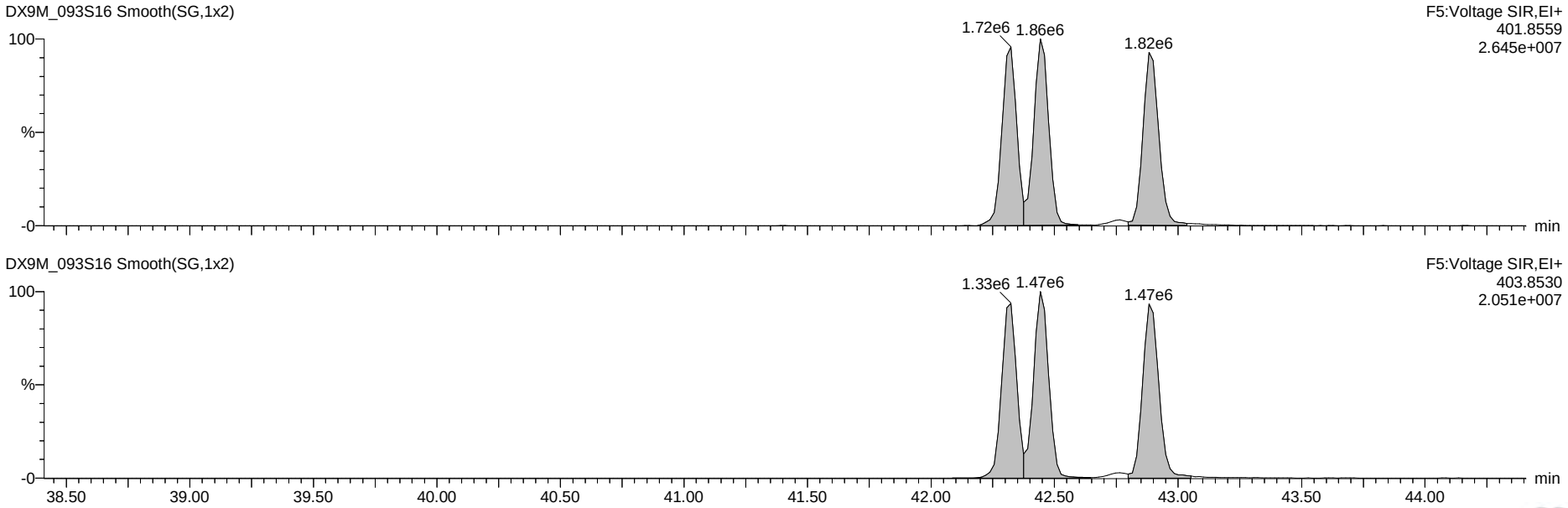
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S16, Date: 12-Sep-2019, Time: 23:06:41, ID: L31654-7,I,, Description: 1,WG69303,1.0/20uL

Total Hexa-Dioxins



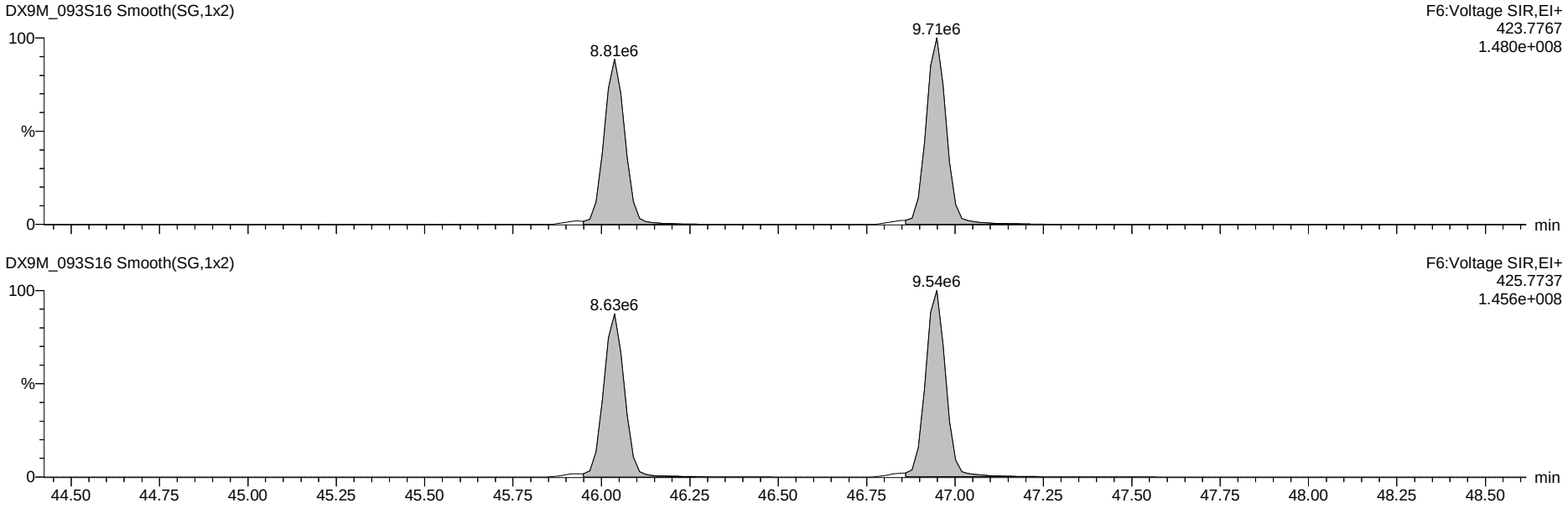
13C-Hexa-Dioxins



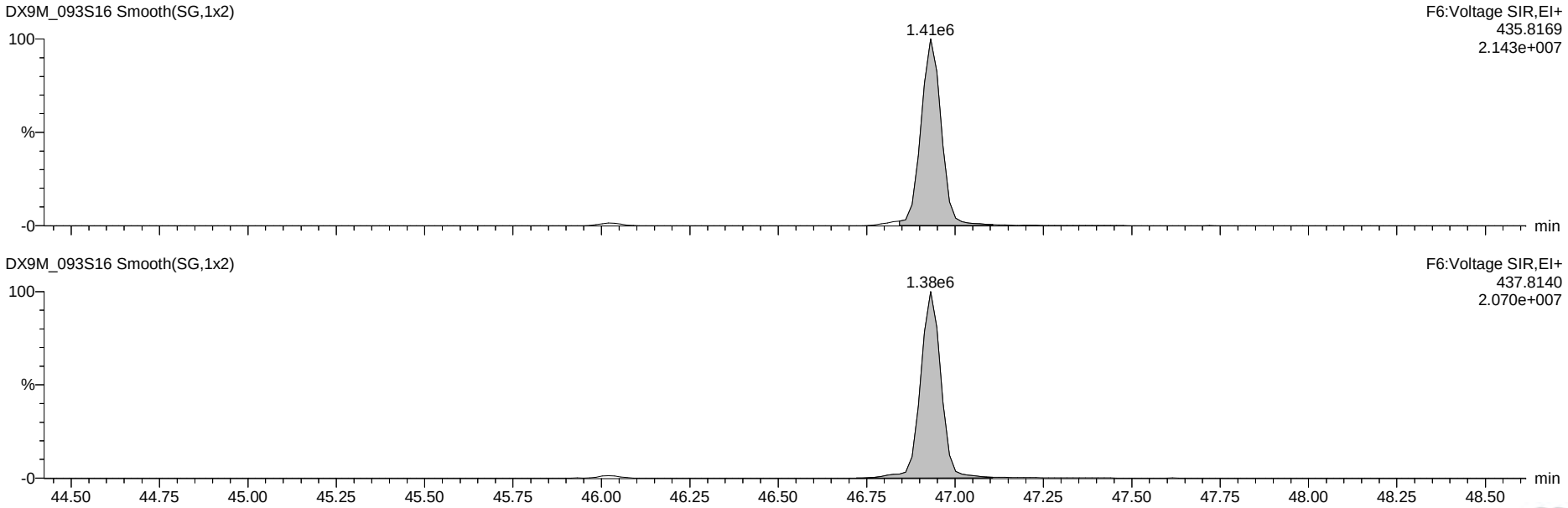
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S16, Date: 12-Sep-2019, Time: 23:06:41, ID: L31654-7,I,, Description: 1,WG69303,1.0/20uL

Total Hepta-Dioxins



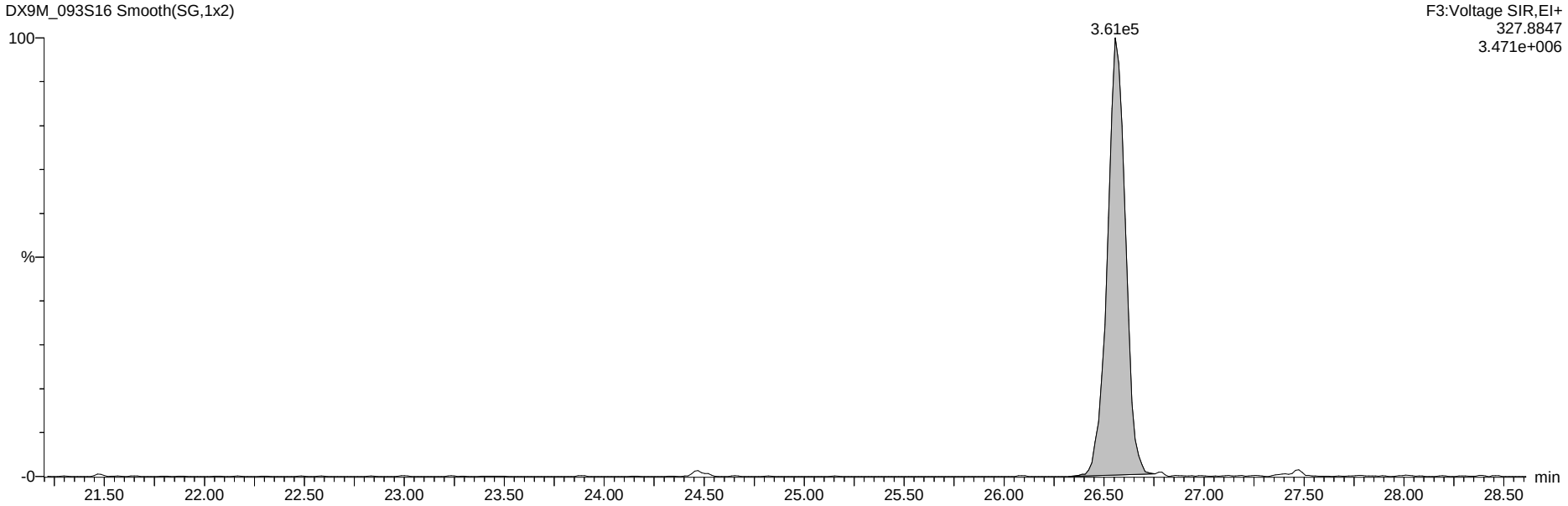
13C-Hepta-Dioxins



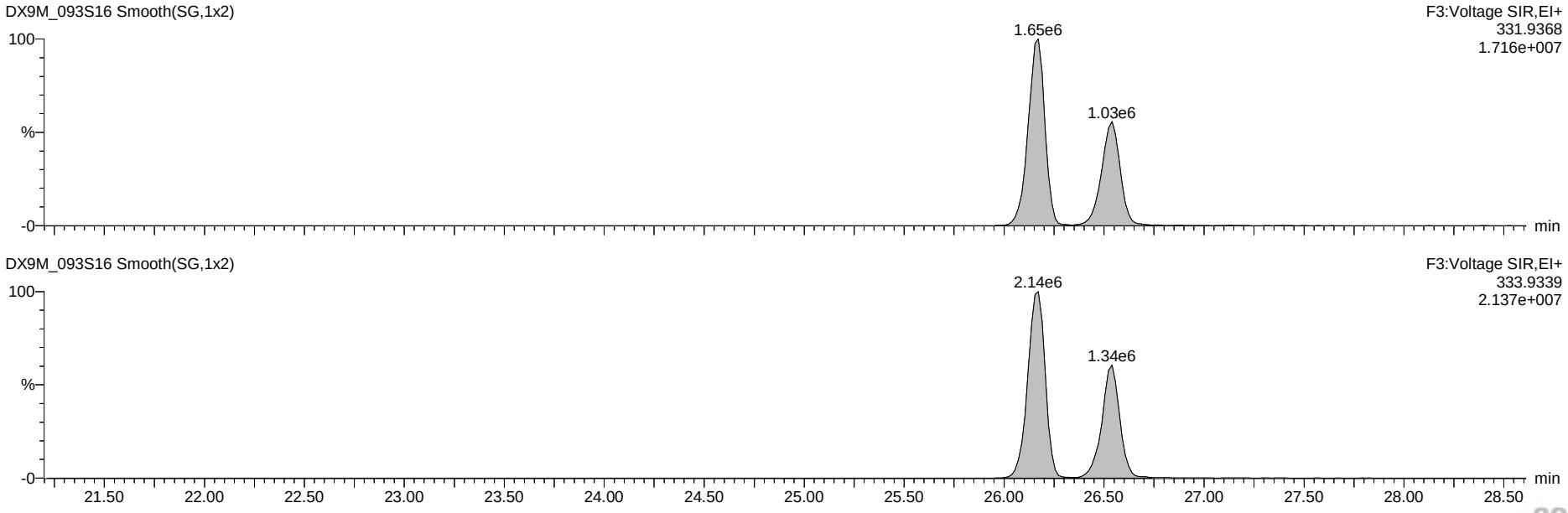
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S16, Date: 12-Sep-2019, Time: 23:06:41, ID: L31654-7,I,, Description: 1,WG69303,1.0/20uL

37Cl-2,3,7,8-TCDD



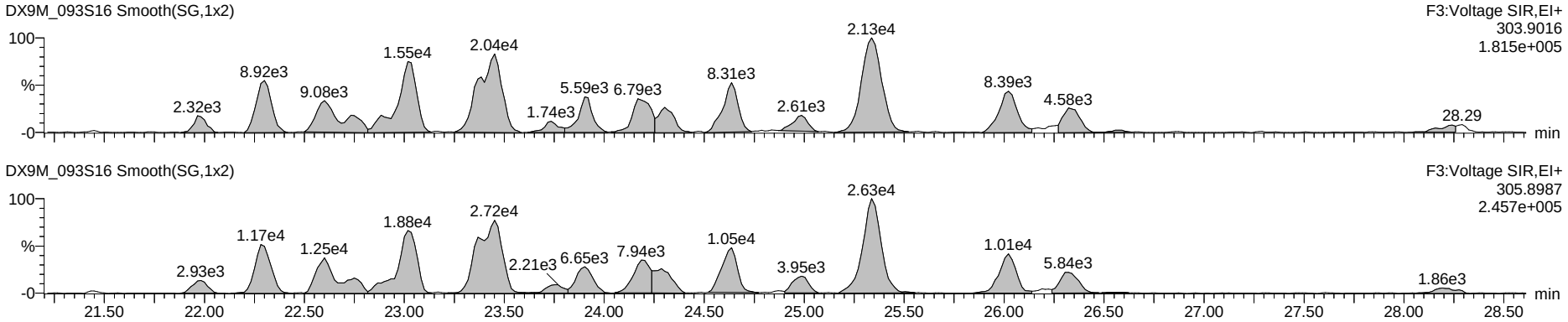
13C-Tetra-Dioxins



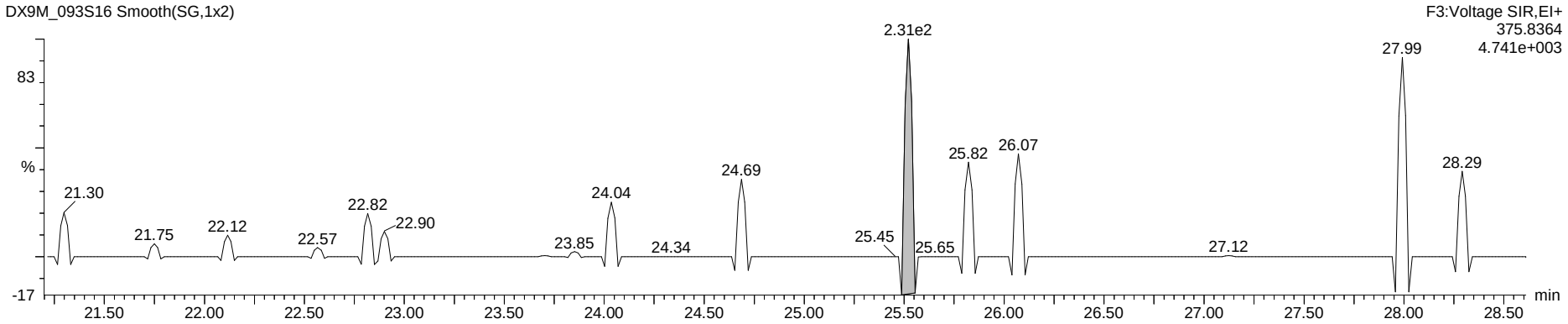
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S16, Date: 12-Sep-2019, Time: 23:06:41, ID: L31654-7,I,, Description: 1,WG69303,1.0/20uL

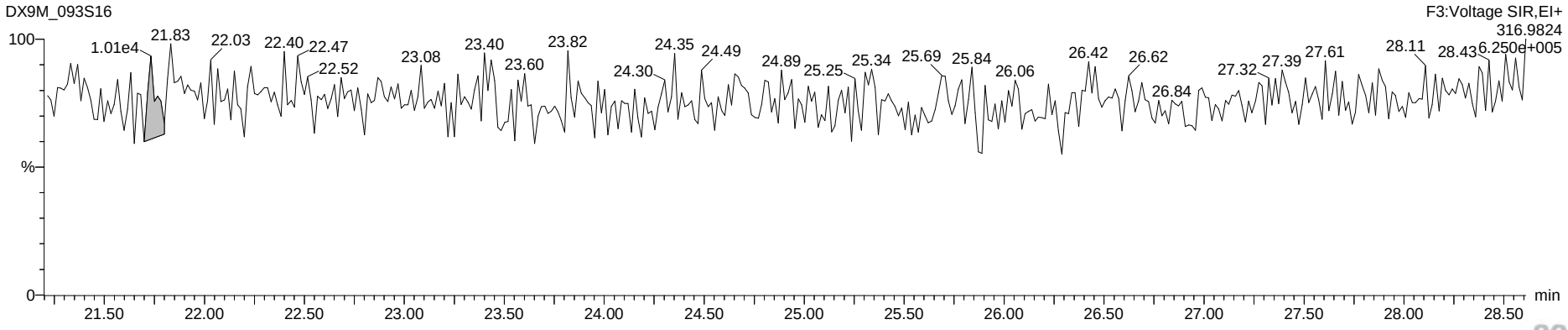
Total Tetra-Furans



Hexa DPE



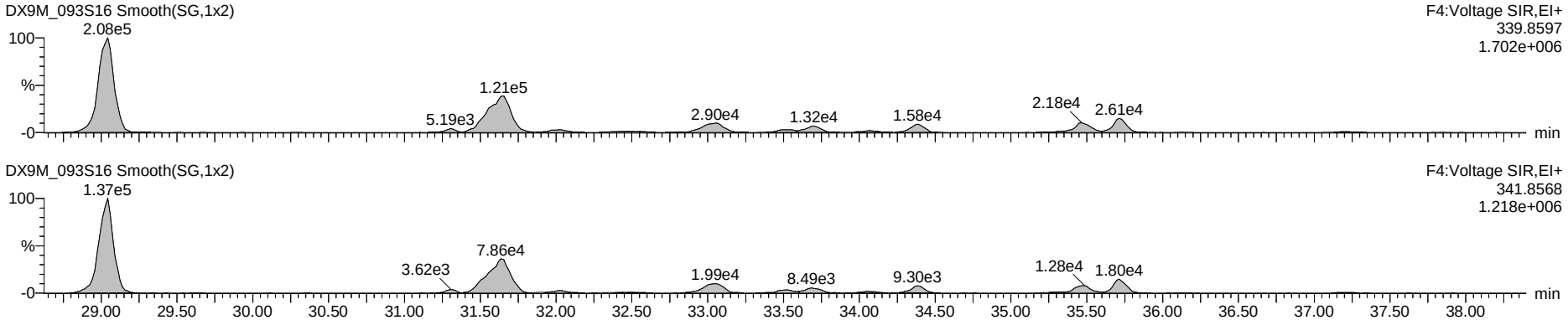
Tetra Lock



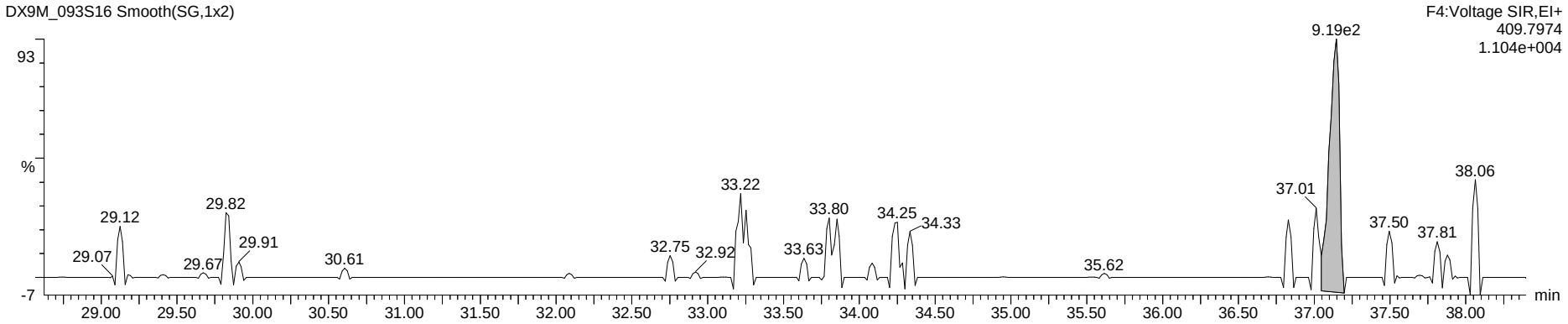
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S16, Date: 12-Sep-2019, Time: 23:06:41, ID: L31654-7,I,, Description: 1,WG69303,1.0/20uL

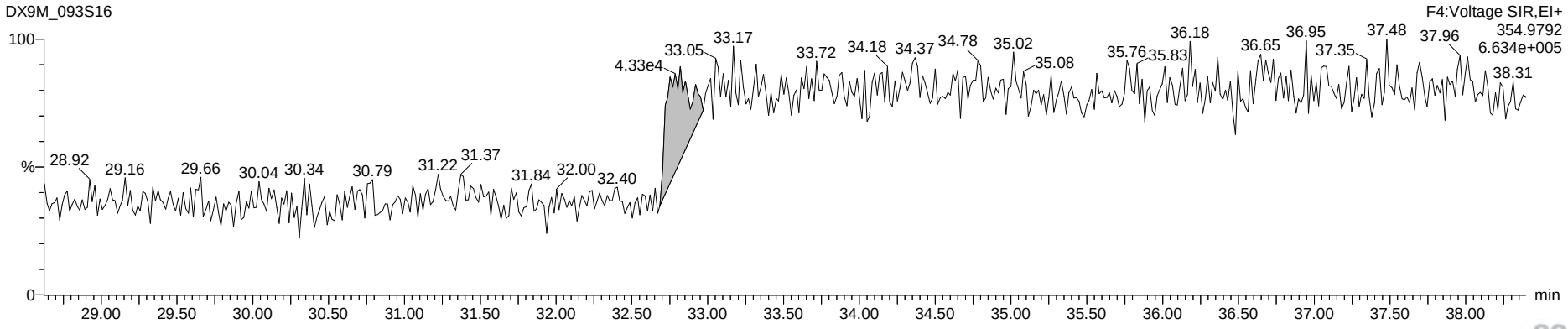
Total Penta-Furans



Hepta DPE



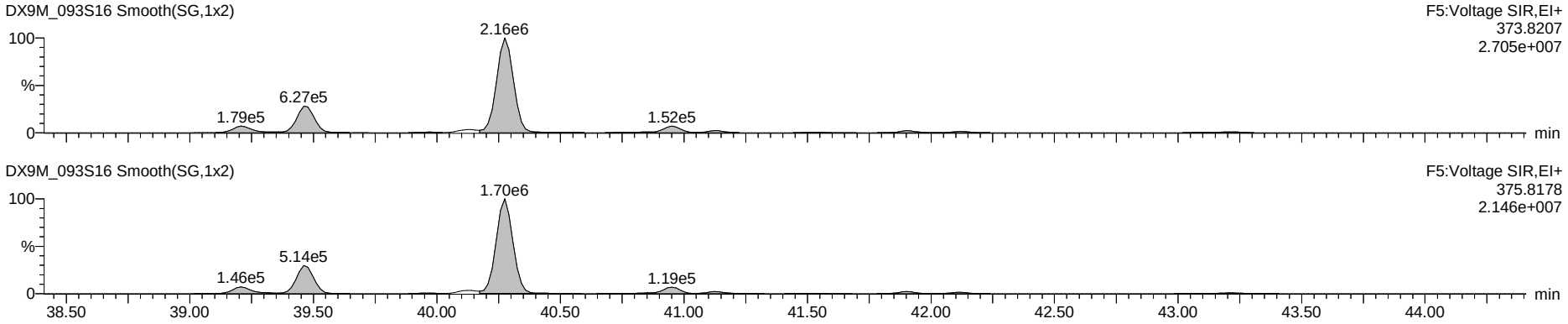
Penta Lock



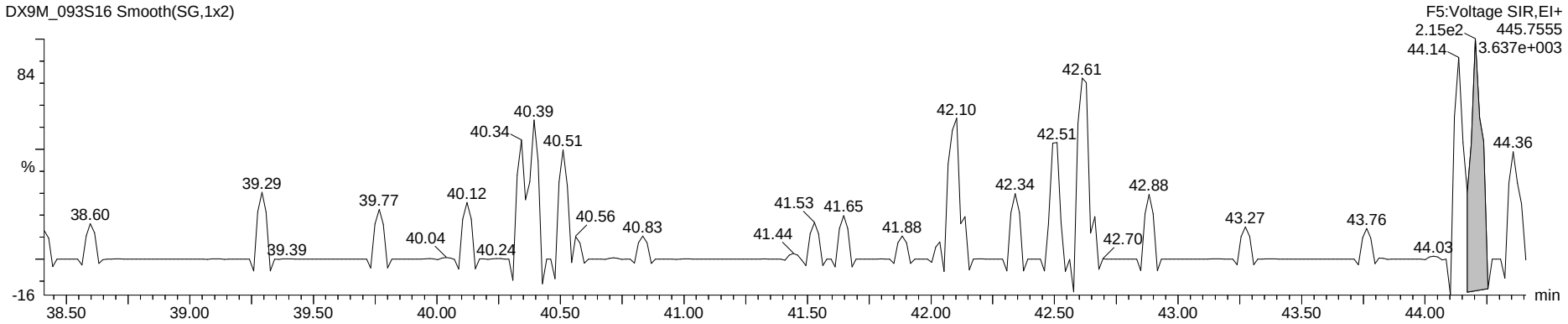
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S16, Date: 12-Sep-2019, Time: 23:06:41, ID: L31654-7,I,, Description: 1,WG69303,1.0/20uL

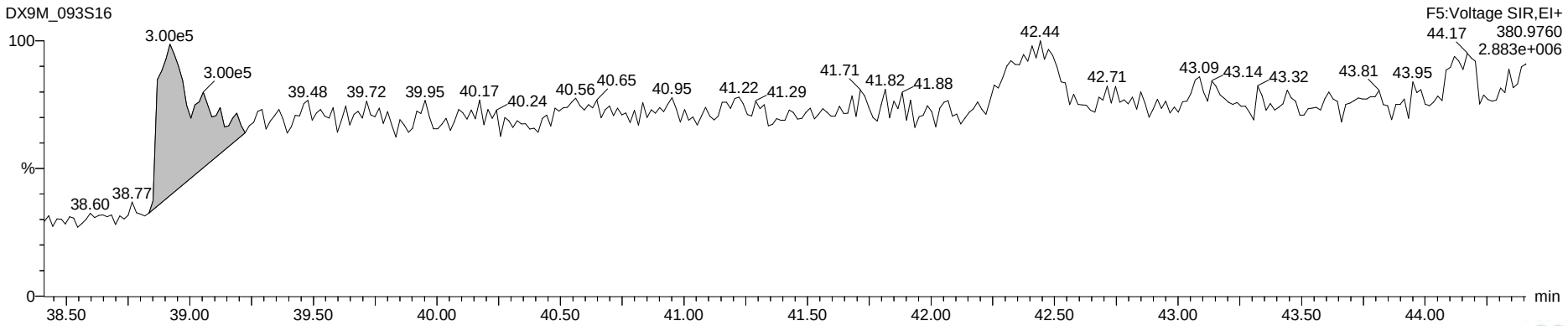
Total Hexa-Furans



Octa DPE



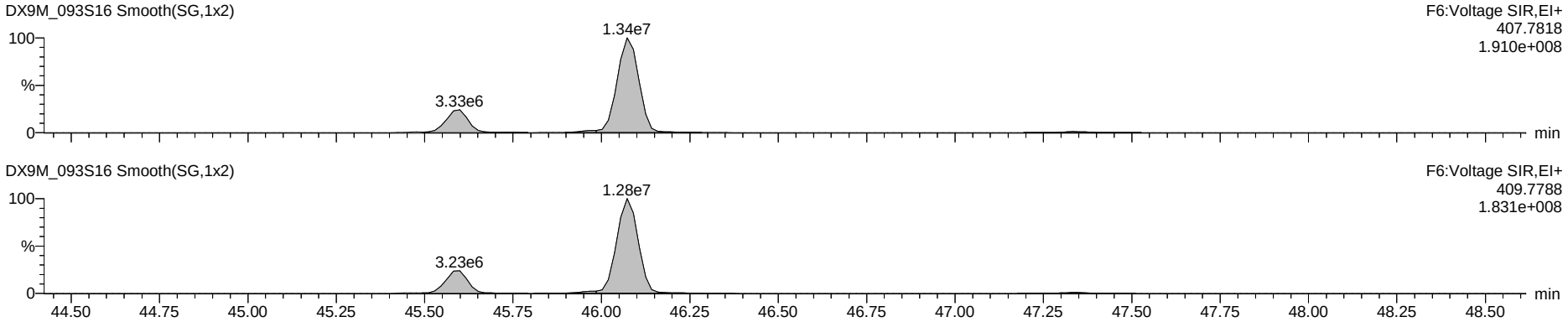
Hexa Lock



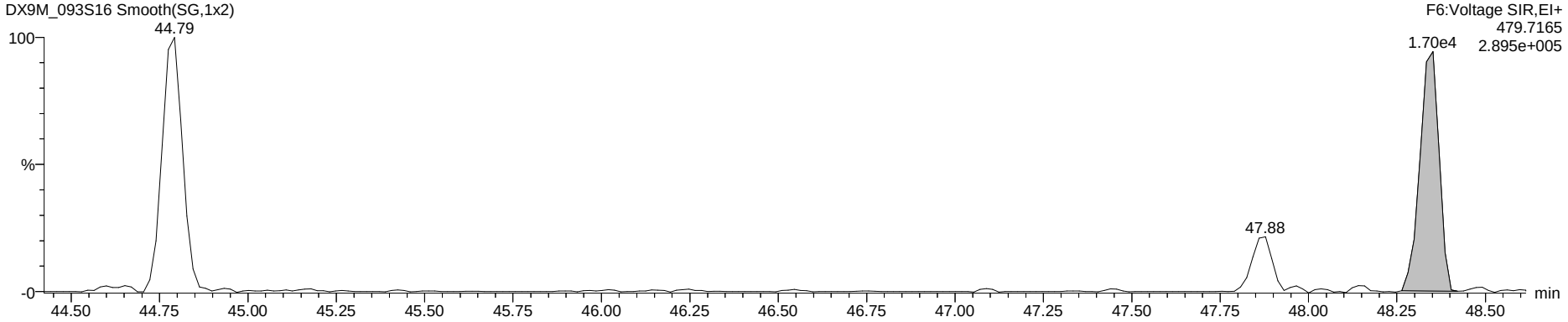
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S16, Date: 12-Sep-2019, Time: 23:06:41, ID: L31654-7,I,, Description: 1,WG69303,1.0/20uL

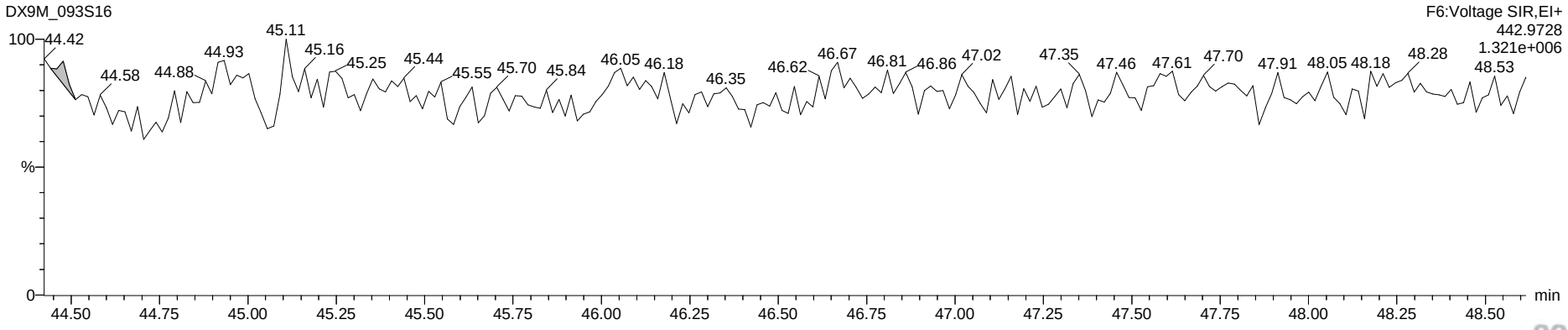
Total Hepta-Furans



Nona DPE



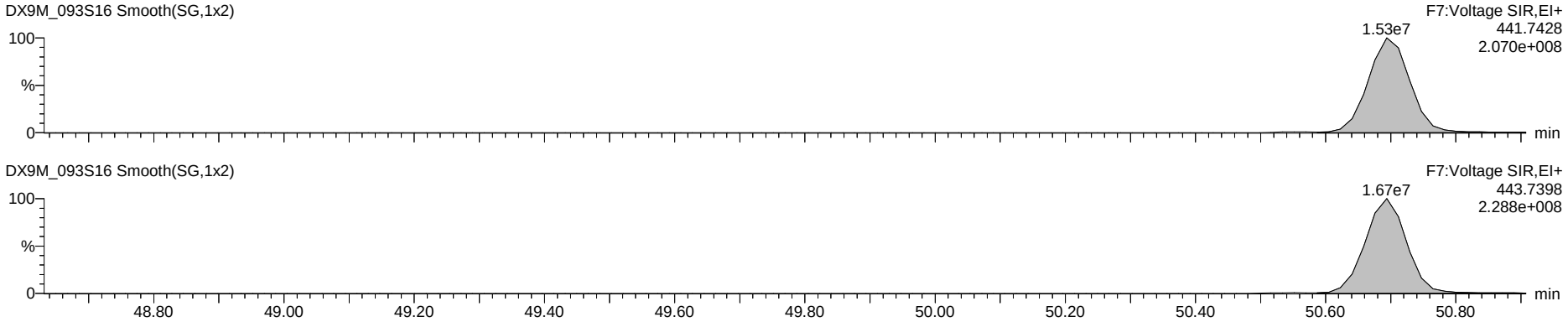
Hepta Lock



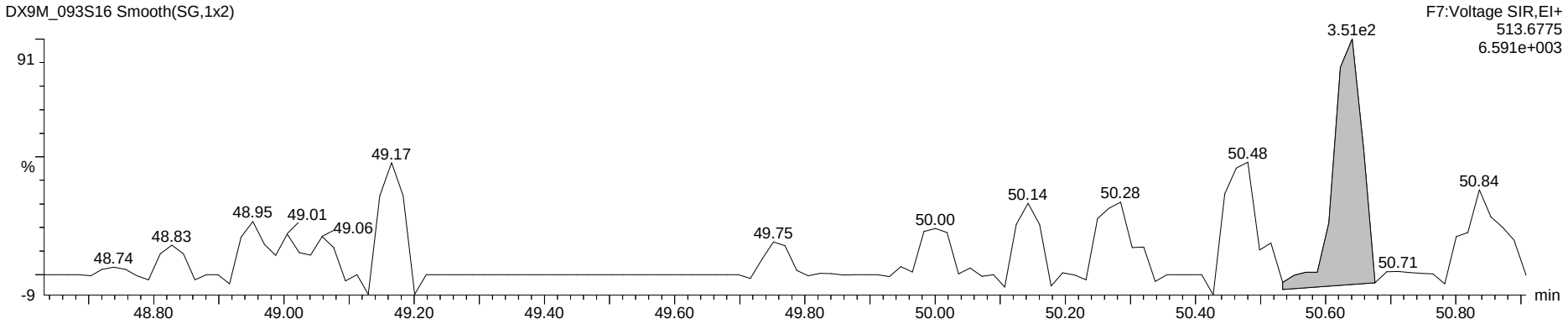
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S16, Date: 12-Sep-2019, Time: 23:06:41, ID: L31654-7,I,, Description: 1,WG69303,1.0/20uL

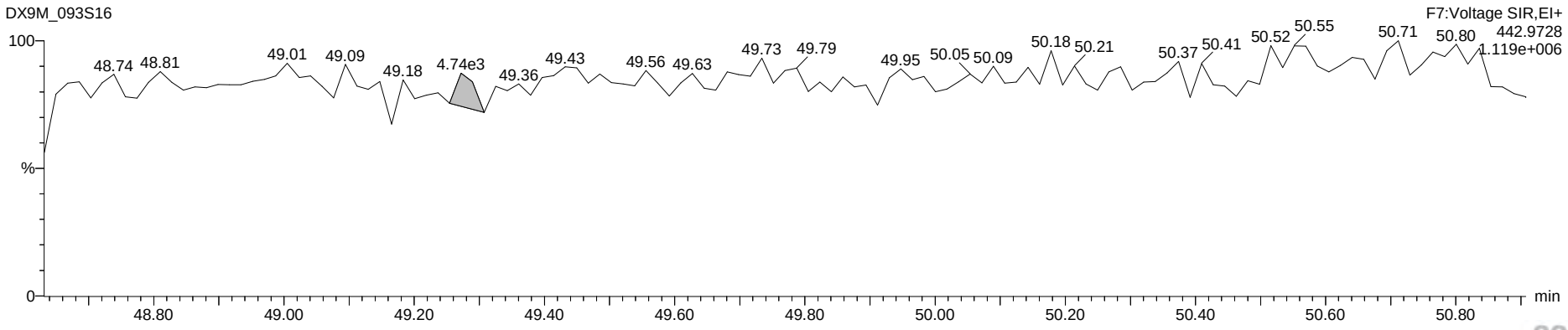
OCDF



Deca DPE



Octa Lock



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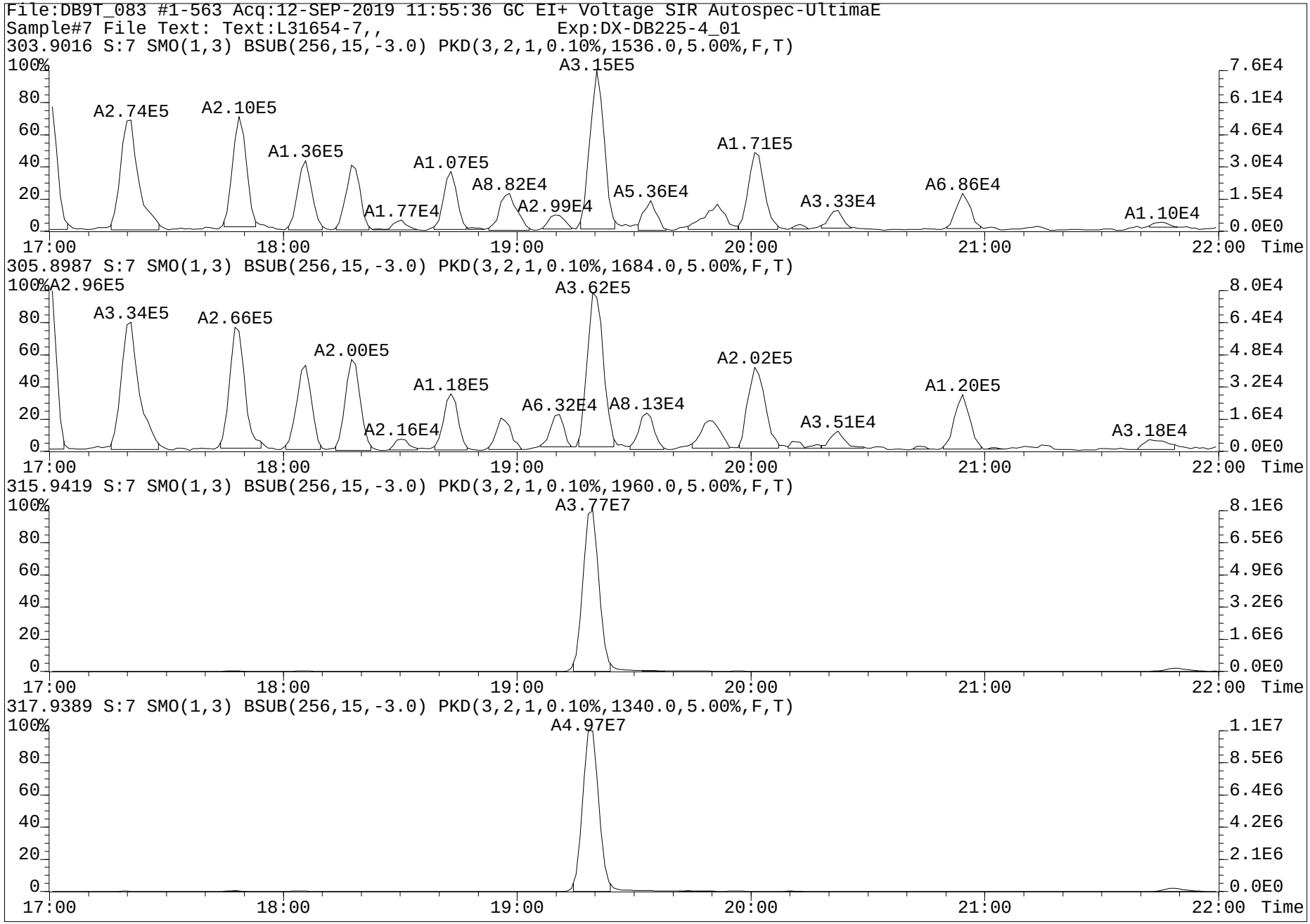
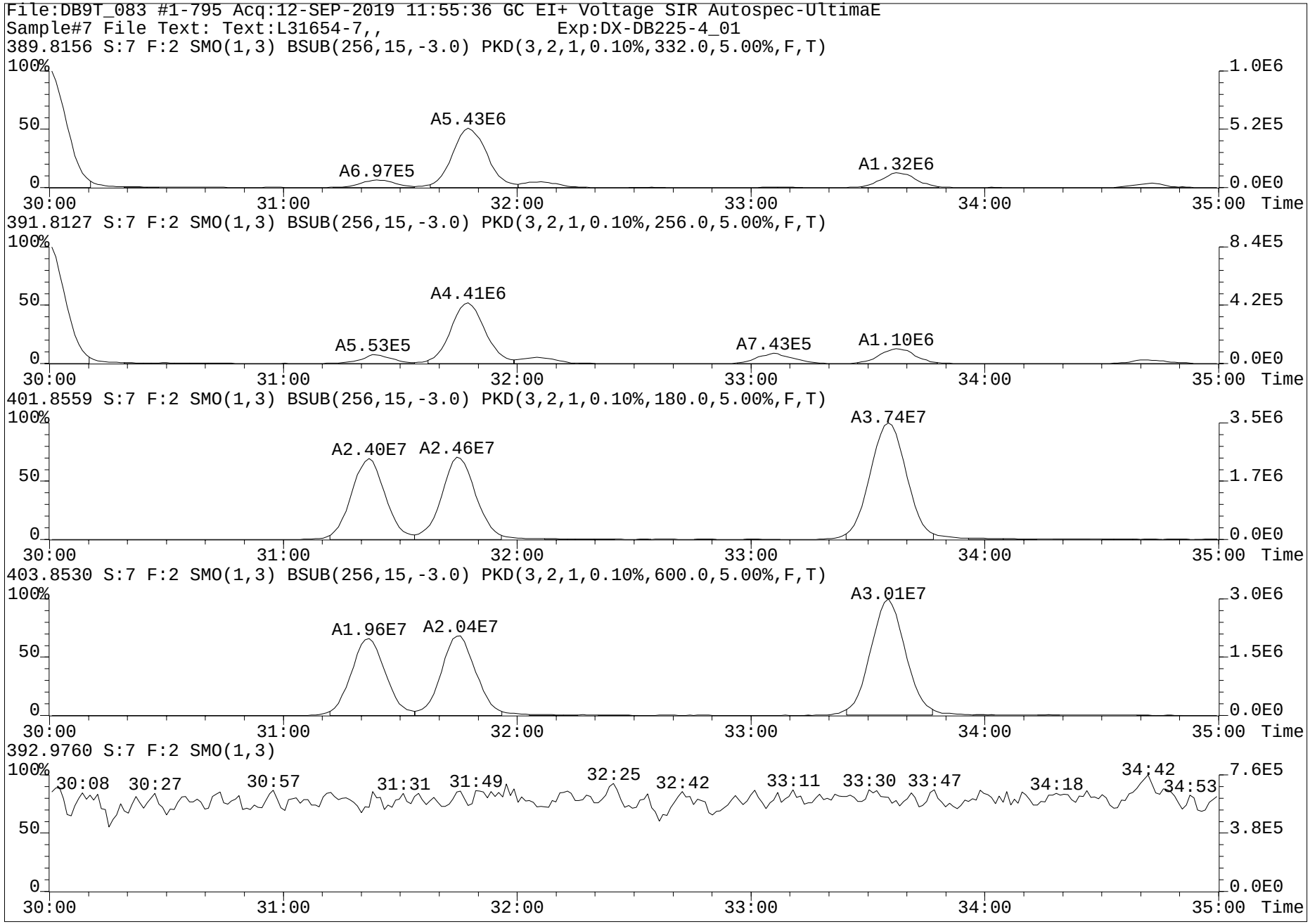
Run #10 Filename DB9T_083 S: 7 I: 1 Acquired: 12-SEP-19 11:55:36 Processed: 17-SEP-19 10:20:04
Run: db9t_083-b Analyte: db-hxd-s2 Cal: db9t_055-5a Results: db9t_083-b Version: V3.6 6-JAN-2000 17:51:42
Sample text: L31654-7,, Comments: 1,WG69303,2.0/20uL
sample size: 10.877000 conc units: pg/g total toxicity: 1.43 F1: 1.0000 F2: 1.0000

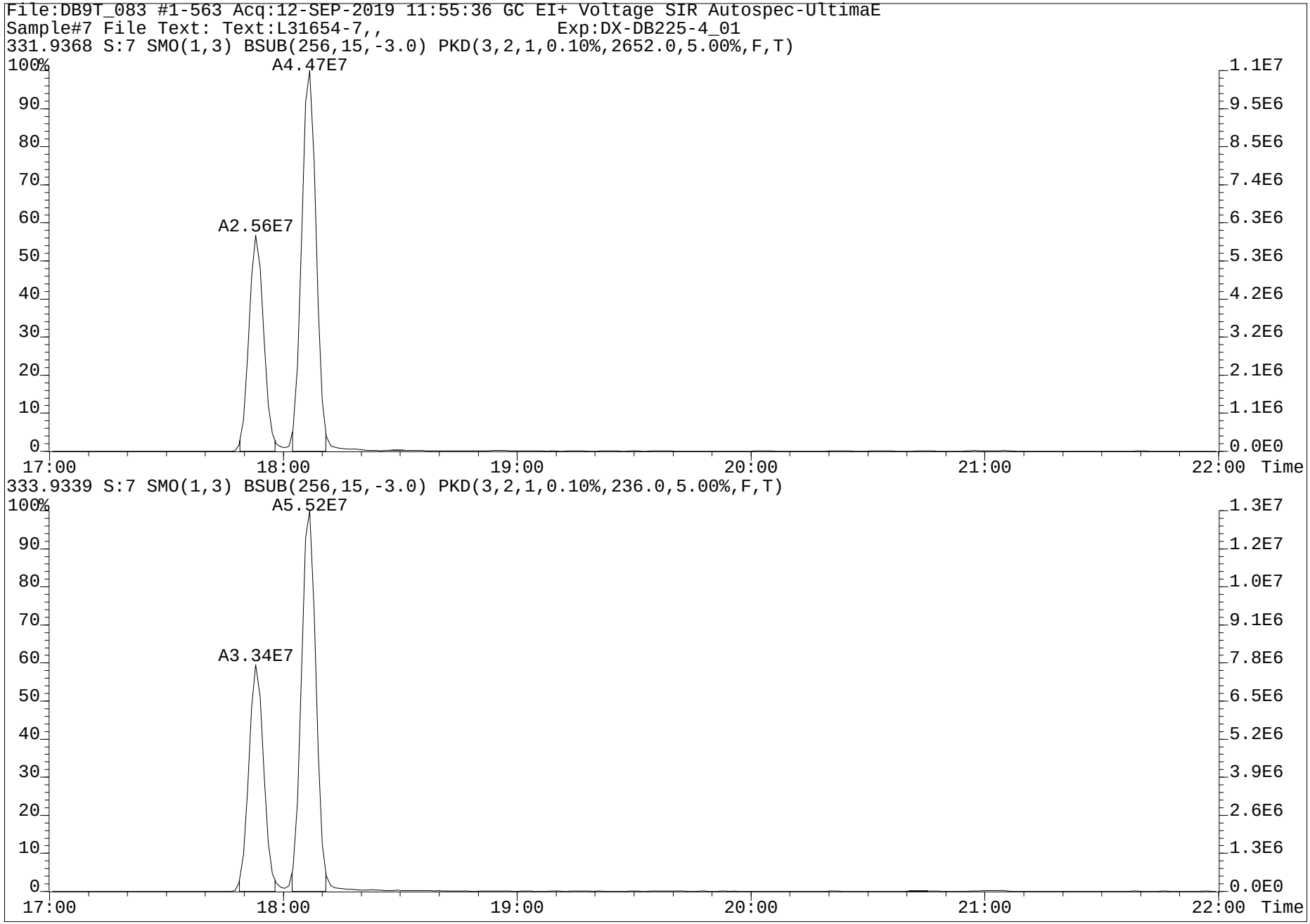
	Typ	Name	#Hom	Resp	RA		RT	Conc	Tox #1	DL	Rec	M?
1	Unk	2,3,7,8-TCDF	1	6.77e+05	0.87	y	19:20	1.836	0	0.1021	-	n
2	Unk	1,2,3,7,8,9-HxCDD	1	2.42e+06	1.20	y	33:38	12.444	1	0.0756	-	n
3	IS/RT	13C-2,3,7,8-TCDF	1	8.74e+07	0.76	y	19:19	113.775	-	0.0454	61.9	n
4	IS/RT	13C-1,2,3,4,7,8-HxCDD	1	4.36e+07	1.23	y	31:22	115.613	-	0.0541	62.9	n
5	IS/RT	13C-1,2,3,6,7,8-HxCDD	1	4.50e+07	1.21	y	31:45	114.249	-	0.0517	62.1	n
6	RS	13C-1,2,3,4-TCDD	1	9.98e+07	0.81	y	18:07	7.975	-	-	-	n
7	RS	13C-1,2,3,7,8,9-HxCDD	1	6.75e+07	1.24	y	33:35	10.801	-	-	-	n
8	Tot	Hexa DPE	0	*			NotFnd	*	-	-	-	n
9	Tot	Tetra Lock	-	-			-	-	-	-	-	n
10	Tot	Hexa Lock	-	-			-	-	-	-	-	n

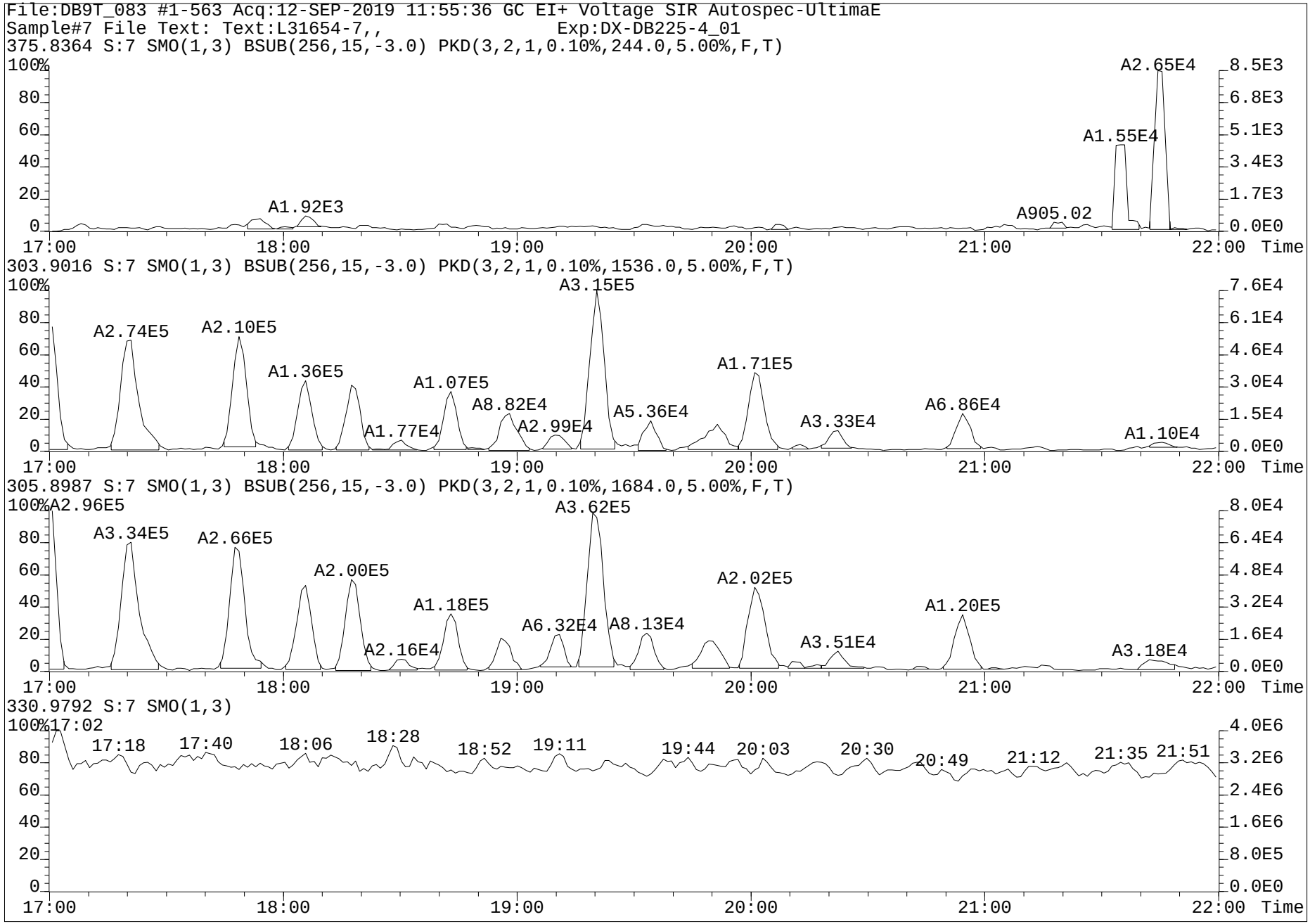
PV by RA 20SEP2019

SV by HH 22Sept2019


File:DB9T_083 #1-563 Acq:12-SEP-2019 11:55:36 GC EI+ Voltage SIR Autospec-UltimaE
Sample#7 File Text: Text:L31654-7,, Exp:DX-DB225-4_01
303.9016 S:7 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1536.0,5.00%,F,T)
A2.74E5
A2.10E5
A1.36E5
A1.07E5
A8.82E4
A1.77E4
A2.99E4
A3.15E5
A5.36E4
A1.71E5
A3.33E4
A6.86E4
A1.10E4
305.8987 S:7 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1684.0,5.00%,F,T)
A2.96E5
A3.34E5
A2.66E5
A2.00E5
A1.18E5
A2.16E4
A6.32E4
A8.13E4
A3.62E5
A2.02E5
A3.51E4
A1.20E5
A3.18E4
315.9419 S:7 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1960.0,5.00%,F,T)
A3.77E7
317.9389 S:7 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1340.0,5.00%,F,T)
A4.97E7
100%
80
60
40
20
0
17:00
18:00
19:00
20:00
21:00
22:00
Time
7.6E4
6.1E4
4.6E4
3.0E4
1.5E4
0.0E0
8.0E4
6.4E4
4.8E4
3.2E4
1.6E4
8.1E6
6.5E6
4.9E6
3.2E6
1.6E6
1.1E7
8.5E6
6.4E6
4.2E6
2.1E6


File:DB9T_083 #1-795 Acq:12-SEP-2019 11:55:36 GC EI+ Voltage SIR Autospec-UltimaE
Sample#7 File Text: Text:L31654-7,, Exp:DX-DB225-4_01
389.8156 S:7 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,332.0,5.00%,F,T)
A6.97E5
A5.43E6
A1.32E6
391.8127 S:7 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,256.0,5.00%,F,T)
A5.53E5
A4.41E6
A7.43E5
A1.10E6
401.8559 S:7 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,180.0,5.00%,F,T)
A2.40E7
A2.46E7
A3.74E7
403.8530 S:7 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,600.0,5.00%,F,T)
A1.96E7
A2.04E7
A3.01E7
392.9760 S:7 F:2 SMO(1,3)
30:08
30:27
30:57
31:31
31:49
32:25
32:42
33:11
33:30
33:47
34:18
34:42
34:53
100%
50
0
30:00
31:00
32:00
33:00
34:00
35:00
Time
1.0E6
5.2E5
0.0E0
8.4E5
4.2E5
3.5E6
1.7E6
3.0E6
1.5E6
7.6E5
3.8E5


File:DB9T_083 #1-563 Acq:12-SEP-2019 11:55:36 GC EI+ Voltage SIR Autospec-UltimaE
Sample#7 File Text: Text:L31654-7,, Exp:DX-DB225-4_01
331.9368 S:7 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,2652.0,5.00%,F,T)
A4.47E7
A2.56E7
100%
90
80
70
60
50
40
30
20
10
0
1.1E7
9.5E6
8.5E6
7.4E6
6.3E6
5.3E6
4.2E6
3.2E6
2.1E6
1.1E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time
333.9339 S:7 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,236.0,5.00%,F,T)
A5.52E7
A3.34E7
100%
90
80
70
60
50
40
30
20
10
0
1.3E7
1.2E7
1.0E7
9.1E6
7.8E6
6.5E6
5.2E6
3.9E6
2.6E6
1.3E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time


File:DB9T_083 #1-563 Acq:12-SEP-2019 11:55:36 GC EI+ Voltage SIR Autospec-UltimaE
Sample#7 File Text: Text:L31654-7,, Exp:DX-DB225-4_01
375.8364 S:7 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,244.0,5.00%,F,T)
A1.92E3
A905.02
A1.55E4
A2.65E4
303.9016 S:7 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1536.0,5.00%,F,T)
A2.74E5
A2.10E5
A1.36E5
A1.77E4
A1.07E5
A8.82E4
A2.99E4
A3.15E5
A5.36E4
A1.71E5
A3.33E4
A6.86E4
A1.10E4
305.8987 S:7 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1684.0,5.00%,F,T)
A2.96E5
A3.34E5
A2.66E5
A2.00E5
A2.16E4
A1.18E5
A6.32E4
A3.62E5
A8.13E4
A2.02E5
A3.51E4
A1.20E5
A3.18E4
330.9792 S:7 SMO(1,3)
17:02
17:18
17:40
18:06
18:28
18:52
19:11
19:44
20:03
20:30
20:49
21:12
21:35
21:51
17:00
18:00
19:00
20:00
21:00
22:00
Time

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S17, Date: 13-Sep-2019, Time: 00:01:49, ID: L31654-8,,, Description: 1,WG69303,1.0/20uL

	Name	Sample Size	Resp	Ratio	fails?	RT	pg	DL	%Rec	Noise 1	Noise 2
1	2,3,7,8-TCDF	10.459	1.02e5	0.77	NO	25.29	4.485	0.0480		2.26e3	2.69e3
2	1,2,3,7,8-PeCDF	10.459	5.72e4	1.48	NO	33.62	2.422	0.0492		2.09e3	2.23e3
3	2,3,4,7,8-PeCDF	10.459	7.98e4	1.52	NO	35.38	3.168	0.0411		2.09e3	2.23e3
4	1,2,3,4,7,8-HxCDF	10.459	2.64e5	1.28	NO	40.82	10.572	0.0376		2.71e3	2.20e3
5	1,2,3,6,7,8-HxCDF	10.459	5.57e5	1.26	NO	40.99	23.337	0.0367		2.71e3	2.20e3
6	2,3,4,6,7,8-HxCDF	10.459	1.30e5	1.24	NO	41.95	5.333	0.0363		2.71e3	2.20e3
7	1,2,3,7,8,9-HxCDF	10.459	1.56e4	1.19	NO	42.97	0.748	0.0413		2.71e3	2.20e3
8	1,2,3,4,6,7,8-HpCDF	10.459	6.44e6	1.04	NO	45.46	281.285	0.0580		4.14e3	4.11e3
9	1,2,3,4,7,8,9-HpCDF	10.459	2.08e5	1.02	NO	47.23	10.115	0.0649		4.14e3	4.11e3
10	OCDF	10.459	8.68e6	0.91	NO	50.53	373.591	0.0249		2.13e3	1.22e3
11	2,3,7,8-TCDD	10.459	2.52e4	0.79	NO	26.52	1.193	0.0446		2.02e3	2.01e3
12	1,2,3,7,8-PeCDD	10.459	4.13e4	0.59	NO	36.21	2.320	0.0495		1.94e3	1.79e3
13	1,2,3,4,7,8-HxCDD	10.459	6.20e4	1.25	NO	42.21	3.122	0.0399		2.47e3	2.36e3
14	1,2,3,6,7,8-HxCDD	10.459	3.32e5	1.23	NO	42.34	16.240	0.0403		2.47e3	2.36e3
15	1,2,3,7,8,9-HxCDD	10.459	1.65e5	1.28	NO	42.78	8.268	0.0405		2.47e3	2.36e3
16	1,2,3,4,6,7,8-HpCDD	10.459	6.00e6	1.03	NO	46.83	341.256	0.0848		5.12e3	4.37e3
17	OCDD	10.459	1.01e8	0.88	NO	50.44	5025.512	0.0783		4.63e3	4.45e3
18	13C-2,3,7,8-TCDF	10.459	4.69e6	0.82	NO	25.25	138.803	0.0784	72.6	6.53e3	5.31e3
19	13C-1,2,3,7,8-PeCDF	10.459	4.86e6	1.57	NO	33.58	176.796	0.0922	92.5	4.78e3	6.54e3
20	13C-2,3,4,7,8-PeCDF	10.459	5.07e6	1.58	NO	35.37	178.942	0.0894	93.6	4.78e3	6.54e3
21	13C-1,2,3,4,7,8-HxCDF	10.459	4.33e6	0.53	NO	40.80	166.923	0.1145	87.3	7.97e3	8.83e3
22	13C-1,2,3,6,7,8-HxCDF	10.459	4.25e6	0.53	NO	40.97	149.242	0.1042	78.0	7.97e3	8.83e3
23	13C-2,3,4,6,7,8-HxCDF	10.459	4.09e6	0.52	NO	41.92	159.311	0.1155	83.3	7.97e3	8.83e3
24	13C-1,2,3,7,8,9-HxCDF	10.459	3.78e6	0.52	NO	42.95	165.532	0.1299	86.6	7.97e3	8.83e3
25	13C-1,2,3,4,6,7,8-HpCDF	10.459	3.50e6	0.45	NO	45.44	164.120	0.0842	85.8	6.24e3	3.94e3
26	13C-1,2,3,4,7,8,9-HpCDF	10.459	3.14e6	0.46	NO	47.21	181.500	0.1038	94.9	6.24e3	3.94e3
27	13C-2,3,7,8-TCDD	10.459	3.67e6	0.78	NO	26.49	170.603	0.1793	89.2	4.71e3	1.25e4
28	13C-1,2,3,7,8-PeCDD	10.459	3.44e6	0.63	NO	36.16	201.783	0.0746	105.5	2.18e3	3.51e3
29	13C-1,2,3,4,7,8-HxCDD	10.459	3.69e6	1.28	NO	42.19	178.515	0.0998	93.4	5.27e3	6.41e3
30	13C-1,2,3,6,7,8-HxCDD	10.459	4.16e6	1.24	NO	42.32	181.777	0.0903	95.1	5.27e3	6.41e3
31	13C-1,2,3,4,6,7,8-HpCDD	10.459	4.31e6	1.03	NO	46.81	186.371	0.0647	97.5	4.71e3	3.77e3
32	13C-OCDD	10.459	7.80e6	0.88	NO	50.44	458.473	0.0990	119.9	4.16e3	5.38e3
33	13C-1,2,3,4-TCDD	10.459	4.24e6	0.80	NO	26.14	10.085	0.0092	5.3	4.71e3	1.25e4
34	13C-1,2,3,7,8,9-HxCDD	10.459	4.08e6	1.23	NO	42.76	13.445	0.0068	7.0	5.27e3	6.41e3
35	37Cl-2,3,7,8-TCDD	10.459	4.16e5			26.52	17.551	0.0331	91.8		3.50e3
36	Total Tetra-Furans	10.459					71.061	0.0480			2.69e3
37	Total Tetra-Dioxins	10.459					19.611	0.0446			2.01e3
38	Total Penta-Furans	10.459					177.509	0.0455			2.23e3
39	Total Penta-Dioxins	10.459					30.090	0.0495			1.79e3
40	Total Hexa-Furans	10.459					284.347	0.0374			2.20e3
41	Total Hexa-Dioxins	10.459					115.379	0.0383			2.36e3
42	Total Hepta-Furans	10.459					680.538	0.0613			4.11e3
43	Total Hepta-Dioxins	10.459					820.564	0.0848			4.37e3
44	Hexa DPE	1.000	3.45e2			23.79					5.63e2
45	Hepta DPE	1.000	3.07e2			37.93					4.00e2
46	Octa DPE	1.000	6.47e2			40.80					1.51e3
47	Nona DPE	1.000	8.33e2			48.30					2.01e3
48	Deca DPE	1.000	1.05e2			49.34					5.95e2
49	Tetra Lock	1.000	5.14e3			21.43					1.17e5
50	Penta Lock	1.000	5.68e3			33.10					8.57e4
51	Hexa Lock	1.000	2.12e5			39.04					2.16e5
52	Hepta Lock	1.000	1.89e4			44.72					1.60e5
53	Octa Lock	1.000	1.00e4			49.25					1.29e5
54	13C-Tetra-Furans	10.459					138.803	0.0784			5.31e3
55	13C-Tetra-Dioxins	10.459					180.688	0.1885			1.25e4

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

SV1H 22 Sept. 2019

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S17, Date: 13-Sep-2019, Time: 00:01:49, ID: L31654-8,,, Description: 1,WG69303,1.0/20uL

Tetrafurans

	RT	Ratio	Fails?	pg
1	24.60	0.748	NO	2.980
2	24.29	0.766	NO	1.114
3	24.17	0.737	NO	3.255
4	23.89	0.780	NO	6.200
5	23.74	0.857	NO	0.399
6	23.37	0.757	NO	16.615
7	23.02	0.757	NO	10.294
8	22.60	0.811	NO	3.480
9	22.28	0.761	NO	15.068
10	21.97	0.736	NO	3.325
11	21.45	0.717	NO	0.305
12	28.17	1.438	YES	0.335
13	26.57	0.777	NO	0.038
14	26.31	0.791	NO	1.243
15	25.99	0.759	NO	1.049
16	25.29	0.771	NO	4.485
17	24.97	0.792	NO	0.875

Tetradioxins

	RT	Ratio	Fails?	pg
1	25.10	0.671	NO	0.326
2	24.95	0.790	NO	0.205
3	24.70	0.720	NO	2.560
4	23.79	0.768	NO	1.154
5	23.40	0.858	NO	1.561
6	22.97	0.763	NO	8.410
7	28.31	1.010	YES	0.190
8	27.12	0.740	NO	0.519
9	26.72	0.165	YES	0.051
10	26.52	0.793	NO	1.193
11	26.36	0.814	NO	1.465
12	26.14	0.724	NO	0.609
13	25.64	0.795	NO	0.591
14	25.24	0.940	YES	0.779

Pentafurans

	RT	Ratio	Fails?	pg
1	33.97	1.528	NO	0.500
2	33.62	1.481	NO	2.422
3	33.45	1.759	NO	0.903
4	32.95	1.560	NO	15.197
5	32.35	1.674	NO	0.365
6	31.95	1.513	NO	1.753
7	31.55	1.550	NO	41.821
8	31.17	1.502	NO	0.465
9	28.96	1.566	NO	96.666
10	37.16	1.998	YES	0.252
11	35.65	1.494	NO	10.246
12	35.38	1.516	NO	3.168
13	34.32	1.640	NO	3.543
14	35.28	1.457	NO	0.209

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S17, Date: 13-Sep-2019, Time: 00:01:49, ID: L31654-8,,, Description: 1,WG69303,1.0/20uL

Pentadioxins

	RT	Ratio	Fails?	pg
1	33.22	0.699	NO	2.112
2	32.09	0.645	NO	8.553
3	36.51	0.629	NO	0.546
4	36.21	0.595	NO	2.320
5	35.73	0.669	NO	0.195
6	35.58	0.590	NO	0.289
7	35.13	0.647	NO	2.168
8	34.93	0.667	NO	1.788
9	34.55	0.604	NO	1.752
10	34.23	0.634	NO	2.278
11	33.90	0.616	NO	6.439
12	37.15	0.932	YES	1.649

Hexafurans

	RT	Ratio	Fails?	pg
1	41.41	1.179	NO	2.398
2	40.99	1.259	NO	23.337
3	40.82	1.281	NO	10.572
4	40.75	1.218	NO	2.084
5	40.16	1.240	NO	111.983
6	39.85	1.215	NO	1.740
7	39.34	1.240	NO	85.478
8	39.09	1.240	NO	30.583
9	43.10	1.276	NO	1.901
10	42.97	1.194	NO	0.748
11	41.95	1.241	NO	5.333
12	41.76	1.239	NO	8.191

Hexadioxins

	RT	Ratio	Fails?	pg
1	41.51	1.400	NO	2.194
2	41.31	1.219	NO	42.306
3	40.93	1.236	NO	5.737
4	40.12	1.211	NO	37.513
5	42.78	1.283	NO	8.268
6	42.34	1.228	NO	16.240
7	42.21	1.253	NO	3.122

Heptafurans

	RT	Ratio	Fails?	pg
1	45.46	1.038	NO	281.285
2	47.23	1.021	NO	10.115
3	45.95	1.040	NO	386.849
4	45.76	1.054	NO	2.289

Heptadioxins

	RT	Ratio	Fails?	pg
1	46.83	1.032	NO	341.256
2	45.91	1.027	NO	479.308

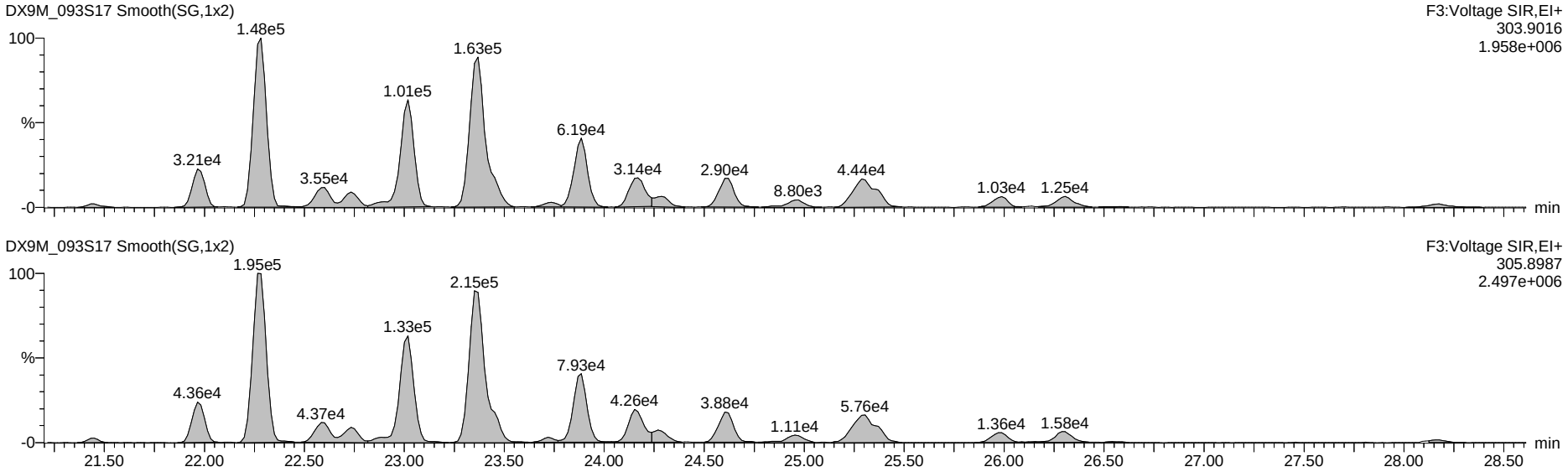
PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

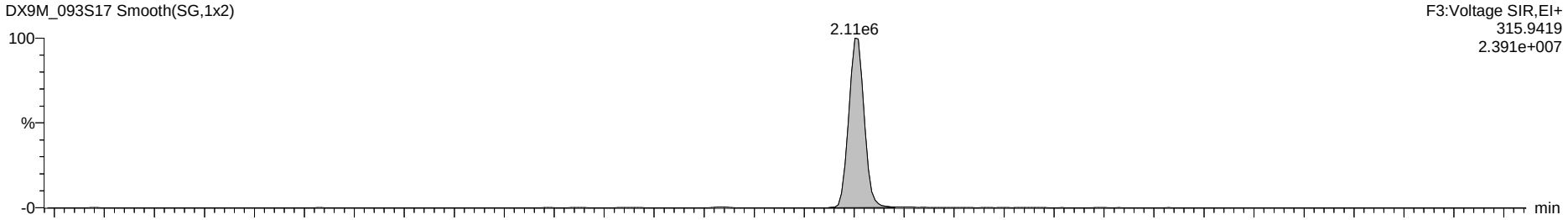
Method: G:\Masslynx\Inst_M\Exported_methods\DX_1613B_16.mdb 07 Sep 2017 16:45:23
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

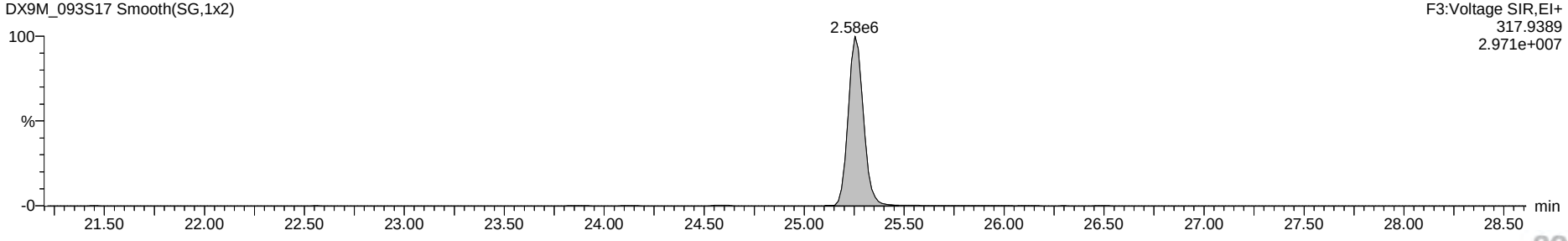
Name: DX9M_093S17, Date: 13-Sep-2019, Time: 00:01:49, ID: L31654-8,,, Description: 1,WG69303,1.0/20uL

Total Tetra-Furans



13C-Tetra-Furans





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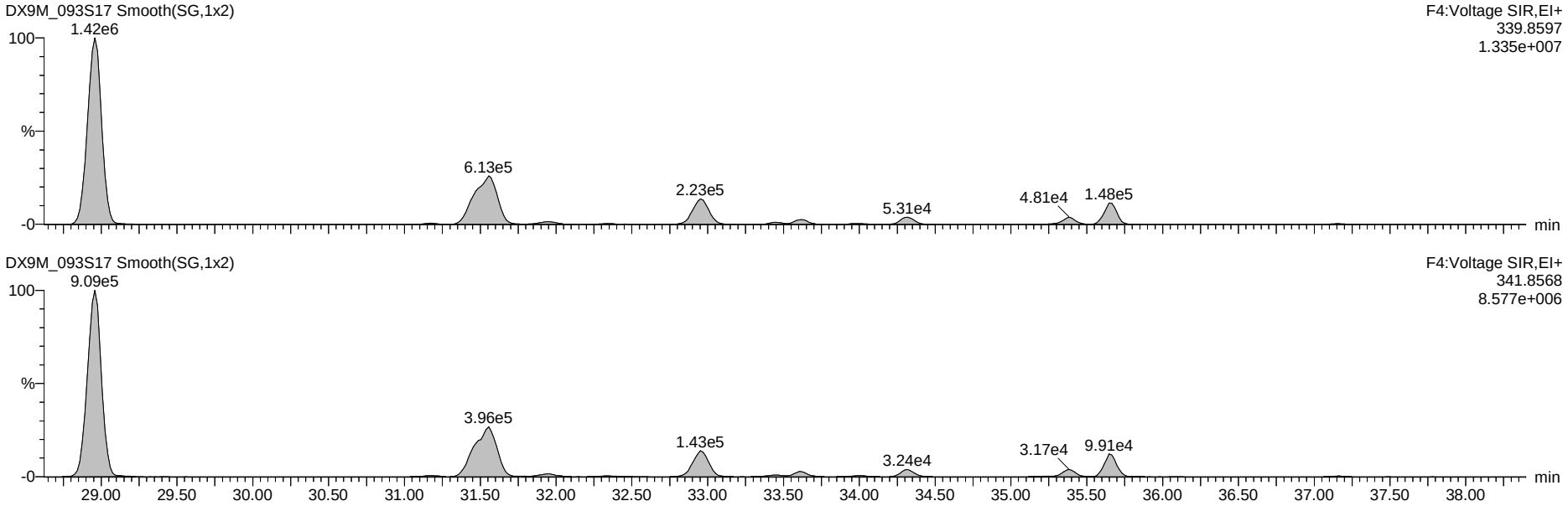
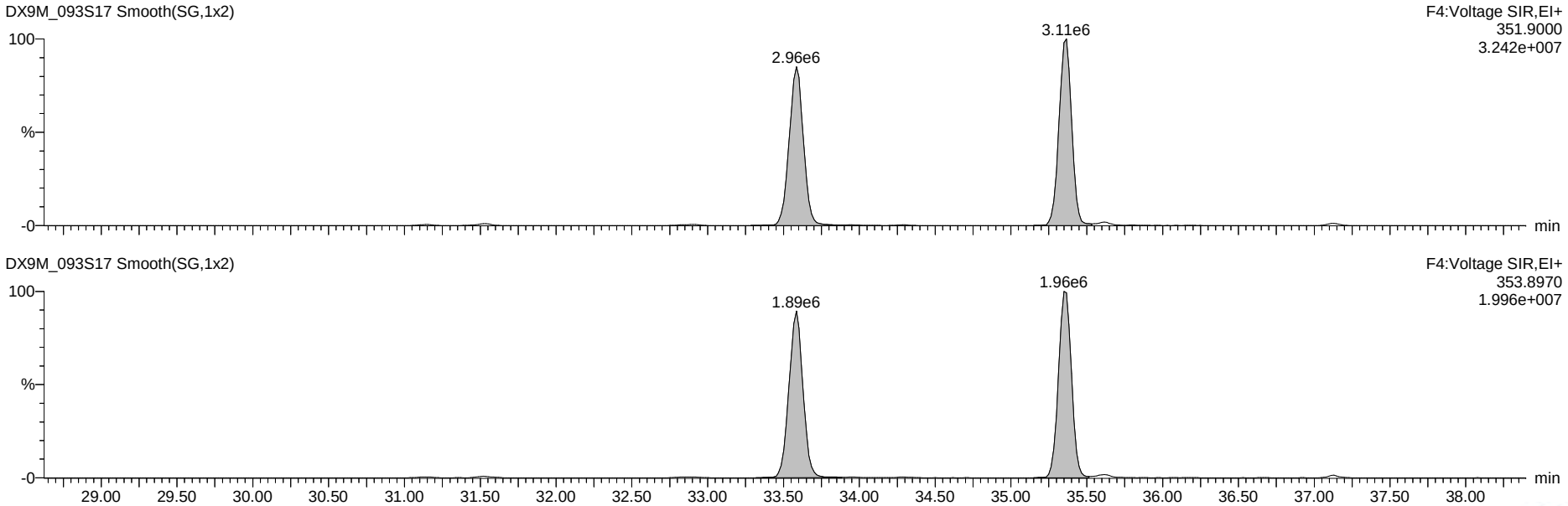
Name: DX9M_093S17, Date: 13-Sep-2019, Time: 00:01:49, ID: L31654-8,,, Description: 1,WG69303,1.0/20uL

Total Penta-Furans



13C-Penta-Furans



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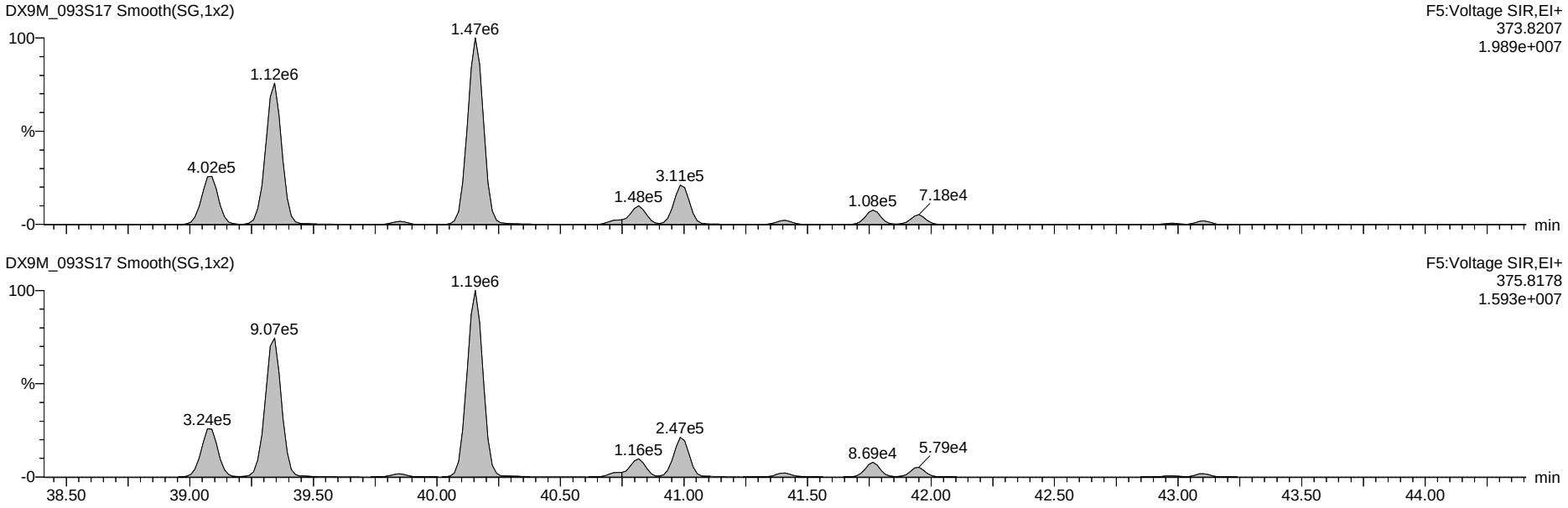
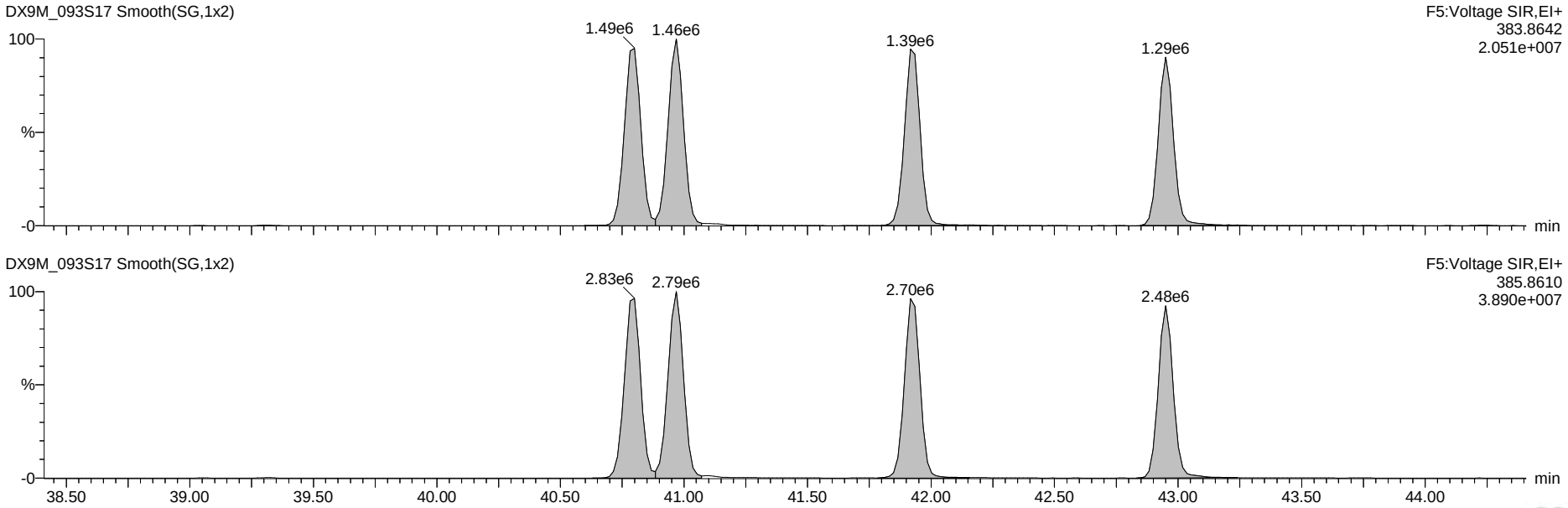
Name: DX9M_093S17, Date: 13-Sep-2019, Time: 00:01:49, ID: L31654-8,,, Description: 1,WG69303,1.0/20uL

Total Hexa-Furans



13C-Hexa-Furans



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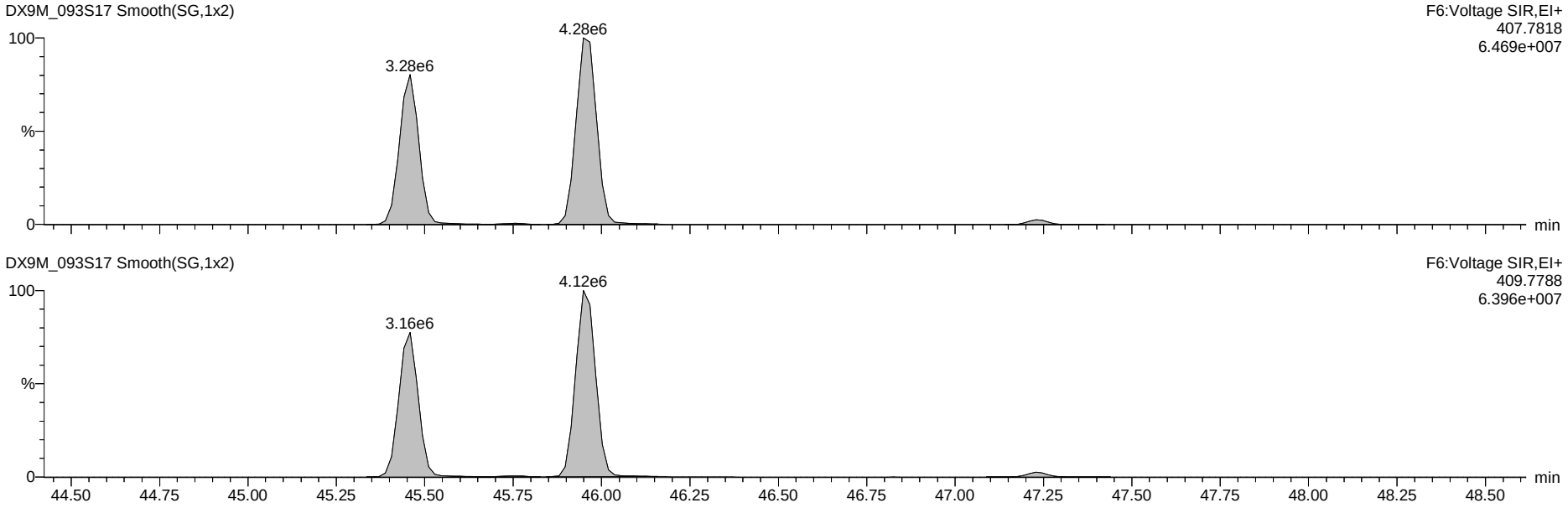
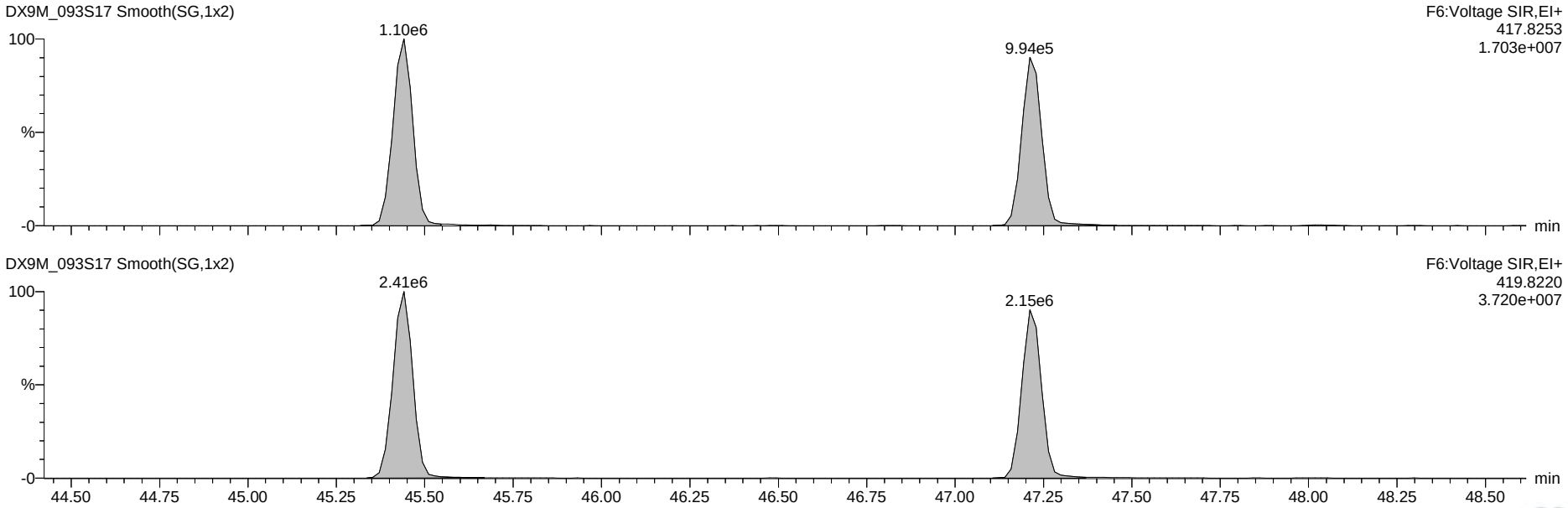
Name: DX9M_093S17, Date: 13-Sep-2019, Time: 00:01:49, ID: L31654-8,,, Description: 1,WG69303,1.0/20uL

Total Hepta-Furans



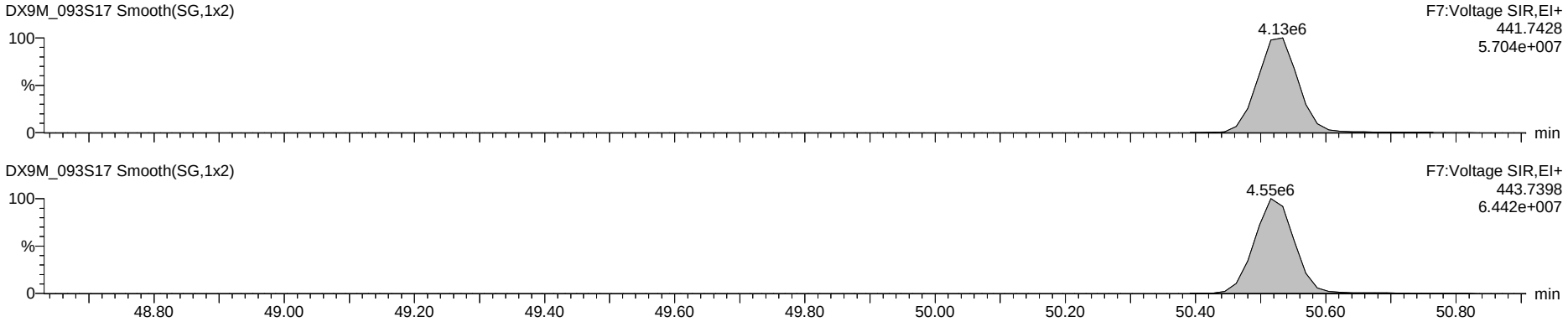
13C-Hepta-Furans



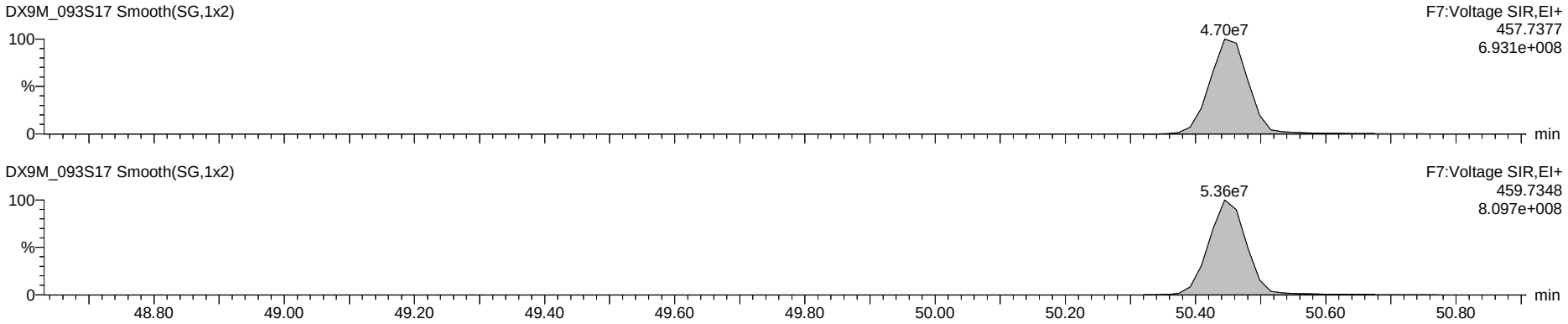
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S17, Date: 13-Sep-2019, Time: 00:01:49, ID: L31654-8,,, Description: 1,WG69303,1.0/20uL

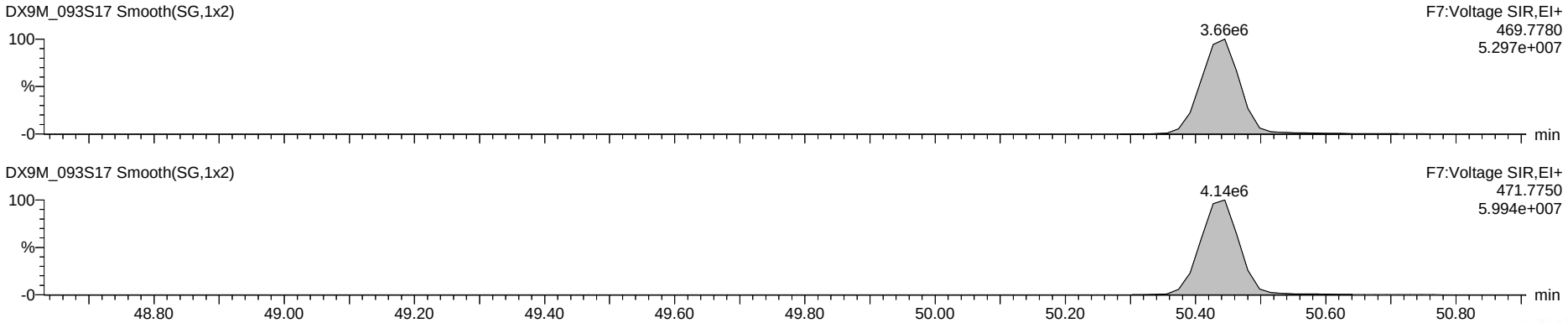
OCDF



OCDD



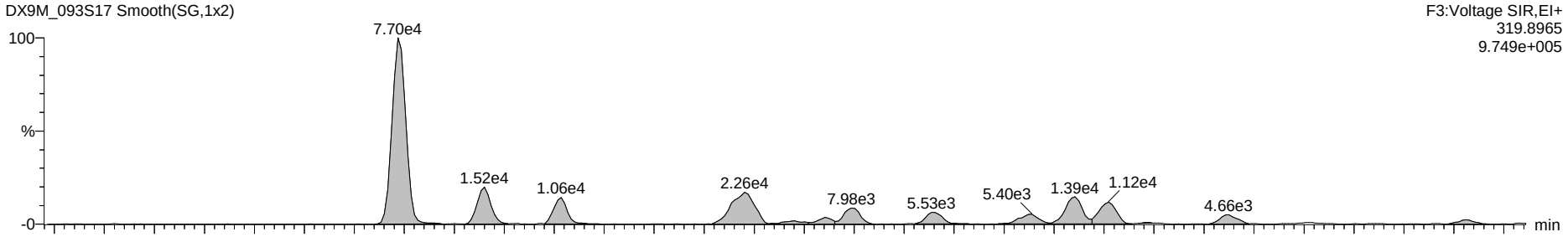
13C-OCDD

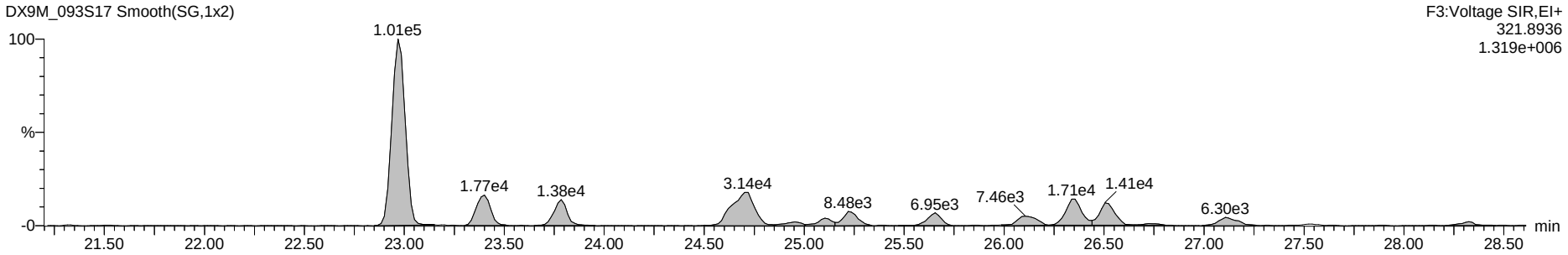


Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

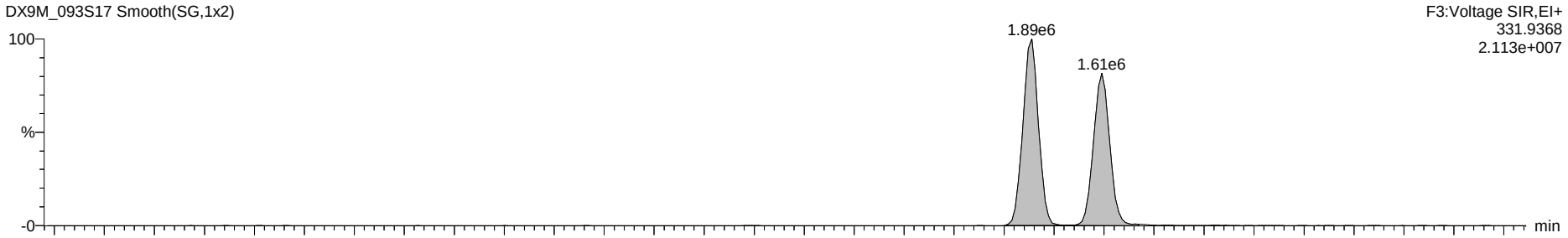
Name: DX9M_093S17, Date: 13-Sep-2019, Time: 00:01:49, ID: L31654-8,,, Description: 1,WG69303,1.0/20uL

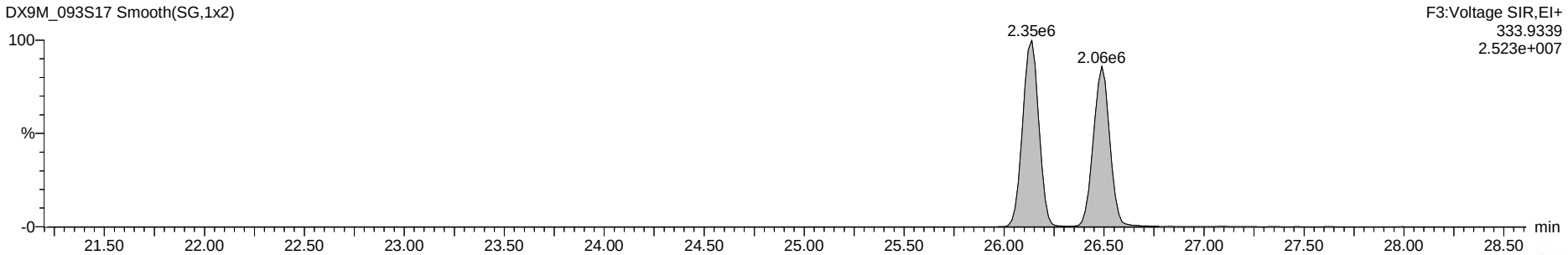
Total Tetra-Dioxins





13C-Tetra-Dioxins

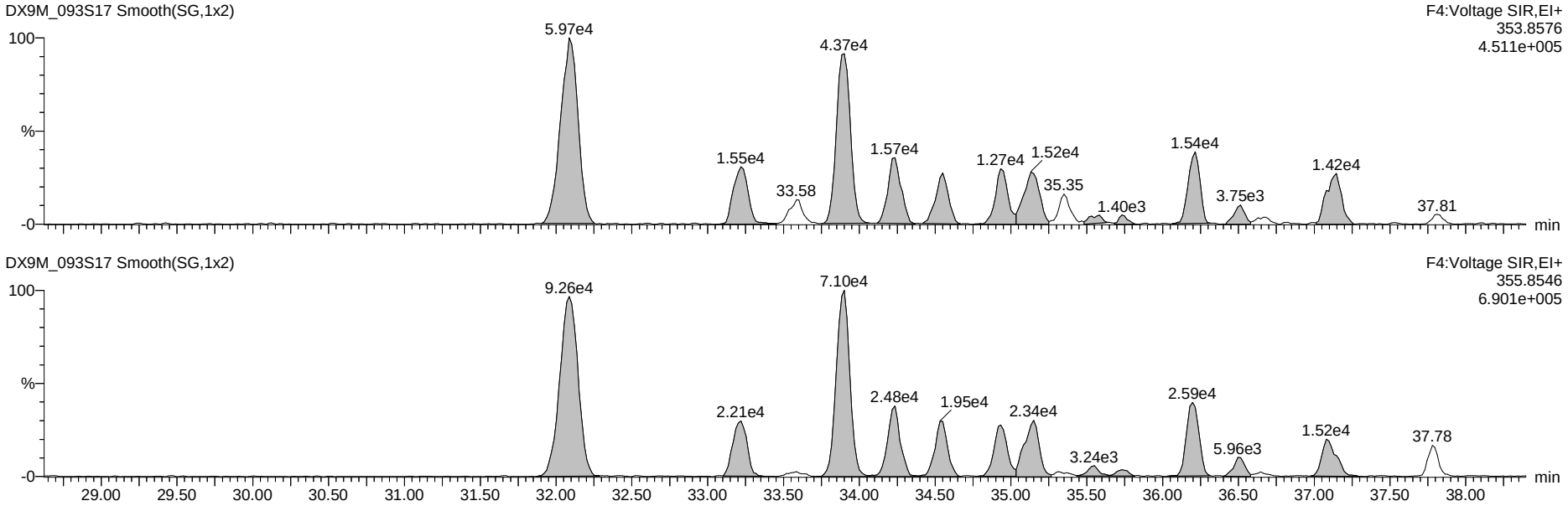




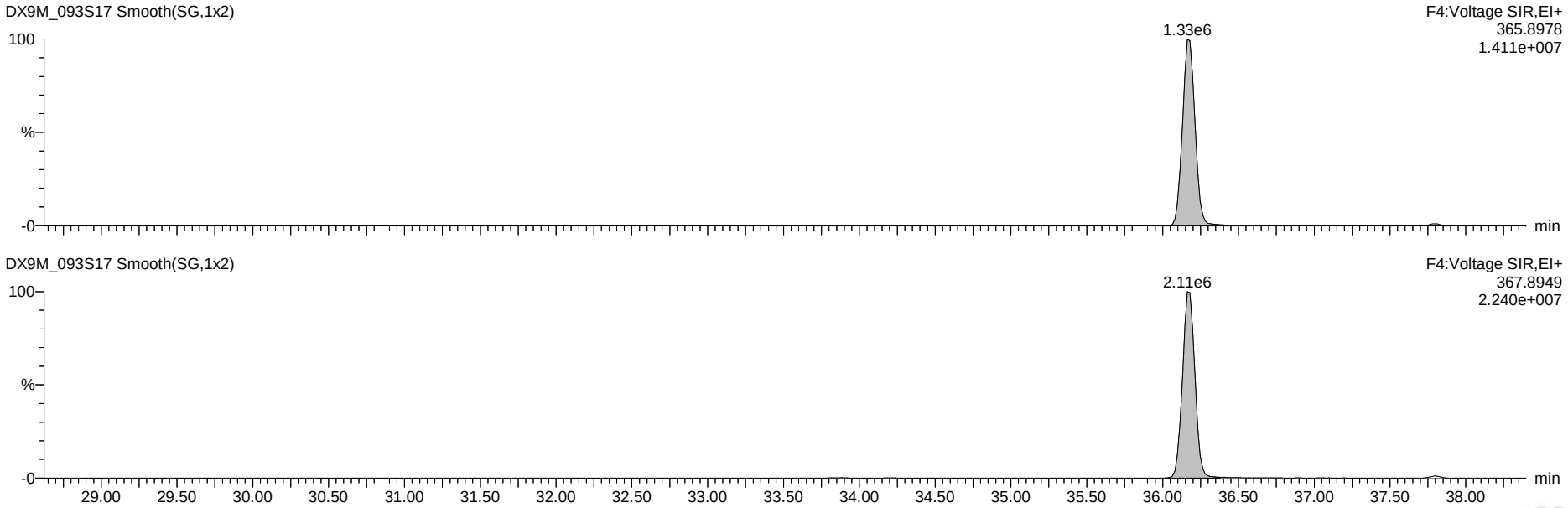
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S17, Date: 13-Sep-2019, Time: 00:01:49, ID: L31654-8,,, Description: 1,WG69303,1.0/20uL

Total Penta-Dioxins



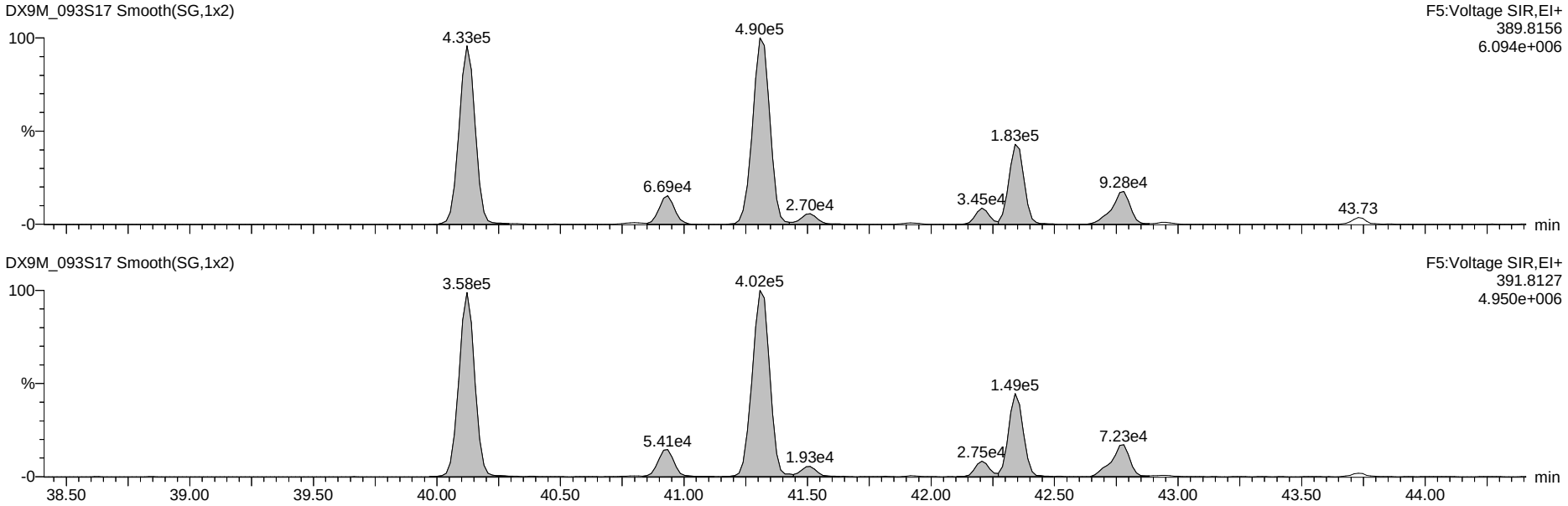
13C-Penta-Dioxins



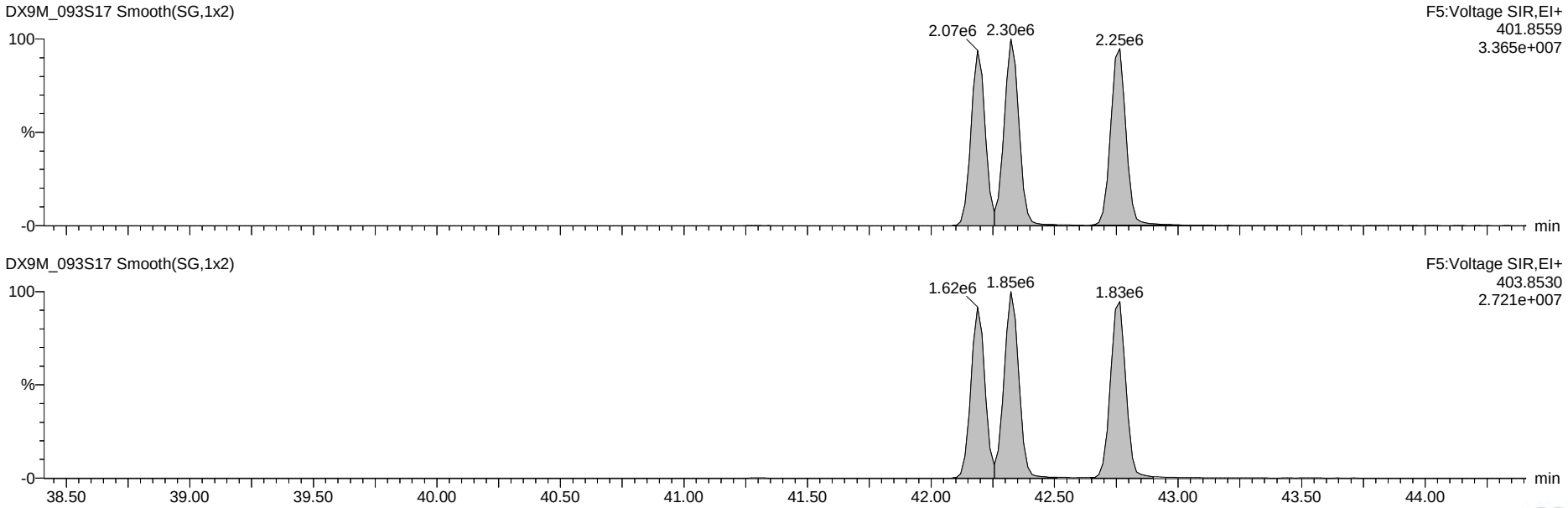
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S17, Date: 13-Sep-2019, Time: 00:01:49, ID: L31654-8,,, Description: 1,WG69303,1.0/20uL

Total Hexa-Dioxins



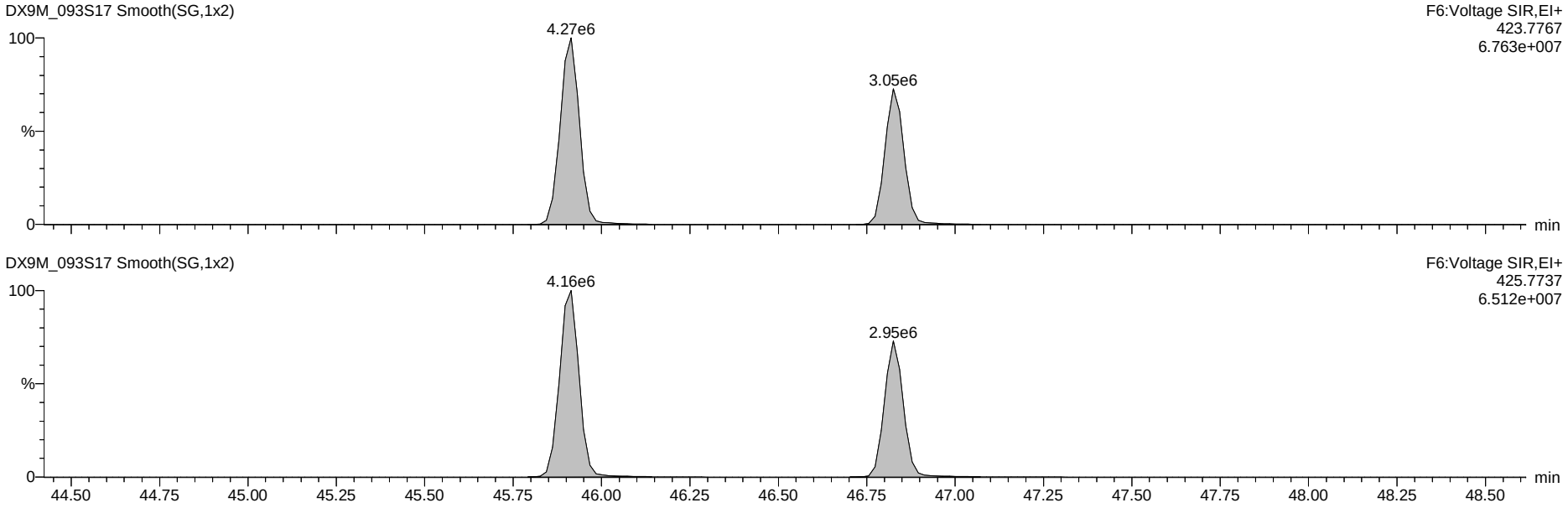
13C-Hexa-Dioxins



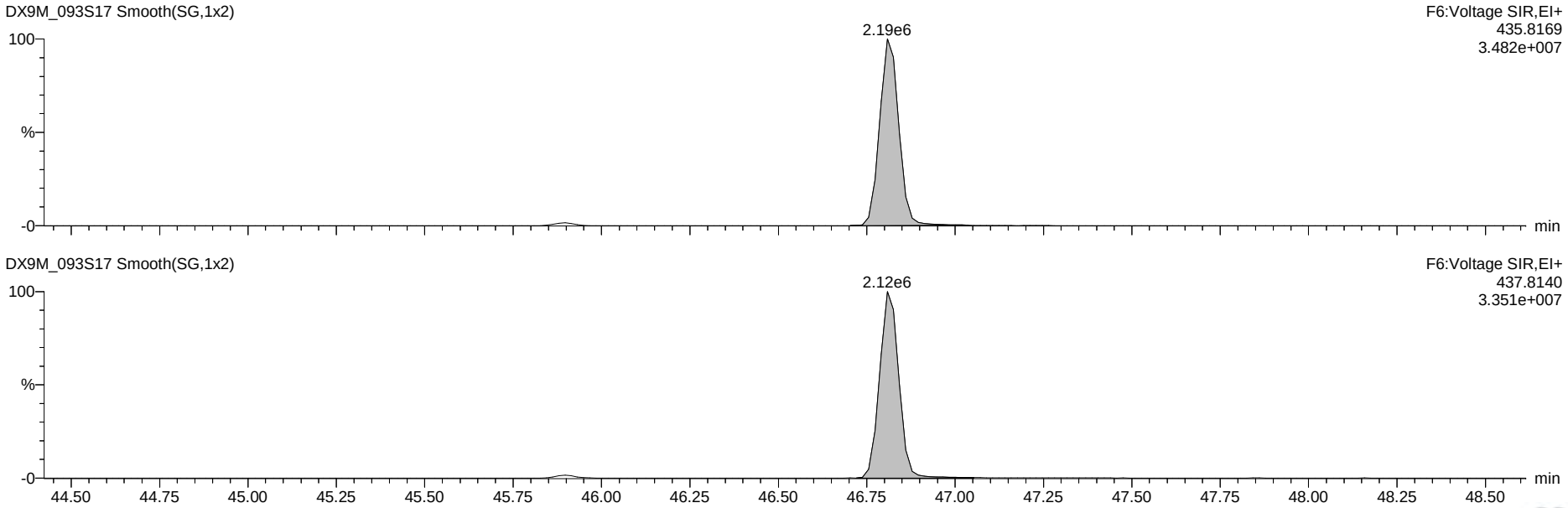
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S17, Date: 13-Sep-2019, Time: 00:01:49, ID: L31654-8,,, Description: 1,WG69303,1.0/20uL

Total Hepta-Dioxins



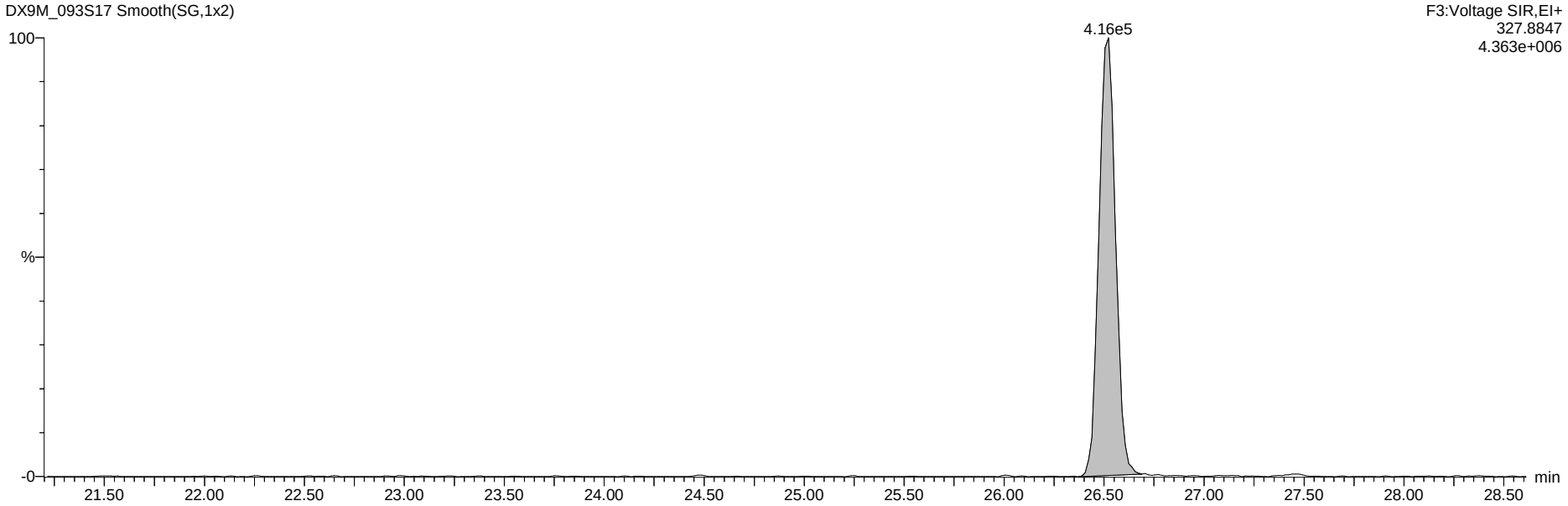
13C-Hepta-Dioxins



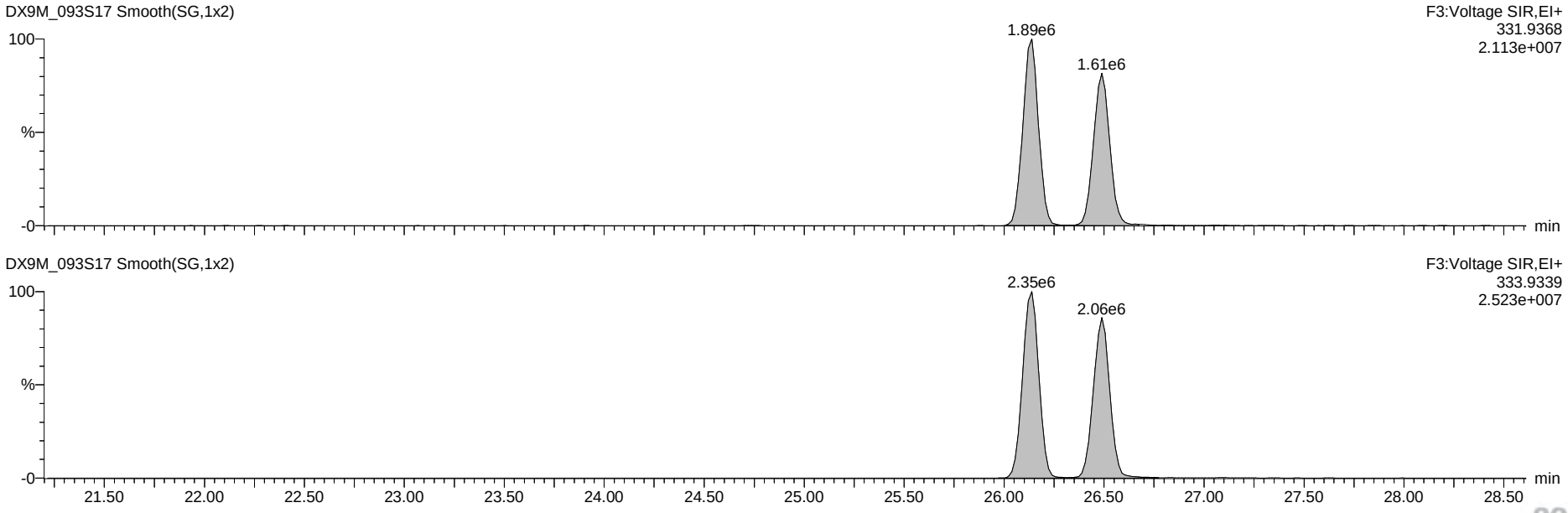
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S17, Date: 13-Sep-2019, Time: 00:01:49, ID: L31654-8,,, Description: 1,WG69303,1.0/20uL

37Cl-2,3,7,8-TCDD



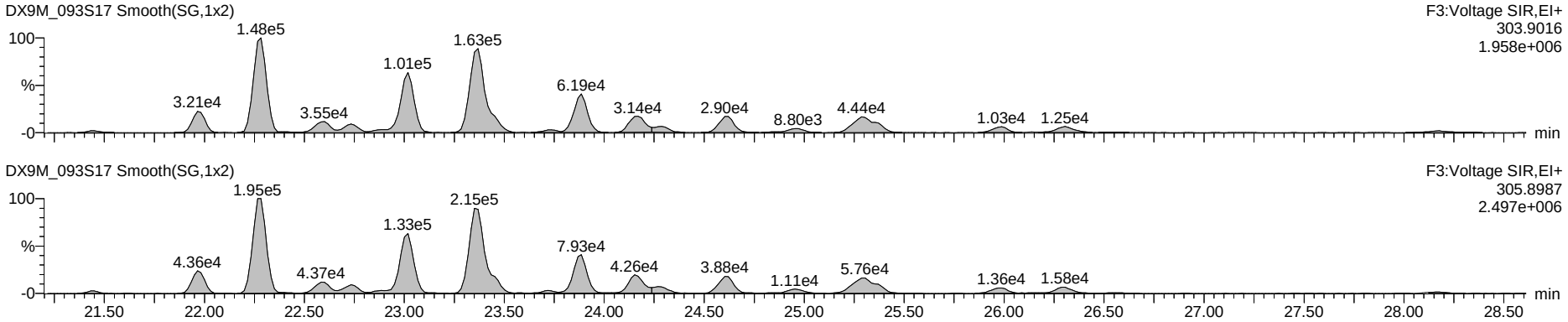
13C-Tetra-Dioxins



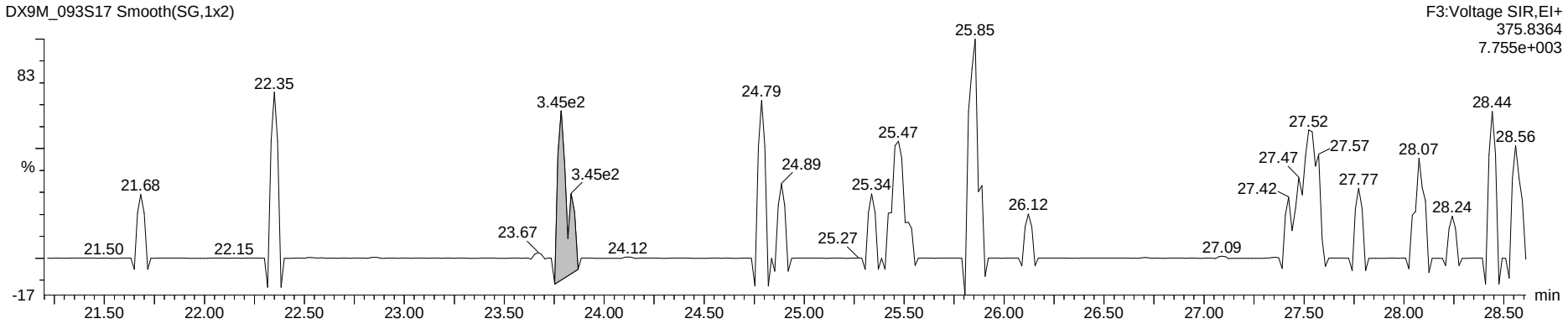
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S17, Date: 13-Sep-2019, Time: 00:01:49, ID: L31654-8,,, Description: 1,WG69303,1.0/20uL

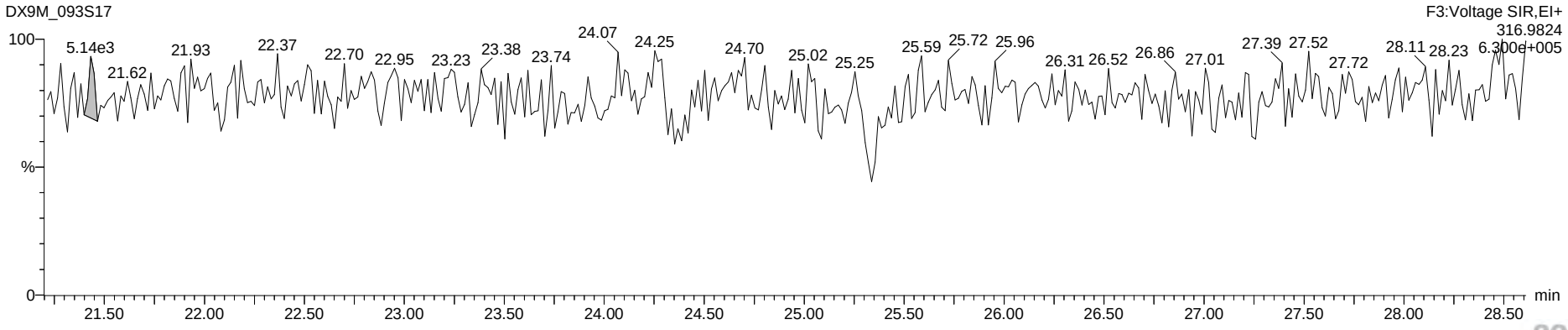
Total Tetra-Furans



Hexa DPE



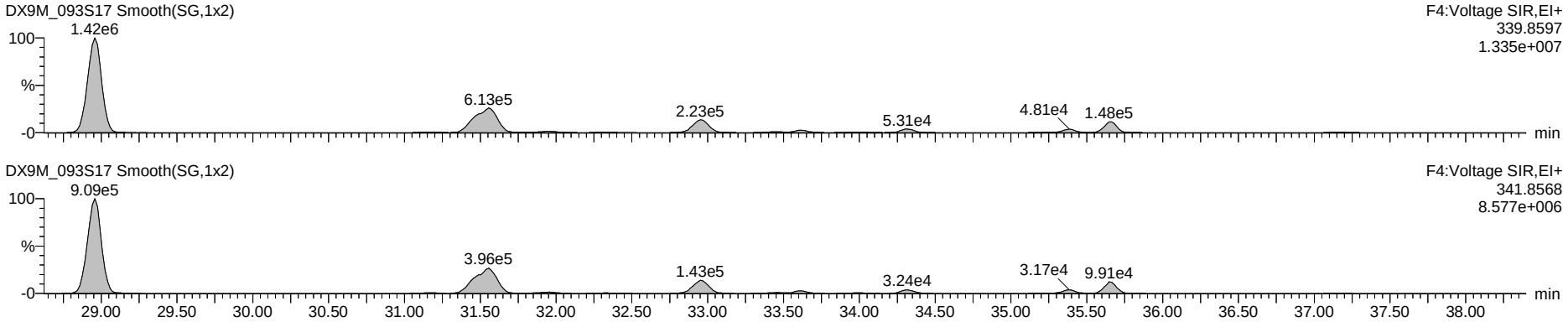
Tetra Lock



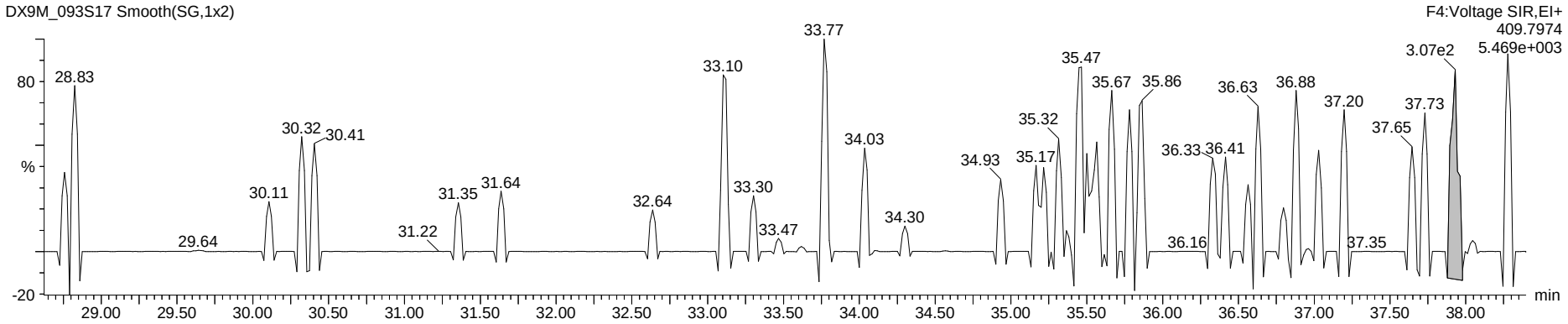
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S17, Date: 13-Sep-2019, Time: 00:01:49, ID: L31654-8,,, Description: 1,WG69303,1.0/20uL

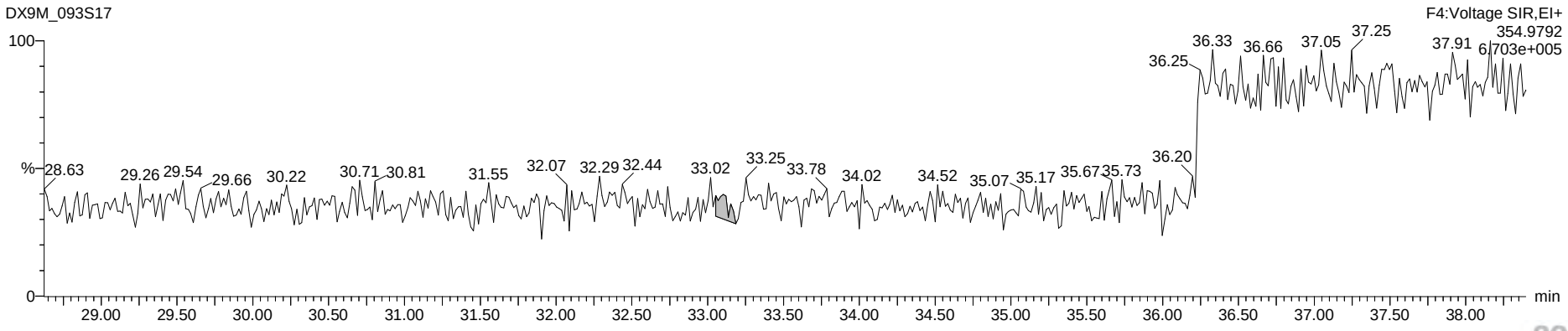
Total Penta-Furans



Hepta DPE



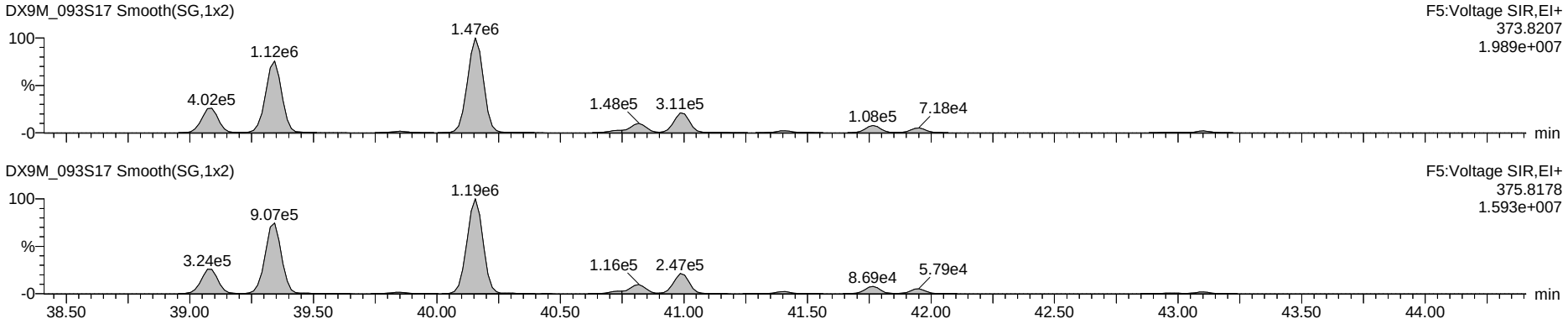
Penta Lock



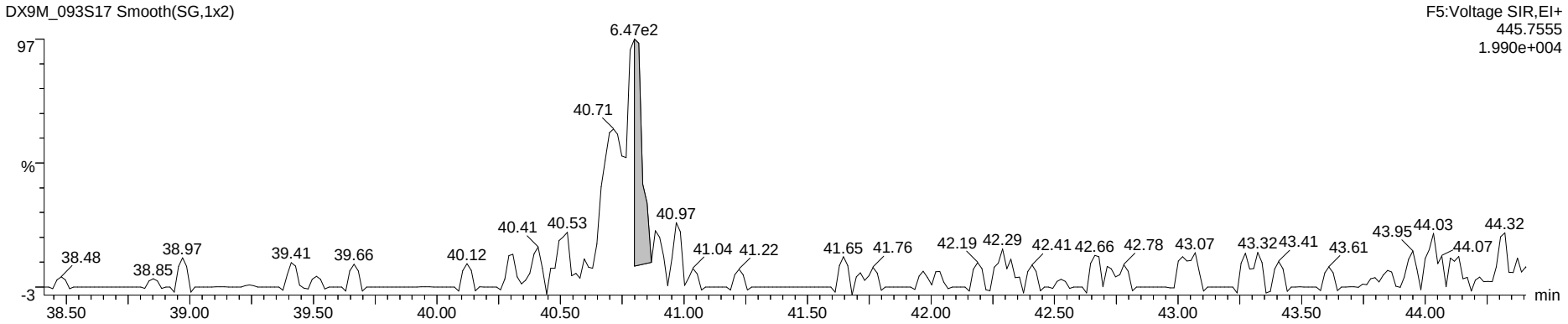
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S17, Date: 13-Sep-2019, Time: 00:01:49, ID: L31654-8,,, Description: 1,WG69303,1.0/20uL

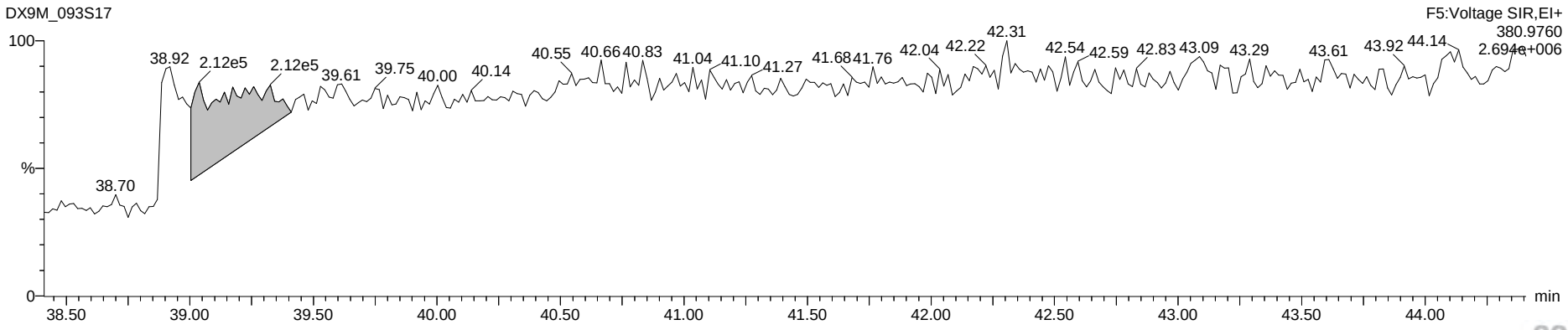
Total Hexa-Furans



Octa DPE



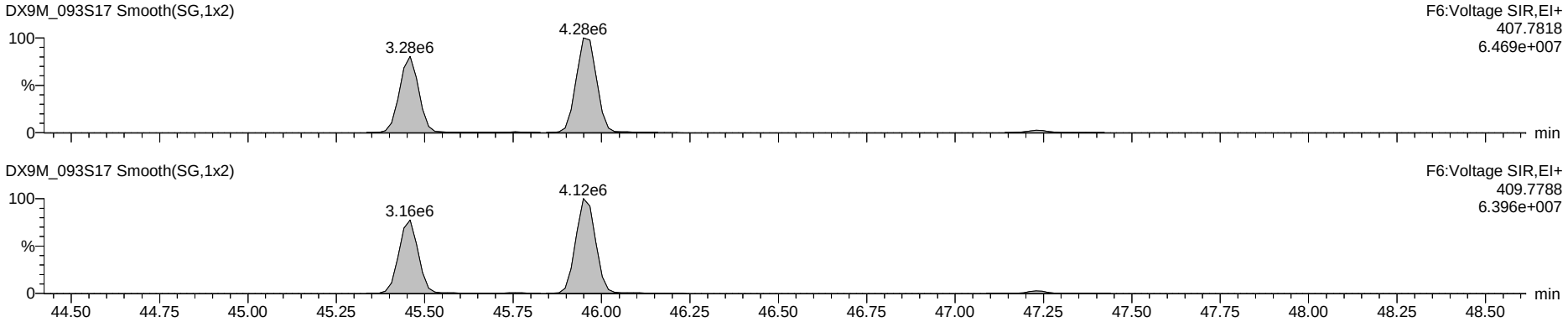
Hexa Lock



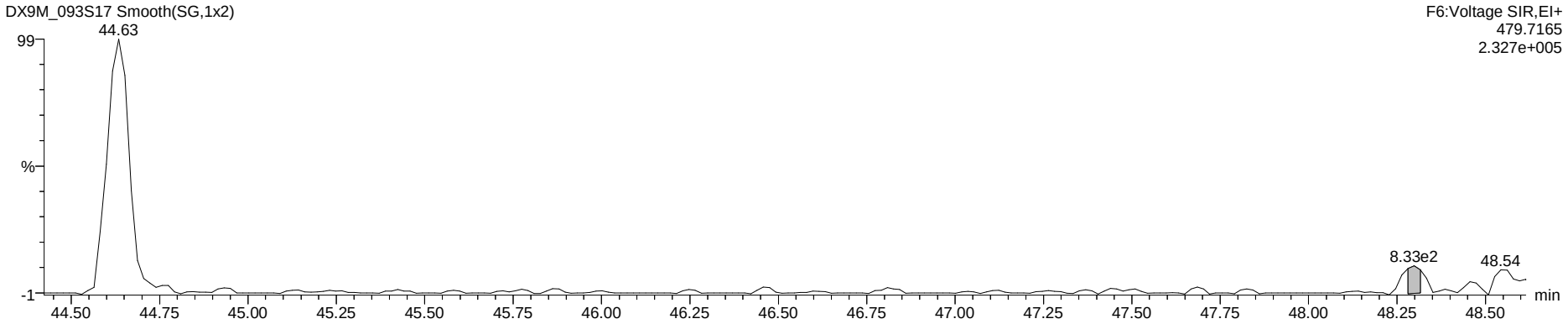
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S17, Date: 13-Sep-2019, Time: 00:01:49, ID: L31654-8,,, Description: 1,WG69303,1.0/20uL

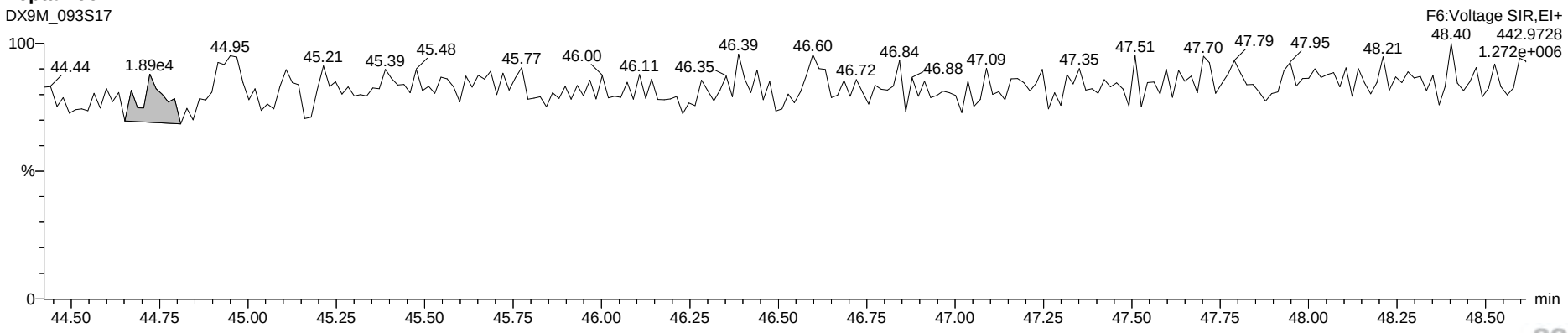
Total Hepta-Furans



Nona DPE



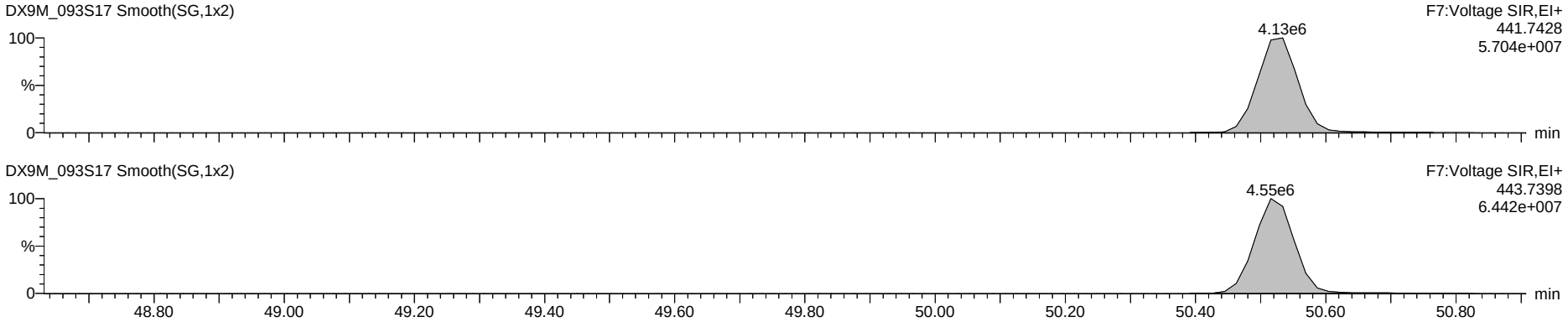
Hepta Lock



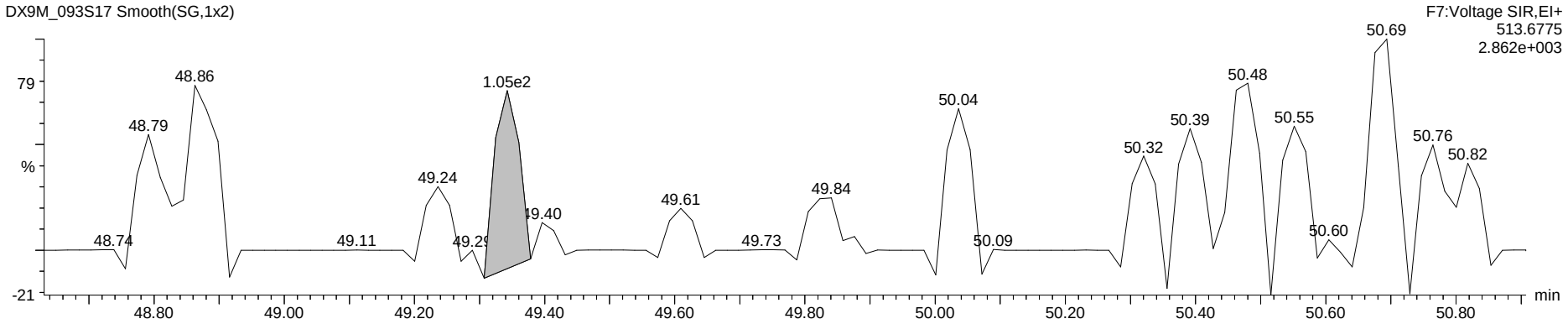
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S17, Date: 13-Sep-2019, Time: 00:01:49, ID: L31654-8,,, Description: 1,WG69303,1.0/20uL

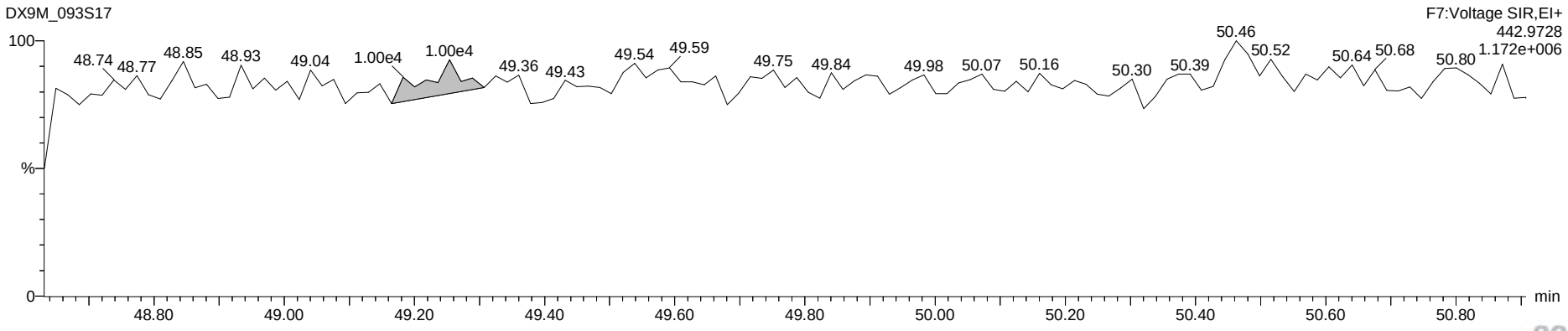
OCDF



Deca DPE



Octa Lock



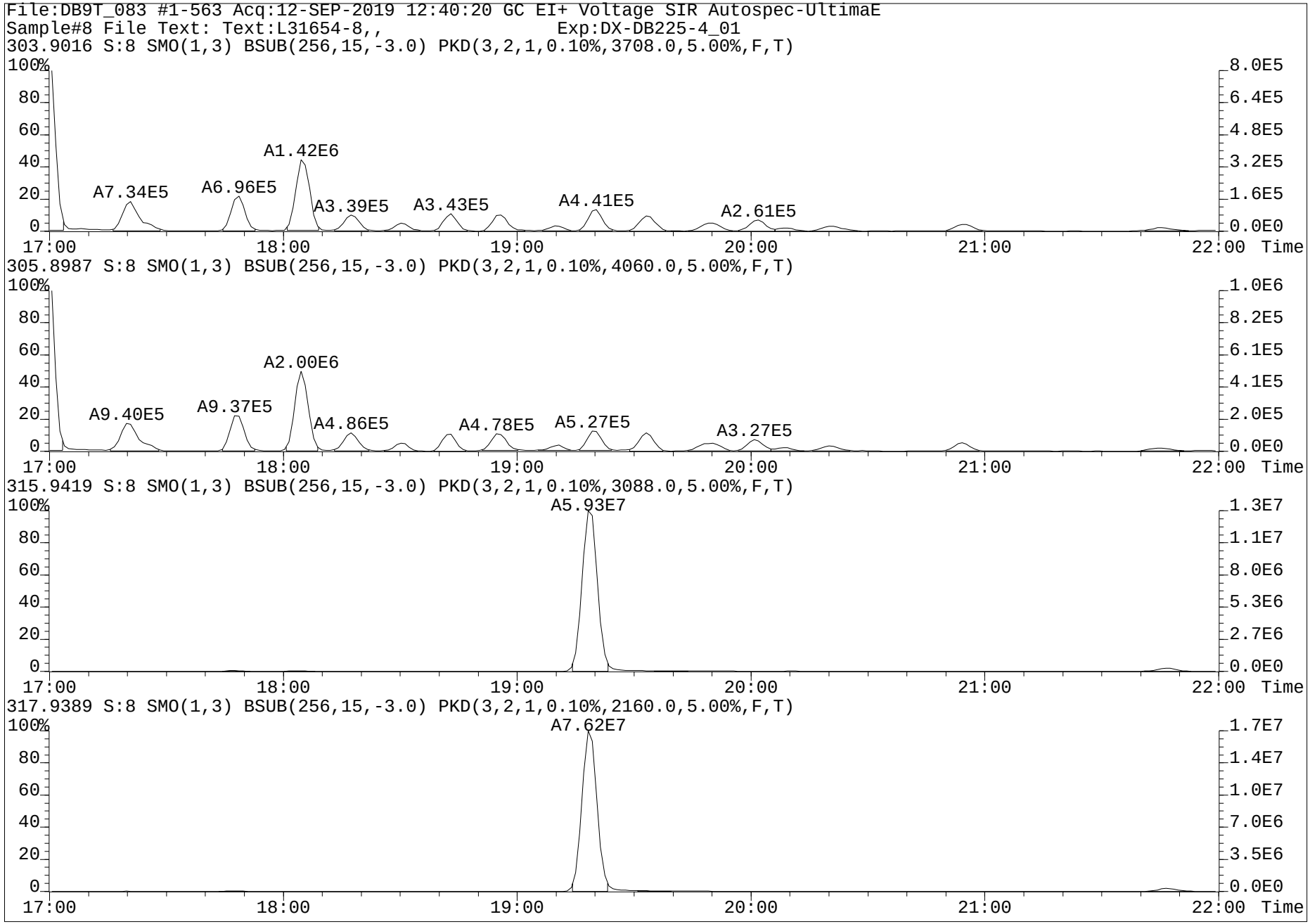
www.axysanalytical.com

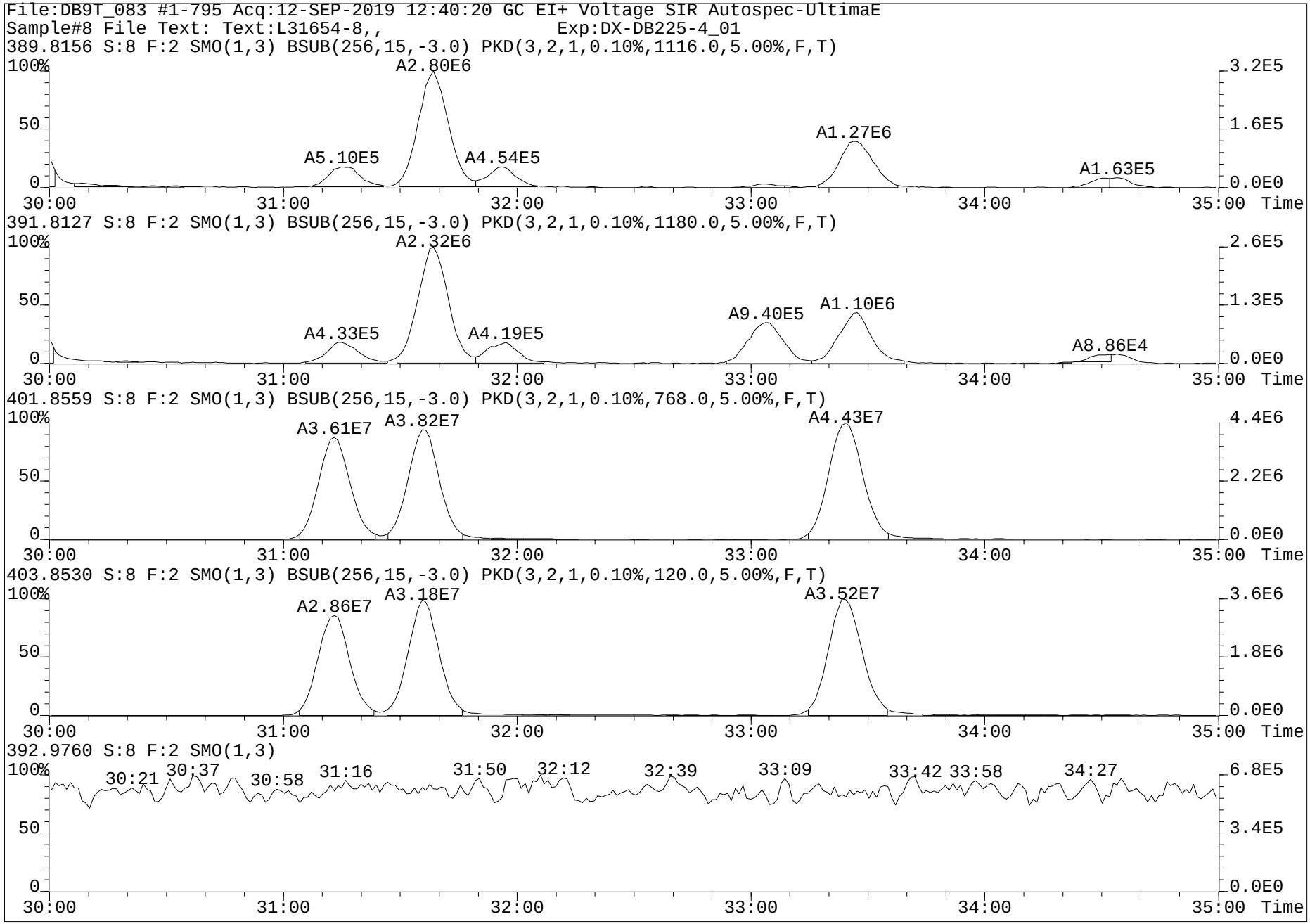
Run #11 Filename DB9T_083 S: 8 I: 1 Acquired: 12-SEP-19 12:40:20 Processed: 17-SEP-19 10:20:04
Run: db9t_083-b Analyte: db-hxd-s2 Cal: db9t_055-5a Results: db9t_083-b Version: V3.6 6-JAN-2000 17:51:42
Sample text: L31654-8,, Comments: 1,WG69303,2.0/20uL
sample size: 10.459000 conc units: pg/g total toxicity: 1.01 F1: 1.0000 F2: 1.0000

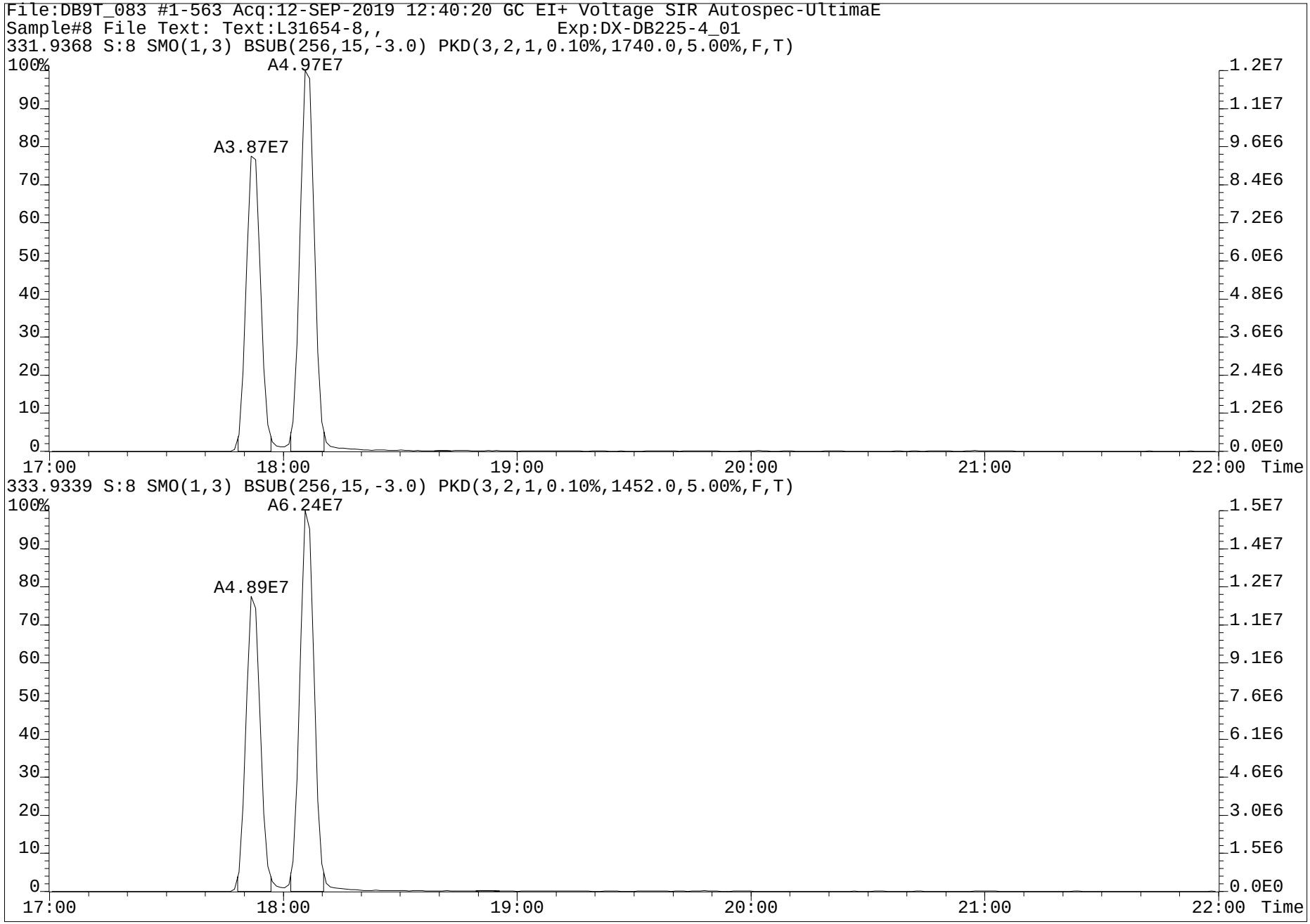
	Typ	Name	#Hom	Resp	RA		RT	Conc	Tox #1	DL	Rec	M?
1	Unk	2,3,7,8-TCDF	1	9.68e+05	0.84	y	19:20	1.761	0	0.1558	-	n
2	Unk	1,2,3,7,8,9-HxCDD	1	2.37e+06	1.16	y	33:27	8.306	1	0.1853	-	n
3	IS/RT	13C-2,3,7,8-TCDF	1	1.35e+08	0.78	y	19:18	163.313	-	0.0654	85.4	n
4	IS/RT	13C-1,2,3,4,7,8-HxCDD	1	6.48e+07	1.26	y	31:13	151.685	-	0.0517	79.3	n
5	IS/RT	13C-1,2,3,6,7,8-HxCDD	1	7.00e+07	1.20	y	31:36	156.771	-	0.0495	82.0	n
6	RS	13C-1,2,3,4-TCDD	1	1.12e+08	0.80	y	18:06	9.315	-	-	-	n
7	RS	13C-1,2,3,7,8,9-HxCDD	1	7.95e+07	1.26	y	33:24	13.232	-	-	-	n
8	Tot	Hexa DPE	0	*			NotFnd	*	-	-	-	n
9	Tot	Tetra Lock	-	-			-	-	-	-	-	n
10	Tot	Hexa Lock	-	-			-	-	-	-	-	n

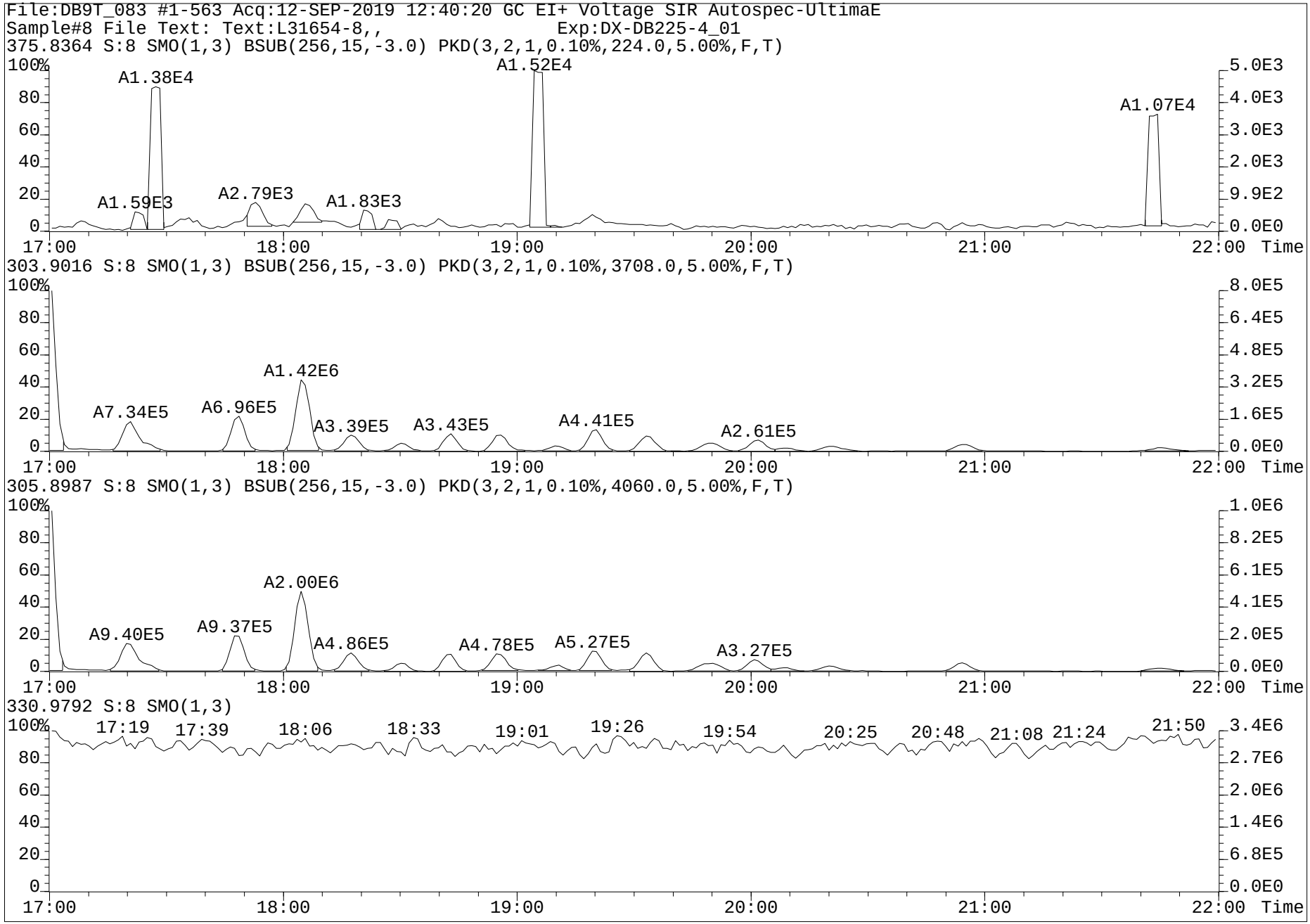
PV by RA 20SEP2019

SV by HH 22Sept.2019


File:DB9T_083 #1-563 Acq:12-SEP-2019 12:40:20 GC EI+ Voltage SIR Autospec-UltimaE
Sample#8 File Text: Text:L31654-8,, Exp:DX-DB225-4_01
303.9016 S:8 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,3708.0,5.00%,F,T)
A7.34E5
A6.96E5
A1.42E6
A3.39E5
A3.43E5
A4.41E5
A2.61E5
305.8987 S:8 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,4060.0,5.00%,F,T)
A9.40E5
A9.37E5
A2.00E6
A4.86E5
A4.78E5
A5.27E5
A3.27E5
315.9419 S:8 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,3088.0,5.00%,F,T)
A5.93E7
317.9389 S:8 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,2160.0,5.00%,F,T)
A7.62E7
100%
80
60
40
20
0
17:00
18:00
19:00
20:00
21:00
22:00
Time
8.0E5
6.4E5
4.8E5
3.2E5
1.6E5
0.0E0
1.0E6
8.2E5
6.1E5
4.1E5
2.0E5
1.3E7
1.1E7
8.0E6
5.3E6
2.7E6
1.7E7
1.4E7
1.0E7
7.0E6
3.5E6


File:DB9T_083 #1-795 Acq:12-SEP-2019 12:40:20 GC EI+ Voltage SIR Autospec-UltimaE
Sample#8 File Text: Text:L31654-8,, Exp:DX-DB225-4_01
389.8156 S:8 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1116.0,5.00%,F,T)
A2.80E6
A5.10E5
A4.54E5
A1.27E6
A1.63E5
391.8127 S:8 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1180.0,5.00%,F,T)
A2.32E6
A4.33E5
A4.19E5
A9.40E5
A1.10E6
A8.86E4
401.8559 S:8 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,768.0,5.00%,F,T)
A3.61E7
A3.82E7
A4.43E7
403.8530 S:8 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,120.0,5.00%,F,T)
A2.86E7
A3.18E7
A3.52E7
392.9760 S:8 F:2 SMO(1,3)
30:21
30:37
30:58
31:16
31:50
32:12
32:39
33:09
33:42
33:58
34:27
100%
50
0
30:00
31:00
32:00
33:00
34:00
35:00
Time
3.2E5
1.6E5
0.0E0
2.6E5
1.3E5
4.4E6
2.2E6
3.6E6
1.8E6
6.8E5
3.4E5


File:DB9T_083 #1-563 Acq:12-SEP-2019 12:40:20 GC EI+ Voltage SIR Autospec-UltimaE
Sample#8 File Text: Text:L31654-8,, Exp:DX-DB225-4_01
331.9368 S:8 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1740.0,5.00%,F,T)
A4.97E7
A3.87E7
100%
90
80
70
60
50
40
30
20
10
0
1.2E7
1.1E7
9.6E6
8.4E6
7.2E6
6.0E6
4.8E6
3.6E6
2.4E6
1.2E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time
333.9339 S:8 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1452.0,5.00%,F,T)
A6.24E7
A4.89E7
100%
90
80
70
60
50
40
30
20
10
0
1.5E7
1.4E7
1.2E7
1.1E7
9.1E6
7.6E6
6.1E6
4.6E6
3.0E6
1.5E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time


File:DB9T_083 #1-563 Acq:12-SEP-2019 12:40:20 GC EI+ Voltage SIR Autospec-UltimaE
Sample#8 File Text: Text:L31654-8,, Exp:DX-DB225-4_01
375.8364 S:8 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,224.0,5.00%,F,T)
A1.38E4
A1.52E4
A1.07E4
A1.59E3
A2.79E3
A1.83E3
303.9016 S:8 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,3708.0,5.00%,F,T)
A1.42E6
A7.34E5
A6.96E5
A3.39E5
A3.43E5
A4.41E5
A2.61E5
305.8987 S:8 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,4060.0,5.00%,F,T)
A2.00E6
A9.40E5
A9.37E5
A4.86E5
A4.78E5
A5.27E5
A3.27E5
330.9792 S:8 SMO(1,3)
17:19
17:39
18:06
18:33
19:01
19:26
19:54
20:25
20:48
21:08
21:24
21:50
Time

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S18, Date: 13-Sep-2019, Time: 00:56:57, ID: L31654-9,,, Description: 1,WG69303,1.0/20uL

	Name	Sample Size	Resp	Ratio	fails?	RT	pg	DL	%Rec	Noise 1	Noise 2
1	2,3,7,8-TCDF	10.406	1.54e5	0.75	NO	25.25	6.397	0.0247		1.12e3	1.68e3
2	1,2,3,7,8-PeCDF	10.406	9.36e4	1.49	NO	33.57	4.077	0.0608		2.03e3	3.24e3
3	2,3,4,7,8-PeCDF	10.406	8.61e4	1.55	NO	35.33	3.697	0.0532		2.03e3	3.24e3
4	1,2,3,4,7,8-HxCDF	10.406	5.73e5	1.21	NO	40.77	23.588	0.0439		3.46e3	2.26e3
5	1,2,3,6,7,8-HxCDF	10.406	3.31e5	1.27	NO	40.93	14.902	0.0458		3.46e3	2.26e3
6	2,3,4,6,7,8-HxCDF	10.406	1.04e5	1.24	NO	41.90	4.851	0.0463		3.46e3	2.26e3
7	1,2,3,7,8,9-HxCDF	10.406	1.94e4	1.39	NO	42.93	1.025	0.0534		3.46e3	2.26e3
8	1,2,3,4,6,7,8-HpCDF	10.406	4.91e6	1.04	NO	45.39	229.000	0.0749		4.29e3	5.49e3
9	1,2,3,4,7,8,9-HpCDF	10.406	3.13e5	1.01	NO	47.18	17.334	0.0898		4.29e3	5.49e3
10	OCDF	10.406	1.38e7	0.90	NO	50.46	598.097	0.0373		2.50e3	2.27e3
11	2,3,7,8-TCDD	10.406	3.84e4	0.77	NO	26.49	1.948	0.0357		1.54e3	1.43e3
12	1,2,3,7,8-PeCDD	10.406	6.73e4	0.67	NO	36.16	3.609	0.0417		1.79e3	1.80e3
13	1,2,3,4,7,8-HxCDD	10.406	1.59e5	1.26	NO	42.15	8.272	0.0540		3.32e3	3.00e3
14	1,2,3,6,7,8-HxCDD	10.406	6.46e5	1.23	NO	42.29	34.815	0.0610		3.32e3	3.00e3
15	1,2,3,7,8,9-HxCDD	10.406	3.42e5	1.21	NO	42.73	18.308	0.0580		3.32e3	3.00e3
16	1,2,3,4,6,7,8-HpCDD	10.406	1.58e7	1.03	NO	46.77	950.300	0.1240		8.52e3	4.56e3
17	OCDD	10.406	1.96e8	0.95	NO	50.41	9860.967	0.1179		6.37e3	6.64e3
18	13C-2,3,7,8-TCDF	10.406	5.00e6	0.81	NO	25.24	148.202	0.0769	77.1	5.32e3	6.65e3
19	13C-1,2,3,7,8-PeCDF	10.406	4.75e6	1.56	NO	33.53	173.033	0.1092	90.0	5.92e3	7.89e3
20	13C-2,3,4,7,8-PeCDF	10.406	4.71e6	1.61	NO	35.32	166.482	0.1059	86.6	5.92e3	7.89e3
21	13C-1,2,3,4,7,8-HxCDF	10.406	4.22e6	0.52	NO	40.75	162.331	0.1017	84.5	7.56e3	7.50e3
22	13C-1,2,3,6,7,8-HxCDF	10.406	3.97e6	0.53	NO	40.92	138.969	0.0925	72.3	7.56e3	7.50e3
23	13C-2,3,4,6,7,8-HxCDF	10.406	3.64e6	0.52	NO	41.87	141.251	0.1026	73.5	7.56e3	7.50e3
24	13C-1,2,3,7,8,9-HxCDF	10.406	3.45e6	0.51	NO	42.90	150.319	0.1154	78.2	7.56e3	7.50e3
25	13C-1,2,3,4,6,7,8-HpCDF	10.406	3.29e6	0.46	NO	45.37	153.707	0.0726	80.0	4.44e3	4.41e3
26	13C-1,2,3,4,7,8,9-HpCDF	10.406	2.77e6	0.45	NO	47.16	159.201	0.0894	82.8	4.44e3	4.41e3
27	13C-2,3,7,8-TCDD	10.406	3.43e6	0.75	NO	26.46	159.906	0.1544	83.2	8.75e3	6.53e3
28	13C-1,2,3,7,8-PeCDD	10.406	3.63e6	0.62	NO	36.13	212.669	0.1051	110.7	5.08e3	3.18e3
29	13C-1,2,3,4,7,8-HxCDD	10.406	3.59e6	1.24	NO	42.14	172.910	0.0897	90.0	5.09e3	5.51e3
30	13C-1,2,3,6,7,8-HxCDD	10.406	3.79e6	1.22	NO	42.27	165.017	0.0811	85.9	5.09e3	5.51e3
31	13C-1,2,3,4,6,7,8-HpCDD	10.406	4.10e6	1.00	NO	46.76	176.266	0.0799	91.7	7.18e3	3.39e3
32	13C-OCDD	10.406	7.80e6	0.89	NO	50.39	456.604	0.0754	118.8	3.29e3	4.05e3
33	13C-1,2,3,4-TCDD	10.406	4.26e6	0.78	NO	26.11	10.177	0.0079	5.3	8.75e3	6.53e3
34	13C-1,2,3,7,8,9-HxCDD	10.406	4.12e6	1.22	NO	42.71	13.638	0.0062	7.1	5.09e3	5.51e3
35	37Cl-2,3,7,8-TCDD	10.406	4.14e5			26.49	17.507	0.0582	91.1		6.35e3
36	Total Tetra-Furans	10.406					67.900	0.0247			1.68e3
37	Total Tetra-Dioxins	10.406					17.972	0.0357			1.43e3
38	Total Penta-Furans	10.406					108.395	0.0576			3.24e3
39	Total Penta-Dioxins	10.406					34.741	0.0417			1.80e3 T
40	Total Hexa-Furans	10.406					306.748	0.0465			2.26e3
41	Total Hexa-Dioxins	10.406					239.440	0.0549			3.00e3
42	Total Hepta-Furans	10.406					846.959	0.0819			5.49e3
43	Total Hepta-Dioxins	10.406					2022.929	0.1240			4.56e3
44	Hexa DPE	1.000	2.29e2			23.35					9.17e2
45	Hepta DPE	1.000	6.11e2			36.40					5.20e2
46	Octa DPE	1.000	5.39e2			40.38					1.81e3
47	Nona DPE	1.000	5.46e2			48.25					2.07e0
48	Deca DPE	1.000	5.49e2			50.41					3.91e2
49	Tetra Lock	1.000	2.07e4			21.70					1.46e5
50	Penta Lock	1.000									8.10e4
51	Hexa Lock	1.000	1.09e5			39.02					3.09e5
52	Hepta Lock	1.000	5.90e3			44.70					1.54e5
53	Octa Lock	1.000									1.10e5
54	13C-Tetra-Furans	10.406					148.202	0.0769			6.65e3
55	13C-Tetra-Dioxins	10.406					170.083	0.1623			6.53e3

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

SVHH 22 Sept. 2019

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S18, Date: 13-Sep-2019, Time: 00:56:57, ID: L31654-9,,, Description: 1,WG69303,1.0/20uL

Tetrafurans

	RT	Ratio	Fails?	pg
1	24.59	0.777	NO	4.205
2	24.25	0.799	NO	2.128
3	24.14	0.792	NO	3.506
4	23.85	0.783	NO	2.140
5	23.70	0.690	NO	0.637
6	23.42	0.759	NO	13.423
7	22.98	0.784	NO	10.707
8	22.57	0.771	NO	5.892
9	22.25	0.801	NO	8.159
10	21.95	0.800	NO	3.387
11	21.42	0.780	NO	0.333
12	28.14	0.918	YES	0.442
13	26.57	0.648	YES	0.050
14	26.27	0.771	NO	3.091
15	25.96	0.749	NO	1.780
16	25.25	0.748	NO	6.397
17	24.94	0.787	NO	1.621

Tetradioxins

	RT	Ratio	Fails?	pg
1	26.49	0.774	NO	1.948
2	26.32	0.787	NO	0.867
3	26.09	0.676	NO	0.628
4	25.64	0.806	NO	0.567
5	25.20	0.878	NO	1.005
6	25.09	0.849	NO	0.349
7	24.90	0.610	YES	0.192
8	24.69	0.735	NO	2.590
9	23.75	0.776	NO	1.822
10	23.37	0.729	NO	1.704
11	22.95	0.757	NO	5.467
12	28.26	0.635	YES	0.231
13	27.51	0.980	YES	0.096
14	27.09	0.779	NO	0.486
15	26.74	1.190	YES	0.020

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S18, Date: 13-Sep-2019, Time: 00:56:57, ID: L31654-9,,, Description: 1,WG69303,1.0/20uL

Pentafurans

	RT	Ratio	Fails?	pg
1	34.27	1.533	NO	2.919
2	33.95	1.675	NO	0.846
3	33.57	1.490	NO	4.077
4	33.40	1.419	NO	1.297
5	32.90	1.512	NO	7.598
6	32.44	1.655	NO	0.405
7	32.30	0.701	YES	0.245
8	31.89	1.610	NO	1.745
9	31.52	1.541	NO	29.917
10	31.12	1.736	NO	0.424
11	28.91	1.543	NO	49.039
12	37.11	1.572	NO	0.313
13	35.62	1.497	NO	5.501
14	35.33	1.546	NO	3.697
15	35.27	1.692	NO	0.372

Pentadioxins

	RT	Ratio	Fails?	pg
1	33.17	0.607	NO	3.045
2	32.02	0.638	NO	11.504
3	36.46	0.570	NO	0.619
4	36.16	0.668	NO	3.609
5	35.70	0.691	NO	0.185
6	35.52	0.567	NO	0.304
7	35.08	0.624	NO	2.254
8	34.90	0.560	NO	2.133
9	34.50	0.612	NO	1.869
10	34.20	0.607	NO	3.693
11	33.85	0.607	NO	4.521
12	37.06	0.649	NO	1.005

Hexafurans

	RT	Ratio	Fails?	pg
1	39.02	1.245	NO	26.875
2	43.07	1.354	NO	3.205
3	42.93	1.386	NO	1.025
4	41.90	1.235	NO	4.851
5	41.71	1.237	NO	7.570
6	41.43	2.177	YES	0.138
7	41.36	1.015	YES	1.071
8	41.09	1.034	YES	0.271
9	40.93	1.269	NO	14.902
10	40.77	1.209	NO	23.588
11	40.10	1.254	NO	136.005
12	39.80	1.308	NO	2.150
13	39.29	1.276	NO	82.477
14	40.70	1.236	NO	2.622

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S18, Date: 13-Sep-2019, Time: 00:56:57, ID: L31654-9,,, Description: 1,WG69303,1.0/20uL

Hexadioxins

	RT	Ratio	Fails?	pg
1	42.29	1.234	NO	34.815
2	42.15	1.264	NO	8.272
3	41.46	1.292	NO	3.214
4	41.26	1.227	NO	84.394
5	40.88	1.179	NO	9.116
6	40.07	1.209	NO	81.321
7	42.73	1.214	NO	18.308

Heptafurans

	RT	Ratio	Fails?	pg
1	47.18	1.008	NO	17.334
2	45.90	1.032	NO	595.942
3	45.70	1.607	YES	4.683
4	45.39	1.043	NO	229.000

Heptadioxins

	RT	Ratio	Fails?	pg
1	46.77	1.030	NO	950.300
2	45.84	1.029	NO	1072.629

13C-TF

	RT	Ratio	Fails?	pg
1	25.24	0.810	NO	148.202

13C-TD

	RT	Ratio	Fails?	pg
1	26.46	0.751	NO	159.906
2	26.11	0.776	NO	10.177

13C-PF

	RT	Ratio	Fails?	pg
1	33.53	1.561	NO	173.033
2	35.32	1.610	NO	166.482

13C-PD

	RT	Ratio	Fails?	pg
1	36.13	0.624	NO	212.669

13C-HxF

	RT	Ratio	Fails?	pg
1	40.92	0.534	NO	138.969
2	40.75	0.517	NO	162.331
3	42.90	0.515	NO	150.319
4	41.87	0.521	NO	141.251

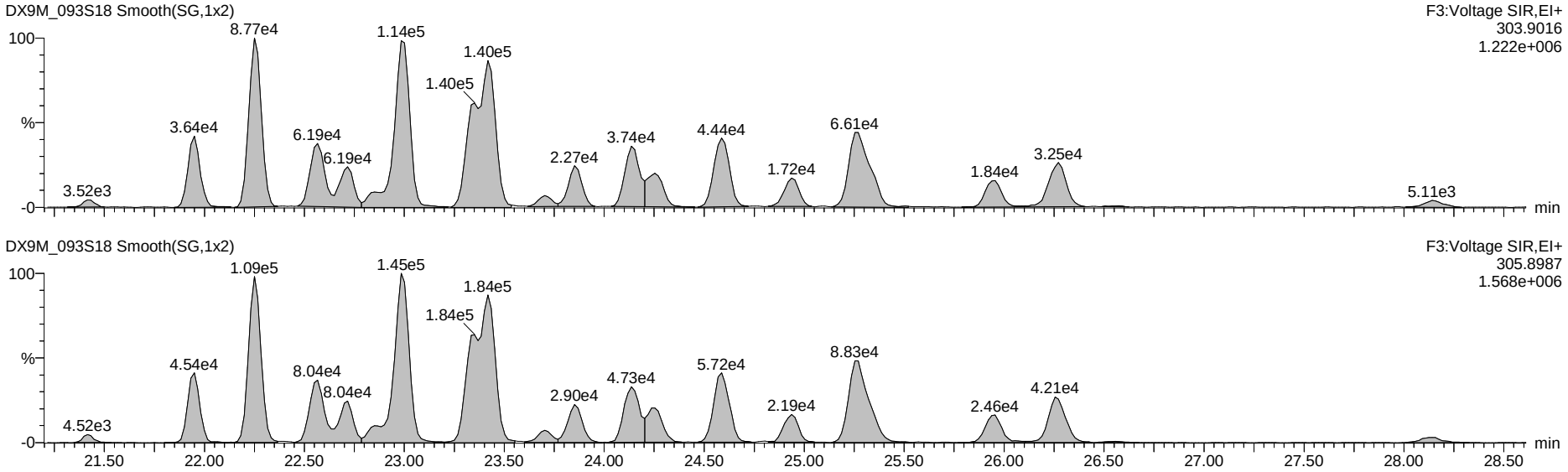
PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

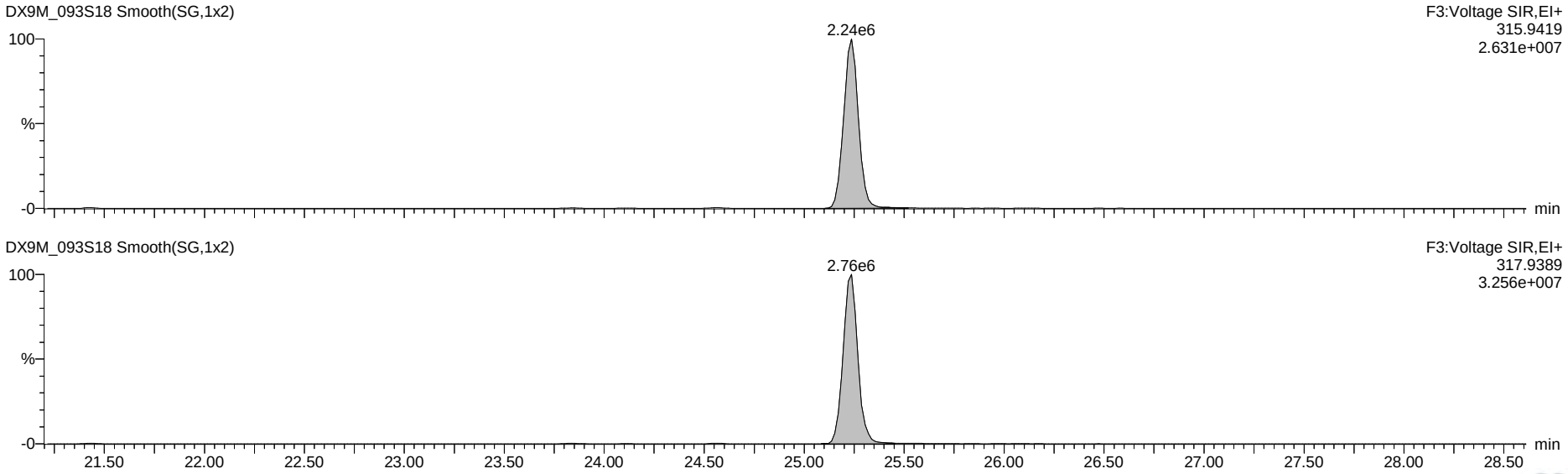
Method: G:\Masslynx\Inst_M\Exported_methods\DX_1613B_16.mdb 07 Sep 2017 16:45:23
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

Name: DX9M_093S18, Date: 13-Sep-2019, Time: 00:56:57, ID: L31654-9,,, Description: 1,WG69303,1.0/20uL

Total Tetra-Furans



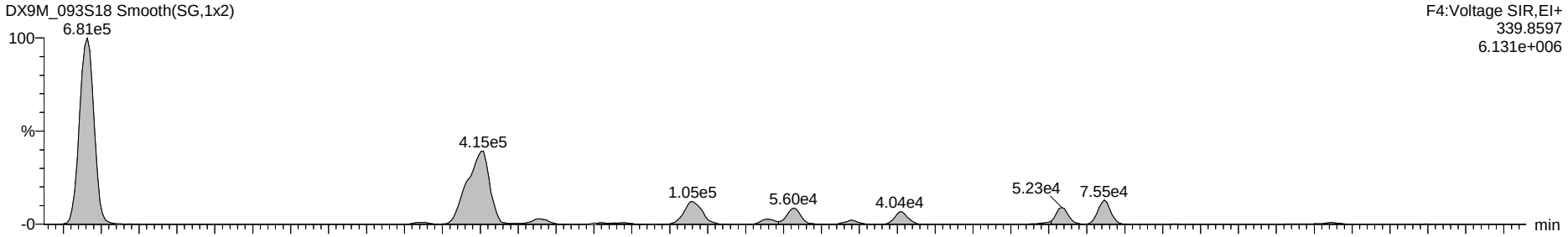
13C-Tetra-Furans

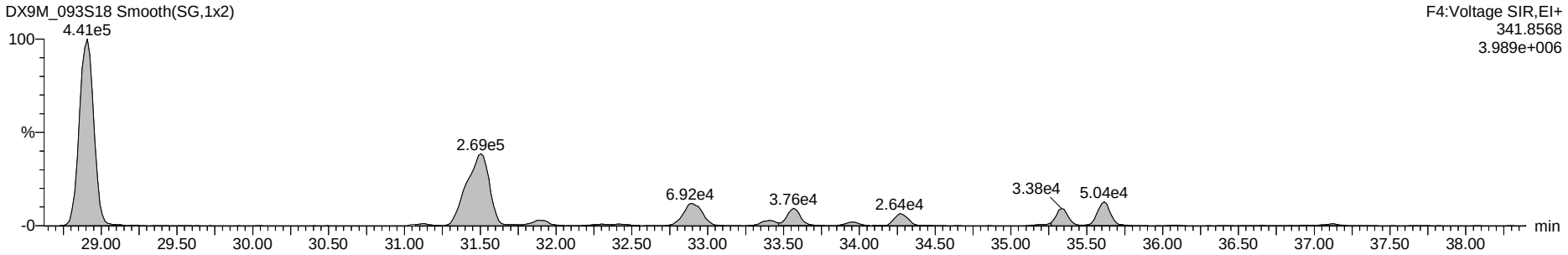


Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

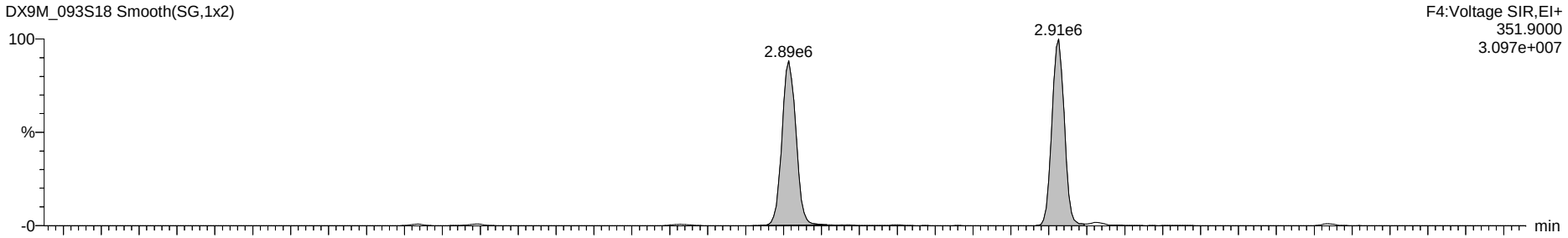
Name: DX9M_093S18, Date: 13-Sep-2019, Time: 00:56:57, ID: L31654-9,,, Description: 1,WG69303,1.0/20uL

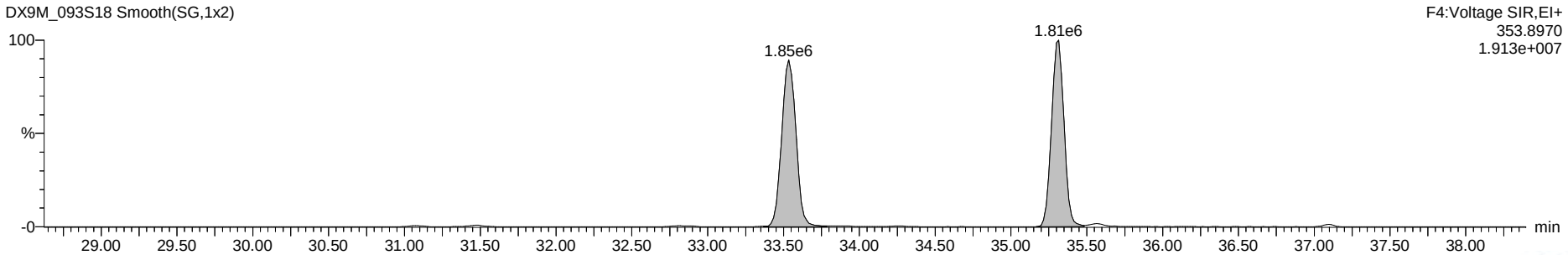
Total Penta-Furans





13C-Penta-Furans





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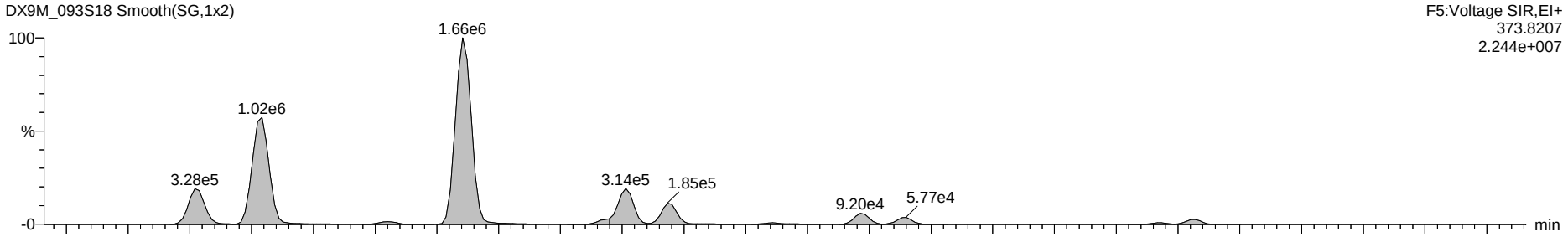
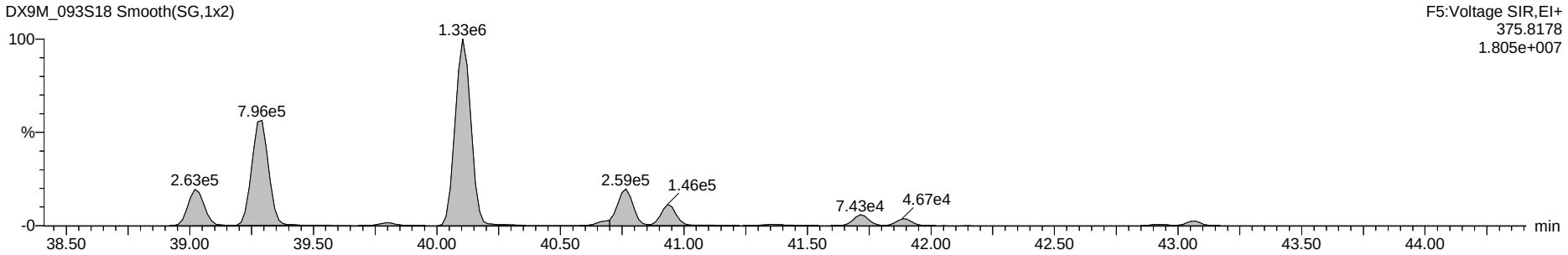
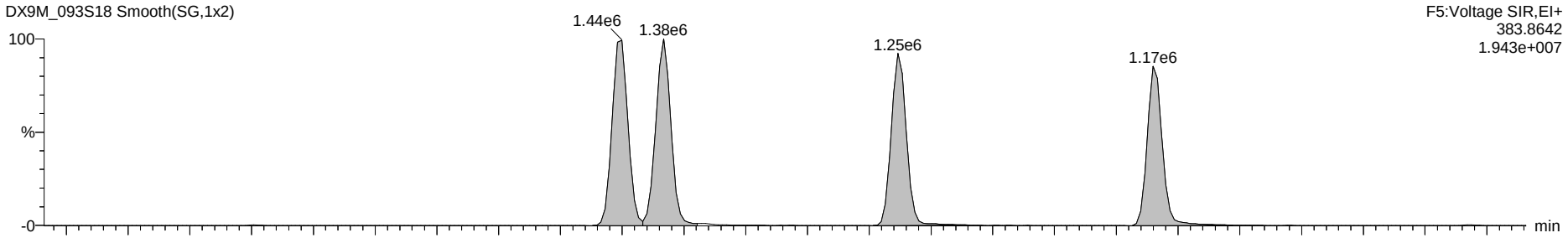
Name: DX9M_093S18, Date: 13-Sep-2019, Time: 00:56:57, ID: L31654-9,,, Description: 1,WG69303,1.0/20uL

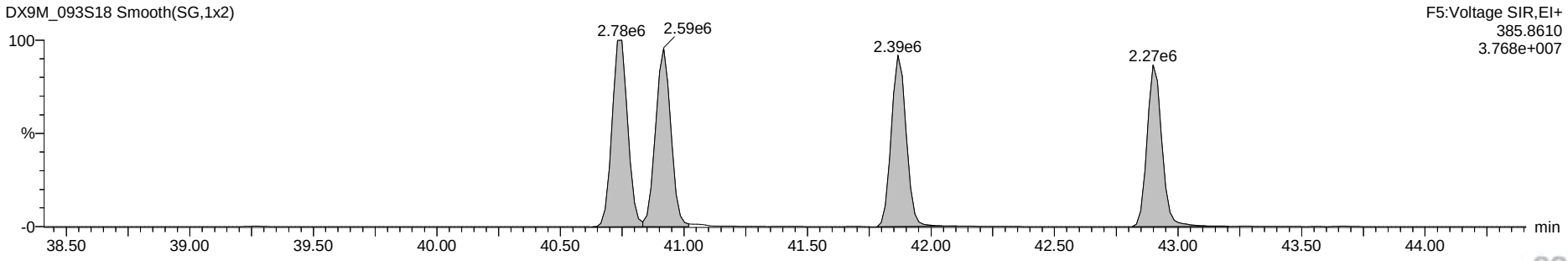
Total Hexa-Furans





13C-Hexa-Furans





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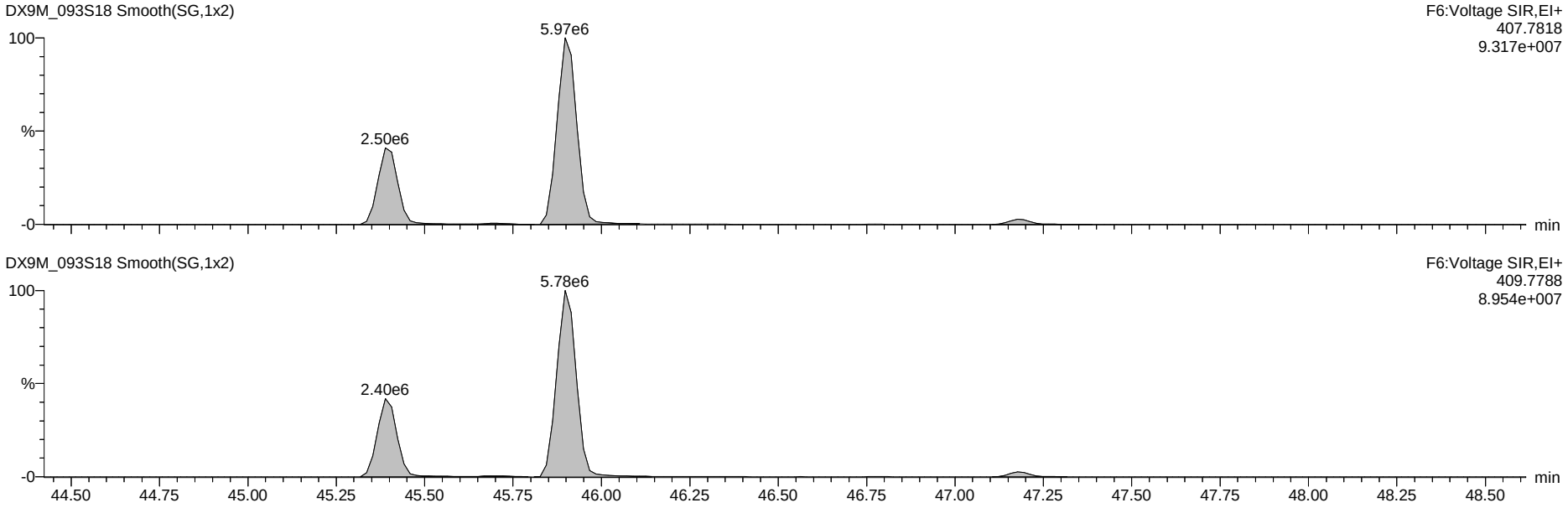
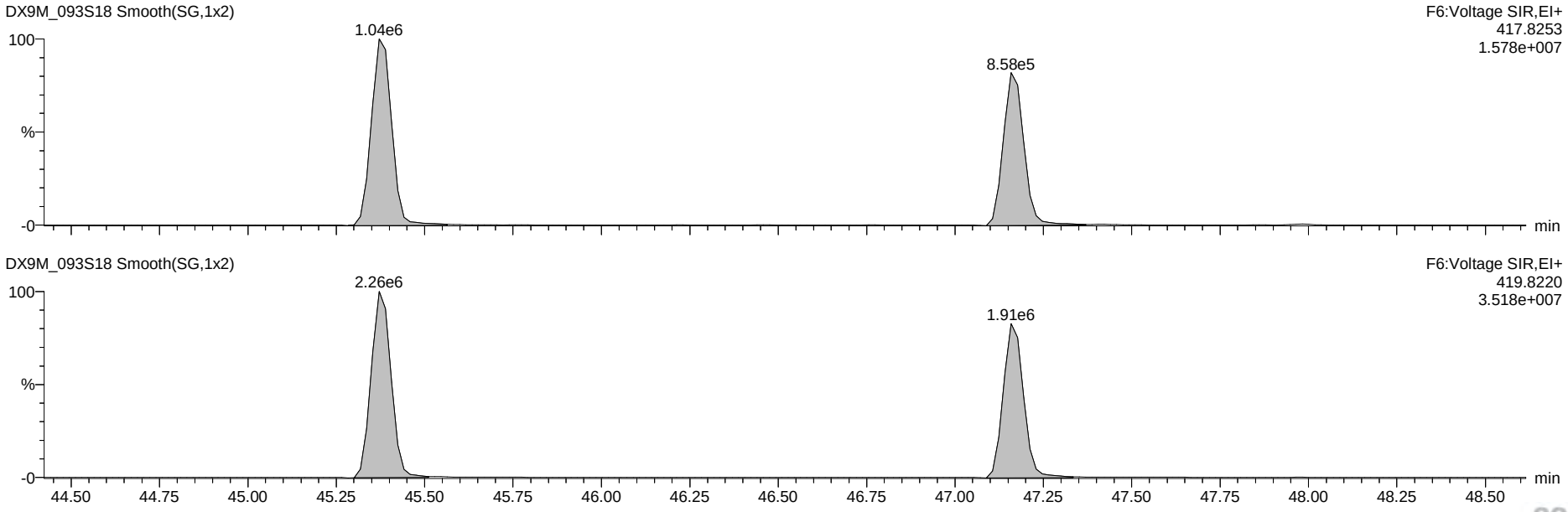
Name: DX9M_093S18, Date: 13-Sep-2019, Time: 00:56:57, ID: L31654-9,,, Description: 1,WG69303,1.0/20uL

Total Hepta-Furans



13C-Hepta-Furans



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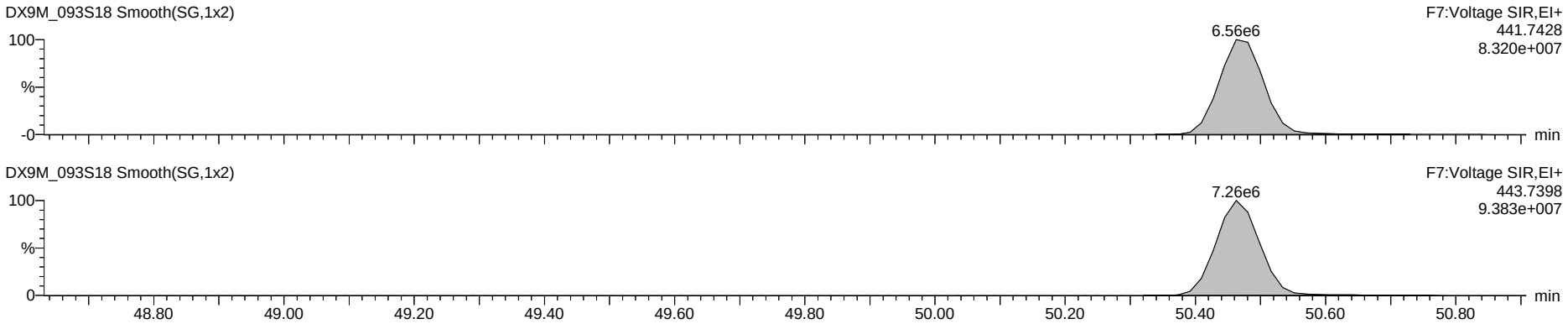
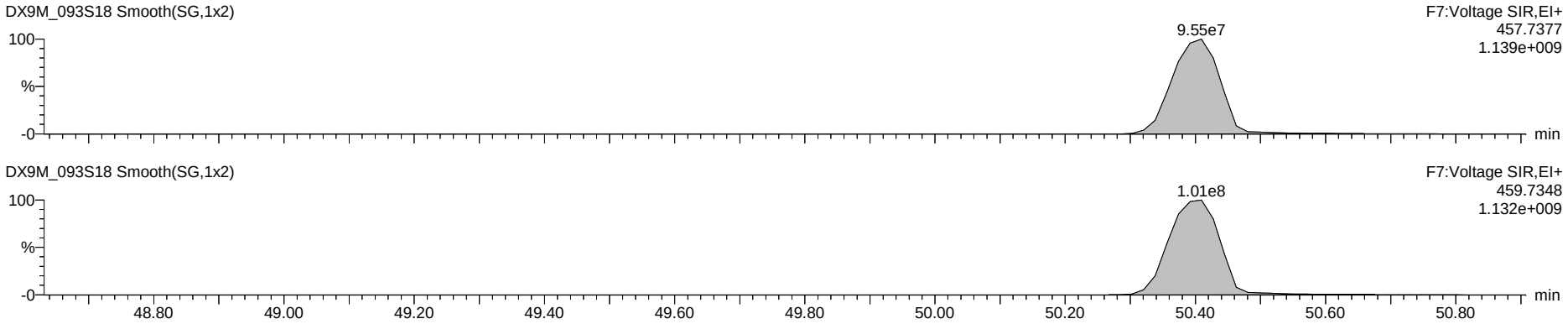
Name: DX9M_093S18, Date: 13-Sep-2019, Time: 00:56:57, ID: L31654-9,,, Description: 1,WG69303,1.0/20uL

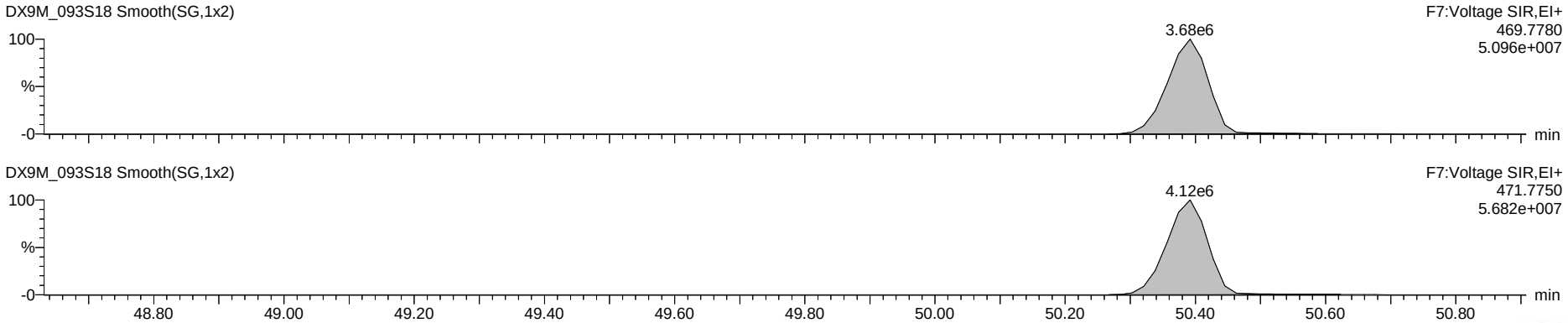
OCDF



OCDD



13C-OCDD



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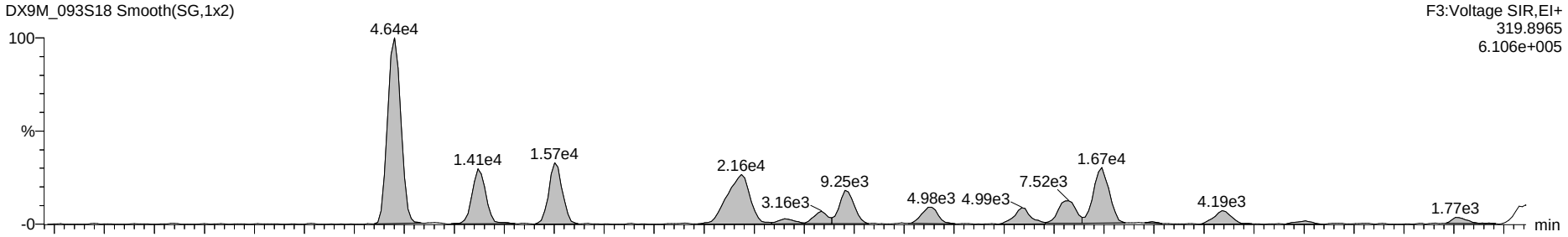
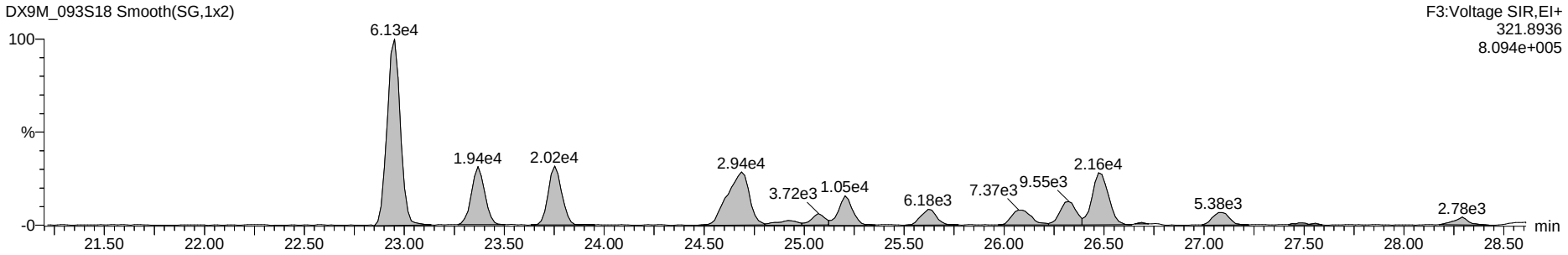
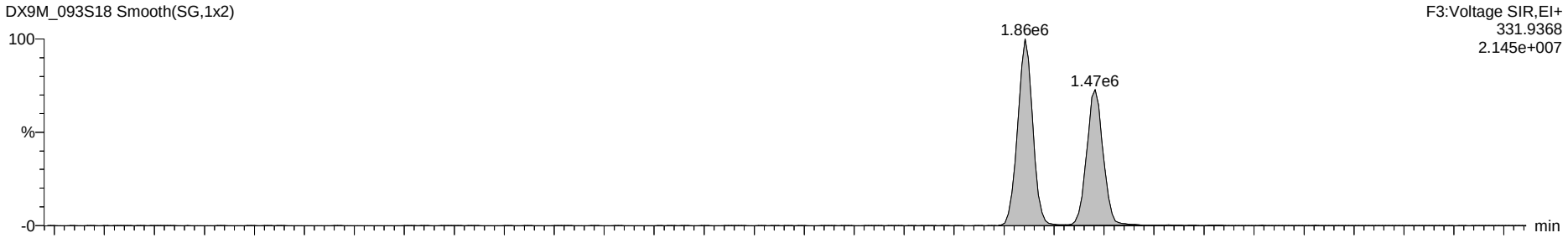
Name: DX9M_093S18, Date: 13-Sep-2019, Time: 00:56:57, ID: L31654-9,,, Description: 1,WG69303,1.0/20uL

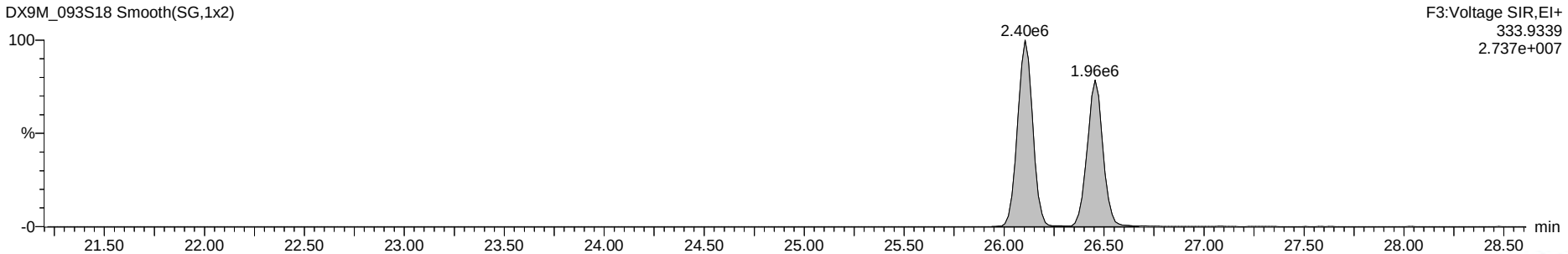
Total Tetra-Dioxins





13C-Tetra-Dioxins

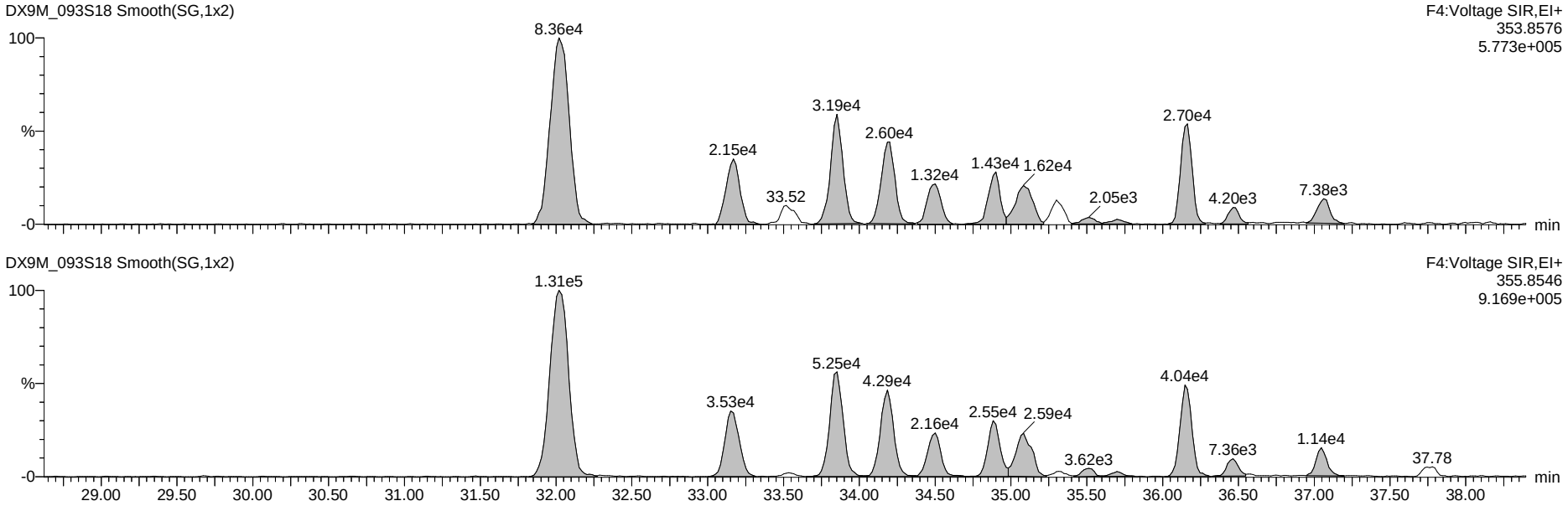




Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S18, Date: 13-Sep-2019, Time: 00:56:57, ID: L31654-9,,, Description: 1,WG69303,1.0/20uL

Total Penta-Dioxins



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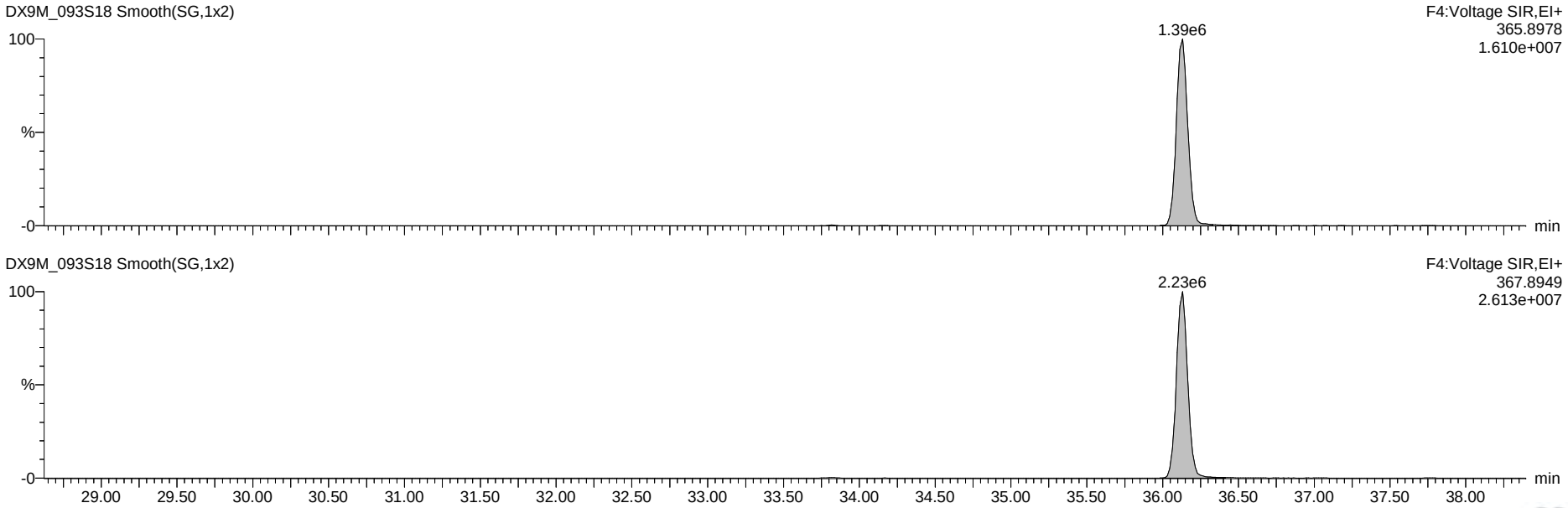

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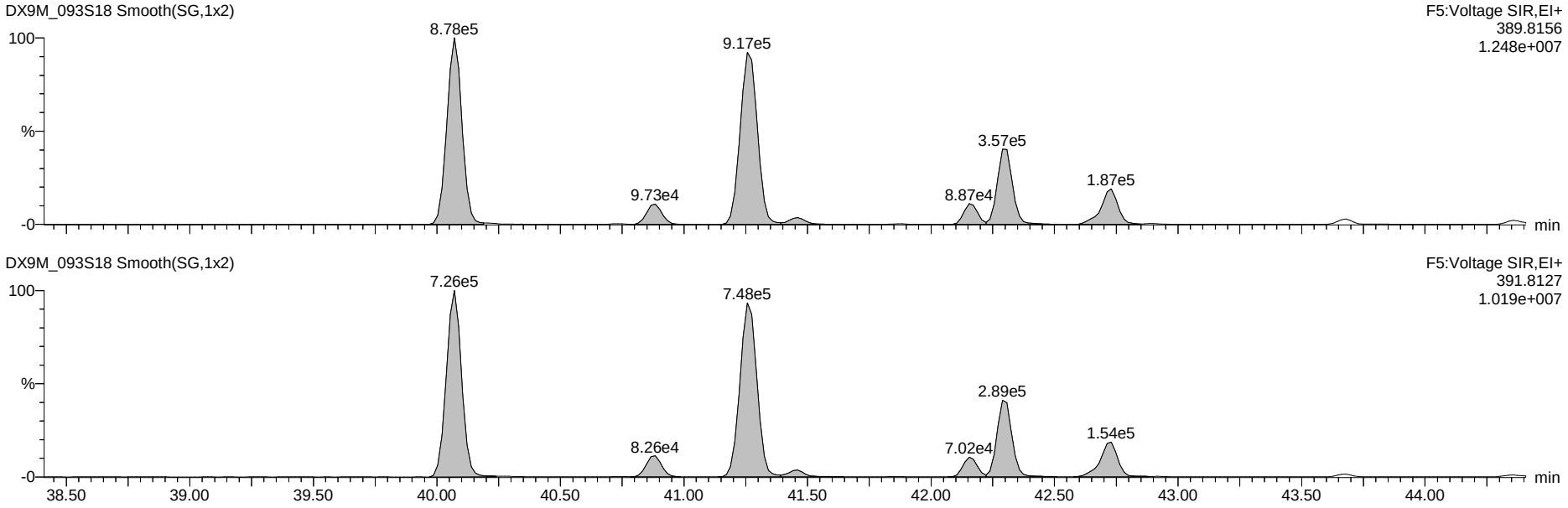
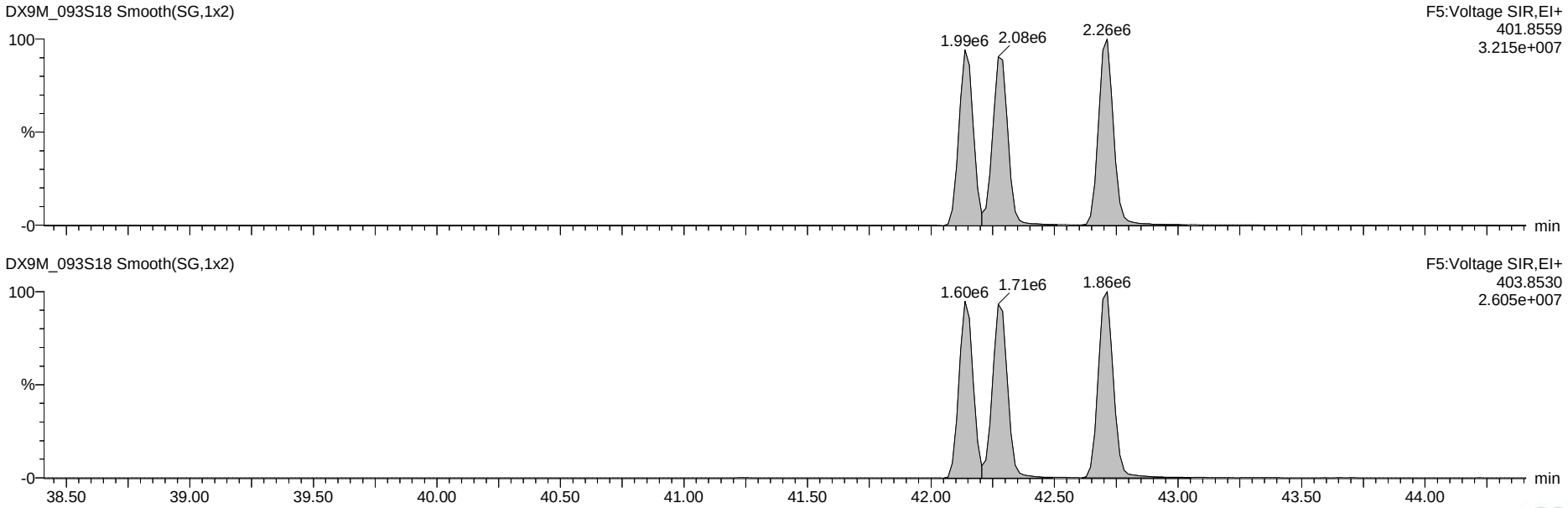
Total Hexa-Dioxins



13C-Hexa-Dioxins



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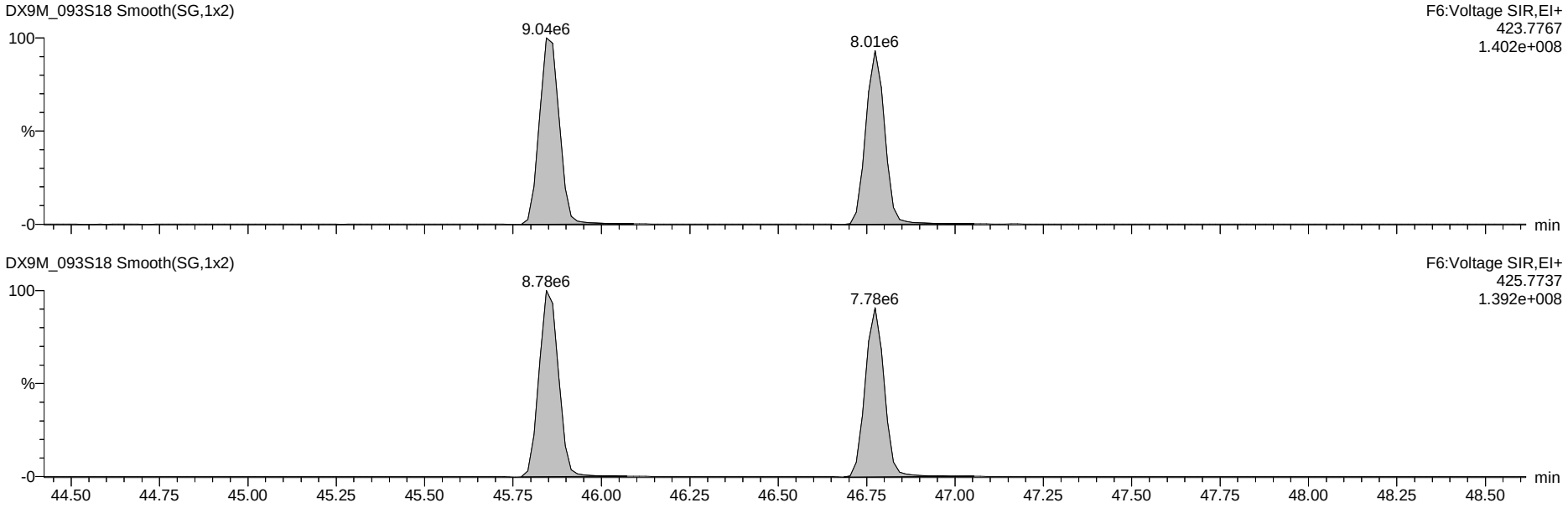
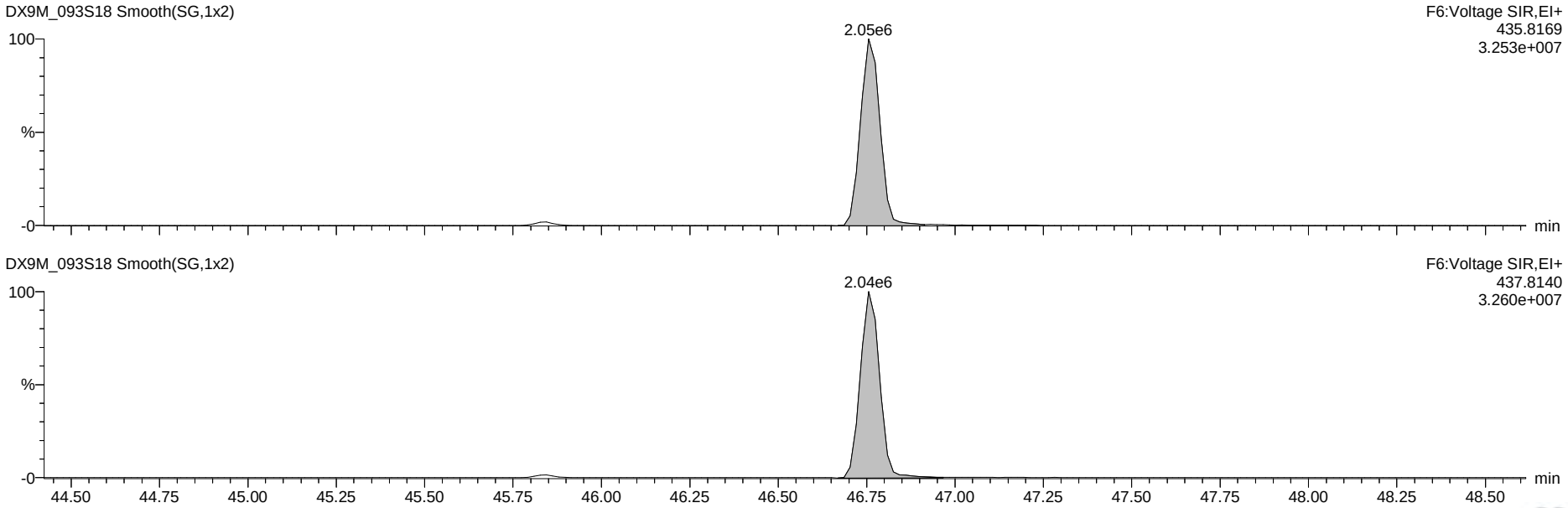
Name: DX9M_093S18, Date: 13-Sep-2019, Time: 00:56:57, ID: L31654-9,,, Description: 1,WG69303,1.0/20uL

Total Hepta-Dioxins



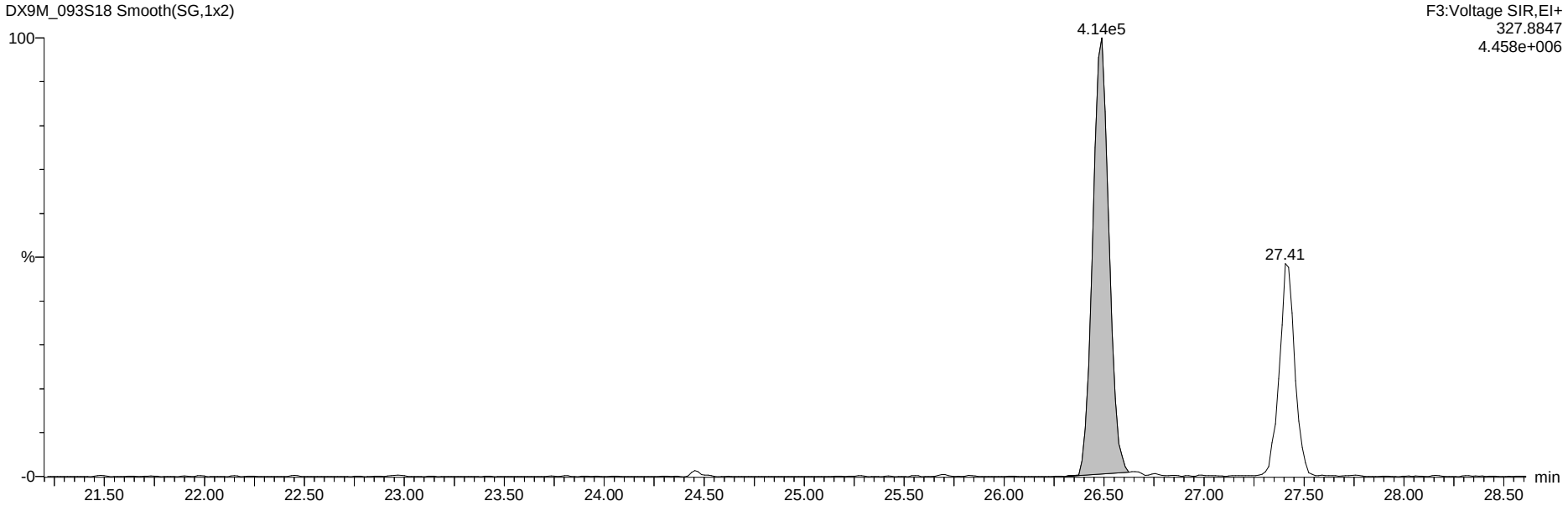
13C-Hepta-Dioxins



Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S18, Date: 13-Sep-2019, Time: 00:56:57, ID: L31654-9,,, Description: 1,WG69303,1.0/20uL

37Cl-2,3,7,8-TCDD



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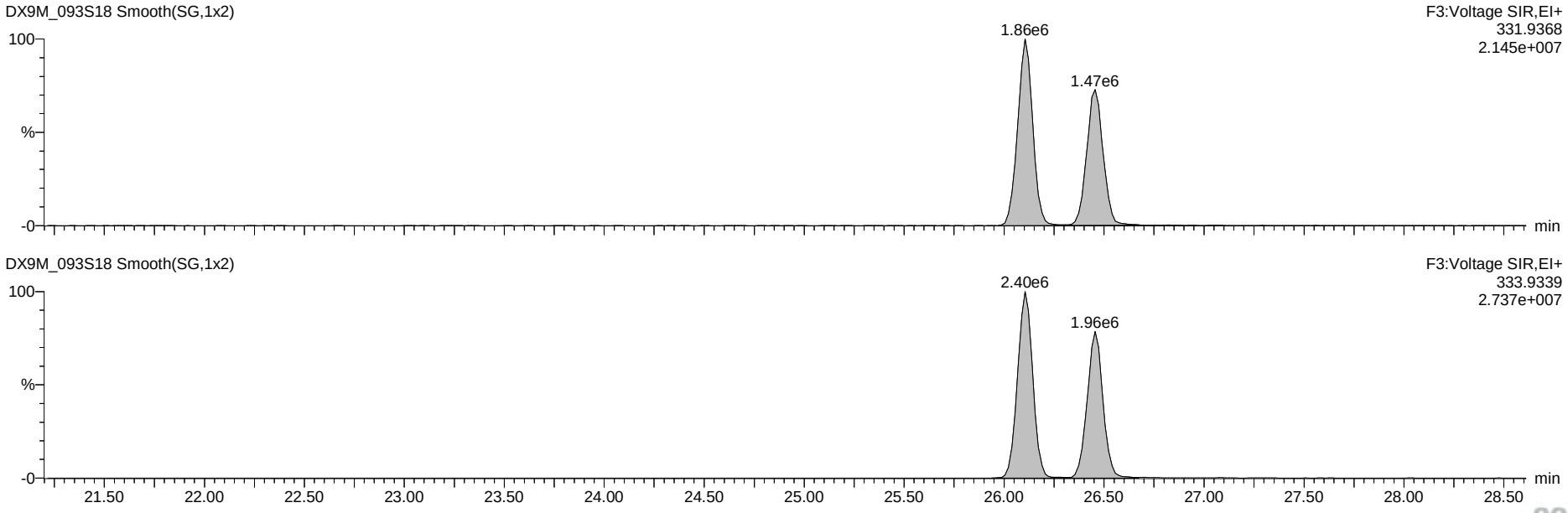
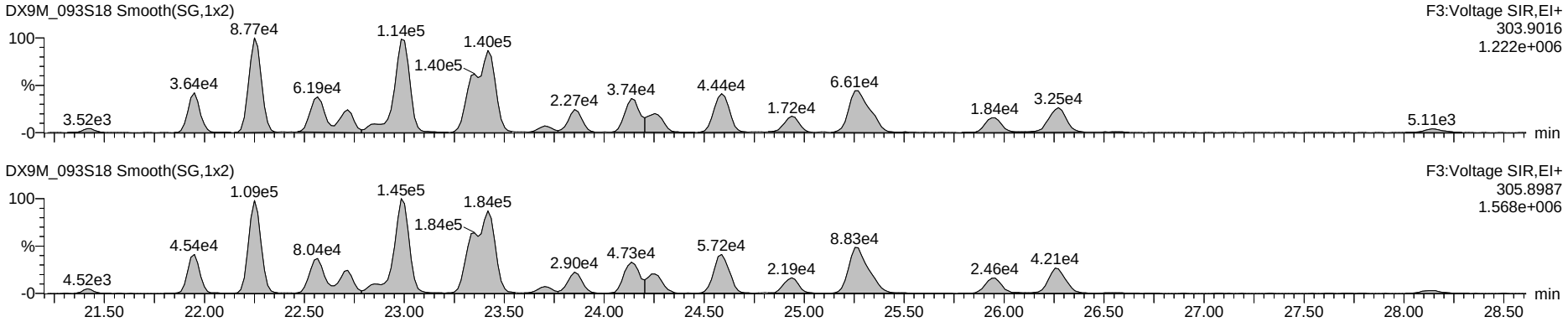


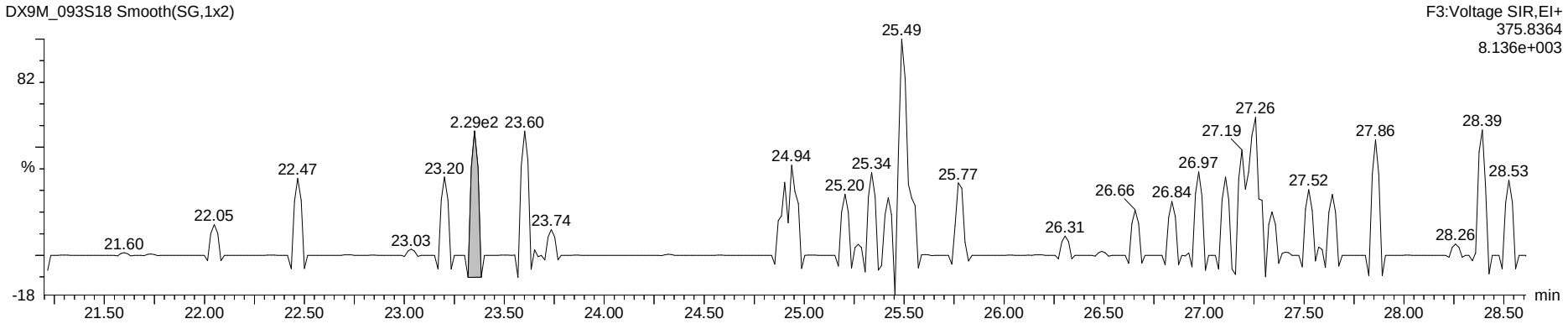
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S18, Date: 13-Sep-2019, Time: 00:56:57, ID: L31654-9,,, Description: 1,WG69303,1.0/20uL

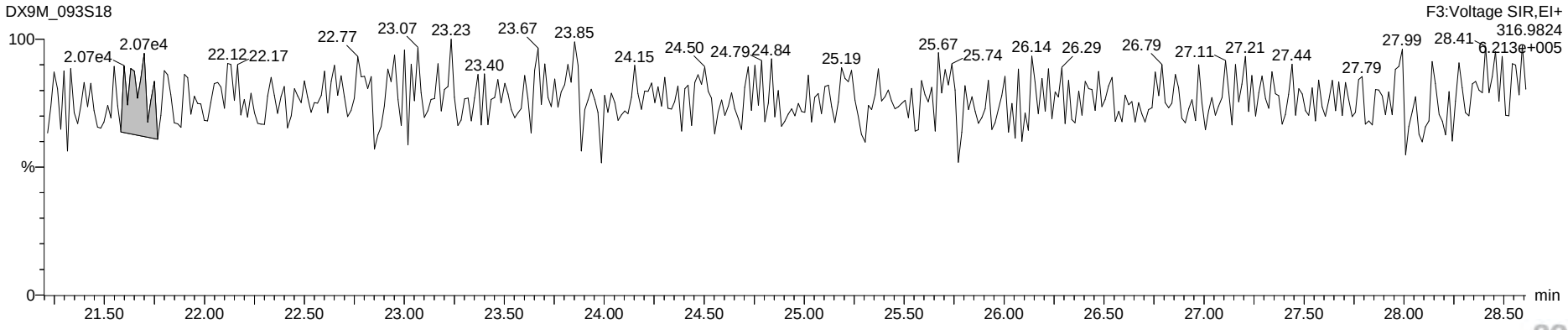
Total Tetra-Furans



Hexa DPE



Tetra Lock



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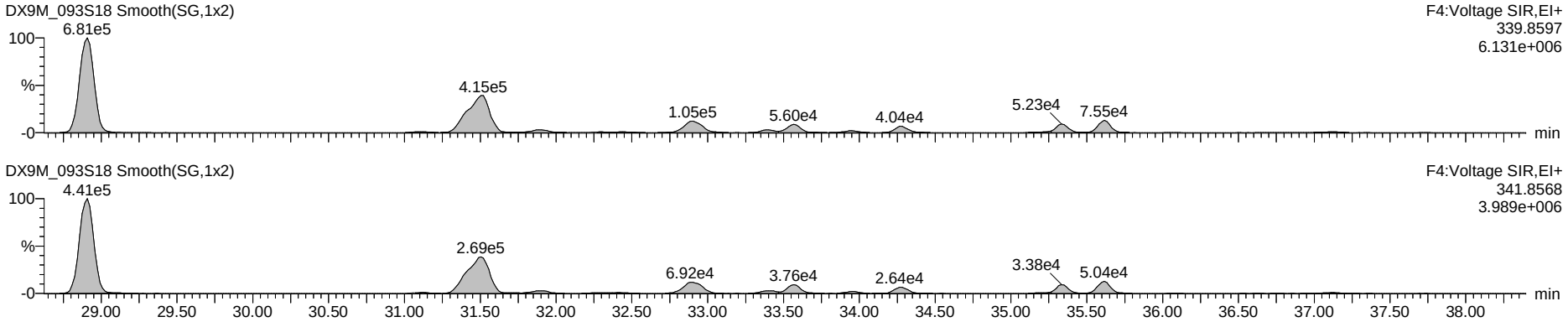
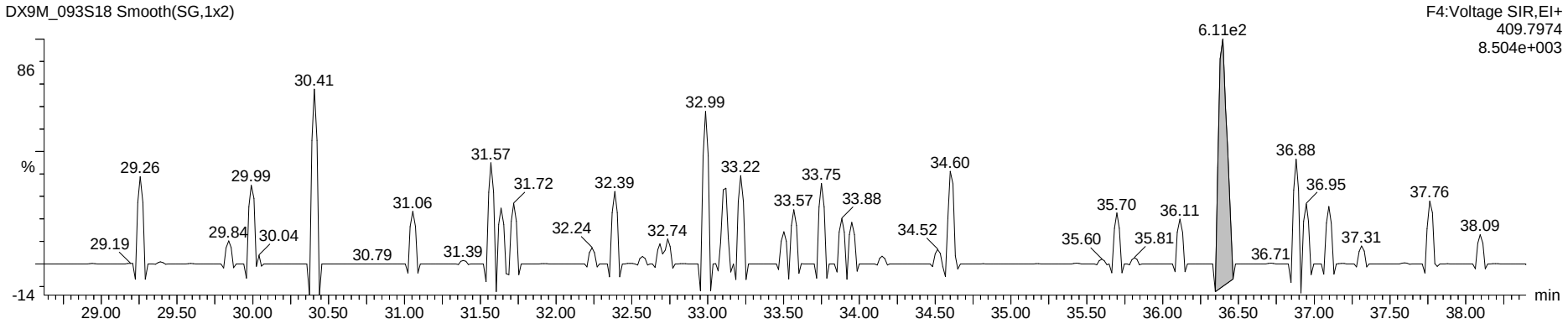
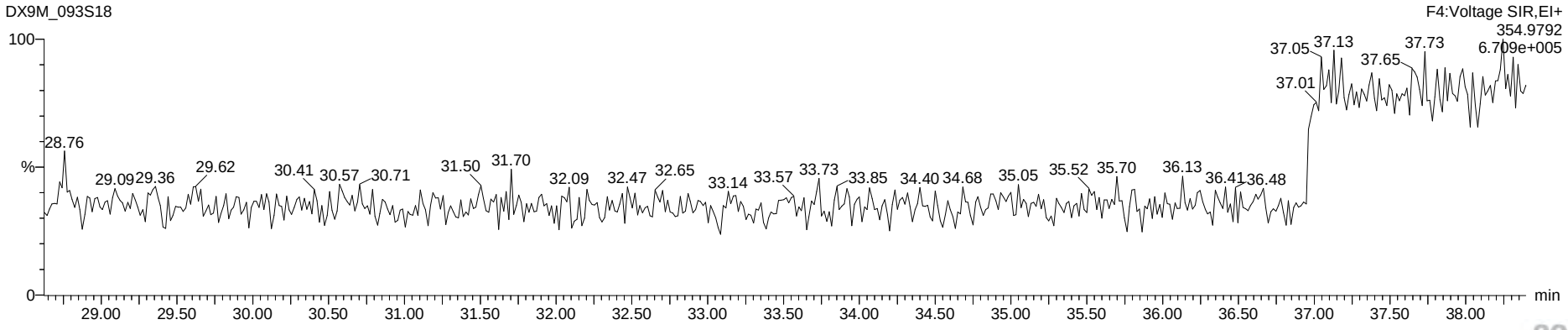
Total Penta-Furans



Hepta DPE



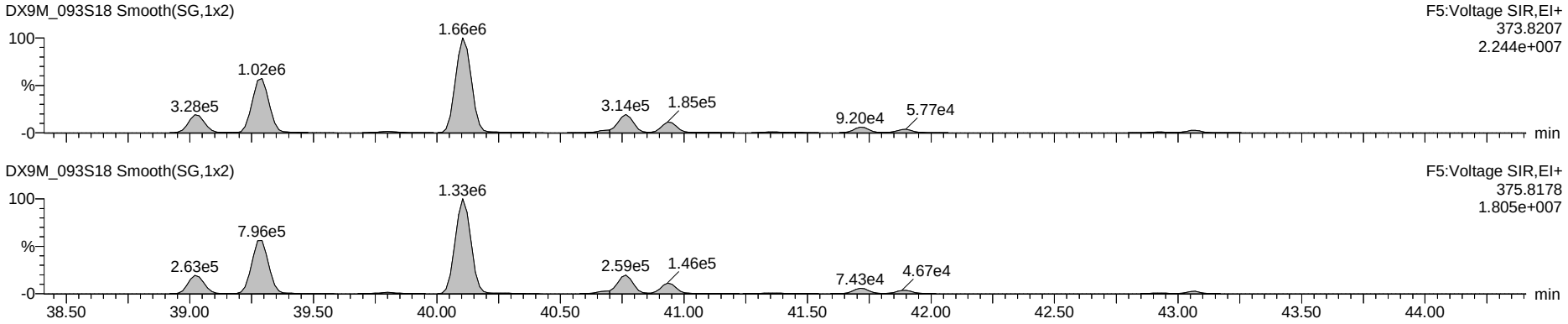
Penta Lock



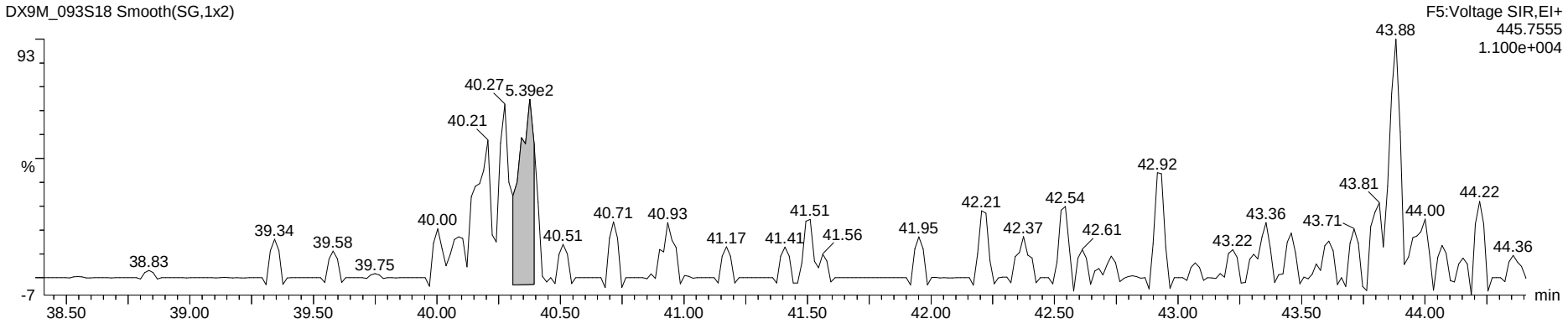
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S18, Date: 13-Sep-2019, Time: 00:56:57, ID: L31654-9,,, Description: 1,WG69303,1.0/20uL

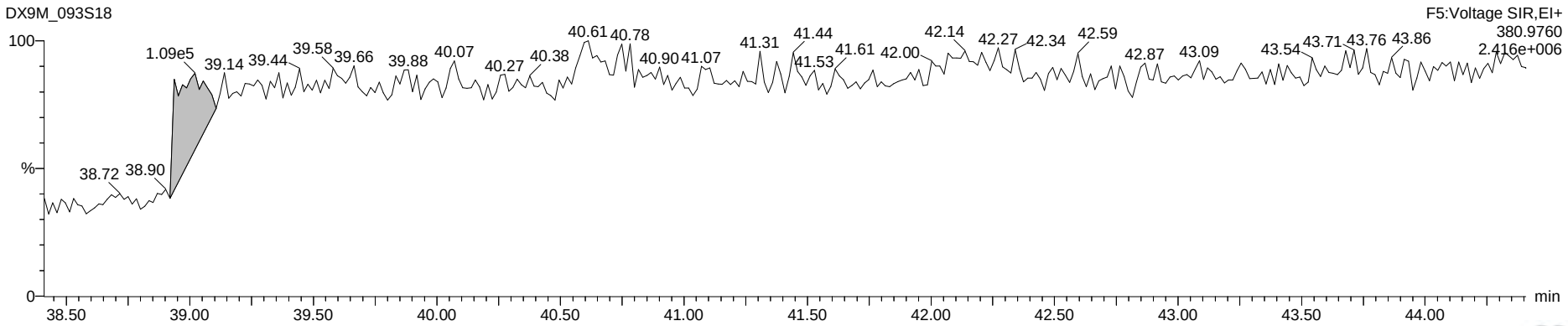
Total Hexa-Furans



Octa DPE



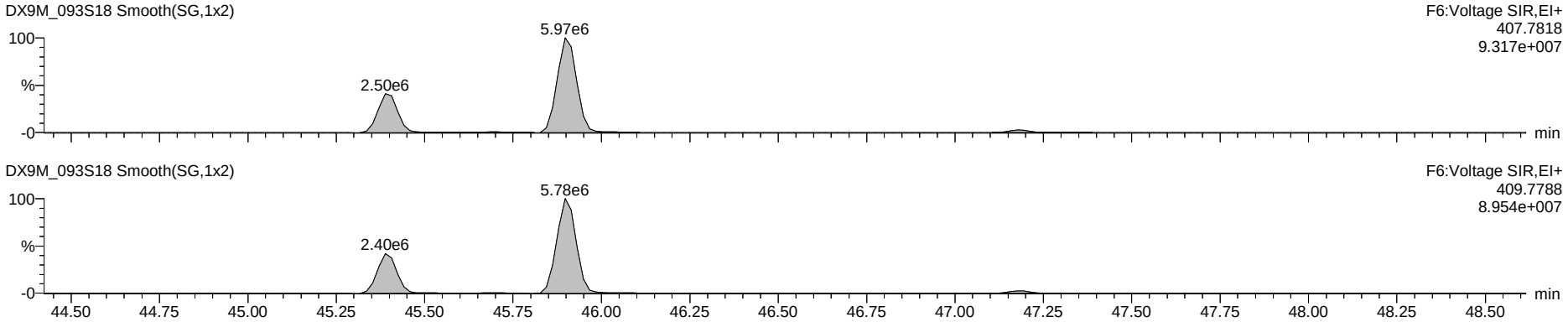
Hexa Lock



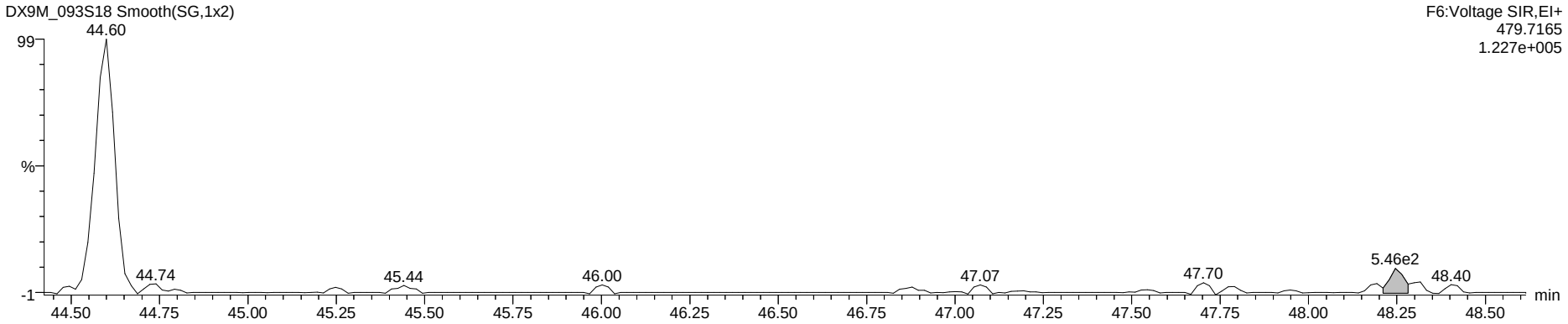
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S18, Date: 13-Sep-2019, Time: 00:56:57, ID: L31654-9,,, Description: 1,WG69303,1.0/20uL

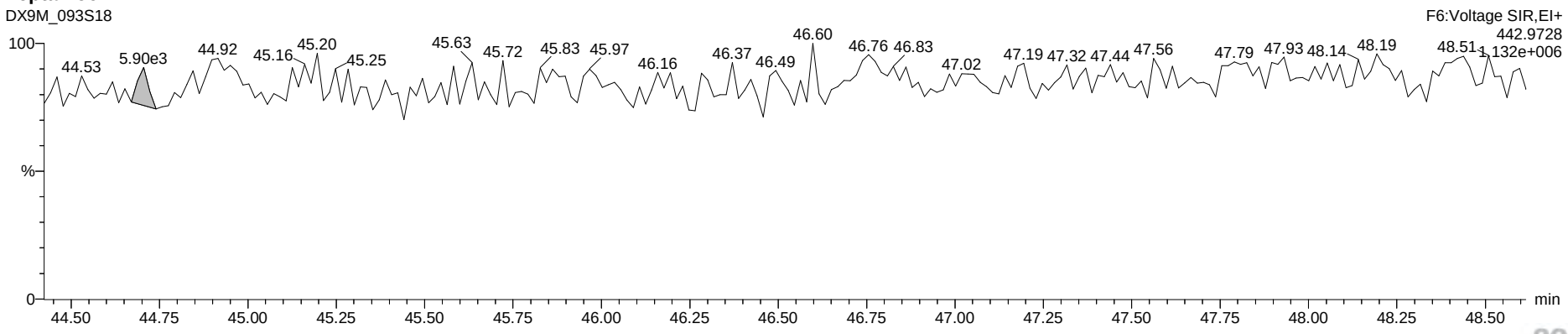
Total Hepta-Furans



Nona DPE



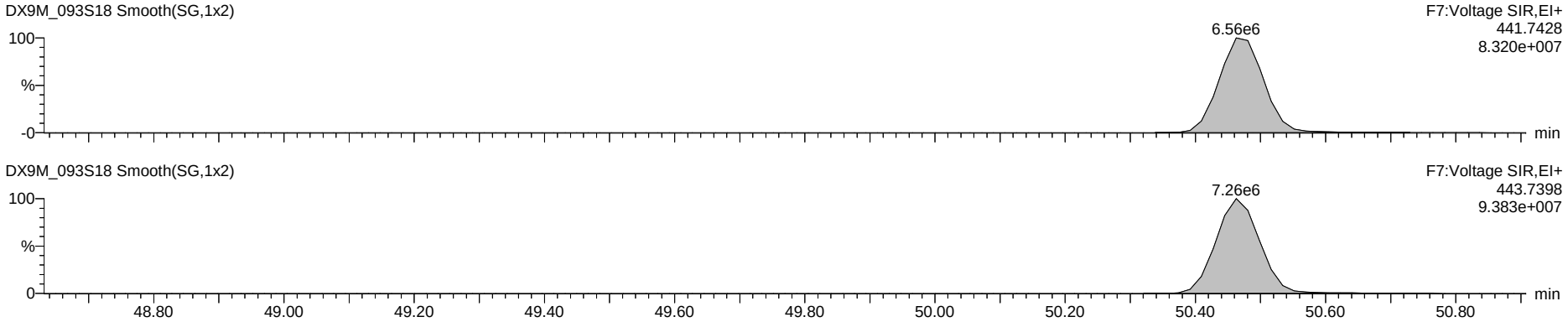
Hepta Lock



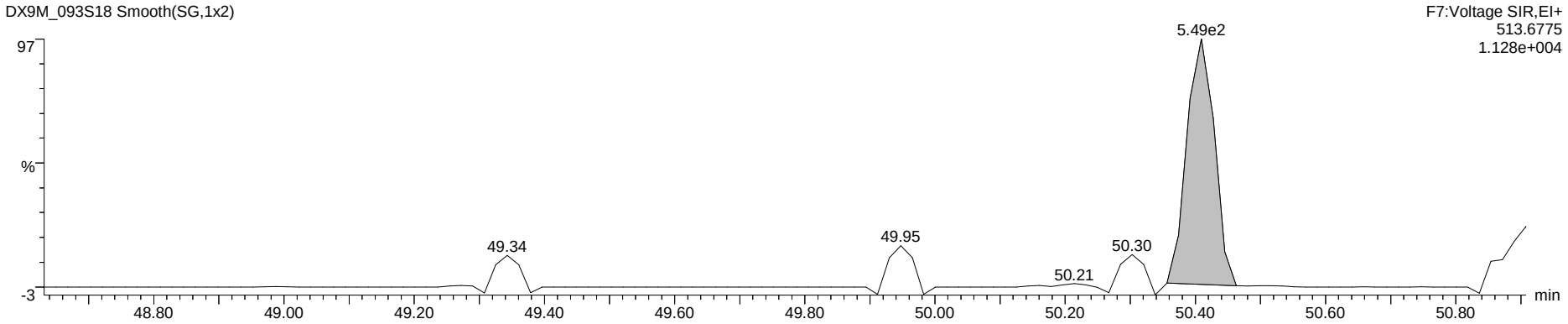
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S18, Date: 13-Sep-2019, Time: 00:56:57, ID: L31654-9,,, Description: 1,WG69303,1.0/20uL

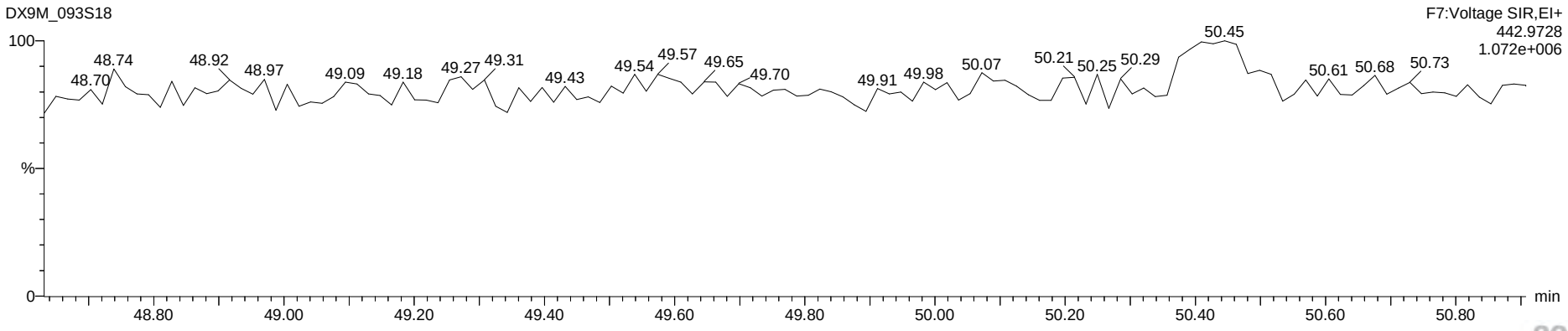
OCDF



Deca DPE



Octa Lock



Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

Name: DX9M_095AS13, Date: 17-Sep-2019, Time: 20:48:37, ID: L31654-9,W,, Description: 5,WG69303,1.0/100uL

	Name	Sample Size	Resp	Ratio	fails?	RT	pg	DL	%Rec	Noise 1	Noise 2
1	2,3,7,8-TCDF	10.406	1.78e4	0.92	YES	25.25	4.467	0.1469		1.50e3	9.49e2
2	1,2,3,7,8-PeCDF	10.406	1.63e4	1.37	NO	33.53	4.540	0.2522		1.49e3	1.68e3
3	2,3,4,7,8-PeCDF	10.406	1.49e4	1.43	NO	35.32	3.899	0.2111		1.49e3	1.68e3
4	1,2,3,4,7,8-HxCDF	10.406	7.99e4	1.24	NO	40.73	24.558	0.3434		2.60e3	3.13e3
5	1,2,3,6,7,8-HxCDF	10.406	4.59e4	1.21	NO	40.90	13.217	0.3272		2.60e3	3.13e3
6	2,3,4,6,7,8-HxCDF	10.406	1.68e4	1.19	NO	41.87	5.207	0.3242		2.60e3	3.13e3
7	1,2,3,7,8,9-HxCDF	10.406	2.09e3	1.57	YES	42.90	0.805	0.4340		2.60e3	3.13e3
8	1,2,3,4,6,7,8-HpCDF	10.406	7.02e5	1.05	NO	45.37	223.024	0.4685		2.39e3	6.33e3
9	1,2,3,4,7,8,9-HpCDF	10.406	4.89e4	1.12	NO	47.18	17.850	0.5689		2.39e3	6.33e3
10	OCDF	10.406	1.82e6	0.90	NO	50.44	649.250	0.1815		6.93e2	2.22e3
11	2,3,7,8-TCDD	10.406	6.25e3	0.83	NO	26.47	1.995	0.2277		1.32e3	1.63e3
12	1,2,3,7,8-PeCDD	10.406	9.37e3	0.61	NO	36.15	3.706	0.2419		1.24e3	1.43e3
13	1,2,3,4,7,8-HxCDD	10.406	2.13e4	1.34	NO	42.12	8.129	0.3398		2.34e3	2.71e3
14	1,2,3,6,7,8-HxCDD	10.406	9.11e4	1.24	NO	42.27	35.232	0.3493		2.34e3	2.71e3
15	1,2,3,7,8,9-HxCDD	10.406	4.44e4	1.19	NO	42.70	17.247	0.3482		2.34e3	2.71e3
16	1,2,3,4,6,7,8-HpCDD	10.406	2.21e6	1.01	NO	46.76	930.674	1.0643		6.97e3	7.74e3
17	OCDD	10.406	3.07e7	0.86	NO	50.36	12719.177	0.0517		3.63e2	3.50e2
18	13C-2,3,7,8-TCDF	10.406	8.25e5	0.76	NO	25.22	141.461	0.5692	73.6	8.14e3	6.26e3
19	13C-1,2,3,7,8-PeCDF	10.406	7.44e5	1.54	NO	33.52	156.949	0.5411	81.7	6.16e3	4.96e3
20	13C-2,3,4,7,8-PeCDF	10.406	7.74e5	1.57	NO	35.28	158.425	0.5246	82.4	6.16e3	4.96e3
21	13C-1,2,3,4,7,8-HxCDF	10.406	5.66e5	0.52	NO	40.71	149.962	0.7490	78.0	7.87e3	7.25e3
22	13C-1,2,3,6,7,8-HxCDF	10.406	6.21e5	0.53	NO	40.88	149.789	0.6814	77.9	7.87e3	7.25e3
23	13C-2,3,4,6,7,8-HxCDF	10.406	5.47e5	0.49	NO	41.83	146.300	0.7559	76.1	7.87e3	7.25e3
24	13C-1,2,3,7,8,9-HxCDF	10.406	4.73e5	0.53	NO	42.88	142.310	0.8501	74.0	7.87e3	7.25e3
25	13C-1,2,3,4,6,7,8-HpCDF	10.406	4.84e5	0.44	NO	45.35	155.854	0.6766	81.1	6.81e3	4.44e3
26	13C-1,2,3,4,7,8,9-HpCDF	10.406	4.20e5	0.44	NO	47.16	166.720	0.8338	86.7	6.81e3	4.44e3
27	13C-2,3,7,8-TCDD	10.406	5.47e5	0.77	NO	26.44	147.443	1.0009	76.7	6.14e3	9.97e3
28	13C-1,2,3,7,8-PeCDD	10.406	4.91e5	0.63	NO	36.11	166.884	0.5412	86.8	3.86e3	3.06e3
29	13C-1,2,3,4,7,8-HxCDD	10.406	4.90e5	1.24	NO	42.12	162.856	0.7319	84.7	5.90e3	5.89e3
30	13C-1,2,3,6,7,8-HxCDD	10.406	5.27e5	1.28	NO	42.26	158.558	0.6621	82.5	5.90e3	5.89e3
31	13C-1,2,3,4,6,7,8-HpCDD	10.406	5.85e5	1.04	NO	46.74	173.614	0.5204	90.3	4.69e3	4.70e3
32	13C-OCDD	10.406	9.45e5	0.85	NO	50.34	381.693	0.1620	99.3	1.23e3	9.15e2
33	13C-1,2,3,4-TCDD	10.406	7.36e5	0.79	NO	26.09	1.758	0.0089	0.9	6.14e3	9.97e3
34	13C-1,2,3,7,8,9-HxCDD	10.406	5.97e5	1.18	NO	42.68	1.977	0.0073	1.0	5.90e3	5.89e3
35	37Cl-2,3,7,8-TCDD	10.406	7.01e4			26.47	17.154	0.1020	89.3		1.81e3
36	Total Tetra-Furans	10.406					70.818	0.1468			9.49e2
37	Total Tetra-Dioxins	10.406					18.336	0.2277			1.63e3
38	Total Penta-Furans	10.406					111.442	0.2336			1.68e3
39	Total Penta-Dioxins	10.406					42.535	0.2419			1.43e3
40	Total Hexa-Furans	10.406					335.195	0.3489			3.13e3
41	Total Hexa-Dioxins	10.406					272.340	0.3296			2.71e3
42	Total Hepta-Furans	10.406					836.562	0.5158			6.33e3
43	Total Hepta-Dioxins	10.406					2072.739	1.0643			7.74e3
44	Hexa DPE	1.000	4.34e2			24.04					5.29e0
45	Hepta DPE	1.000	2.73e2			36.86					4.28e0
46	Octa DPE	1.000	2.03e2			41.70					4.17e0
47	Nona DPE	1.000	8.15e1			47.28					5.21e2
48	Deca DPE	1.000	9.44e1			50.32					2.51e2
49	Tetra Lock	1.000	5.40e3			21.30					3.64e5
50	Penta Lock	1.000	3.26e4			33.05					3.38e5
51	Hexa Lock	1.000									8.68e5
52	Hepta Lock	1.000	1.57e4			44.79					5.38e5
53	Octa Lock	1.000	2.94e4			49.20					4.01e5
54	13C-Tetra-Furans	10.406					141.461	0.5692			6.26e3
55	13C-Tetra-Dioxins	10.406					149.201	1.0098			9.97e3

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

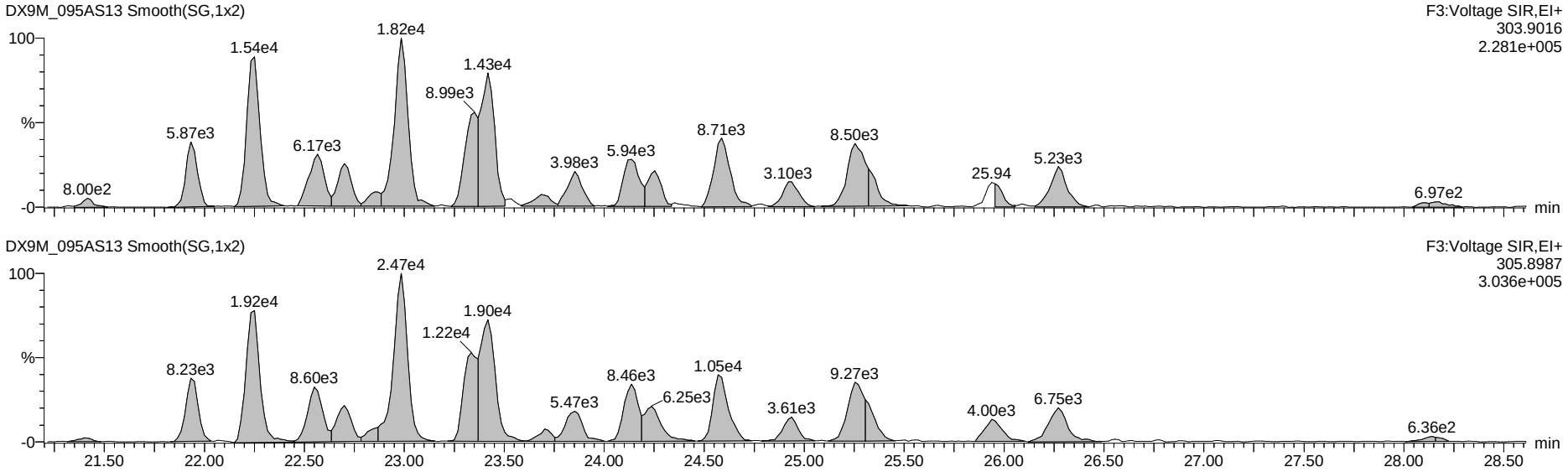
SVHH 22 Sept. 2019

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

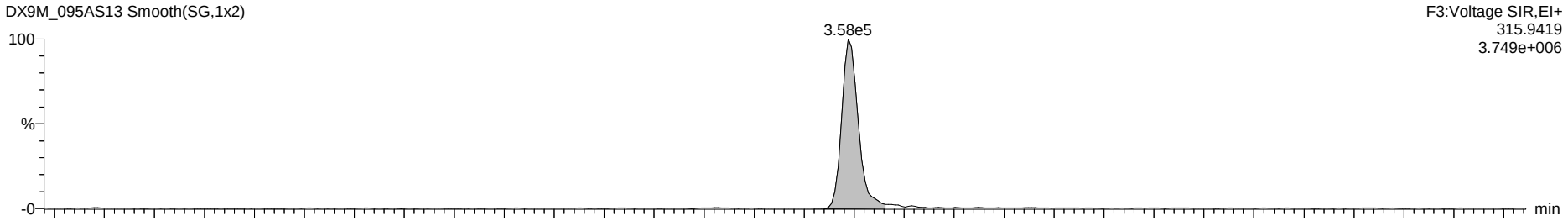
Method: G:\Masslynx\Inst_M\Master methods and layouts\Current Methods\DX_1613B_16.mdb 07 Sep 2017 16:45:23
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

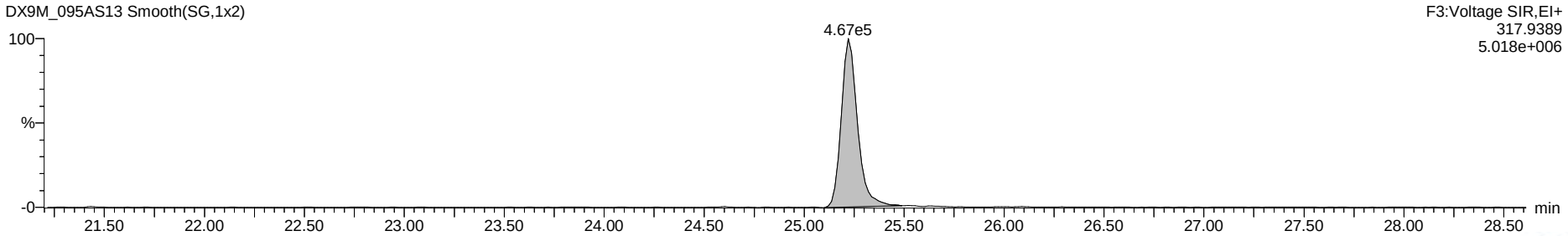
Name: DX9M_095AS13, Date: 17-Sep-2019, Time: 20:48:37, ID: L31654-9,W,, Description: 5,WG69303,1.0/100uL

Total Tetra-Furans



13C-Tetra-Furans

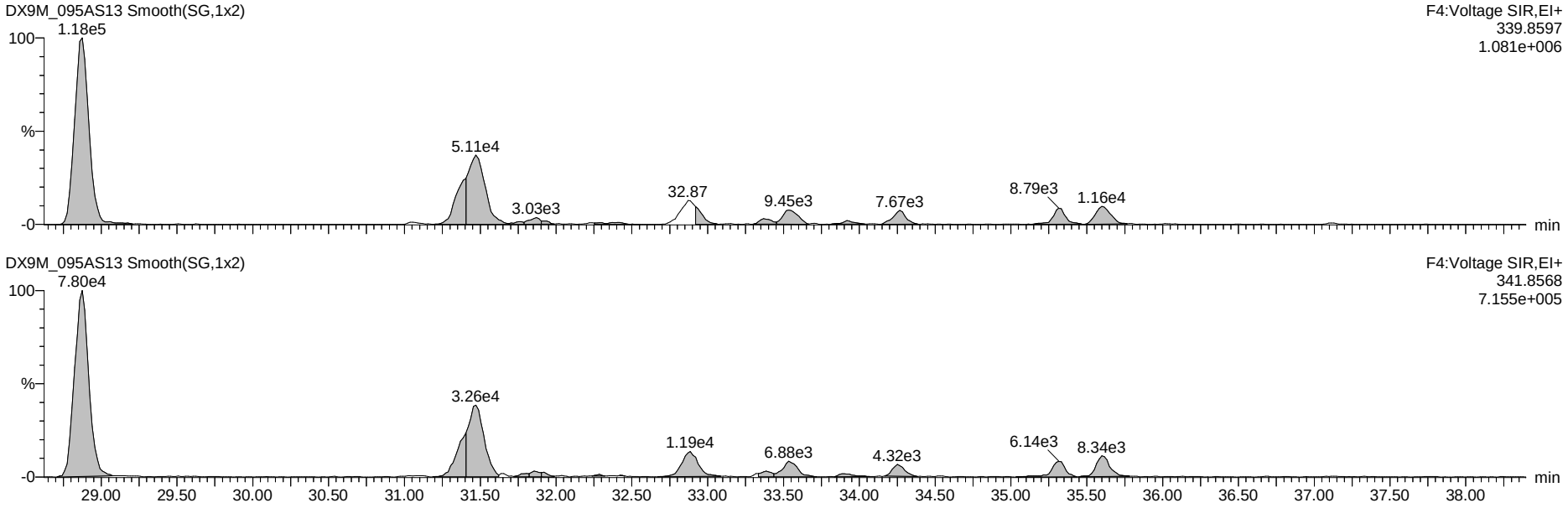




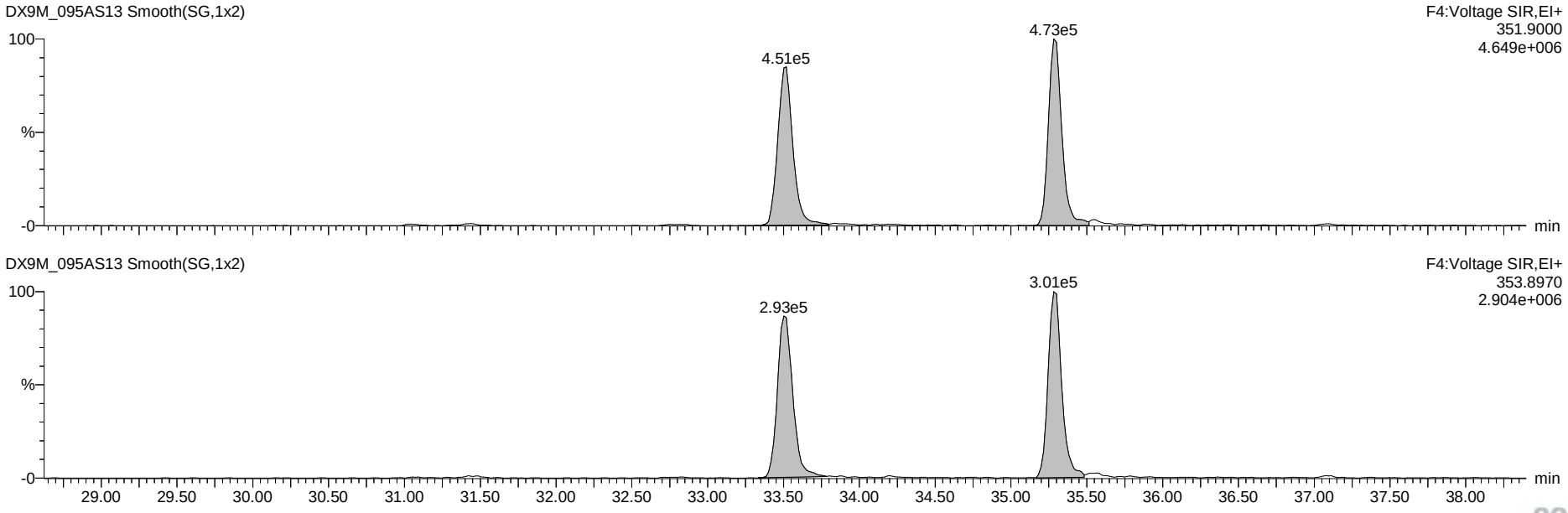
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

Name: DX9M_095AS13, Date: 17-Sep-2019, Time: 20:48:37, ID: L31654-9,W,, Description: 5,WG69303,1.0/100uL

Total Penta-Furans



13C-Penta-Furans



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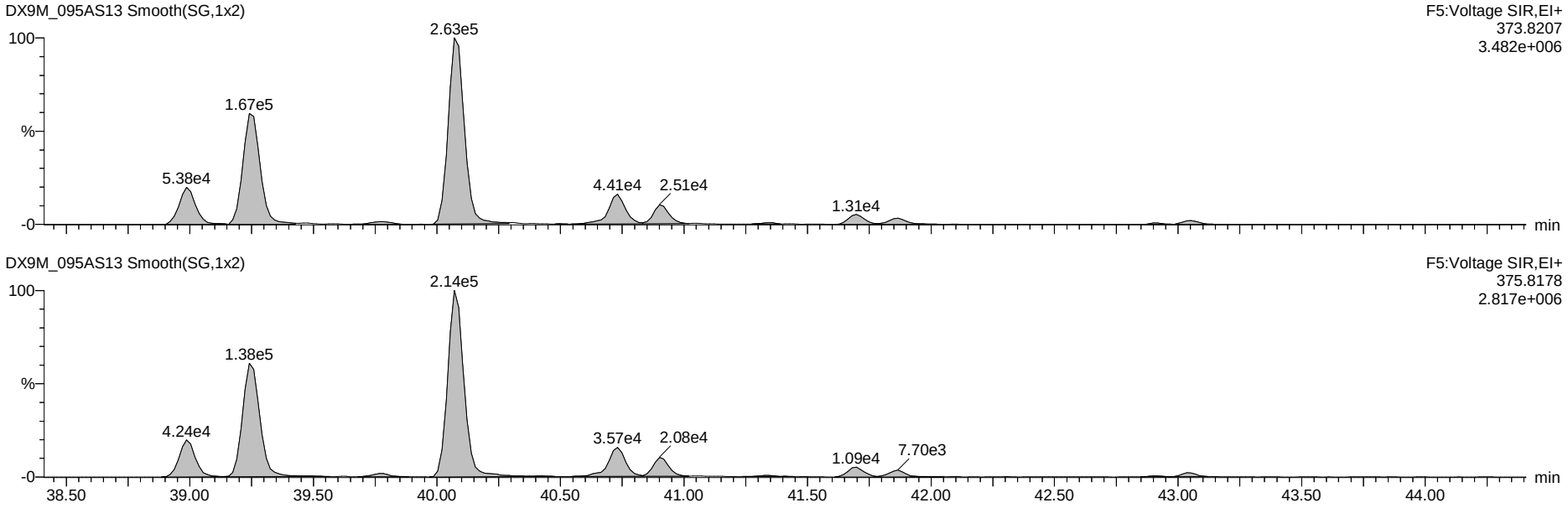
Total Hexa-Furans



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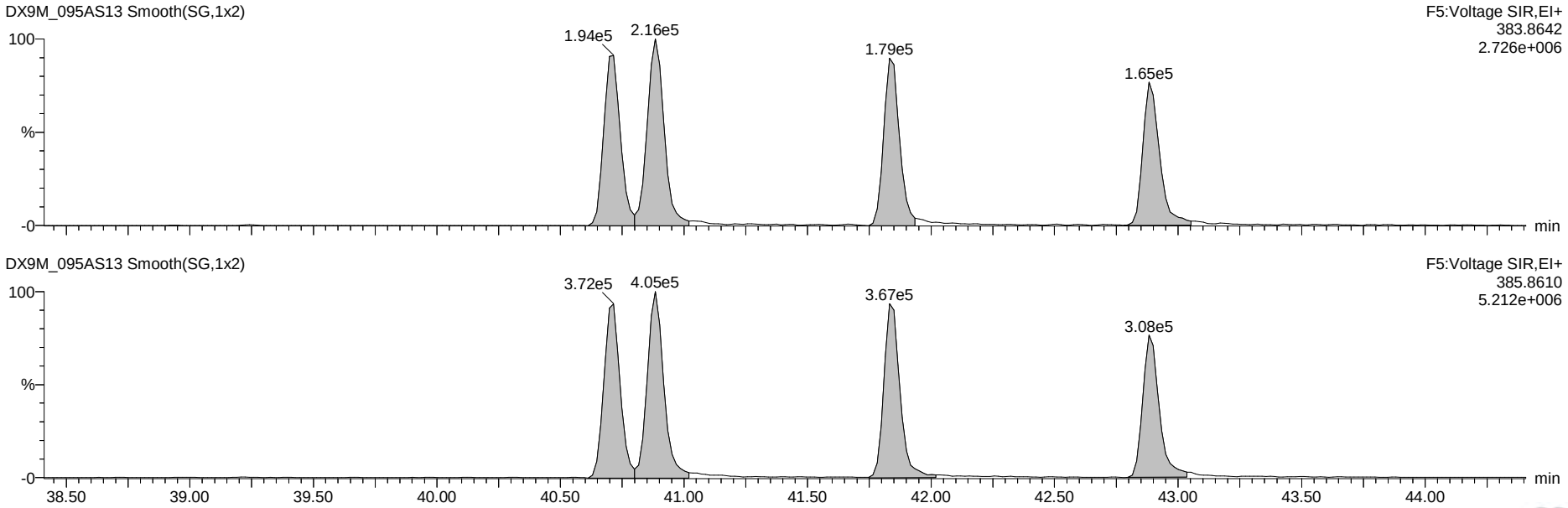

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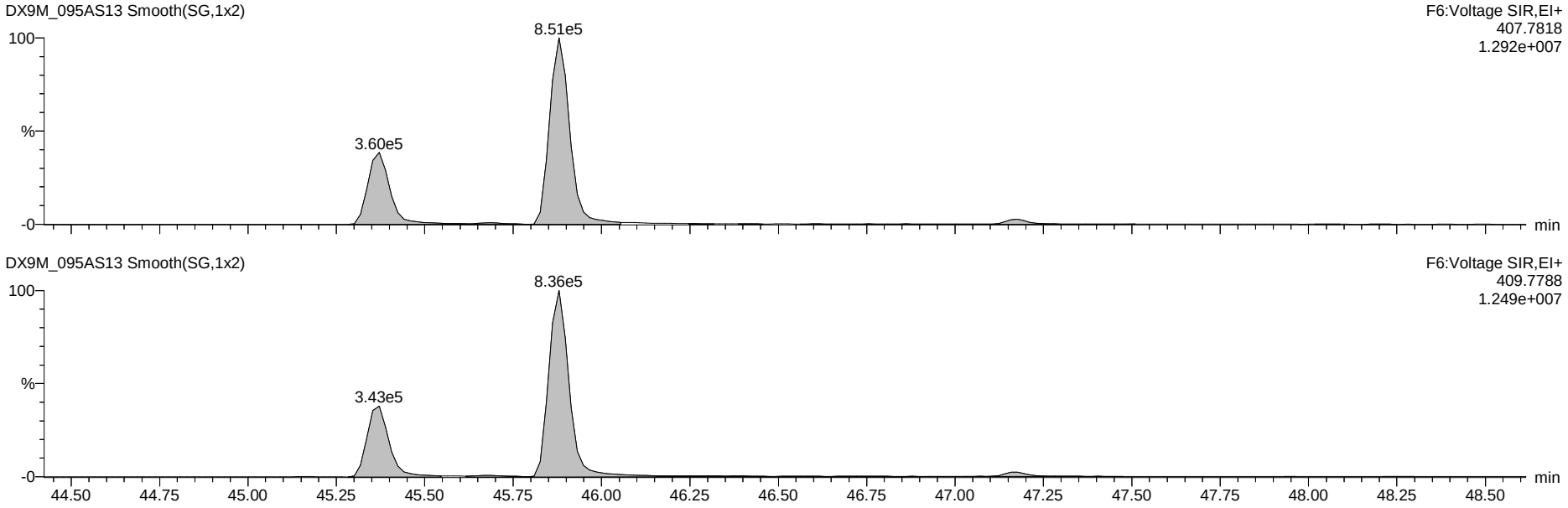
Total Hepta-Furans



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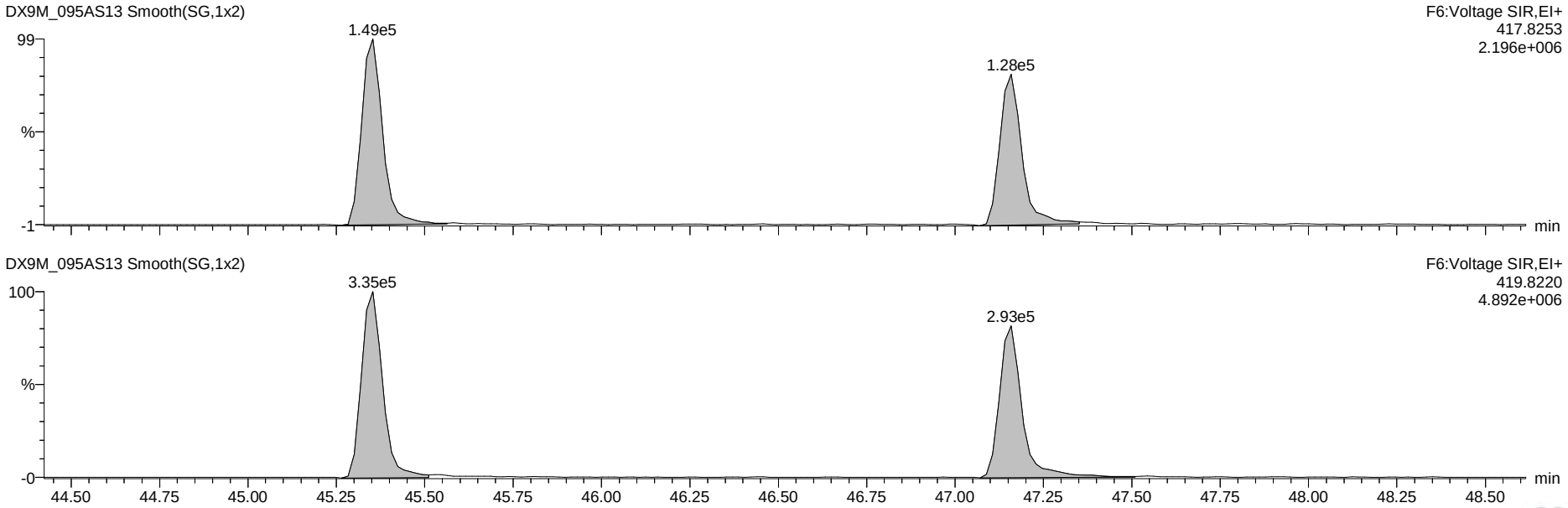

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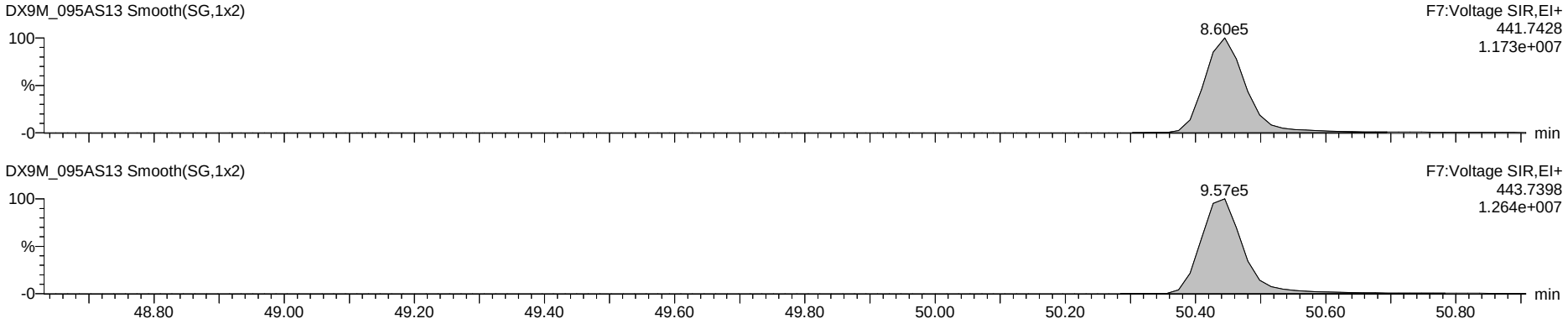
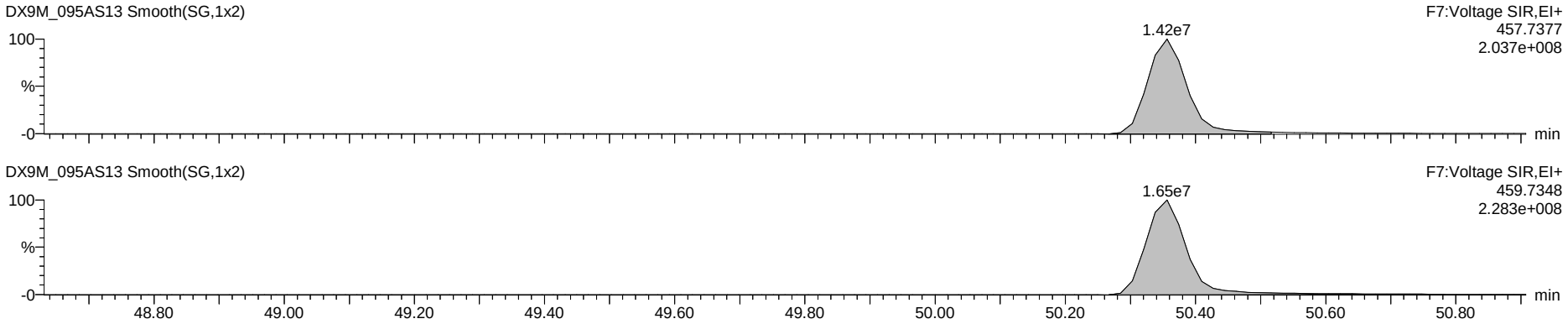
OCDF



OCDD



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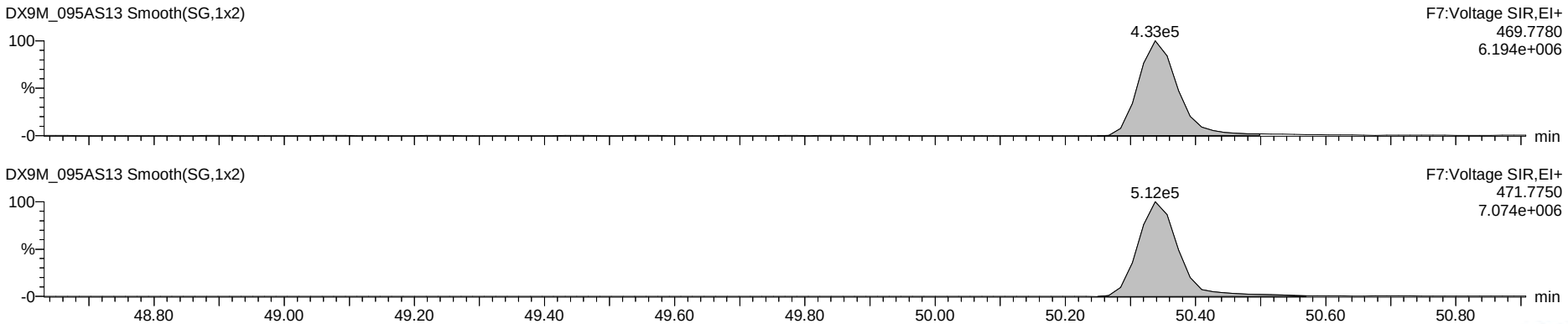

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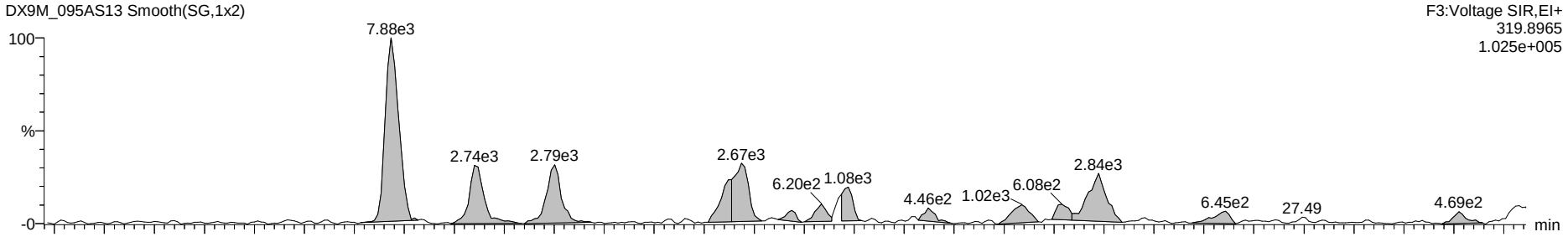
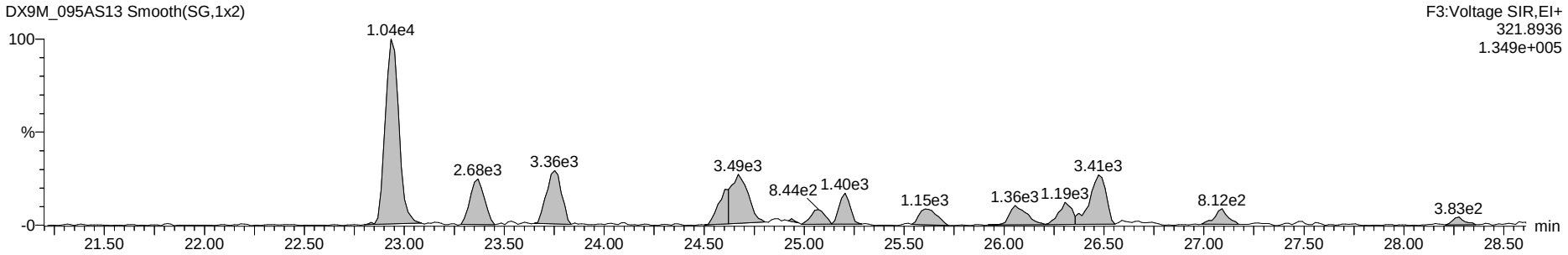
Name: DX9M_095AS13, Date: 17-Sep-2019, Time: 20:48:37, ID: L31654-9,W,, Description: 5,WG69303,1.0/100uL

Total Tetra-Dioxins





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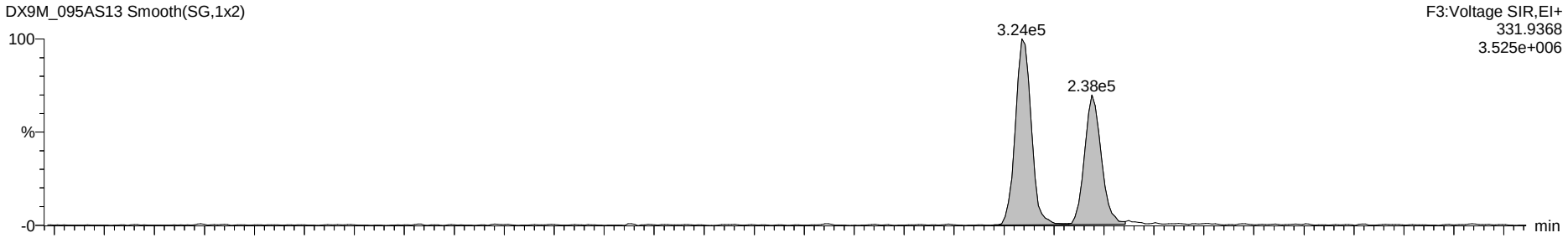
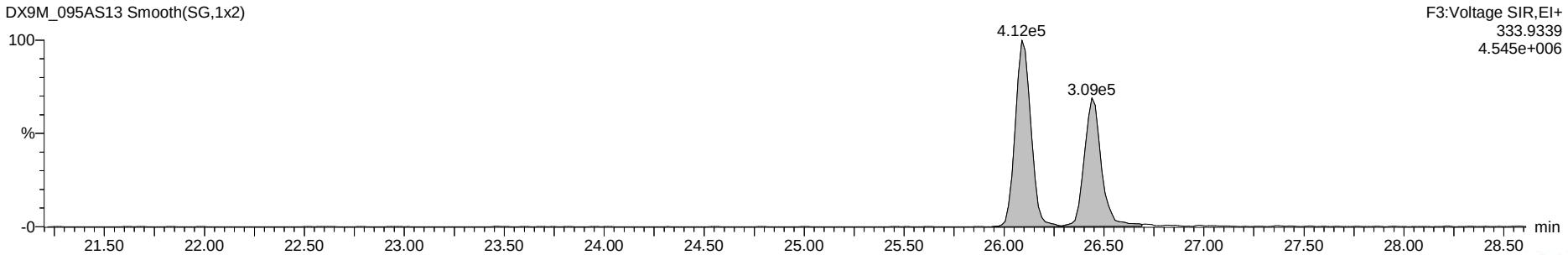
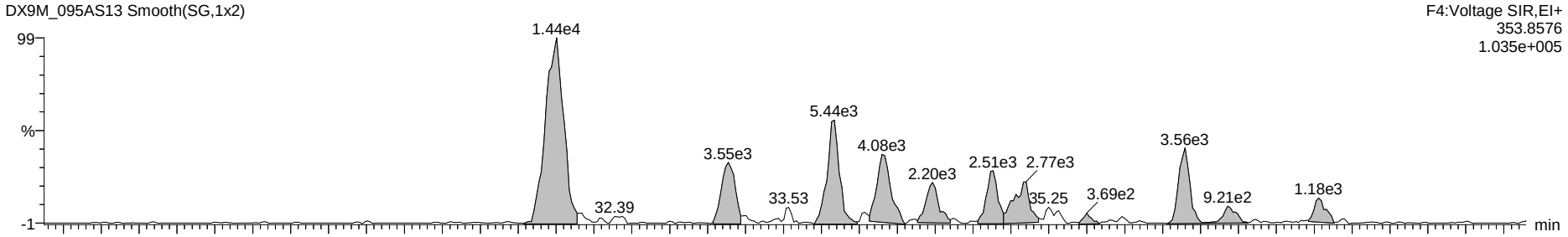


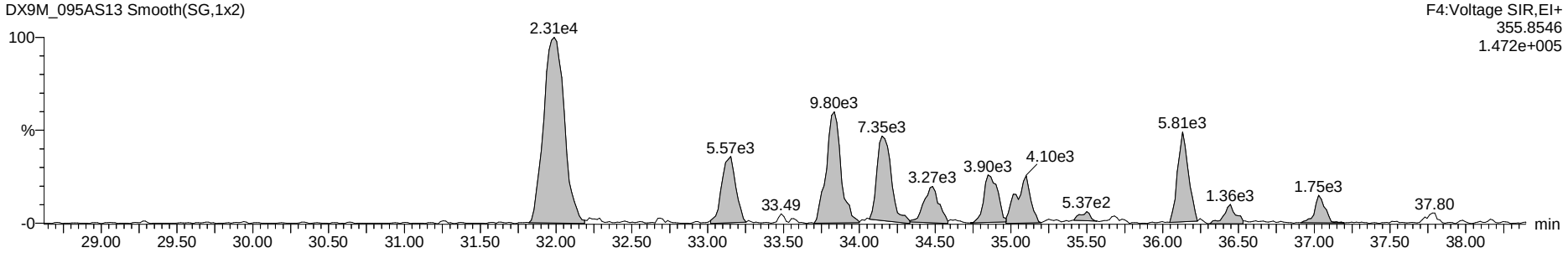


Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

Name: DX9M_095AS13, Date: 17-Sep-2019, Time: 20:48:37, ID: L31654-9,W,, Description: 5,WG69303,1.0/100uL

Total Penta-Dioxins





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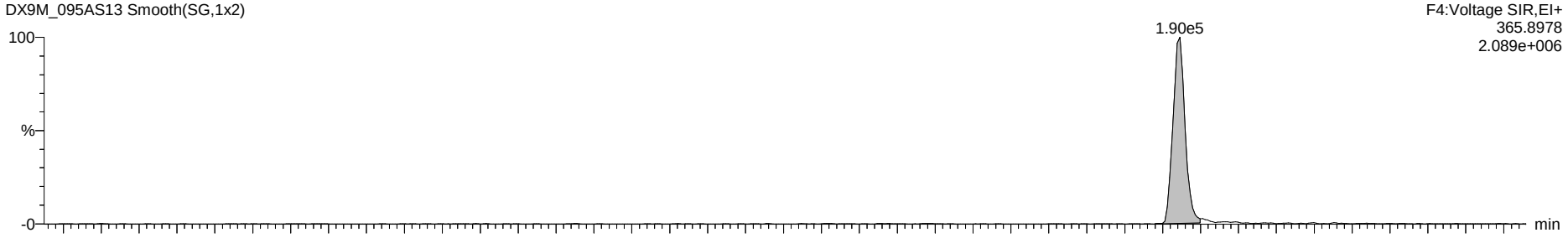

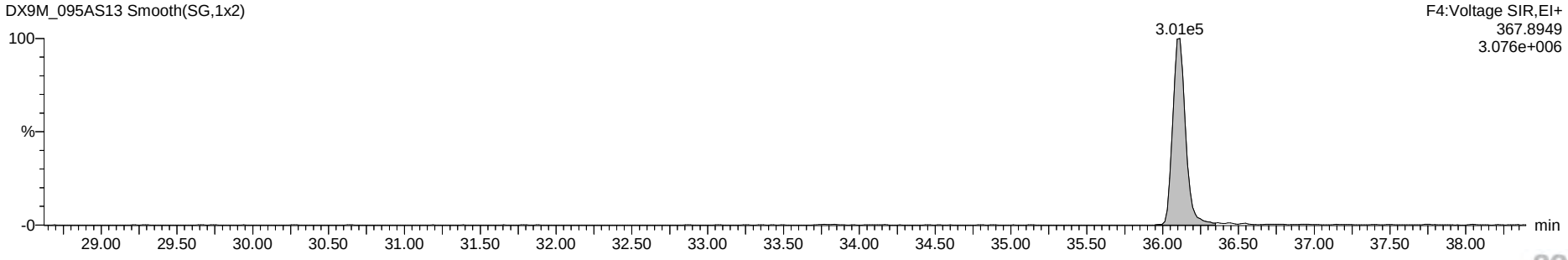

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

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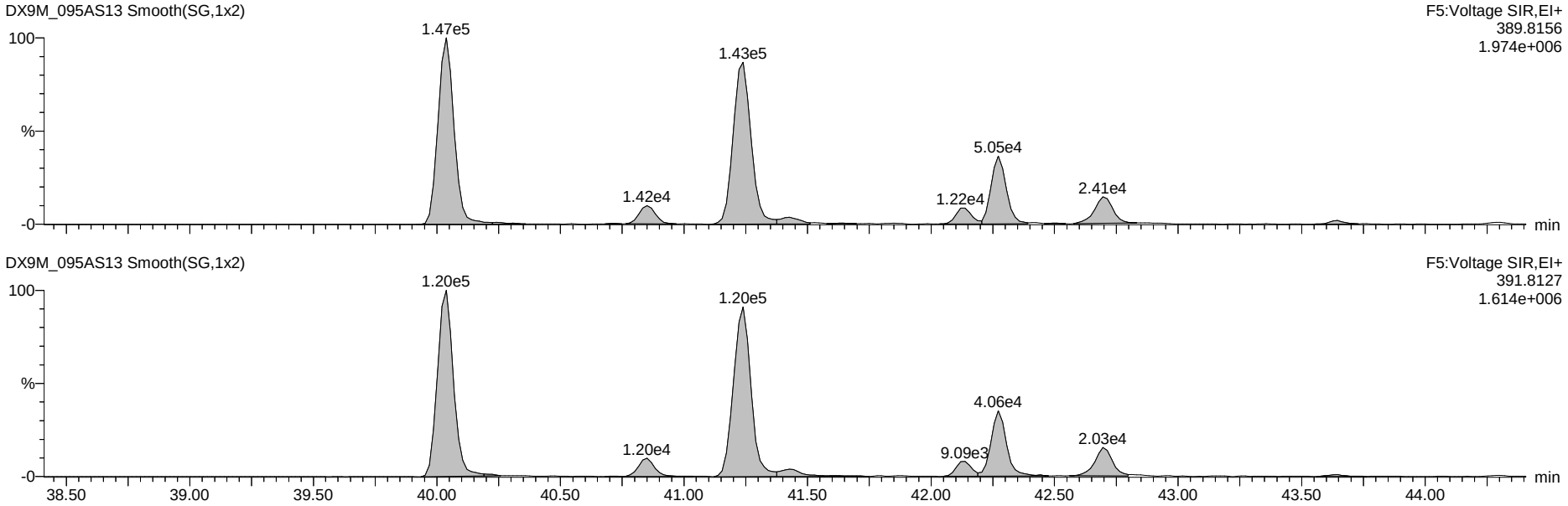
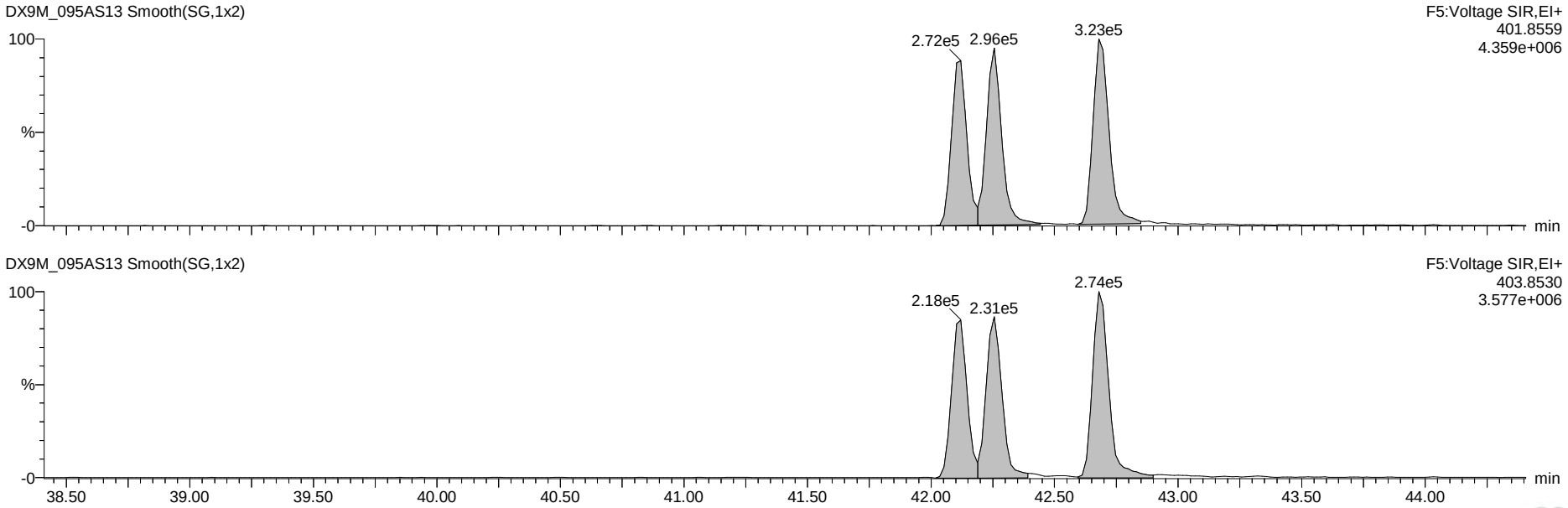
Total Hexa-Dioxins



13C-Hexa-Dioxins



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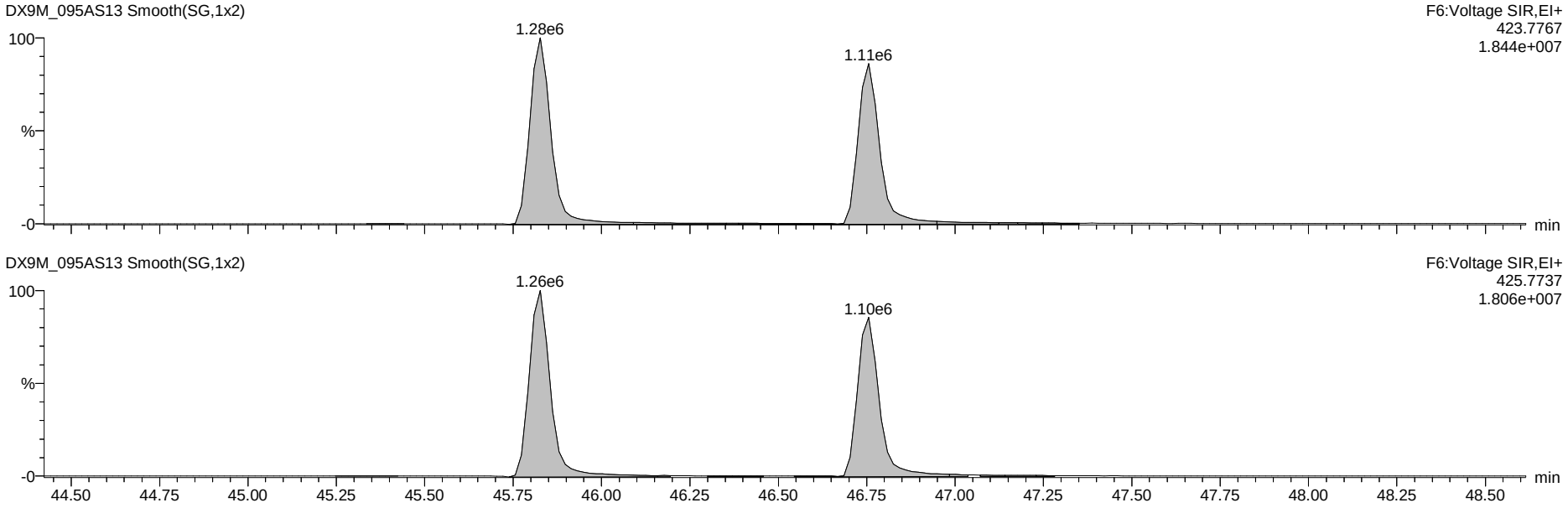
Name: DX9M_095AS13, Date: 17-Sep-2019, Time: 20:48:37, ID: L31654-9,W,, Description: 5,WG69303,1.0/100uL

Total Hepta-Dioxins



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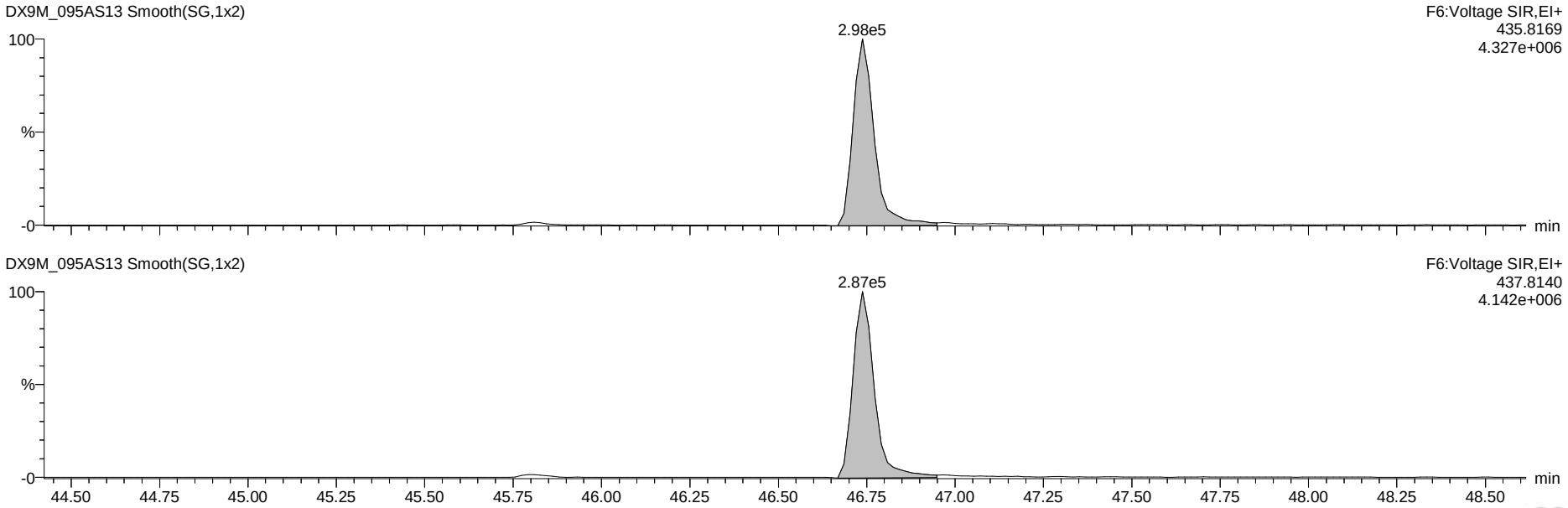

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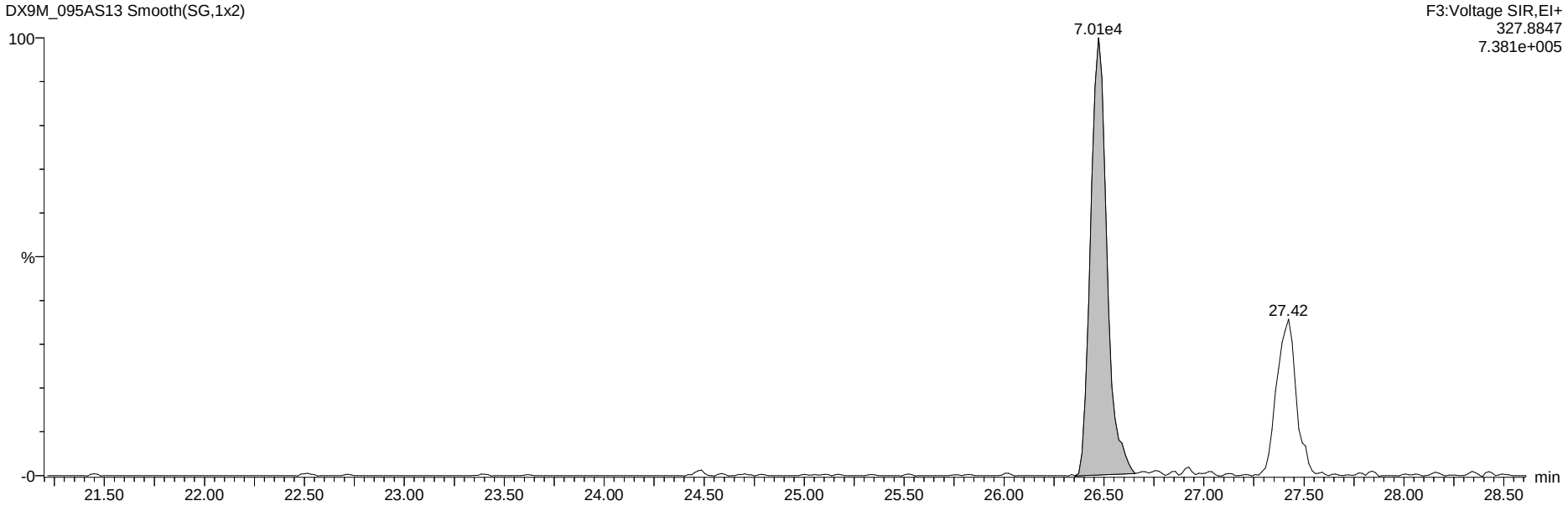
Name: DX9M_095AS13, Date: 17-Sep-2019, Time: 20:48:37, ID: L31654-9,W,, Description: 5,WG69303,1.0/100uL

37Cl-2,3,7,8-TCDD



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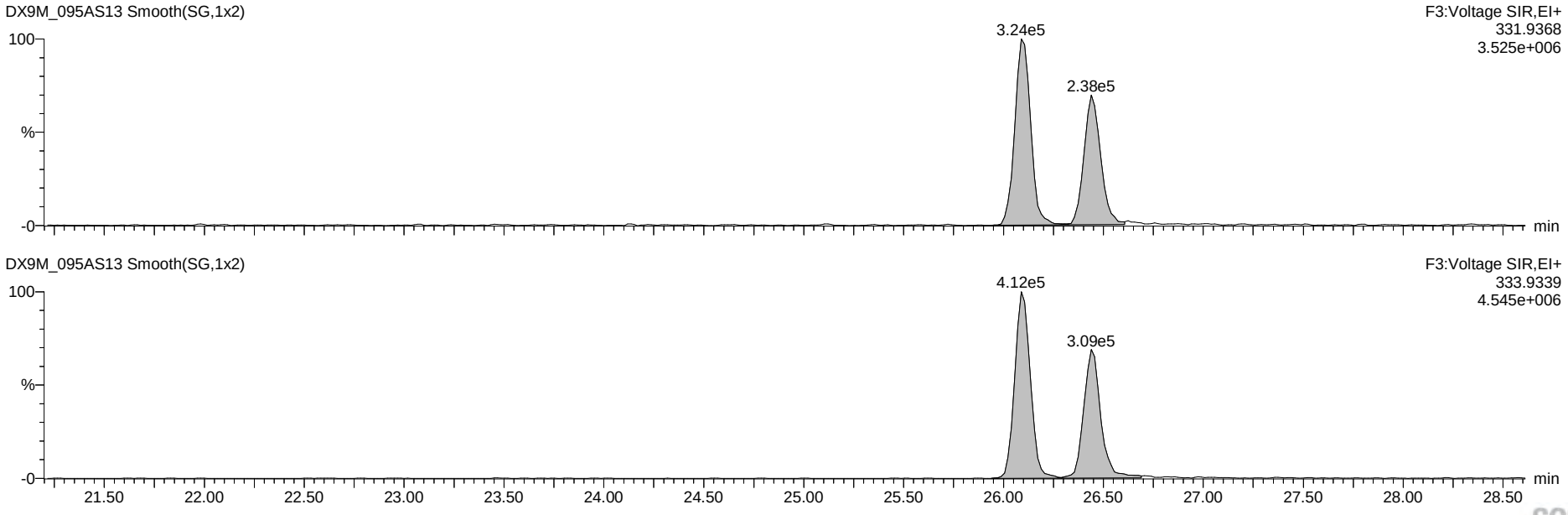

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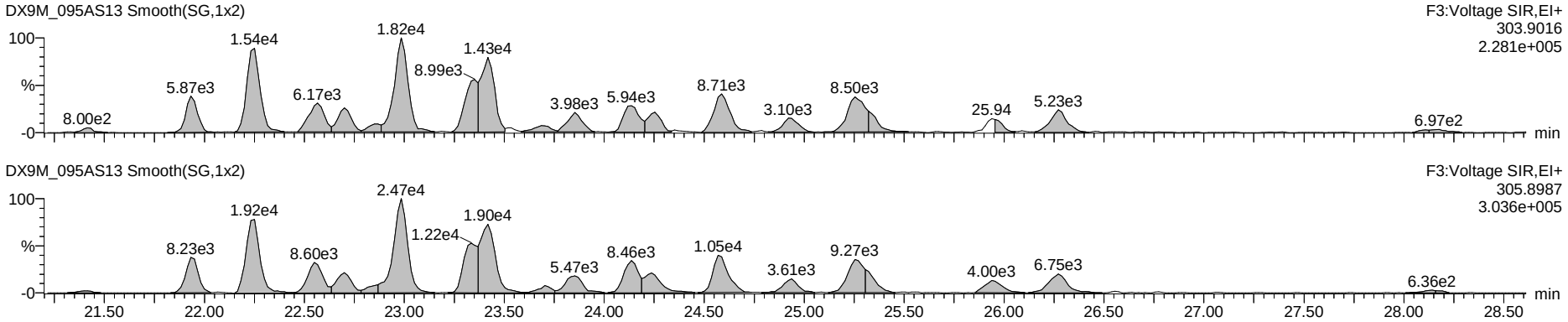
Total Tetra-Furans



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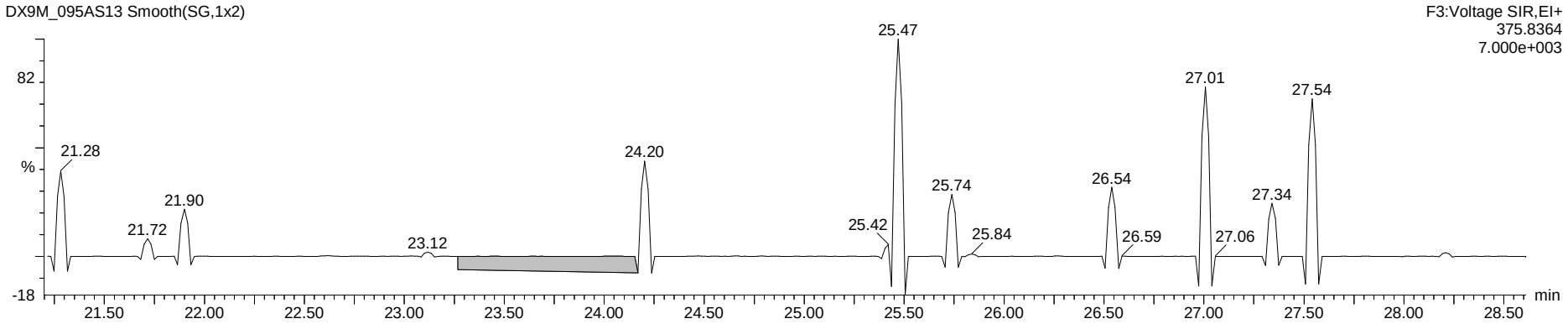
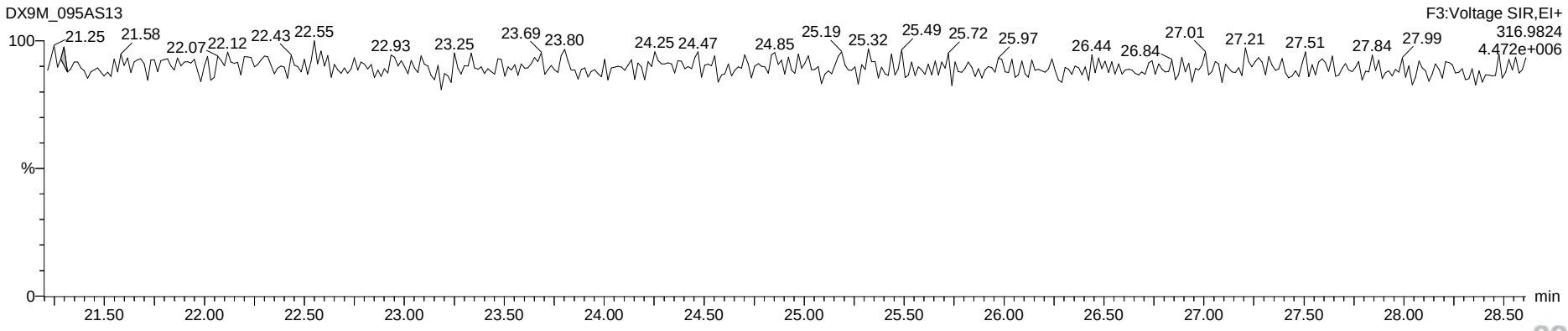


Tetra Lock



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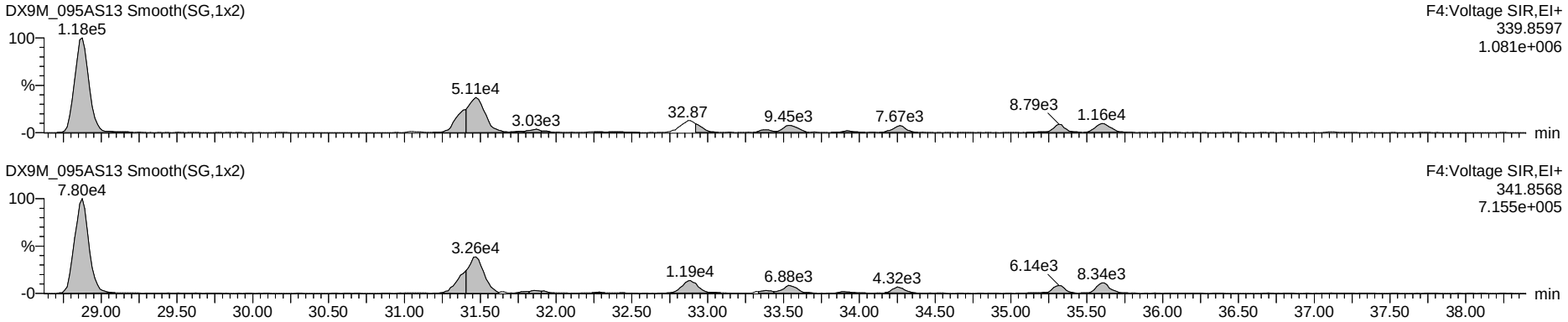
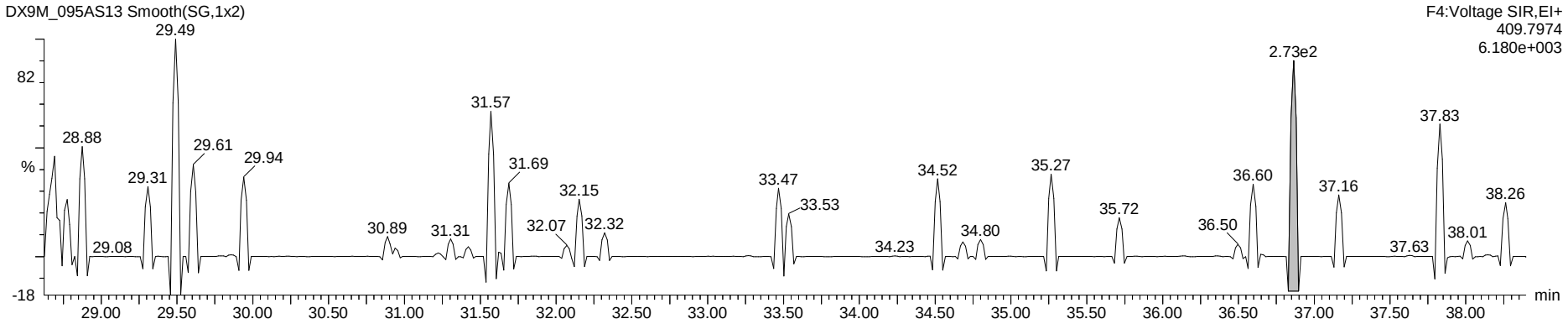
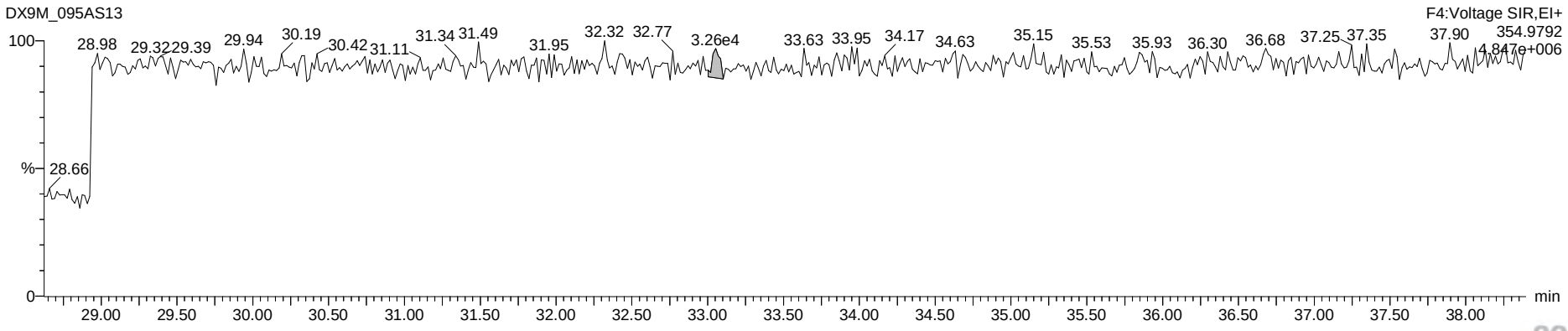
Total Penta-Furans



Hepta DPE



Penta Lock



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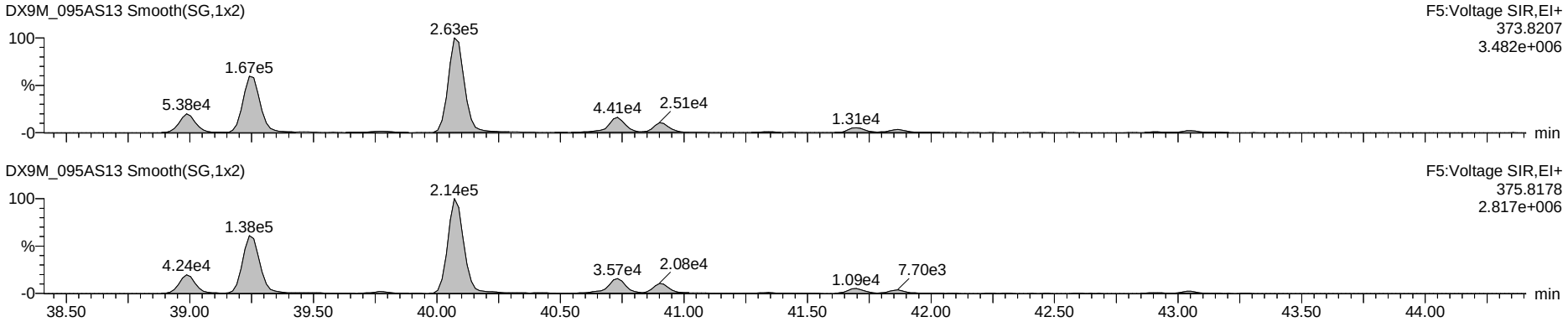
Total Hexa-Furans



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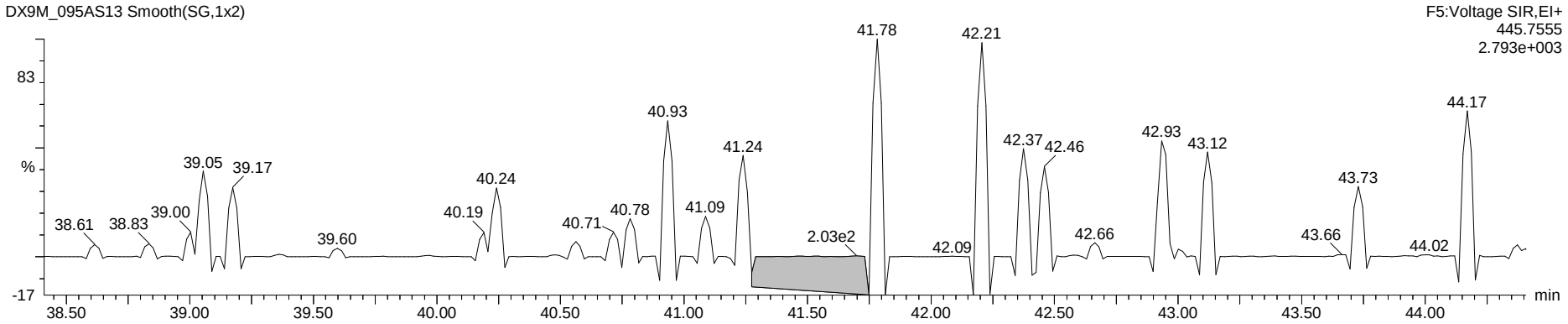

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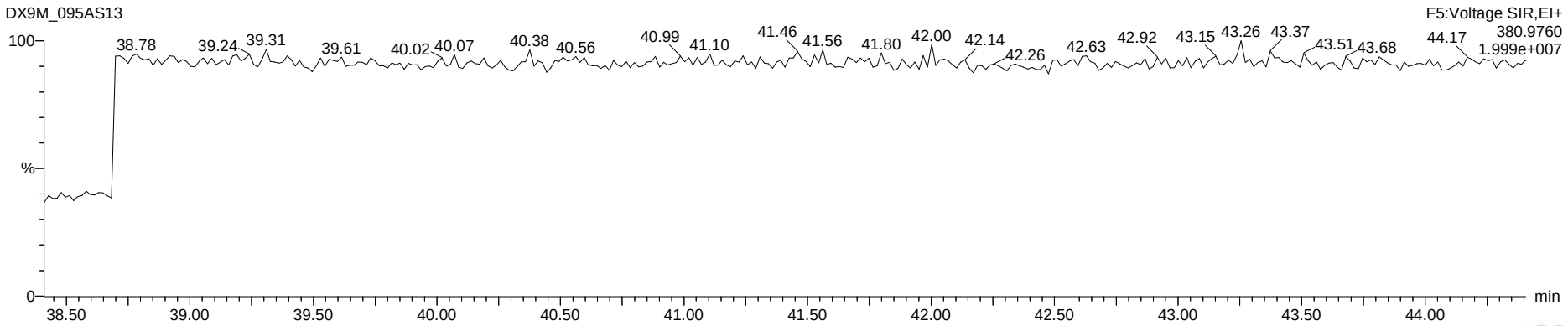

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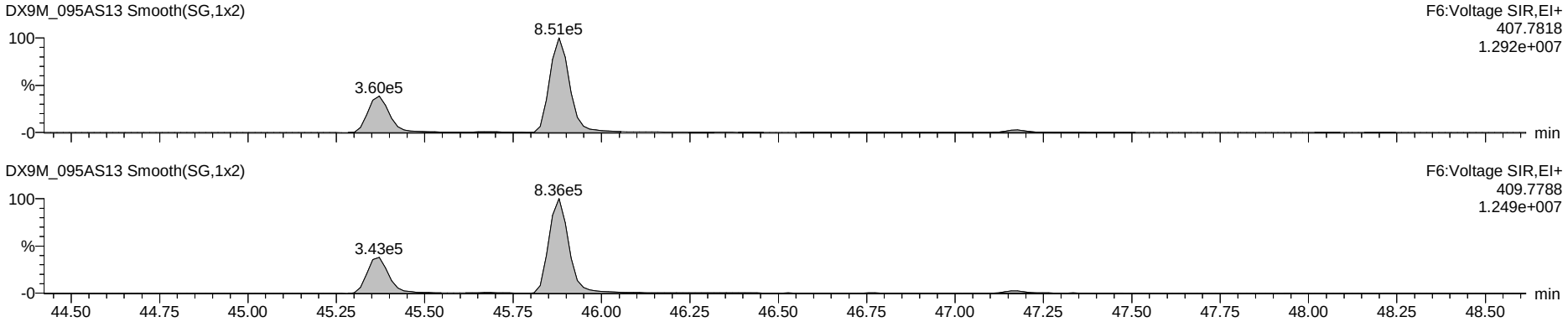
Total Hepta-Furans



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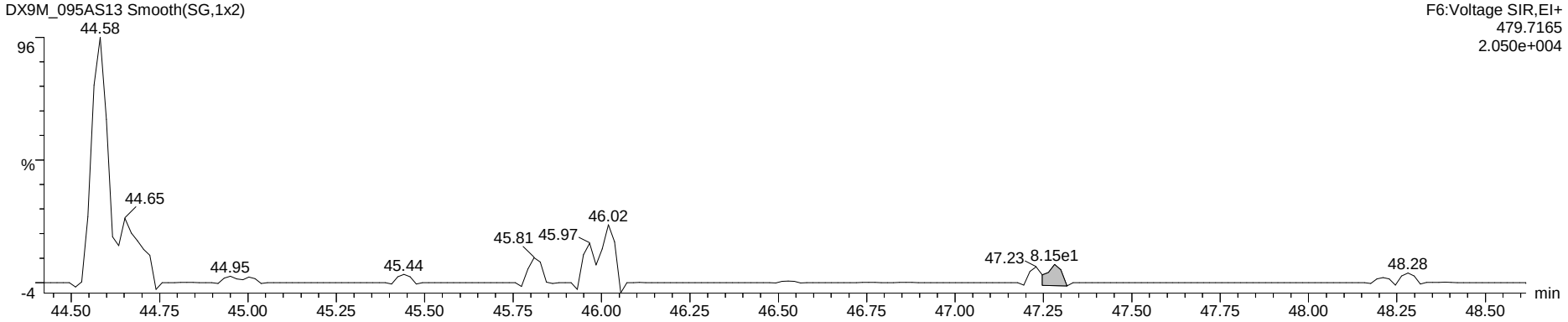

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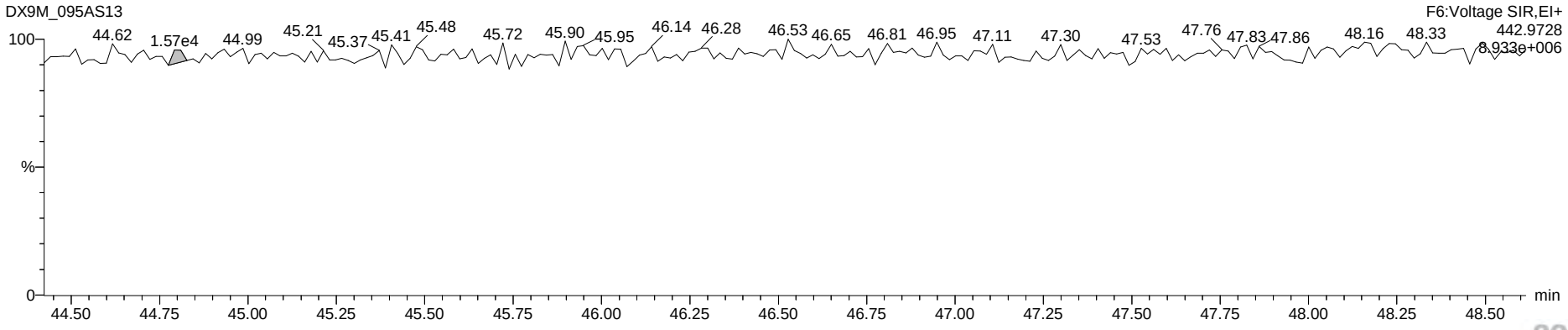

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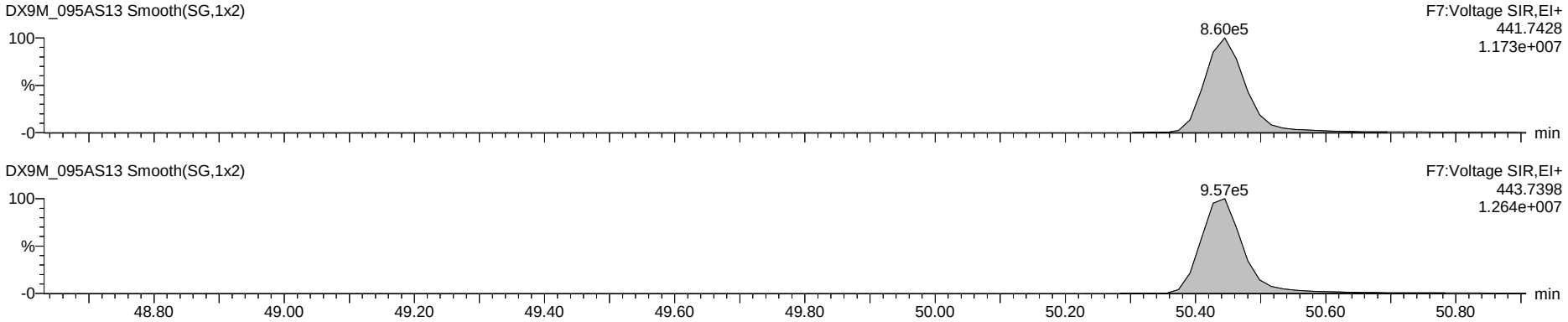
OCDF



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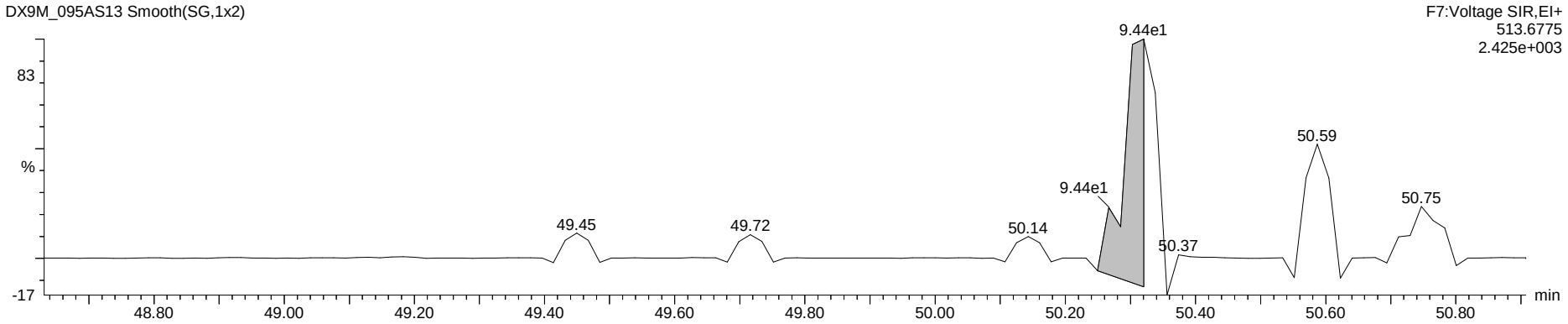

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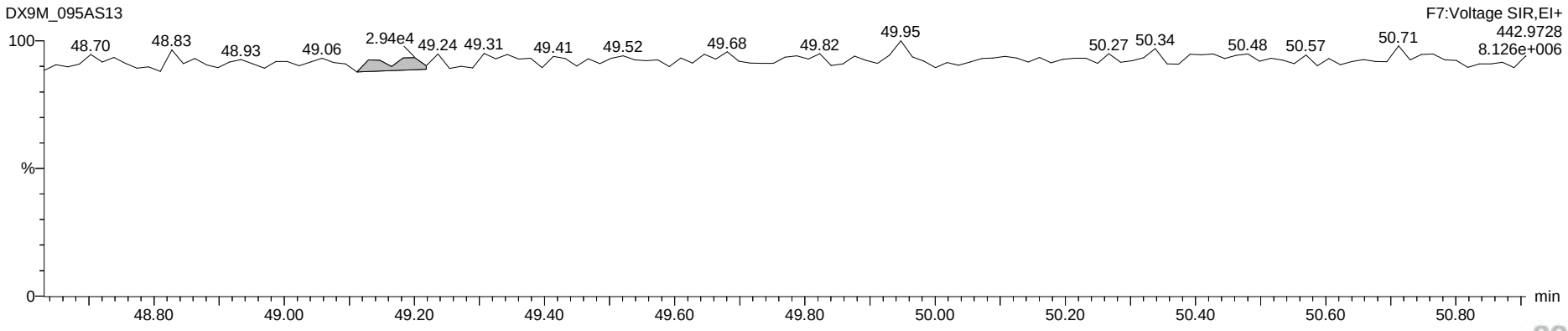

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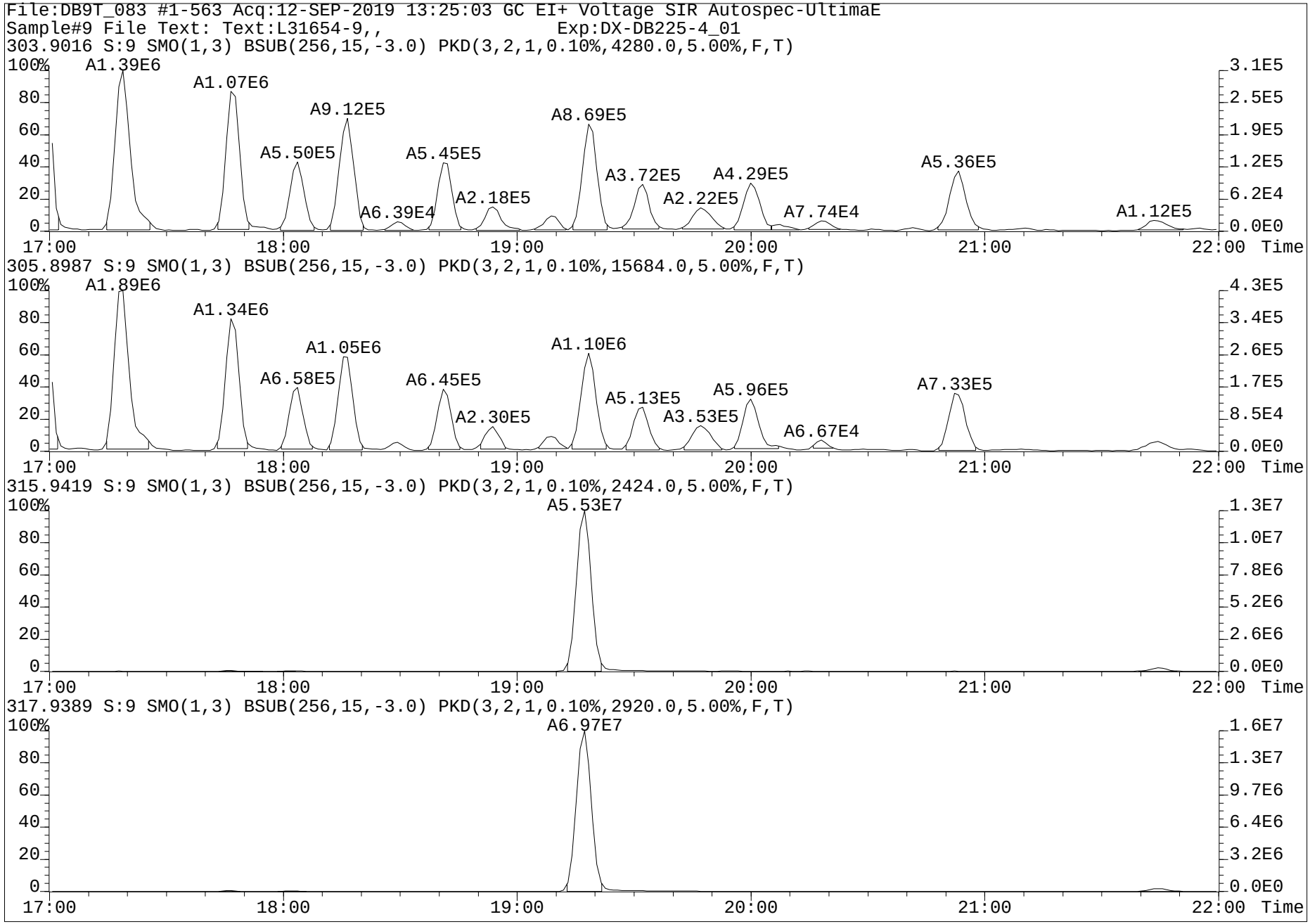
Run #12 Filename DB9T_083 S: 9 I: 1 Acquired: 12-SEP-19 13:25:03 Processed: 17-SEP-19 10:20:04
Run: db9t_083-b Analyte: db-hxd-s2 Cal: db9t_055-5a Results: db9t_083-b Version: V3.6 6-JAN-2000 17:51:42
Sample text: L31654-9,, Comments: 1,WG69303,2.0/20uL
sample size: 10.406000 conc units: pg/g total toxicity: 2.18 F1: 1.0000 F2: 1.0000

	Typ	Name	#Hom	Resp	RA		RT	Conc	Tox #1	DL	Rec	M?
1	Unk	2,3,7,8-TCDF	1	1.97e+06	0.79	y	19:18	3.902	0	0.4249	-	n
2	Unk	1,2,3,7,8,9-HxCDD	1	4.69e+06	1.22	y	33:22	17.861	2	0.3314	-	n
3	IS/RT	13C-2,3,7,8-TCDF	1	1.25e+08	0.79	y	19:17	152.453	-	0.0649	79.3	n
4	IS/RT	13C-1,2,3,4,7,8-HxCDD	1	6.02e+07	1.27	y	31:07	151.285	-	0.0603	78.7	n
5	IS/RT	13C-1,2,3,6,7,8-HxCDD	1	6.46e+07	1.21	y	31:30	155.235	-	0.0577	80.8	n
6	RS	13C-1,2,3,4-TCDD	1	1.11e+08	0.81	y	18:05	9.300	-	-	-	n
7	RS	13C-1,2,3,7,8,9-HxCDD	1	7.44e+07	1.24	y	33:19	12.458	-	-	-	n
8	Tot	Hexa DPE	0	*			NotFnd	*	-	-	-	n
9	Tot	Tetra Lock	-	-			-	-	-	-	-	n
10	Tot	Hexa Lock	-	-			-	-	-	-	-	n

PV by RA 20SEP2019
SV by HH 22Sept2019


File:DB9T_083 #1-563 Acq:12-SEP-2019 13:25:03 GC EI+ Voltage SIR Autospec-UltimaE
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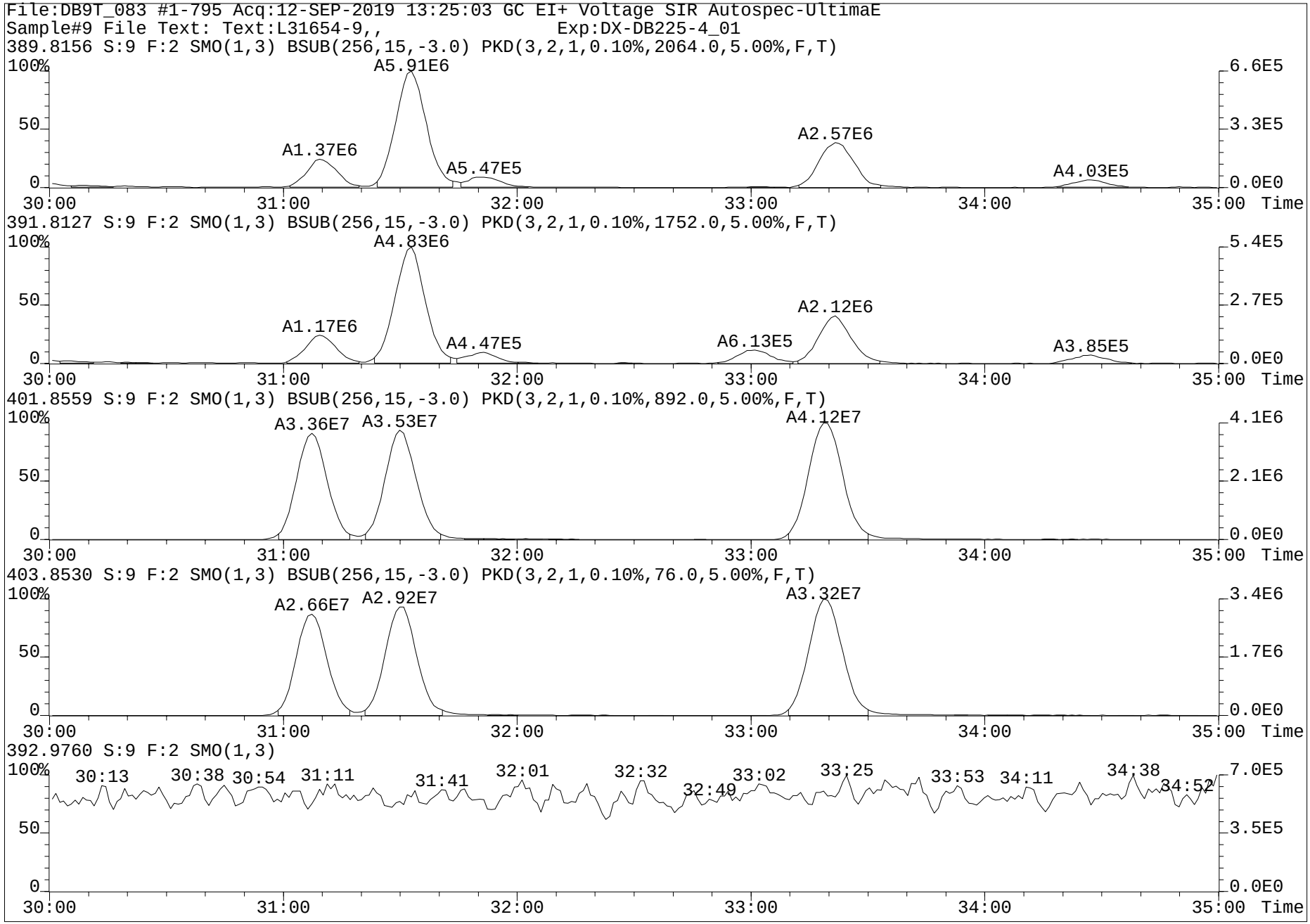
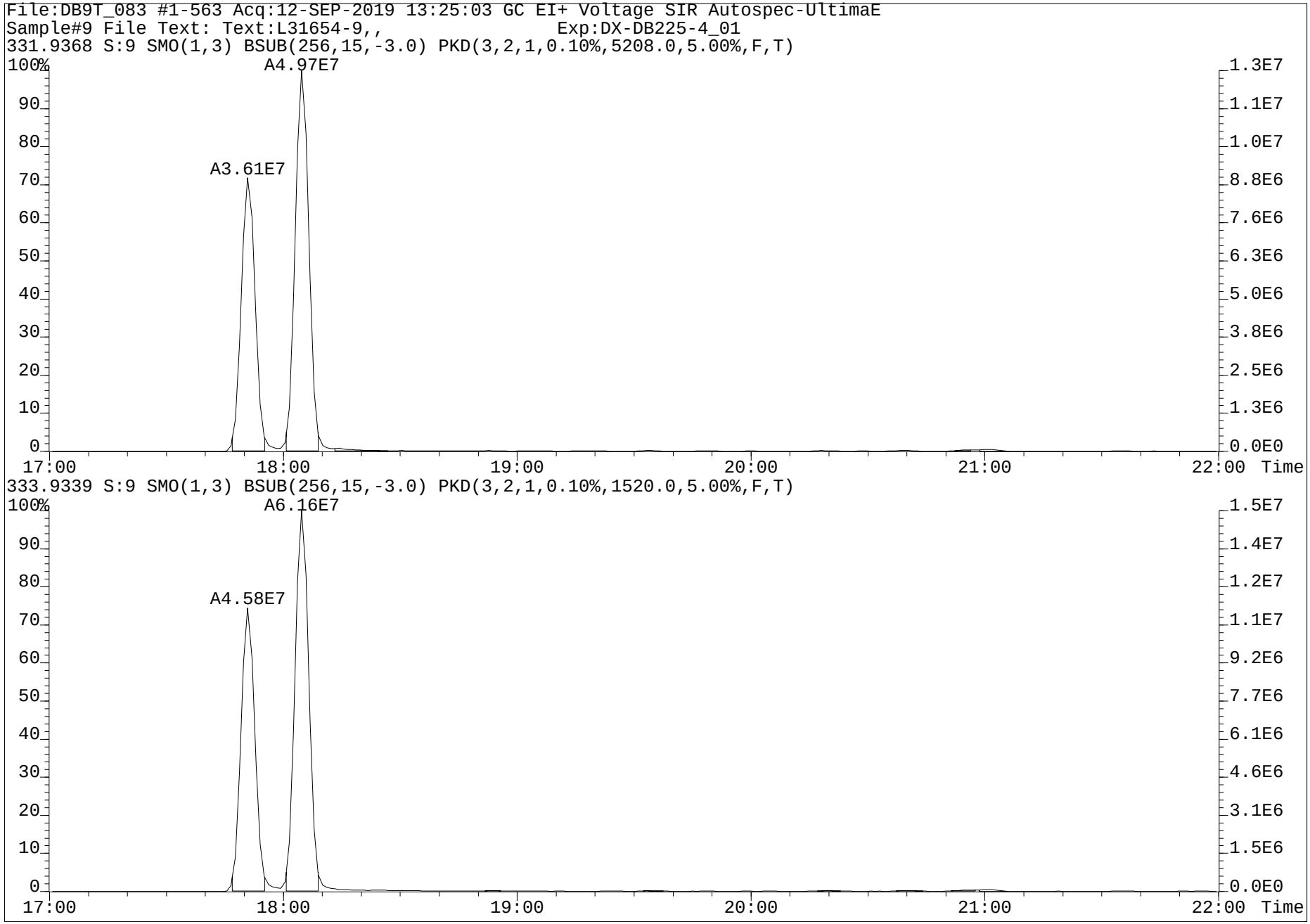
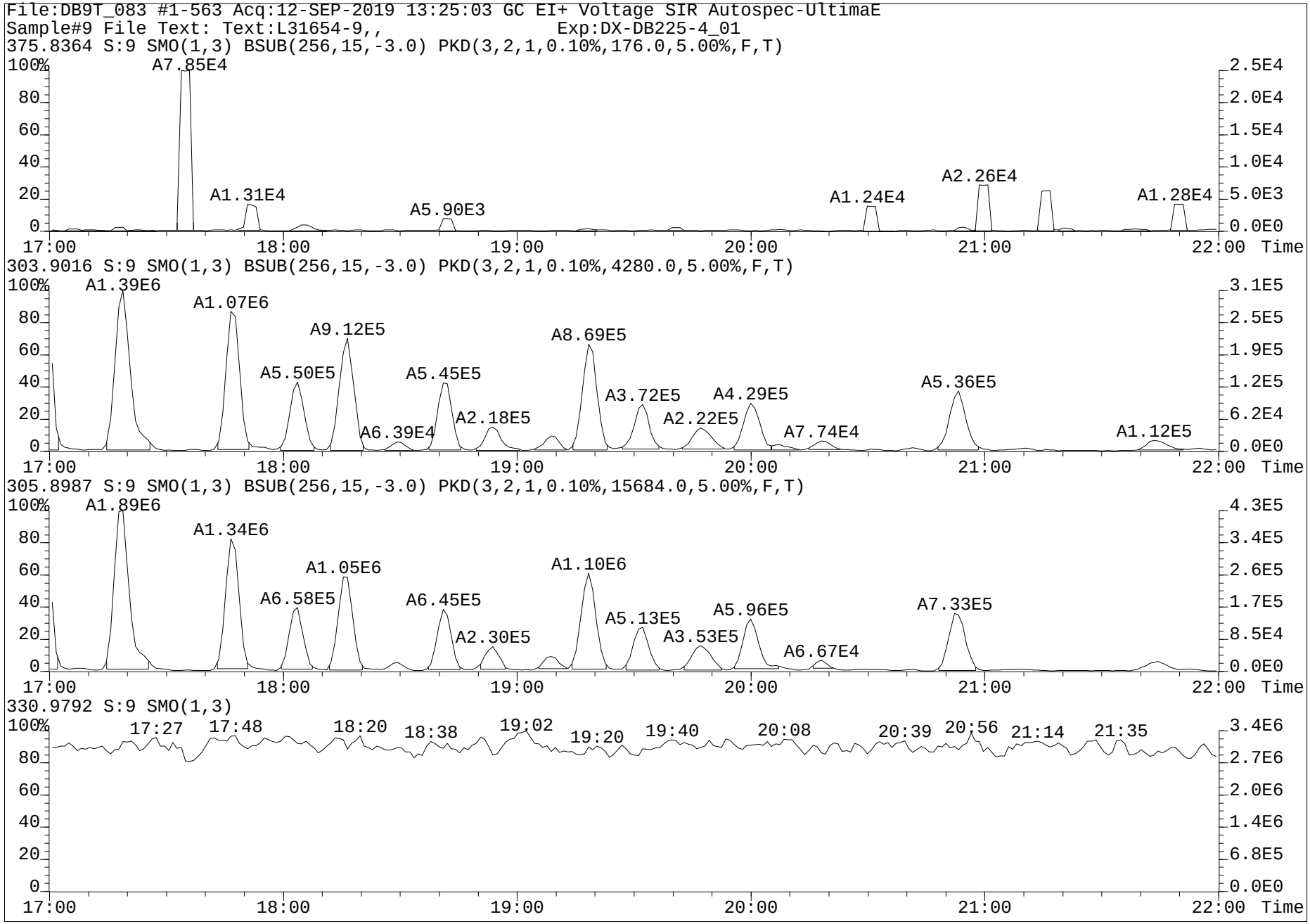
A1.39E6
A1.07E6
A9.12E5
A5.50E5
A5.45E5
A8.69E5
A3.72E5
A4.29E5
A5.36E5
A2.18E5
A2.22E5
A6.39E4
A7.74E4
A1.12E5
305.8987 S:9 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,15684.0,5.00%,F,T)
A1.89E6
A1.34E6
A1.05E6
A1.10E6
A6.58E5
A6.45E5
A5.13E5
A5.96E5
A7.33E5
A2.30E5
A3.53E5
A6.67E4
315.9419 S:9 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,2424.0,5.00%,F,T)
A5.53E7
317.9389 S:9 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,2920.0,5.00%,F,T)
A6.97E7
100%
80
60
40
20
0
17:00
18:00
19:00
20:00
21:00
22:00
Time
3.1E5
2.5E5
1.9E5
1.2E5
6.2E4
0.0E0
4.3E5
3.4E5
2.6E5
1.7E5
8.5E4
1.3E7
1.0E7
7.8E6
5.2E6
2.6E6
1.6E7
1.3E7
9.7E6
6.4E6
3.2E6


File:DB9T_083 #1-795 Acq:12-SEP-2019 13:25:03 GC EI+ Voltage SIR Autospec-UltimaE
Sample#9 File Text: Text:L31654-9,, Exp:DX-DB225-4_01
389.8156 S:9 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,2064.0,5.00%,F,T)
A5.91E6
A1.37E6
A5.47E5
A2.57E6
A4.03E5
391.8127 S:9 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1752.0,5.00%,F,T)
A4.83E6
A1.17E6
A4.47E5
A6.13E5
A2.12E6
A3.85E5
401.8559 S:9 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,892.0,5.00%,F,T)
A3.36E7
A3.53E7
A4.12E7
403.8530 S:9 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,76.0,5.00%,F,T)
A2.66E7
A2.92E7
A3.32E7
392.9760 S:9 F:2 SMO(1,3)
30:13
30:38
30:54
31:11
31:41
32:01
32:32
32:49
33:02
33:25
33:53
34:11
34:38
34:52
100%
50
0
30:00
31:00
32:00
33:00
34:00
35:00
Time
6.6E5
3.3E5
0.0E0
5.4E5
2.7E5
4.1E6
2.1E6
3.4E6
1.7E6
7.0E5
3.5E5


File:DB9T_083 #1-563 Acq:12-SEP-2019 13:25:03 GC EI+ Voltage SIR Autospec-UltimaE
Sample#9 File Text: Text:L31654-9,, Exp:DX-DB225-4_01
331.9368 S:9 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,5208.0,5.00%,F,T)
A4.97E7
A3.61E7
333.9339 S:9 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1520.0,5.00%,F,T)
A6.16E7
A4.58E7
Time


File:DB9T_083 #1-563 Acq:12-SEP-2019 13:25:03 GC EI+ Voltage SIR Autospec-UltimaE
Sample#9 File Text: Text:L31654-9,, Exp:DX-DB225-4_01
375.8364 S:9 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,176.0,5.00%,F,T)
A7.85E4
A1.31E4
A5.90E3
A1.24E4
A2.26E4
A1.28E4
303.9016 S:9 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,4280.0,5.00%,F,T)
A1.39E6
A1.07E6
A9.12E5
A5.50E5
A5.45E5
A8.69E5
A6.39E4
A2.18E5
A3.72E5
A2.22E5
A4.29E5
A7.74E4
A5.36E5
A1.12E5
305.8987 S:9 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,15684.0,5.00%,F,T)
A1.89E6
A1.34E6
A1.05E6
A6.58E5
A6.45E5
A1.10E6
A2.30E5
A5.13E5
A3.53E5
A5.96E5
A6.67E4
A7.33E5
330.9792 S:9 SMO(1,3)
17:27
17:48
18:20
18:38
19:02
19:20
19:40
20:08
20:39
20:56
21:14
21:35
17:00
18:00
19:00
20:00
21:00
22:00
Time

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S19, Date: 13-Sep-2019, Time: 01:52:05, ID: L31654-10,,, Description: 1,WG69303,1.0/20uL

	Name	Sample Size	Resp	Ratio	fails?	RT	pg	DL	%Rec	Noise 1	Noise 2
1	2,3,7,8-TCDF	10.172	2.38e5	0.78	NO	25.40	7.700	0.0200		1.16e3	1.19e3
2	1,2,3,7,8-PeCDF	10.172	1.52e5	1.59	NO	33.78	5.012	0.0450		2.09e3	2.09e3
3	2,3,4,7,8-PeCDF	10.172	1.31e5	1.50	NO	35.55	4.489	0.0453		2.09e3	2.09e3
4	1,2,3,4,7,8-HxCDF	10.172	6.91e5	1.29	NO	41.00	25.453	0.0522		3.49e3	3.69e3
5	1,2,3,6,7,8-HxCDF	10.172	4.48e5	1.27	NO	41.17	15.426	0.0471		3.49e3	3.69e3
6	2,3,4,6,7,8-HxCDF	10.172	1.52e5	1.25	NO	42.15	5.542	0.0446		3.49e3	3.69e3
7	1,2,3,7,8,9-HxCDF	10.172	3.12e4	1.28	NO	43.14	1.176	0.0482		3.49e3	3.69e3
8	1,2,3,4,6,7,8-HpCDF	10.172	8.59e6	1.02	NO	45.60	324.165	0.0625		3.81e3	5.47e3
9	1,2,3,4,7,8,9-HpCDF	10.172	4.91e5	1.04	NO	47.35	22.114	0.0721		3.81e3	5.47e3
10	OCDF	10.172	2.74e7	0.91	NO	50.68	1120.585	0.0660		3.75e3	4.94e3
11	2,3,7,8-TCDD	10.172	4.13e4	0.81	NO	26.62	1.592	0.0355		1.60e3	1.74e3
12	1,2,3,7,8-PeCDD	10.172	7.83e4	0.63	NO	36.36	3.754	0.0564		1.84e3	2.21e3
13	1,2,3,4,7,8-HxCDD	10.172	2.05e5	1.22	NO	42.37	7.436	0.0364		2.97e3	3.13e3
14	1,2,3,6,7,8-HxCDD	10.172	1.12e6	1.22	NO	42.51	42.734	0.0400		2.97e3	3.13e3
15	1,2,3,7,8,9-HxCDD	10.172	4.57e5	1.21	NO	42.95	17.224	0.0386		2.97e3	3.13e3
16	1,2,3,4,6,7,8-HpCDD	10.172	2.19e7	1.01	NO	46.95	1099.143	0.0993		5.76e3	6.32e3
17	OCDD	10.172	1.88e8	0.95	NO	50.60	8913.981	0.6612		6.62e4	8.90e3
18	13C-2,3,7,8-TCDF	10.172	6.56e6	0.78	NO	25.37	155.082	0.0561	78.9	4.27e3	5.04e3
19	13C-1,2,3,7,8-PeCDF	10.172	6.40e6	1.57	NO	33.75	186.206	0.0865	94.7	5.19e3	6.49e3
20	13C-2,3,4,7,8-PeCDF	10.172	6.03e6	1.57	NO	35.52	170.019	0.0839	86.5	5.19e3	6.49e3
21	13C-1,2,3,4,7,8-HxCDF	10.172	4.83e6	0.52	NO	40.99	157.479	0.1611	80.1	1.74e4	1.03e4
22	13C-1,2,3,6,7,8-HxCDF	10.172	5.32e6	0.53	NO	41.15	157.757	0.1466	80.2	1.74e4	1.03e4
23	13C-2,3,4,6,7,8-HxCDF	10.172	4.76e6	0.53	NO	42.14	156.604	0.1626	79.6	1.74e4	1.03e4
24	13C-1,2,3,7,8,9-HxCDF	10.172	4.95e6	0.52	NO	43.10	183.257	0.1828	93.2	1.74e4	1.03e4
25	13C-1,2,3,4,6,7,8-HpCDF	10.172	4.17e6	0.45	NO	45.58	165.061	0.0832	84.0	7.11e3	4.64e3
26	13C-1,2,3,4,7,8,9-HpCDF	10.172	3.48e6	0.45	NO	47.33	169.951	0.1026	86.4	7.11e3	4.64e3
27	13C-2,3,7,8-TCDD	10.172	4.63e6	0.77	NO	26.61	172.212	0.1434	87.6	7.37e3	7.79e3
28	13C-1,2,3,7,8-PeCDD	10.172	4.15e6	0.63	NO	36.33	194.243	0.0861	98.8	4.55e3	2.68e3
29	13C-1,2,3,4,7,8-HxCDD	10.172	5.26e6	1.27	NO	42.36	215.112	0.0799	109.4	4.90e3	6.05e3
30	13C-1,2,3,6,7,8-HxCDD	10.172	5.46e6	1.26	NO	42.49	202.029	0.0723	102.8	4.90e3	6.05e3
31	13C-1,2,3,4,6,7,8-HpCDD	10.172	5.04e6	1.05	NO	46.93	183.985	0.0577	93.6	4.72e3	4.12e3
32	13C-OCDD	10.172	8.43e6	0.89	NO	50.59	418.873	0.0567	106.5	3.49e3	2.90e3
33	13C-1,2,3,4-TCDD	10.172	5.46e6	0.77	NO	26.22	13.335	0.0094	6.8	7.37e3	7.79e3
34	13C-1,2,3,7,8,9-HxCDD	10.172	4.97e6	1.29	NO	42.93	16.816	0.0066	8.6	4.90e3	6.05e3
35	37Cl-2,3,7,8-TCDD	10.172	5.61e5			26.62	18.940	0.0300	96.3		3.50e3
36	Total Tetra-Furans	10.172					52.448	0.0200			1.19e3
37	Total Tetra-Dioxins	10.172					12.017	0.0355			1.74e3
38	Total Penta-Furans	10.172					111.318	0.0456			2.09e3
39	Total Penta-Dioxins	10.172					42.001	0.0564			2.21e3
40	Total Hexa-Furans	10.172					374.089	0.0474			3.69e3
41	Total Hexa-Dioxins	10.172					224.898	0.0365			3.13e3
42	Total Hepta-Furans	10.172					1353.372	0.0669			5.47e3
43	Total Hepta-Dioxins	10.172					2167.564	0.0993			6.32e3
44	Hexa DPE	1.000	4.05e2			26.51					2.08e3
45	Hepta DPE	1.000	4.53e2			37.21					2.06e2
46	Octa DPE	1.000	6.01e2			43.78					2.10e3
47	Nona DPE	1.000	9.03e3			48.35					3.41e3
48	Deca DPE	1.000	4.11e2			50.62					7.93e2
49	Tetra Lock	1.000	8.12e3			21.22					1.24e5
50	Penta Lock	1.000	9.85e3			32.49					1.08e5
51	Hexa Lock	1.000	2.86e5			38.99					2.86e5
52	Hepta Lock	1.000	9.21e3			44.81					1.60e5
53	Octa Lock	1.000									1.22e5
54	13C-Tetra-Furans	10.172					155.082	0.0561			5.04e3
55	13C-Tetra-Dioxins	10.172					185.547	0.1528			7.79e3

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

SV 1st 22 Sept. 2019

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S19, Date: 13-Sep-2019, Time: 01:52:05, ID: L31654-10,,, Description: 1,WG69303,1.0/20uL

Tetrafurans

	RT	Ratio	Fails?	pg
1	24.67	0.823	NO	5.298
2	24.30	0.793	NO	1.475
3	24.24	0.805	NO	3.243
4	23.95	0.792	NO	1.158
5	23.80	0.769	NO	0.724
6	23.52	0.759	NO	10.175
7	23.08	0.772	NO	7.161
8	22.65	0.787	NO	4.186
9	22.35	0.783	NO	2.208
10	22.03	0.788	NO	1.262
11	21.48	1.090	YES	0.049
12	28.26	0.812	NO	0.433
13	26.64	0.621	YES	0.073
14	26.39	0.762	NO	3.475
15	26.07	0.758	NO	1.948
16	25.40	0.783	NO	7.700
17	25.04	0.784	NO	1.880

Tetradioxins

	RT	Ratio	Fails?	pg
1	24.80	0.784	NO	1.890
2	23.85	0.795	NO	0.882
3	23.47	0.772	NO	1.482
4	23.03	0.699	NO	1.634
5	28.43	0.617	YES	0.250
6	27.22	0.847	NO	0.477
7	26.62	0.812	NO	1.592
8	26.44	0.772	NO	1.622
9	26.21	0.742	NO	0.514
10	25.72	0.802	NO	0.633
11	25.34	1.121	YES	0.638
12	25.17	0.836	NO	0.242
13	25.00	0.749	NO	0.161

Pentafurans

	RT	Ratio	Fails?	pg
1	35.55	1.504	NO	4.489
2	34.45	1.612	NO	3.554
3	34.13	1.840	YES	1.145
4	33.78	1.593	NO	5.012
5	33.58	1.473	NO	1.480
6	33.14	1.520	NO	8.737
7	32.65	1.335	NO	0.589
8	32.49	1.974	YES	0.481
9	32.12	1.558	NO	1.995
10	31.74	1.513	NO	33.142
11	31.37	1.593	NO	0.691
12	29.12	1.552	NO	42.850
13	37.28	1.630	NO	0.362
14	35.78	1.534	NO	6.338
15	35.43	1.824	YES	0.453

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S19, Date: 13-Sep-2019, Time: 01:52:05, ID: L31654-10,,, Description: 1,WG69303,1.0/20uL

Pentadioxins

	RT	Ratio	Fails?	pg
1	33.37	0.627	NO	3.022
2	32.29	0.615	NO	14.217
3	37.21	0.591	NO	1.329
4	36.65	0.564	NO	0.762
5	36.36	0.629	NO	3.754
6	35.88	1.287	YES	0.161
7	35.67	0.816	YES	0.508
8	35.27	0.675	NO	2.414
9	35.07	0.684	NO	2.820
10	34.70	0.686	NO	2.614
11	34.38	0.638	NO	4.416
12	34.05	0.606	NO	5.986

Hexafurans

	RT	Ratio	Fails?	pg
1	39.28	1.260	NO	28.617
2	43.26	1.262	NO	3.503
3	43.14	1.282	NO	1.176
4	42.15	1.248	NO	5.542
5	41.95	1.267	NO	8.576
6	41.78	2.214	YES	0.120
7	41.66	1.128	NO	0.373
8	41.58	1.390	NO	1.256
9	41.17	1.265	NO	15.426
10	41.00	1.291	NO	25.453
11	40.33	1.250	NO	184.402
12	40.02	1.218	NO	2.488
13	39.75	1.265	NO	0.411
14	39.53	1.243	NO	93.569
15	40.93	1.191	NO	3.178

Hexadioxins

	RT	Ratio	Fails?	pg
1	42.95	1.205	NO	17.224
2	42.51	1.220	NO	42.734
3	42.37	1.222	NO	7.436
4	41.70	1.314	NO	2.375
5	41.49	1.214	NO	85.279
6	41.10	1.242	NO	7.894
7	40.31	1.225	NO	61.956

Heptafurans

	RT	Ratio	Fails?	pg
1	45.60	1.024	NO	324.165
2	47.35	1.037	NO	22.114
3	46.09	1.041	NO	1003.883
4	45.88	0.892	YES	3.209

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S19, Date: 13-Sep-2019, Time: 01:52:05, ID: L31654-10,,, Description: 1,WG69303,1.0/20uL

Heptadioxins

	RT	Ratio	Fails?	pg
1	46.95	1.012	NO	1099.143
2	46.04	1.024	NO	1068.421

13C-TF

	RT	Ratio	Fails?	pg
1	25.37	0.780	NO	155.082

13C-TD

	RT	Ratio	Fails?	pg
1	26.61	0.772	NO	172.212
2	26.22	0.774	NO	13.335

13C-PF

	RT	Ratio	Fails?	pg
1	35.52	1.572	NO	170.019
2	33.75	1.575	NO	186.206

13C-PD

	RT	Ratio	Fails?	pg
1	36.33	0.626	NO	194.243

13C-HxF

	RT	Ratio	Fails?	pg
1	41.15	0.526	NO	157.757
2	40.99	0.520	NO	157.479
3	43.10	0.521	NO	183.257
4	42.14	0.526	NO	156.604

13C-HxD

	RT	Ratio	Fails?	pg
1	42.93	1.294	NO	16.816
2	42.49	1.263	NO	202.029
3	42.36	1.271	NO	215.112

13C-HpF

	RT	Ratio	Fails?	pg
1	47.33	0.450	NO	169.951
2	45.58	0.454	NO	165.061

13C-HpD

	RT	Ratio	Fails?	pg
1	46.93	1.050	NO	183.985

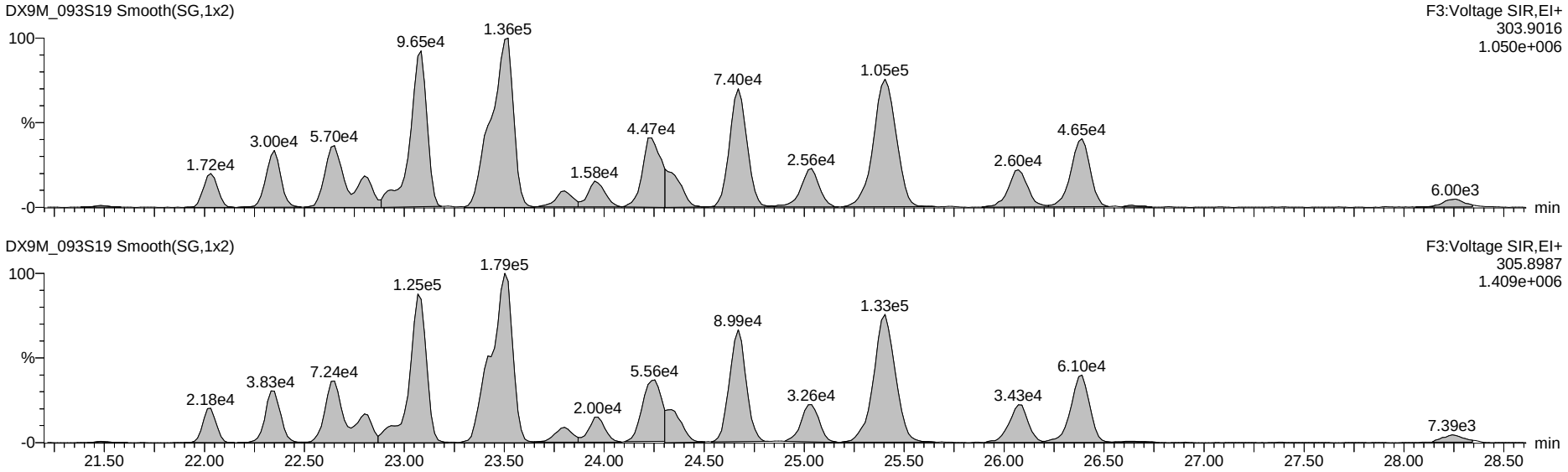
PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

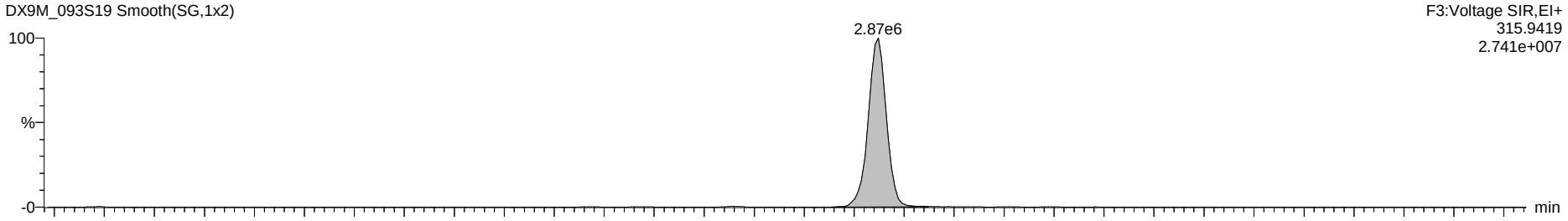
Method: G:\Masslynx\Inst_M\Exported_methods\DX_1613B_16.mdb 07 Sep 2017 16:45:23
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

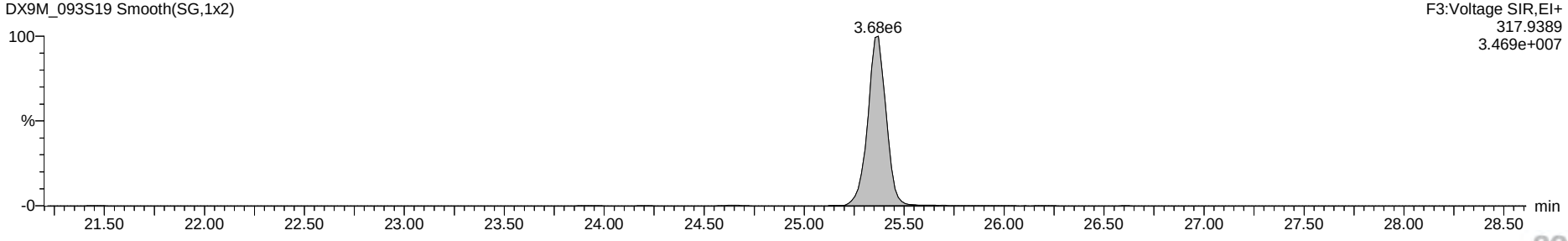
Name: DX9M_093S19, Date: 13-Sep-2019, Time: 01:52:05, ID: L31654-10,,, Description: 1,WG69303,1.0/20uL

Total Tetra-Furans



13C-Tetra-Furans

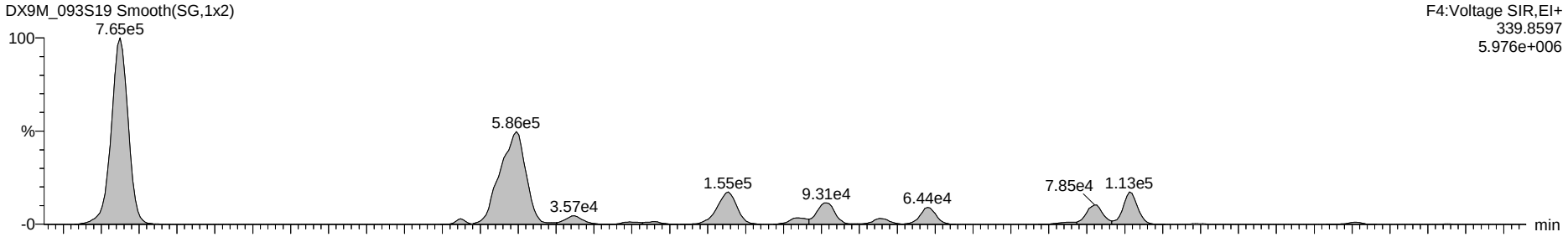


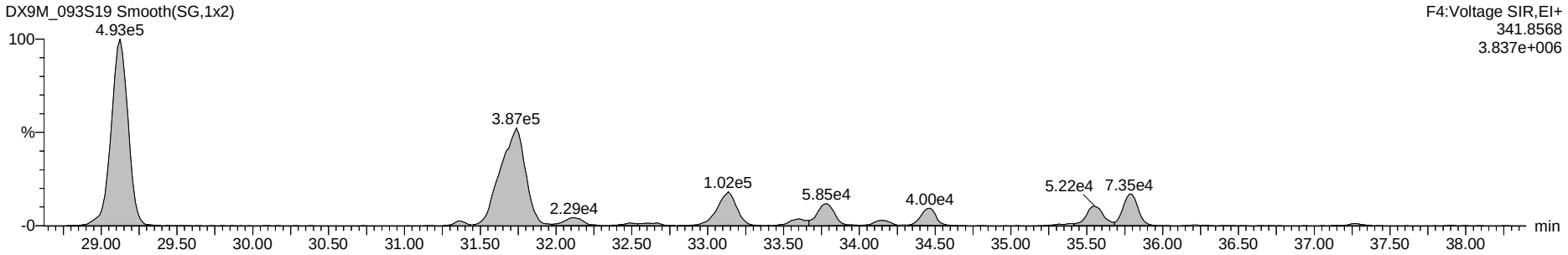


Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

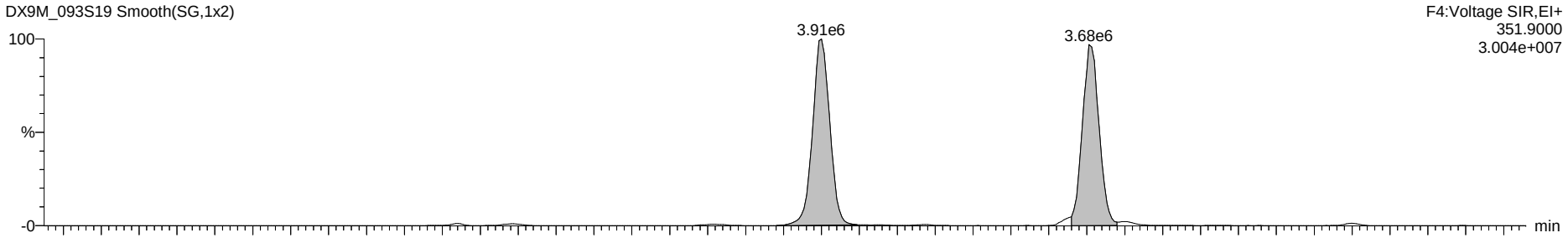
Name: DX9M_093S19, Date: 13-Sep-2019, Time: 01:52:05, ID: L31654-10,,, Description: 1,WG69303,1.0/20uL

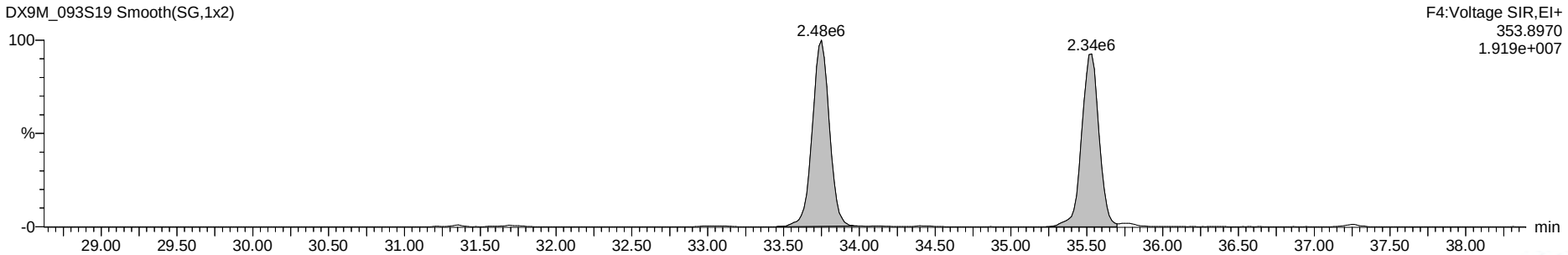
Total Penta-Furans





13C-Penta-Furans

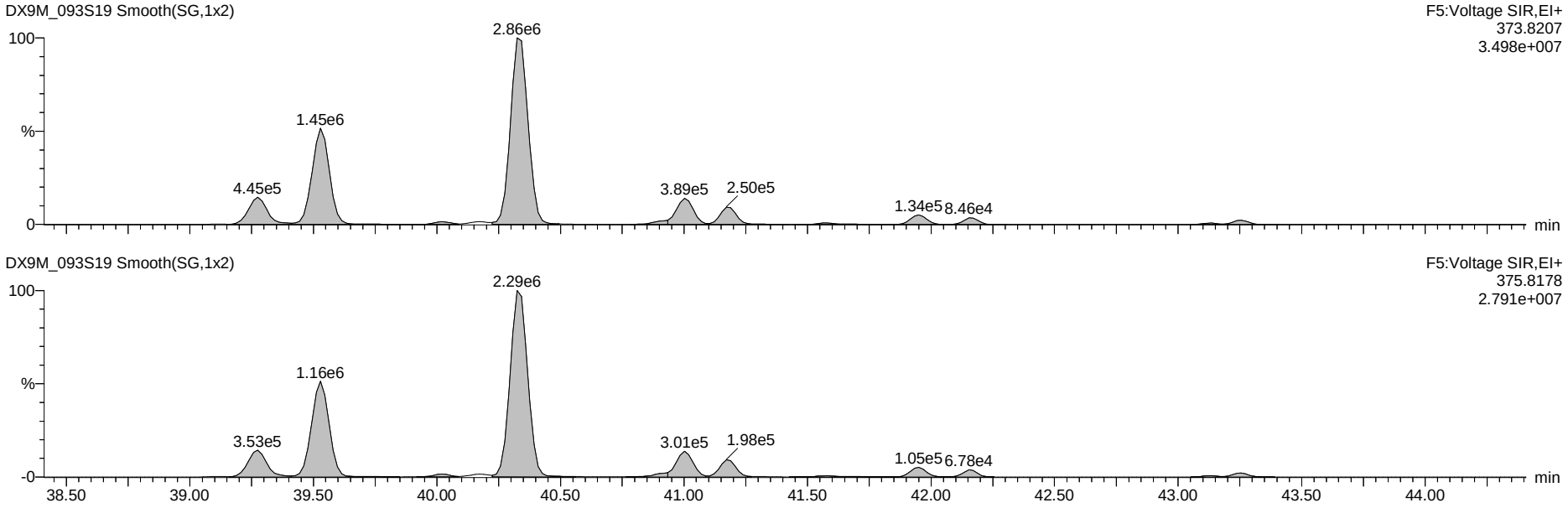




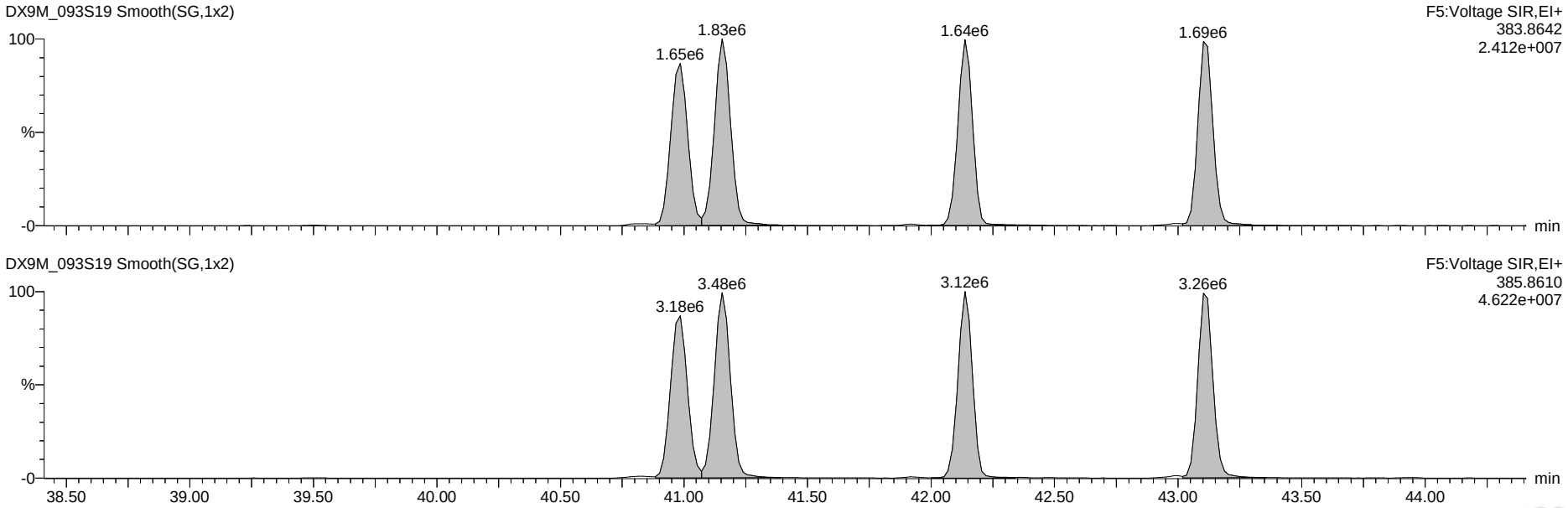
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S19, Date: 13-Sep-2019, Time: 01:52:05, ID: L31654-10,,, Description: 1,WG69303,1.0/20uL

Total Hexa-Furans



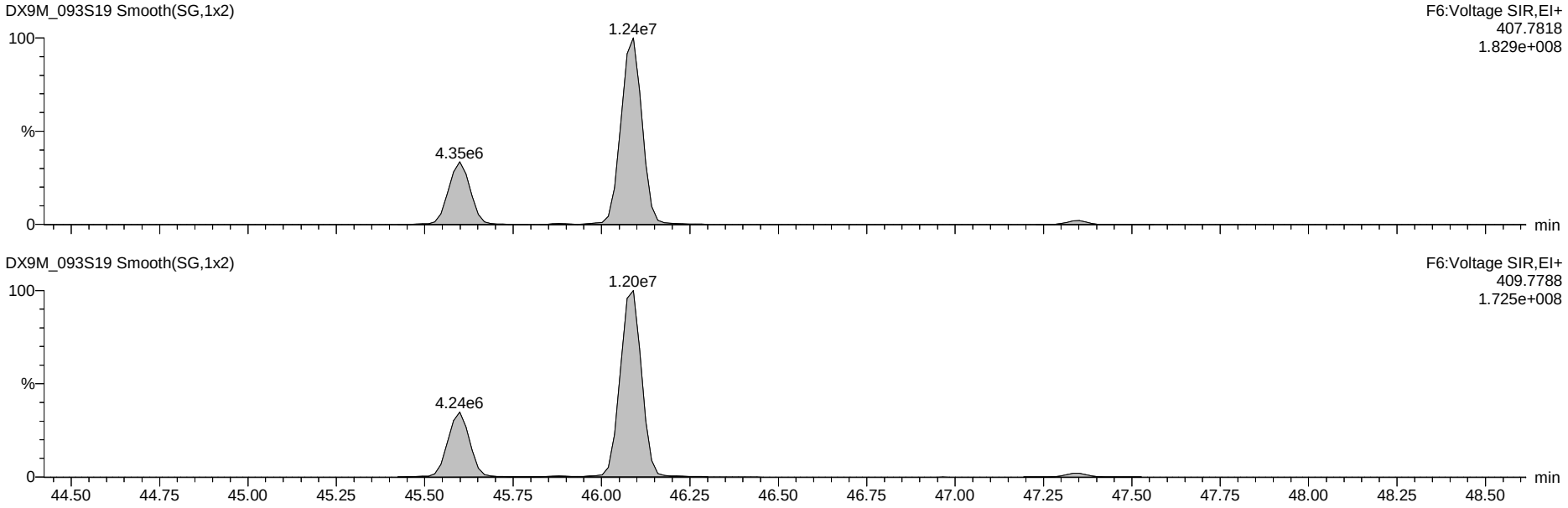
13C-Hexa-Furans



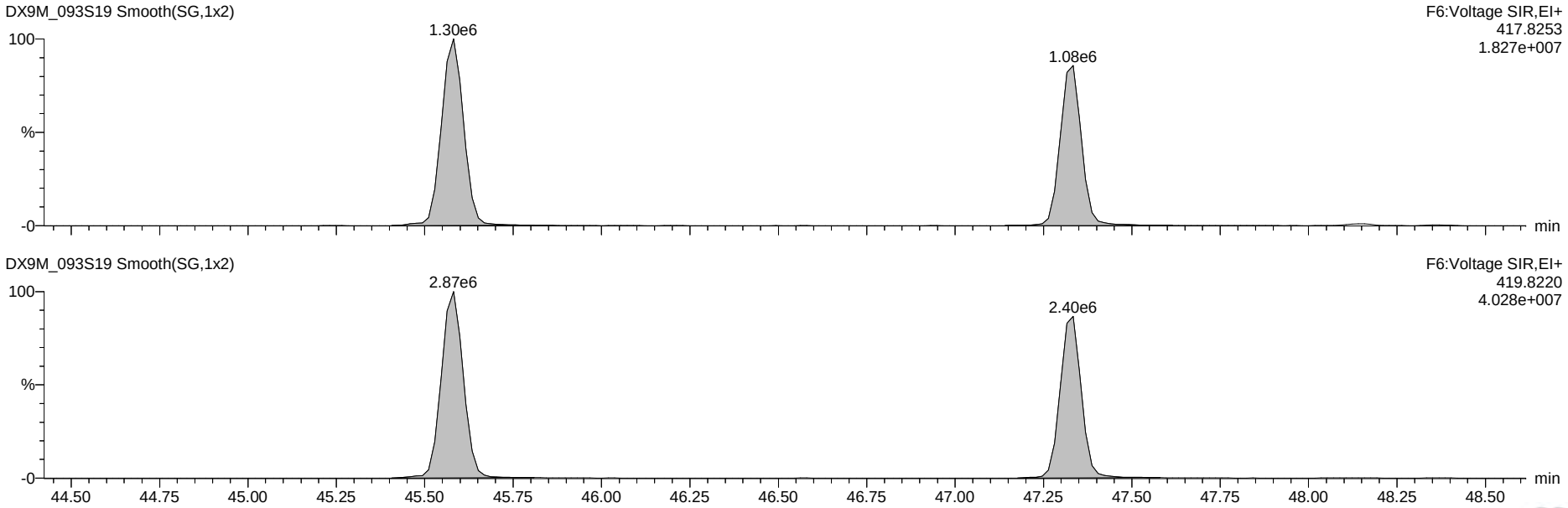
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S19, Date: 13-Sep-2019, Time: 01:52:05, ID: L31654-10,,, Description: 1,WG69303,1.0/20uL

Total Hepta-Furans



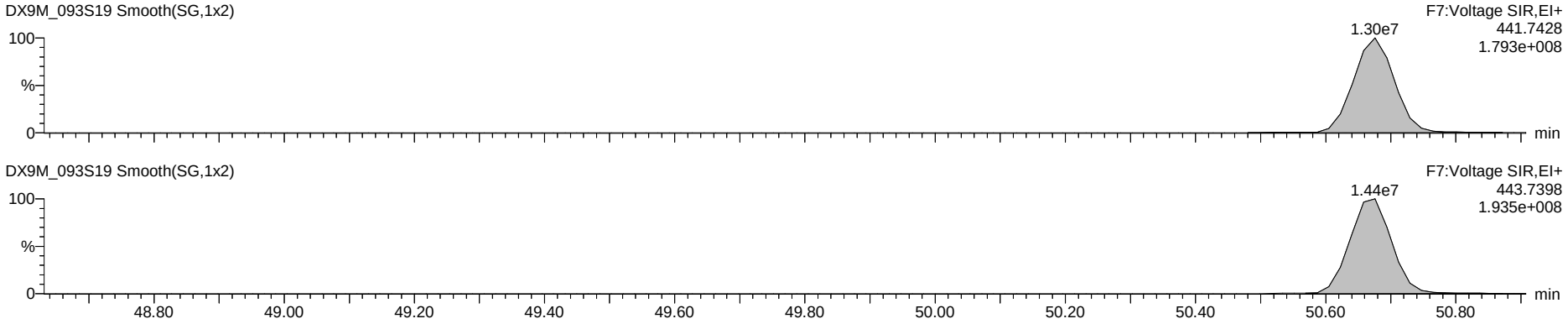
13C-Hepta-Furans



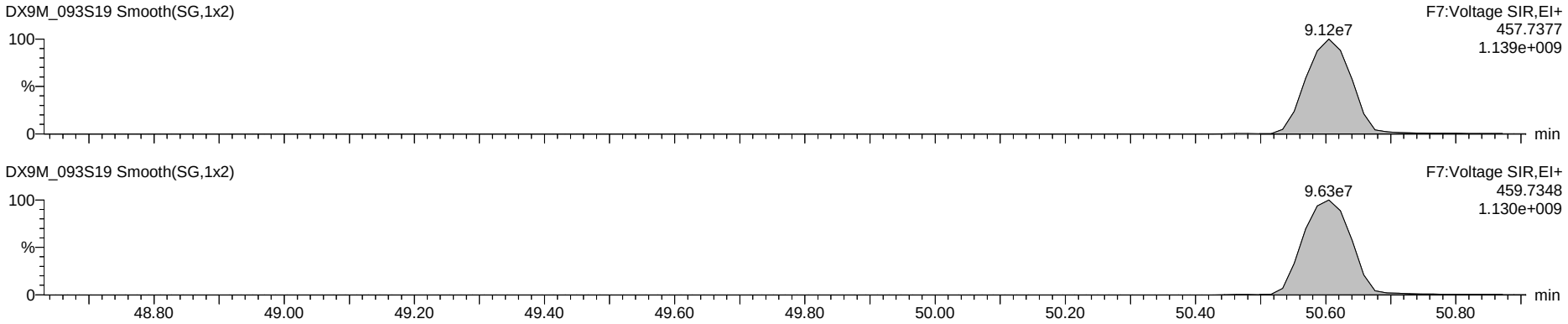
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S19, Date: 13-Sep-2019, Time: 01:52:05, ID: L31654-10,,, Description: 1,WG69303,1.0/20uL

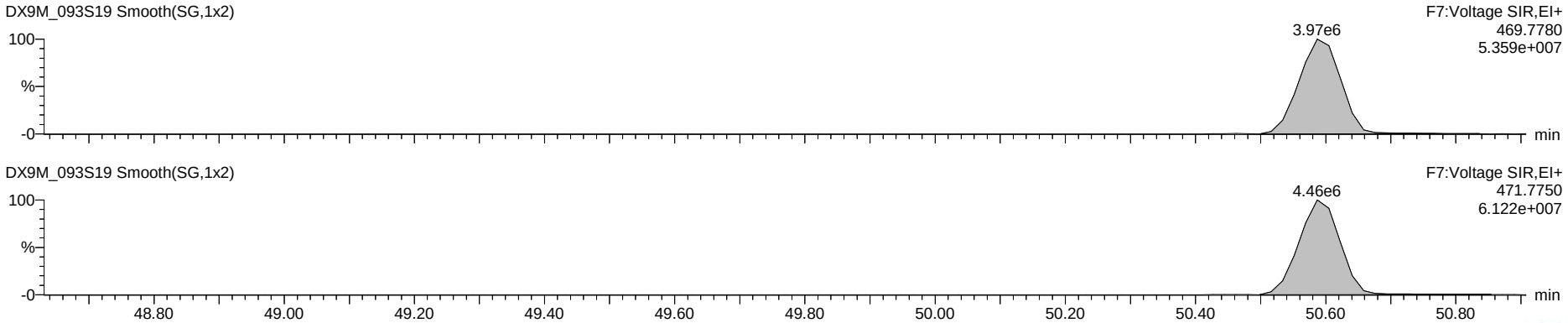
OCDF



OCDD



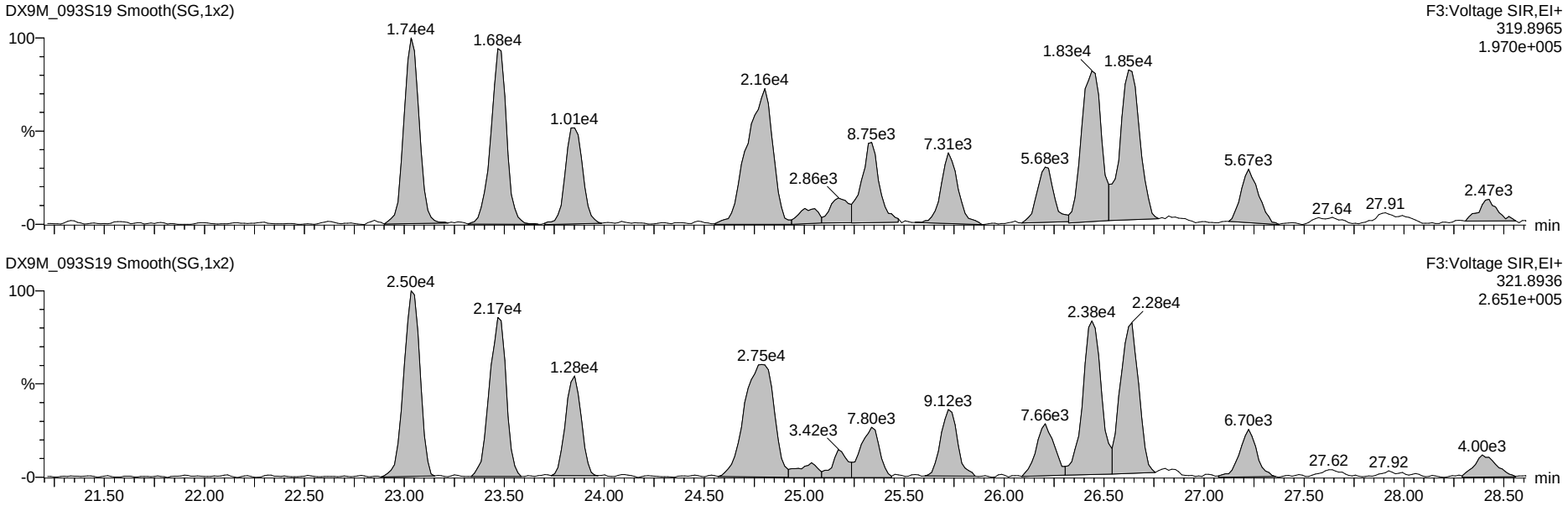
13C-OCDD



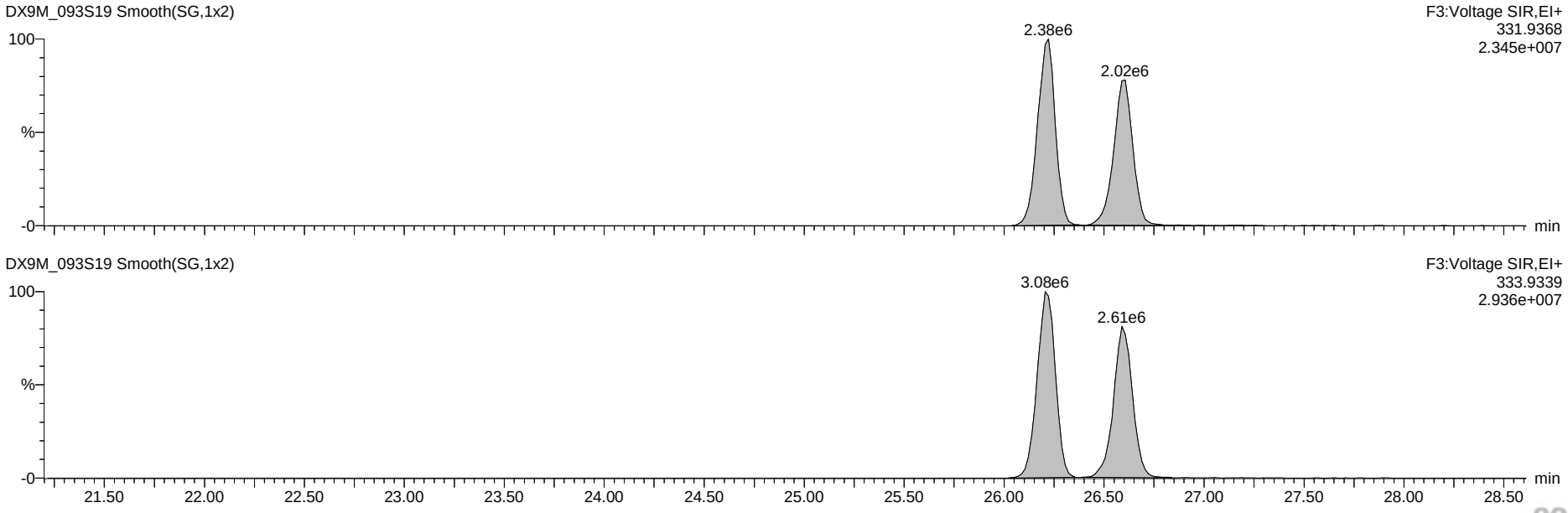
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S19, Date: 13-Sep-2019, Time: 01:52:05, ID: L31654-10,,, Description: 1,WG69303,1.0/20uL

Total Tetra-Dioxins



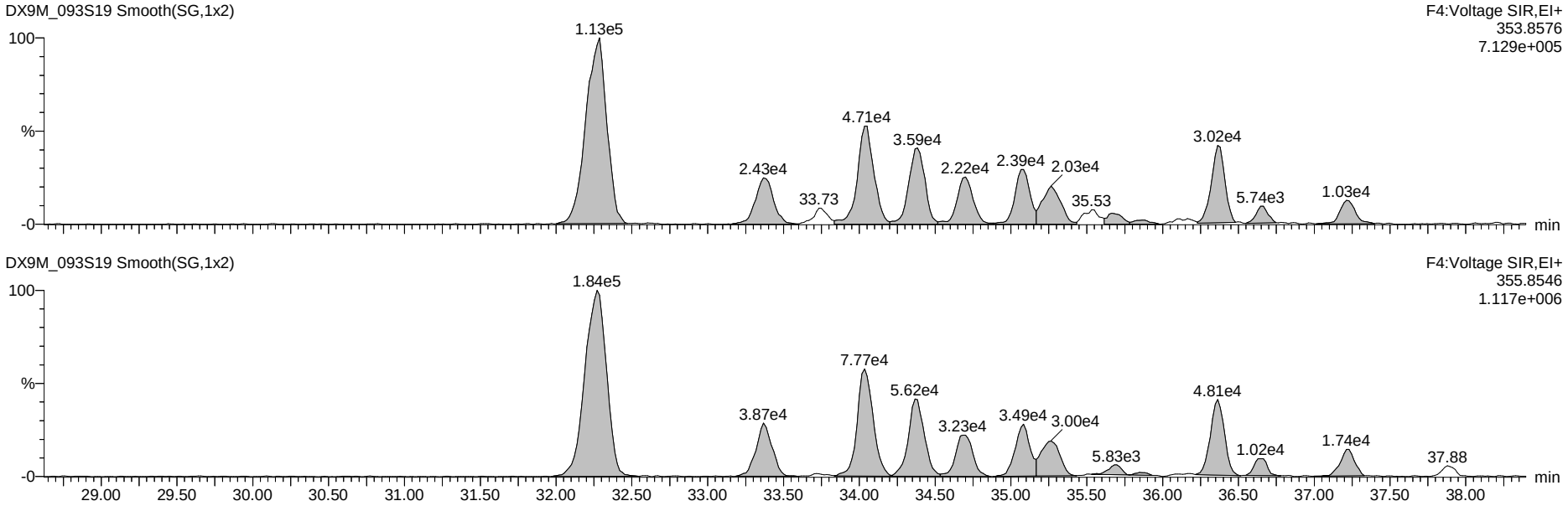
13C-Tetra-Dioxins



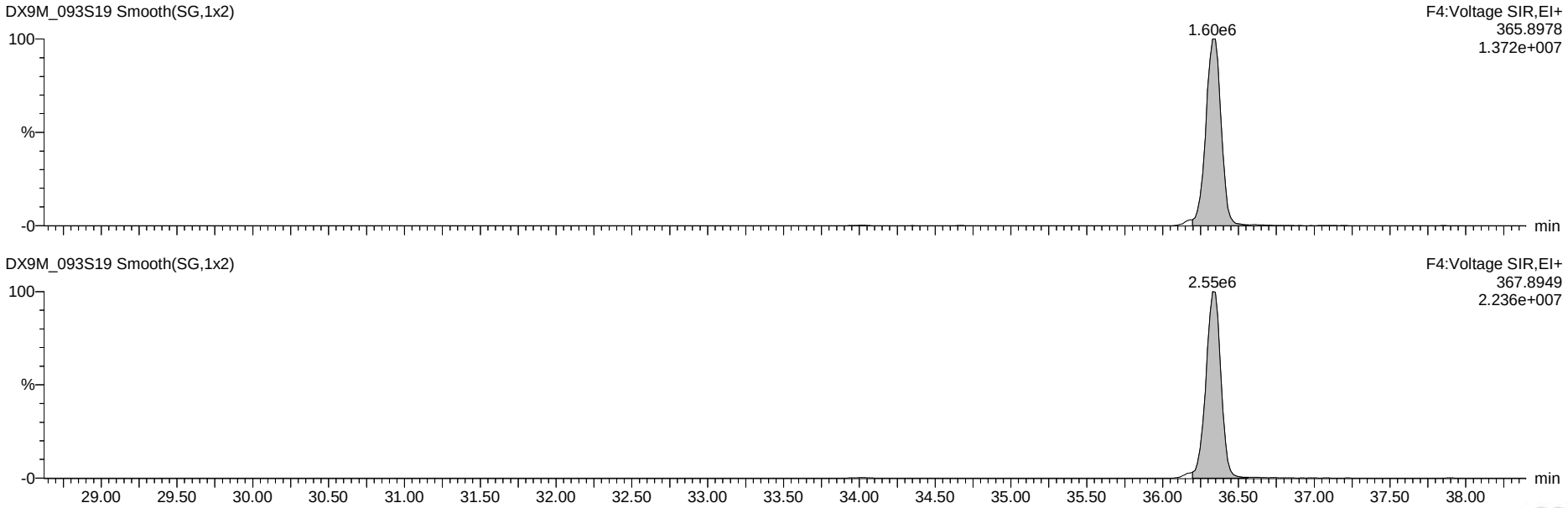
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S19, Date: 13-Sep-2019, Time: 01:52:05, ID: L31654-10,,, Description: 1,WG69303,1.0/20uL

Total Penta-Dioxins



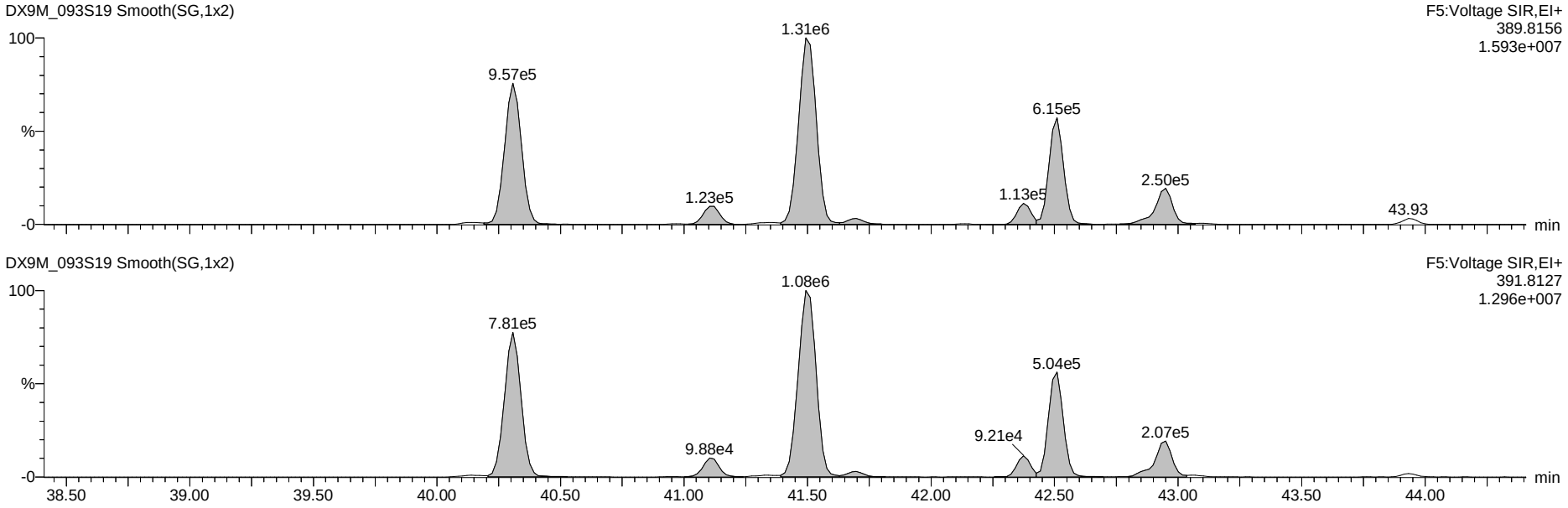
13C-Penta-Dioxins



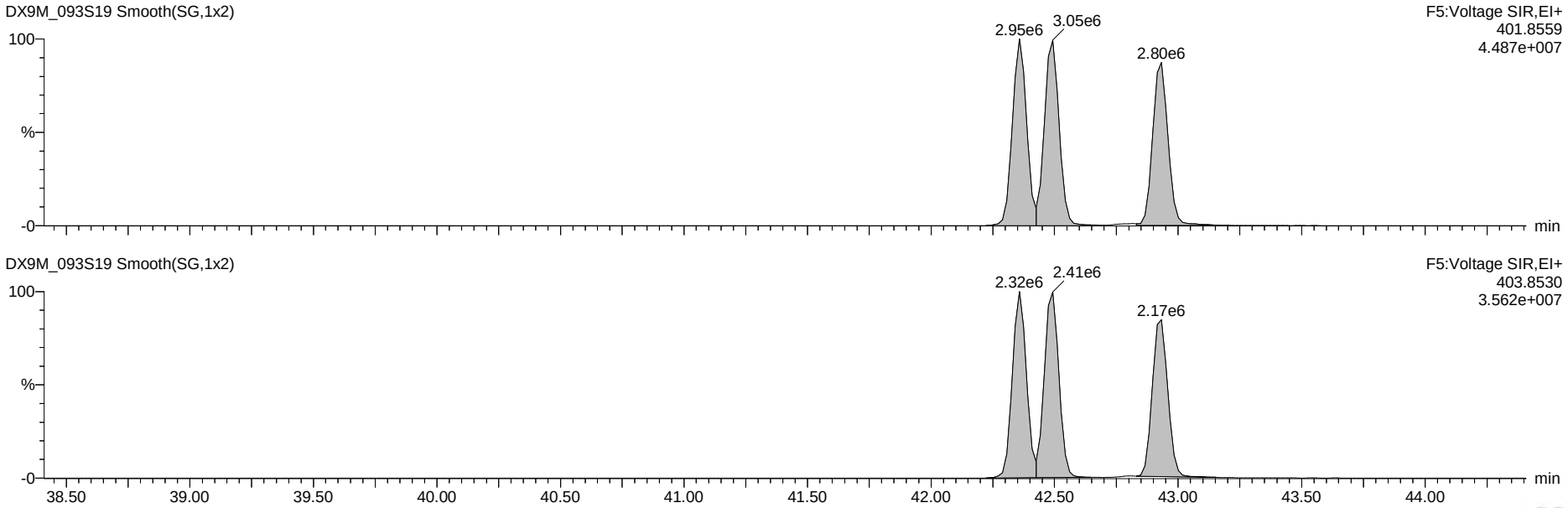
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S19, Date: 13-Sep-2019, Time: 01:52:05, ID: L31654-10,,, Description: 1,WG69303,1.0/20uL

Total Hexa-Dioxins



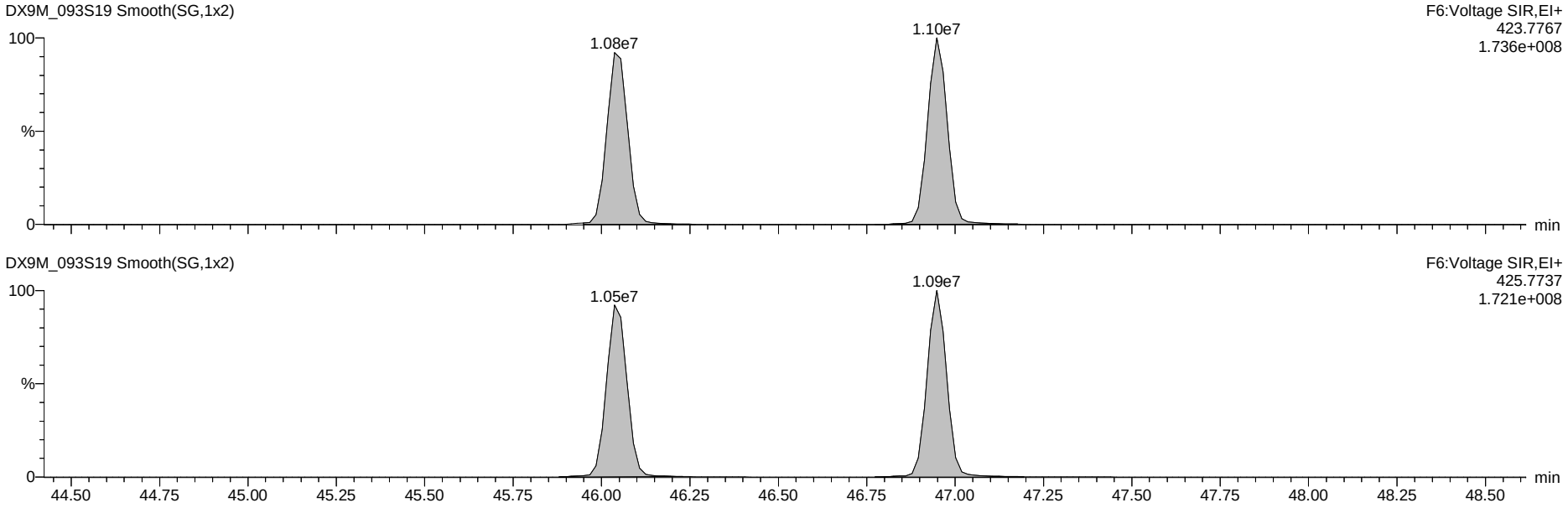
13C-Hexa-Dioxins



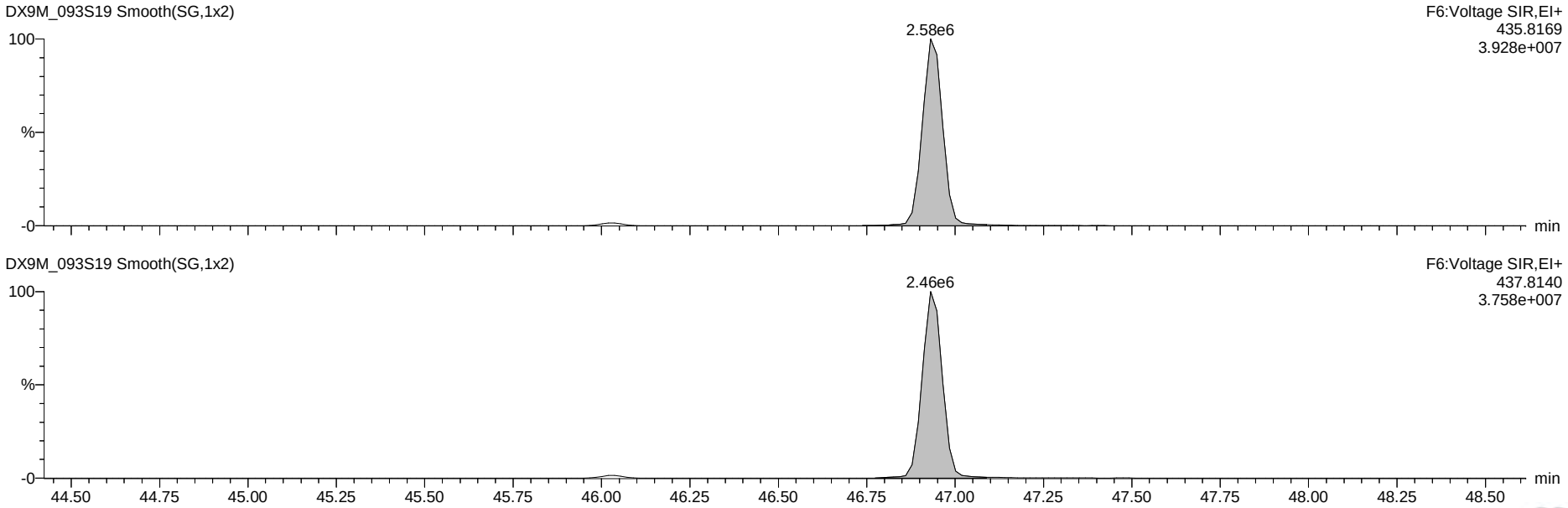
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S19, Date: 13-Sep-2019, Time: 01:52:05, ID: L31654-10,,, Description: 1,WG69303,1.0/20uL

Total Hepta-Dioxins



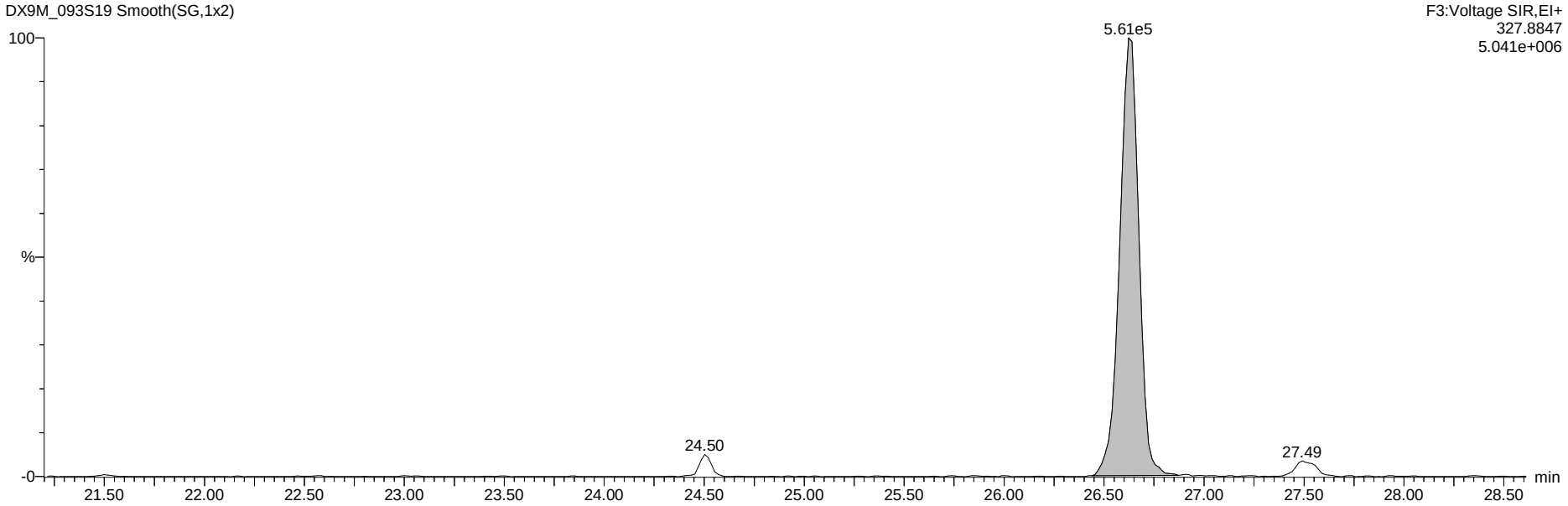
13C-Hepta-Dioxins



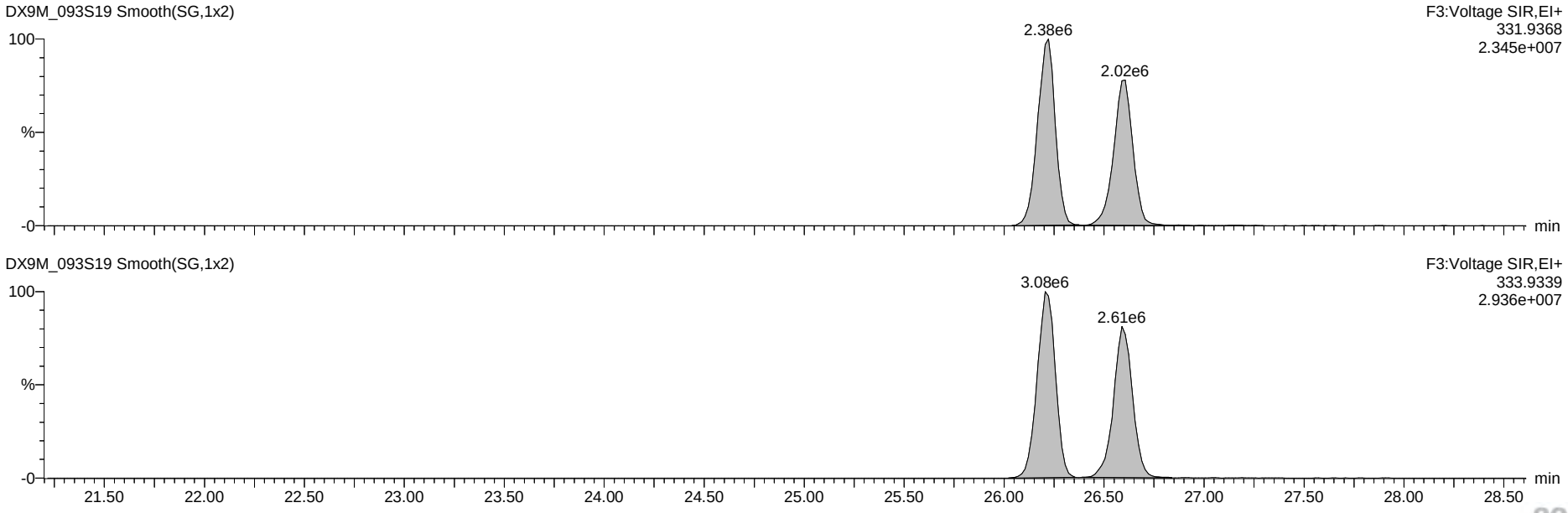
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S19, Date: 13-Sep-2019, Time: 01:52:05, ID: L31654-10,,, Description: 1,WG69303,1.0/20uL

37Cl-2,3,7,8-TCDD



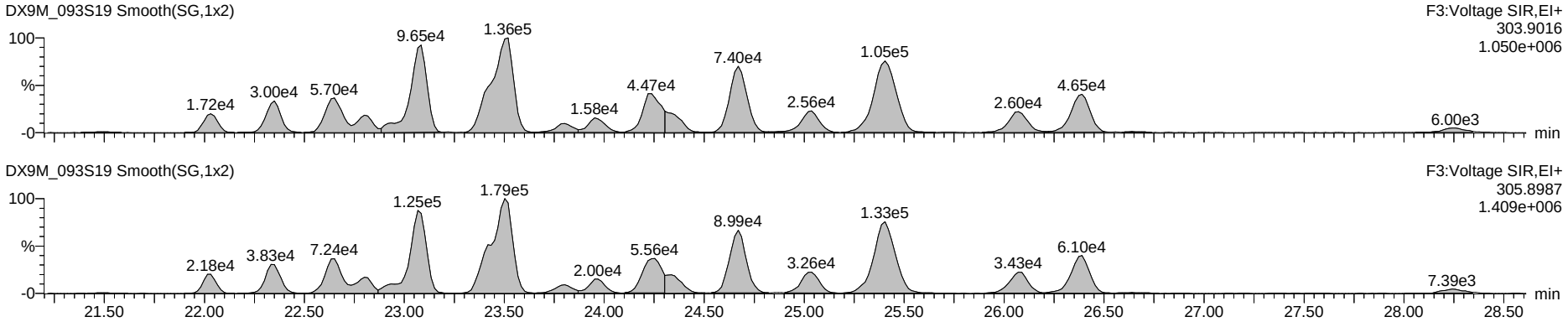
13C-Tetra-Dioxins



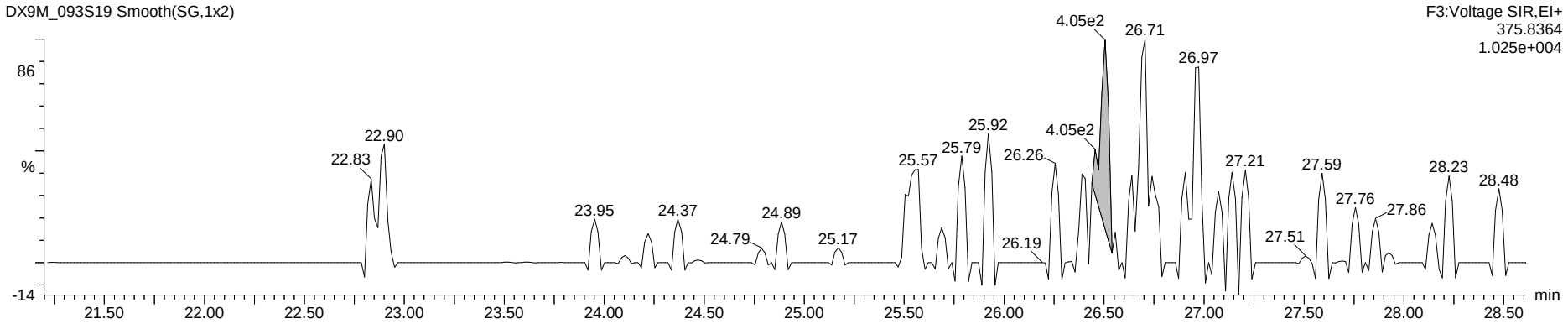
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S19, Date: 13-Sep-2019, Time: 01:52:05, ID: L31654-10,,, Description: 1,WG69303,1.0/20uL

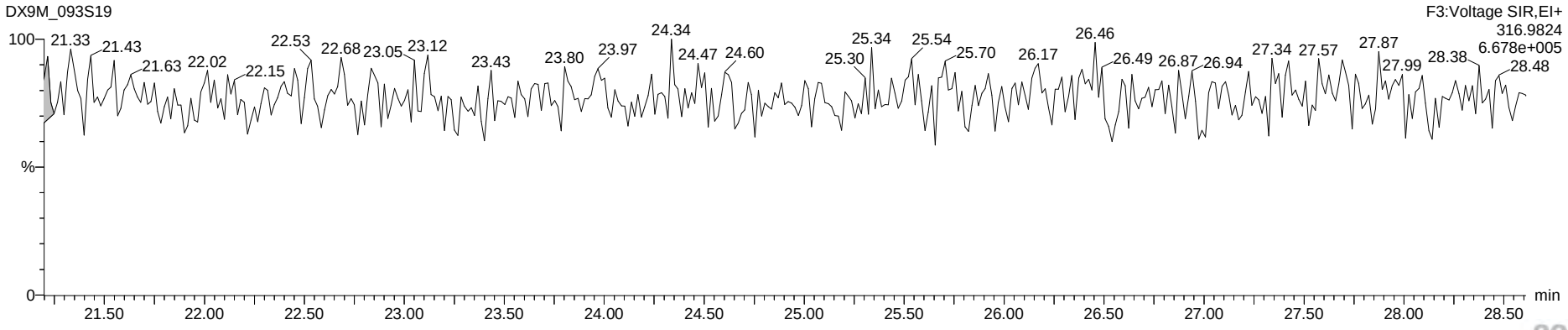
Total Tetra-Furans



Hexa DPE



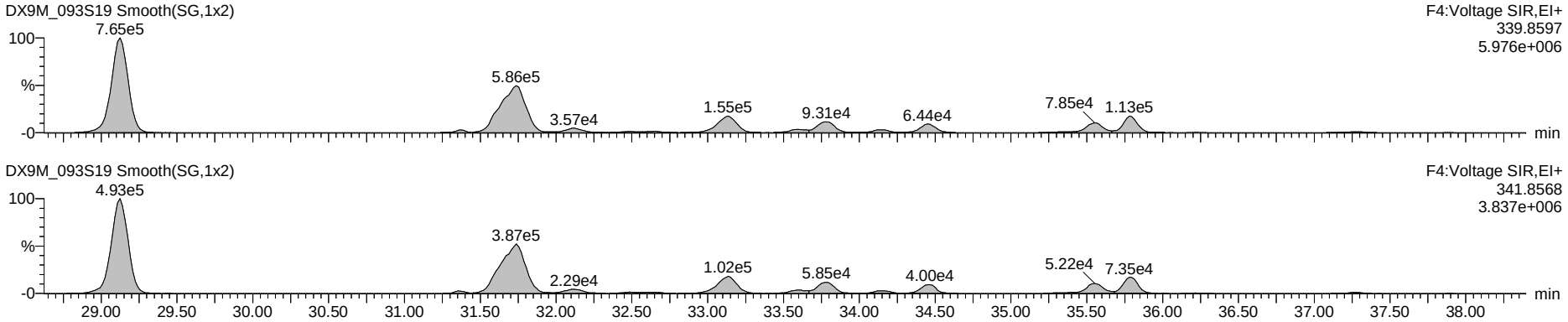
Tetra Lock



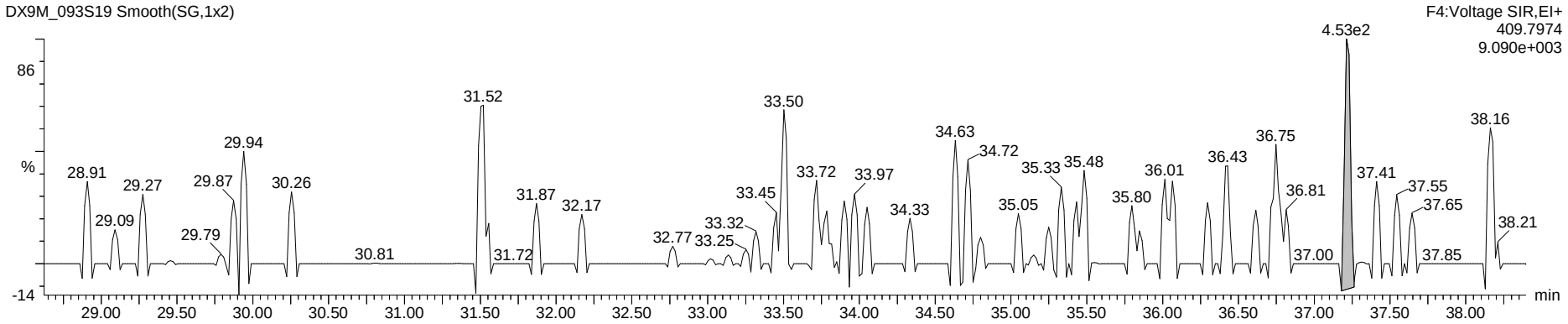
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S19, Date: 13-Sep-2019, Time: 01:52:05, ID: L31654-10,,, Description: 1,WG69303,1.0/20uL

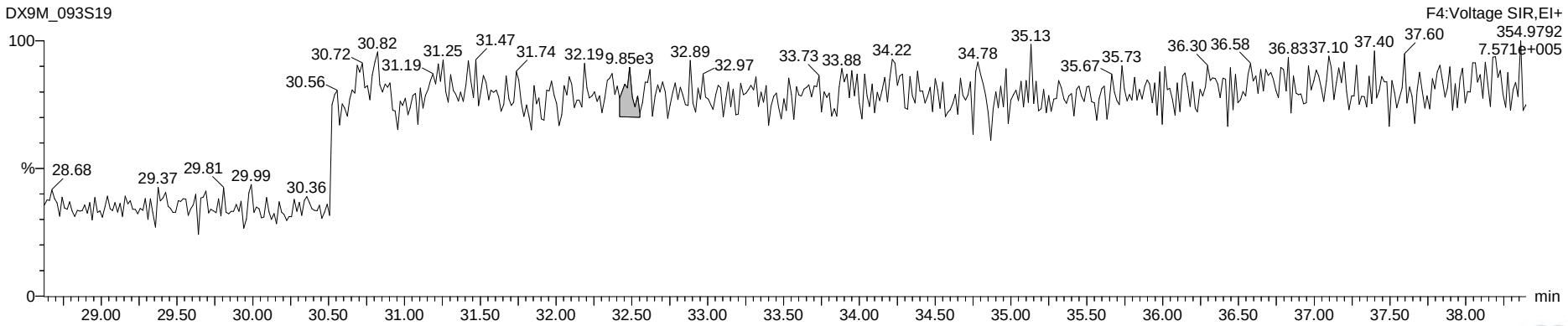
Total Penta-Furans



Hepta DPE



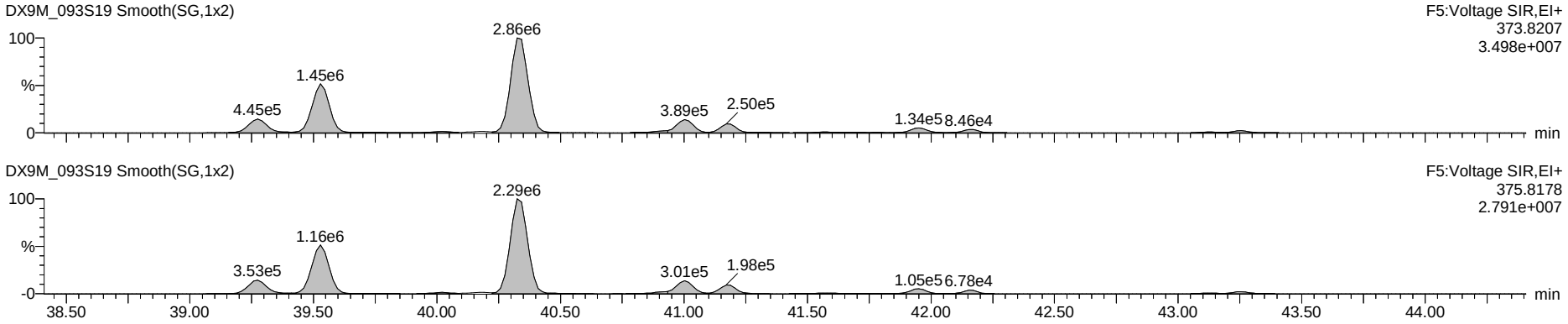
Penta Lock



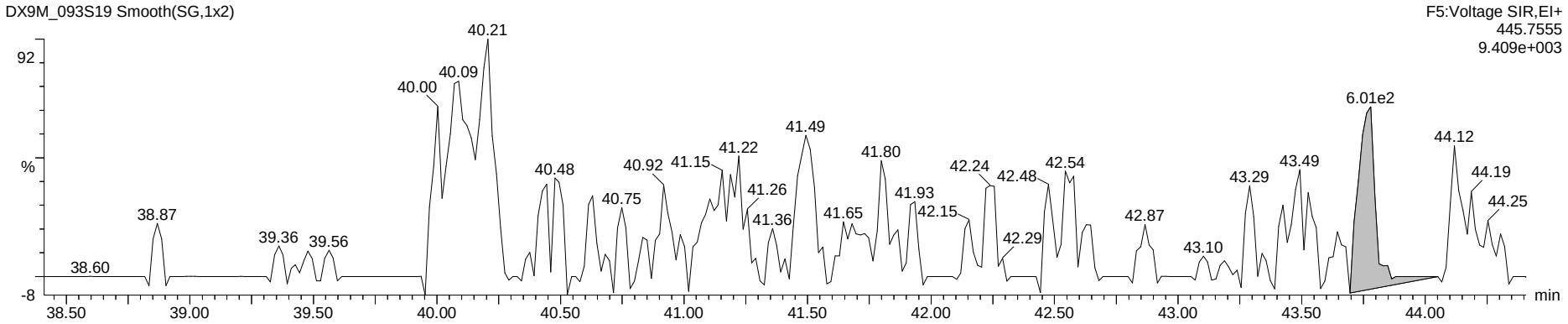
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S19, Date: 13-Sep-2019, Time: 01:52:05, ID: L31654-10,,, Description: 1,WG69303,1.0/20uL

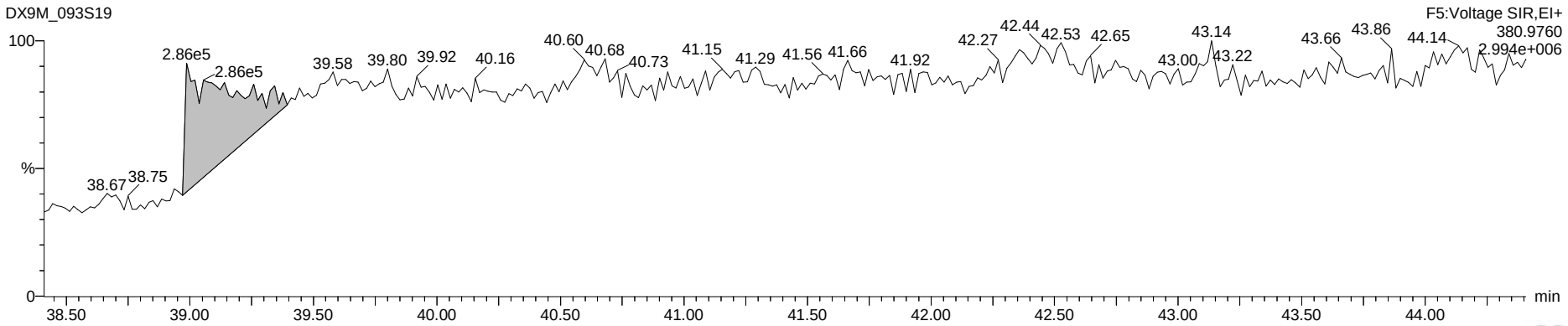
Total Hexa-Furans



Octa DPE



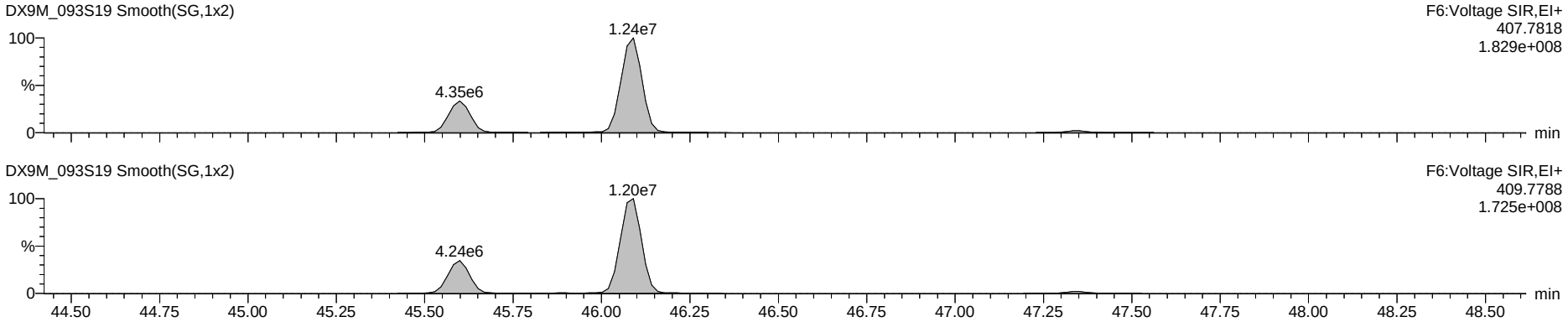
Hexa Lock



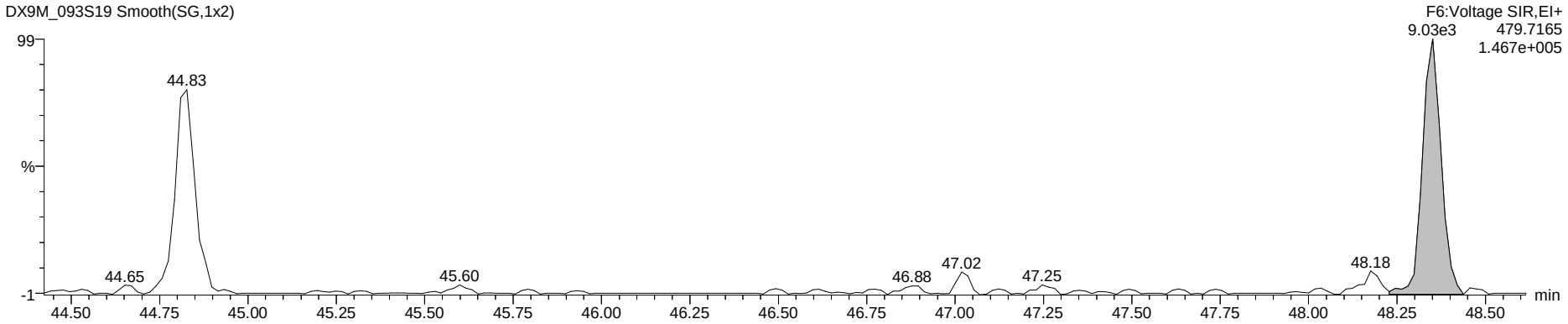
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S19, Date: 13-Sep-2019, Time: 01:52:05, ID: L31654-10,,, Description: 1,WG69303,1.0/20uL

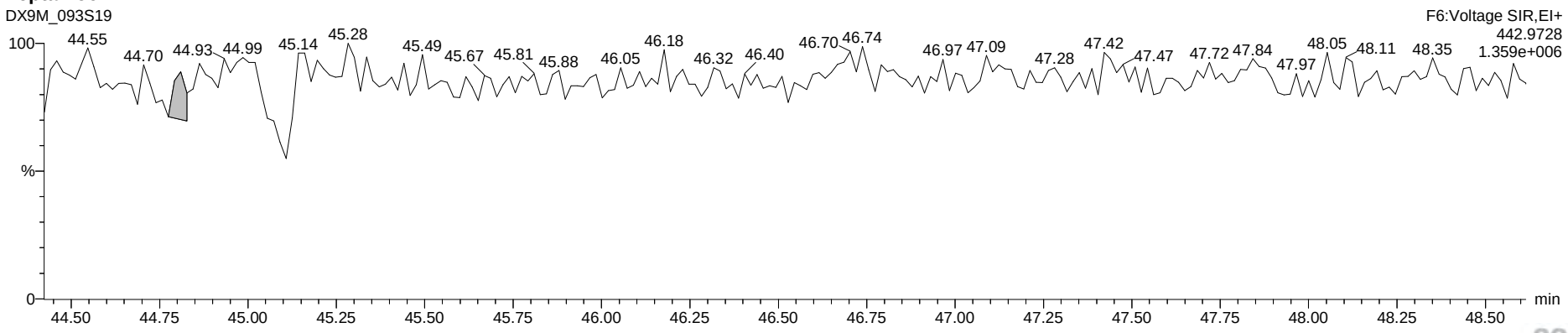
Total Hepta-Furans



Nona DPE



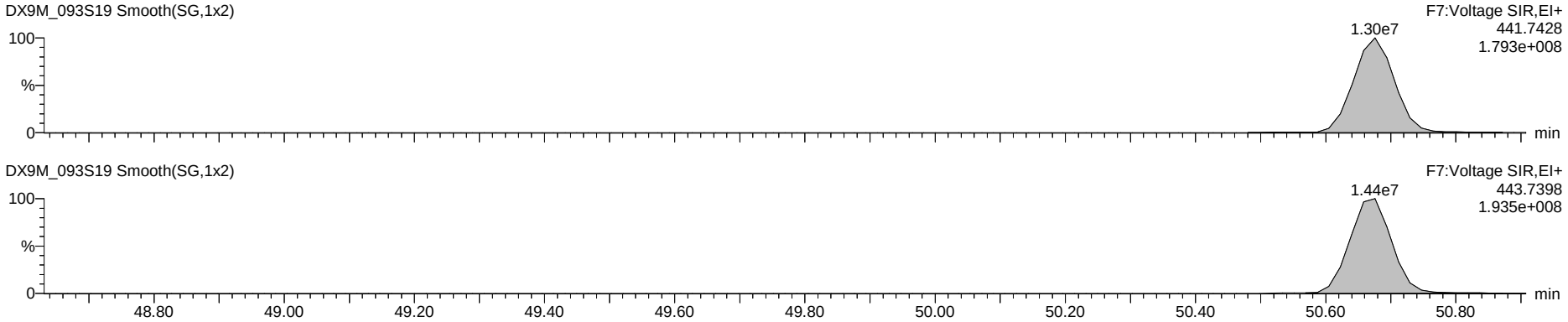
Hepta Lock



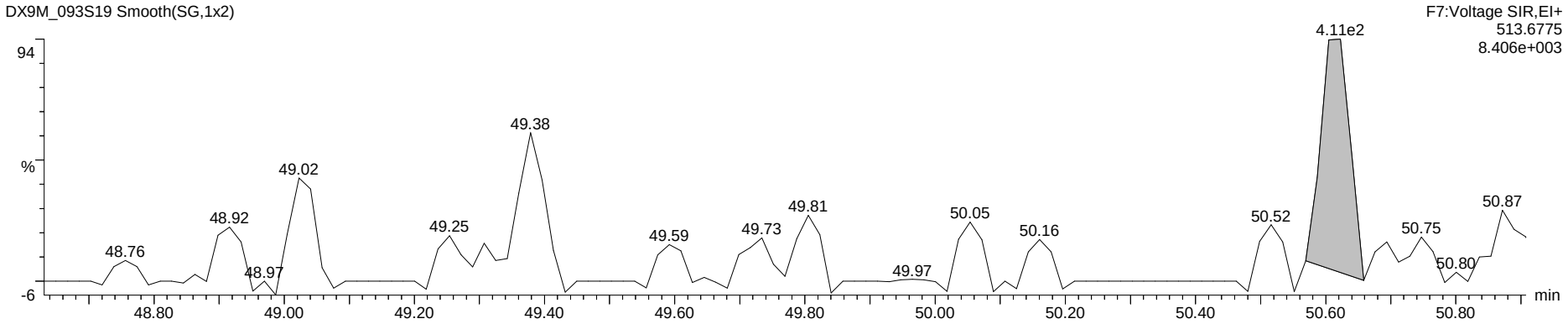
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S19, Date: 13-Sep-2019, Time: 01:52:05, ID: L31654-10,,, Description: 1,WG69303,1.0/20uL

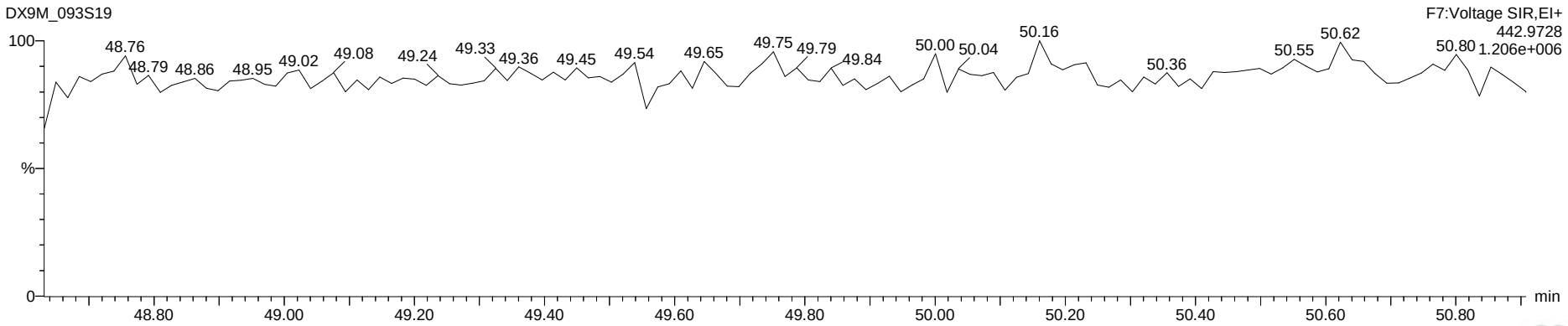
OCDF



Deca DPE



Octa Lock



Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

Name: DX9M_095AS14, Date: 17-Sep-2019, Time: 21:43:45, ID: L31654-10,W,, Description: 5,WG69303,1.0/100uL

	Name	Sample Size	Resp	Ratio	fails?	RT	pg	DL	%Rec	Noise 1	Noise 2
1	2,3,7,8-TCDF	10.172	3.15e4	1.05	YES	25.27	6.217	0.1089		9.59e2	1.43e3
2	1,2,3,7,8-PeCDF	10.172	2.44e4	1.76	NO	33.57	4.947	0.1558		1.17e3	1.55e3
3	2,3,4,7,8-PeCDF	10.172	2.35e4	1.54	NO	35.35	4.603	0.1320		1.17e3	1.55e3
4	1,2,3,4,7,8-HxCDF	10.172	1.27e5	1.21	NO	40.77	28.028	0.1796		2.59e3	1.82e3
5	1,2,3,6,7,8-HxCDF	10.172	7.28e4	1.26	NO	40.93	15.293	0.1689		2.59e3	1.82e3
6	2,3,4,6,7,8-HxCDF	10.172	2.50e4	1.23	NO	41.90	5.230	0.1677		2.59e3	1.82e3
7	1,2,3,7,8,9-HxCDF	10.172	4.25e3	1.13	NO	42.93	1.081	0.2095		2.59e3	1.82e3
8	1,2,3,4,6,7,8-HpCDF	10.172	1.43e6	1.06	NO	45.41	318.640	0.2678		3.17e3	4.21e3
9	1,2,3,4,7,8,9-HpCDF	10.172	8.43e4	1.04	NO	47.19	21.823	0.3224		3.17e3	4.21e3
10	OCDF	10.172	4.65e6	0.90	NO	50.48	1227.072	0.0555		5.26e2	6.23e2
11	2,3,7,8-TCDD	10.172	7.20e3	0.69	NO	26.49	1.694	0.1165		1.06e3	1.05e3
12	1,2,3,7,8-PeCDD	10.172	1.38e4	0.66	NO	36.15	3.995	0.1684		1.67e3	9.09e2
13	1,2,3,4,7,8-HxCDD	10.172	2.43e4	1.22	NO	42.17	6.556	0.1775		1.55e3	2.23e3
14	1,2,3,6,7,8-HxCDD	10.172	1.55e5	1.22	NO	42.31	41.392	0.1801		1.55e3	2.23e3
15	1,2,3,7,8,9-HxCDD	10.172	7.29e4	1.18	NO	42.73	19.738	0.1807		1.55e3	2.23e3
16	1,2,3,4,6,7,8-HpCDD	10.172	3.57e6	1.11	NO	46.79	1091.675	0.5414		6.92e3	3.74e3
17	OCDD	10.172	3.74e7	0.88	NO	50.39	11451.924	0.1656		1.45e3	1.50e3
18	13C-2,3,7,8-TCDF	10.172	1.08e6	0.80	NO	25.24	157.423	0.3528	80.1	5.34e3	5.03e3
19	13C-1,2,3,7,8-PeCDF	10.172	1.04e6	1.52	NO	33.53	187.702	0.4617	95.5	6.88e3	4.15e3
20	13C-2,3,4,7,8-PeCDF	10.172	1.06e6	1.56	NO	35.32	184.616	0.4476	93.9	6.88e3	4.15e3
21	13C-1,2,3,4,7,8-HxCDF	10.172	8.08e5	0.51	NO	40.75	158.978	0.3130	80.9	4.52e3	4.61e3
22	13C-1,2,3,6,7,8-HxCDF	10.172	8.71e5	0.53	NO	40.92	155.915	0.2848	79.3	4.52e3	4.61e3
23	13C-2,3,4,6,7,8-HxCDF	10.172	8.26e5	0.51	NO	41.88	164.070	0.3159	83.4	4.52e3	4.61e3
24	13C-1,2,3,7,8,9-HxCDF	10.172	7.34e5	0.50	NO	42.92	163.876	0.3553	83.3	4.52e3	4.61e3
25	13C-1,2,3,4,6,7,8-HpCDF	10.172	7.08e5	0.45	NO	45.39	169.107	0.2374	86.0	2.60e3	3.11e3
26	13C-1,2,3,4,7,8,9-HpCDF	10.172	6.06e5	0.46	NO	47.18	178.377	0.2926	90.7	2.60e3	3.11e3
27	13C-2,3,7,8-TCDD	10.172	7.58e5	0.77	NO	26.46	174.425	0.6911	88.7	5.09e3	7.83e3
28	13C-1,2,3,7,8-PeCDD	10.172	6.89e5	0.63	NO	36.13	199.630	0.4039	101.5	4.09e3	1.91e3
29	13C-1,2,3,4,7,8-HxCDD	10.172	7.09e5	1.21	NO	42.15	174.942	0.4205	89.0	4.65e3	5.14e3
30	13C-1,2,3,6,7,8-HxCDD	10.172	7.82e5	1.22	NO	42.27	174.534	0.3804	88.8	4.65e3	5.14e3
31	13C-1,2,3,4,6,7,8-HpCDD	10.172	8.25e5	1.03	NO	46.77	181.866	0.2412	92.5	3.24e3	3.05e3
32	13C-OCDD	10.172	1.31e6	0.89	NO	50.37	391.902	0.3907	99.7	5.40e3	2.09e3
33	13C-1,2,3,4-TCDD	10.172	8.82e5	0.76	NO	26.11	2.156	0.0073	1.1	5.09e3	7.83e3
34	13C-1,2,3,7,8,9-HxCDD	10.172	8.23e5	1.25	NO	42.71	2.788	0.0058	1.4	4.65e3	5.14e3
35	37Cl-2,3,7,8-TCDD	10.172	9.74e4			26.47	20.332	0.1223	103.4		2.52e3
36	Total Tetra-Furans	10.172					49.344	0.1089			1.43e3
37	Total Tetra-Dioxins	10.172					11.176	0.1165			1.05e3
38	Total Penta-Furans	10.172					104.379	0.1452			1.55e3
39	Total Penta-Dioxins	10.172					40.875	0.1684			9.09e2
40	Total Hexa-Furans	10.172					396.926	0.1782			1.82e3
41	Total Hexa-Dioxins	10.172					265.863	0.1710			2.23e3
42	Total Hepta-Furans	10.172					1279.041	0.2934			4.21e3
43	Total Hepta-Dioxins	10.172					2166.919	0.5414			3.74e3
44	Hexa DPE	1.000	1.76e3			22.62					6.44e0
45	Hepta DPE	1.000	1.73e2			36.38					4.58e0
46	Octa DPE	1.000	9.16e1			41.61					5.54e2
47	Nona DPE	1.000	9.85e2			48.26					4.35e0
48	Deca DPE	1.000	1.69e2			50.69					4.38e0
49	Tetra Lock	1.000									3.27e5
50	Penta Lock	1.000	1.35e4			32.99					3.12e5
51	Hexa Lock	1.000	4.44e6			39.29					7.84e5
52	Hepta Lock	1.000									4.94e5
53	Octa Lock	1.000	2.57e4			48.85					4.52e5
54	13C-Tetra-Furans	10.172					157.423	0.3528			5.03e3
55	13C-Tetra-Dioxins	10.172					176.581	0.6984			7.83e3

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

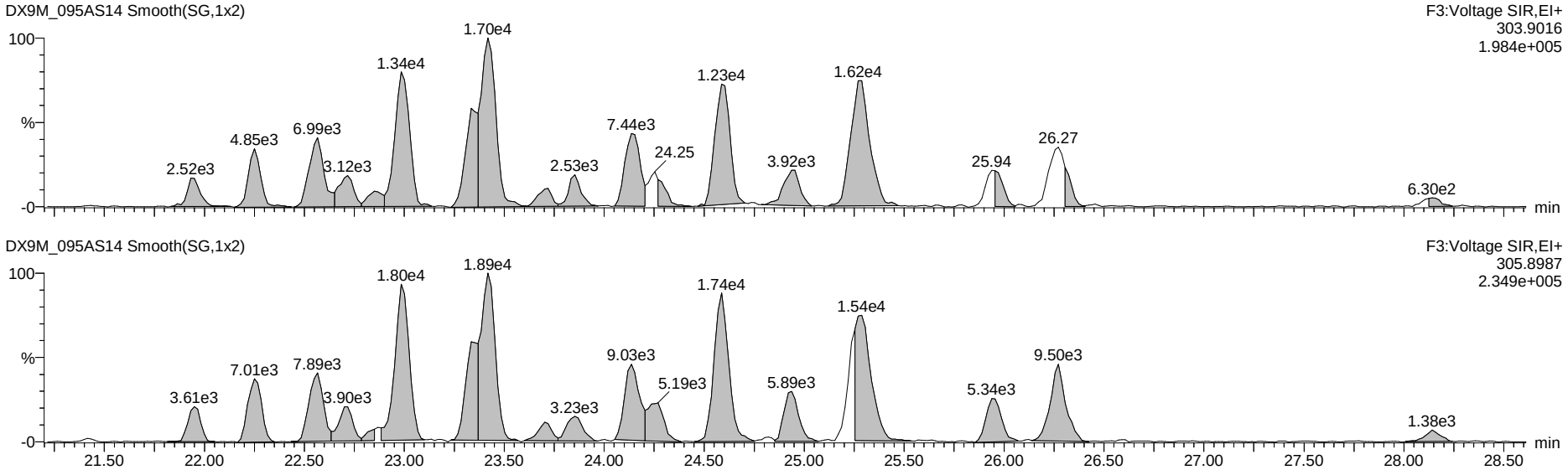
SVHH 22 Sept. 2019

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

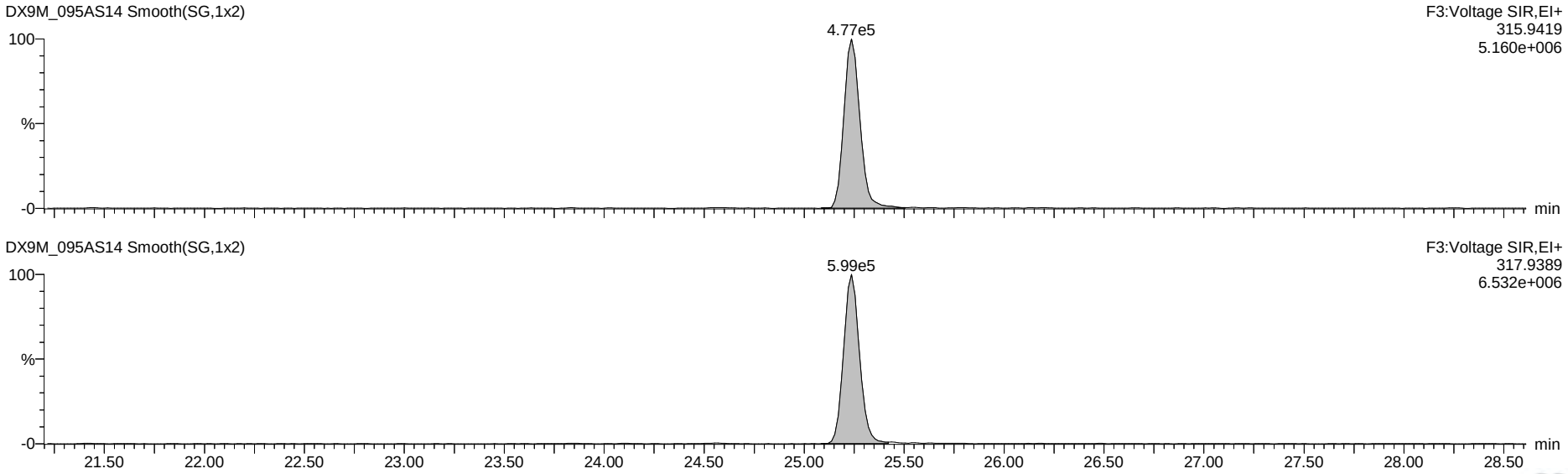
Method: G:\Masslynx\Inst_M\Master methods and layouts\Current Methods\DX_1613B_16.mdb 07 Sep 2017 16:45:23
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

Name: DX9M_095AS14, Date: 17-Sep-2019, Time: 21:43:45, ID: L31654-10,W,, Description: 5,WG69303,1.0/100uL

Total Tetra-Furans



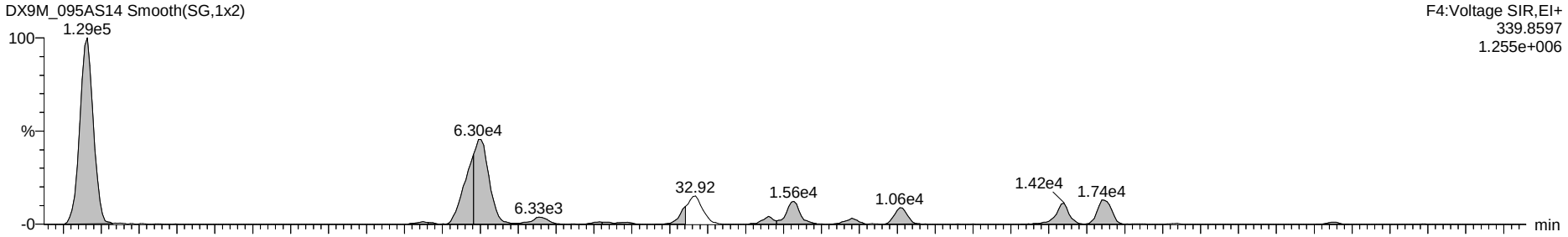
13C-Tetra-Furans

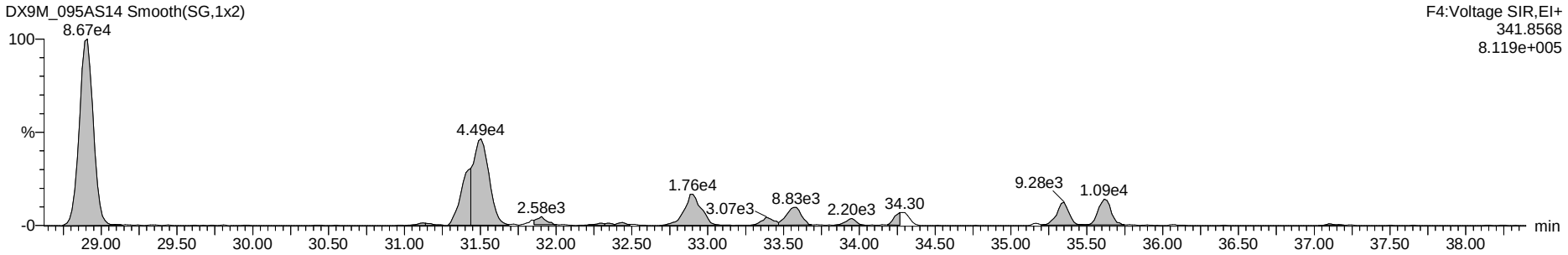


Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

Name: DX9M_095AS14, Date: 17-Sep-2019, Time: 21:43:45, ID: L31654-10,W,, Description: 5,WG69303,1.0/100uL

Total Penta-Furans





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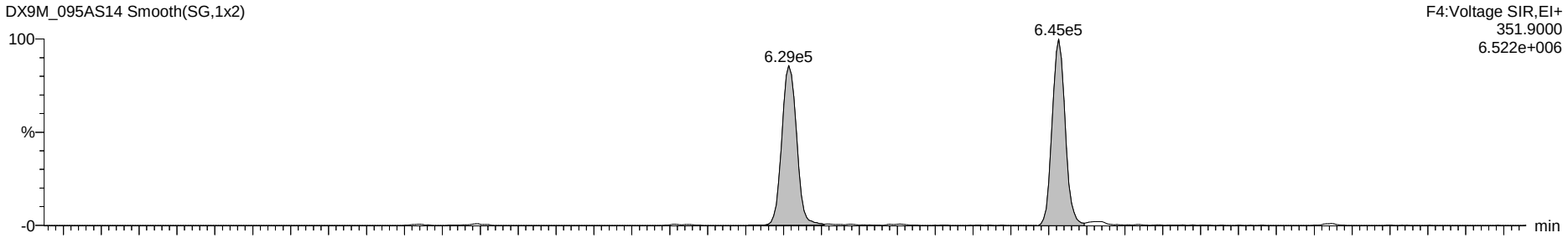

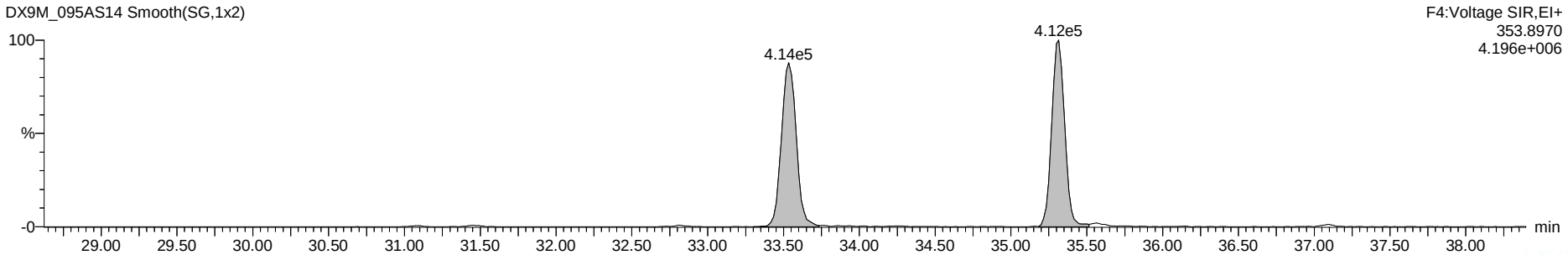

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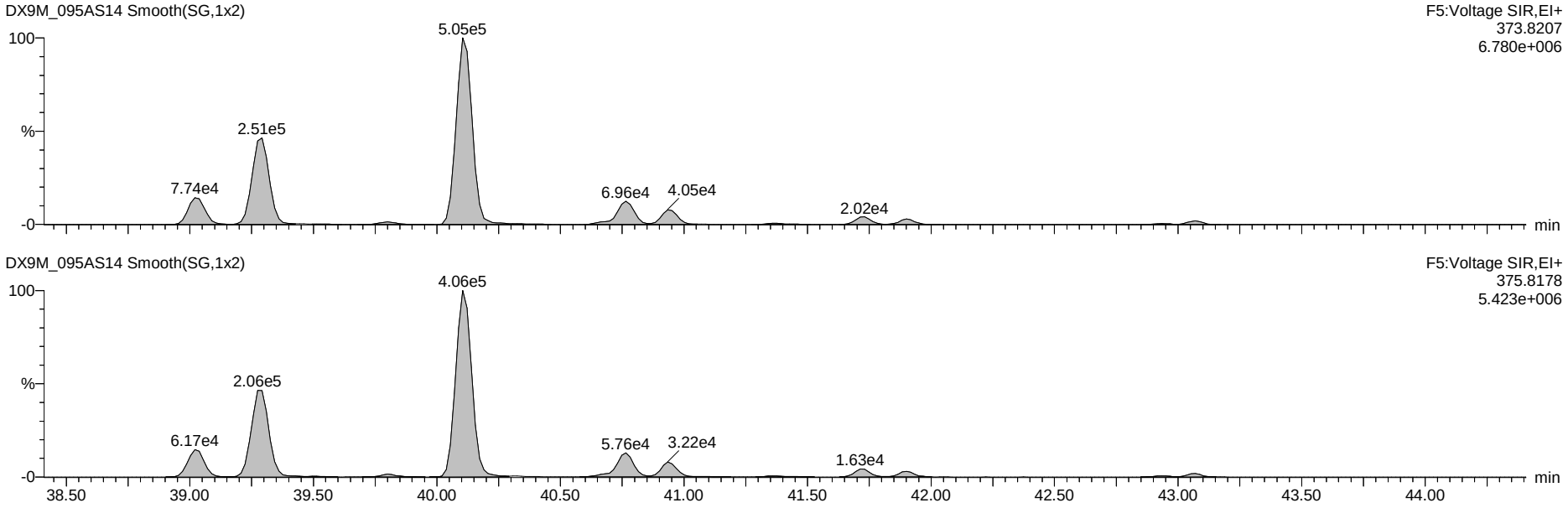
Name: DX9M_095AS14, Date: 17-Sep-2019, Time: 21:43:45, ID: L31654-10,W,, Description: 5,WG69303,1.0/100uL

Total Hexa-Furans



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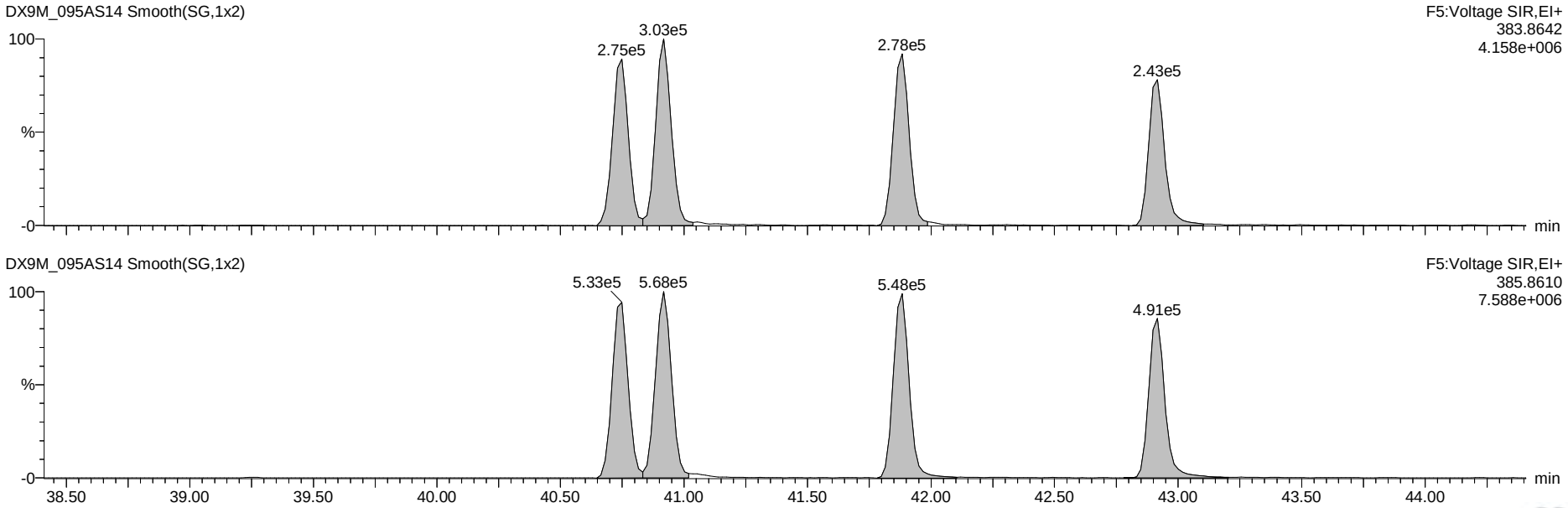

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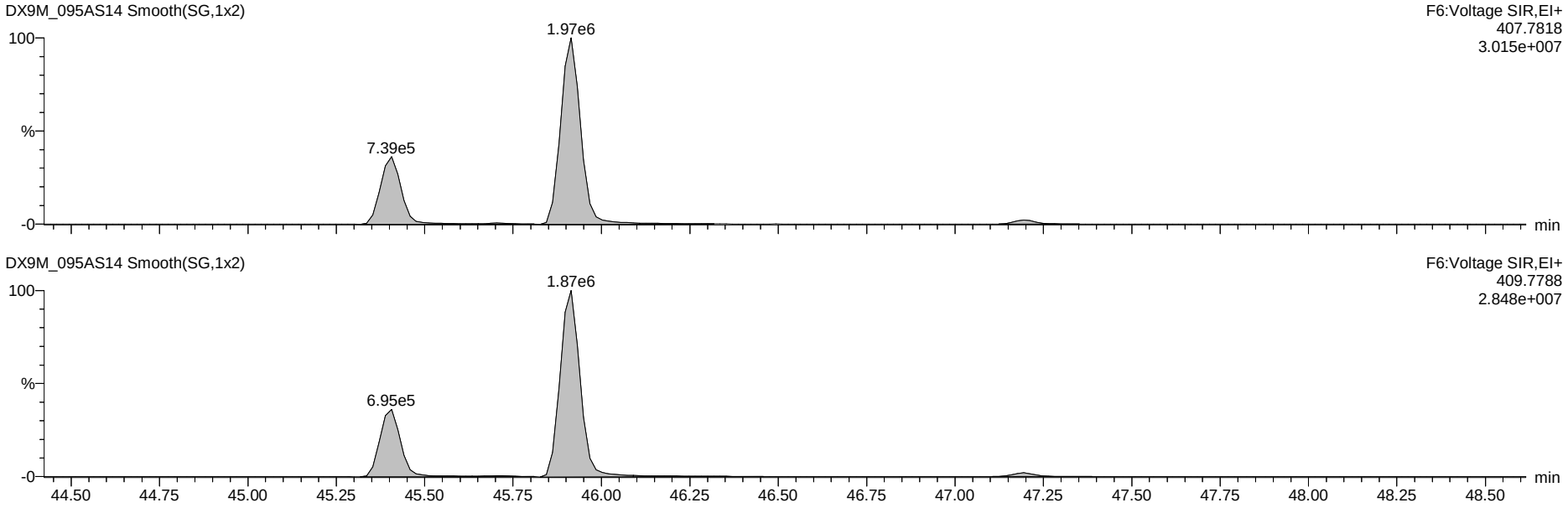
Total Hepta-Furans



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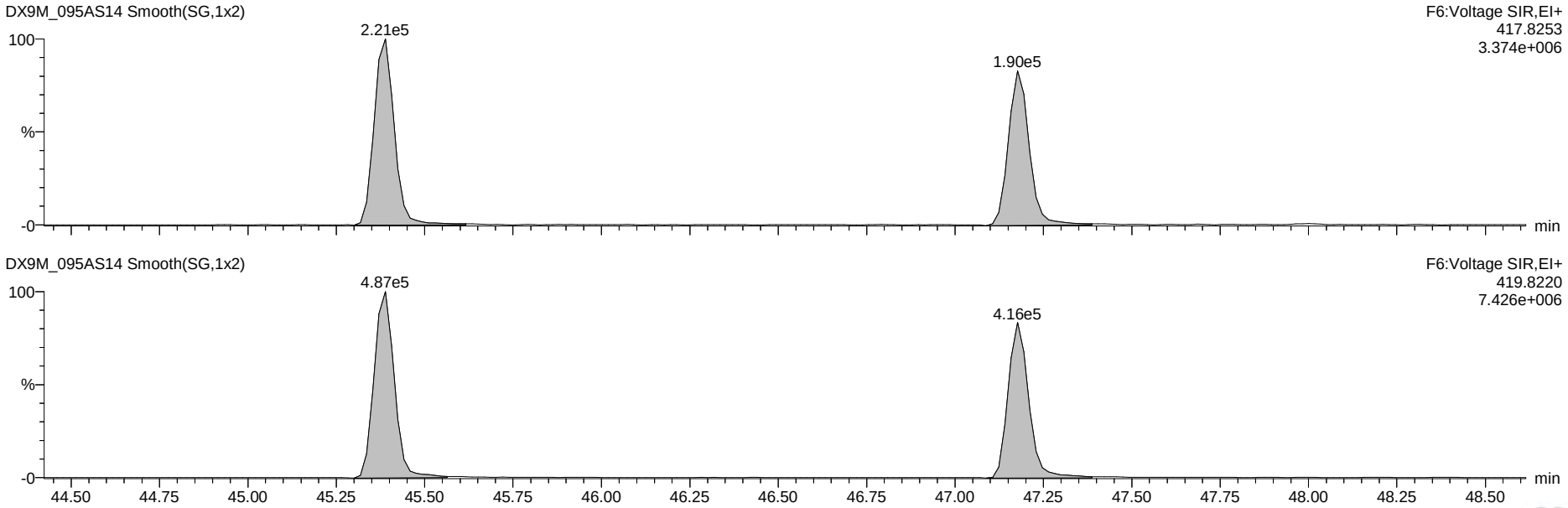

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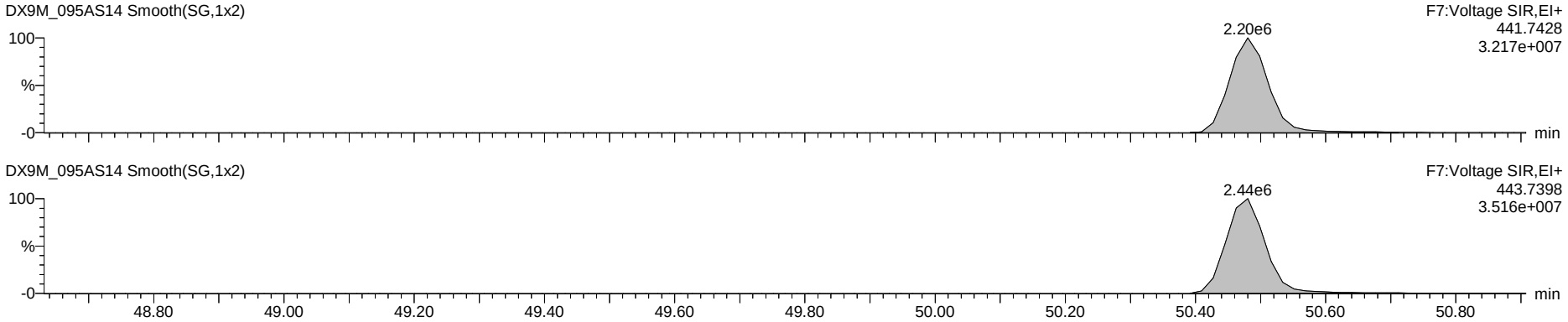
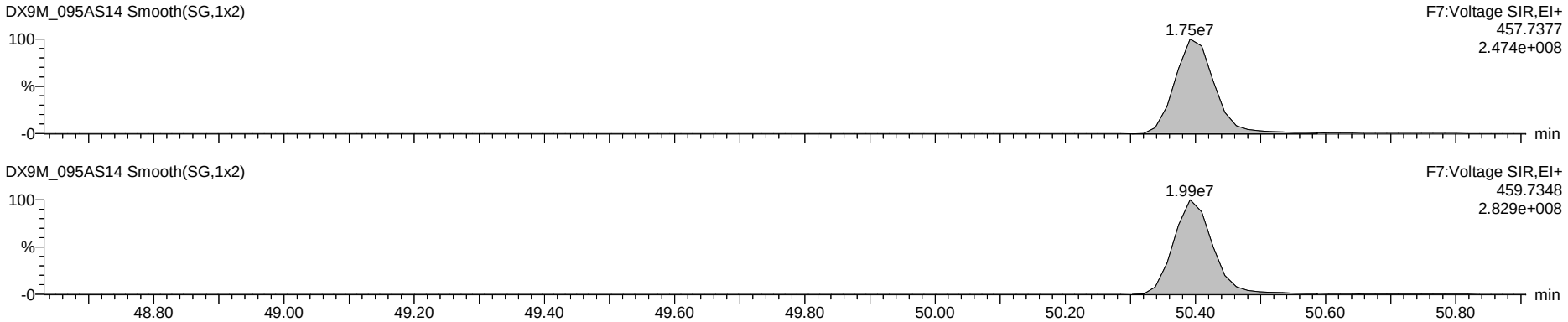
Name: DX9M_095AS14, Date: 17-Sep-2019, Time: 21:43:45, ID: L31654-10,W,, Description: 5,WG69303,1.0/100uL

OCDF



OCDD



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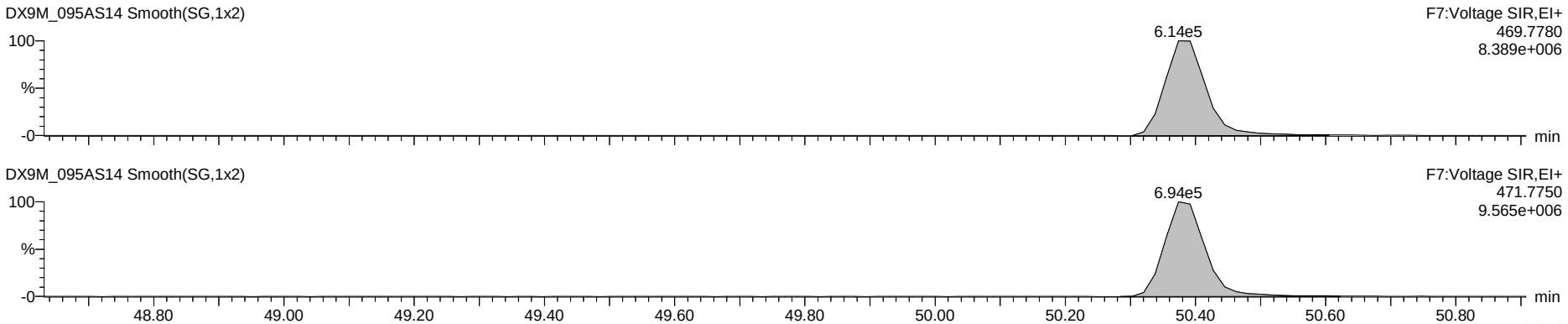

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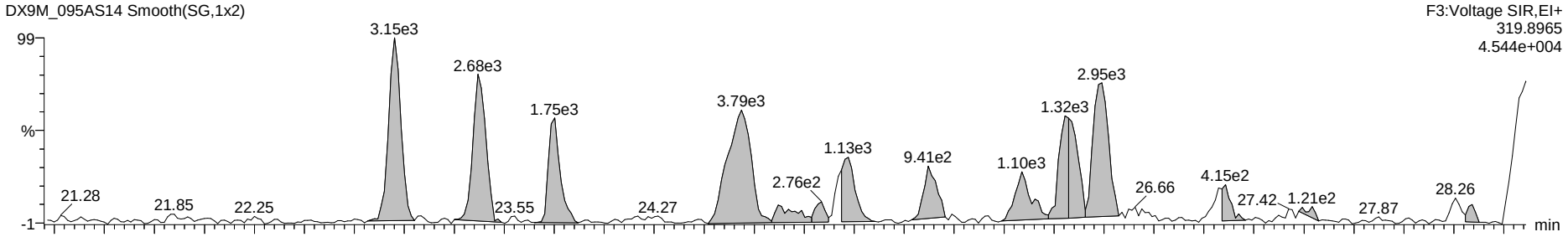
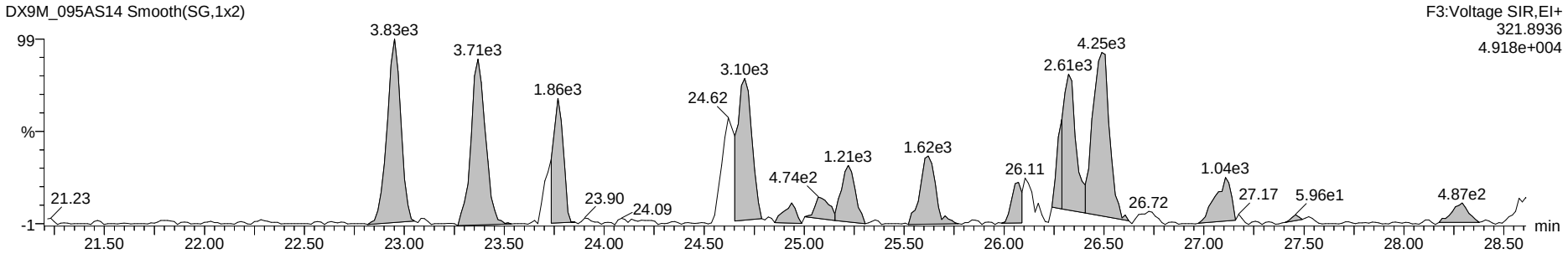
Name: DX9M_095AS14, Date: 17-Sep-2019, Time: 21:43:45, ID: L31654-10,W,, Description: 5,WG69303,1.0/100uL

Total Tetra-Dioxins





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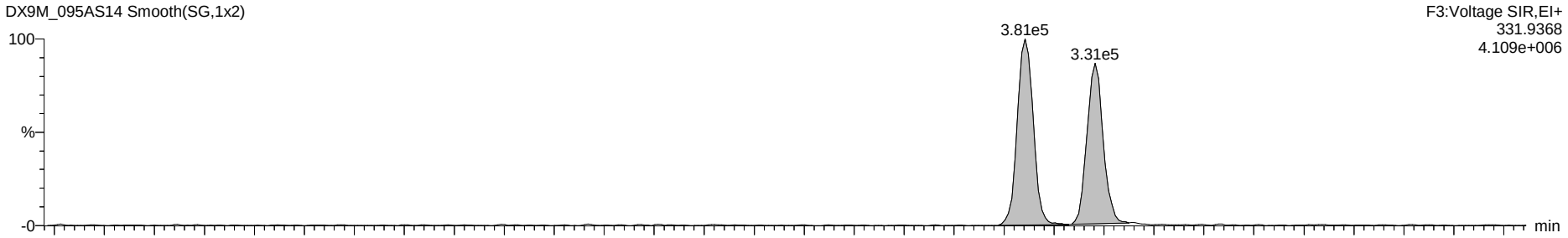

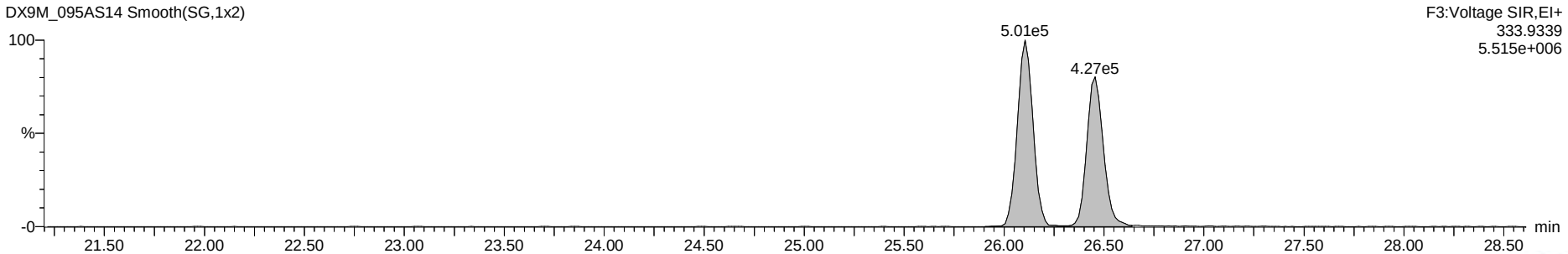

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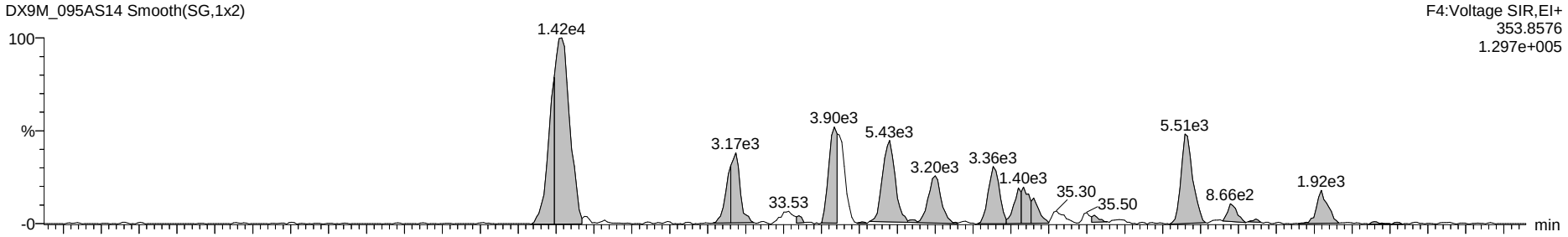
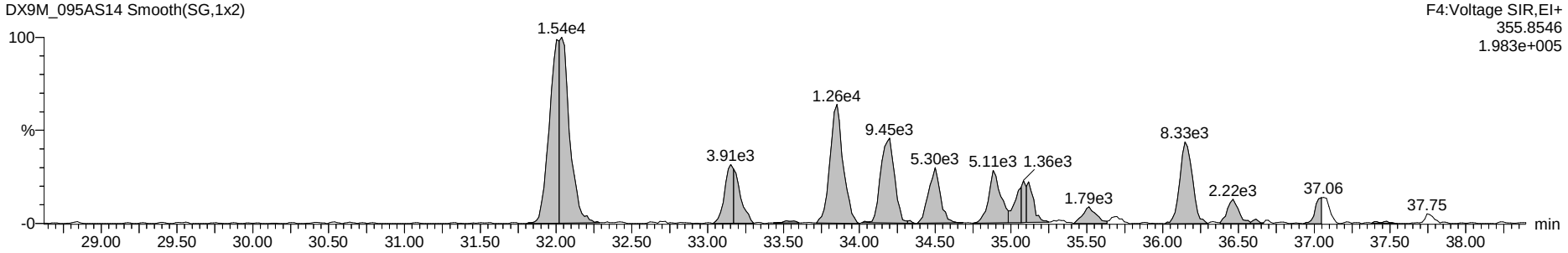
Total Penta-Dioxins





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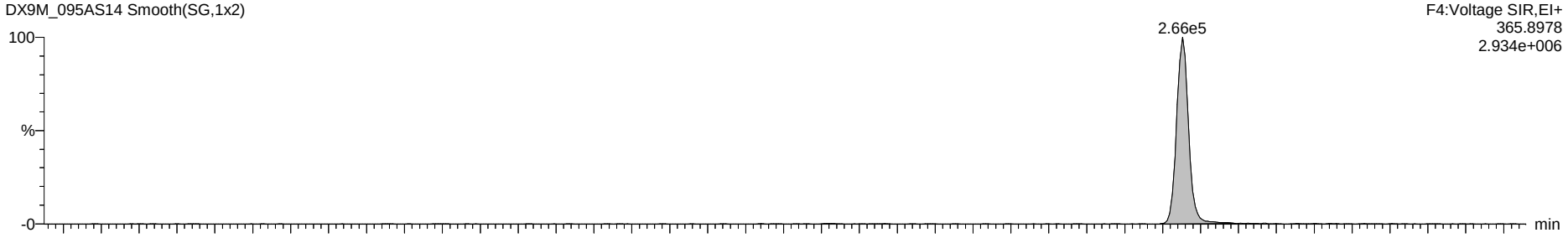

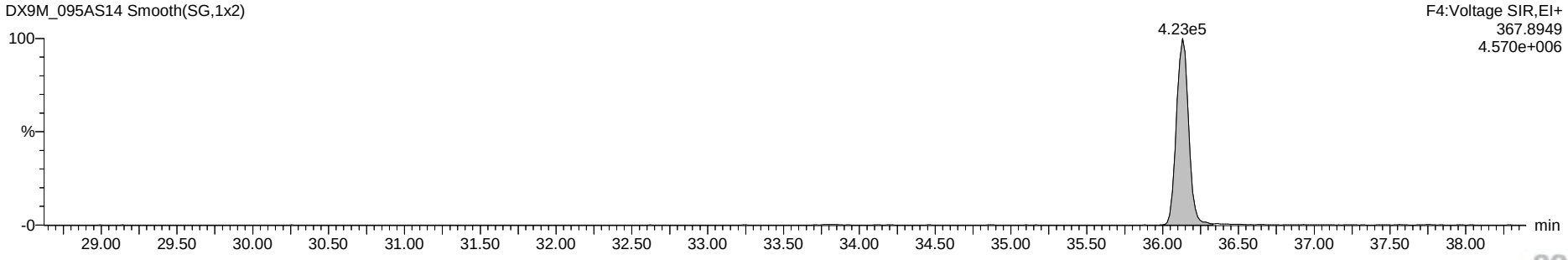

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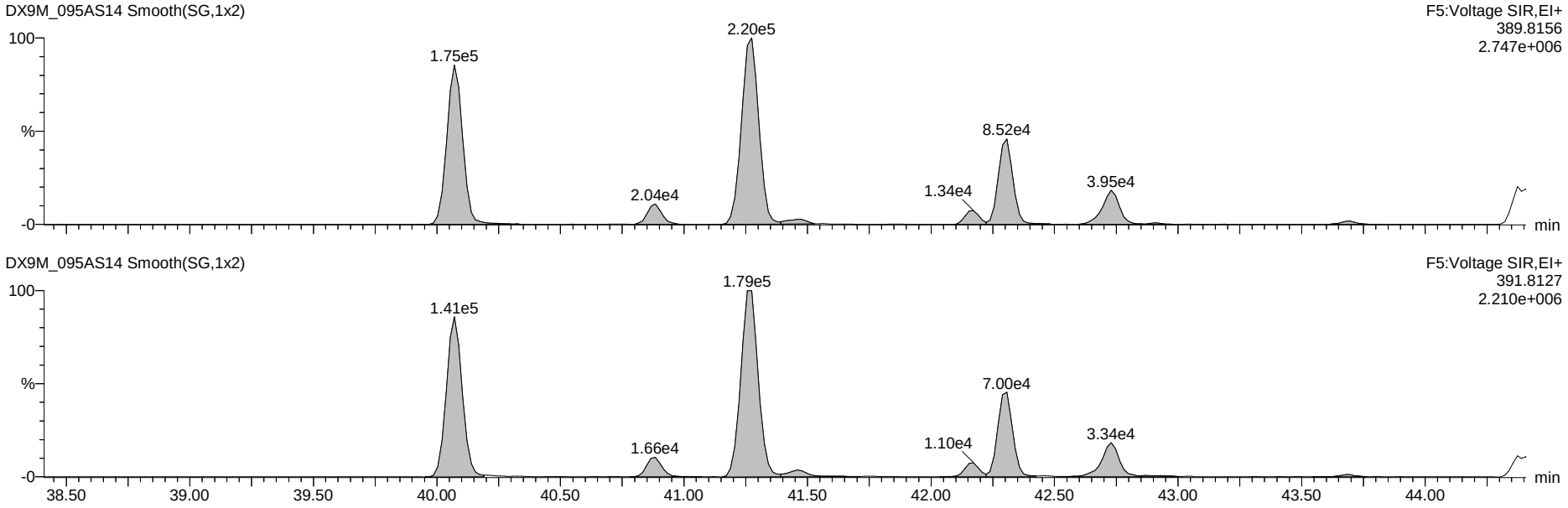
Total Hexa-Dioxins



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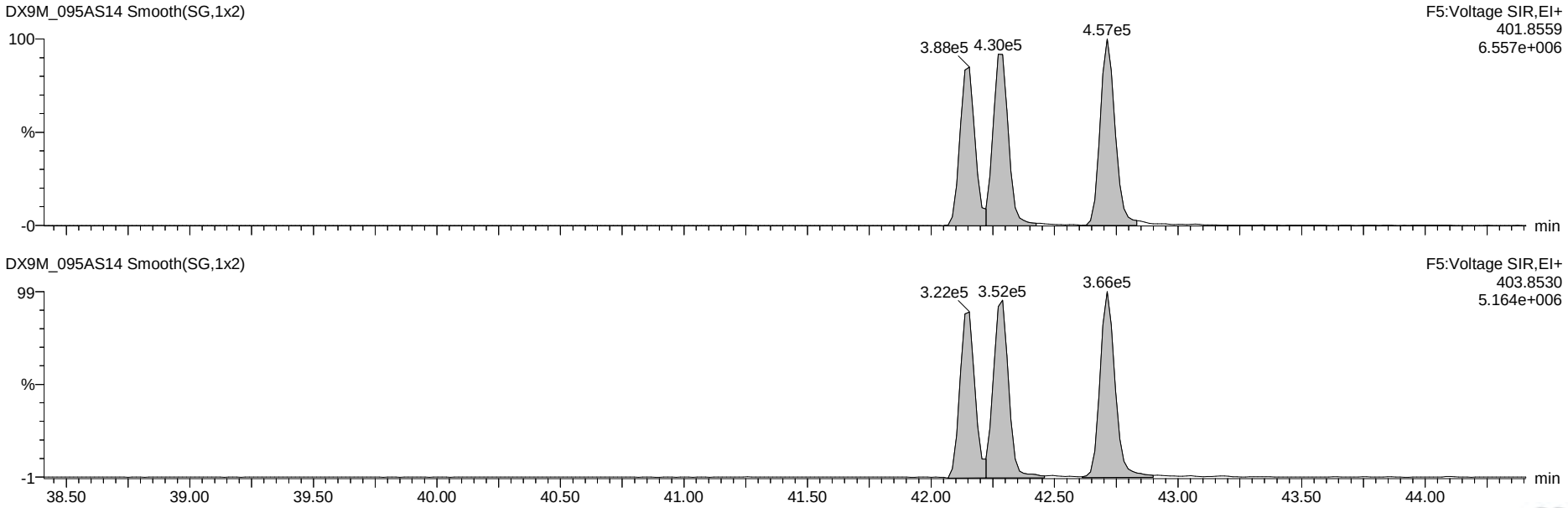

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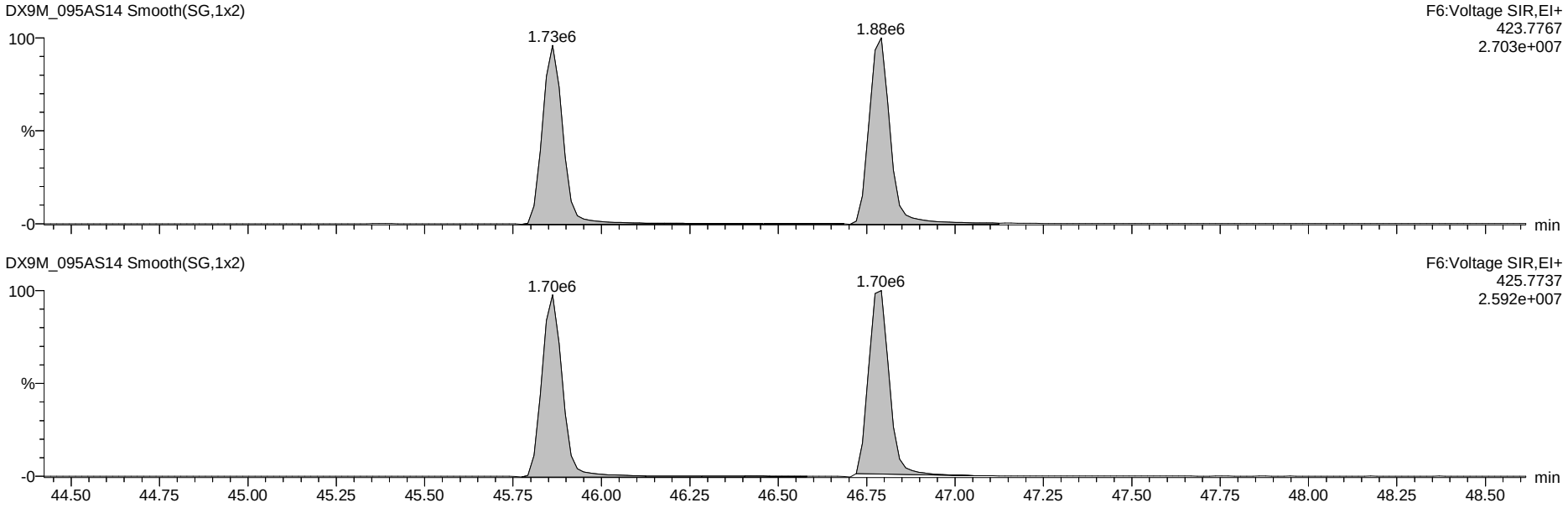
Total Hepta-Dioxins



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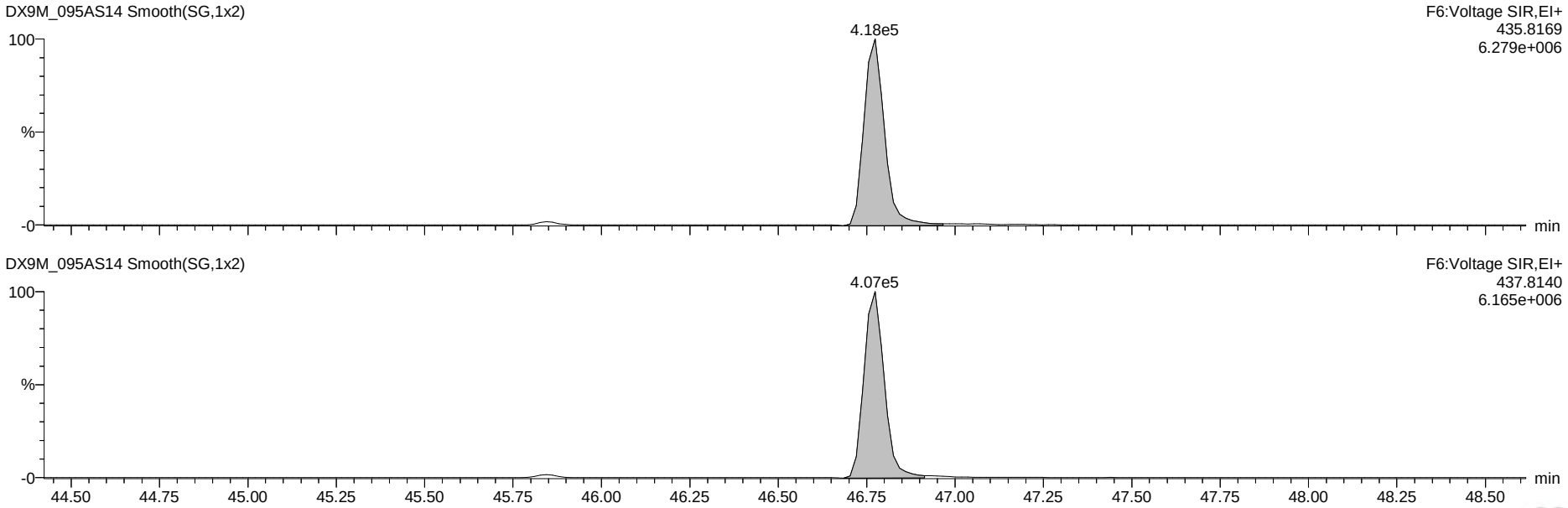

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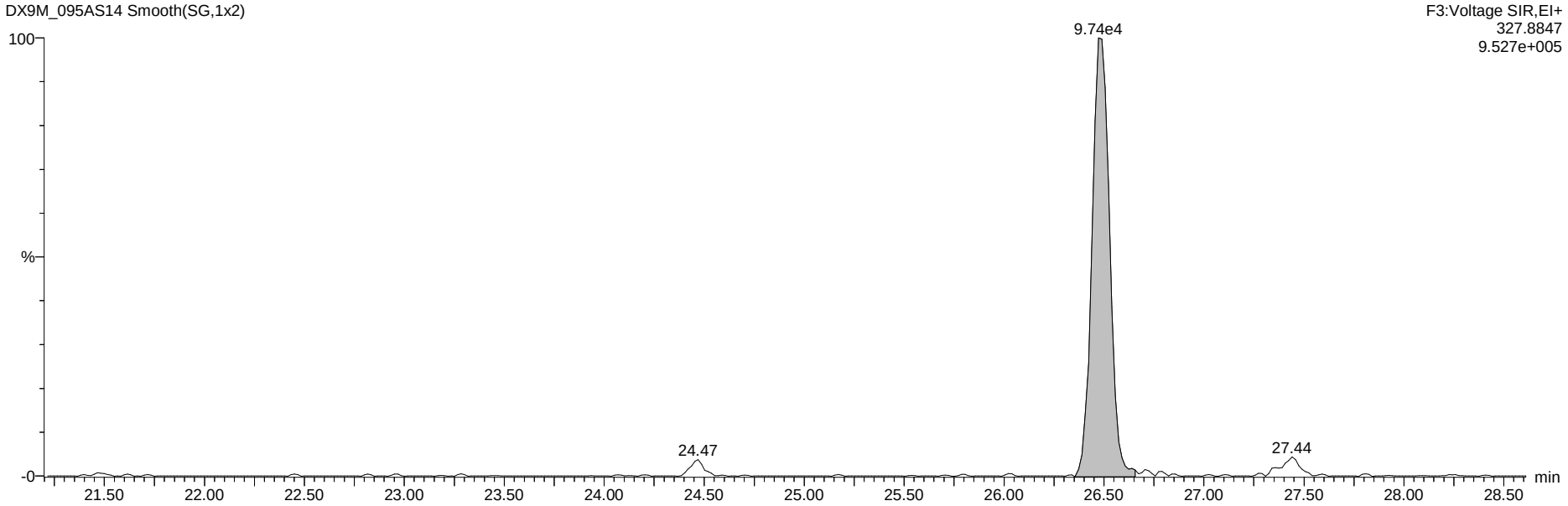
37Cl-2,3,7,8-TCDD



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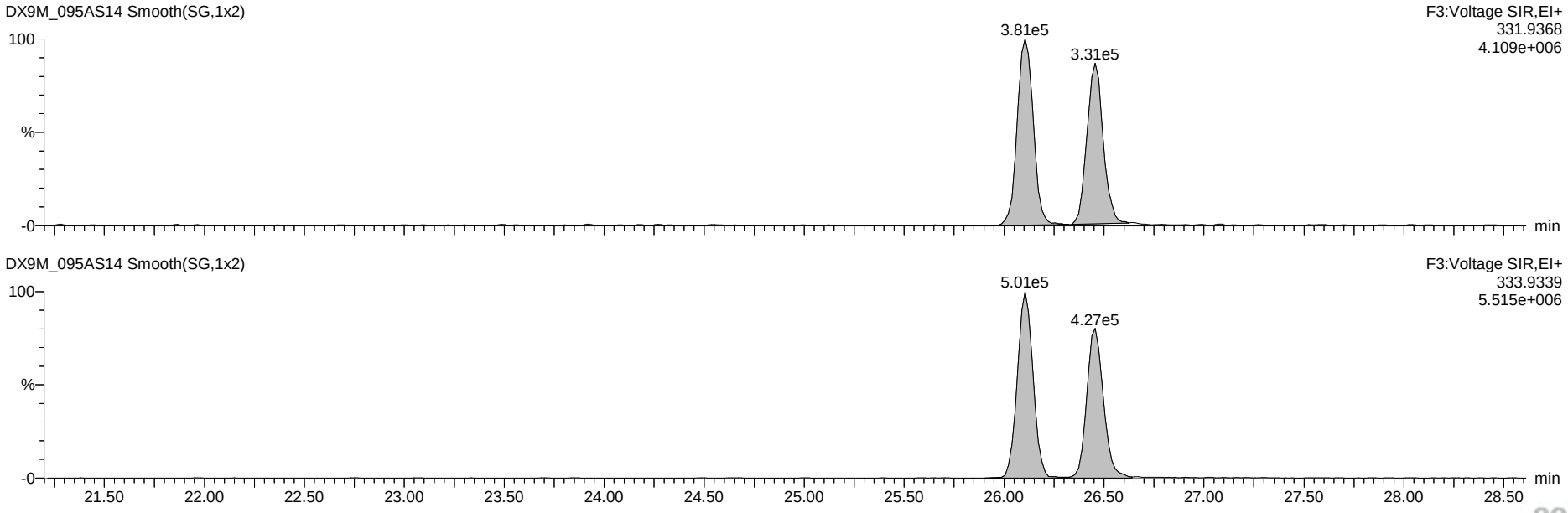

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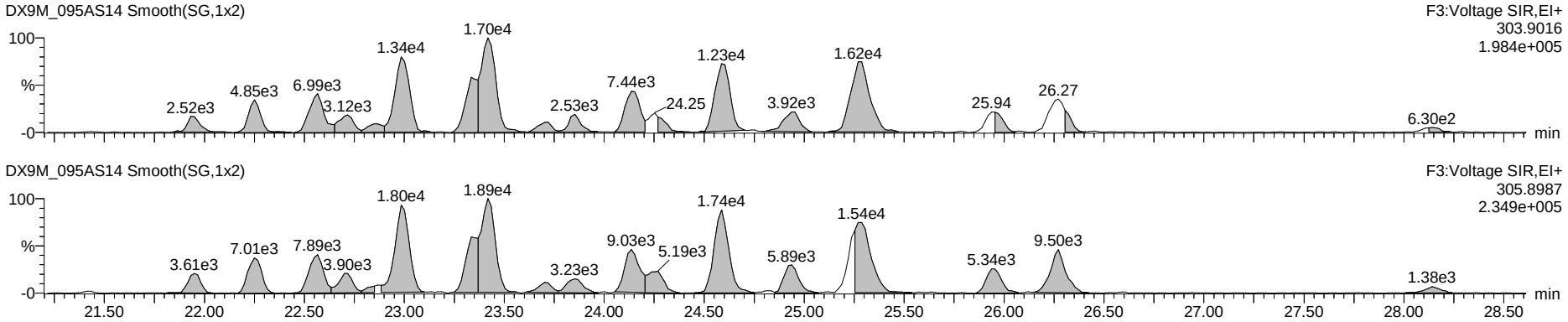
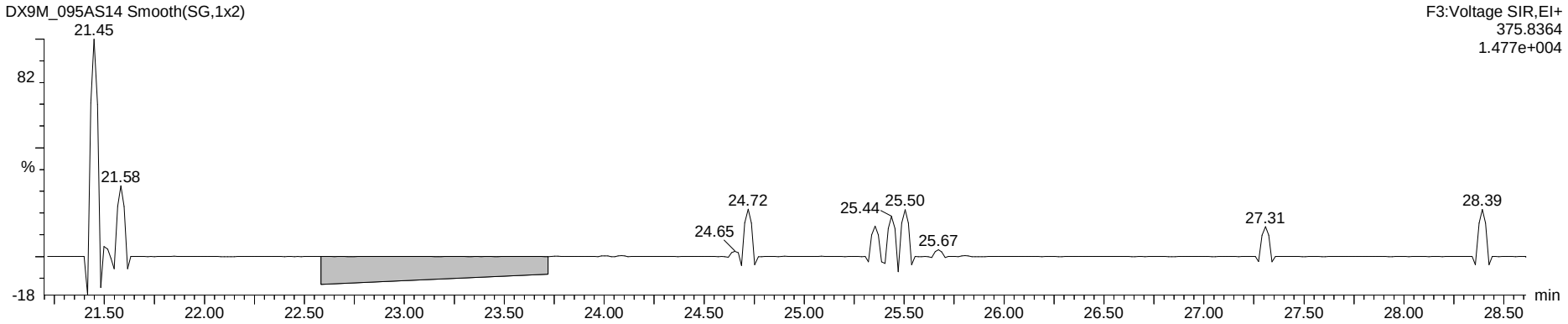
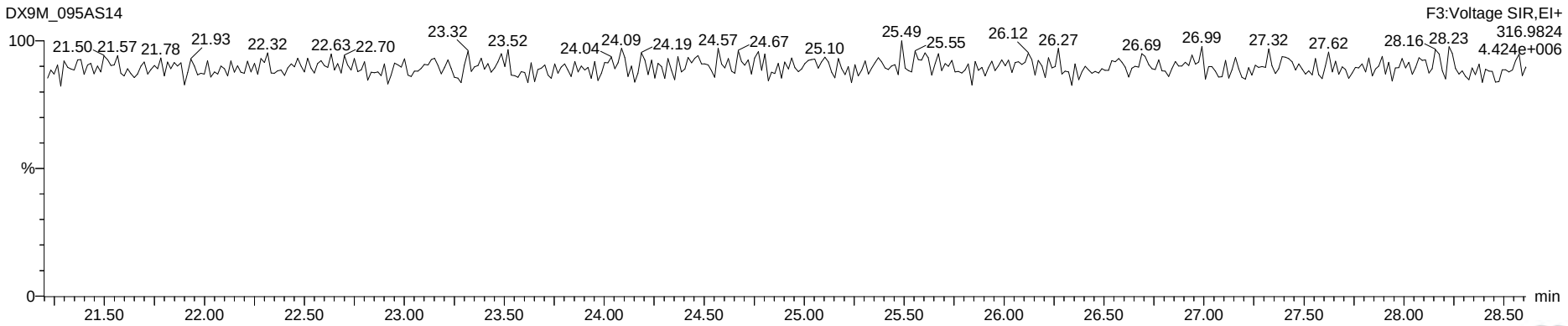
Total Tetra-Furans



Hexa DPE



Tetra Lock



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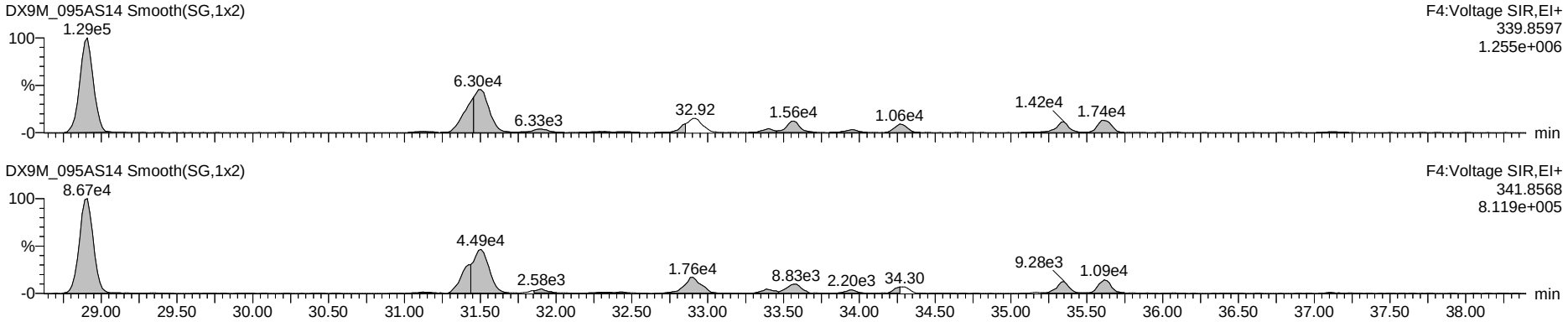
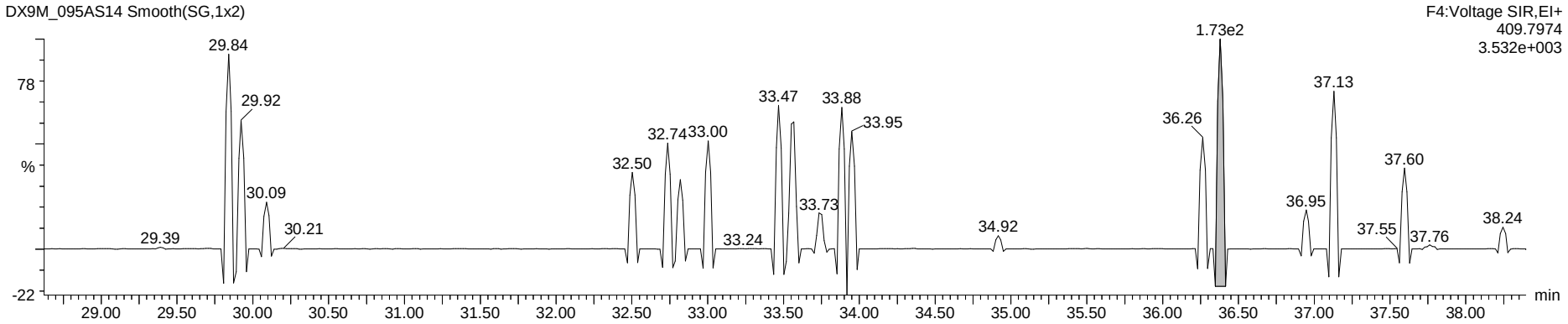
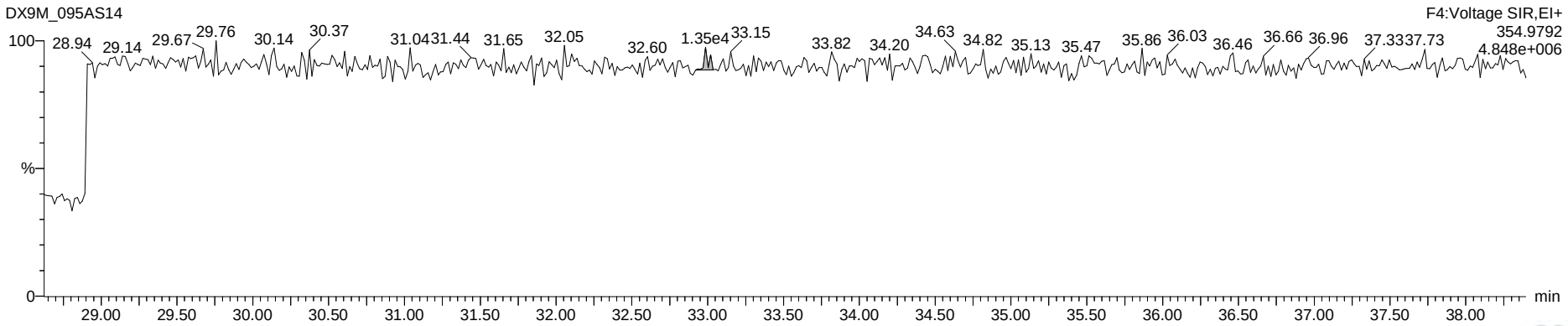
Total Penta-Furans



Hepta DPE



Penta Lock



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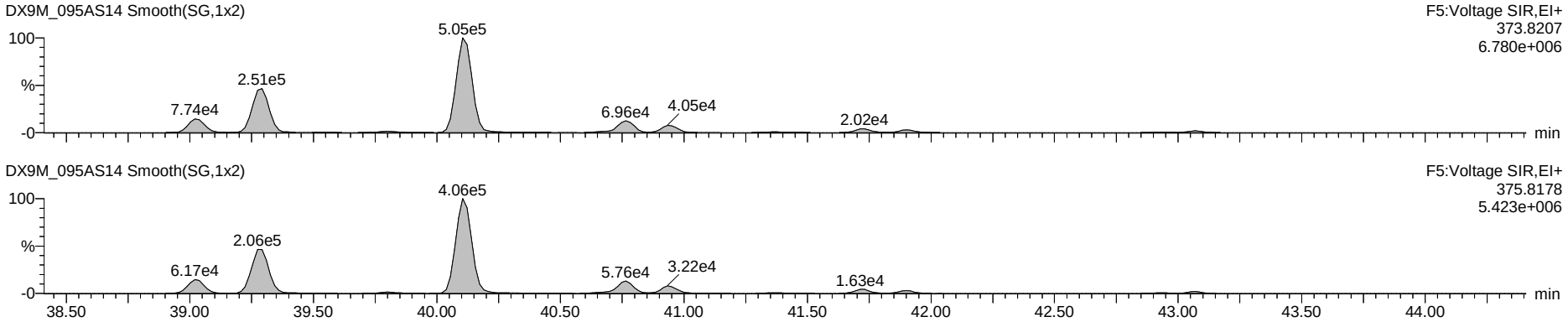
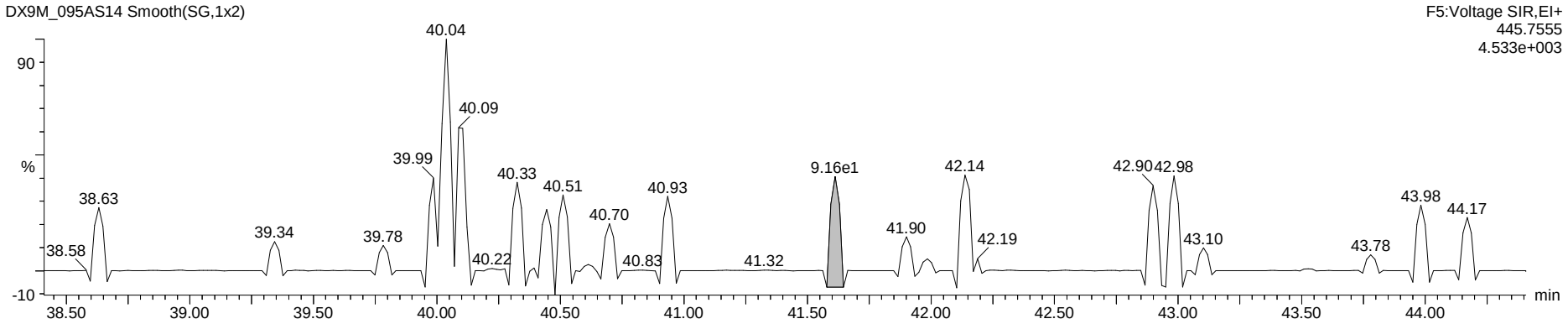
Total Hexa-Furans



Octa DPE



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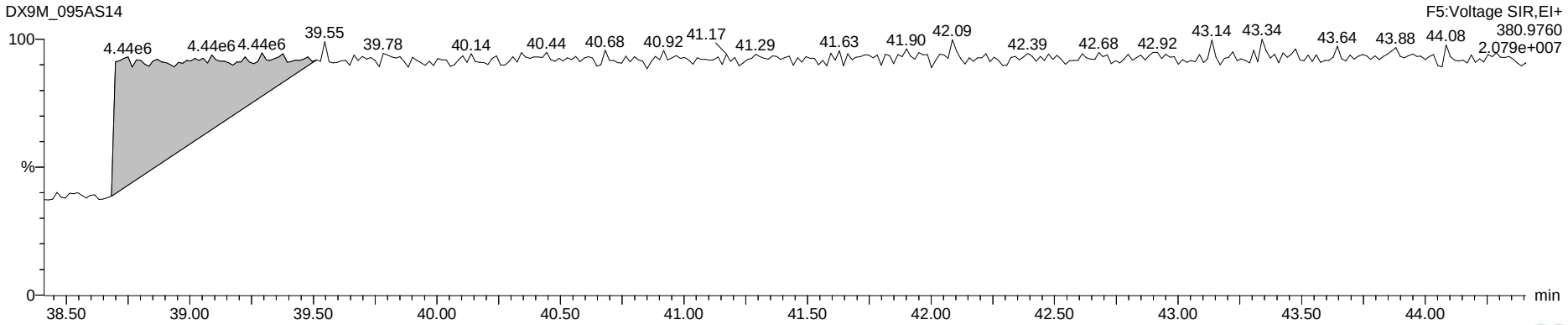

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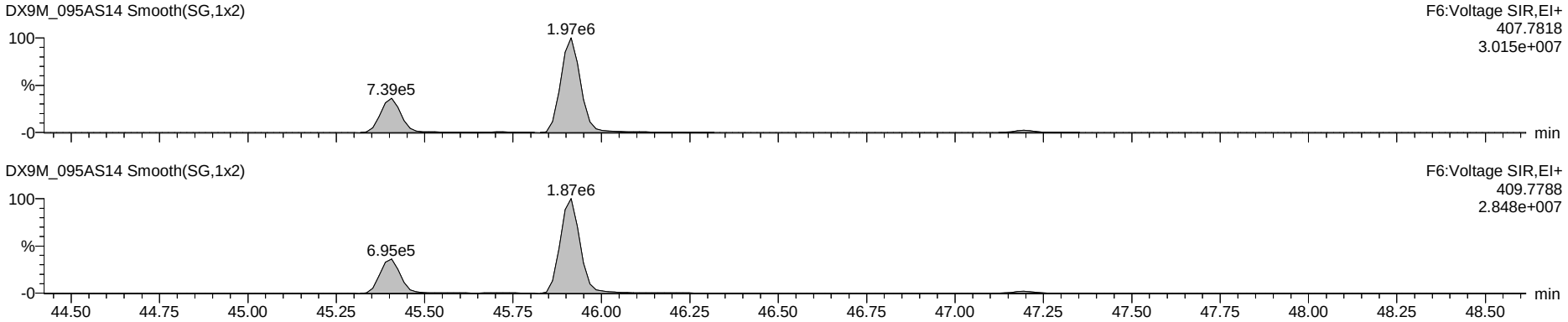
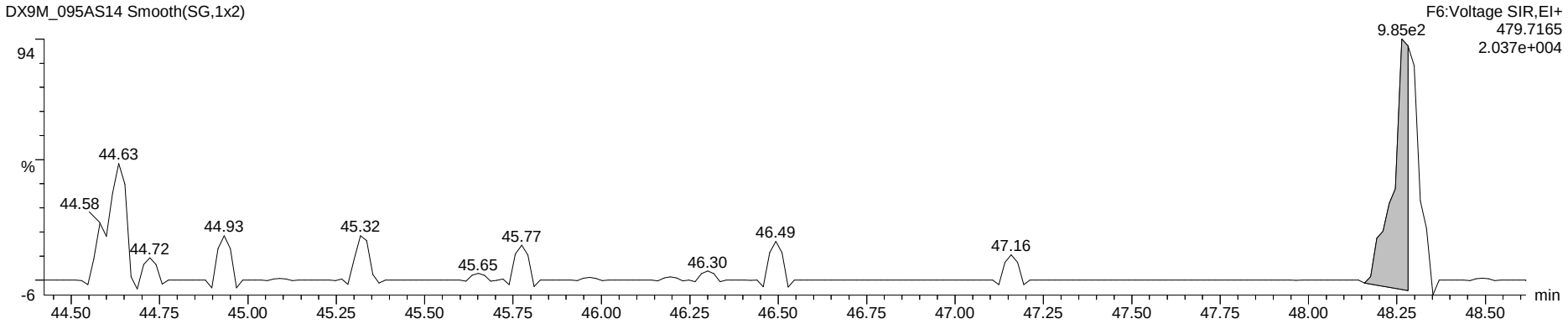
Name: DX9M_095AS14, Date: 17-Sep-2019, Time: 21:43:45, ID: L31654-10,W,, Description: 5,WG69303,1.0/100uL

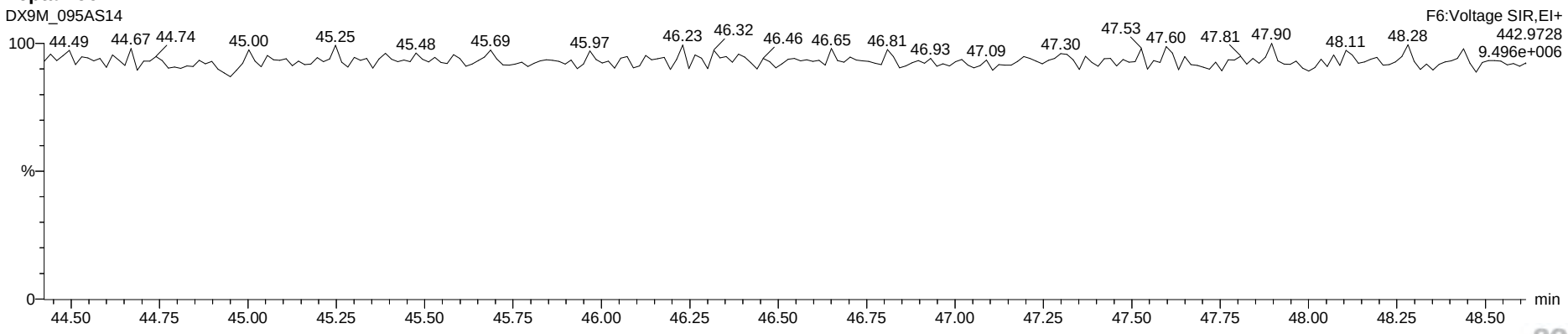
Total Hepta-Furans



Nona DPE



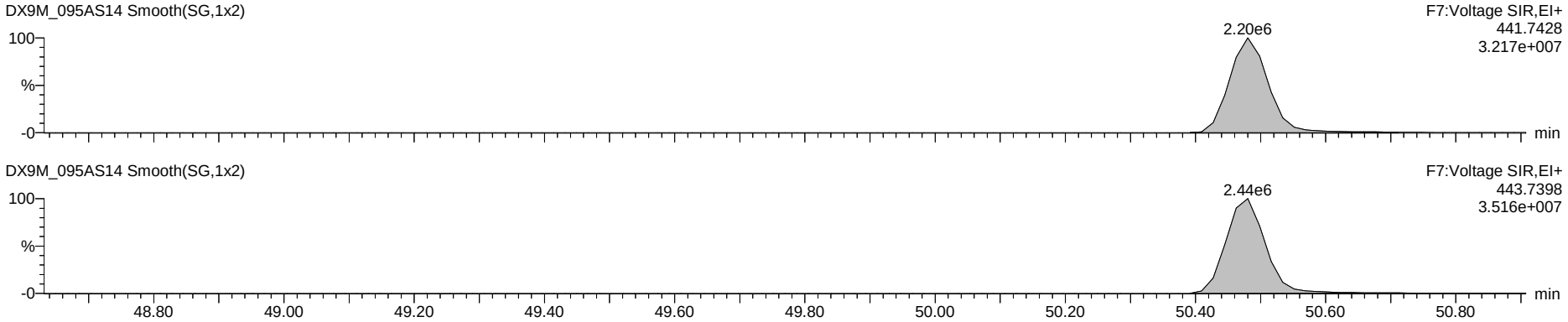
Hepta Lock



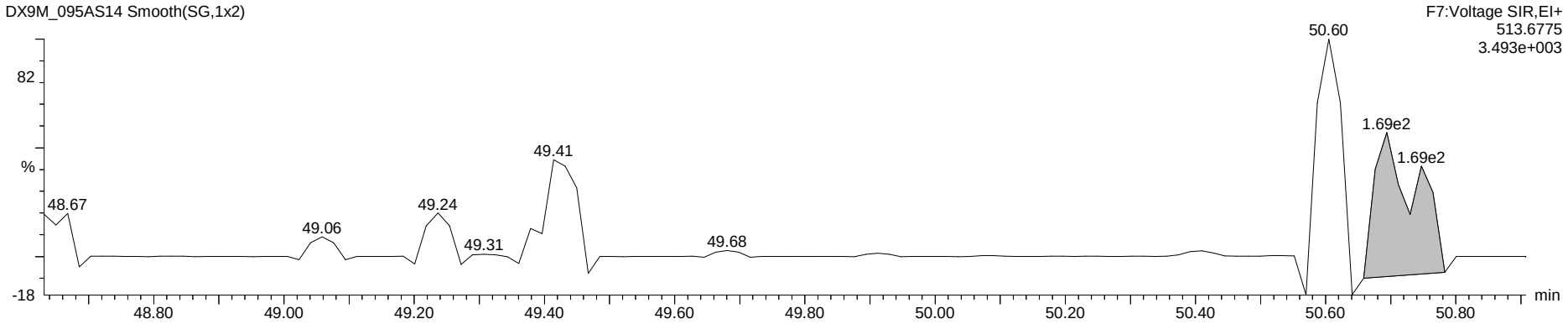
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

Name: DX9M_095AS14, Date: 17-Sep-2019, Time: 21:43:45, ID: L31654-10,W,, Description: 5,WG69303,1.0/100uL

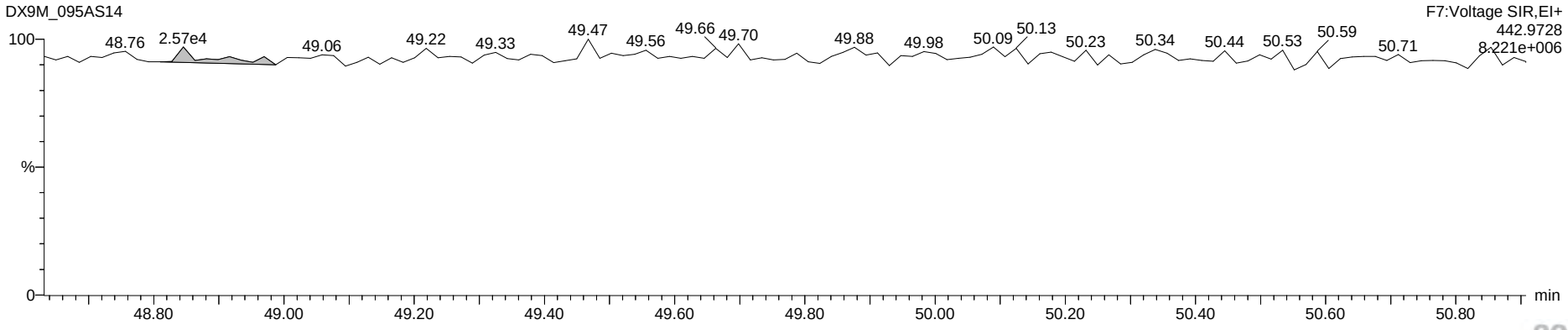
OCDF



Deca DPE



Octa Lock



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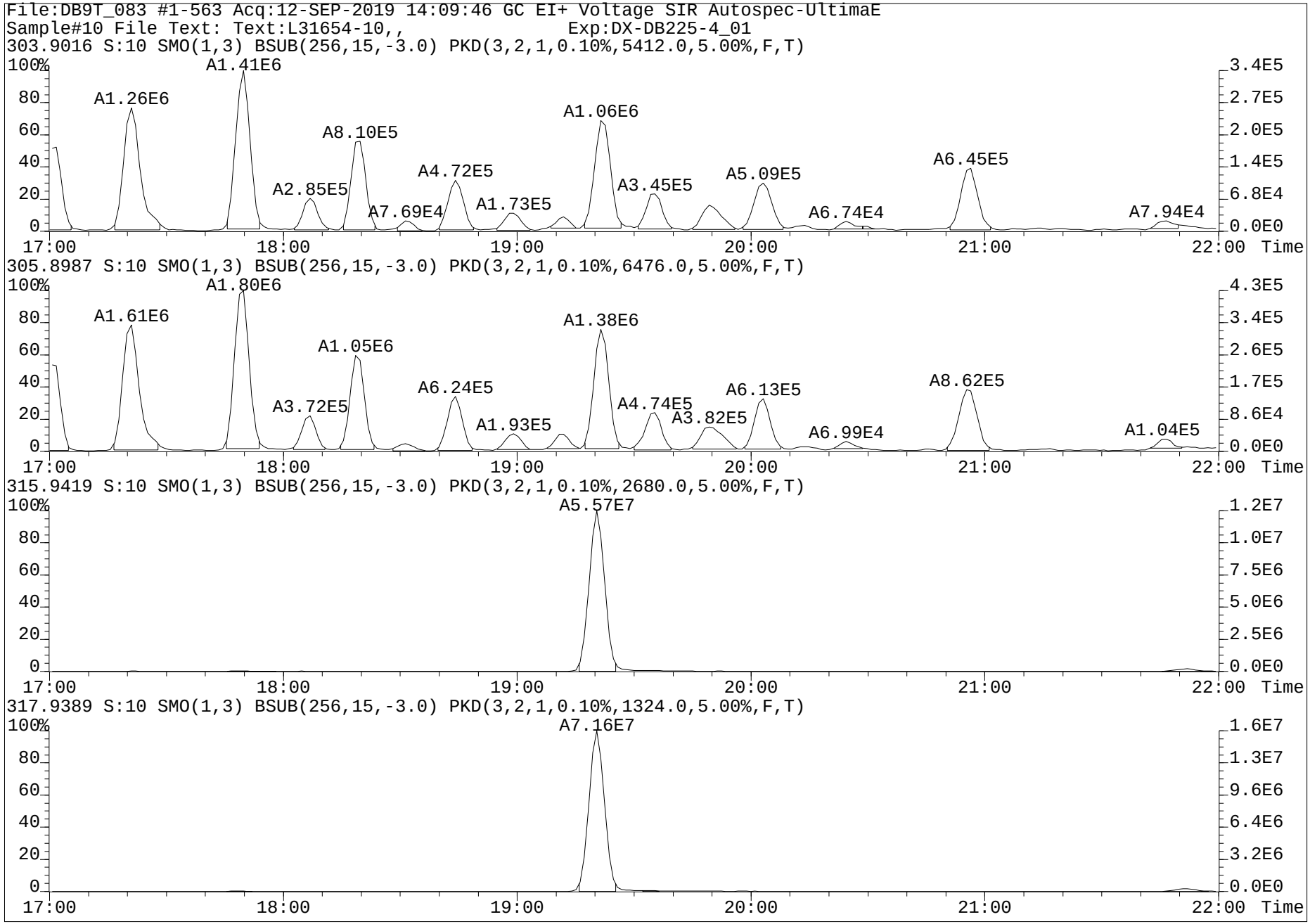
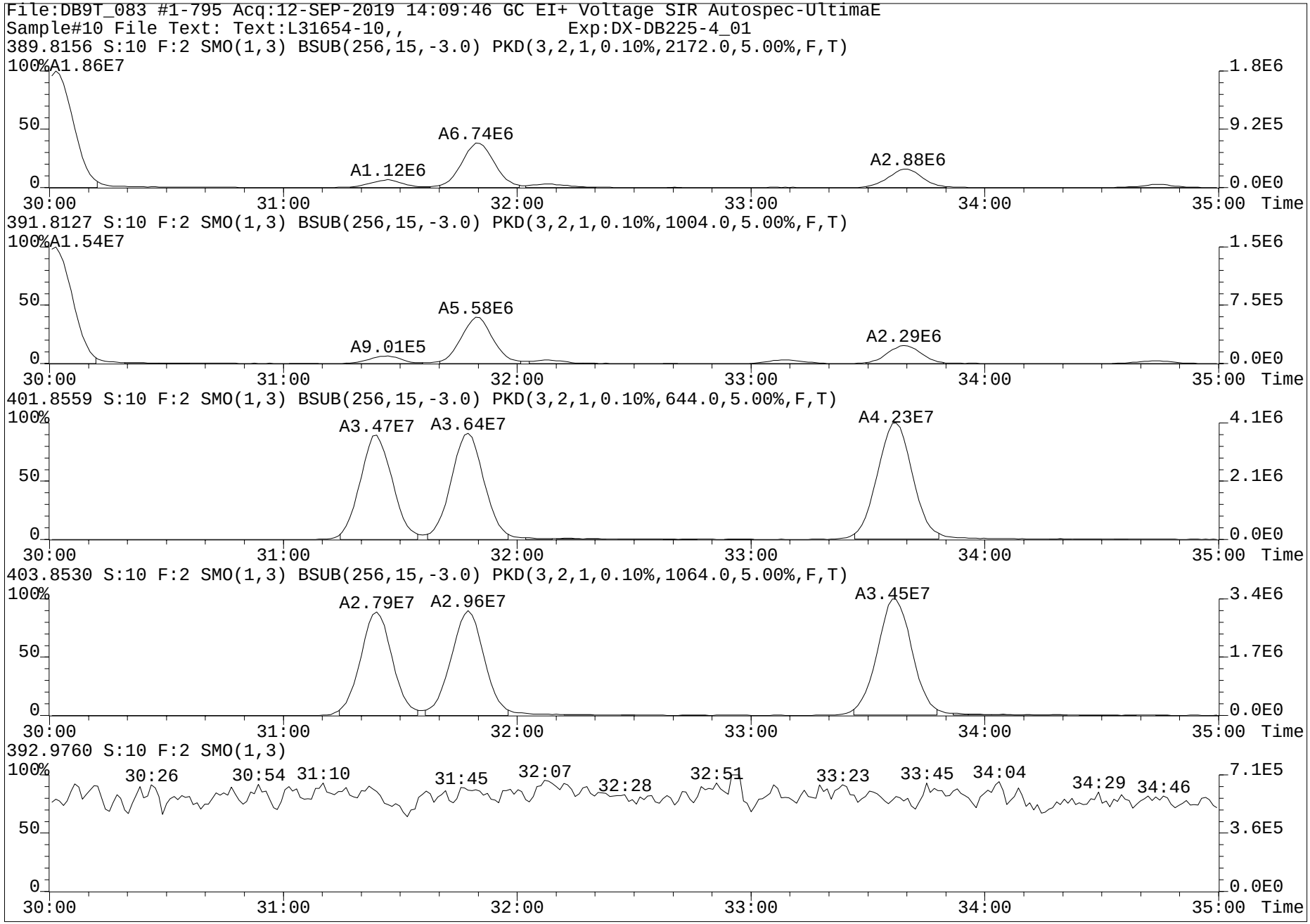
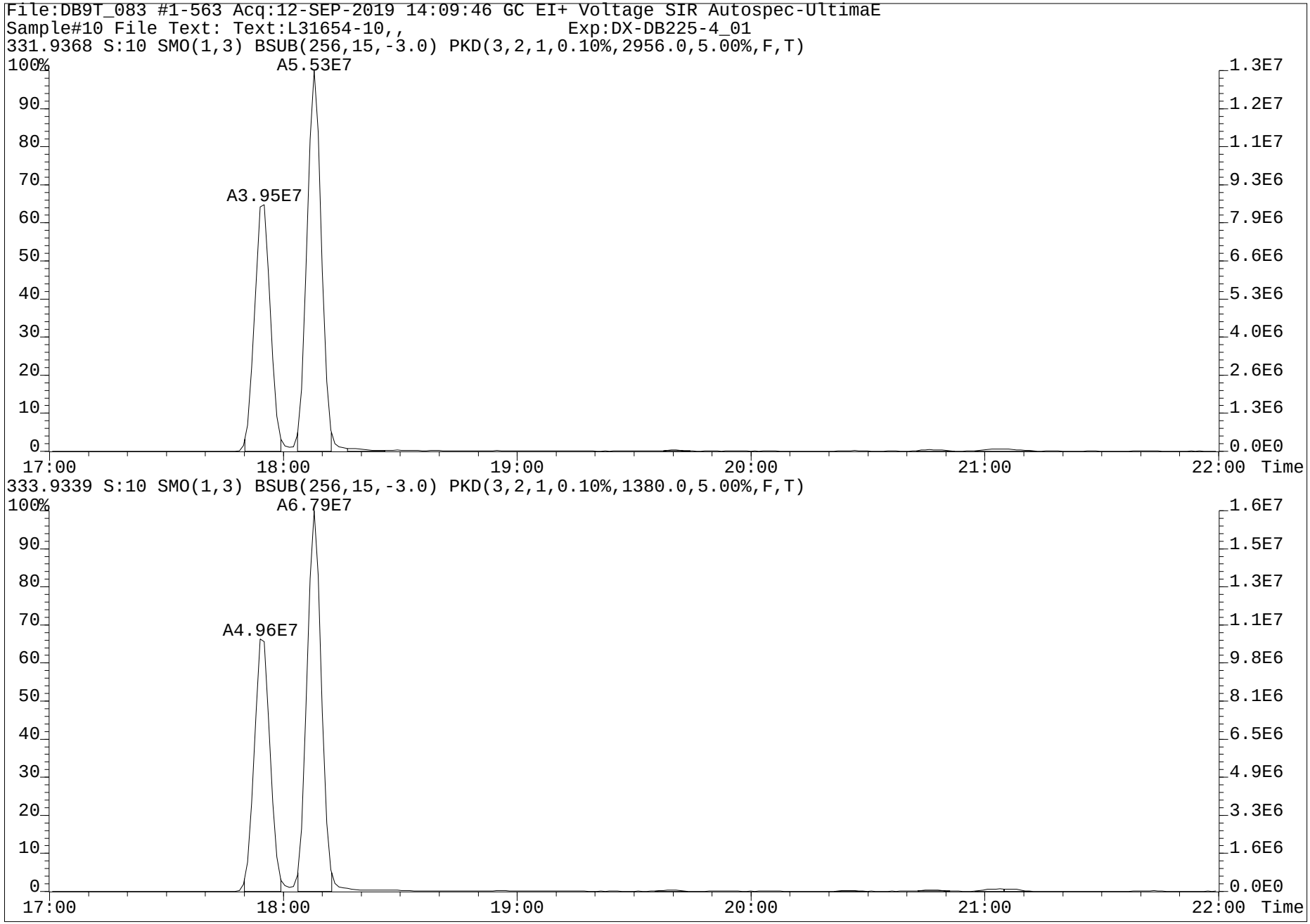
Run #13 Filename DB9T_083 S: 10 I: 1 Acquired: 12-SEP-19 14:09:46 Processed: 17-SEP-19 10:20:04
Run: db9t_083-b Analyte: db-hxd-s2 Cal: db9t_055-5a Results: db9t_083-b Version: V3.6 6-JAN-2000 17:51:42
Sample text: L31654-10,, Comments: 1,WG69303,2.0/20uL
sample size: 10.172000 conc units: pg/g total toxicity: 2.44 F1: 1.0000 F2: 1.0000

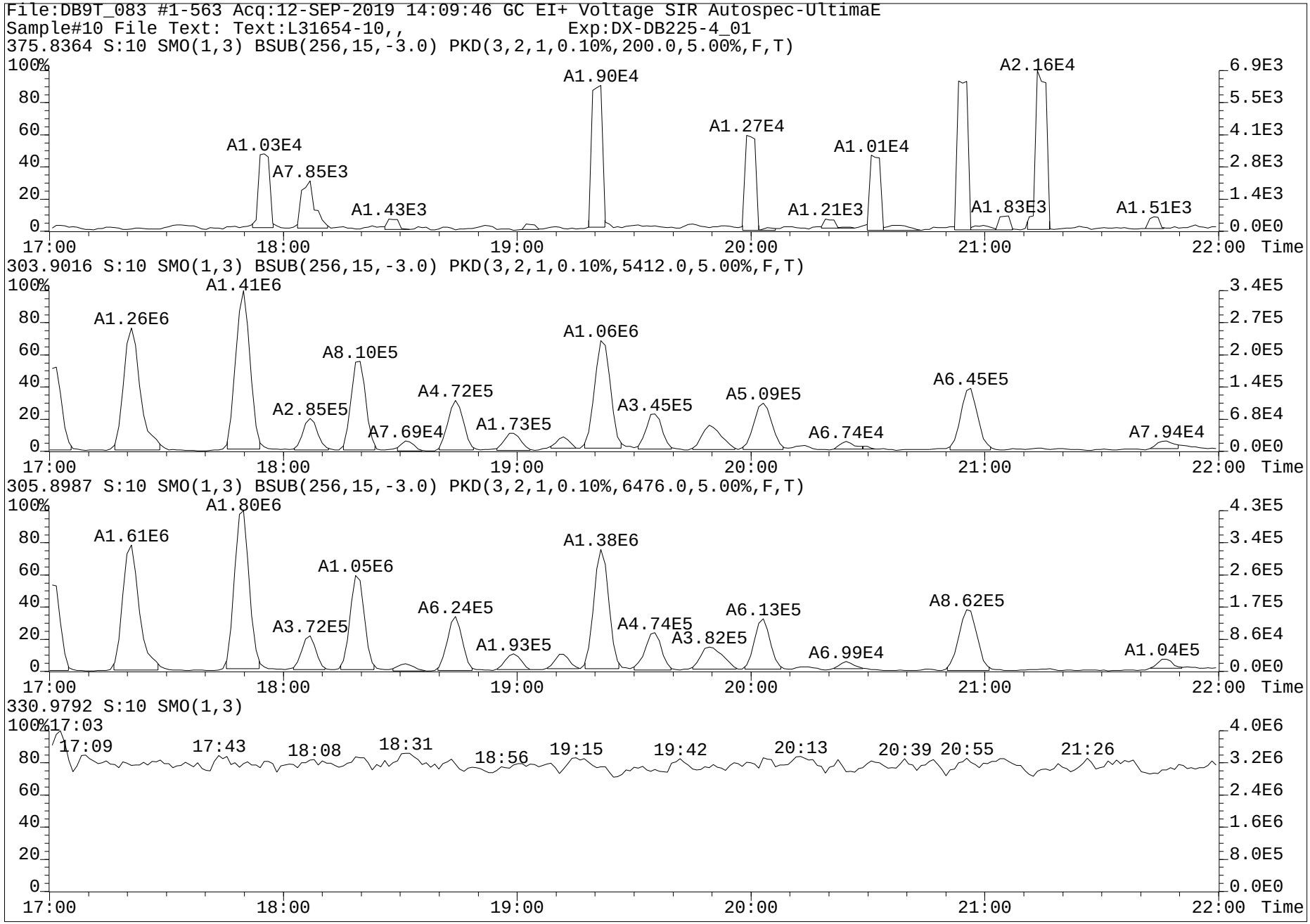
	Typ	Name	#Hom	Resp	RA		RT	Conc	Tox #1	DL	Rec	M?
1	Unk	2,3,7,8-TCDF	1	2.44e+06	0.77	y	19:21	4.864	0	0.2643	-	n
2	Unk	1,2,3,7,8,9-HxCDD	1	5.17e+06	1.26	y	33:39	19.525	2	0.2864	-	n
3	IS/RT	13C-2,3,7,8-TCDF	1	1.27e+08	0.78	y	19:20	143.397	-	0.0472	72.9	n
4	IS/RT	13C-1,2,3,4,7,8-HxCDD	1	6.26e+07	1.24	y	31:24	156.122	-	0.1092	79.4	n
5	IS/RT	13C-1,2,3,6,7,8-HxCDD	1	6.60e+07	1.23	y	31:47	157.422	-	0.1045	80.1	n
6	RS	13C-1,2,3,4-TCDD	1	1.23e+08	0.81	y	18:08	10.534	-	-	-	n
7	RS	13C-1,2,3,7,8,9-HxCDD	1	7.68e+07	1.23	y	33:37	13.144	-	-	-	n
8	Tot	Hexa DPE	0	*			NotFnd	*	-	-	-	n
9	Tot	Tetra Lock	-	-			-	-	-	-	-	n
10	Tot	Hexa Lock	-	-			-	-	-	-	-	n

PV by RA 20SEP2019
SV by HH 22Sept.2019


File:DB9T_083 #1-563 Acq:12-SEP-2019 14:09:46 GC EI+ Voltage SIR Autospec-UltimaE
Sample#10 File Text: Text:L31654-10,, Exp:DX-DB225-4_01
303.9016 S:10 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,5412.0,5.00%,F,T)
A1.26E6
A1.41E6
A2.85E5
A8.10E5
A7.69E4
A4.72E5
A1.73E5
A1.06E6
A3.45E5
A5.09E5
A6.74E4
A6.45E5
A7.94E4
305.8987 S:10 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,6476.0,5.00%,F,T)
A1.61E6
A1.80E6
A3.72E5
A1.05E6
A6.24E5
A1.93E5
A1.38E6
A4.74E5
A3.82E5
A6.13E5
A6.99E4
A8.62E5
A1.04E5
315.9419 S:10 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,2680.0,5.00%,F,T)
A5.57E7
317.9389 S:10 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1324.0,5.00%,F,T)
A7.16E7
100%
80
60
40
20
0
17:00
18:00
19:00
20:00
21:00
22:00
Time
3.4E5
2.7E5
2.0E5
1.4E5
6.8E4
0.0E0
4.3E5
3.4E5
2.6E5
1.7E5
8.6E4
1.2E7
1.0E7
7.5E6
5.0E6
2.5E6
1.6E7
1.3E7
9.6E6
6.4E6
3.2E6


File:DB9T_083 #1-795 Acq:12-SEP-2019 14:09:46 GC EI+ Voltage SIR Autospec-UltimaE
Sample#10 File Text: Text:L31654-10,, Exp:DX-DB225-4_01
389.8156 S:10 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,2172.0,5.00%,F,T)
100%A1.86E7
A1.12E6
A6.74E6
A2.88E6
1.8E6
9.2E5
0.0E0
30:00 31:00 32:00 33:00 34:00 35:00 Time
391.8127 S:10 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1004.0,5.00%,F,T)
100%A1.54E7
A9.01E5
A5.58E6
A2.29E6
1.5E6
7.5E5
0.0E0
30:00 31:00 32:00 33:00 34:00 35:00 Time
401.8559 S:10 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,644.0,5.00%,F,T)
100%
A3.47E7
A3.64E7
A4.23E7
4.1E6
2.1E6
0.0E0
30:00 31:00 32:00 33:00 34:00 35:00 Time
403.8530 S:10 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1064.0,5.00%,F,T)
100%
A2.79E7
A2.96E7
A3.45E7
3.4E6
1.7E6
0.0E0
30:00 31:00 32:00 33:00 34:00 35:00 Time
392.9760 S:10 F:2 SMO(1,3)
100%
30:26
30:54
31:10
31:45
32:07
32:28
32:51
33:23
33:45
34:04
34:29
34:46
7.1E5
3.6E5
0.0E0
30:00 31:00 32:00 33:00 34:00 35:00 Time


File:DB9T_083 #1-563 Acq:12-SEP-2019 14:09:46 GC EI+ Voltage SIR Autospec-UltimaE
Sample#10 File Text: Text:L31654-10,, Exp:DX-DB225-4_01
331.9368 S:10 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,2956.0,5.00%,F,T)
A5.53E7
A3.95E7
333.9339 S:10 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1380.0,5.00%,F,T)
A6.79E7
A4.96E7
17:00
18:00
19:00
20:00
21:00
22:00
Time


File:DB9T_083 #1-563 Acq:12-SEP-2019 14:09:46 GC EI+ Voltage SIR Autospec-UltimaE
Sample#10 File Text: Text:L31654-10,, Exp:DX-DB225-4_01
375.8364 S:10 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,200.0,5.00%,F,T)
A1.03E4
A7.85E3
A1.43E3
A1.90E4
A1.27E4
A1.21E3
A1.01E4
A2.16E4
A1.83E3
A1.51E3
303.9016 S:10 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,5412.0,5.00%,F,T)
A1.26E6
A1.41E6
A2.85E5
A8.10E5
A7.69E4
A4.72E5
A1.73E5
A1.06E6
A3.45E5
A5.09E5
A6.74E4
A6.45E5
A7.94E4
305.8987 S:10 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,6476.0,5.00%,F,T)
A1.61E6
A1.80E6
A3.72E5
A1.05E6
A6.24E5
A1.93E5
A1.38E6
A4.74E5
A3.82E5
A6.13E5
A6.99E4
A8.62E5
A1.04E5
330.9792 S:10 SMO(1,3)
17:03
17:09
17:43
18:08
18:31
18:56
19:15
19:42
20:13
20:39
20:55
21:26
Time

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S20, Date: 13-Sep-2019, Time: 02:47:12, ID: L31654-11,,, Description: 1,WG69303,1.0/20uL

	Name	Sample Size	Resp	Ratio	fails?	RT	pg	DL	%Rec	Noise 1	Noise 2
1	2,3,7,8-TCDF	10.327	2.03e5	0.79	NO	25.27	7.979	0.0399		2.82e3	1.75e3
2	1,2,3,7,8-PeCDF	10.327	1.26e5	1.56	NO	33.58	5.026	0.0610		2.63e3	2.83e3
3	2,3,4,7,8-PeCDF	10.327	1.31e5	1.52	NO	35.37	5.045	0.0510		2.63e3	2.83e3
4	1,2,3,4,7,8-HxCDF	10.327	8.89e5	1.27	NO	40.78	30.440	0.0410		3.18e3	3.42e3
5	1,2,3,6,7,8-HxCDF	10.327	4.52e5	1.27	NO	40.95	15.460	0.0410		3.18e3	3.42e3
6	2,3,4,6,7,8-HxCDF	10.327	1.47e5	1.30	NO	41.92	5.919	0.0472		3.18e3	3.42e3
7	1,2,3,7,8,9-HxCDF	10.327	2.35e4	1.20	NO	42.95	1.092	0.0551		3.18e3	3.42e3
8	1,2,3,4,6,7,8-HpCDF	10.327	7.16e6	1.03	NO	45.41	299.585	0.0513		2.68e3	4.83e3
9	1,2,3,4,7,8,9-HpCDF	10.327	3.97e5	0.99	NO	47.19	19.866	0.0608		2.68e3	4.83e3
10	OCDF	10.327	2.01e7	0.90	NO	50.50	818.107	0.0316		1.43e3	2.67e3
11	2,3,7,8-TCDD	10.327	4.14e4	0.70	NO	26.51	1.862	0.0403		1.94e3	1.89e3
12	1,2,3,7,8-PeCDD	10.327	1.03e5	0.59	NO	36.18	3.910	0.0287		1.68e3	1.95e3
13	1,2,3,4,7,8-HxCDD	10.327	1.79e5	1.21	NO	42.19	8.510	0.0694		2.08e3	6.64e3
14	1,2,3,6,7,8-HxCDD	10.327	9.37e5	1.22	NO	42.31	40.637	0.0650		2.08e3	6.64e3
15	1,2,3,7,8,9-HxCDD	10.327	4.42e5	1.22	NO	42.75	20.235	0.0677		2.08e3	6.64e3
16	1,2,3,4,6,7,8-HpCDD	10.327	2.06e7	1.04	NO	46.79	1109.986	0.1591		8.75e3	1.03e4
17	OCDD	10.327	2.16e8	0.96	NO	50.43	10206.680	0.1084		4.94e3	7.20e3
18	13C-2,3,7,8-TCDF	10.327	5.31e6	0.81	NO	25.25	149.198	0.0774	77.0	6.28e3	5.95e3
19	13C-1,2,3,7,8-PeCDF	10.327	5.24e6	1.53	NO	33.55	181.051	0.1450	93.5	7.07e3	1.16e4
20	13C-2,3,4,7,8-PeCDF	10.327	5.29e6	1.60	NO	35.33	177.245	0.1406	91.5	7.07e3	1.16e4
21	13C-1,2,3,4,7,8-HxCDF	10.327	5.12e6	0.52	NO	40.77	189.046	0.0725	97.6	7.20e3	3.87e3
22	13C-1,2,3,6,7,8-HxCDF	10.327	5.27e6	0.51	NO	40.93	177.194	0.0660	91.5	7.20e3	3.87e3
23	13C-2,3,4,6,7,8-HxCDF	10.327	4.23e6	0.52	NO	41.88	157.576	0.0732	81.4	7.20e3	3.87e3
24	13C-1,2,3,7,8,9-HxCDF	10.327	3.96e6	0.52	NO	42.92	165.992	0.0823	85.7	7.20e3	3.87e3
25	13C-1,2,3,4,6,7,8-HpCDF	10.327	3.70e6	0.45	NO	45.39	166.063	0.1043	85.7	6.54e3	6.57e3
26	13C-1,2,3,4,7,8,9-HpCDF	10.327	3.09e6	0.46	NO	47.18	170.870	0.1285	88.2	6.54e3	6.57e3
27	13C-2,3,7,8-TCDD	10.327	3.90e6	0.78	NO	26.47	172.492	0.1511	89.1	7.48e3	7.71e3
28	13C-1,2,3,7,8-PeCDD	10.327	5.17e6	0.64	NO	36.15	287.763	0.1587	148.6	6.99e3	5.68e3
29	13C-1,2,3,4,7,8-HxCDD	10.327	3.96e6	1.27	NO	42.15	183.182	0.1064	94.6	3.73e3	9.23e3
30	13C-1,2,3,6,7,8-HxCDD	10.327	4.74e6	1.25	NO	42.29	198.449	0.0963	102.5	3.73e3	9.23e3
31	13C-1,2,3,4,6,7,8-HpCDD	10.327	4.62e6	1.02	NO	46.77	191.003	0.0676	98.6	4.27e3	4.94e3
32	13C-OCDD	10.327	8.36e6	0.90	NO	50.41	470.547	0.0910	121.5	4.78e3	4.34e3
33	13C-1,2,3,4-TCDD	10.327	4.53e6	0.77	NO	26.12	10.890	0.0082	5.6	7.48e3	7.71e3
34	13C-1,2,3,7,8,9-HxCDD	10.327	4.32e6	1.25	NO	42.73	14.407	0.0077	7.4	3.73e3	9.23e3
35	37Cl-2,3,7,8-TCDD	10.327	4.52e5			26.51	18.105	0.0454	93.5		5.03e3
36	Total Tetra-Furans	10.327					89.461	0.0399			1.75e3
37	Total Tetra-Dioxins	10.327					20.867	0.0403			1.89e3
38	Total Penta-Furans	10.327					128.198	0.0566			2.83e3
39	Total Penta-Dioxins	10.327					31.137	0.0287			1.95e3
40	Total Hexa-Furans	10.327					347.838	0.0449			3.42e3
41	Total Hexa-Dioxins	10.327					272.908	0.0640			6.64e3
42	Total Hepta-Furans	10.327					1096.692	0.0557			4.83e3
43	Total Hepta-Dioxins	10.327					2405.083	0.1591			1.03e4
44	Hexa DPE	1.000	6.51e2			25.50					1.89e3
45	Hepta DPE	1.000	8.32e2			33.07					1.18e3
46	Octa DPE	1.000	1.82e3			40.70					2.20e3
47	Nona DPE	1.000	7.74e2			48.40					1.52e3
48	Deca DPE	1.000	9.87e2			50.43					4.95e2
49	Tetra Lock	1.000	5.36e3			21.77					1.21e5
50	Penta Lock	1.000									7.33e4
51	Hexa Lock	1.000									2.21e5
52	Hepta Lock	1.000									1.42e5
53	Octa Lock	1.000	9.14e3			49.13					1.09e5
54	13C-Tetra-Furans	10.327					149.198	0.0774			5.95e3
55	13C-Tetra-Dioxins	10.327					183.382	0.1593			7.71e3

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

SV1HI 22sept.2019

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S20, Date: 13-Sep-2019, Time: 02:47:12, ID: L31654-11,,, Description: 1,WG69303,1.0/20uL

Tetrafurans

	RT	Ratio	Fails?	pg
1	24.60	0.807	NO	5.996
2	24.27	0.761	NO	2.838
3	24.15	0.783	NO	4.731
4	23.87	0.776	NO	2.511
5	23.72	0.772	NO	0.884
6	23.43	0.787	NO	17.486
7	23.00	0.788	NO	14.657
8	22.58	0.756	NO	8.321
9	22.27	0.777	NO	10.597
10	21.97	0.790	NO	4.326
11	21.45	0.734	NO	0.420
12	28.17	0.818	NO	0.518
13	26.29	0.773	NO	3.646
14	25.97	0.760	NO	2.270
15	25.27	0.793	NO	7.979
16	24.95	0.773	NO	2.281

Tetradioxins

	RT	Ratio	Fails?	pg
1	26.11	0.832	NO	0.636
2	25.64	0.820	NO	0.680
3	25.22	0.995	YES	0.951
4	25.10	0.568	YES	0.401
5	24.94	0.696	NO	0.242
6	24.70	0.818	NO	2.928
7	23.77	0.719	NO	1.928
8	23.39	0.748	NO	2.010
9	22.97	0.752	NO	6.854
10	28.33	0.932	YES	0.242
11	27.12	0.877	NO	0.522
12	26.72	0.665	NO	0.076
13	26.51	0.695	NO	1.862
14	26.34	0.748	NO	1.534

Pentafurans

	RT	Ratio	Fails?	pg
1	35.63	1.487	NO	6.650
2	35.37	1.519	NO	5.045
3	35.18	1.553	NO	0.121
4	34.30	1.511	NO	3.744
5	33.97	1.557	NO	1.187
6	33.58	1.565	NO	5.026
7	33.42	1.465	NO	1.401
8	32.92	1.559	NO	9.411
9	32.45	1.218	YES	0.632
10	32.30	1.324	NO	0.344
11	31.92	1.506	NO	1.942
12	31.52	1.577	NO	35.389
13	31.16	1.377	NO	0.482
14	28.93	1.571	NO	56.470
15	37.13	1.543	NO	0.354

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S20, Date: 13-Sep-2019, Time: 02:47:12, ID: L31654-11,,, Description: 1,WG69303,1.0/20uL

Pentadioxins

	RT	Ratio	Fails?	pg
1	33.88	0.592	NO	4.315
2	33.20	0.652	NO	2.362
3	32.05	0.613	NO	9.992
4	37.08	0.656	NO	0.948
5	36.50	0.563	NO	0.580
6	36.18	0.594	NO	3.910
7	35.72	0.479	YES	0.183
8	35.53	0.681	NO	0.352
9	35.12	0.586	NO	1.958
10	34.92	0.636	NO	1.732
11	34.52	0.597	NO	1.575
12	34.20	0.609	NO	3.229

Hexafurans

	RT	Ratio	Fails?	pg
1	40.12	1.264	NO	150.068
2	39.82	1.266	NO	2.260
3	39.55	0.621	YES	0.391
4	39.31	1.216	NO	95.273
5	39.04	1.242	NO	30.859
6	43.07	1.229	NO	3.751
7	42.95	1.202	NO	1.092
8	41.92	1.295	NO	5.919
9	41.73	1.236	NO	7.960
10	41.48	1.793	YES	0.266
11	41.38	1.275	NO	1.330
12	40.95	1.273	NO	15.460
13	40.78	1.266	NO	30.440
14	40.71	1.202	NO	2.770

Hexadioxins

	RT	Ratio	Fails?	pg
1	41.48	1.196	NO	3.333
2	41.27	1.224	NO	96.578
3	40.90	1.244	NO	11.978
4	40.09	1.222	NO	91.636
5	42.75	1.219	NO	20.235
6	42.31	1.222	NO	40.637
7	42.19	1.209	NO	8.510

Heptafurans

	RT	Ratio	Fails?	pg
1	47.19	0.992	NO	19.866
2	45.91	1.035	NO	772.493
3	45.72	1.037	NO	4.748
4	45.41	1.034	NO	299.585

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S20, Date: 13-Sep-2019, Time: 02:47:12, ID: L31654-11,,, Description: 1,WG69303,1.0/20uL

Heptadioxins

	RT	Ratio	Fails?	pg
1	45.86	1.029	NO	1295.097
2	46.79	1.037	NO	1109.986

13C-TF

	RT	Ratio	Fails?	pg
1	25.25	0.805	NO	149.198

13C-TD

	RT	Ratio	Fails?	pg
1	26.47	0.784	NO	172.492
2	26.12	0.771	NO	10.890

13C-PF

	RT	Ratio	Fails?	pg
1	35.33	1.595	NO	177.245
2	33.55	1.534	NO	181.051

13C-PD

	RT	Ratio	Fails?	pg
1	36.15	0.636	NO	287.763

13C-HxF

	RT	Ratio	Fails?	pg
1	41.88	0.520	NO	157.576
2	40.93	0.514	NO	177.194
3	40.77	0.516	NO	189.046
4	42.92	0.522	NO	165.992

13C-HxD

	RT	Ratio	Fails?	pg
1	42.73	1.253	NO	14.407
2	42.29	1.253	NO	198.449
3	42.15	1.274	NO	183.182

13C-HpF

	RT	Ratio	Fails?	pg
1	45.39	0.455	NO	166.063
2	47.18	0.460	NO	170.870

13C-HpD

	RT	Ratio	Fails?	pg
1	46.77	1.021	NO	191.003

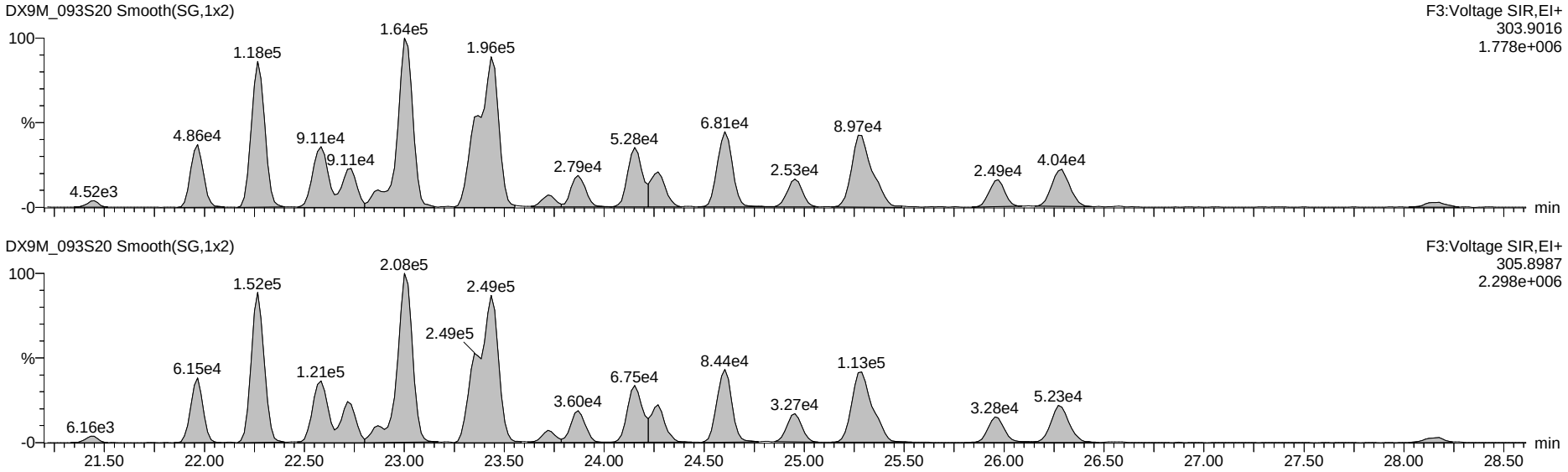
PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

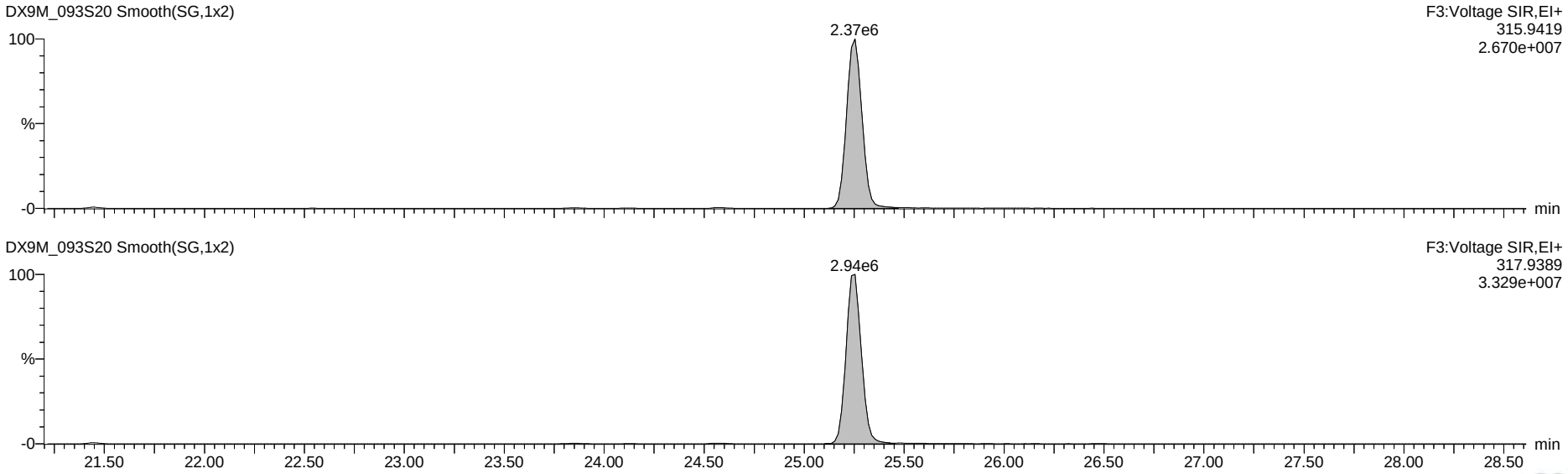
Method: G:\Masslynx\Inst_M\Exported_methods\DX_1613B_16.mdb 07 Sep 2017 16:45:23
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

Name: DX9M_093S20, Date: 13-Sep-2019, Time: 02:47:12, ID: L31654-11,,, Description: 1,WG69303,1.0/20uL

Total Tetra-Furans



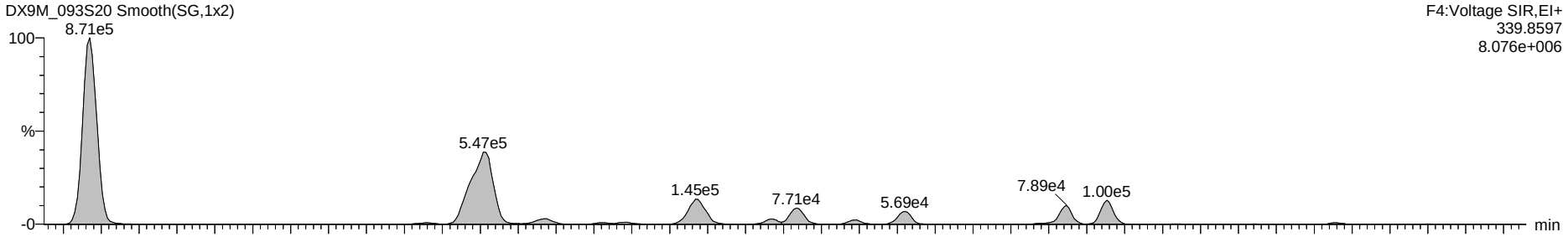
13C-Tetra-Furans

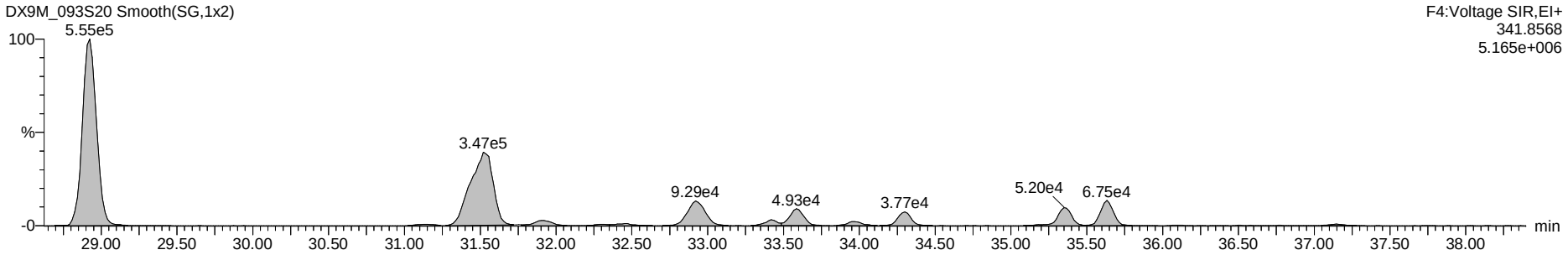


Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S20, Date: 13-Sep-2019, Time: 02:47:12, ID: L31654-11,,, Description: 1,WG69303,1.0/20uL

Total Penta-Furans





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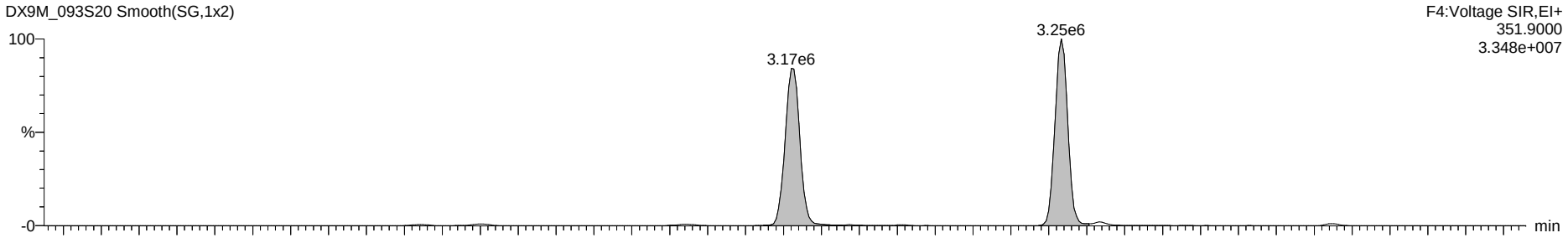

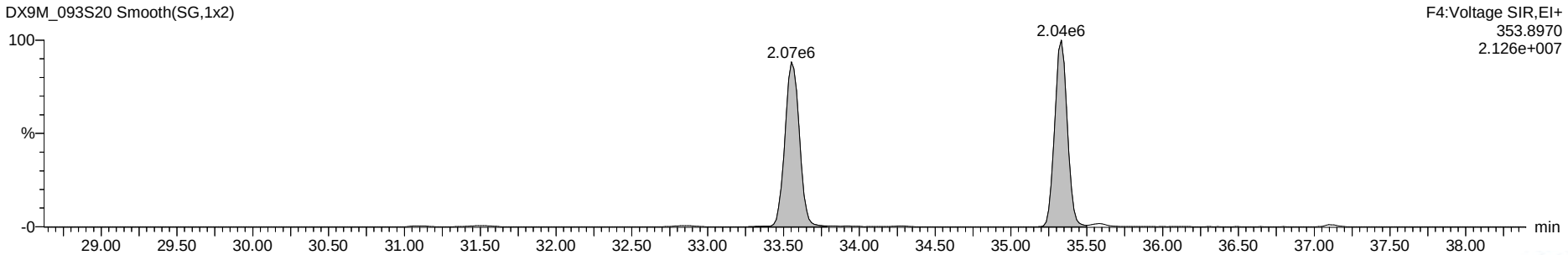

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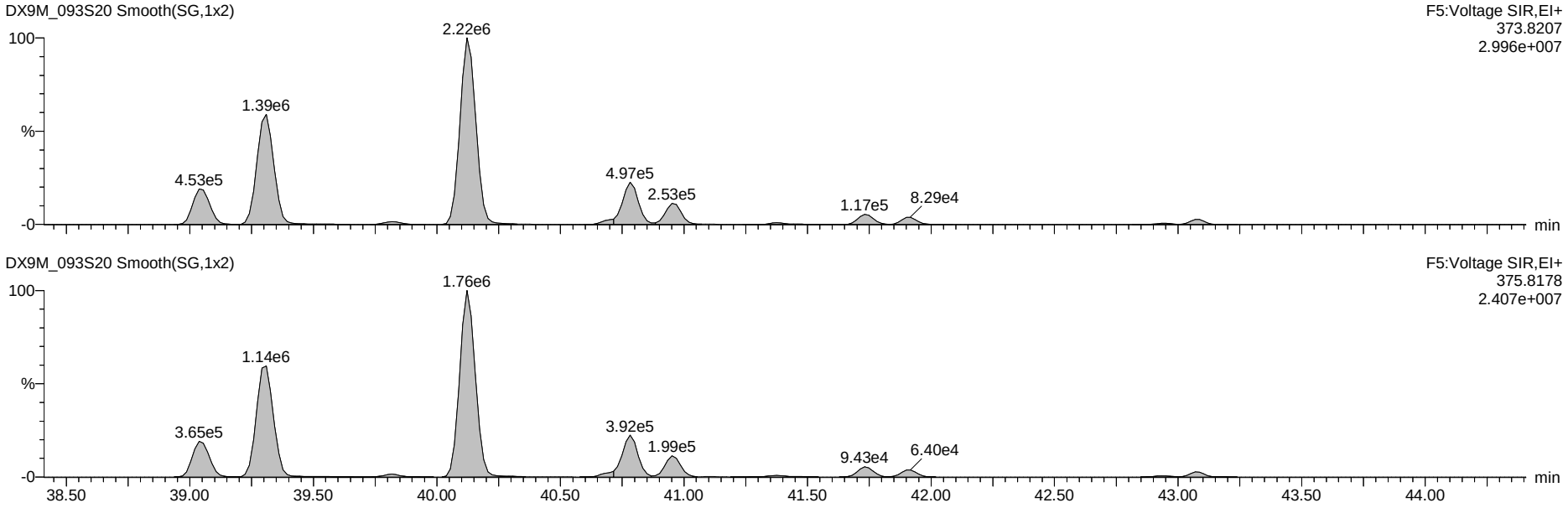
Name: DX9M_093S20, Date: 13-Sep-2019, Time: 02:47:12, ID: L31654-11,,, Description: 1,WG69303,1.0/20uL

Total Hexa-Furans



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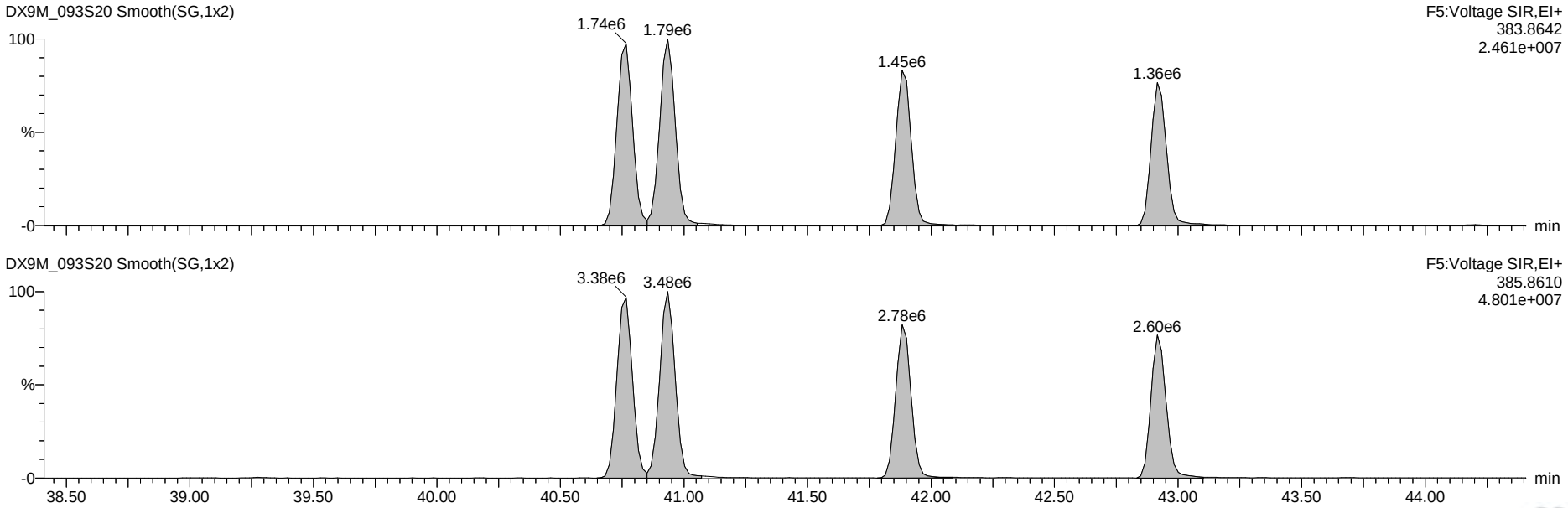

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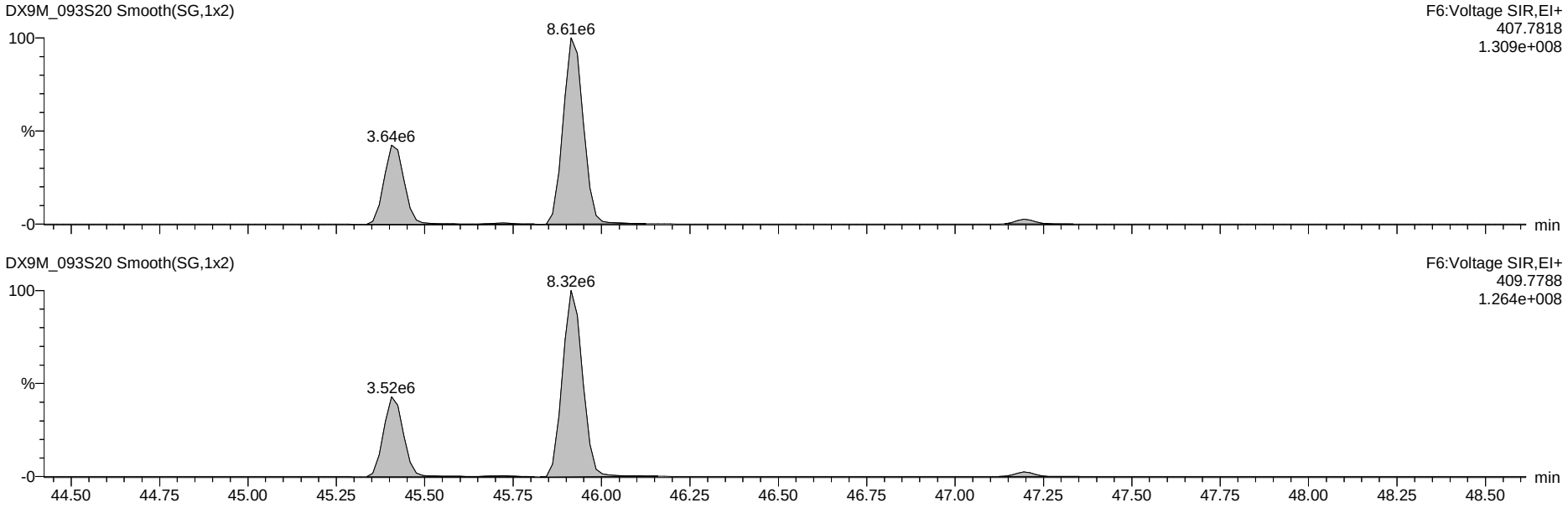
Total Hepta-Furans



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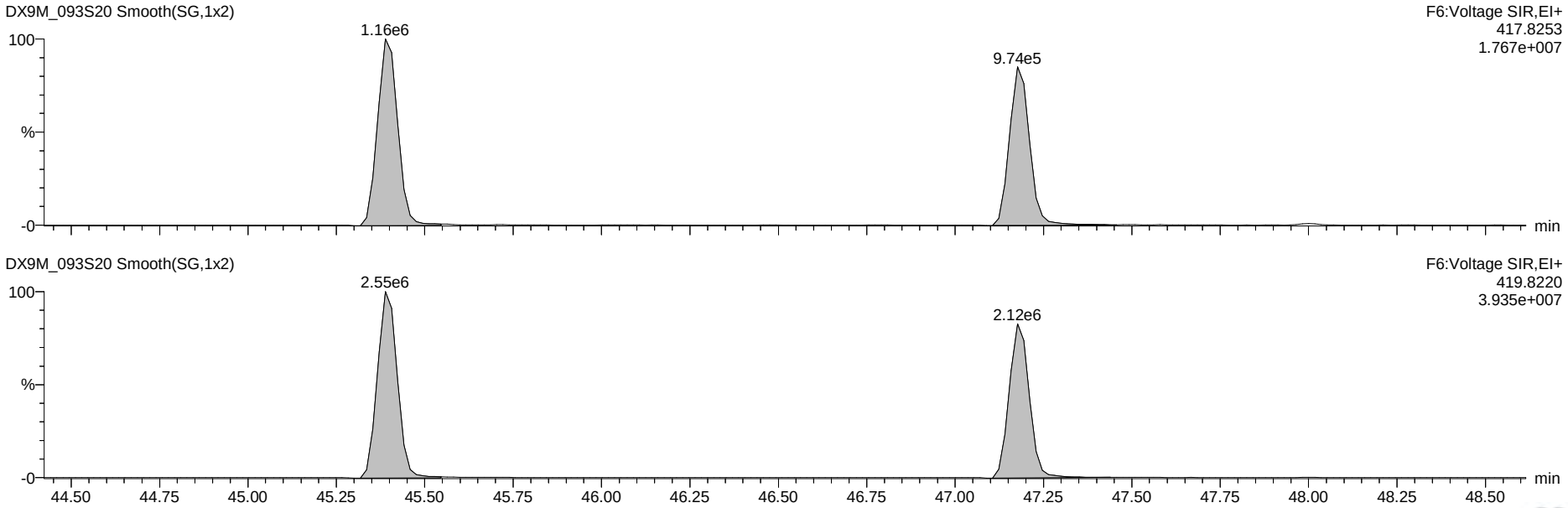

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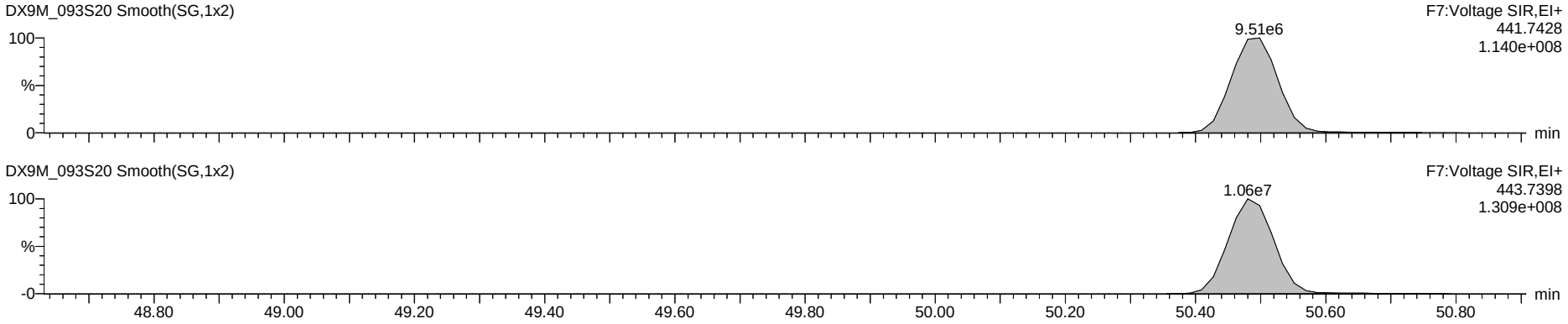
OCDF



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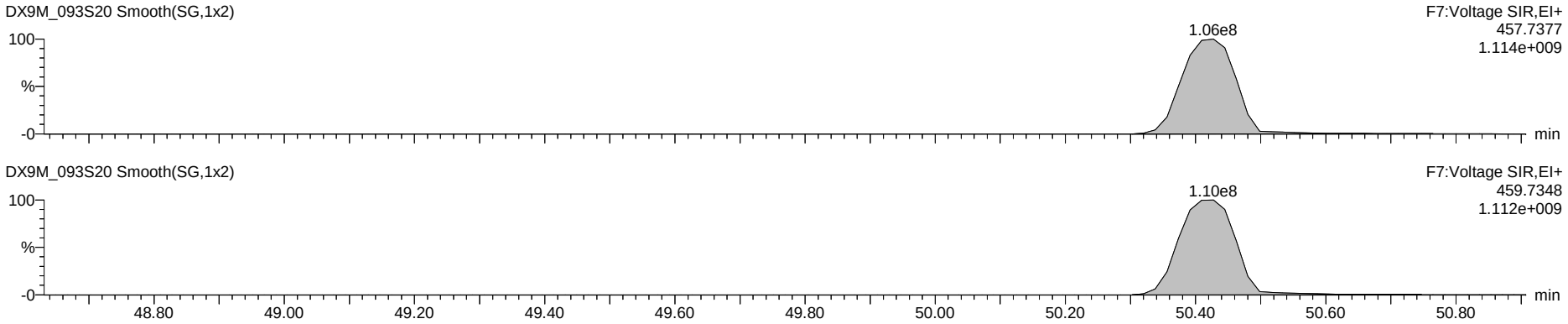

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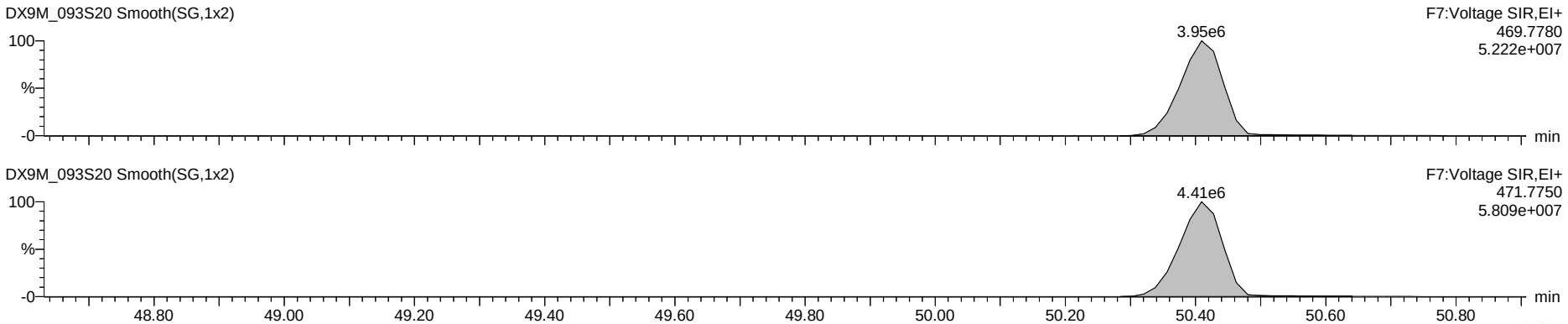

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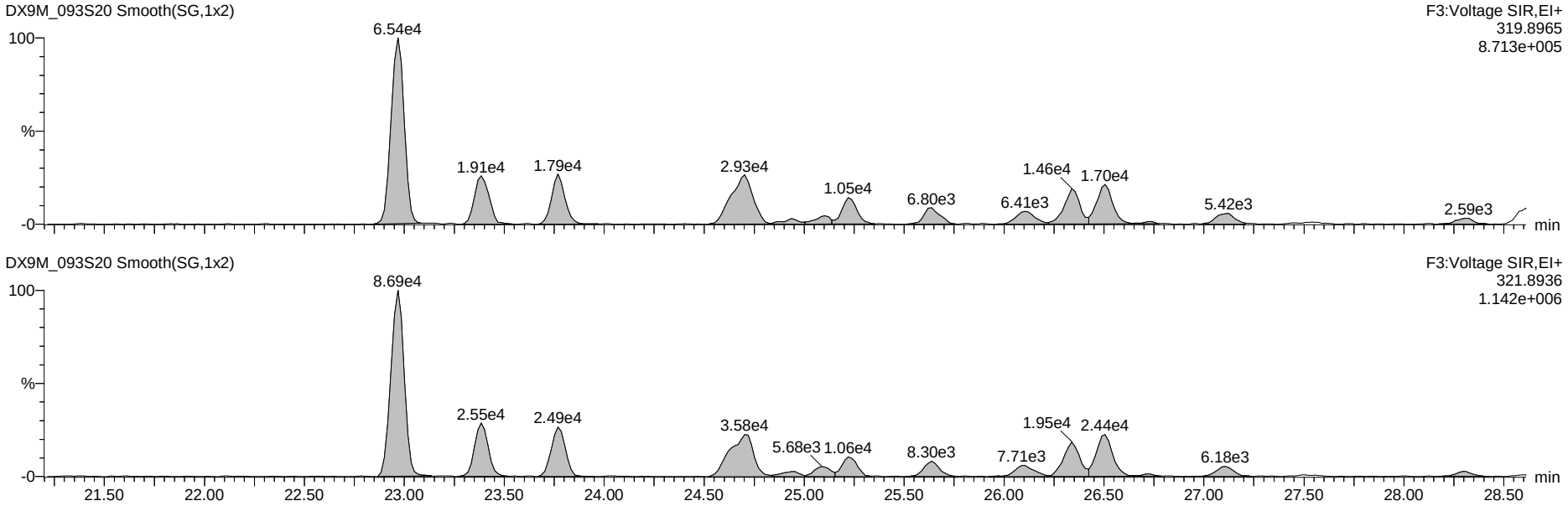
Name: DX9M_093S20, Date: 13-Sep-2019, Time: 02:47:12, ID: L31654-11,,, Description: 1,WG69303,1.0/20uL

Total Tetra-Dioxins



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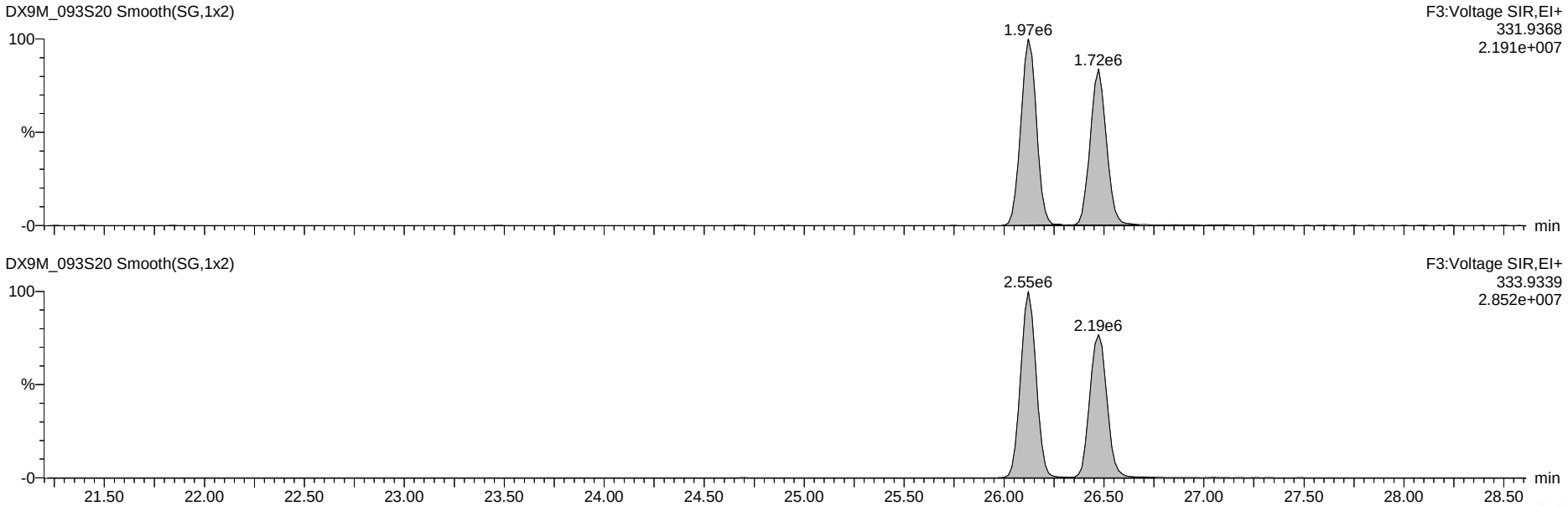

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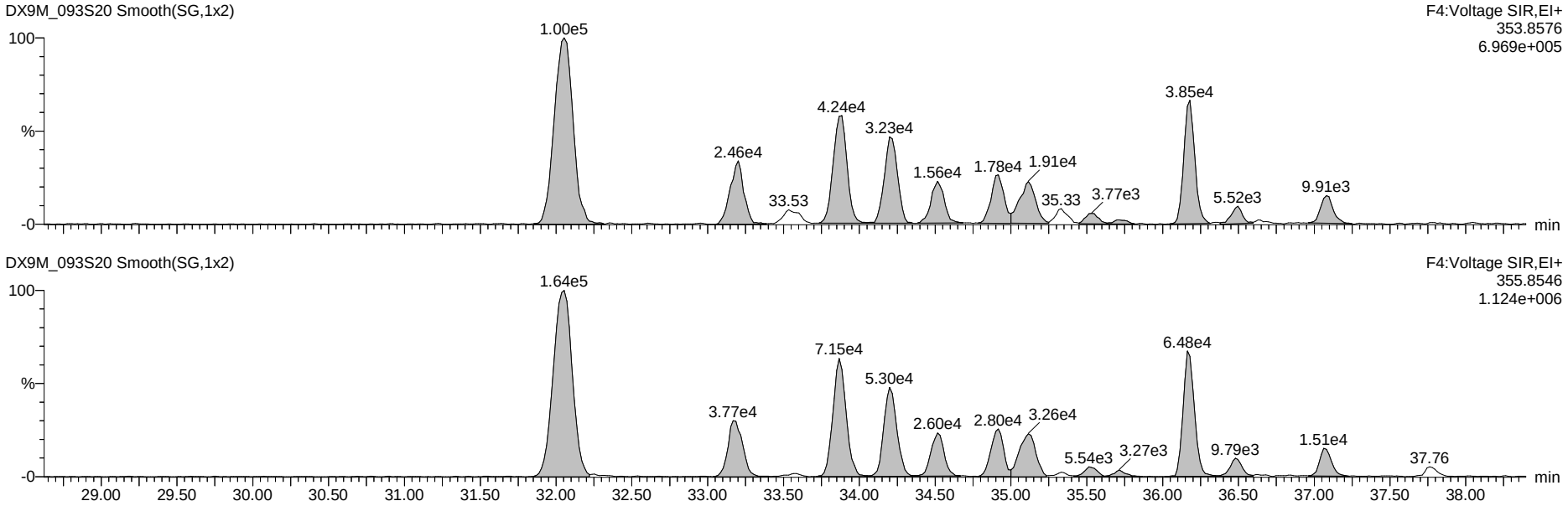
Total Penta-Dioxins



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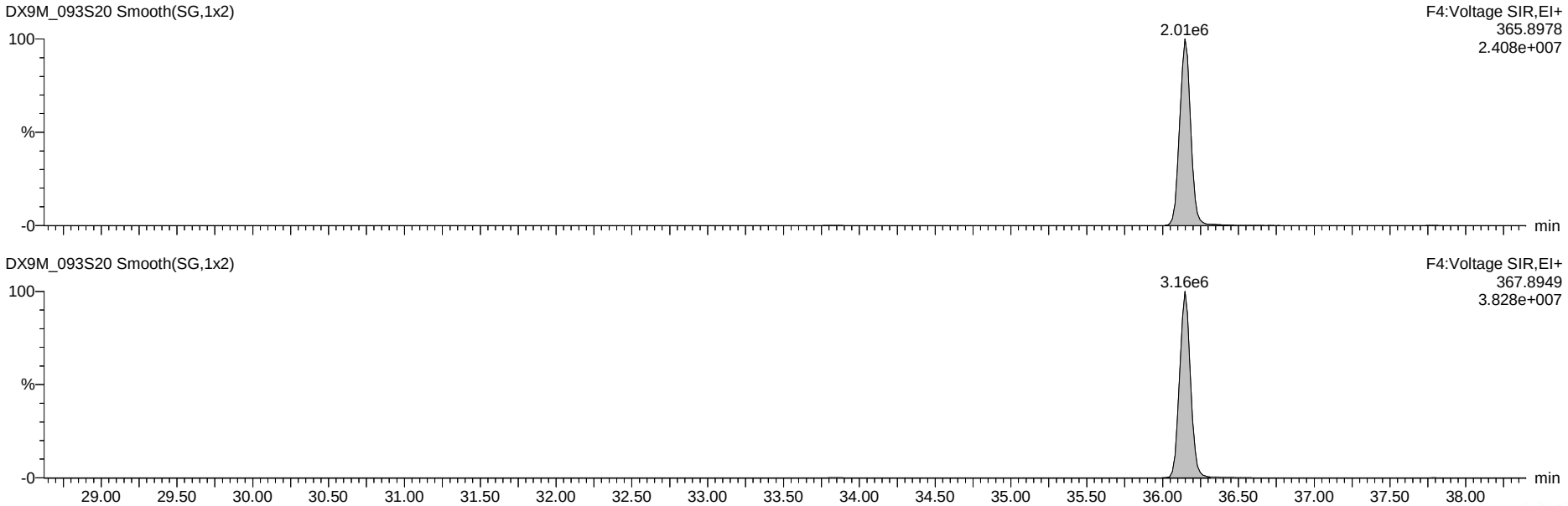

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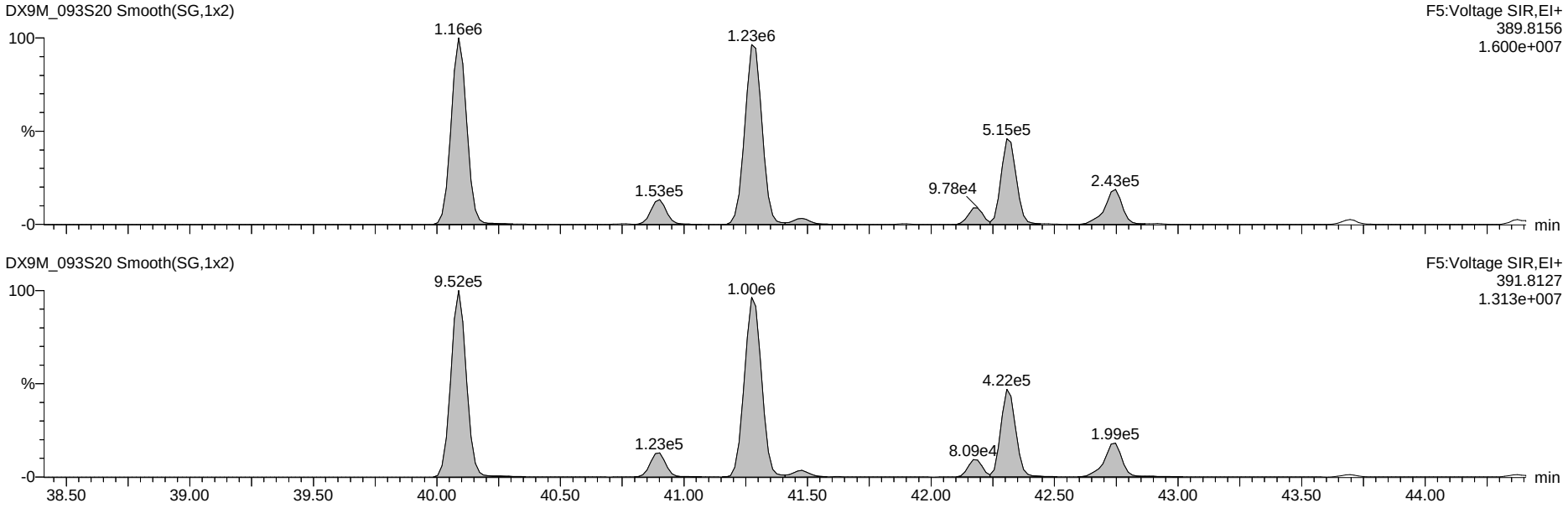
Name: DX9M_093S20, Date: 13-Sep-2019, Time: 02:47:12, ID: L31654-11,,, Description: 1,WG69303,1.0/20uL

Total Hexa-Dioxins



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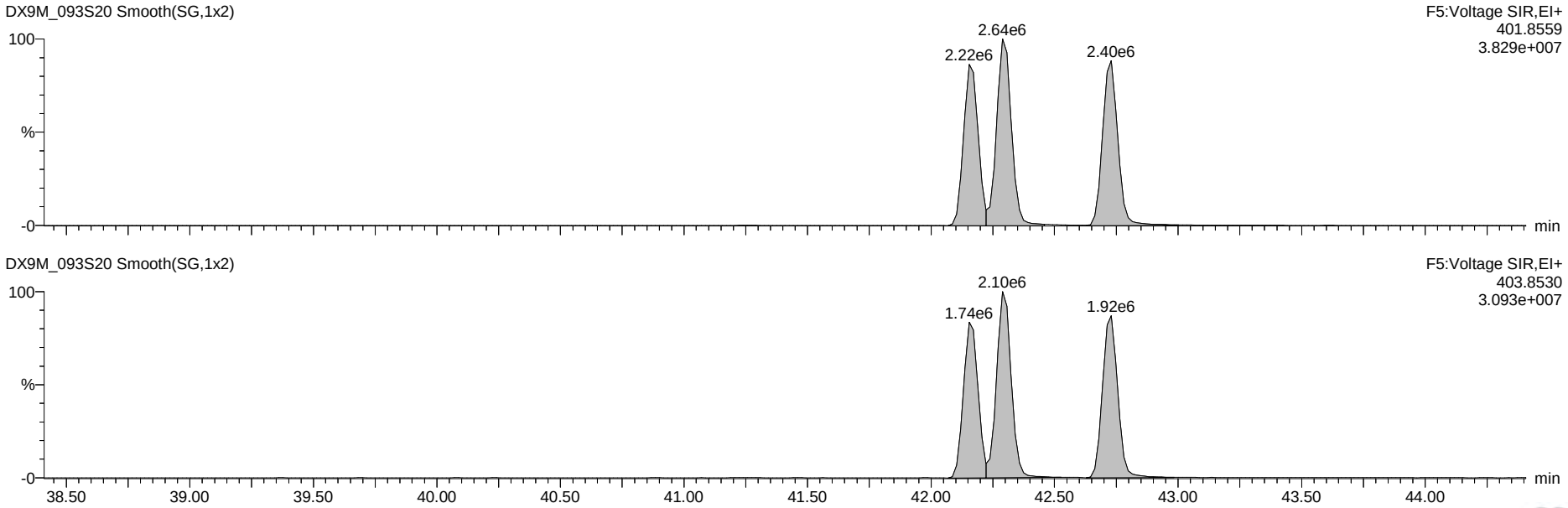

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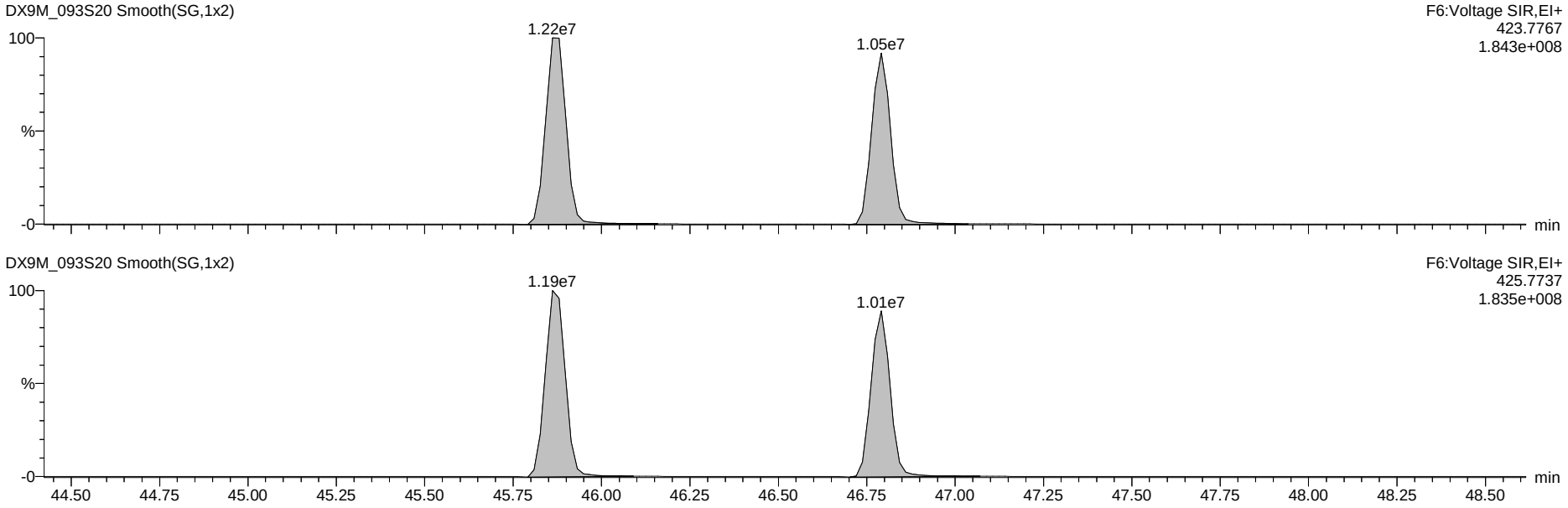
Total Hepta-Dioxins



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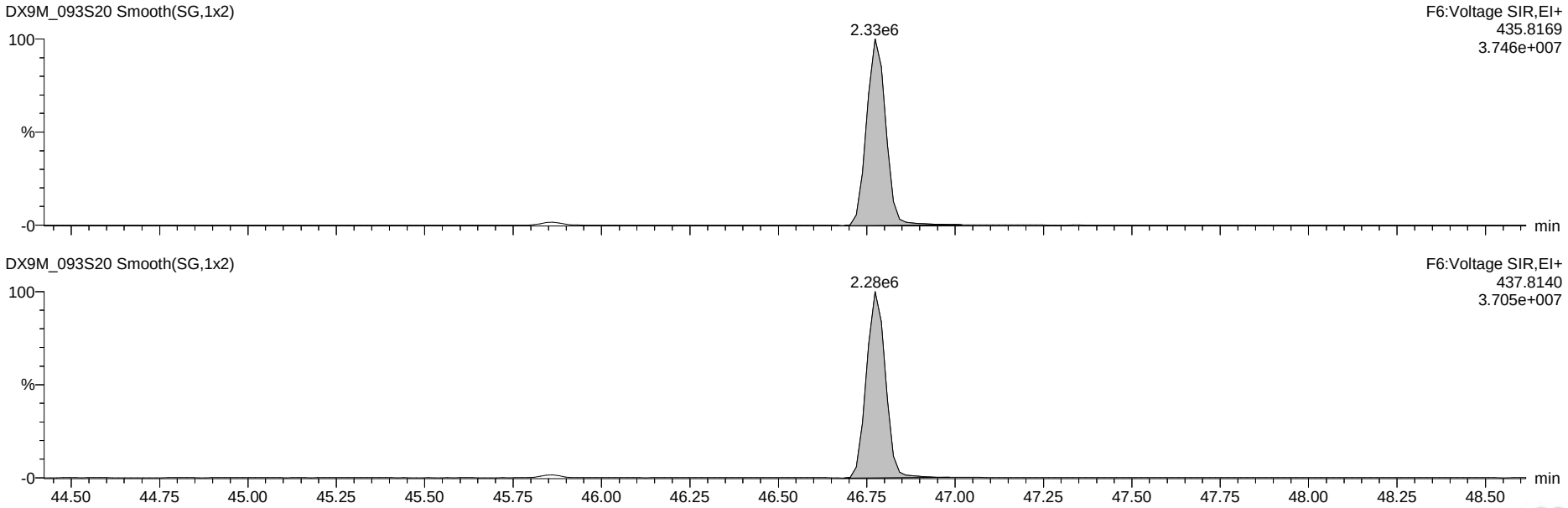

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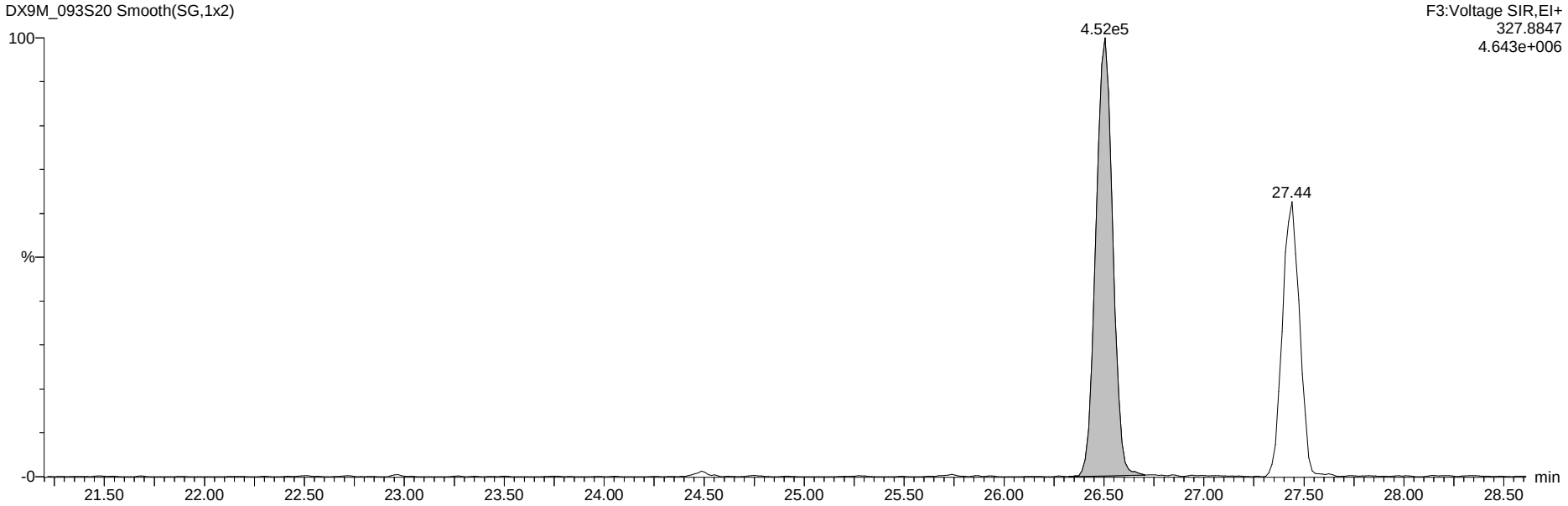
37Cl-2,3,7,8-TCDD



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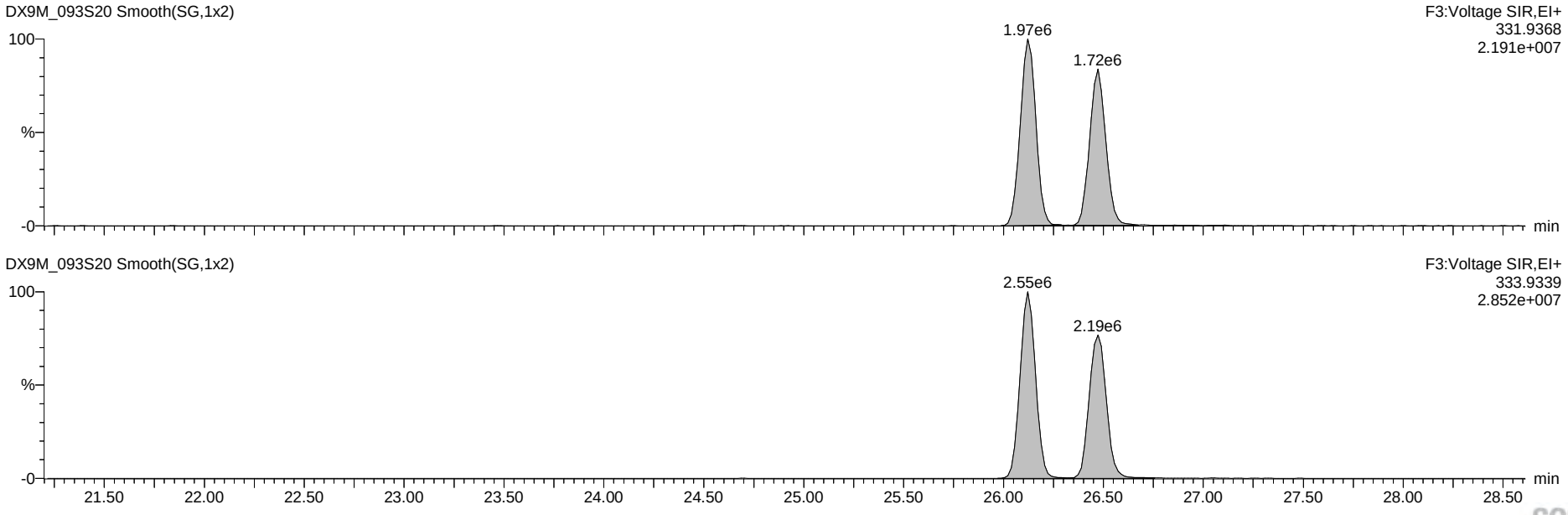

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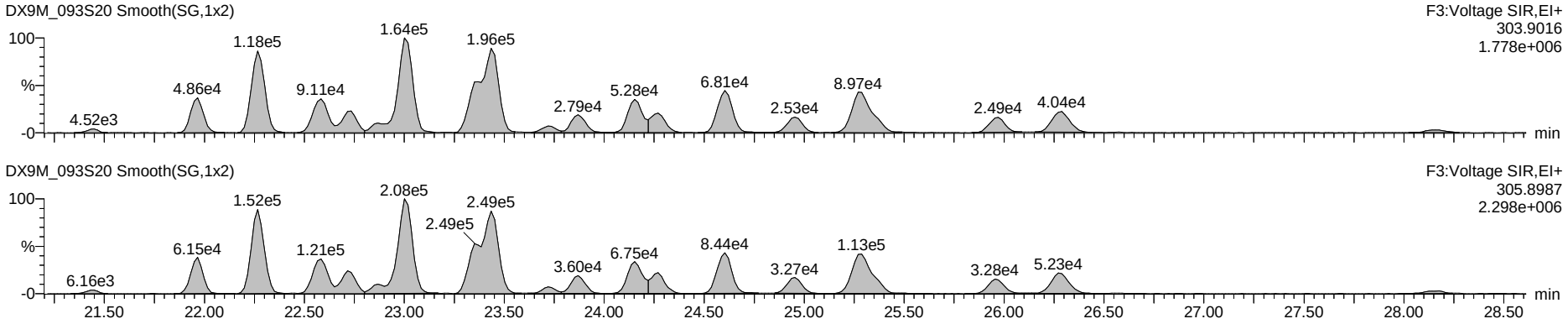
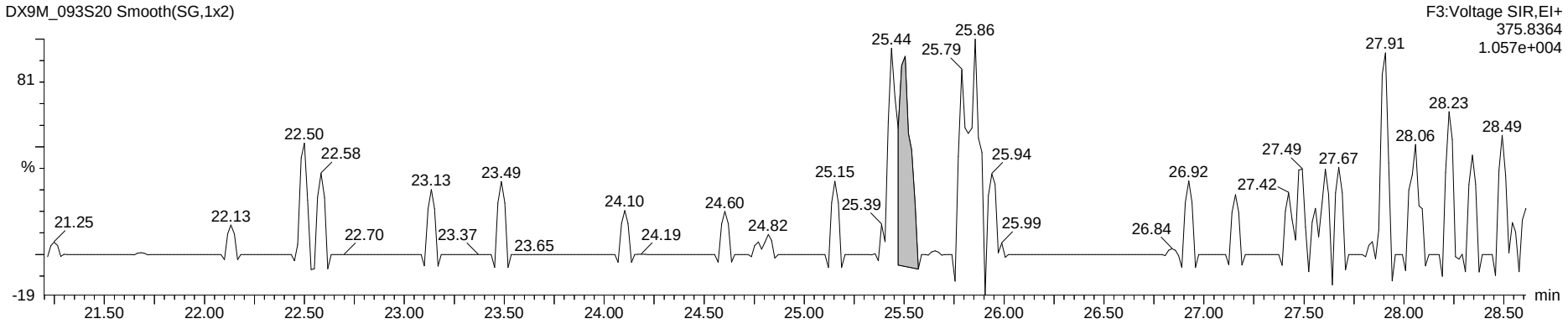
Name: DX9M_093S20, Date: 13-Sep-2019, Time: 02:47:12, ID: L31654-11,,, Description: 1,WG69303,1.0/20uL

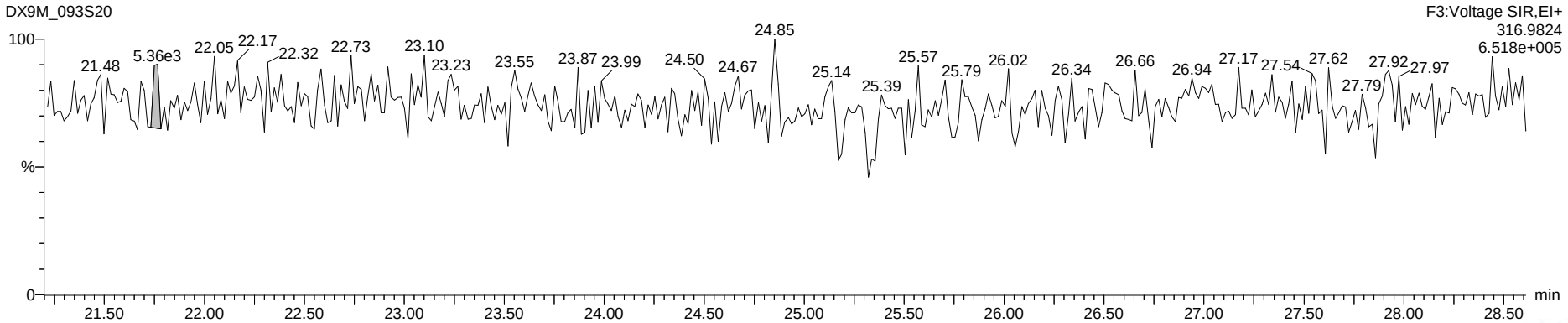
Total Tetra-Furans



Hexa DPE



Tetra Lock



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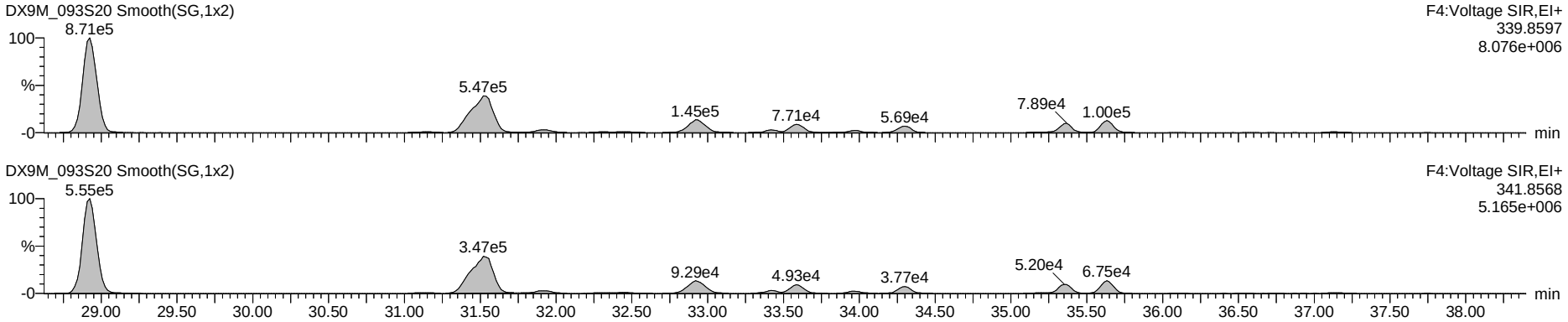
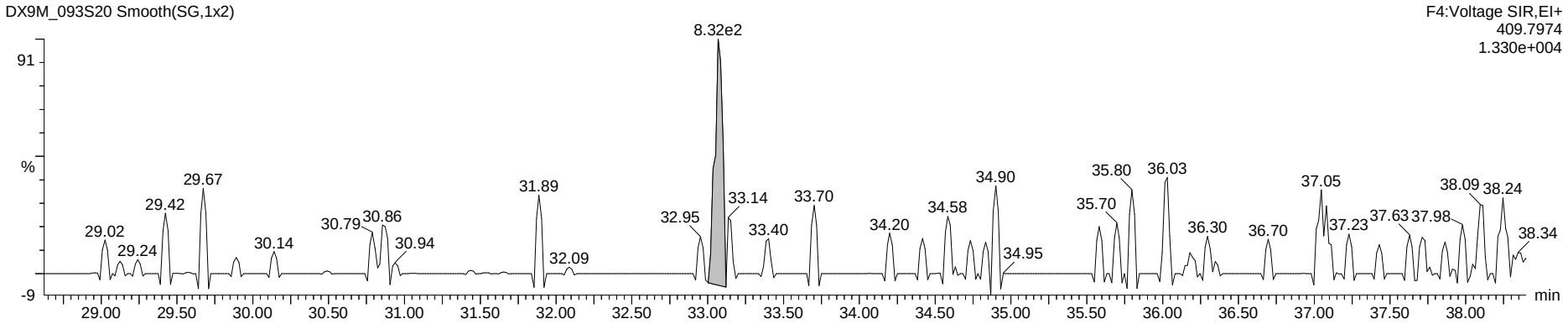
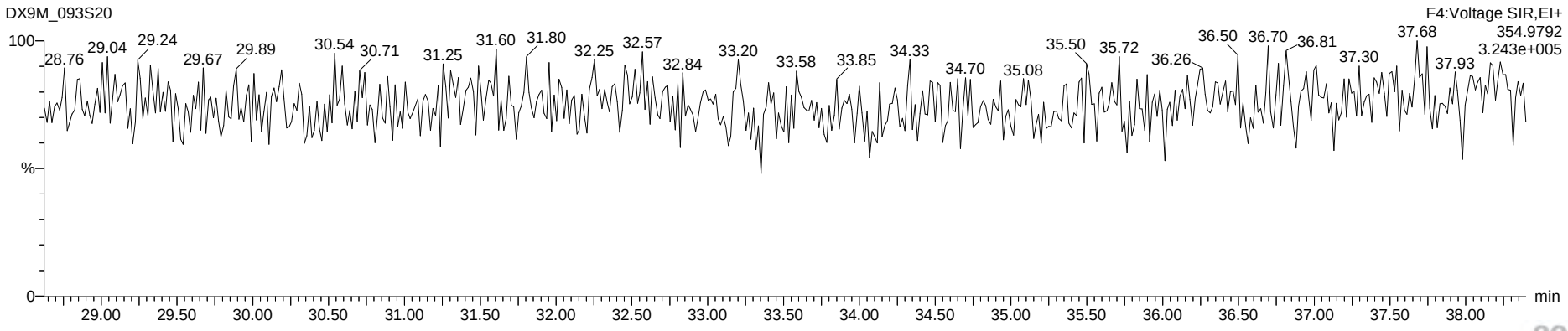
Total Penta-Furans



Hepta DPE



Penta Lock



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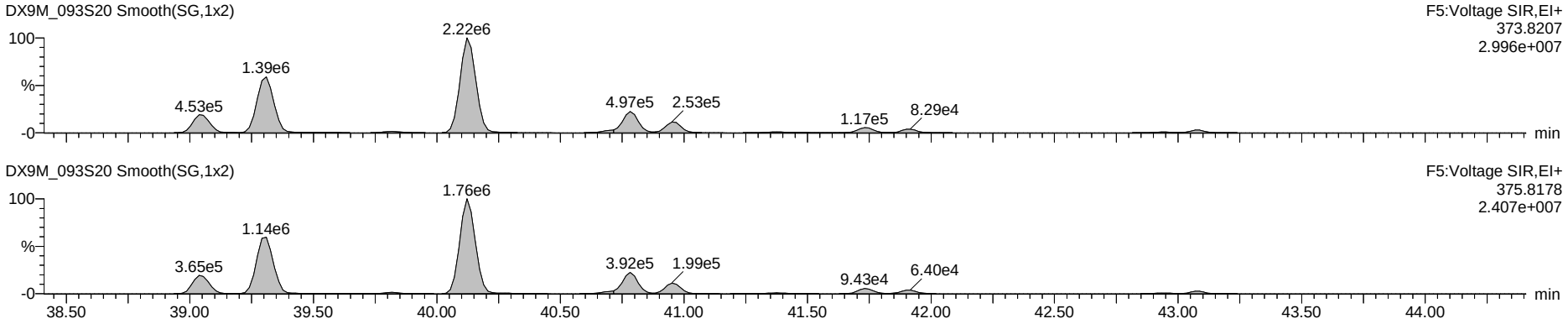
Total Hexa-Furans



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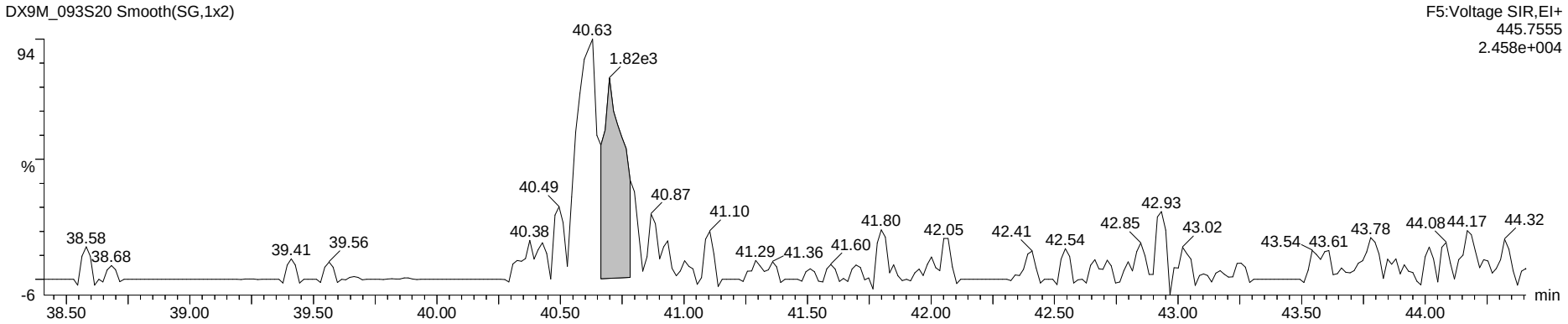

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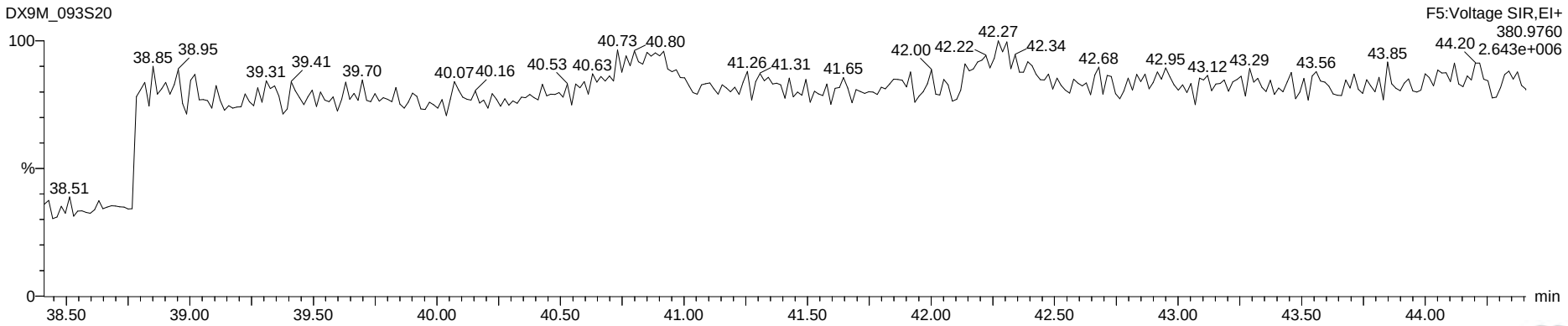

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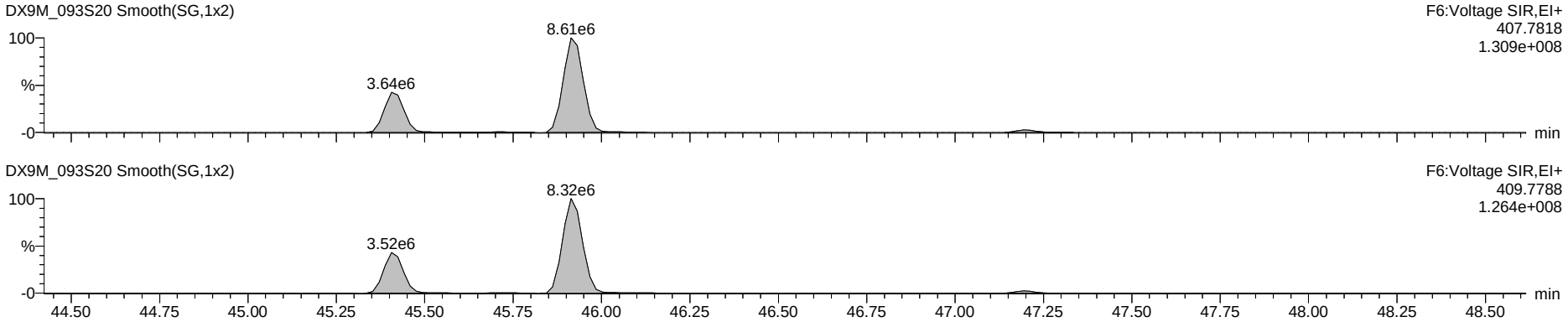
Name: DX9M_093S20, Date: 13-Sep-2019, Time: 02:47:12, ID: L31654-11,,, Description: 1,WG69303,1.0/20uL

Total Hepta-Furans



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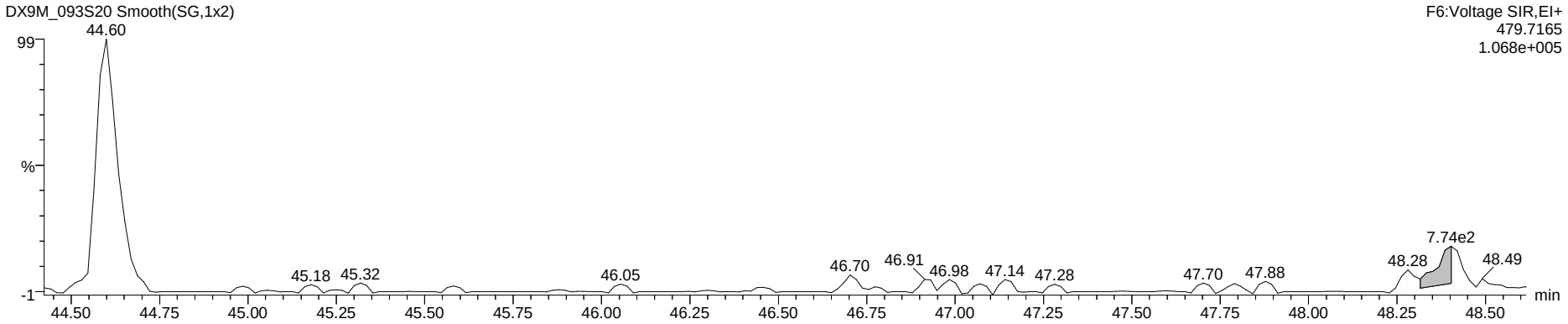

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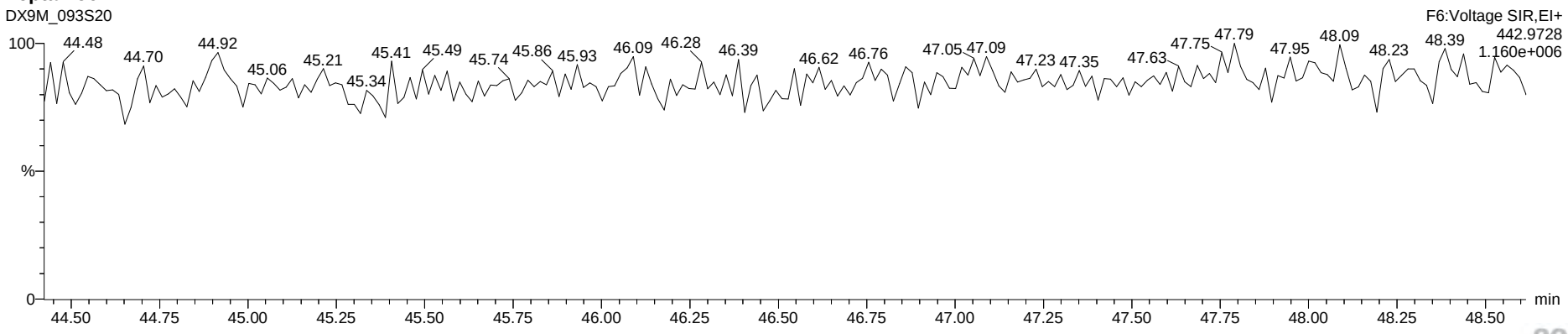

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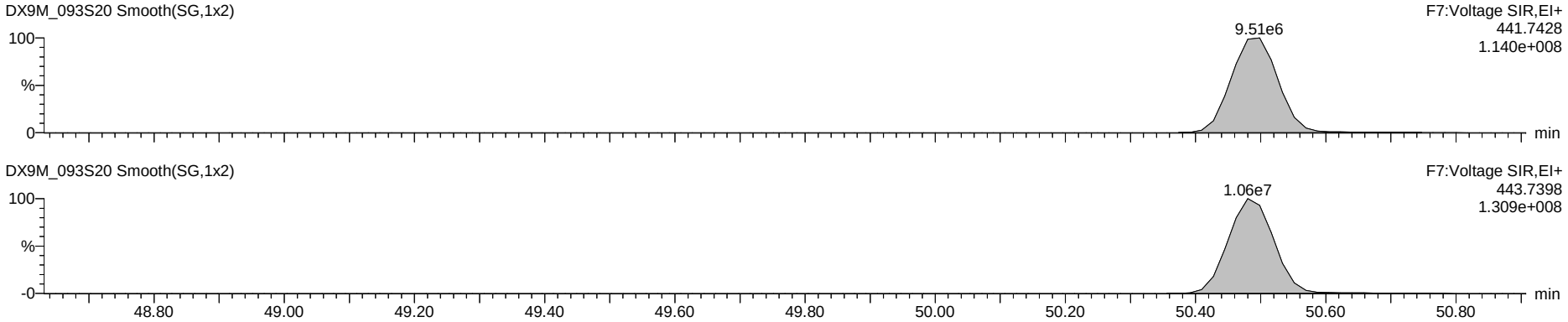
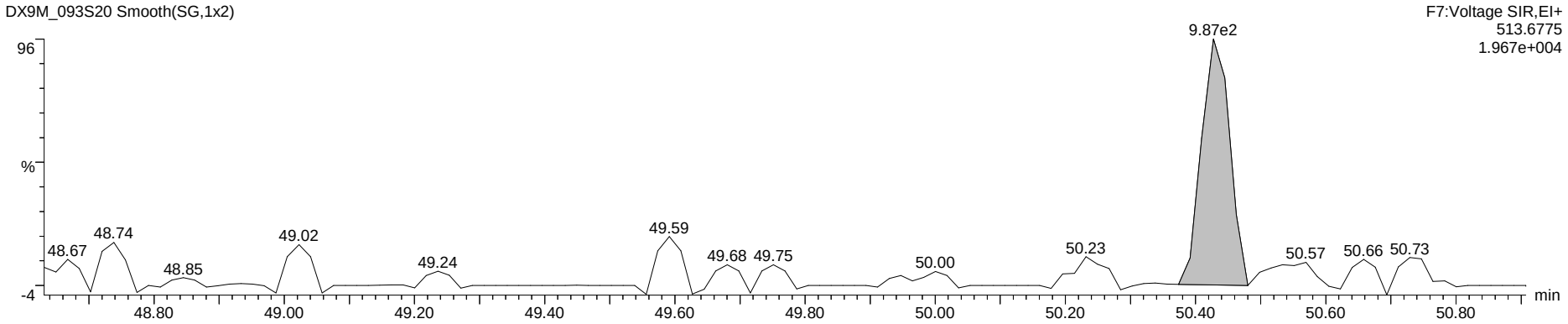
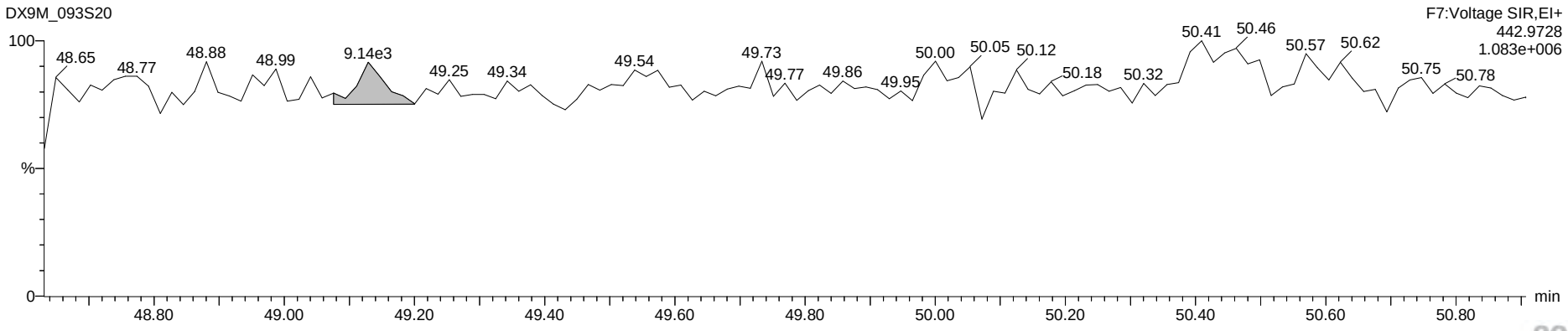
OCDF



Deca DPE



Octa Lock



Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

Name: DX9M_095AS15, Date: 17-Sep-2019, Time: 22:38:52, ID: L31654-11,W,, Description: 5,WG69303,1.0/100uL

	Name	Sample Size	Resp	Ratio	fails?	RT	pg	DL	%Rec	Noise 1	Noise 2
1	2,3,7,8-TCDF	10.327	3.76e4	0.45	YES	25.25	7.249	0.1294		1.57e3	1.29e3
2	1,2,3,7,8-PeCDF	10.327	1.67e4	0.77	YES	33.53	3.492	0.1923		1.42e3	1.96e3
3	2,3,4,7,8-PeCDF	10.327	1.64e4	0.53	YES	35.32	3.317	0.1634		1.42e3	1.96e3
4	1,2,3,4,7,8-HxCDF	10.327	1.46e5	1.25	NO	40.71	32.259	0.1922		2.81e3	1.91e3
5	1,2,3,6,7,8-HxCDF	10.327	7.41e4	1.39	NO	40.90	15.730	0.1896		2.81e3	1.91e3
6	2,3,4,6,7,8-HxCDF	10.327	2.66e4	1.20	NO	41.85	5.872	0.1807		2.81e3	1.91e3
7	1,2,3,7,8,9-HxCDF	10.327	3.76e3	1.26	NO	42.90	1.028	0.2294		2.81e3	1.91e3
8	1,2,3,4,6,7,8-HpCDF	10.327	1.32e6	1.06	NO	45.37	295.689	0.3257		3.26e3	4.96e3
9	1,2,3,4,7,8,9-HpCDF	10.327	7.39e4	1.00	NO	47.16	19.887	0.3845		3.26e3	4.96e3
10	OCDF	10.327	3.27e6	0.92	NO	50.44	866.286	0.0613		8.91e2	4.74e2
11	2,3,7,8-TCDD	10.327	6.31e3	1.10	YES	26.46	1.588	0.1392		9.98e2	1.21e3
12	1,2,3,7,8-PeCDD	10.327	1.42e4	0.55	NO	36.11	4.063	0.2735		2.03e3	2.16e3
13	1,2,3,4,7,8-HxCDD	10.327	2.98e4	1.38	NO	42.12	8.086	0.1816		1.83e3	2.23e3
14	1,2,3,6,7,8-HxCDD	10.327	1.53e5	1.27	NO	42.27	42.197	0.2065		1.83e3	2.23e3
15	1,2,3,7,8,9-HxCDD	10.327	7.73e4	1.28	NO	42.70	21.399	0.1960		1.83e3	2.23e3
16	1,2,3,4,6,7,8-HpCDD	10.327	3.66e6	1.02	NO	46.76	1115.648	0.6274		6.57e3	5.57e3
17	OCDD	10.327	5.04e7	0.87	NO	50.36	15520.145	0.1447		1.50e3	1.28e3
18	13C-2,3,7,8-TCDF	10.327	1.08e6	0.77	NO	25.22	158.497	0.3844	81.8	6.52e3	5.13e3
19	13C-1,2,3,7,8-PeCDF	10.327	9.96e5	1.55	NO	33.50	179.345	0.4383	92.6	4.02e3	6.78e3
20	13C-2,3,4,7,8-PeCDF	10.327	1.01e6	1.56	NO	35.28	176.381	0.4250	91.1	4.02e3	6.78e3
21	13C-1,2,3,4,7,8-HxCDF	10.327	7.95e5	0.52	NO	40.70	162.938	0.4085	84.1	5.98e3	5.16e3
22	13C-1,2,3,6,7,8-HxCDF	10.327	8.49e5	0.51	NO	40.88	158.295	0.3717	81.7	5.98e3	5.16e3
23	13C-2,3,4,6,7,8-HxCDF	10.327	7.73e5	0.52	NO	41.83	159.823	0.4123	82.5	5.98e3	5.16e3
24	13C-1,2,3,7,8,9-HxCDF	10.327	6.72e5	0.50	NO	42.88	156.290	0.4637	80.7	5.98e3	5.16e3
25	13C-1,2,3,4,6,7,8-HpCDF	10.327	6.92e5	0.46	NO	45.34	172.112	0.4108	88.9	4.23e3	5.00e3
26	13C-1,2,3,4,7,8,9-HpCDF	10.327	5.74e5	0.45	NO	47.14	175.988	0.5062	90.9	4.23e3	5.00e3
27	13C-2,3,7,8-TCDD	10.327	6.99e5	0.77	NO	26.42	160.806	0.6581	83.0	3.12e3	9.56e3
28	13C-1,2,3,7,8-PeCDD	10.327	6.86e5	0.63	NO	36.10	198.809	0.4920	102.7	4.78e3	2.75e3
29	13C-1,2,3,4,7,8-HxCDD	10.327	6.93e5	1.26	NO	42.10	178.024	0.3557	91.9	3.21e3	4.53e3
30	13C-1,2,3,6,7,8-HxCDD	10.327	7.45e5	1.23	NO	42.26	173.097	0.3217	89.4	3.21e3	4.53e3
31	13C-1,2,3,4,6,7,8-HpCDD	10.327	8.15e5	1.05	NO	46.74	187.120	0.2446	96.6	2.56e3	3.40e3
32	13C-OCDD	10.327	1.28e6	0.86	NO	50.34	400.183	0.3218	103.3	2.72e3	3.05e3
33	13C-1,2,3,4-TCDD	10.327	8.69e5	0.81	NO	26.09	2.091	0.0069	1.1	3.12e3	9.56e3
34	13C-1,2,3,7,8,9-HxCDD	10.327	7.79e5	1.22	NO	42.68	2.598	0.0046	1.3	3.21e3	4.53e3
35	37Cl-2,3,7,8-TCDD	10.327	8.58e4			26.46	17.914	0.0637	92.5		1.35e3
36	Total Tetra-Furans	10.327					90.251	0.1294			1.29e3
37	Total Tetra-Dioxins	10.327					21.322	0.1392			1.21e3
38	Total Penta-Furans	10.327					130.335	0.1796			1.96e3
39	Total Penta-Dioxins	10.327					36.620	0.2735			2.16e3
40	Total Hexa-Furans	10.327					393.668	0.1942			1.91e3
41	Total Hexa-Dioxins	10.327					312.866	0.1855			2.23e3
42	Total Hepta-Furans	10.327					1042.280	0.3528			4.96e3
43	Total Hepta-Dioxins	10.327					2407.140	0.6274			5.57e3
44	Hexa DPE	1.000	2.78e2			24.02					8.28e1
45	Hepta DPE	1.000	2.12e2			33.75					3.35e0
46	Octa DPE	1.000	4.77e2			40.19					1.36e3
47	Nona DPE	1.000	3.93e2			48.18					1.83e2
48	Deca DPE	1.000	2.75e2			50.50					9.22e1
49	Tetra Lock	1.000									3.47e5
50	Penta Lock	1.000									3.38e5
51	Hexa Lock	1.000									7.76e5
52	Hepta Lock	1.000	1.97e4			44.79					5.34e5
53	Octa Lock	1.000	3.42e4			49.04					4.09e5
54	13C-Tetra-Furans	10.327					158.497	0.3844			5.13e3
55	13C-Tetra-Dioxins	10.327					162.896	0.6650			9.56e3

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

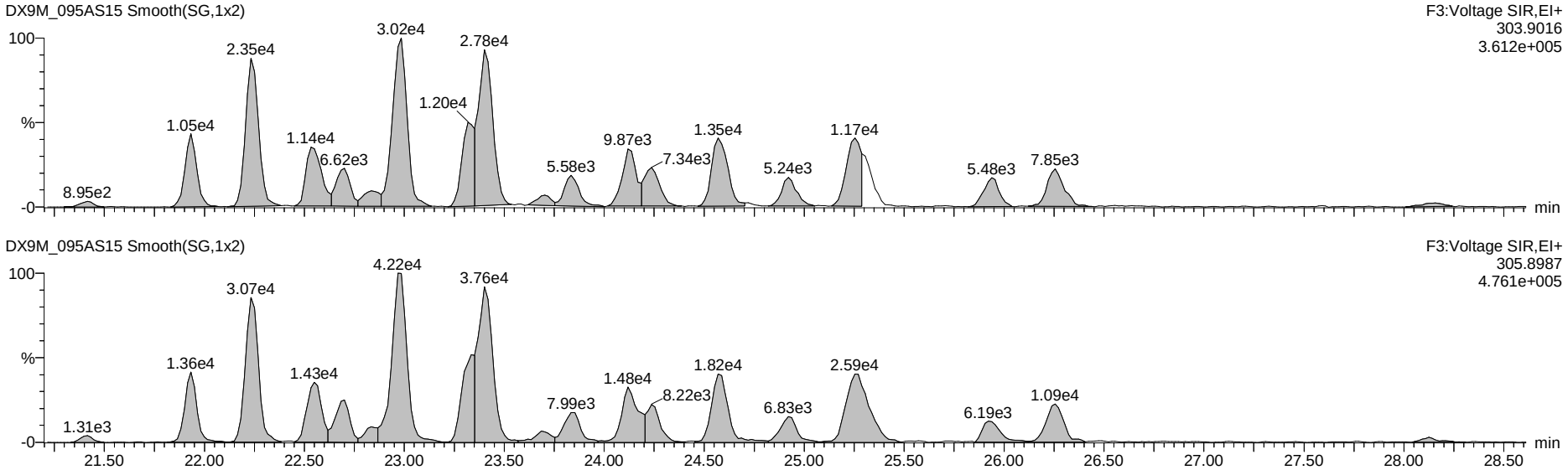
SVHH 22 Sept. 2019

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

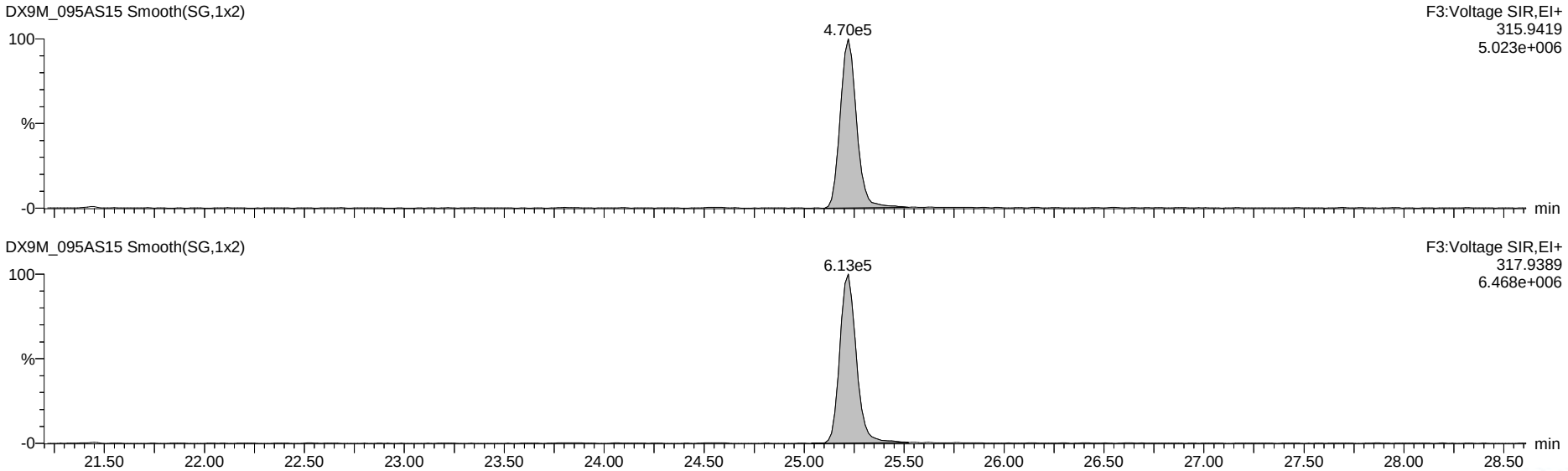
Method: G:\Masslynx\Inst_M\Master methods and layouts\Current Methods\DX_1613B_16.mdb 07 Sep 2017 16:45:23
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

Name: DX9M_095AS15, Date: 17-Sep-2019, Time: 22:38:52, ID: L31654-11,W,, Description: 5,WG69303,1.0/100uL

Total Tetra-Furans



13C-Tetra-Furans



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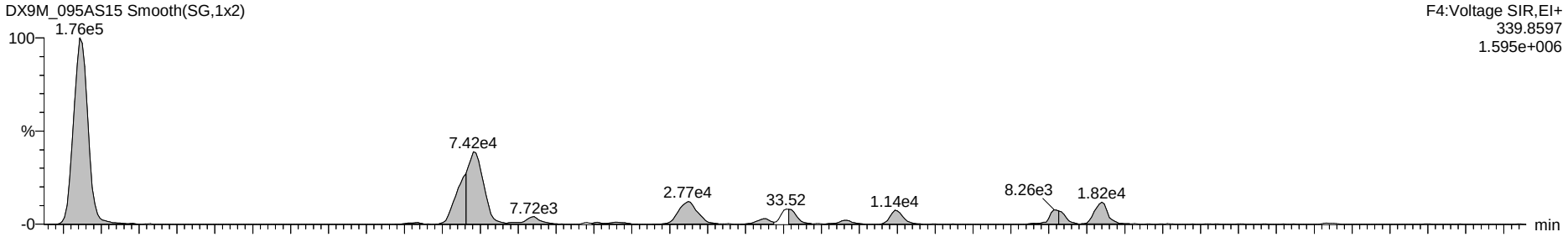
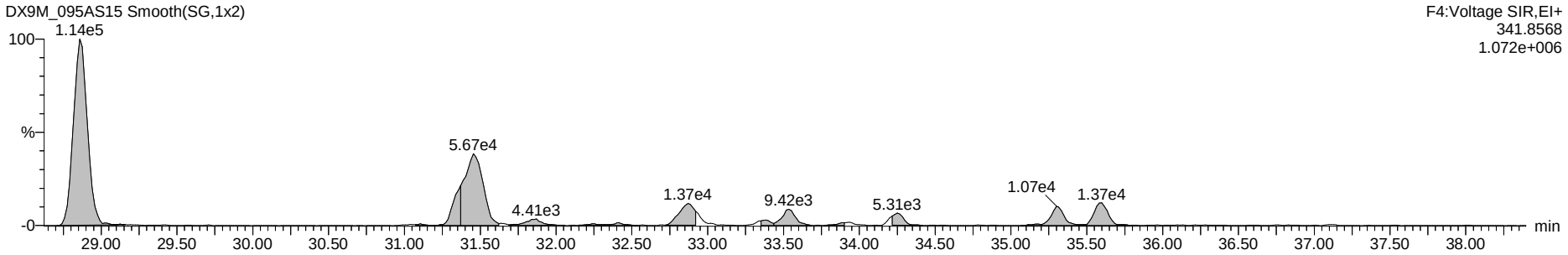
Name: DX9M_095AS15, Date: 17-Sep-2019, Time: 22:38:52, ID: L31654-11,W,, Description: 5,WG69303,1.0/100uL

Total Penta-Furans





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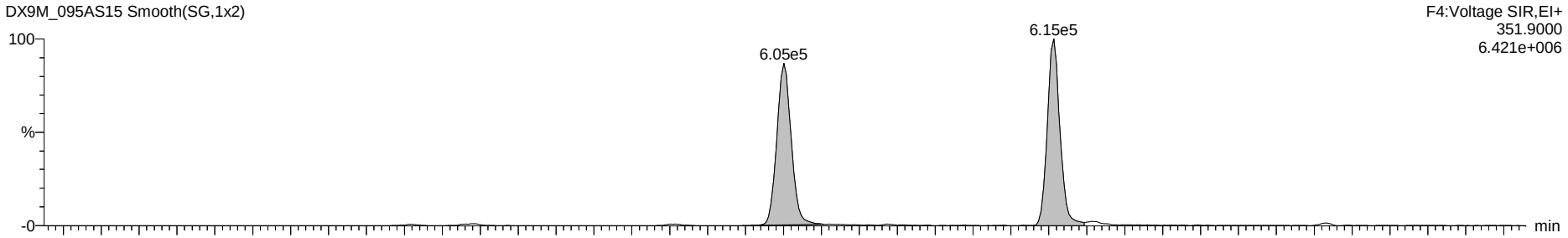

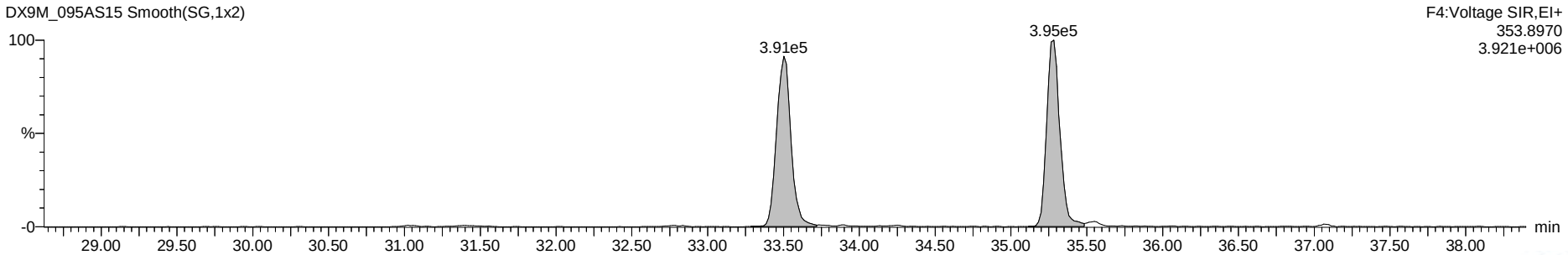

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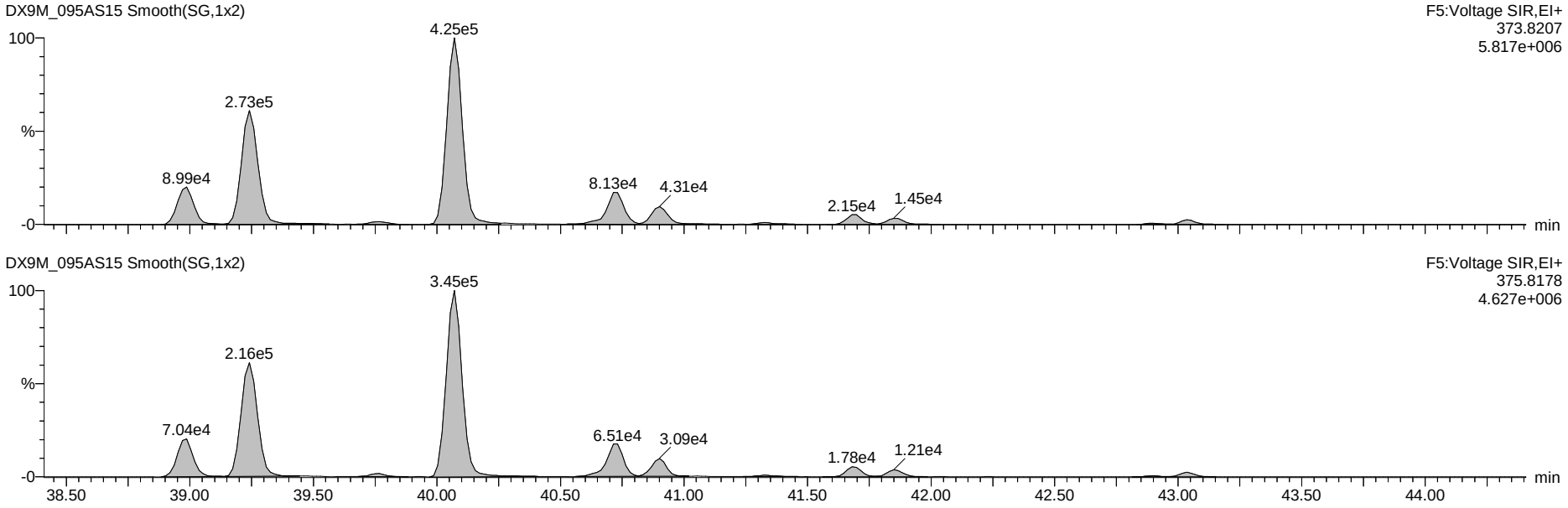
Name: DX9M_095AS15, Date: 17-Sep-2019, Time: 22:38:52, ID: L31654-11,W,, Description: 5,WG69303,1.0/100uL

Total Hexa-Furans



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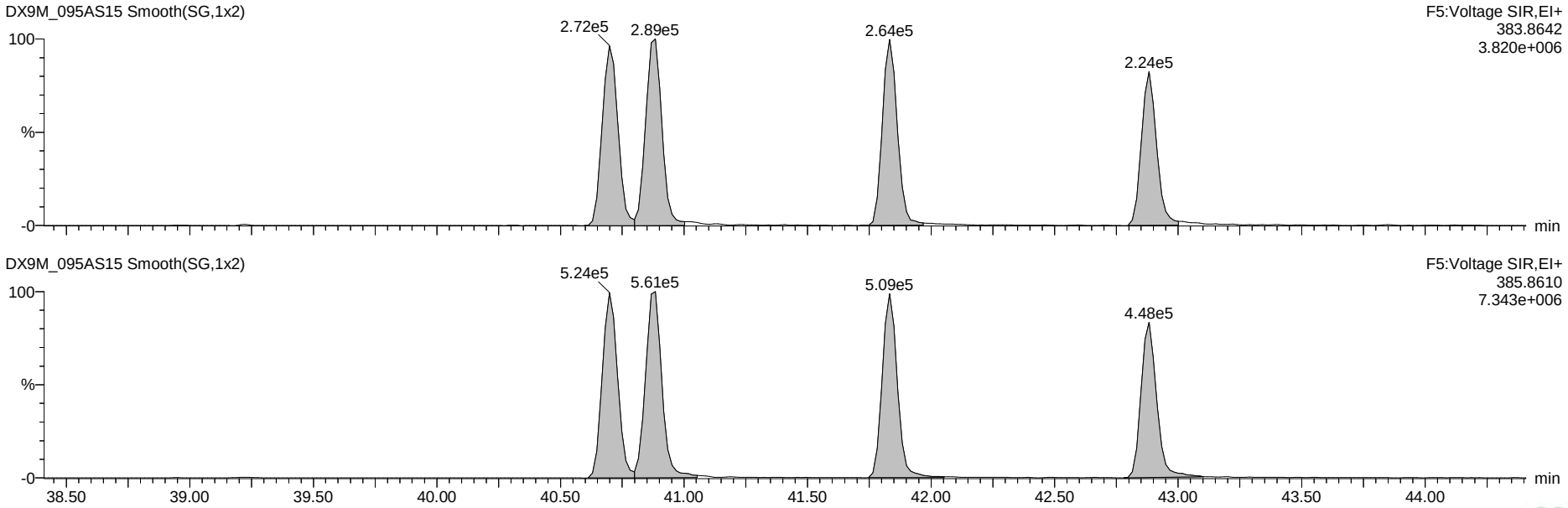

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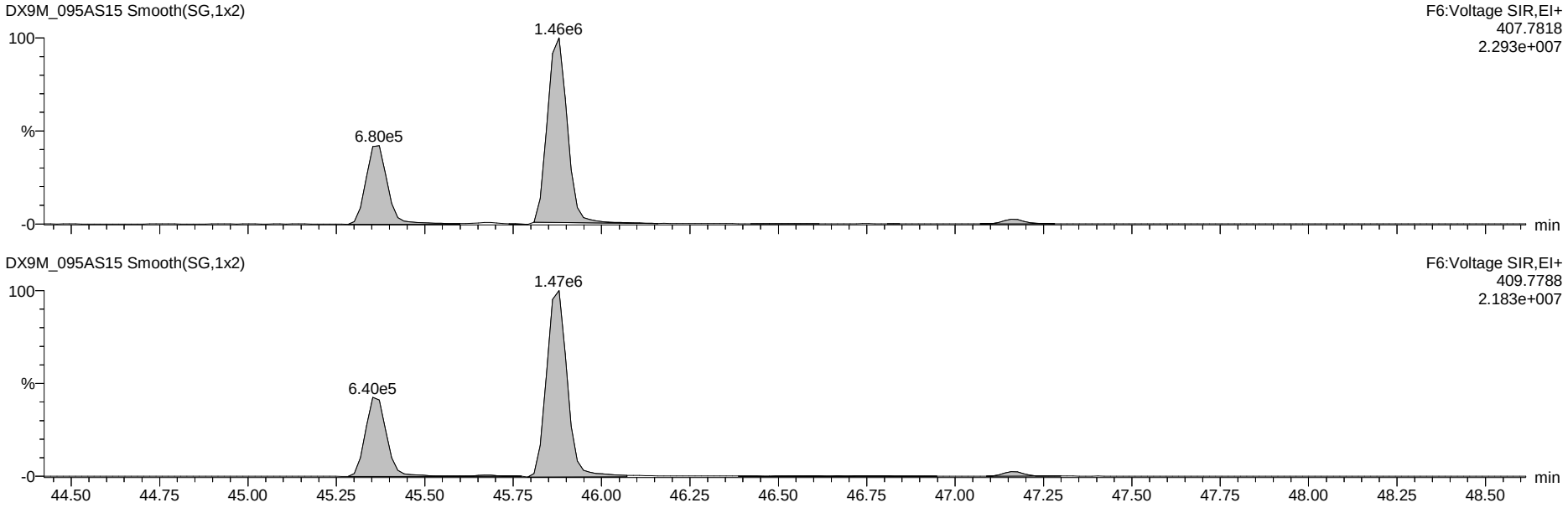
Name: DX9M_095AS15, Date: 17-Sep-2019, Time: 22:38:52, ID: L31654-11,W,, Description: 5,WG69303,1.0/100uL

Total Hepta-Furans



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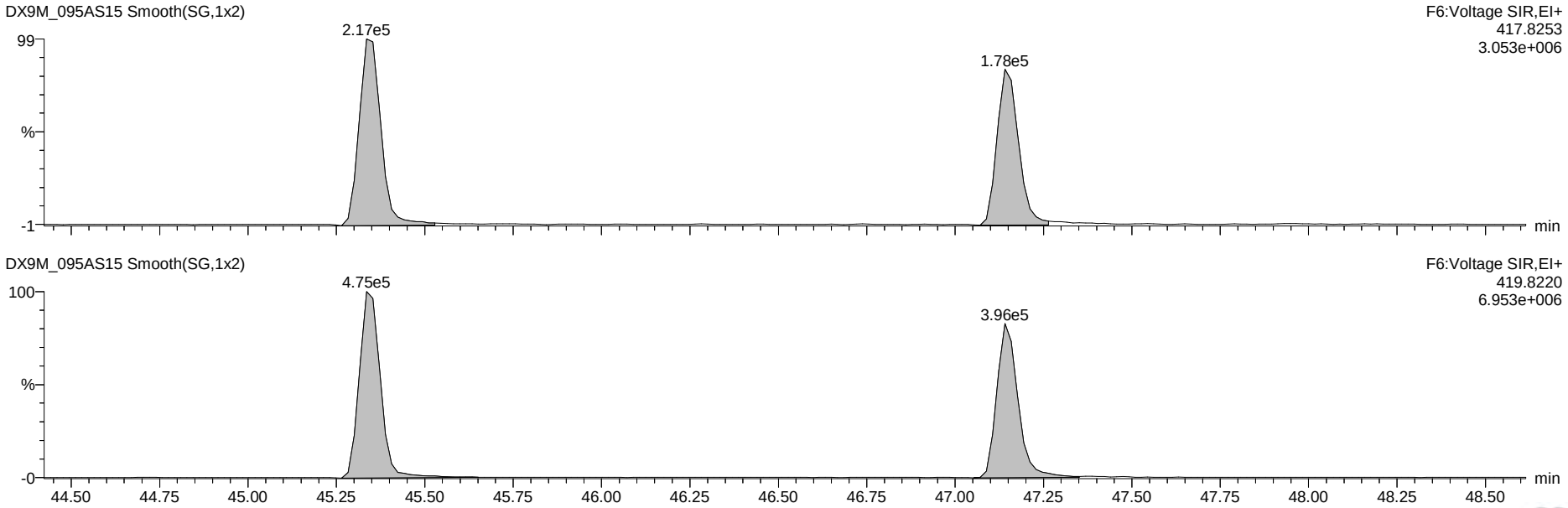

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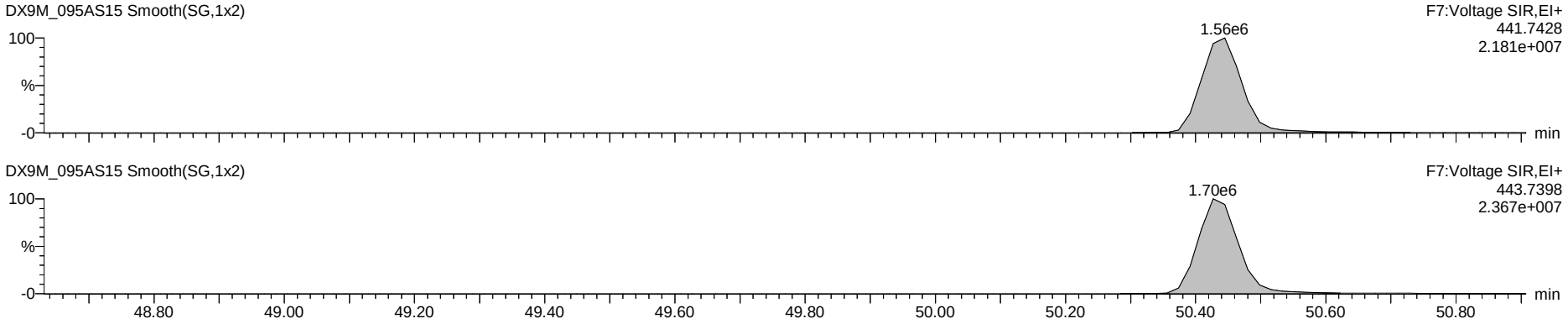
OCDF



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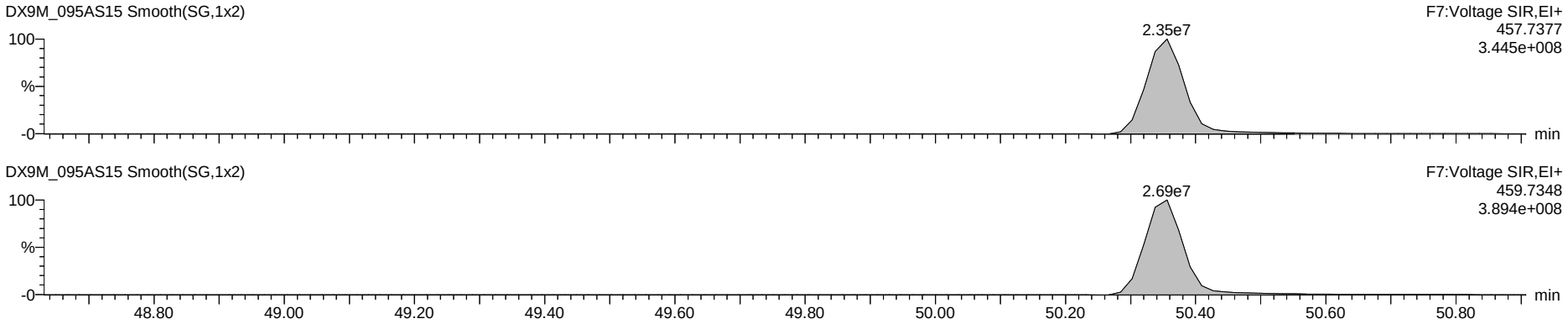

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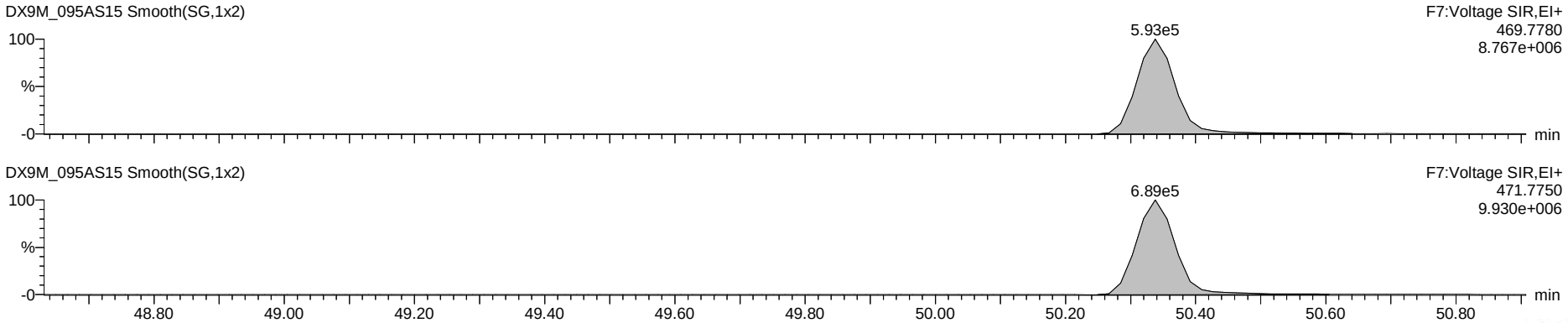

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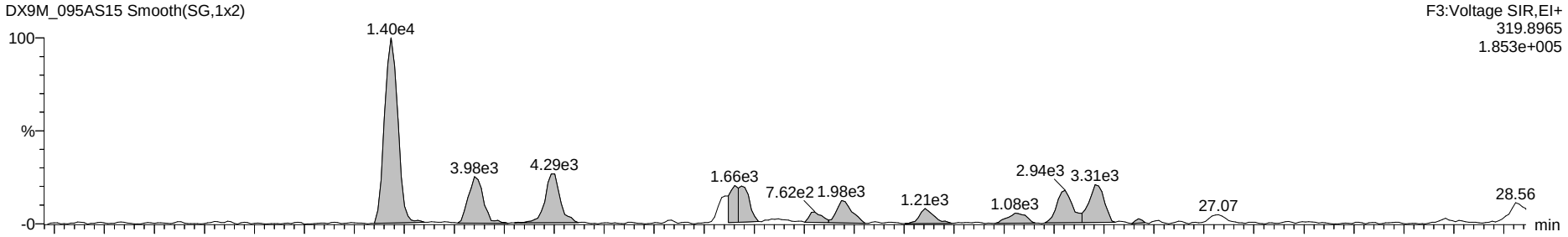
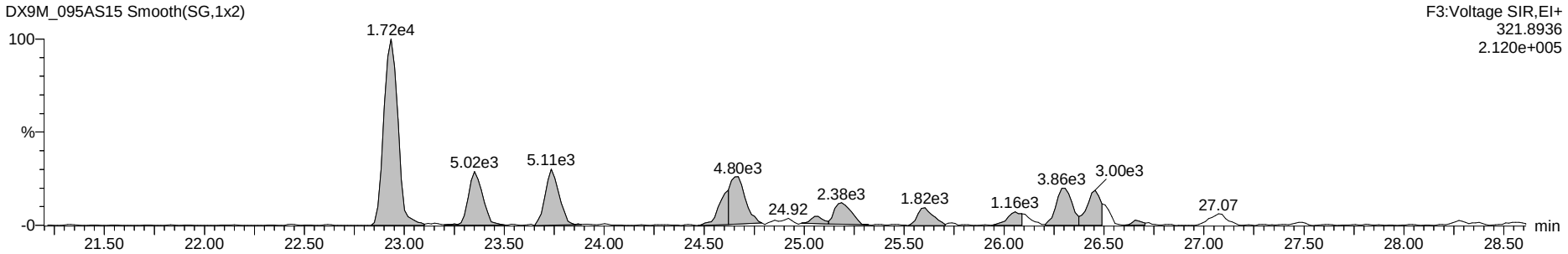
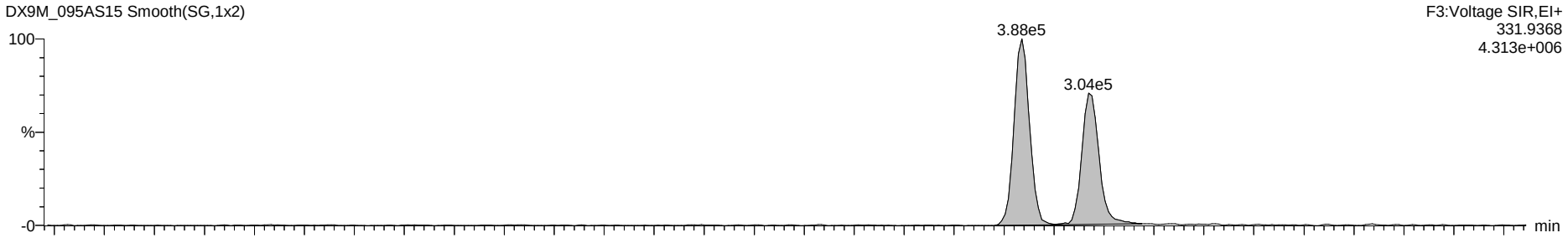
Name: DX9M_095AS15, Date: 17-Sep-2019, Time: 22:38:52, ID: L31654-11,W,, Description: 5,WG69303,1.0/100uL

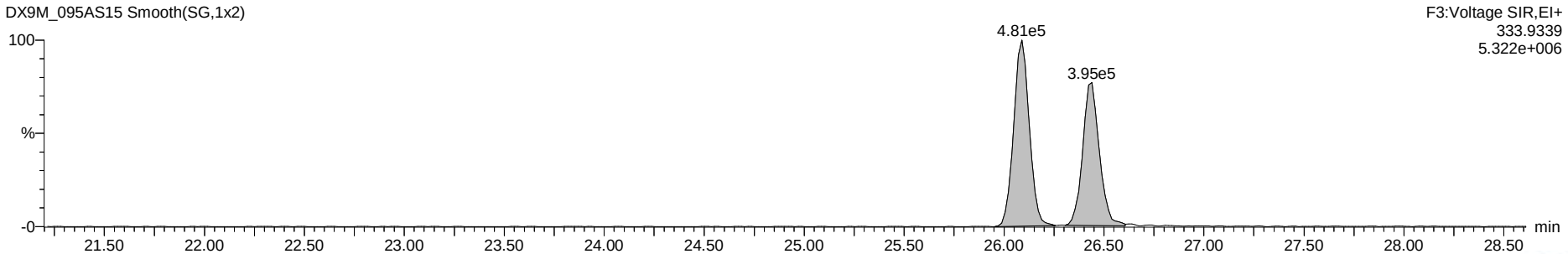
Total Tetra-Dioxins





13C-Tetra-Dioxins





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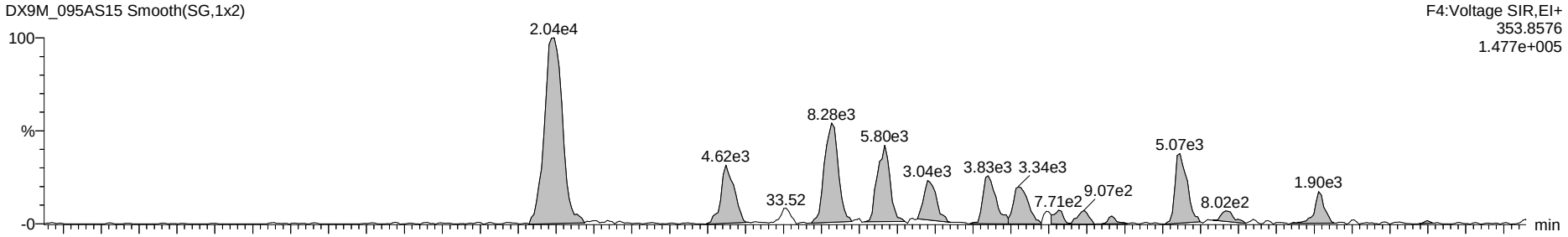
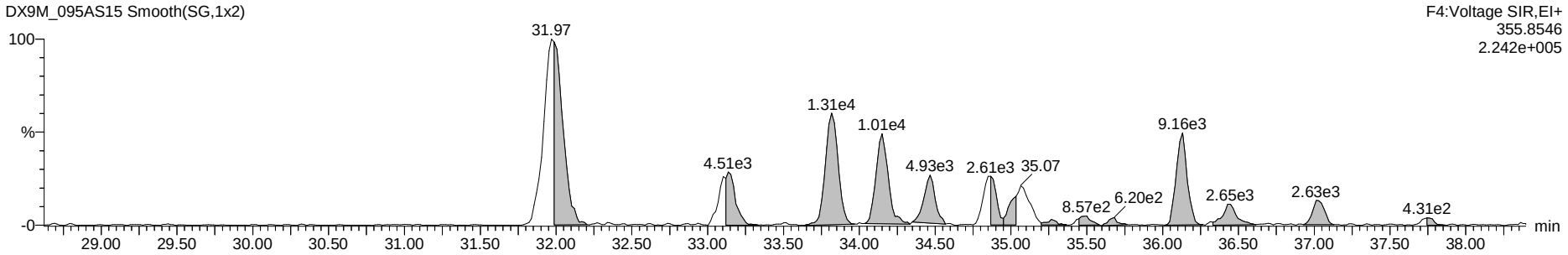
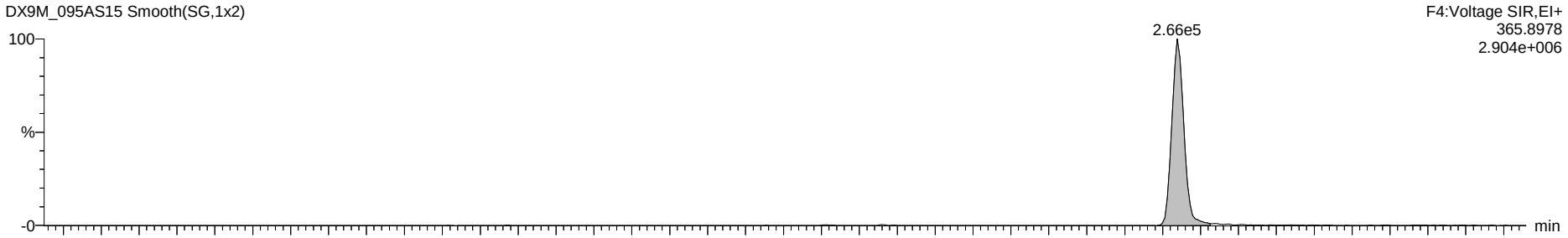
Name: DX9M_095AS15, Date: 17-Sep-2019, Time: 22:38:52, ID: L31654-11,W,, Description: 5,WG69303,1.0/100uL

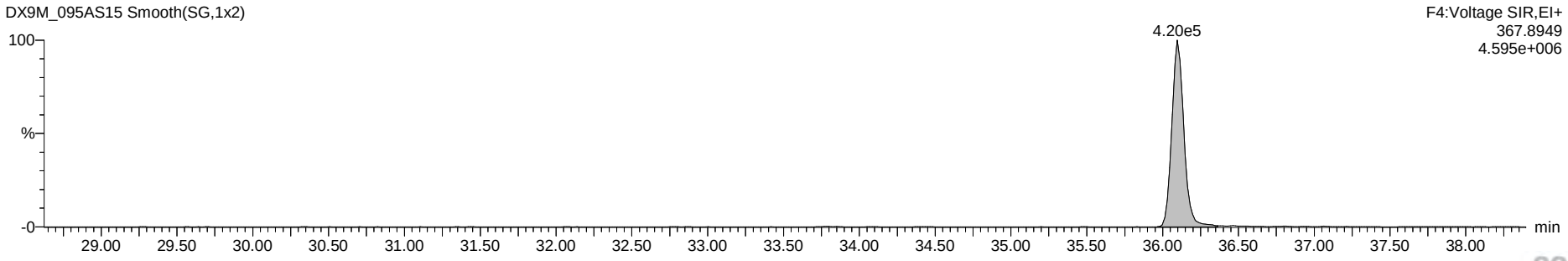
Total Penta-Dioxins





13C-Penta-Dioxins

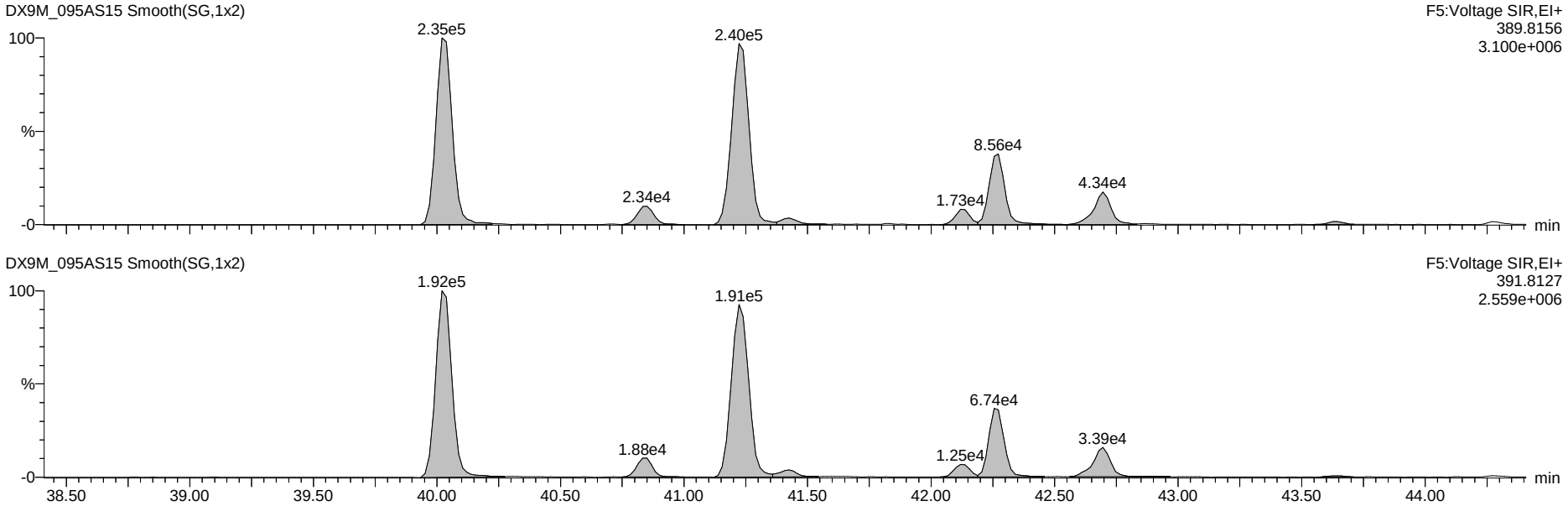




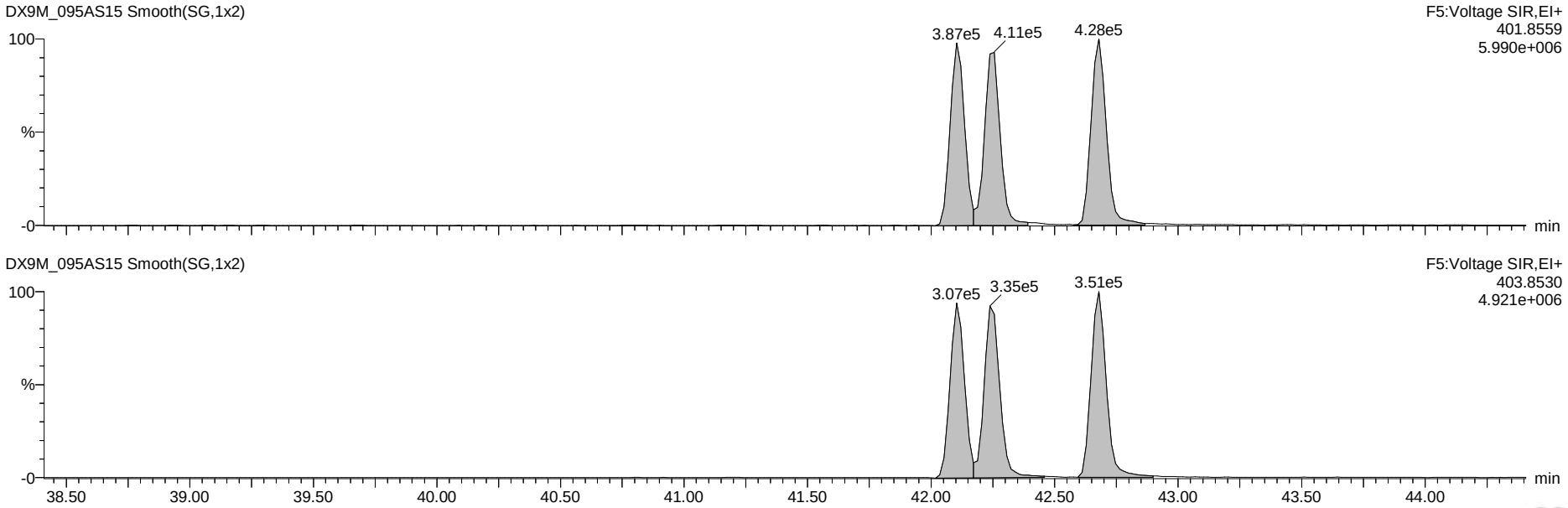
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

Name: DX9M_095AS15, Date: 17-Sep-2019, Time: 22:38:52, ID: L31654-11,W,, Description: 5,WG69303,1.0/100uL

Total Hexa-Dioxins



13C-Hexa-Dioxins



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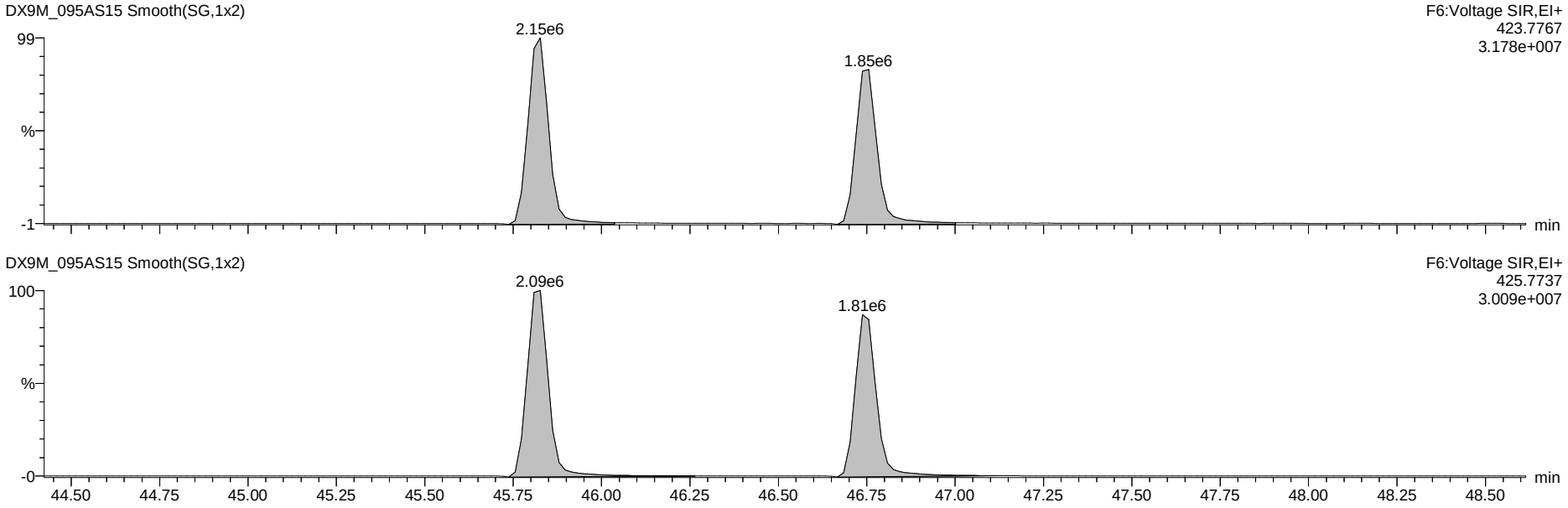
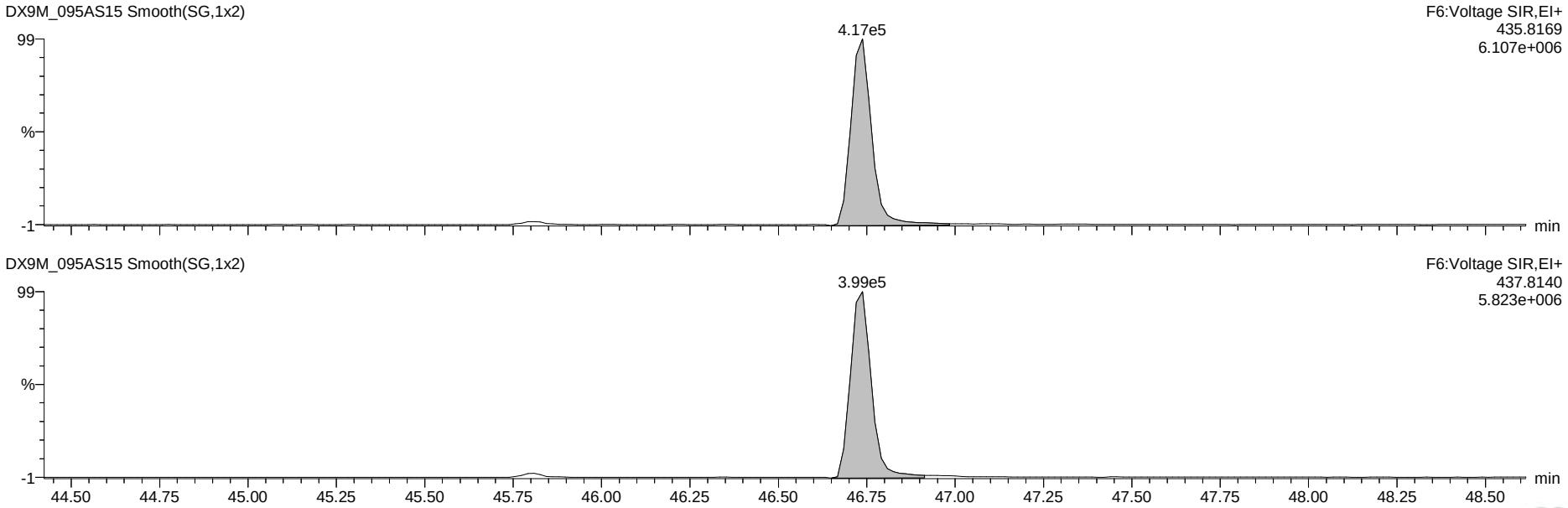
Total Hepta-Dioxins



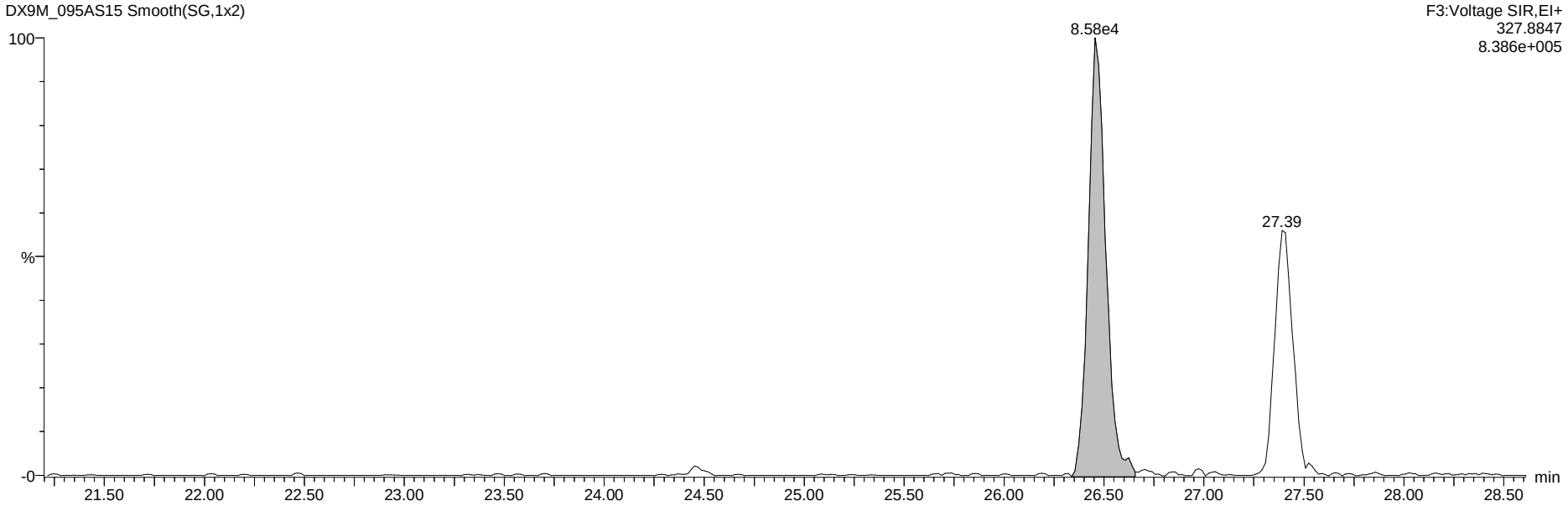
13C-Hepta-Dioxins



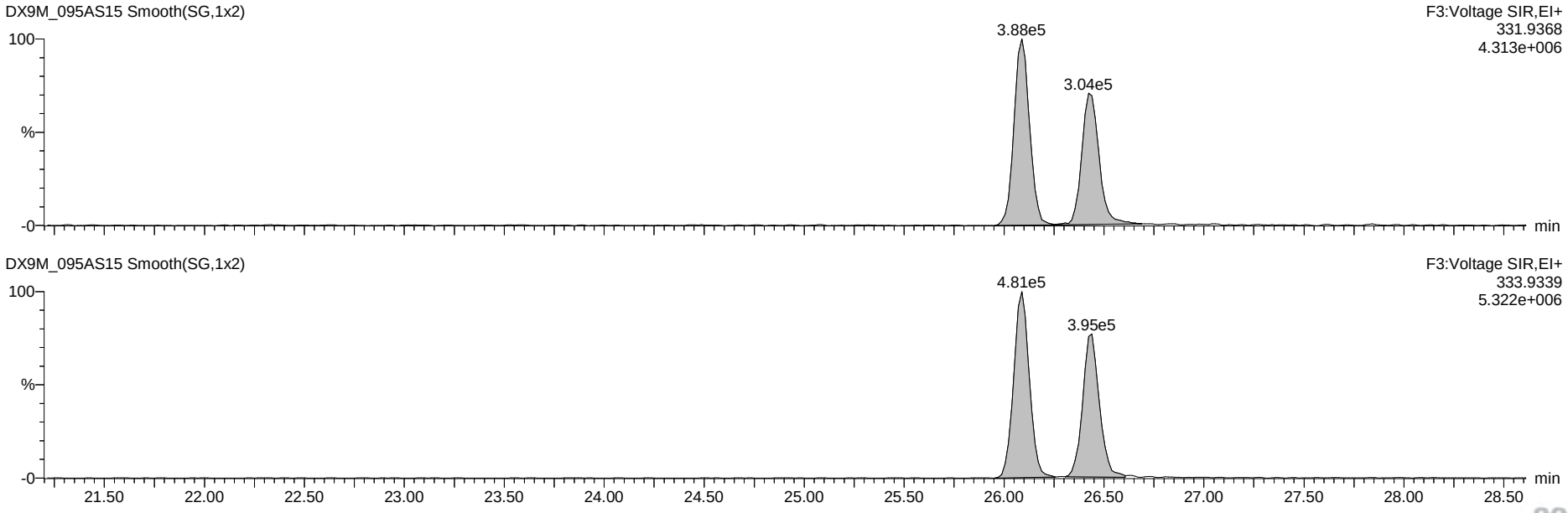
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

Name: DX9M_095AS15, Date: 17-Sep-2019, Time: 22:38:52, ID: L31654-11,W,, Description: 5,WG69303,1.0/100uL

37Cl-2,3,7,8-TCDD



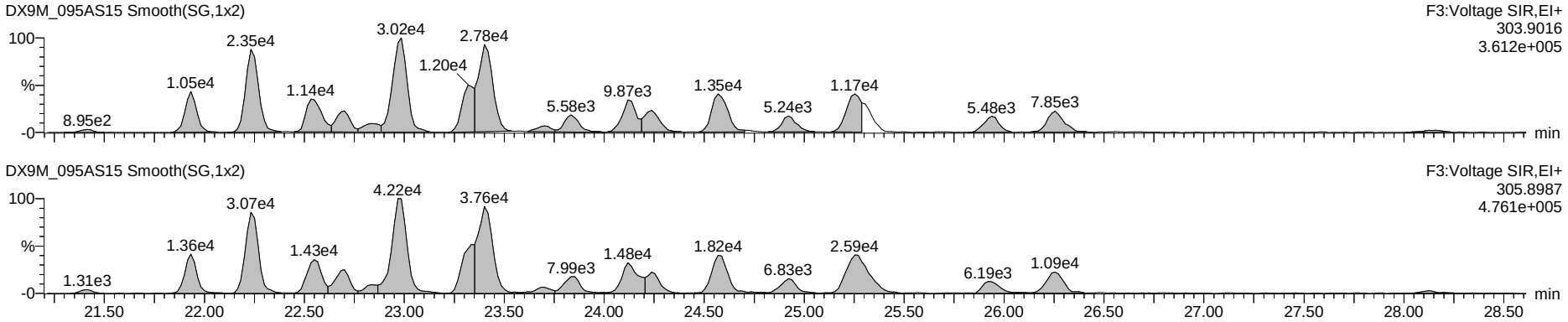
13C-Tetra-Dioxins



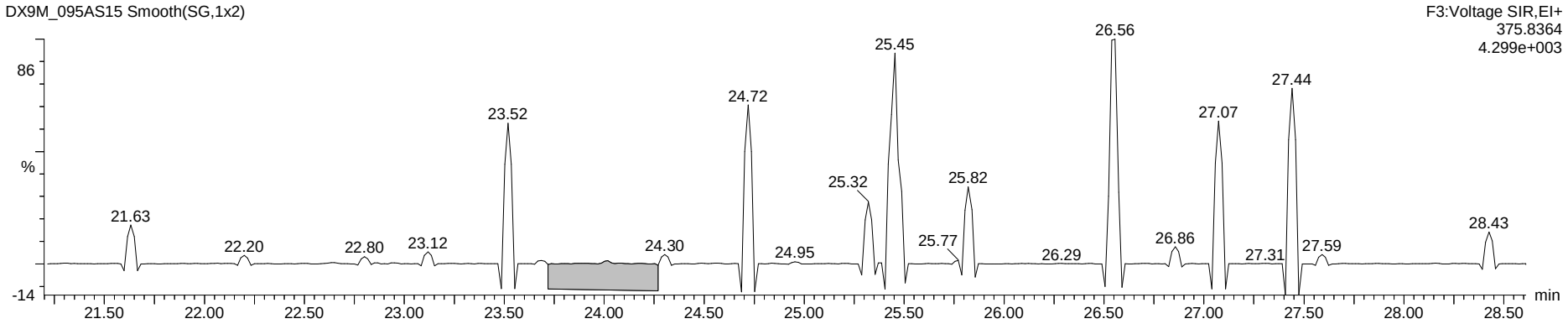
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

Name: DX9M_095AS15, Date: 17-Sep-2019, Time: 22:38:52, ID: L31654-11,W,, Description: 5,WG69303,1.0/100uL

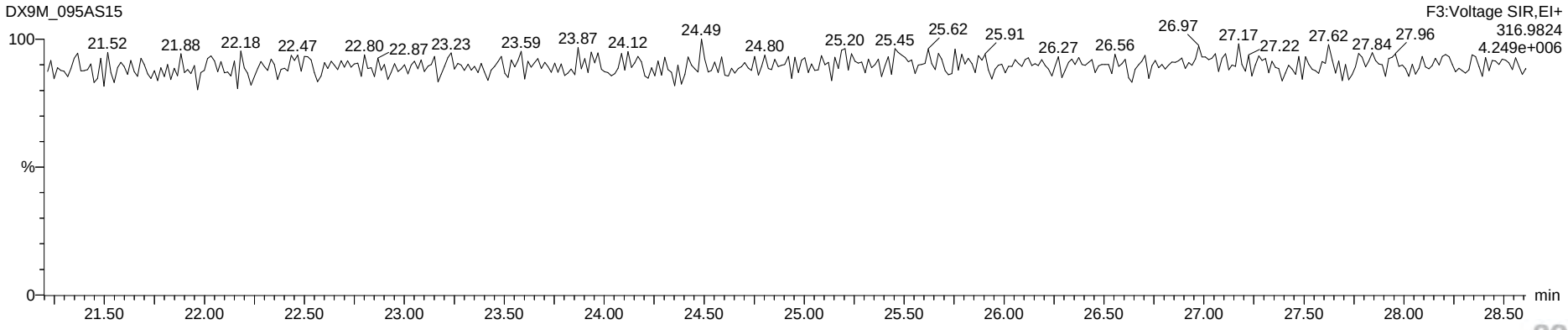
Total Tetra-Furans



Hexa DPE



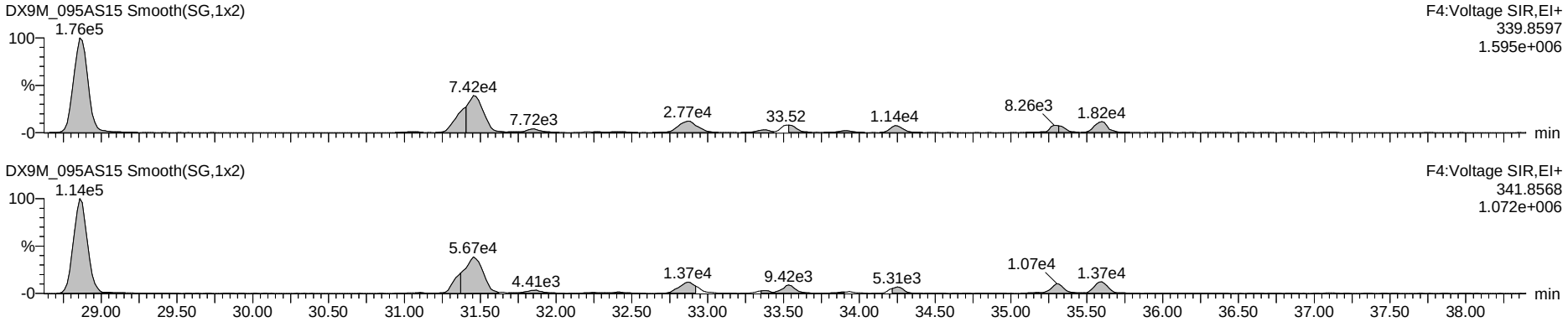
Tetra Lock



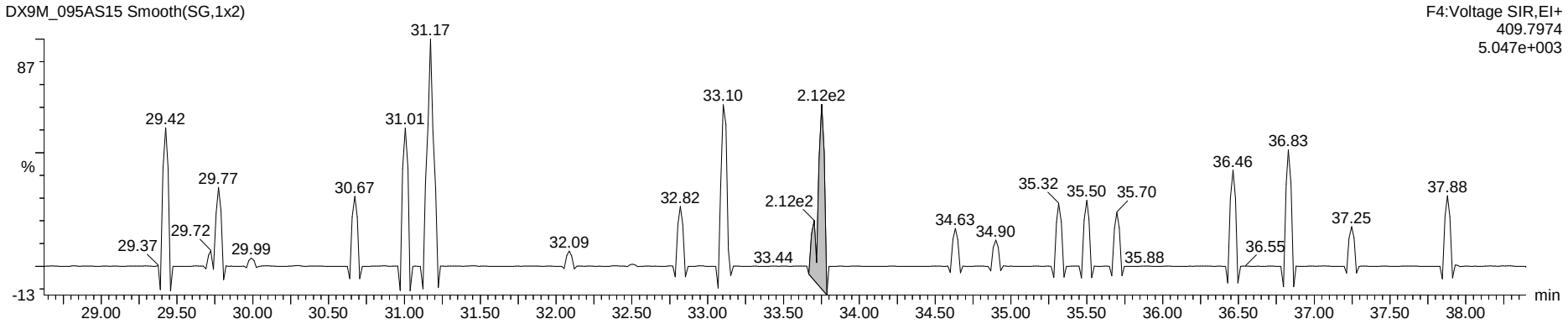
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

Name: DX9M_095AS15, Date: 17-Sep-2019, Time: 22:38:52, ID: L31654-11,W,, Description: 5,WG69303,1.0/100uL

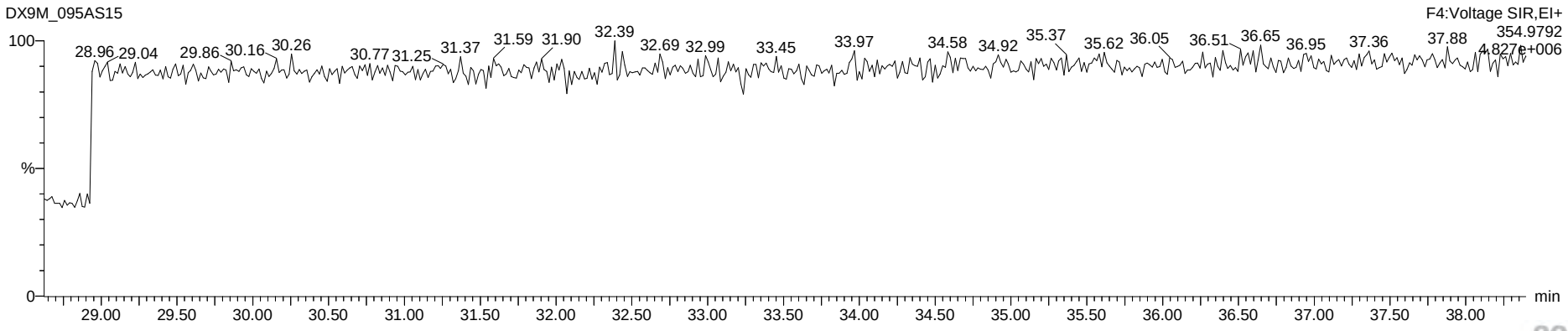
Total Penta-Furans



Hepta DPE



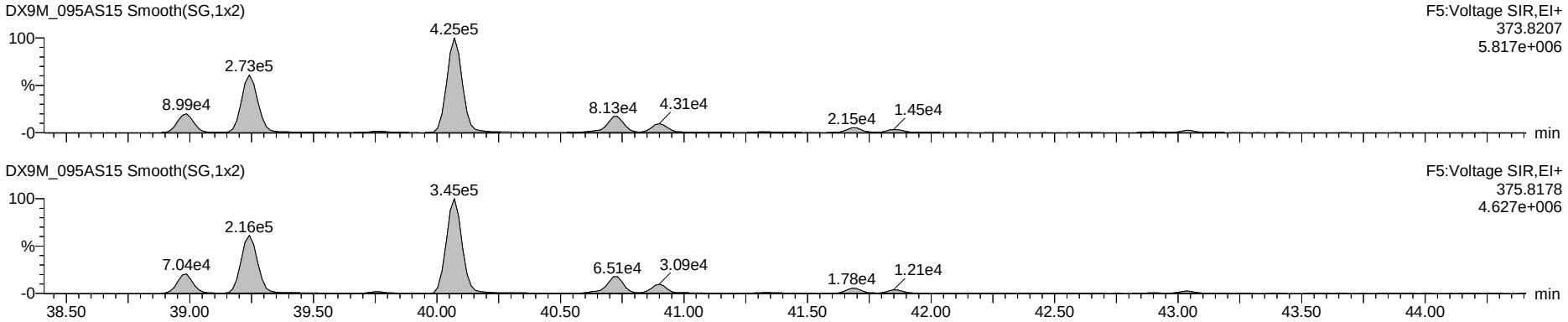
Penta Lock



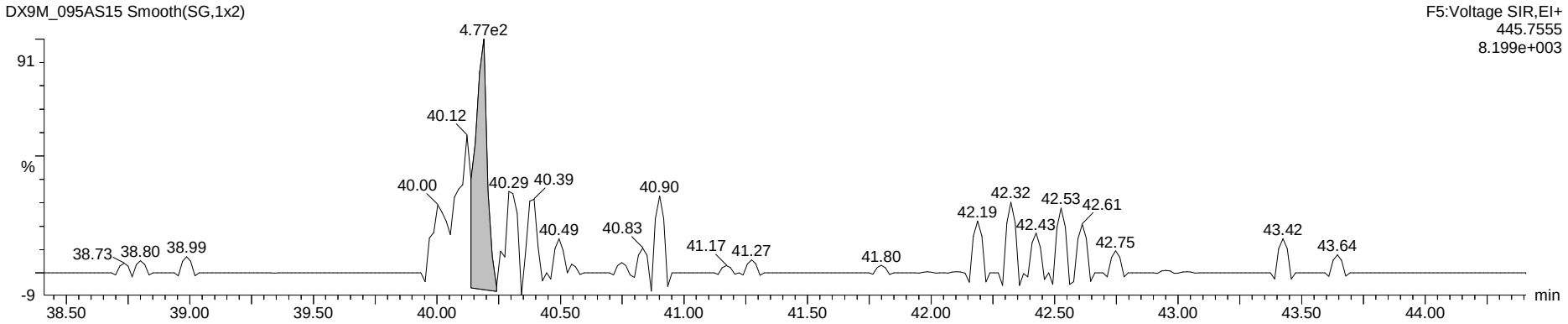
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

Name: DX9M_095AS15, Date: 17-Sep-2019, Time: 22:38:52, ID: L31654-11,W,, Description: 5,WG69303,1.0/100uL

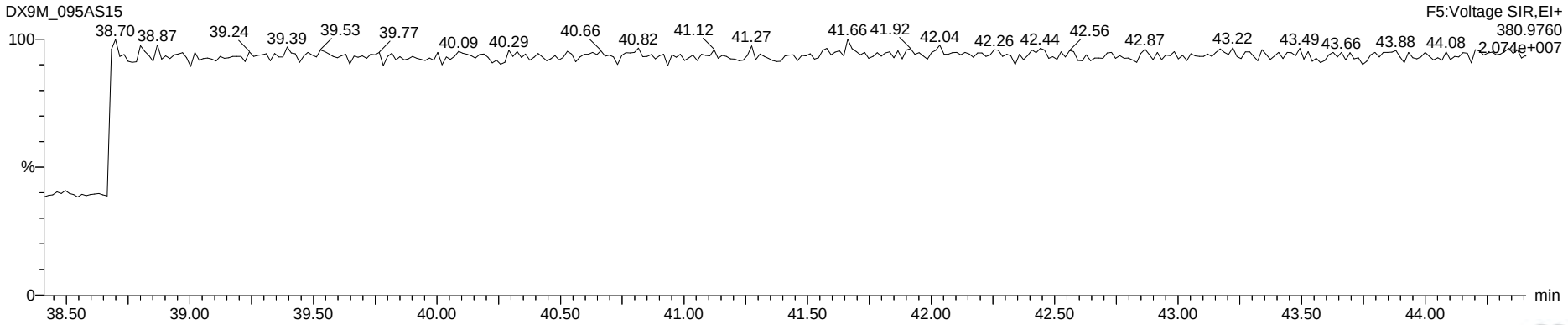
Total Hexa-Furans



Octa DPE



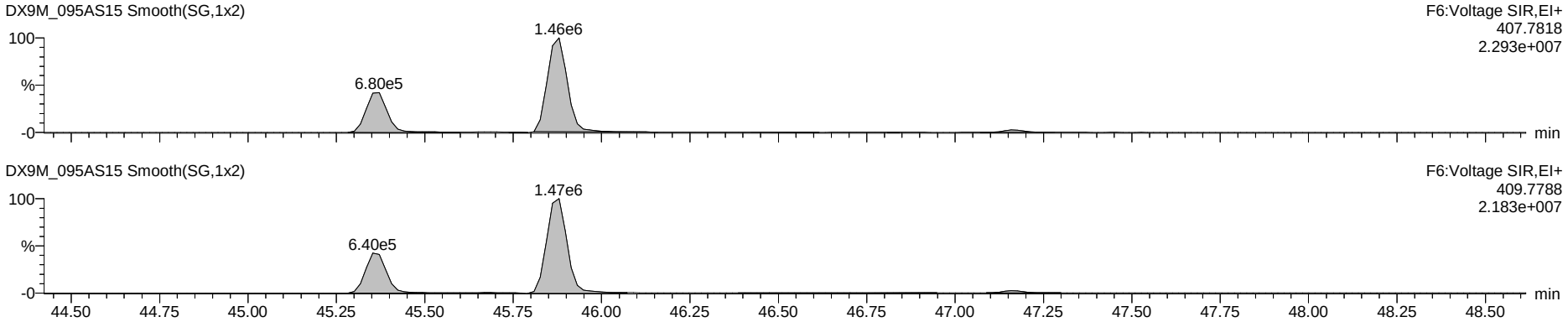
Hexa Lock



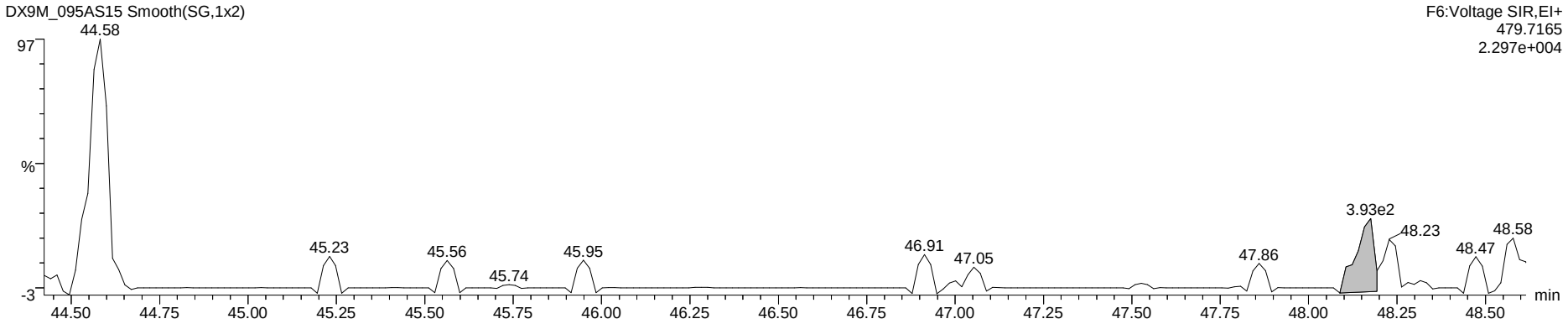
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

Name: DX9M_095AS15, Date: 17-Sep-2019, Time: 22:38:52, ID: L31654-11,W,, Description: 5,WG69303,1.0/100uL

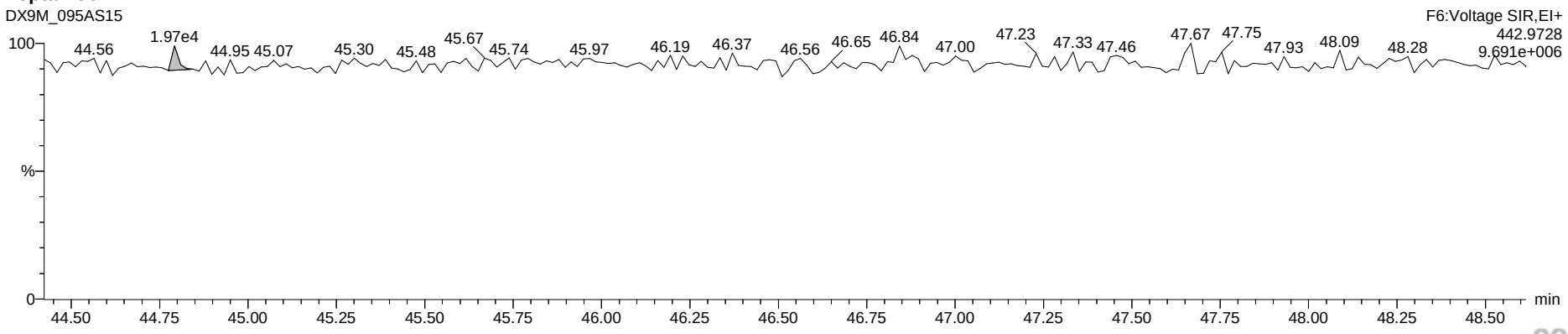
Total Hepta-Furans



Nona DPE



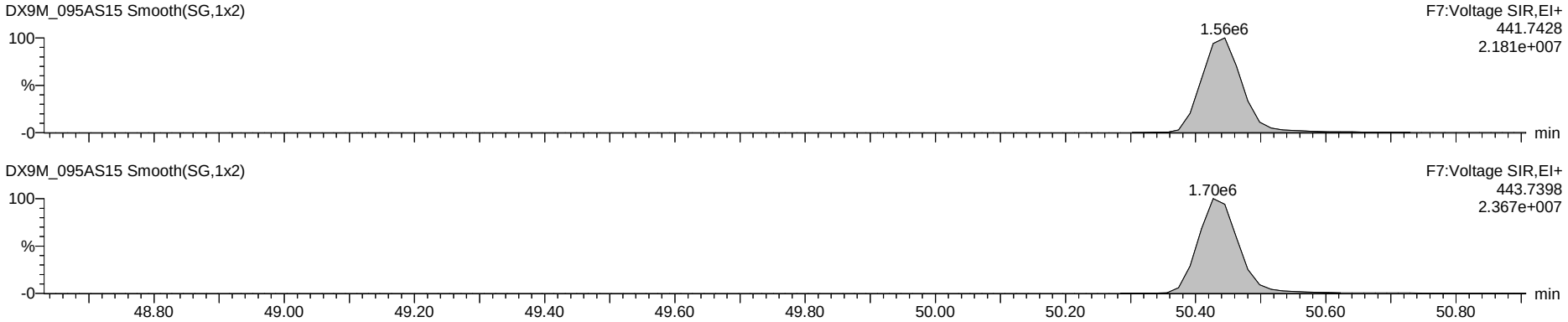
Hepta Lock



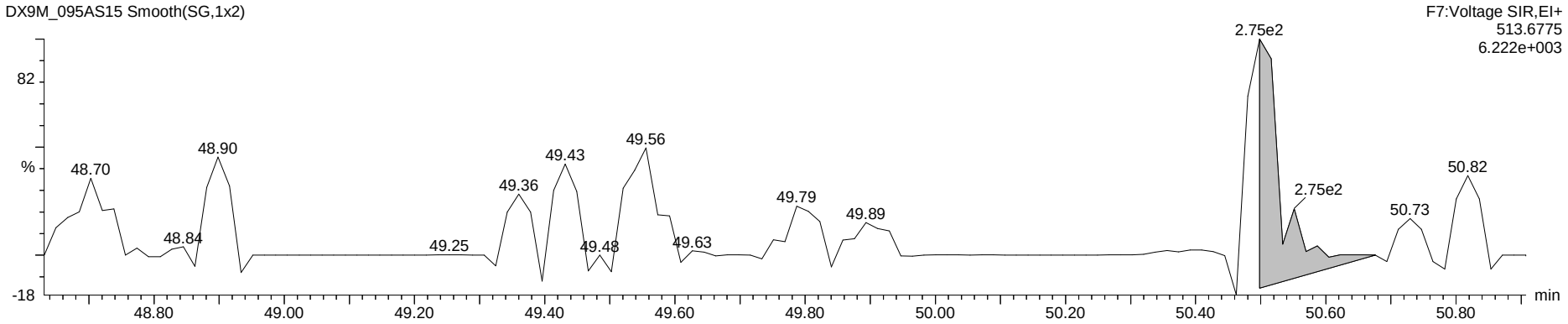
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

Name: DX9M_095AS15, Date: 17-Sep-2019, Time: 22:38:52, ID: L31654-11,W,, Description: 5,WG69303,1.0/100uL

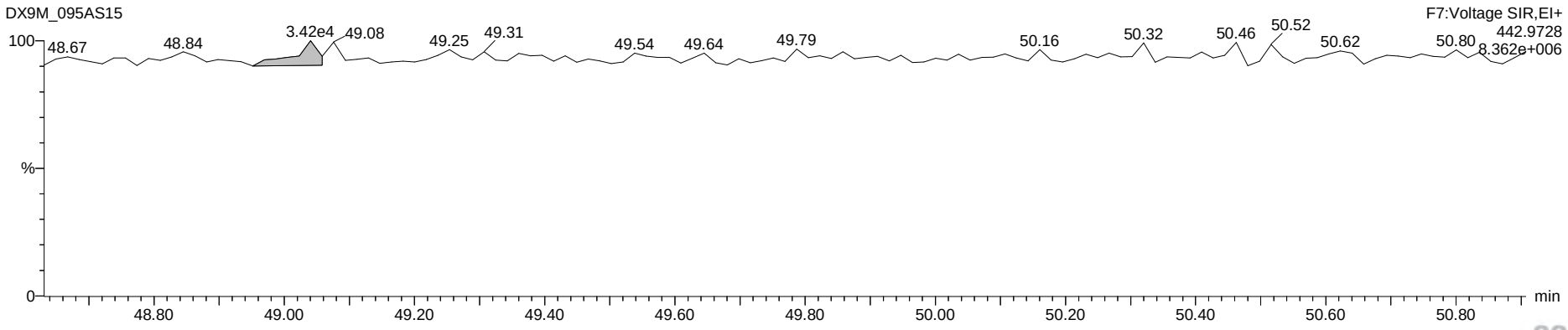
OCDF



Deca DPE



Octa Lock



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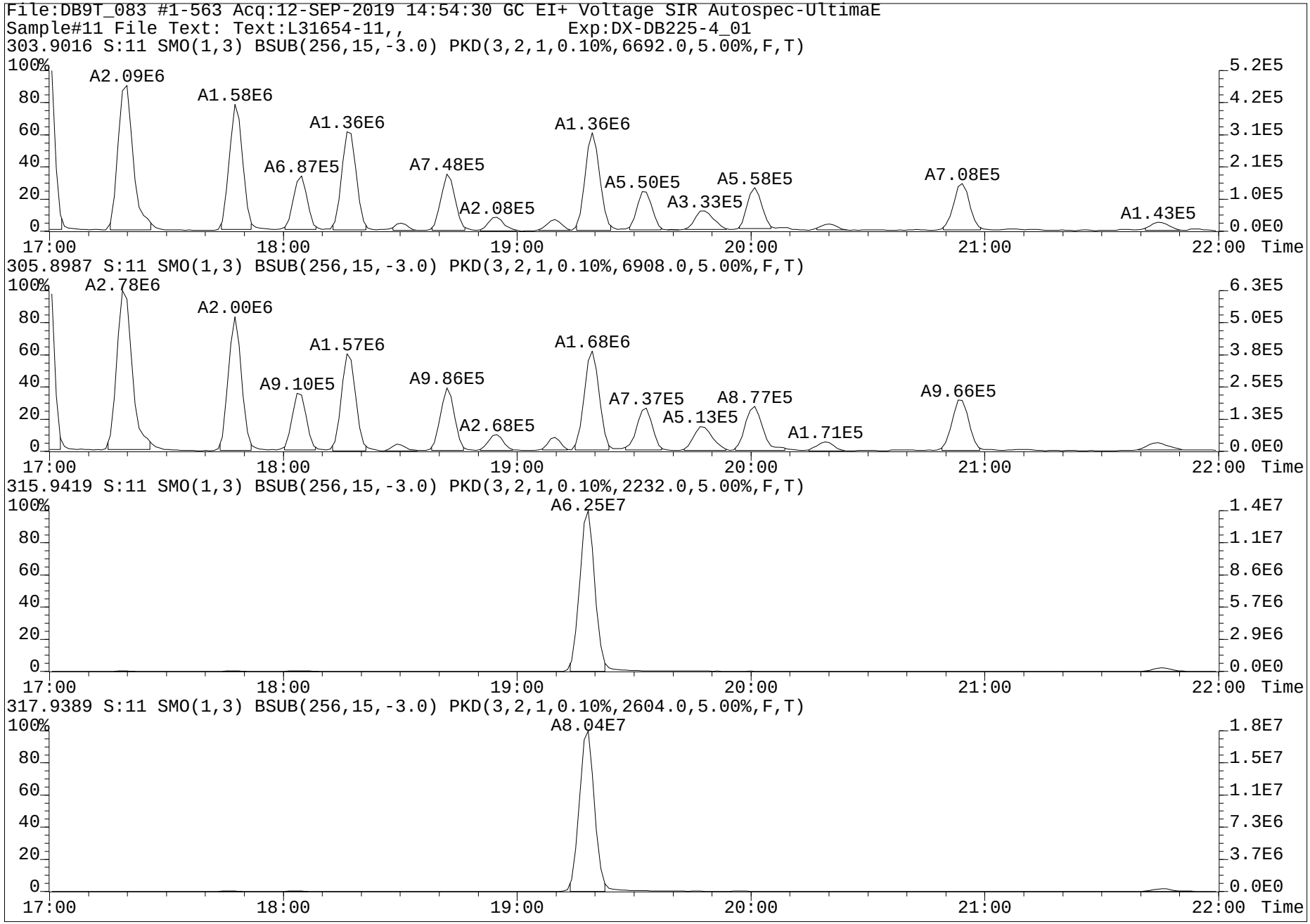
Run #14 Filename DB9T_083 S: 11 I: 1 Acquired: 12-SEP-19 14:54:30 Processed: 17-SEP-19 10:20:04
Run: db9t_083-b Analyte: db-hxd-s2 Cal: db9t_055-5a Results: db9t_083-b Version: V3.6 6-JAN-2000 17:51:42
Sample text: L31654-11,, Comments: 1,WG69303,2.0/20uL
sample size: 10.327000 conc units: pg/g total toxicity: 2.65 F1: 1.0000 F2: 1.0000

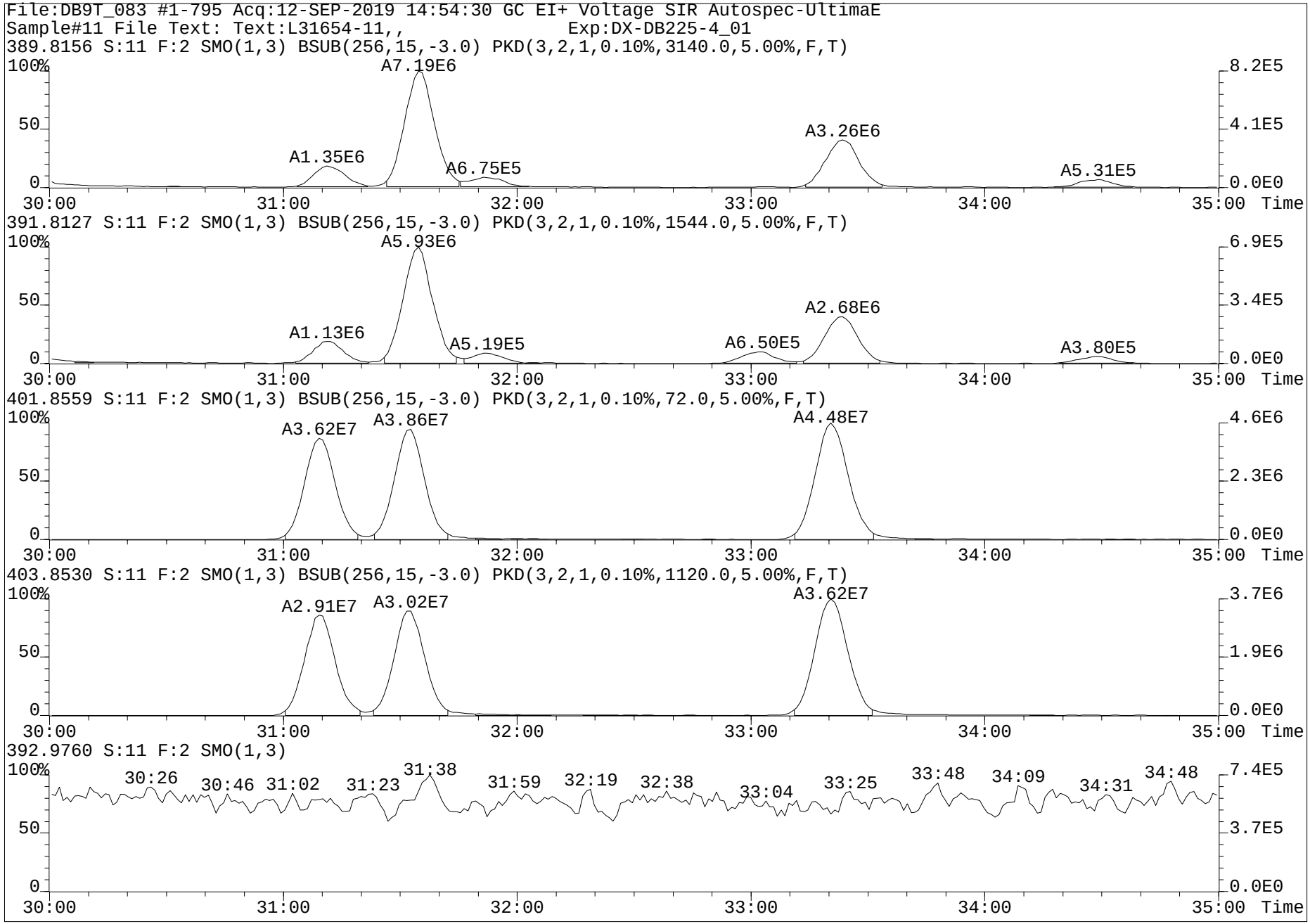
	Typ	Name	#Hom	Resp	RA		RT	Conc	Tox #1	DL	Rec	M?
1	Unk	2,3,7,8-TCDF	1	3.04e+06	0.81	y	19:19	5.308	1	0.2599	-	n
2	Unk	1,2,3,7,8,9-HxCDD	1	5.95e+06	1.22	y	33:23	21.234	2	0.3758	-	n
3	IS/RT	13C-2,3,7,8-TCDF	1	1.43e+08	0.78	y	19:18	164.426	-	0.0555	84.9	n
4	IS/RT	13C-1,2,3,4,7,8-HxCDD	1	6.53e+07	1.25	y	31:09	152.093	-	0.0673	78.5	n
5	IS/RT	13C-1,2,3,6,7,8-HxCDD	1	6.88e+07	1.28	y	31:32	153.281	-	0.0644	79.1	n
6	RS	13C-1,2,3,4-TCDD	1	1.19e+08	0.79	y	18:06	10.012	-	-	-	n
7	RS	13C-1,2,3,7,8,9-HxCDD	1	8.09e+07	1.24	y	33:20	13.648	-	-	-	n
8	Tot	Hexa DPE	0	*			NotFnd	*	-	-	-	n
9	Tot	Tetra Lock	-	-			-	-	-	-	-	n
10	Tot	Hexa Lock	-	-			-	-	-	-	-	n

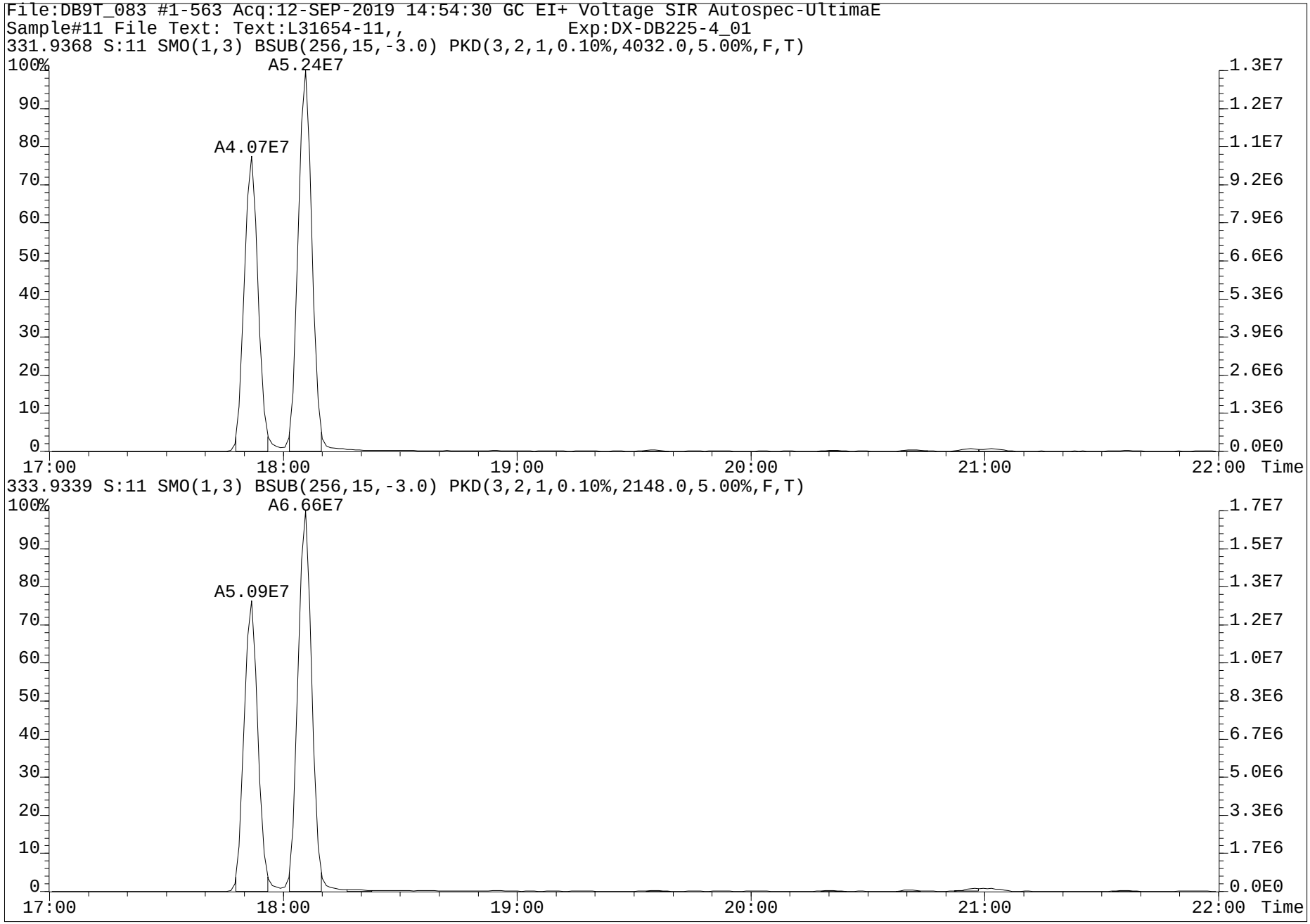
PV by RA 20SEP2019

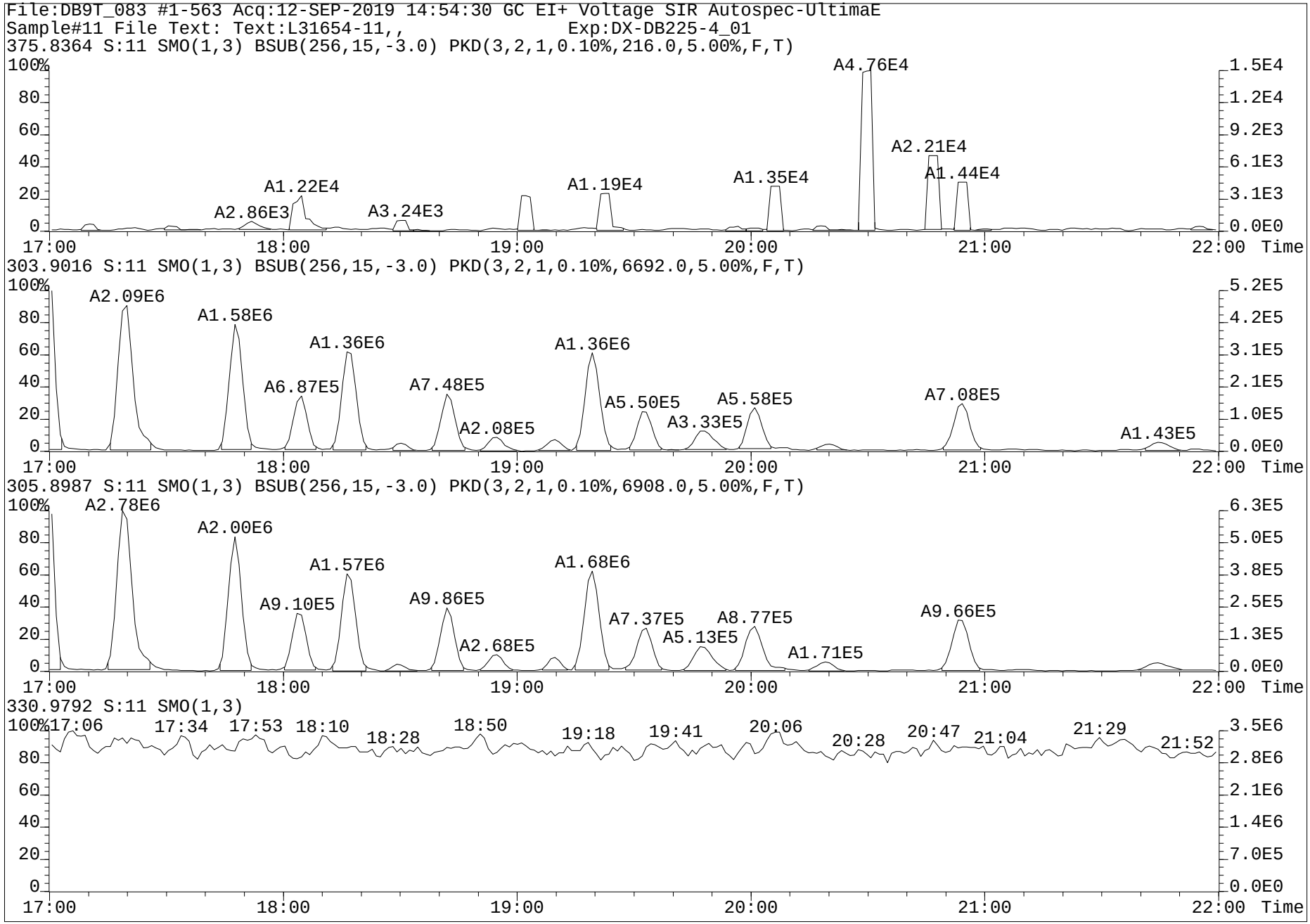
SV by HH 22Sep2019

SGS AXYS


File:DB9T_083 #1-563 Acq:12-SEP-2019 14:54:30 GC EI+ Voltage SIR Autospec-UltimaE
Sample#11 File Text: Text:L31654-11,, Exp:DX-DB225-4_01
303.9016 S:11 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,6692.0,5.00%,F,T)
A2.09E6
A1.58E6
A1.36E6
A6.87E5
A7.48E5
A1.36E6
A2.08E5
A5.50E5
A3.33E5
A5.58E5
A7.08E5
A1.43E5
305.8987 S:11 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,6908.0,5.00%,F,T)
A2.78E6
A2.00E6
A1.57E6
A9.10E5
A9.86E5
A1.68E6
A2.68E5
A7.37E5
A5.13E5
A8.77E5
A1.71E5
A9.66E5
315.9419 S:11 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,2232.0,5.00%,F,T)
A6.25E7
317.9389 S:11 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,2604.0,5.00%,F,T)
A8.04E7
Time


File:DB9T_083 #1-795 Acq:12-SEP-2019 14:54:30 GC EI+ Voltage SIR Autospec-UltimaE
Sample#11 File Text: Text:L31654-11,, Exp:DX-DB225-4_01
389.8156 S:11 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,3140.0,5.00%,F,T)
A7.19E6
A1.35E6
A6.75E5
A3.26E6
A5.31E5
391.8127 S:11 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1544.0,5.00%,F,T)
A5.93E6
A1.13E6
A5.19E5
A6.50E5
A2.68E6
A3.80E5
401.8559 S:11 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,72.0,5.00%,F,T)
A3.62E7
A3.86E7
A4.48E7
403.8530 S:11 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1120.0,5.00%,F,T)
A2.91E7
A3.02E7
A3.62E7
392.9760 S:11 F:2 SMO(1,3)
30:26
30:46
31:02
31:23
31:38
31:59
32:19
32:38
33:04
33:25
33:48
34:09
34:31
34:48
100%
50
0
30:00
31:00
32:00
33:00
34:00
35:00
Time
8.2E5
4.1E5
0.0E0
6.9E5
3.4E5
4.6E6
2.3E6
3.7E6
1.9E6
7.4E5
3.7E5


File:DB9T_083 #1-563 Acq:12-SEP-2019 14:54:30 GC EI+ Voltage SIR Autospec-UltimaE
Sample#11 File Text: Text:L31654-11,, Exp:DX-DB225-4_01
331.9368 S:11 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,4032.0,5.00%,F,T)
A5.24E7
A4.07E7
100%
90
80
70
60
50
40
30
20
10
0
1.3E7
1.2E7
1.1E7
9.2E6
7.9E6
6.6E6
5.3E6
3.9E6
2.6E6
1.3E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time
333.9339 S:11 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,2148.0,5.00%,F,T)
A6.66E7
A5.09E7
100%
90
80
70
60
50
40
30
20
10
0
1.7E7
1.5E7
1.3E7
1.2E7
1.0E7
8.3E6
6.7E6
5.0E6
3.3E6
1.7E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time


File:DB9T_083 #1-563 Acq:12-SEP-2019 14:54:30 GC EI+ Voltage SIR Autospec-UltimaE
Sample#11 File Text: Text:L31654-11,, Exp:DX-DB225-4_01
375.8364 S:11 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,216.0,5.00%,F,T)
A4.76E4
A2.21E4
A1.44E4
A1.35E4
A1.22E4
A1.19E4
A2.86E3
A3.24E3
303.9016 S:11 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,6692.0,5.00%,F,T)
A2.09E6
A1.58E6
A1.36E6
A1.36E6
A6.87E5
A7.48E5
A5.50E5
A5.58E5
A7.08E5
A3.33E5
A2.08E5
A1.43E5
305.8987 S:11 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,6908.0,5.00%,F,T)
A2.78E6
A2.00E6
A1.57E6
A1.68E6
A9.10E5
A9.86E5
A7.37E5
A8.77E5
A9.66E5
A5.13E5
A2.68E5
A1.71E5
330.9792 S:11 SMO(1,3)
17:06
17:34
17:53
18:10
18:28
18:50
19:18
19:41
20:06
20:28
20:47
21:04
21:29
21:52
Time

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S21, Date: 13-Sep-2019, Time: 03:42:14, ID: L31654-12,,, Description: 1,WG69303,1.0/20uL

	Name	Sample Size	Resp	Ratio	fails?	RT	pg	DL	%Rec	Noise 1	Noise 2
1	2,3,7,8-TCDF	10.449	9.01e4	0.78	NO	25.27	4.055	0.0400		1.34e3	2.61e3
2	1,2,3,7,8-PeCDF	10.449	1.08e5	1.60	NO	33.58	4.783	0.0949		3.82e3	3.90e3
3	2,3,4,7,8-PeCDF	10.449	4.72e5	1.55	NO	35.37	20.259	0.0834		3.82e3	3.90e3
4	1,2,3,4,7,8-HxCDF	10.449	5.08e6	1.23	NO	40.80	245.697	0.1154		6.52e3	5.67e3
5	1,2,3,6,7,8-HxCDF	10.449	8.28e5	1.26	NO	40.97	39.126	0.1084		6.52e3	5.67e3
6	2,3,4,6,7,8-HxCDF	10.449	3.93e5	1.23	NO	41.93	18.378	0.1062		6.52e3	5.67e3
7	1,2,3,7,8,9-HxCDF	10.449	4.91e4	1.27	NO	42.95	2.660	0.1186		6.52e3	5.67e3
8	1,2,3,4,6,7,8-HpCDF	10.449	4.55e7	1.04	NO	45.42	1947.185	0.1845		1.09e4	1.53e4
9	1,2,3,4,7,8,9-HpCDF	10.449	2.49e6	1.04	NO	47.21	136.686	0.2302		1.09e4	1.53e4
10	OCDF	10.449	1.80e8	0.91	NO	50.53	7382.883	0.2562		1.65e4	9.29e3
11	2,3,7,8-TCDD	10.449	1.58e4	0.89	NO	26.49	0.804	0.0410		2.05e3	1.31e3
12	1,2,3,7,8-PeCDD	10.449	6.53e4	0.63	NO	36.18	3.826	0.0515		1.29e3	2.35e3
13	1,2,3,4,7,8-HxCDD	10.449	1.59e5	1.23	NO	42.19	9.434	0.0753		3.85e3	3.96e3
14	1,2,3,6,7,8-HxCDD	10.449	2.85e6	1.22	NO	42.32	136.373	0.0627		3.85e3	3.96e3
15	1,2,3,7,8,9-HxCDD	10.449	4.94e5	1.20	NO	42.76	26.307	0.0687		3.85e3	3.96e3
16	1,2,3,4,6,7,8-HpCDD	10.449	9.05e7	1.02	NO	46.81	4822.798	0.2135		1.21e4	1.17e4
17	OCDD	10.449	3.30e8	0.97	NO	50.50	15645.057	0.9856		4.16e4	4.38e4
18	13C-2,3,7,8-TCDF	10.449	4.59e6	0.83	NO	25.24	123.073	0.0855	64.3	8.68e3	5.49e3
19	13C-1,2,3,7,8-PeCDF	10.449	4.65e6	1.60	NO	33.57	153.525	0.0856	80.2	6.42e3	5.11e3
20	13C-2,3,4,7,8-PeCDF	10.449	4.70e6	1.59	NO	35.33	150.430	0.0830	78.6	6.42e3	5.11e3
21	13C-1,2,3,4,7,8-HxCDF	10.449	3.58e6	0.51	NO	40.78	131.900	0.1197	68.9	1.01e4	7.61e3
22	13C-1,2,3,6,7,8-HxCDF	10.449	3.77e6	0.52	NO	40.95	126.300	0.1089	66.0	1.01e4	7.61e3
23	13C-2,3,4,6,7,8-HxCDF	10.449	3.61e6	0.52	NO	41.92	133.981	0.1208	70.0	1.01e4	7.61e3
24	13C-1,2,3,7,8,9-HxCDF	10.449	3.35e6	0.52	NO	42.93	140.001	0.1359	73.1	1.01e4	7.61e3
25	13C-1,2,3,4,6,7,8-HpCDF	10.449	3.58e6	0.45	NO	45.41	160.041	0.1047	83.6	4.89e3	7.89e3
26	13C-1,2,3,4,7,8,9-HpCDF	10.449	2.79e6	0.45	NO	47.19	153.548	0.1291	80.2	4.89e3	7.89e3
27	13C-2,3,7,8-TCDD	10.449	3.42e6	0.78	NO	26.47	144.109	0.1300	75.3	8.22e3	5.48e3
28	13C-1,2,3,7,8-PeCDD	10.449	3.30e6	0.62	NO	36.15	175.647	0.0874	91.8	4.30e3	3.01e3
29	13C-1,2,3,4,7,8-HxCDD	10.449	3.14e6	1.23	NO	42.17	144.669	0.1111	75.6	5.83e3	7.31e3
30	13C-1,2,3,6,7,8-HxCDD	10.449	4.25e6	1.25	NO	42.31	177.256	0.1005	92.6	5.83e3	7.31e3
31	13C-1,2,3,4,6,7,8-HpCDD	10.449	4.61e6	1.04	NO	46.79	189.965	0.0851	99.2	5.66e3	5.60e3
32	13C-OCDD	10.449	8.22e6	0.89	NO	50.46	460.781	0.1279	120.4	6.23e3	6.22e3
33	13C-1,2,3,4-TCDD	10.449	4.68e6	0.81	NO	26.12	11.137	0.0073	5.8	8.22e3	5.48e3
34	13C-1,2,3,7,8,9-HxCDD	10.449	4.28e6	1.23	NO	42.75	14.118	0.0079	7.4	5.83e3	7.31e3
35	37Cl-2,3,7,8-TCDD	10.449	4.12e5			26.51	15.787	0.0498	82.5		5.78e3
36	Total Tetra-Furans	10.449					34.115	0.0400			2.61e3
37	Total Tetra-Dioxins	10.449					14.844	0.0410			1.31e3
38	Total Penta-Furans	10.449					221.262	0.0901			3.90e3
39	Total Penta-Dioxins	10.449					41.511	0.0515			2.35e3 T
40	Total Hexa-Furans	10.449					2547.752	0.1107			5.67e3
41	Total Hexa-Dioxins	10.449					628.009	0.0650			3.96e3
42	Total Hepta-Furans	10.449					9958.129	0.2048			1.53e4
43	Total Hepta-Dioxins	10.449					9642.112	0.2135			1.17e4
44	Hexa DPE	1.000	5.10e2			22.77					1.62e3
45	Hepta DPE	1.000	1.48e3			37.08					1.10e3
46	Octa DPE	1.000	8.50e2			40.21					2.53e3
47	Nona DPE	1.000	9.24e3			47.79					2.50e3
48	Deca DPE	1.000	7.47e3			50.50					2.12e3
49	Tetra Lock	1.000	7.19e3			21.32					1.30e5
50	Penta Lock	1.000	8.10e3			32.89					8.51e4
51	Hexa Lock	1.000	2.58e5			39.17					1.69e5
52	Hepta Lock	1.000									1.54e5
53	Octa Lock	1.000	7.54e3			48.79					1.03e5
54	13C-Tetra-Furans	10.449					123.073	0.0855			5.49e3
55	13C-Tetra-Dioxins	10.449					155.246	0.1373			5.48e3

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

SV HH 22 Sept. 2019

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S21, Date: 13-Sep-2019, Time: 03:42:14, ID: L31654-12,,, Description: 1,WG69303,1.0/20uL

Tetrafurans

	RT	Ratio	Fails?	pg
1	24.59	0.787	NO	1.852
2	24.29	0.825	NO	1.112
3	24.15	0.771	NO	1.363
4	23.87	0.772	NO	2.911
5	23.72	0.786	NO	0.437
6	23.43	0.799	NO	5.546
7	23.00	0.765	NO	5.314
8	22.57	0.760	NO	3.340
9	22.27	0.759	NO	2.950
10	21.95	0.822	NO	0.810
11	21.45	0.752	NO	0.134
12	28.16	0.959	YES	0.374
13	26.56	0.911	YES	0.050
14	26.29	0.691	NO	0.977
15	25.96	0.742	NO	1.931
16	25.27	0.785	NO	4.055
17	24.95	0.773	NO	0.960

Tetradioxins

	RT	Ratio	Fails?	pg
1	26.34	0.760	NO	6.079
2	26.12	0.866	NO	0.418
3	25.64	0.835	NO	0.335
4	25.22	1.800	YES	0.271
5	25.10	0.831	NO	0.205
6	24.90	0.627	YES	0.203
7	24.70	0.873	NO	1.383
8	23.77	0.826	NO	1.536
9	23.38	0.751	NO	1.236
10	22.95	0.775	NO	1.753
11	28.26	0.654	YES	0.105
12	27.56	1.024	YES	0.111
13	27.11	0.868	NO	0.312
14	26.72	0.445	YES	0.092
15	26.49	0.885	NO	0.804

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S21, Date: 13-Sep-2019, Time: 03:42:14, ID: L31654-12,,, Description: 1,WG69303,1.0/20uL

Pentafurans

	RT	Ratio	Fails?	pg
1	33.58	1.599	NO	4.783
2	33.44	1.505	NO	3.636
3	32.92	1.592	NO	7.099
4	32.49	1.444	NO	0.130
5	32.32	1.681	NO	1.170
6	31.92	1.503	NO	2.673
7	31.54	1.561	NO	96.120
8	31.16	1.862	YES	0.853
9	28.94	1.555	NO	62.816
10	37.15	2.220	YES	0.414
11	36.10	1.517	NO	0.161
12	35.65	1.566	NO	12.164
13	35.37	1.548	NO	20.259
14	34.30	1.476	NO	8.397
15	33.97	1.574	NO	0.588

Pentadioxins

	RT	Ratio	Fails?	pg
1	37.08	0.557	NO	0.887
2	36.48	0.564	NO	0.622
3	36.18	0.632	NO	3.826
4	35.73	0.719	YES	0.218
5	35.53	0.700	NO	0.355
6	35.08	0.684	NO	1.808
7	34.92	0.653	NO	1.200
8	34.52	0.666	NO	1.539
9	34.20	0.589	NO	3.503
10	33.88	0.635	NO	2.924
11	33.20	0.604	NO	9.560
12	32.07	0.633	NO	15.068

Hexafurans

	RT	Ratio	Fails?	pg
1	39.33	1.248	NO	436.068
2	39.05	1.261	NO	100.068
3	42.95	1.270	NO	2.660
4	41.93	1.227	NO	18.378
5	41.75	1.228	NO	39.638
6	41.49	0.833	YES	0.680
7	41.39	1.338	NO	2.359
8	41.12	1.236	NO	1.168
9	40.97	1.255	NO	39.126
10	40.80	1.225	NO	245.697
11	40.14	1.259	NO	1607.710
12	39.83	1.257	NO	8.317
13	43.09	1.312	NO	25.638
14	40.73	1.202	NO	20.244

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S21, Date: 13-Sep-2019, Time: 03:42:14, ID: L31654-12,,, Description: 1,WG69303,1.0/20uL

Hexadioxins

	RT	Ratio	Fails?	pg
1	42.76	1.202	NO	26.307
2	42.32	1.222	NO	136.373
3	42.19	1.228	NO	9.434
4	41.49	1.151	NO	10.791
5	41.29	1.235	NO	195.170
6	40.92	1.239	NO	15.285
7	40.10	1.232	NO	234.650

Heptafurans

	RT	Ratio	Fails?	pg
1	45.95	1.022	NO	7858.171
2	45.74	1.128	NO	16.087
3	45.42	1.038	NO	1947.185
4	47.21	1.043	NO	136.686

Heptadioxins

	RT	Ratio	Fails?	pg
1	46.81	1.019	NO	4822.798
2	45.90	1.025	NO	4819.314

13C-TF

	RT	Ratio	Fails?	pg
1	25.24	0.834	NO	123.073

13C-TD

	RT	Ratio	Fails?	pg
1	26.47	0.784	NO	144.109
2	26.12	0.814	NO	11.137

13C-PF

	RT	Ratio	Fails?	pg
1	33.57	1.601	NO	153.525
2	35.33	1.590	NO	150.430

13C-PD

	RT	Ratio	Fails?	pg
1	36.15	0.624	NO	175.647

13C-HxF

	RT	Ratio	Fails?	pg
1	41.92	0.520	NO	133.981
2	40.95	0.523	NO	126.300
3	40.78	0.514	NO	131.900
4	42.93	0.520	NO	140.001

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

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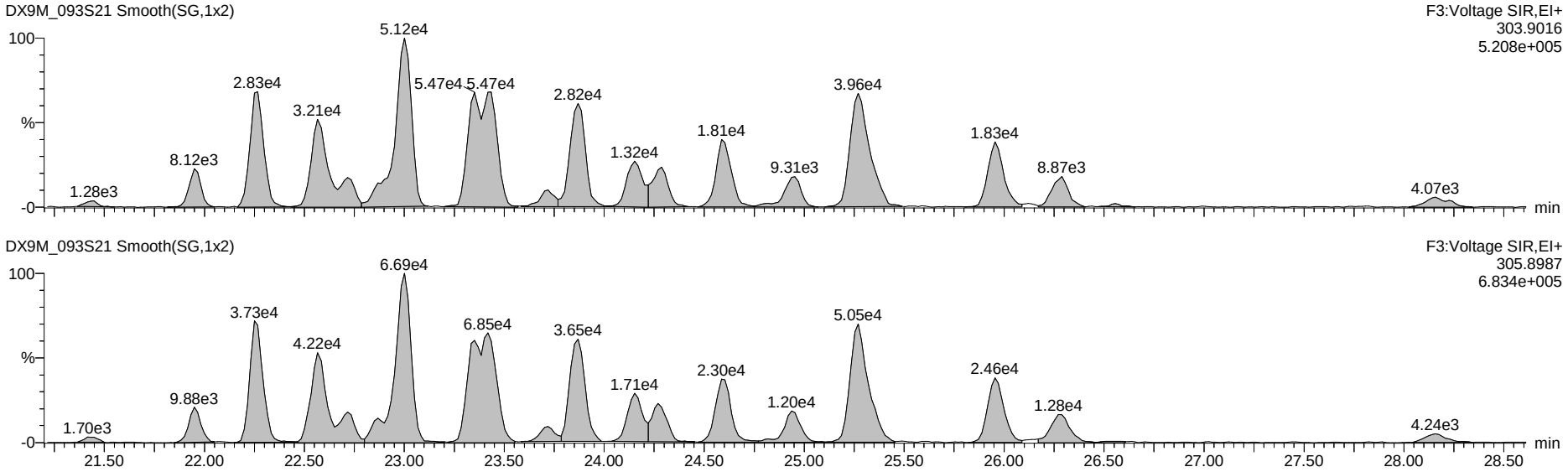
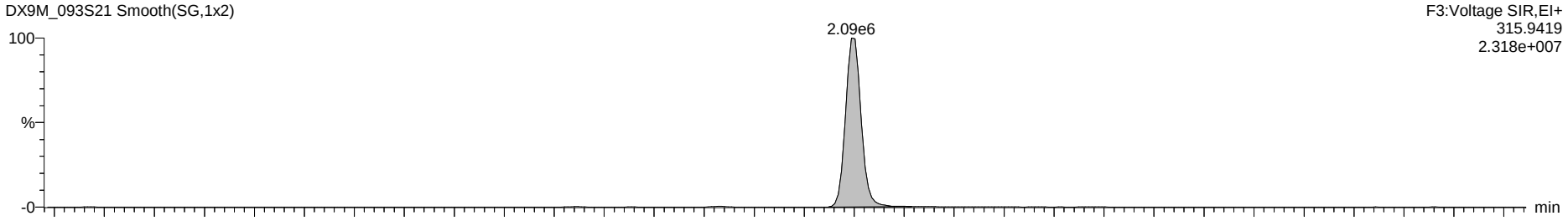
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

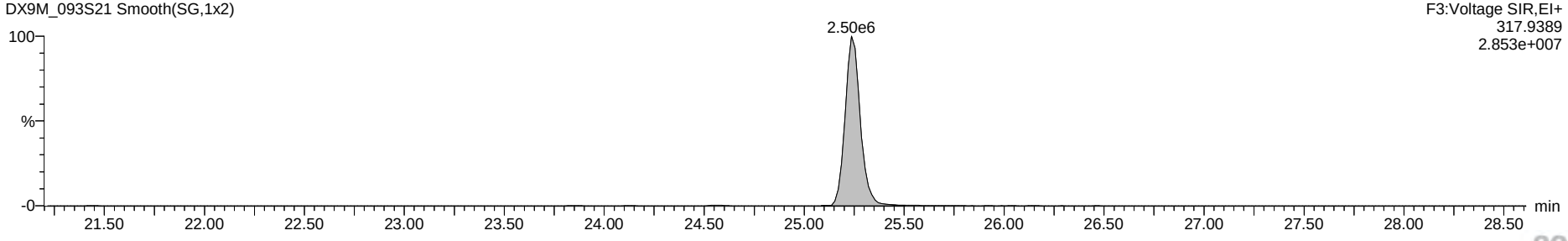
Name: DX9M_093S21, Date: 13-Sep-2019, Time: 03:42:14, ID: L31654-12,,, Description: 1,WG69303,1.0/20uL

Total Tetra-Furans



13C-Tetra-Furans





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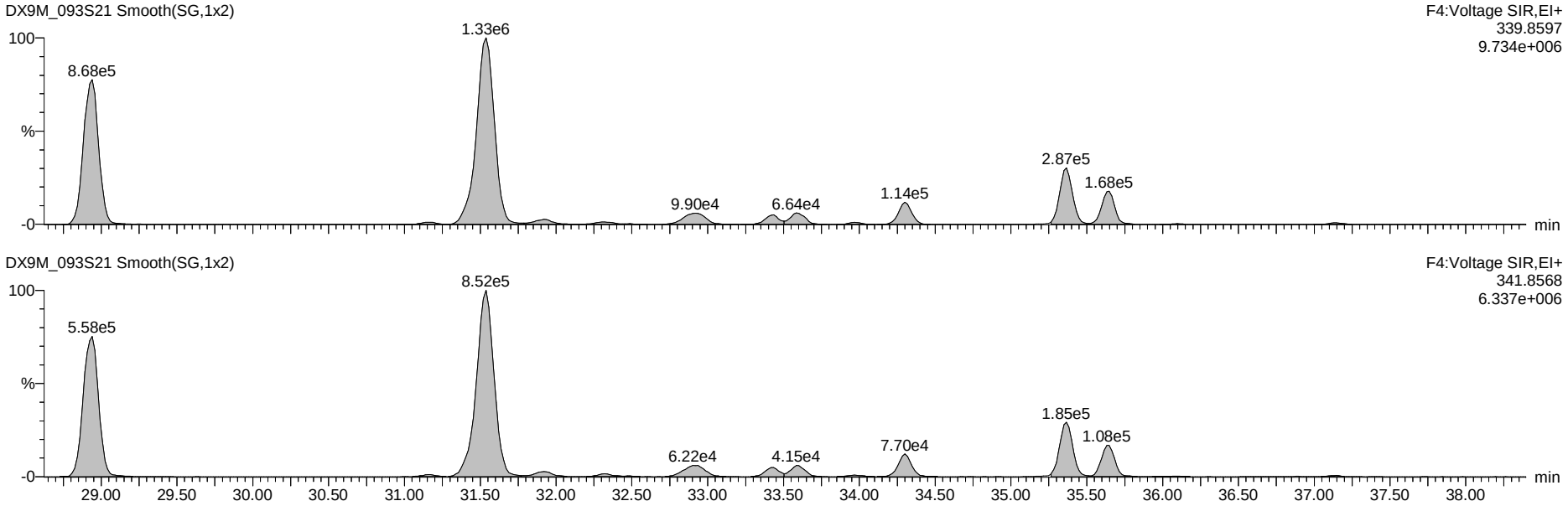
Name: DX9M_093S21, Date: 13-Sep-2019, Time: 03:42:14, ID: L31654-12,,, Description: 1,WG69303,1.0/20uL

Total Penta-Furans



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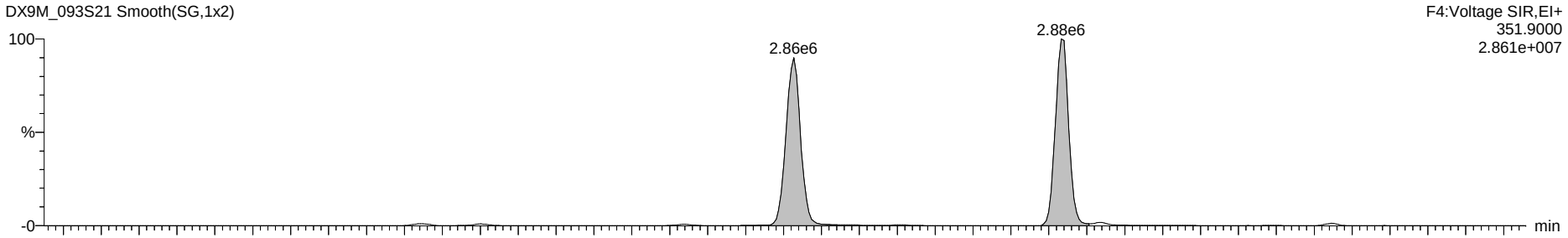

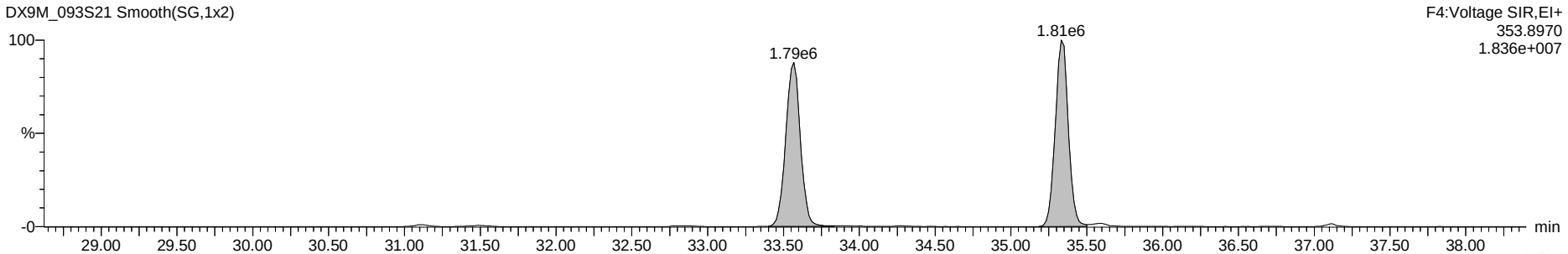

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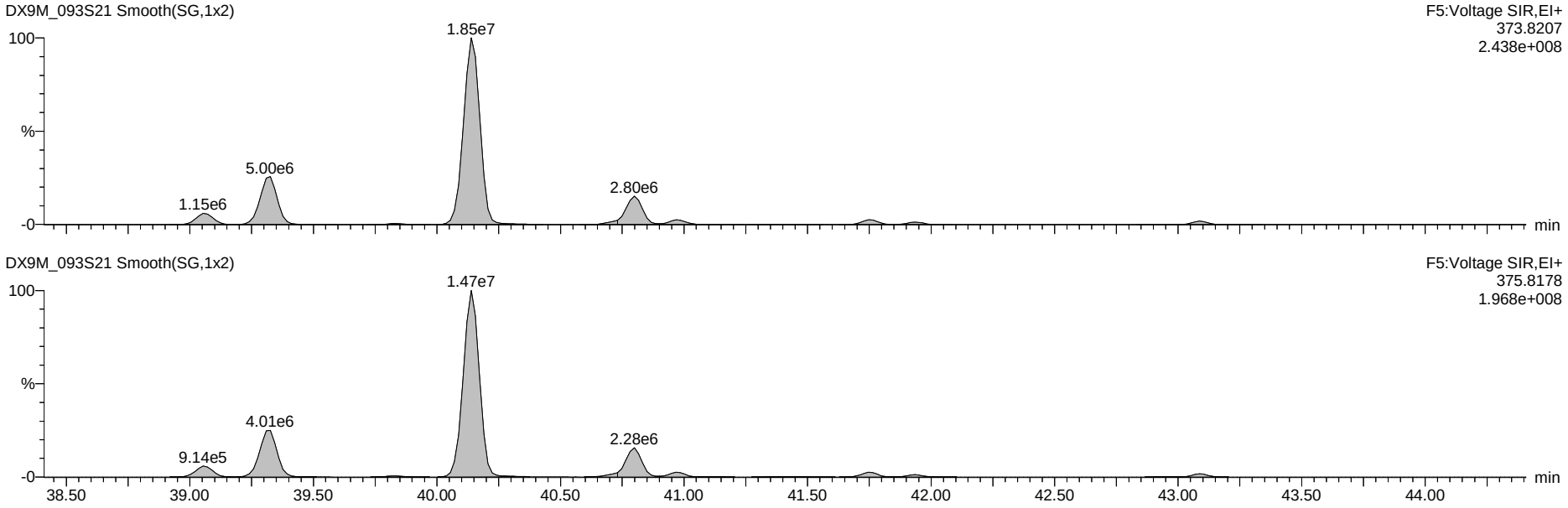
Name: DX9M_093S21, Date: 13-Sep-2019, Time: 03:42:14, ID: L31654-12,,, Description: 1,WG69303,1.0/20uL

Total Hexa-Furans



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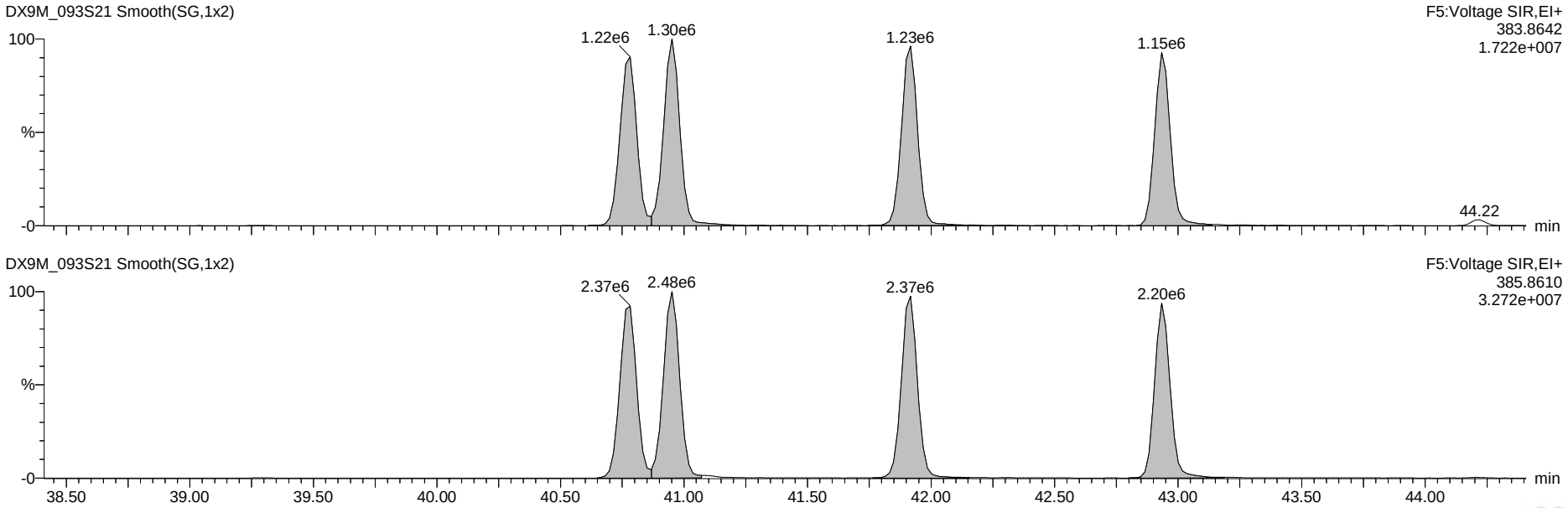

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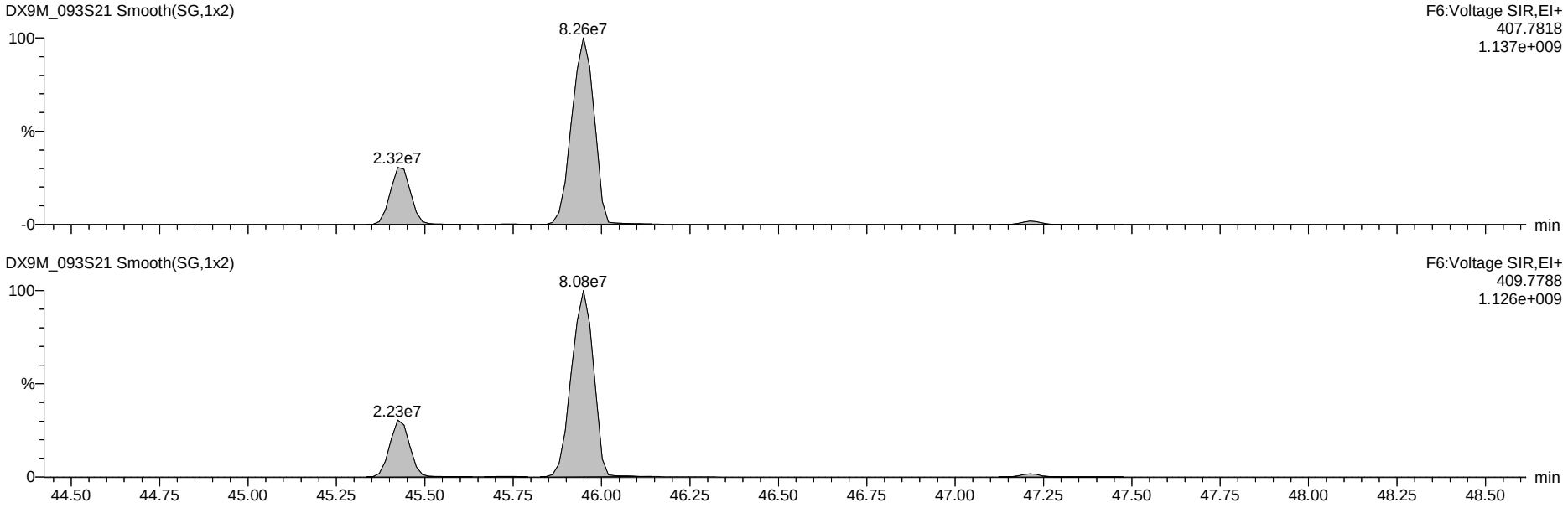
Total Hepta-Furans



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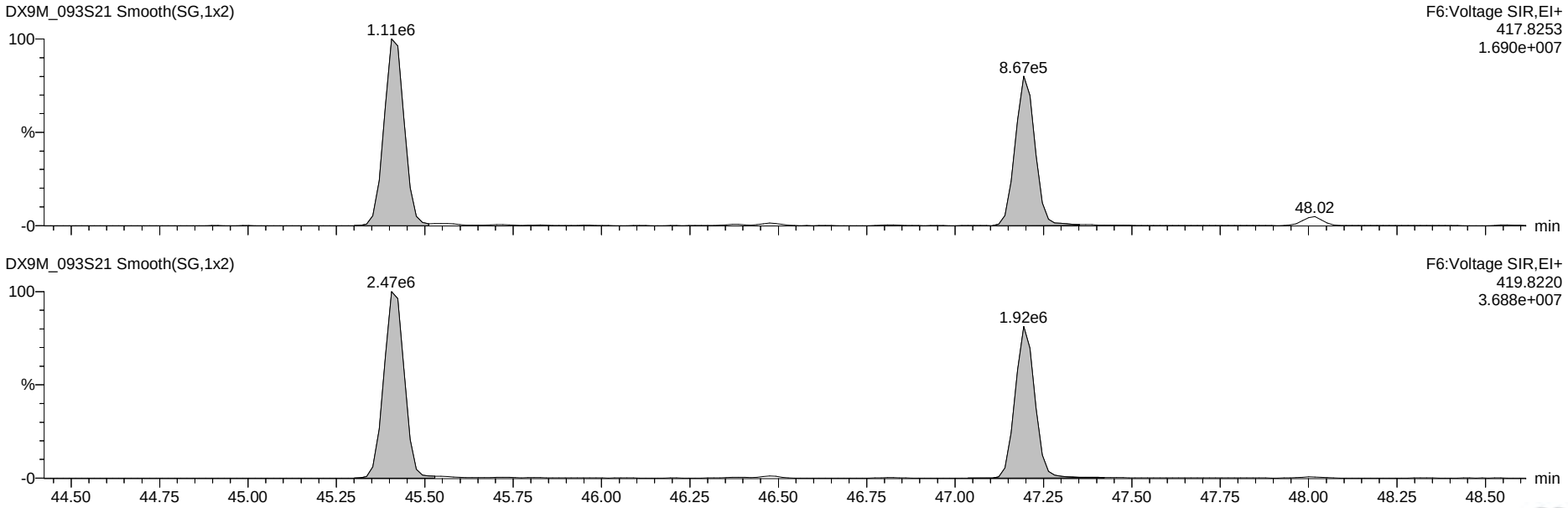

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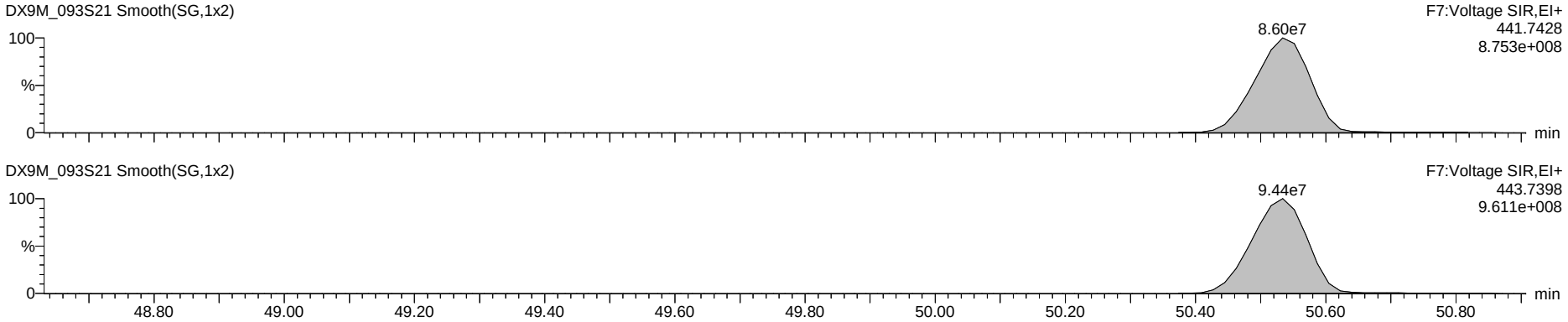
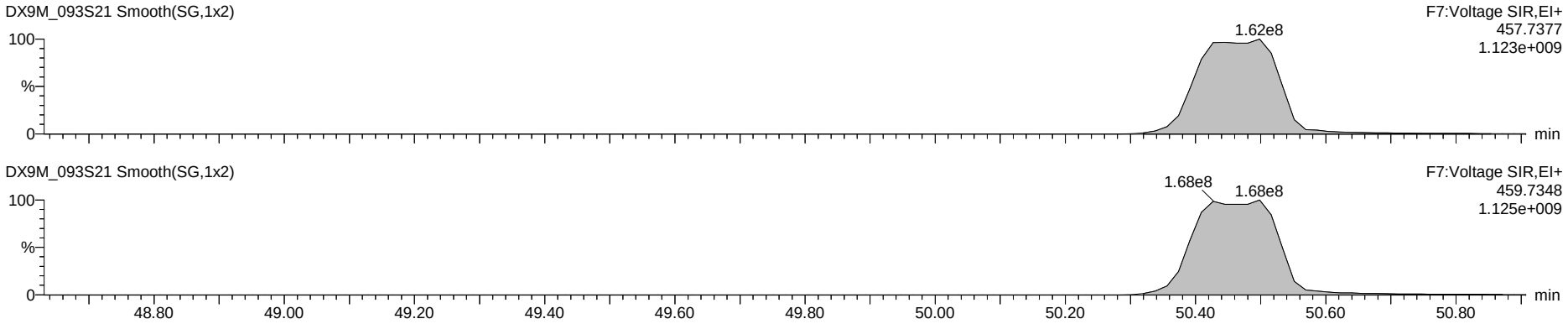


OCDD



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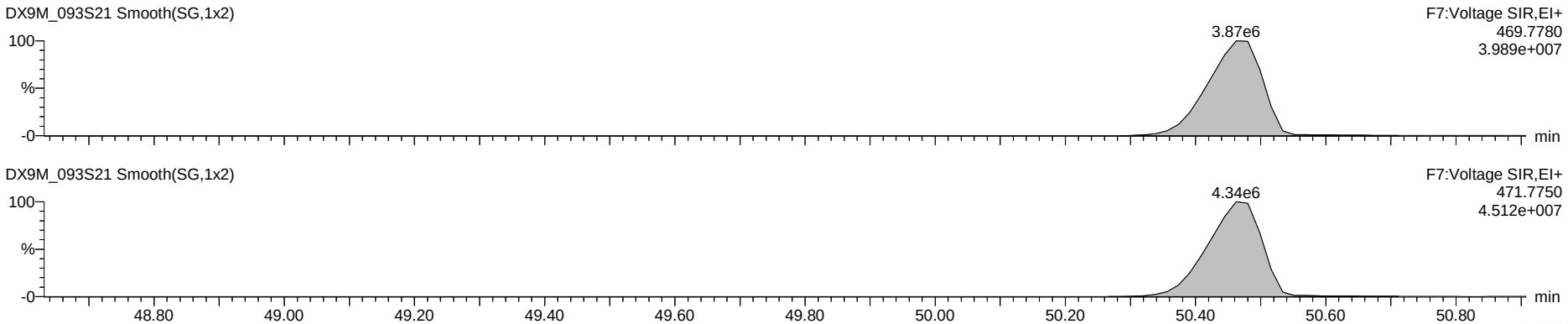

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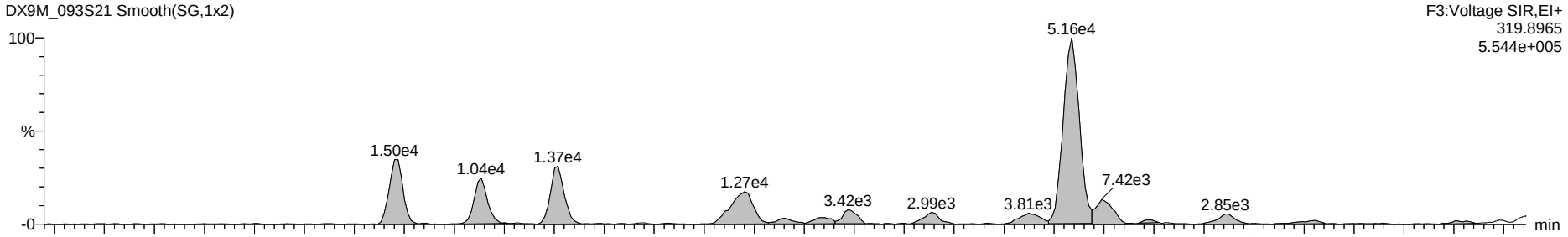
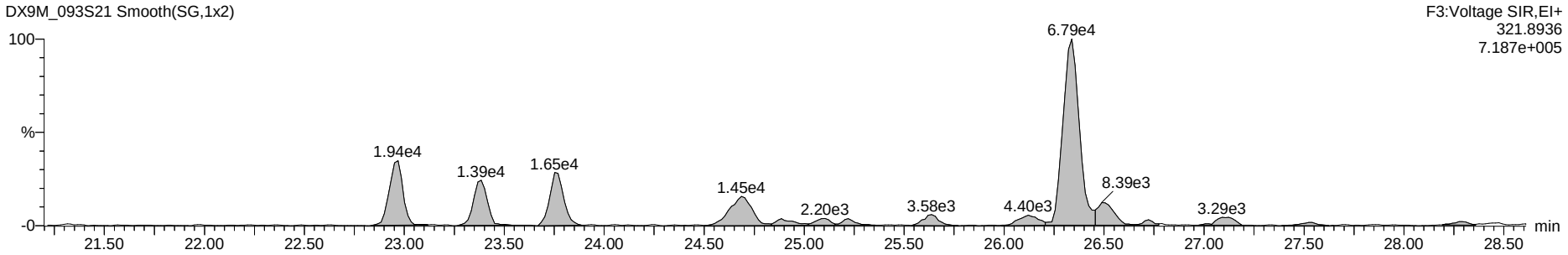
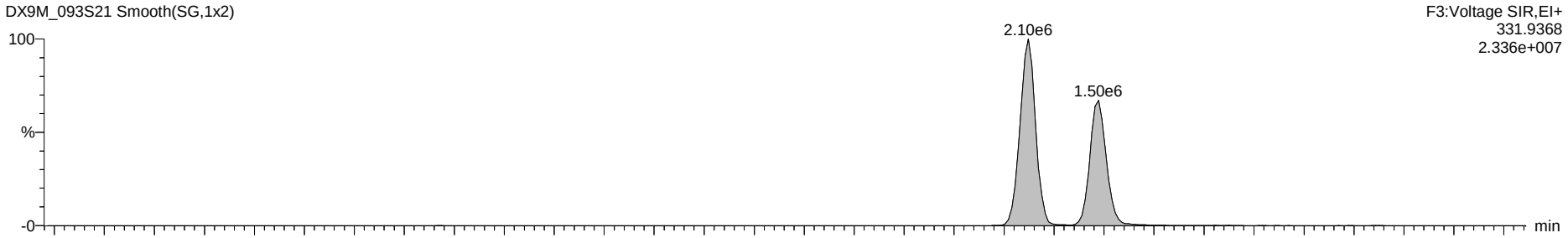
Name: DX9M_093S21, Date: 13-Sep-2019, Time: 03:42:14, ID: L31654-12,,, Description: 1,WG69303,1.0/20uL

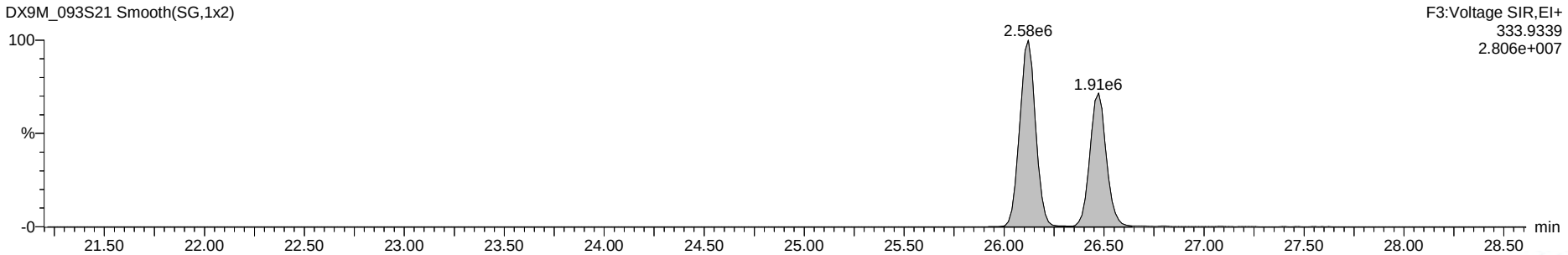
Total Tetra-Dioxins





13C-Tetra-Dioxins





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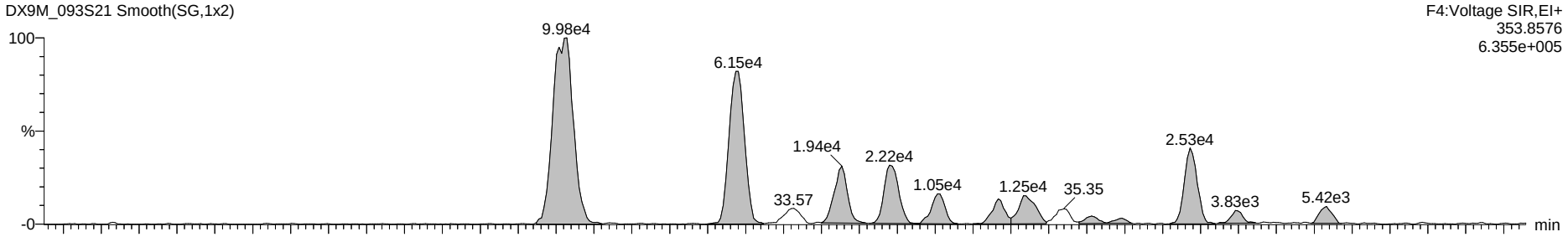
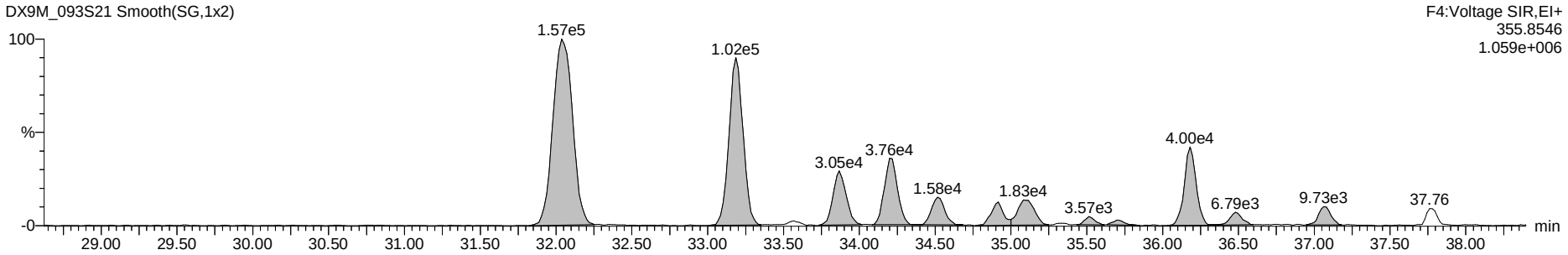
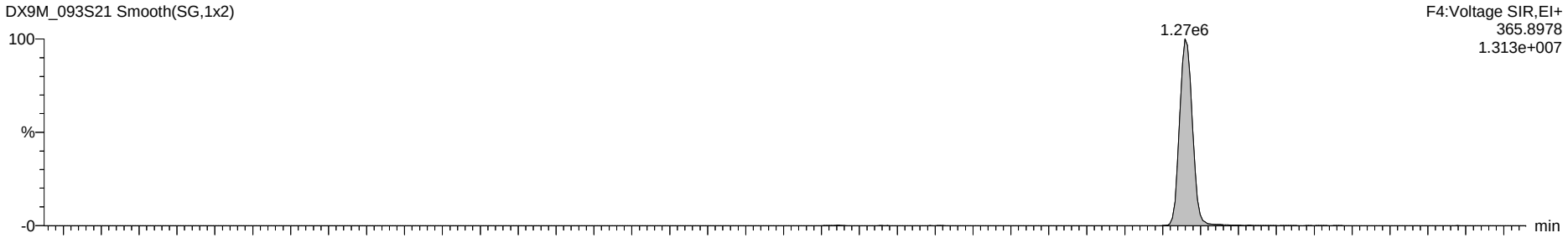
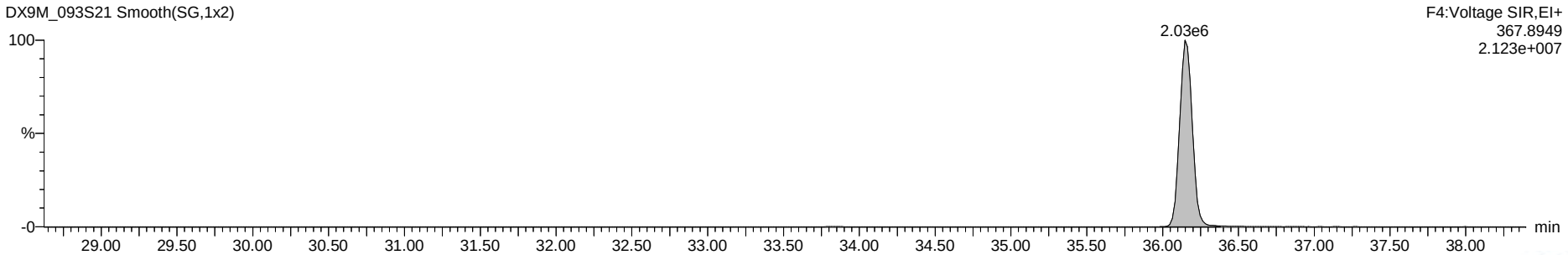
Total Penta-Dioxins





13C-Penta-Dioxins





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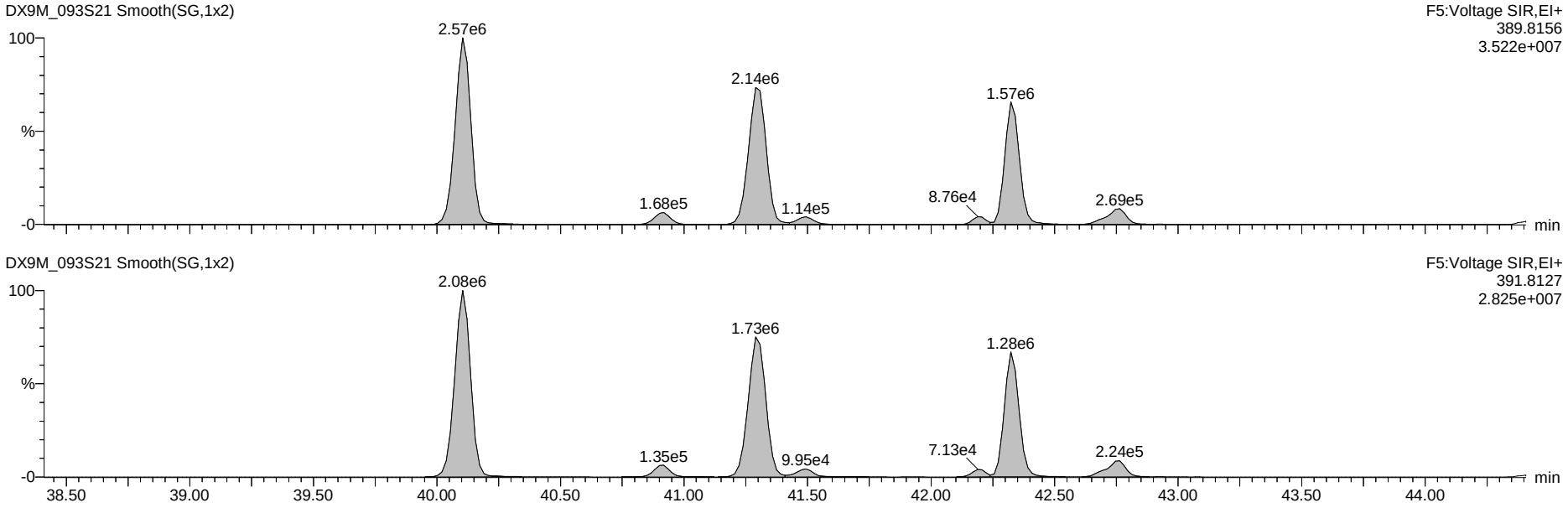
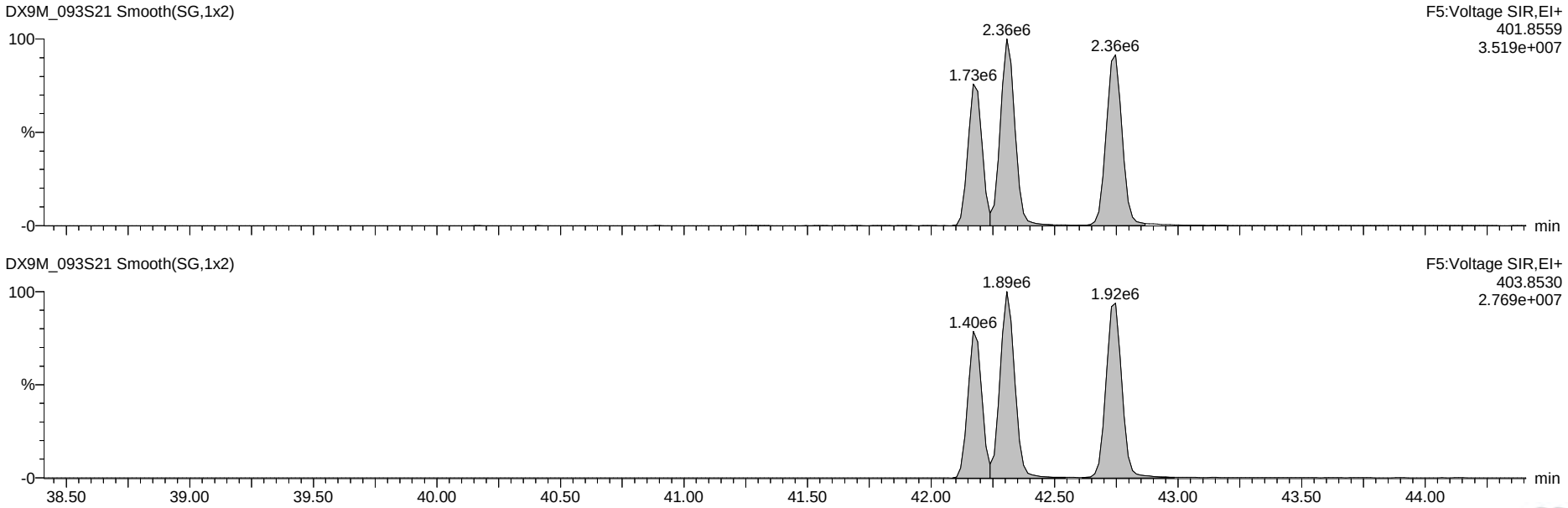
Name: DX9M_093S21, Date: 13-Sep-2019, Time: 03:42:14, ID: L31654-12,,, Description: 1,WG69303,1.0/20uL

Total Hexa-Dioxins



13C-Hexa-Dioxins



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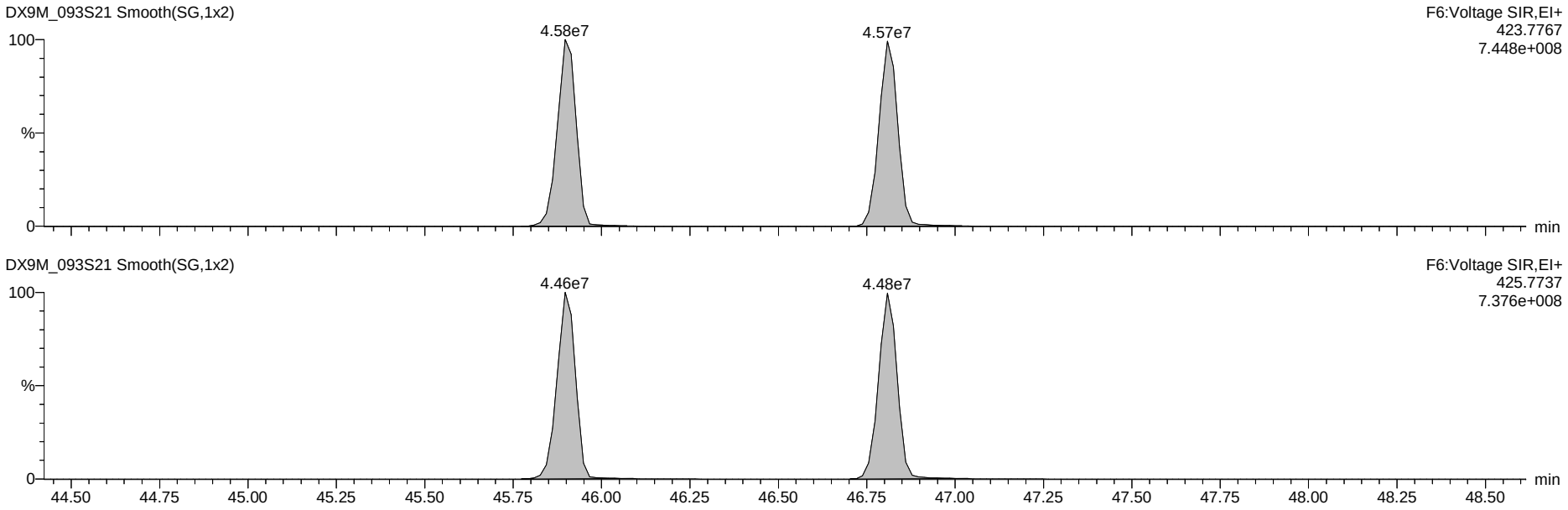
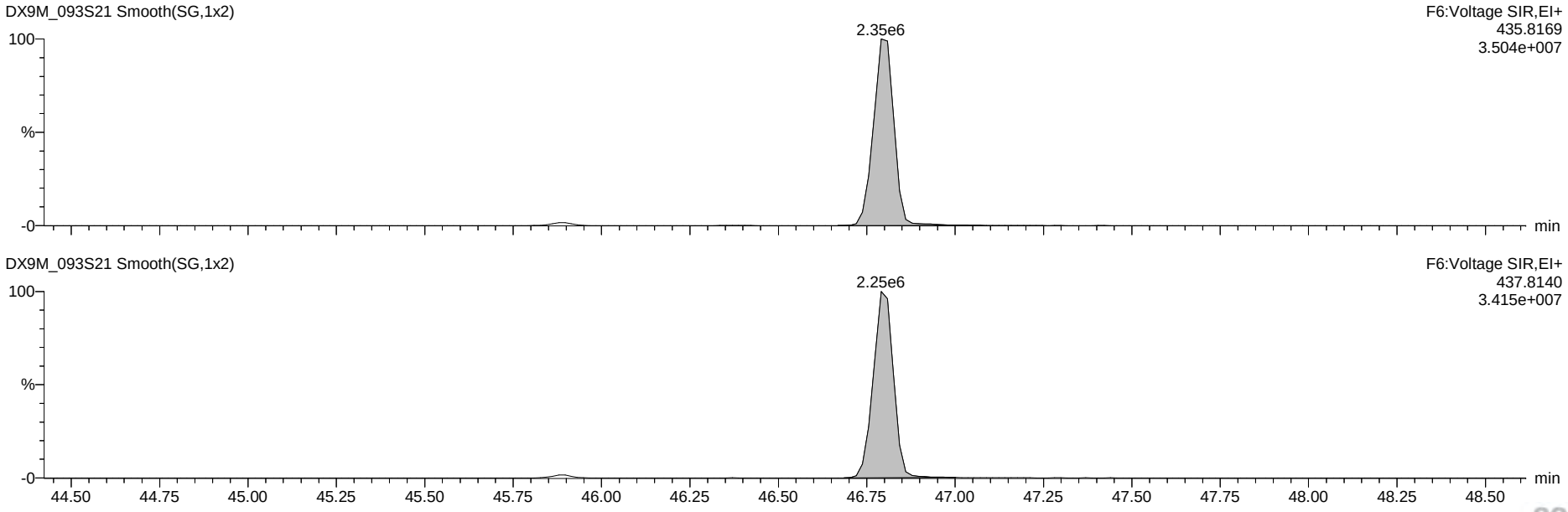
Total Hepta-Dioxins



13C-Hepta-Dioxins



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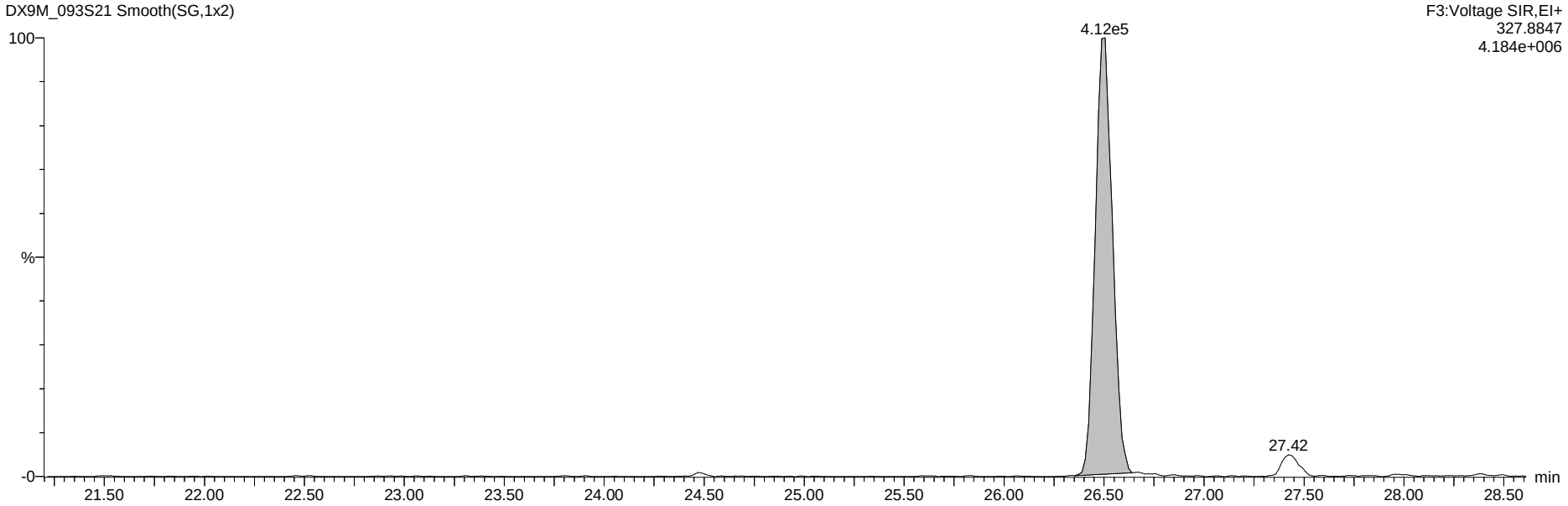
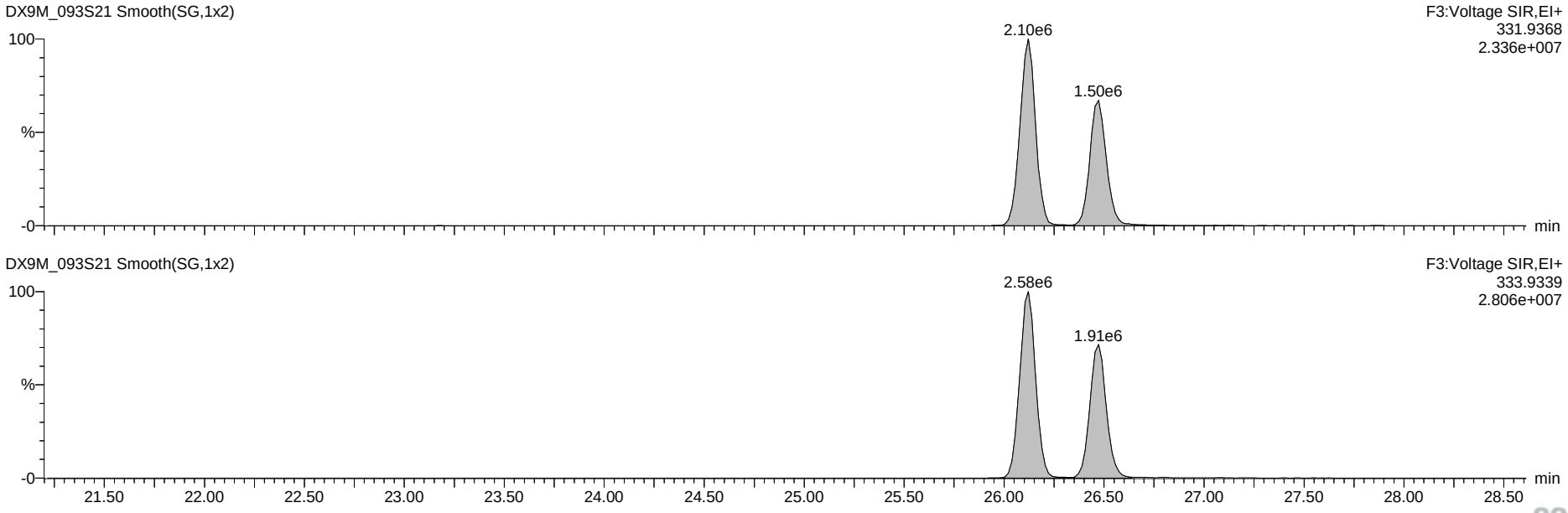
Name: DX9M_093S21, Date: 13-Sep-2019, Time: 03:42:14, ID: L31654-12,,, Description: 1,WG69303,1.0/20uL

37Cl-2,3,7,8-TCDD



13C-Tetra-Dioxins



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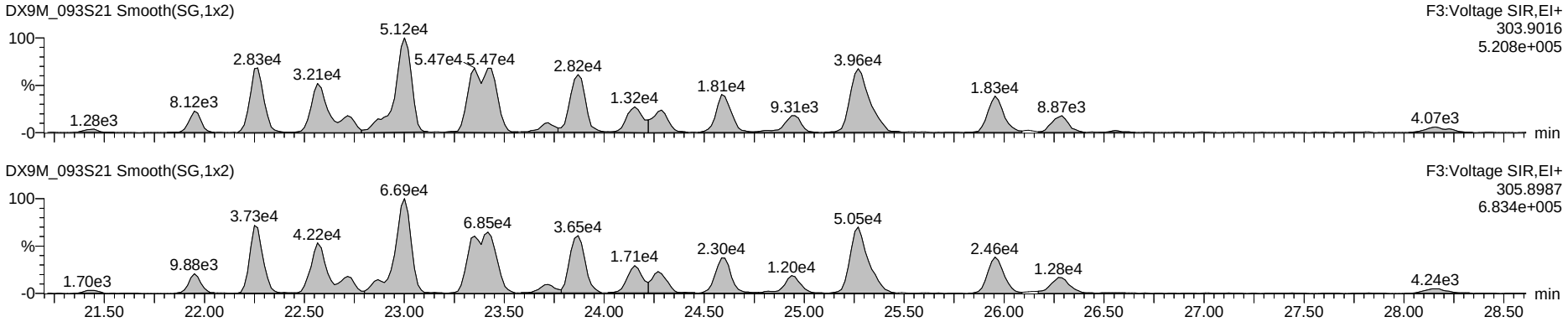
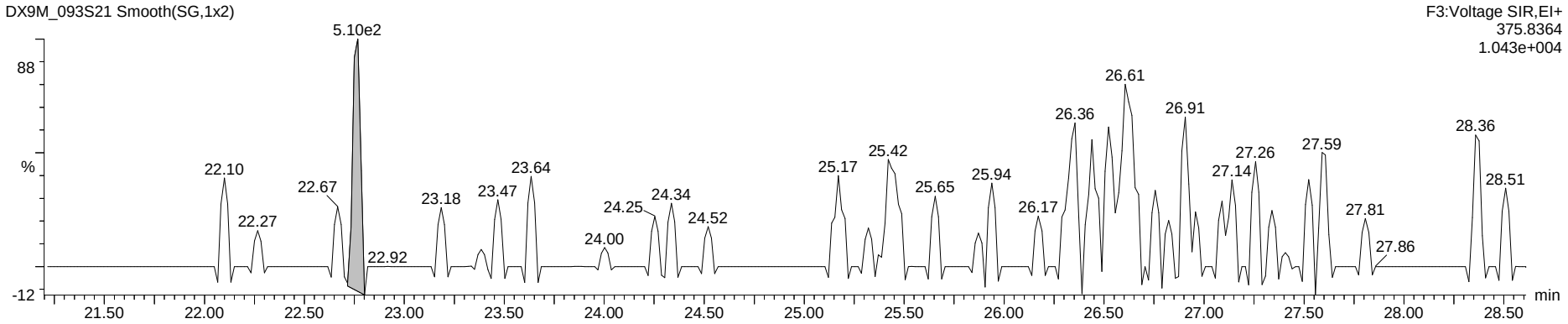
Name: DX9M_093S21, Date: 13-Sep-2019, Time: 03:42:14, ID: L31654-12,,, Description: 1,WG69303,1.0/20uL

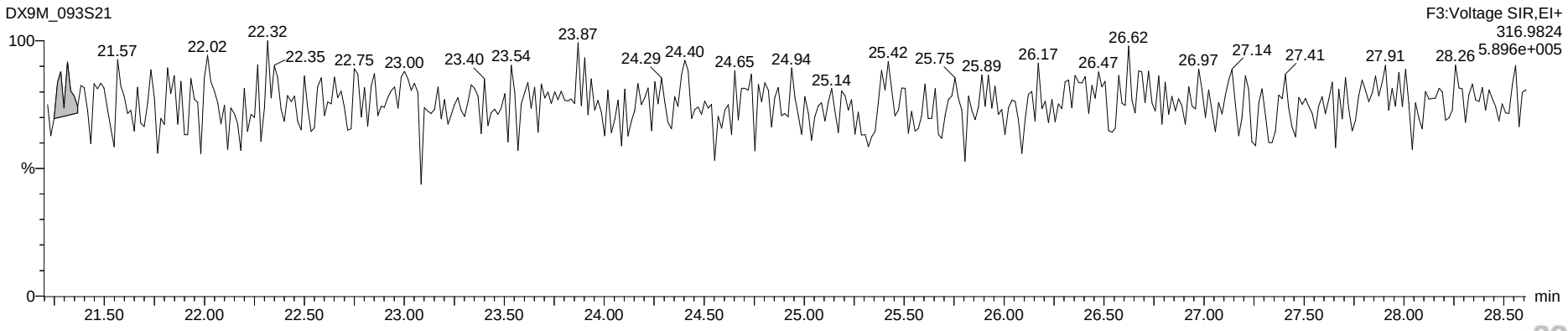
Total Tetra-Furans



Hexa DPE



Tetra Lock



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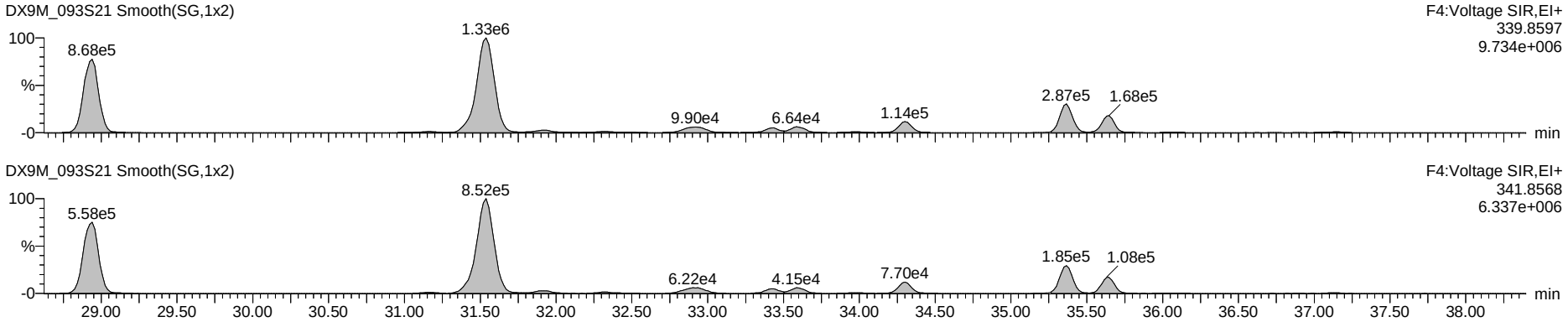
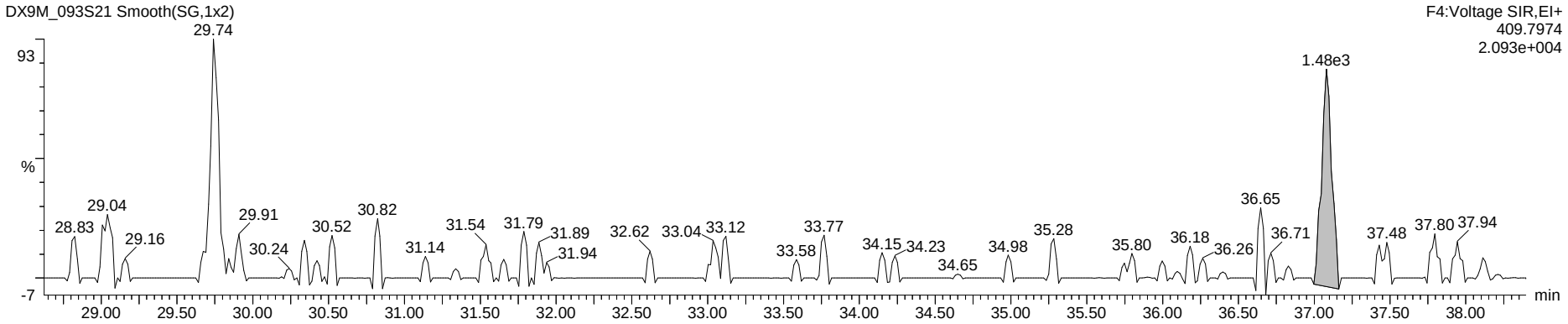
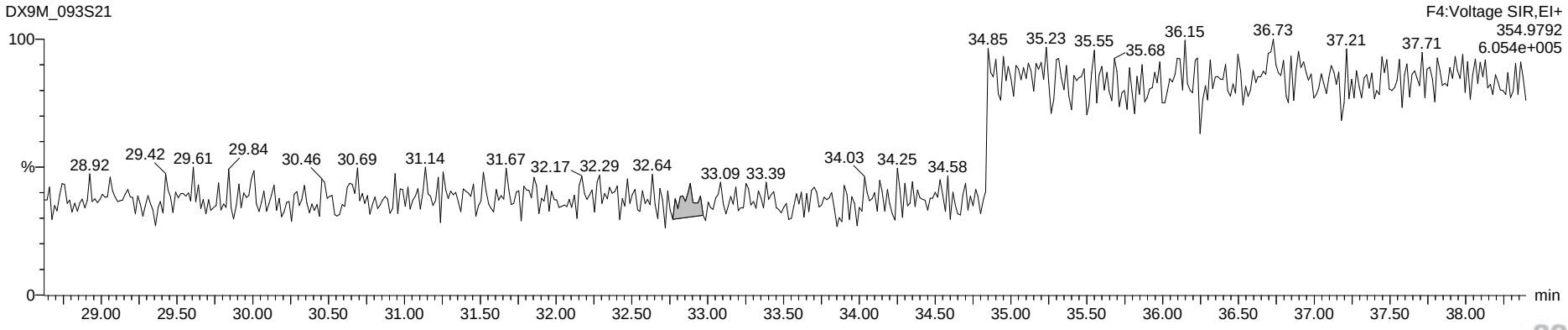
Total Penta-Furans



Hepta DPE



Penta Lock



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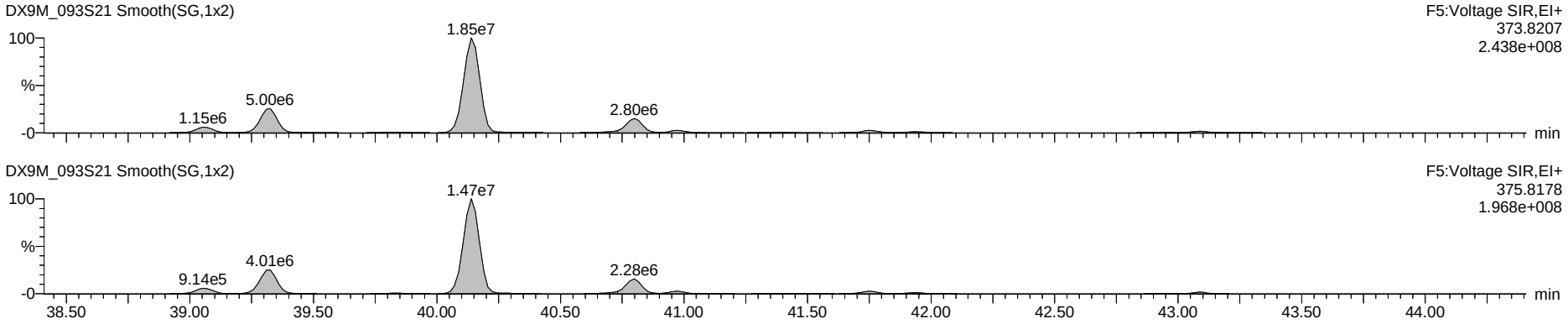
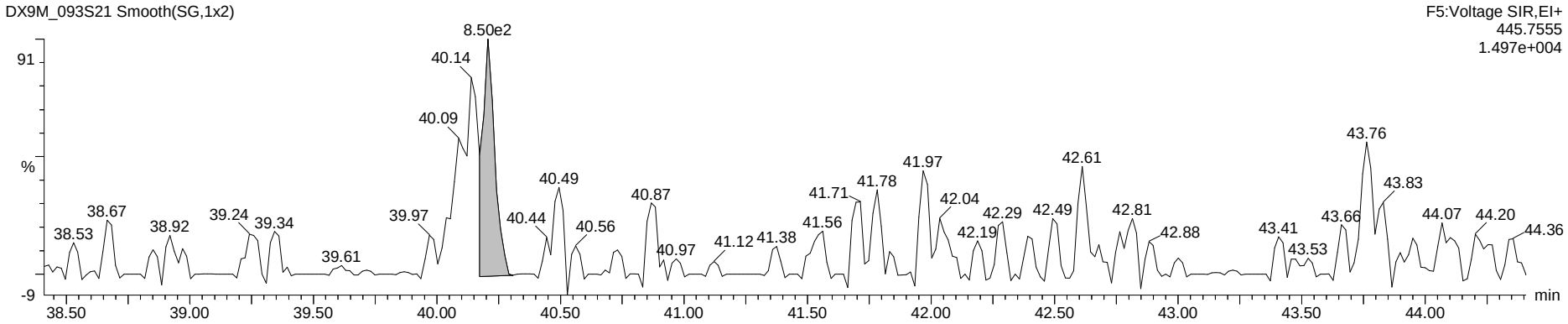
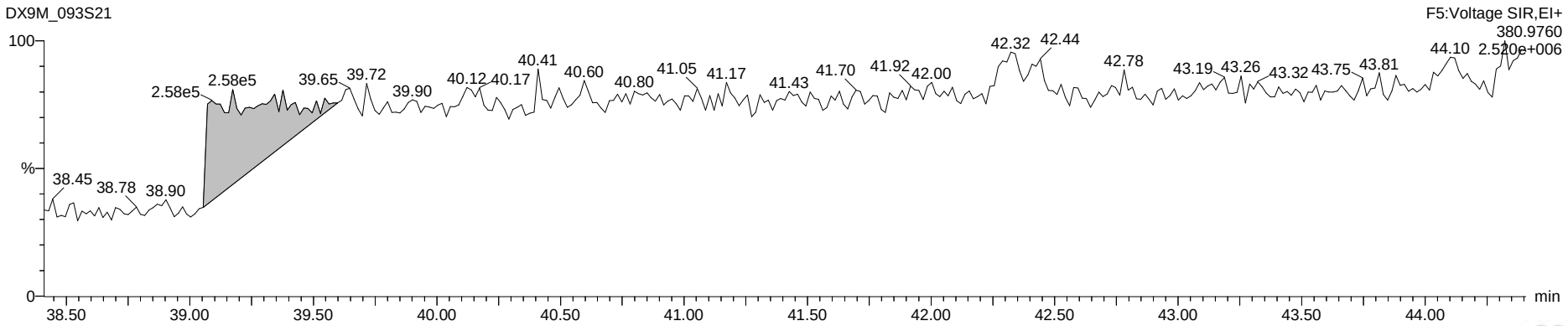
Total Hexa-Furans



Octa DPE



Hexa Lock



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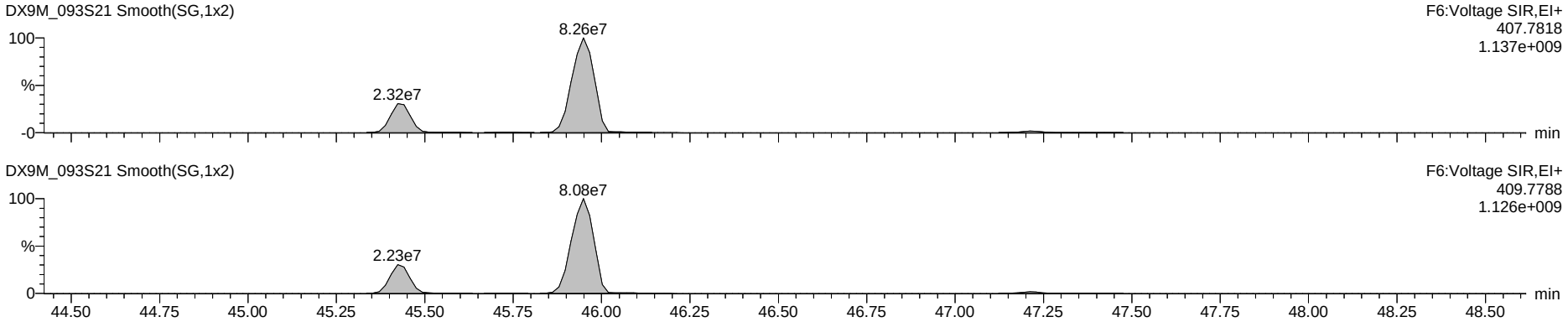
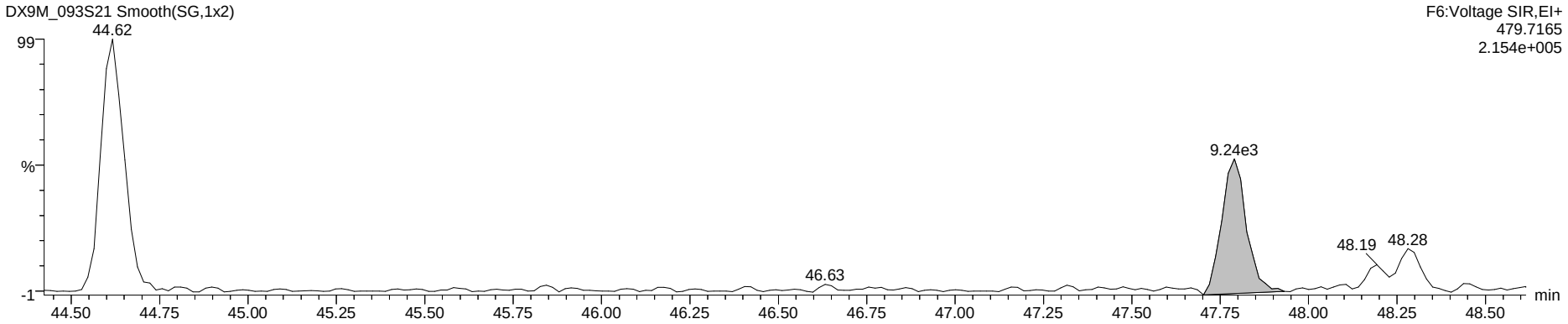
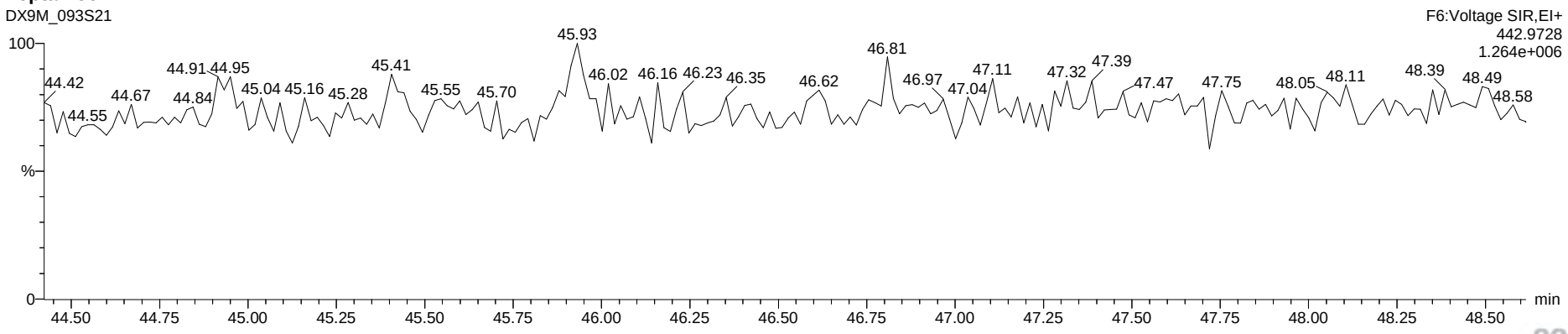
Total Hepta-Furans



Nona DPE



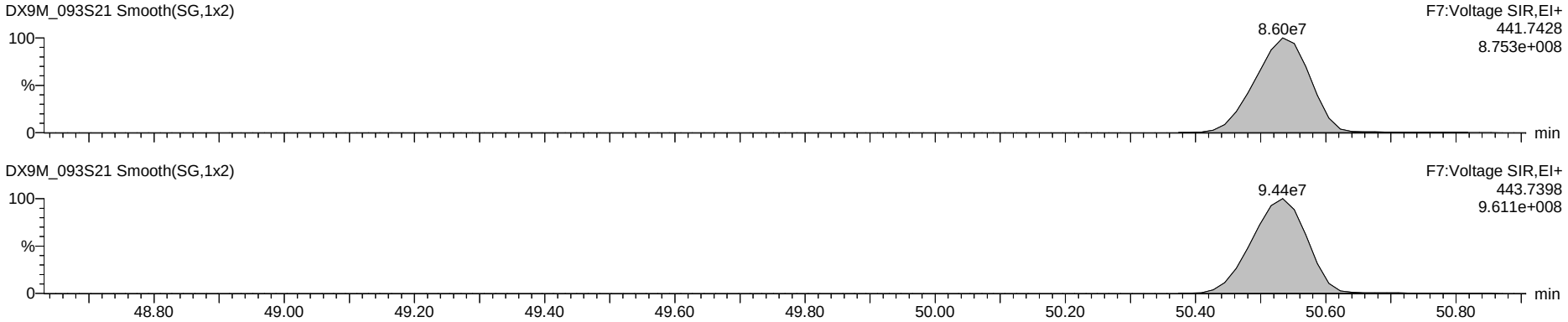
Hepta Lock



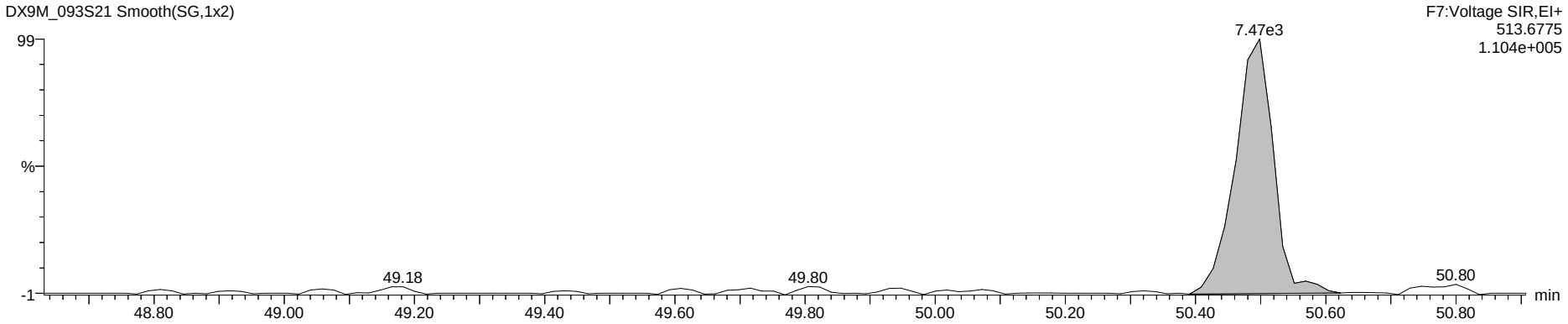
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S21, Date: 13-Sep-2019, Time: 03:42:14, ID: L31654-12,,, Description: 1,WG69303,1.0/20uL

OCDF



Deca DPE



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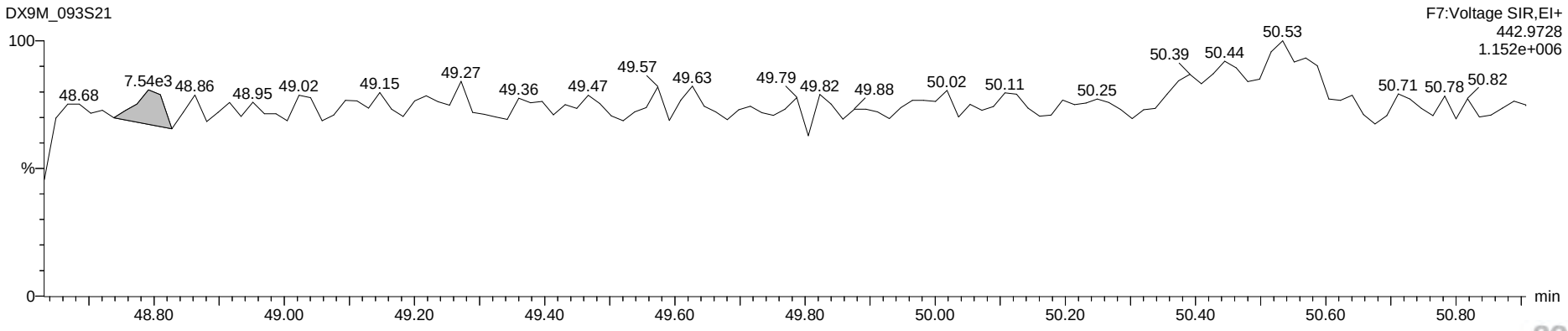


Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

Name: DX9M_095AS16, Date: 17-Sep-2019, Time: 23:34:00, ID: L31654-12,W,, Description: 5,WG69303,1.0/100uL

	Name	Sample Size	Resp	Ratio	fails?	RT	pg	DL	%Rec	Noise 1	Noise 2
1	2,3,7,8-TCDF	10.449	1.43e4	0.41	YES	25.25	3.221	0.1368		1.32e3	1.09e3
2	1,2,3,7,8-PeCDF	10.449	2.05e4	1.64	NO	33.53	5.037	0.2667		2.04e3	1.79e3
3	2,3,4,7,8-PeCDF	10.449	8.67e4	1.55	NO	35.32	20.093	0.2166		2.04e3	1.79e3
4	1,2,3,4,7,8-HxCDF	10.449	1.01e6	1.30	NO	40.73	264.813	0.3483		2.88e3	4.29e3
5	1,2,3,6,7,8-HxCDF	10.449	1.71e5	1.39	NO	40.90	42.362	0.3225		2.88e3	4.29e3
6	2,3,4,6,7,8-HxCDF	10.449	7.60e4	1.29	NO	41.87	19.763	0.3433		2.88e3	4.29e3
7	1,2,3,7,8,9-HxCDF	10.449	8.90e3	1.24	NO	42.92	2.690	0.3953		2.88e3	4.29e3
8	1,2,3,4,6,7,8-HpCDF	10.449	7.47e6	1.07	NO	45.37	1924.731	0.6958		9.58e3	6.74e3
9	1,2,3,4,7,8,9-HpCDF	10.449	4.65e5	1.06	NO	47.18	136.087	0.8151		9.58e3	6.74e3
10	OCDF	10.449	2.74e7	0.94	NO	50.44	7875.732	0.3102		2.10e3	4.10e3
11	2,3,7,8-TCDD	10.449	3.65e3	0.85	NO	26.46	1.067	0.2279		1.69e3	1.47e3
12	1,2,3,7,8-PeCDD	10.449	1.06e4	0.63	NO	36.13	3.679	0.2848		1.25e3	2.42e3
13	1,2,3,4,7,8-HxCDD	10.449	3.09e4	1.16	NO	42.14	9.893	0.2973		2.52e3	3.07e3
14	1,2,3,6,7,8-HxCDD	10.449	4.28e5	1.23	NO	42.27	137.470	0.3112		2.52e3	3.07e3
15	1,2,3,7,8,9-HxCDD	10.449	8.97e4	1.26	NO	42.70	29.062	0.3075		2.52e3	3.07e3
16	1,2,3,4,6,7,8-HpCDD	10.449	1.42e7	1.04	NO	46.76	4814.932	0.7488		9.86e3	3.81e3
17	OCDD	10.449	1.16e8	0.89	NO	50.37	38778.998	1.1713		8.16e3	1.20e4
18	13C-2,3,7,8-TCDF	10.449	9.16e5	0.79	NO	25.22	150.836	0.3847	78.8	4.70e3	5.74e3
19	13C-1,2,3,7,8-PeCDF	10.449	8.37e5	1.56	NO	33.50	169.620	0.4399	88.6	3.99e3	5.71e3
20	13C-2,3,4,7,8-PeCDF	10.449	8.70e5	1.54	NO	35.28	170.881	0.4265	89.3	3.99e3	5.71e3
21	13C-1,2,3,4,7,8-HxCDF	10.449	6.58e5	0.53	NO	40.71	144.072	0.4273	75.3	6.25e3	4.51e3
22	13C-1,2,3,6,7,8-HxCDF	10.449	7.17e5	0.52	NO	40.88	143.003	0.3887	74.7	6.25e3	4.51e3
23	13C-2,3,4,6,7,8-HxCDF	10.449	6.48e5	0.50	NO	41.83	143.252	0.4313	74.8	6.25e3	4.51e3
24	13C-1,2,3,7,8,9-HxCDF	10.449	6.01e5	0.51	NO	42.88	149.455	0.4850	78.1	6.25e3	4.51e3
25	13C-1,2,3,4,6,7,8-HpCDF	10.449	5.94e5	0.46	NO	45.35	158.085	0.4392	82.6	3.92e3	5.19e3
26	13C-1,2,3,4,7,8,9-HpCDF	10.449	5.22e5	0.46	NO	47.16	171.027	0.5412	89.4	3.92e3	5.19e3
27	13C-2,3,7,8-TCDD	10.449	5.93e5	0.76	NO	26.44	153.633	0.7541	80.3	5.08e3	7.93e3
28	13C-1,2,3,7,8-PeCDD	10.449	5.58e5	0.60	NO	36.10	181.881	0.4132	95.0	2.95e3	2.71e3
29	13C-1,2,3,4,7,8-HxCDD	10.449	5.81e5	1.30	NO	42.12	159.447	0.5424	83.3	5.74e3	5.16e3
30	13C-1,2,3,6,7,8-HxCDD	10.449	6.33e5	1.25	NO	42.26	157.266	0.4907	82.2	5.74e3	5.16e3
31	13C-1,2,3,4,6,7,8-HpCDD	10.449	7.24e5	1.05	NO	46.74	177.609	0.2216	92.8	2.20e3	2.78e3
32	13C-OCDD	10.449	1.17e6	0.84	NO	50.36	389.921	0.2896	101.9	2.54e3	2.25e3
33	13C-1,2,3,4-TCDD	10.449	7.63e5	0.77	NO	26.09	1.815	0.0069	0.9	5.08e3	7.93e3
34	13C-1,2,3,7,8,9-HxCDD	10.449	7.20e5	1.24	NO	42.68	2.373	0.0065	1.2	5.74e3	5.16e3
35	37Cl-2,3,7,8-TCDD	10.449	7.42e4			26.47	17.444	0.1217	91.1		2.31e3
36	Total Tetra-Furans	10.449					31.613	0.1367			1.09e3
37	Total Tetra-Dioxins	10.449					15.186	0.2279			1.47e3
38	Total Penta-Furans	10.449					231.795	0.2436			1.79e3
39	Total Penta-Dioxins	10.449					46.181	0.2848			2.42e3
40	Total Hexa-Furans	10.449					2543.224	0.3466			4.29e3
41	Total Hexa-Dioxins	10.449					705.857	0.2910			3.07e3
42	Total Hepta-Furans	10.449					9065.595	0.7525			6.74e3
43	Total Hepta-Dioxins	10.449					9396.607	0.7488			3.81e3
44	Hexa DPE	1.000	4.29e2			26.26					4.10e0
45	Hepta DPE	1.000	3.00e2			37.01					1.41e2
46	Octa DPE	1.000	1.72e2			40.04					4.99e2
47	Nona DPE	1.000	5.56e2			47.77					6.33e2
48	Deca DPE	1.000	2.06e2			48.88					4.94e2
49	Tetra Lock	1.000	1.80e4			21.73					3.15e5
50	Penta Lock	1.000	2.29e4			33.24					3.06e5
51	Hexa Lock	1.000	7.14e6			38.87					7.19e5
52	Hepta Lock	1.000									5.19e5
53	Octa Lock	1.000	1.03e4			48.85					3.48e5
54	13C-Tetra-Furans	10.449					150.836	0.3847			5.74e3
55	13C-Tetra-Dioxins	10.449					155.448	0.7610			7.93e3

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

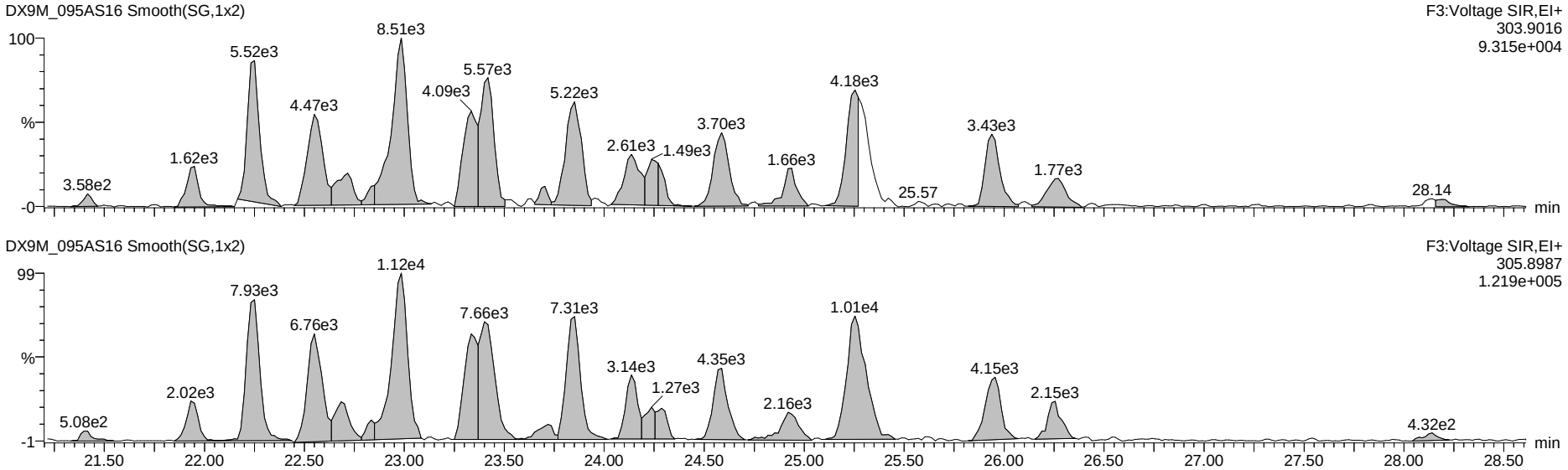
SV HH 22 Sept. 2019

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

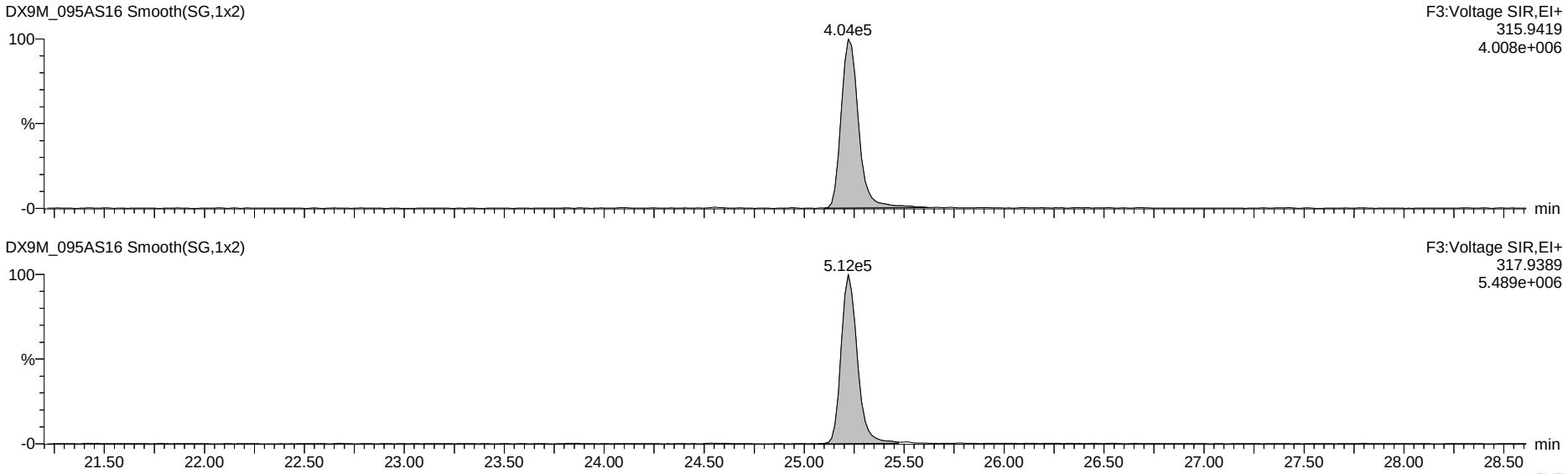
Method: G:\Masslynx\Inst_M\Master methods and layouts\Current Methods\DX_1613B_16.mdb 07 Sep 2017 16:45:23
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

Name: DX9M_095AS16, Date: 17-Sep-2019, Time: 23:34:00, ID: L31654-12,W,, Description: 5,WG69303,1.0/100uL

Total Tetra-Furans



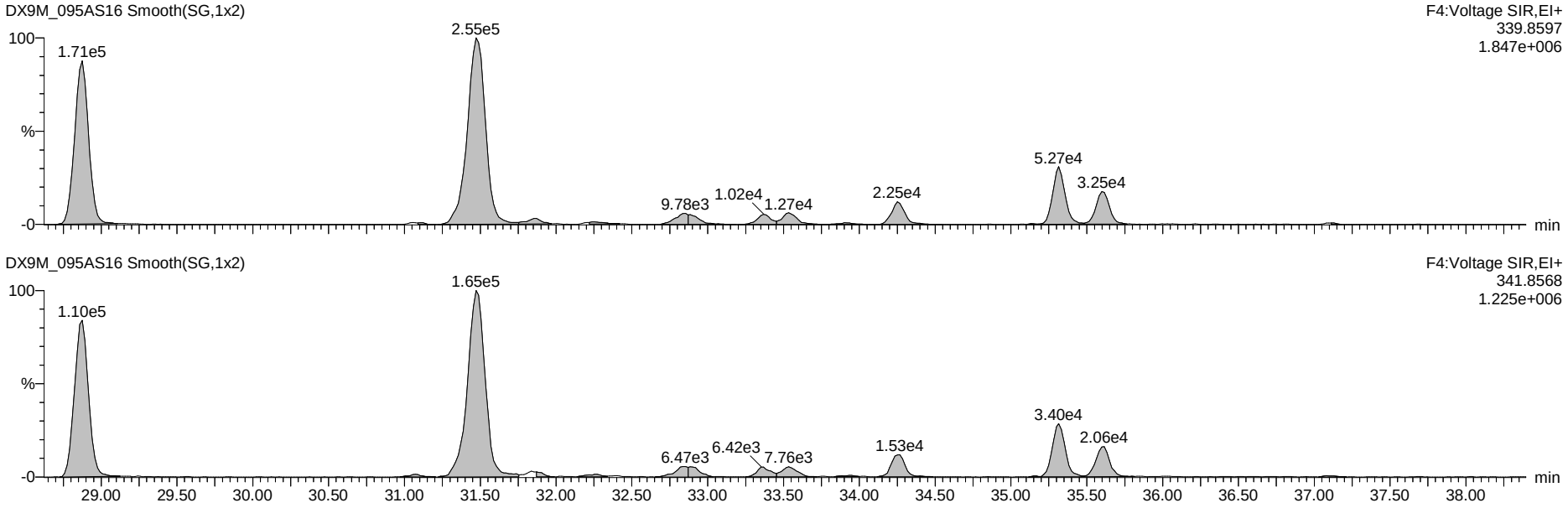
13C-Tetra-Furans



Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

Name: DX9M_095AS16, Date: 17-Sep-2019, Time: 23:34:00, ID: L31654-12,W,, Description: 5,WG69303,1.0/100uL

Total Penta-Furans



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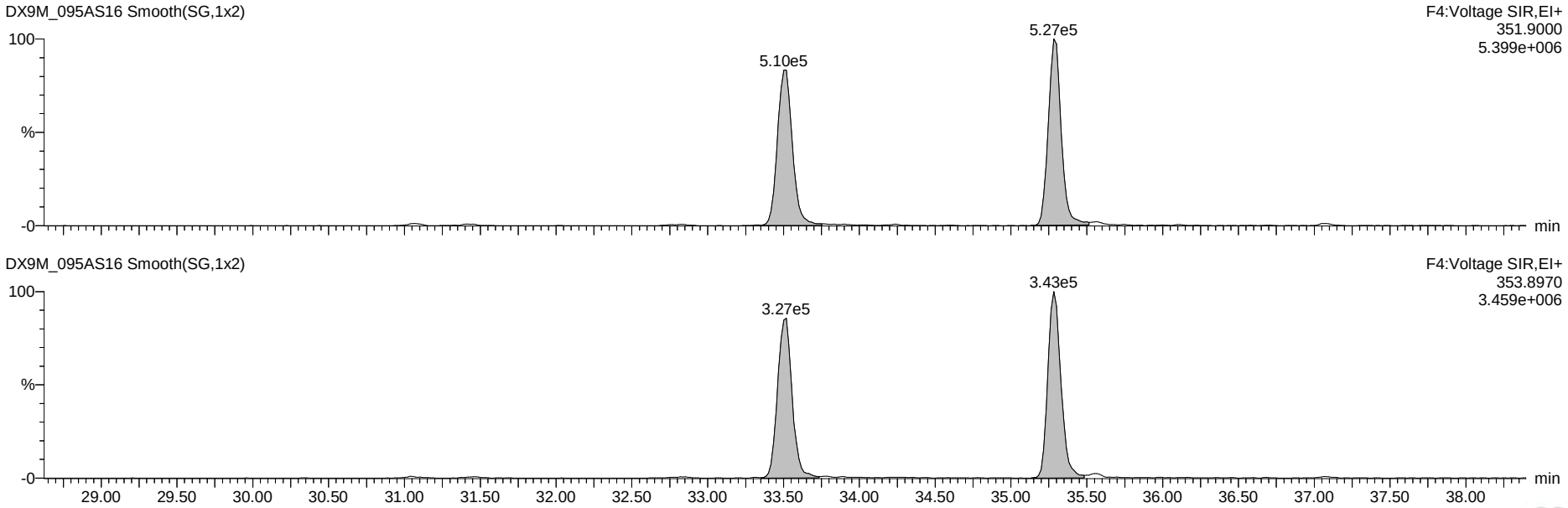

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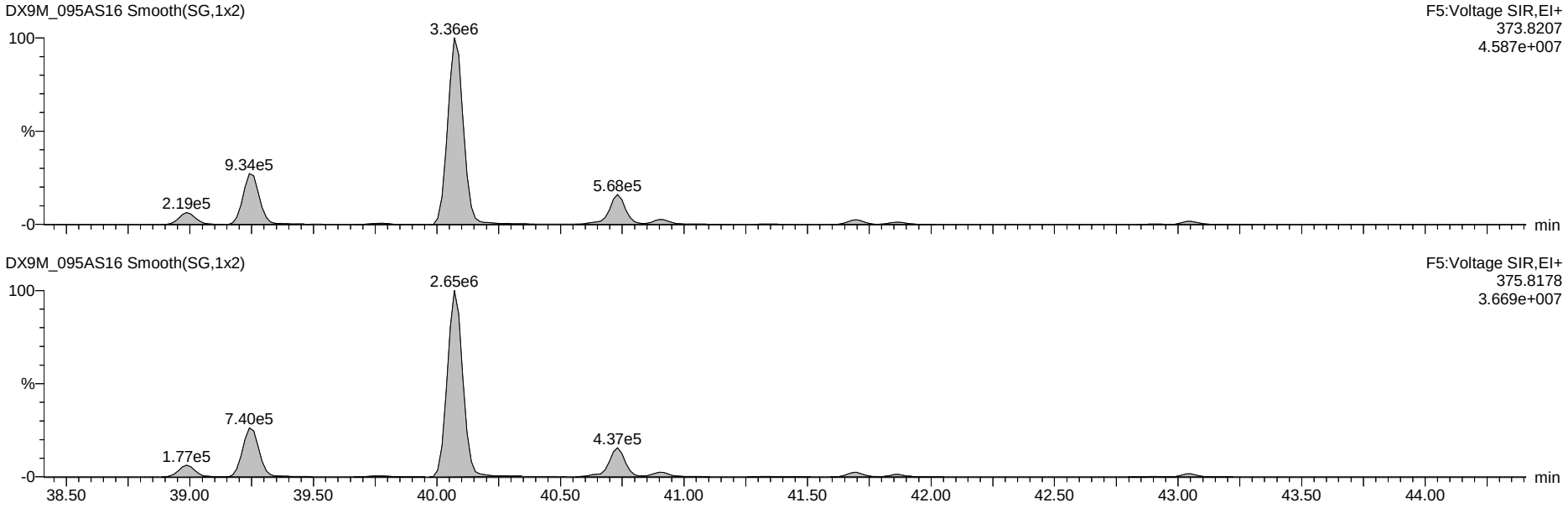
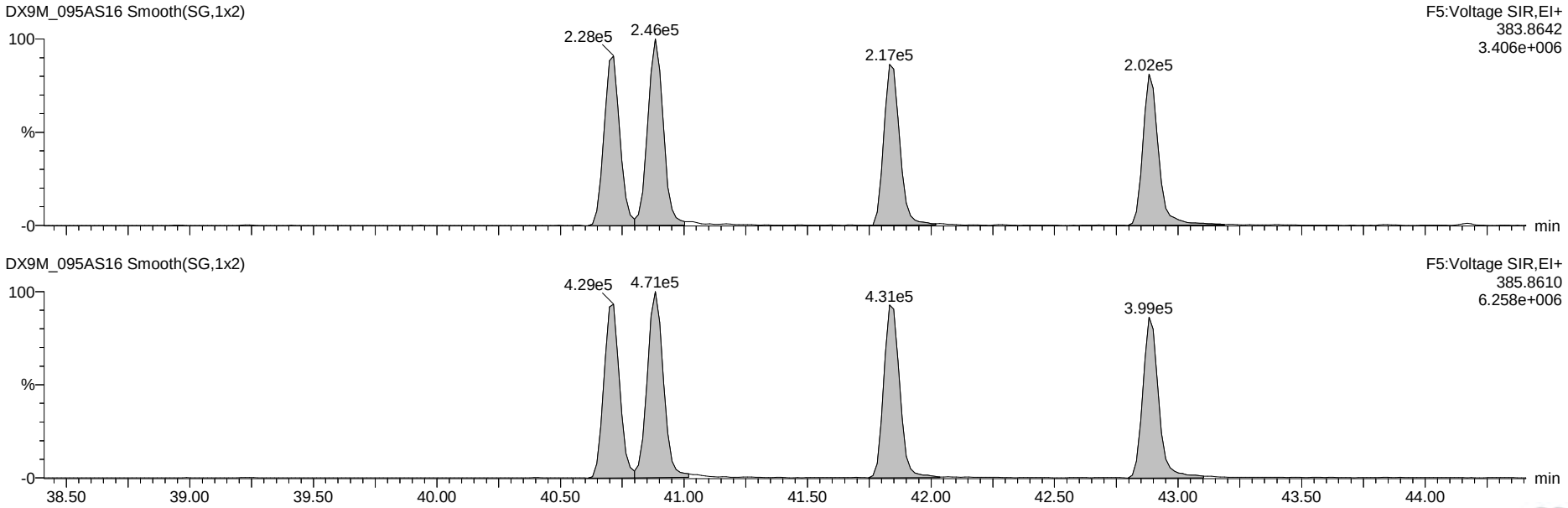
Name: DX9M_095AS16, Date: 17-Sep-2019, Time: 23:34:00, ID: L31654-12,W,, Description: 5,WG69303,1.0/100uL

Total Hexa-Furans



13C-Hexa-Furans



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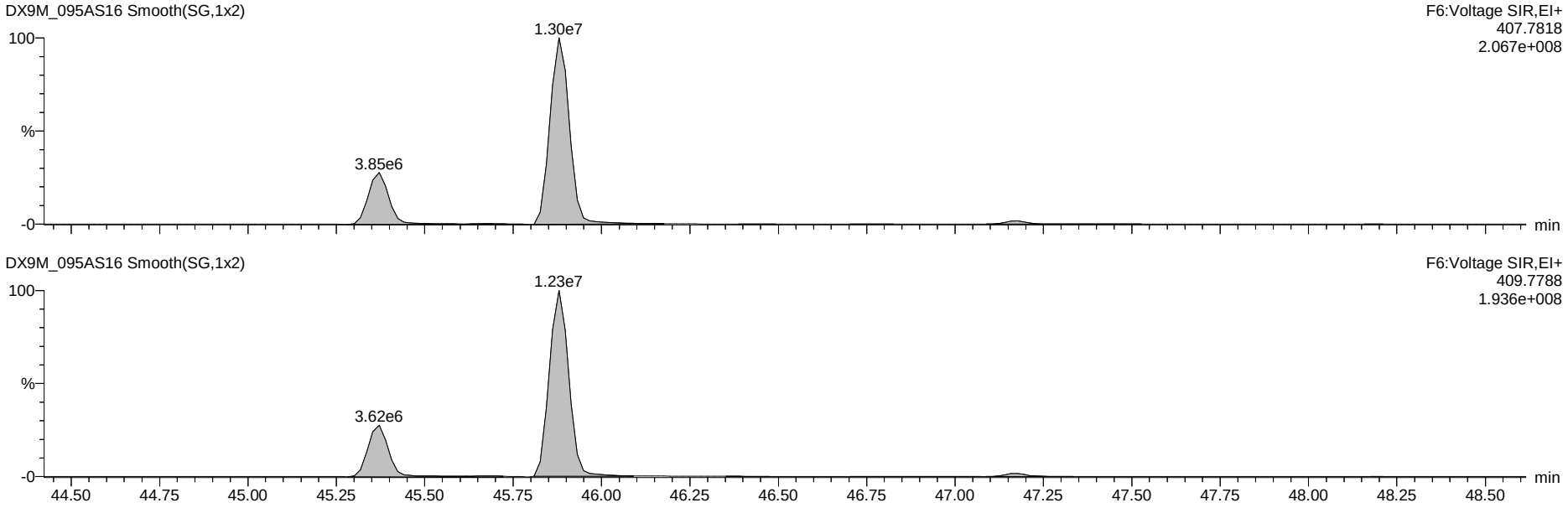
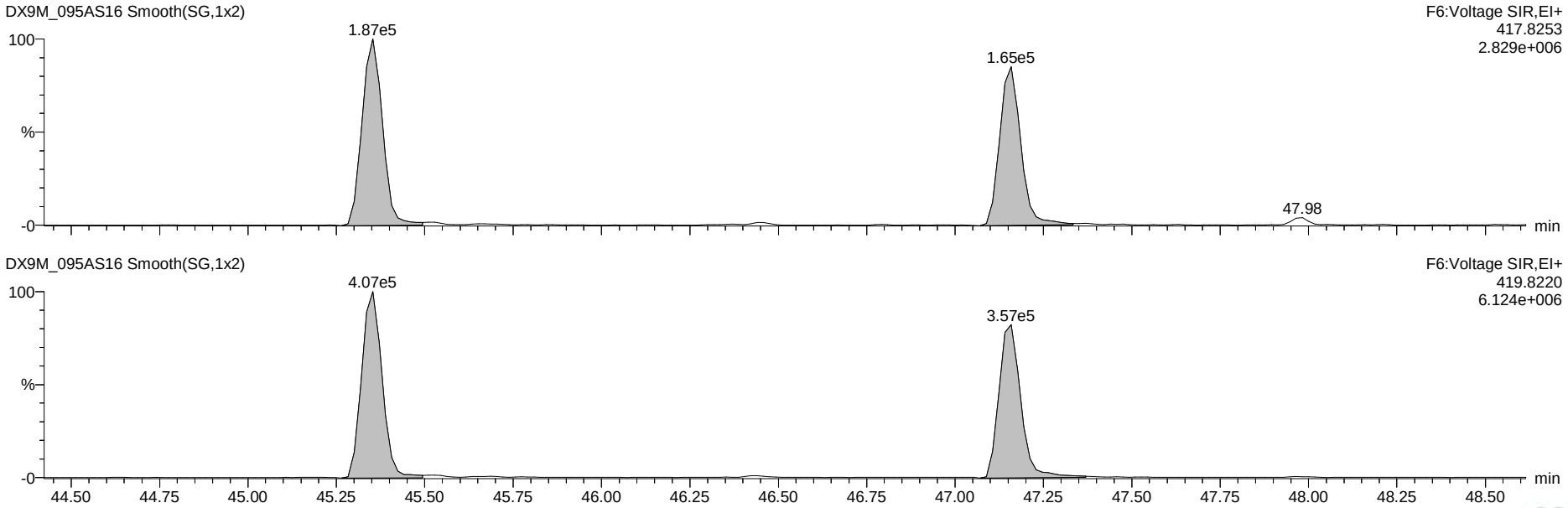
Name: DX9M_095AS16, Date: 17-Sep-2019, Time: 23:34:00, ID: L31654-12,W,, Description: 5,WG69303,1.0/100uL

Total Hepta-Furans



13C-Hepta-Furans



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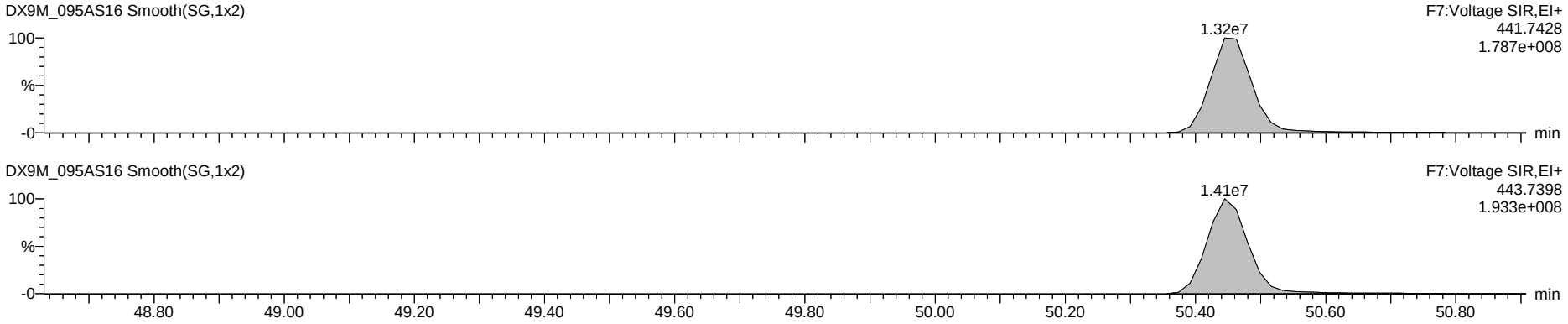
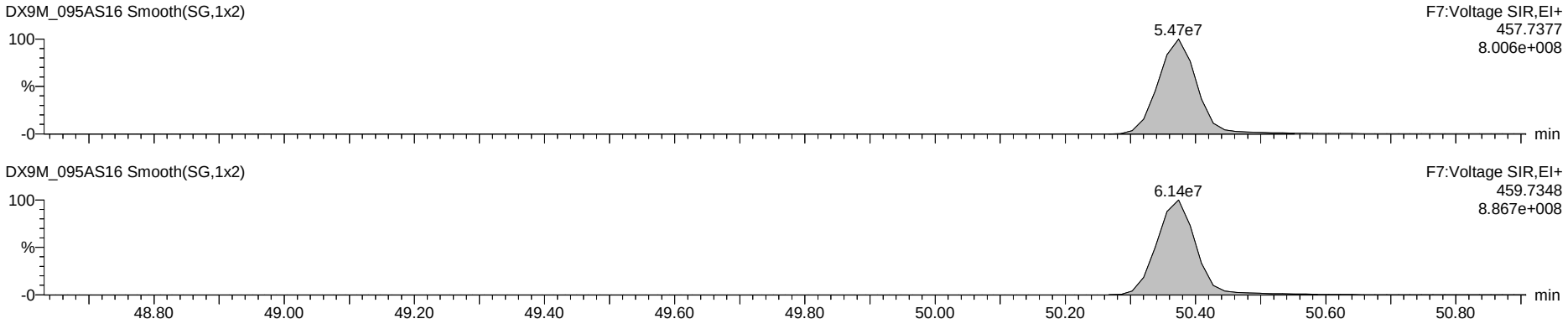
Name: DX9M_095AS16, Date: 17-Sep-2019, Time: 23:34:00, ID: L31654-12,W,, Description: 5,WG69303,1.0/100uL

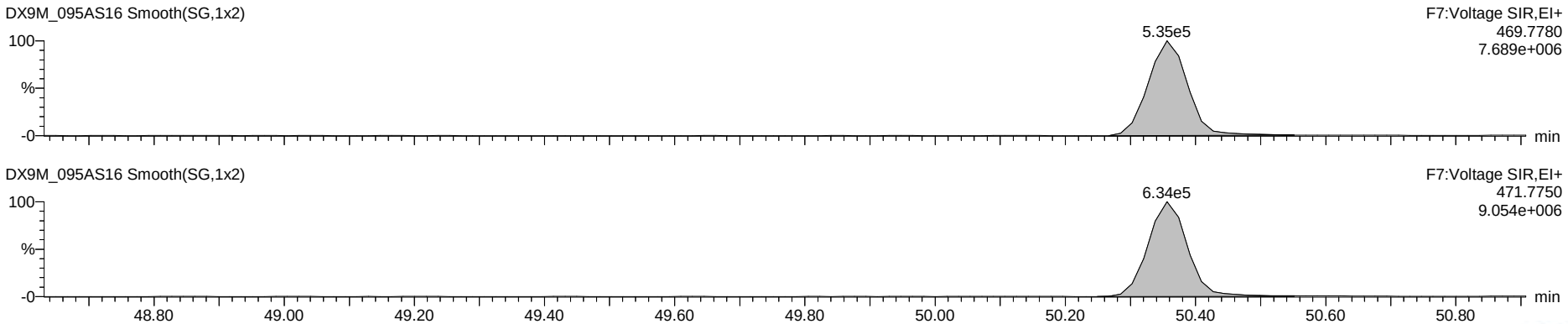
OCDF



OCDD



13C-OCDD



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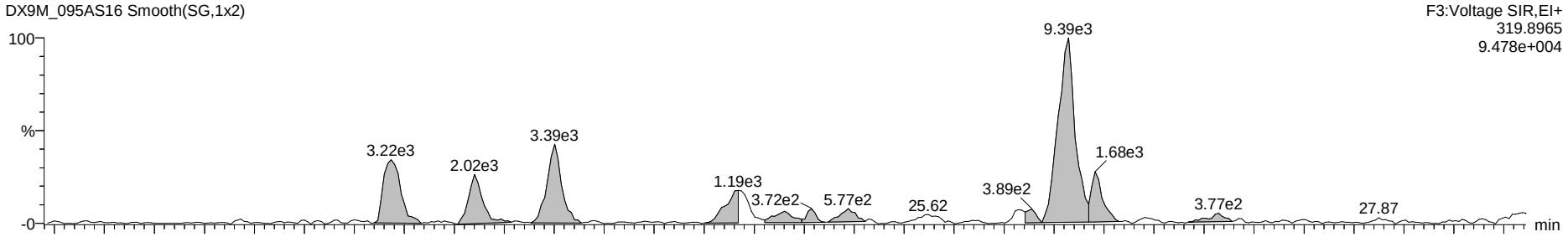
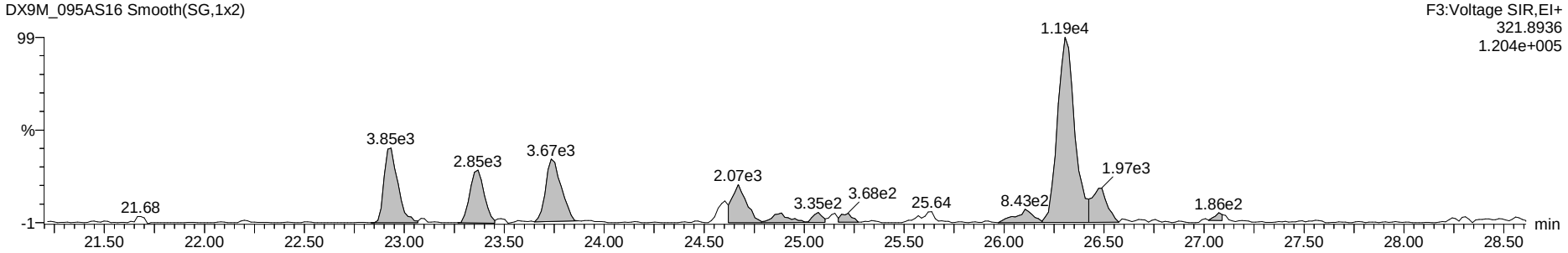
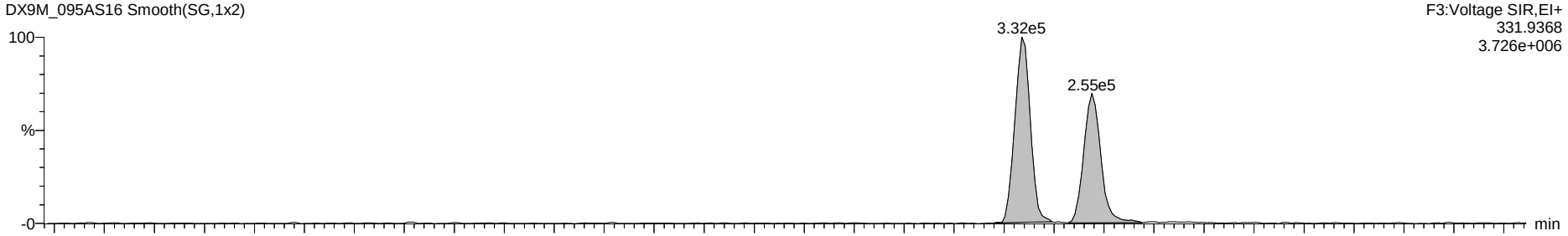
Name: DX9M_095AS16, Date: 17-Sep-2019, Time: 23:34:00, ID: L31654-12,W,, Description: 5,WG69303,1.0/100uL

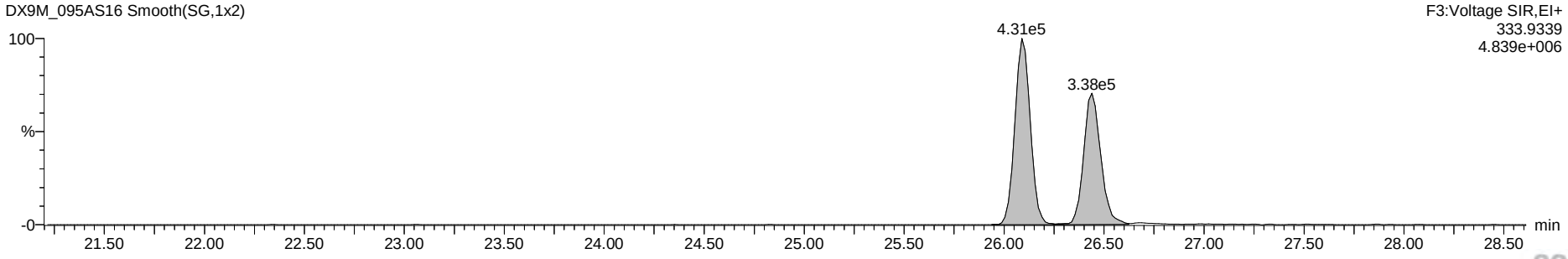
Total Tetra-Dioxins





13C-Tetra-Dioxins

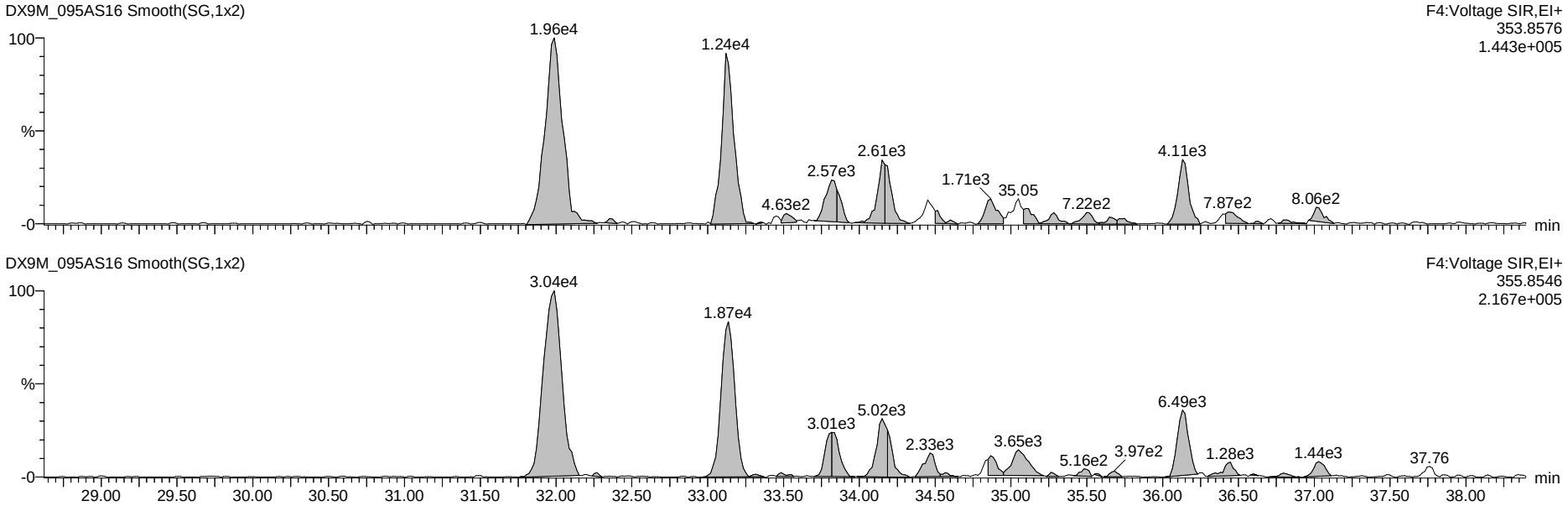




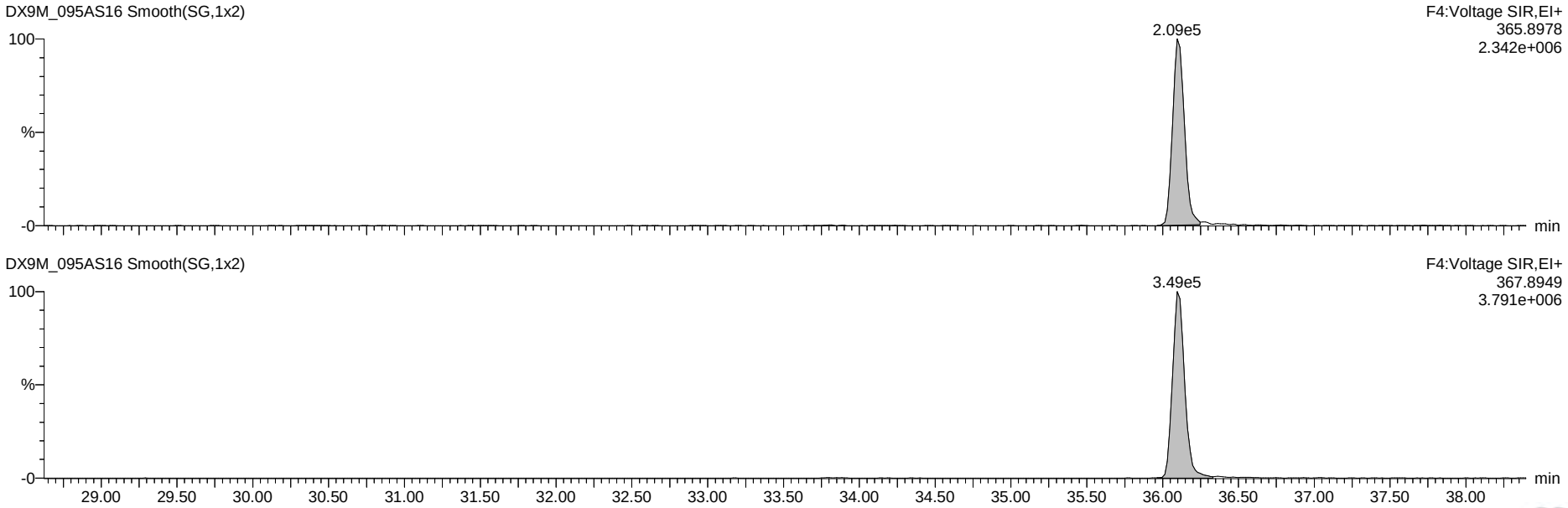
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

Name: DX9M_095AS16, Date: 17-Sep-2019, Time: 23:34:00, ID: L31654-12,W,, Description: 5,WG69303,1.0/100uL

Total Penta-Dioxins



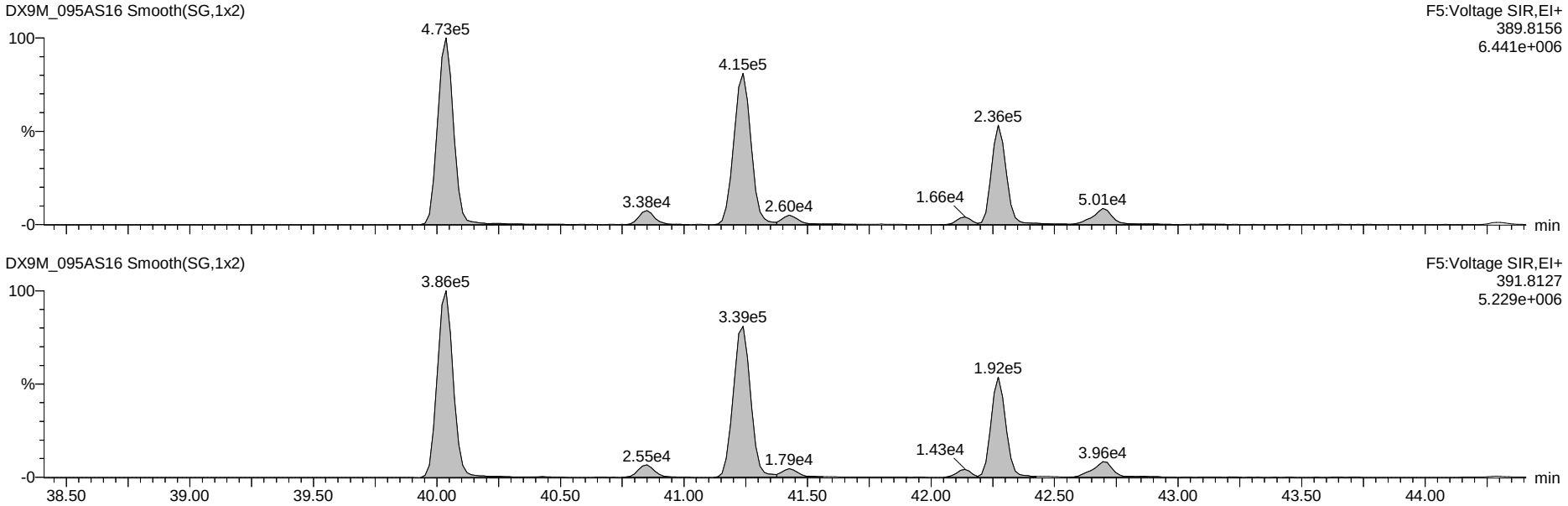
13C-Penta-Dioxins



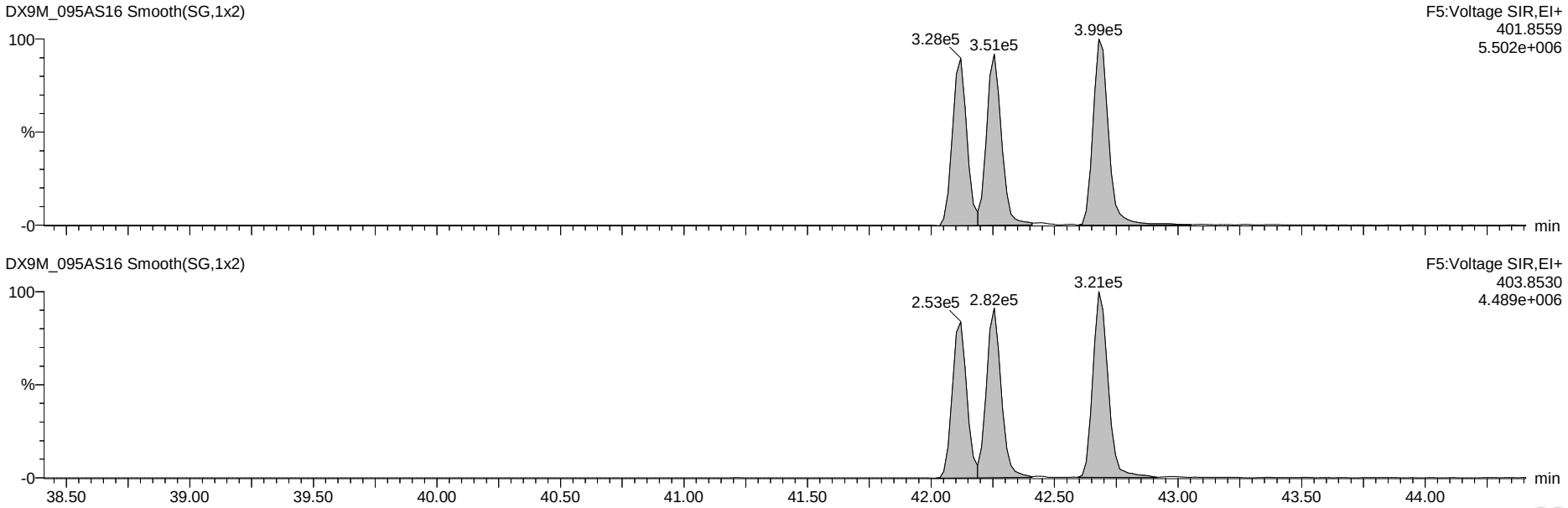
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

Name: DX9M_095AS16, Date: 17-Sep-2019, Time: 23:34:00, ID: L31654-12,W,, Description: 5,WG69303,1.0/100uL

Total Hexa-Dioxins



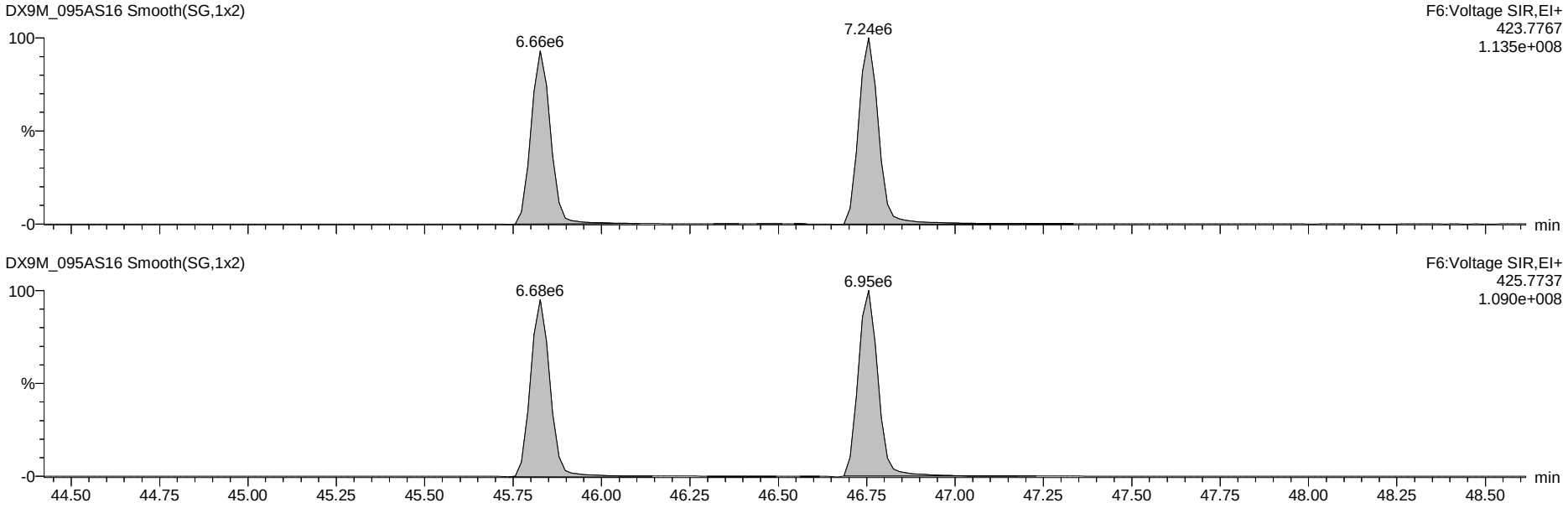
13C-Hexa-Dioxins



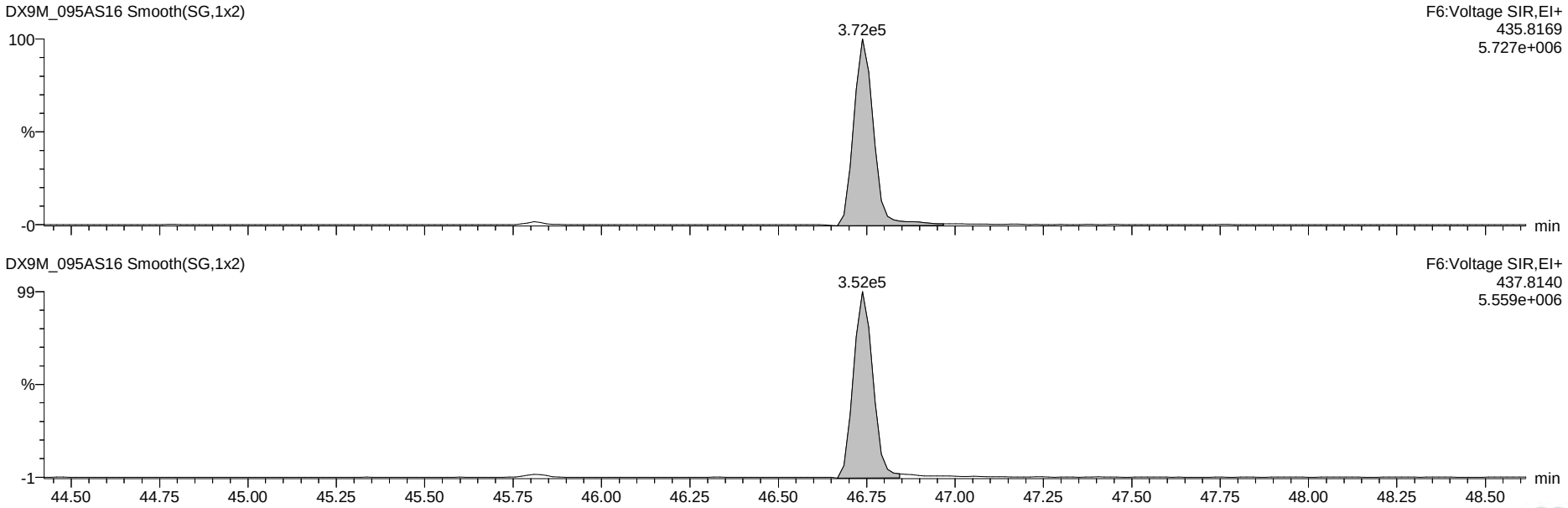
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

Name: DX9M_095AS16, Date: 17-Sep-2019, Time: 23:34:00, ID: L31654-12,W,, Description: 5,WG69303,1.0/100uL

Total Hepta-Dioxins



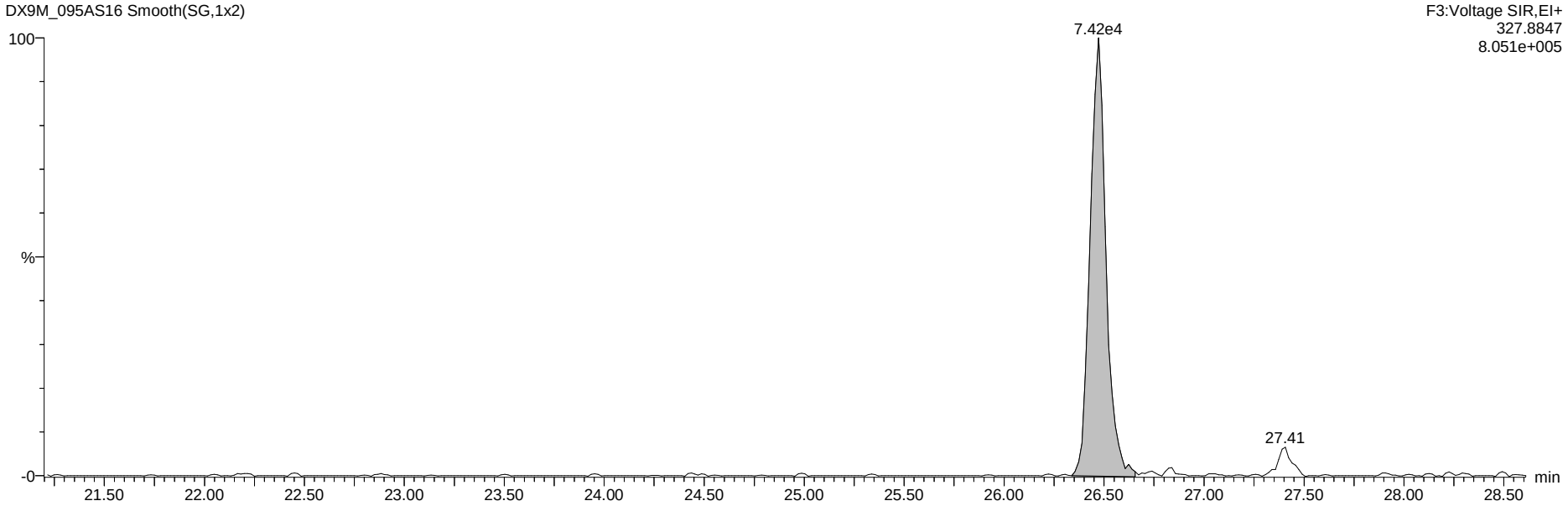
13C-Hepta-Dioxins



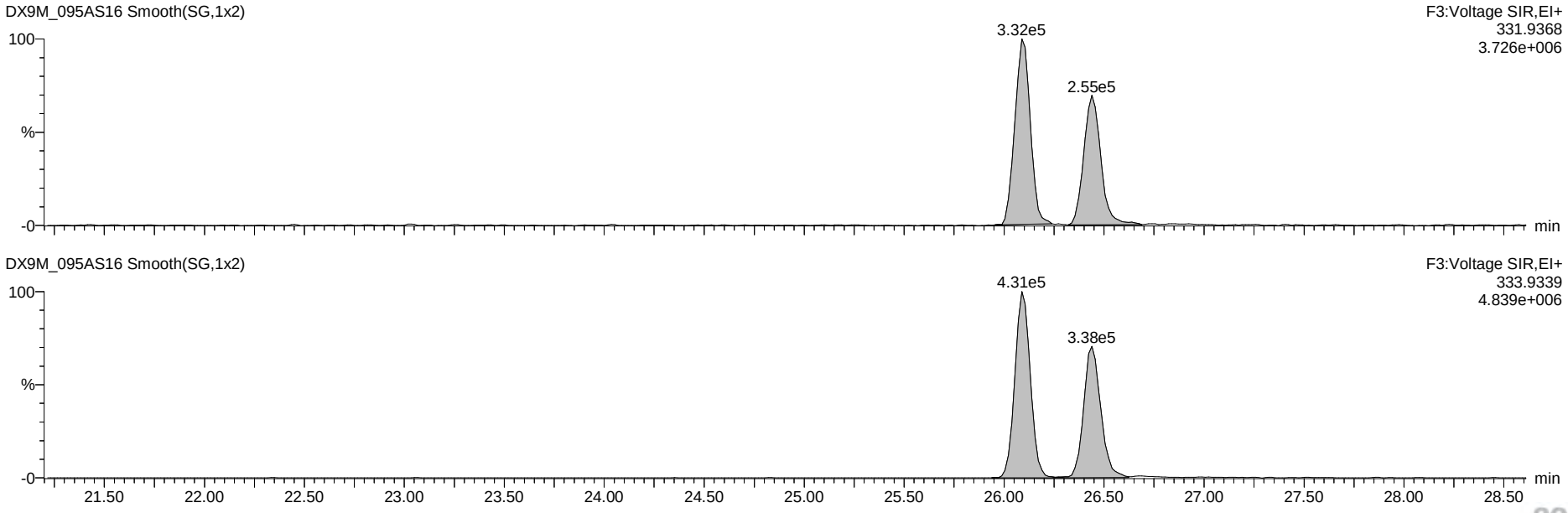
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

Name: DX9M_095AS16, Date: 17-Sep-2019, Time: 23:34:00, ID: L31654-12,W,, Description: 5,WG69303,1.0/100uL

37Cl-2,3,7,8-TCDD



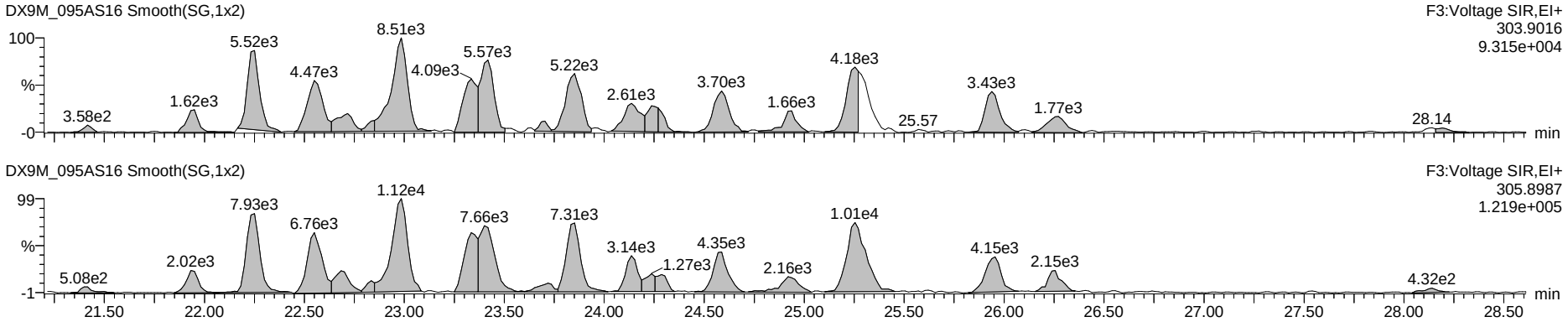
13C-Tetra-Dioxins



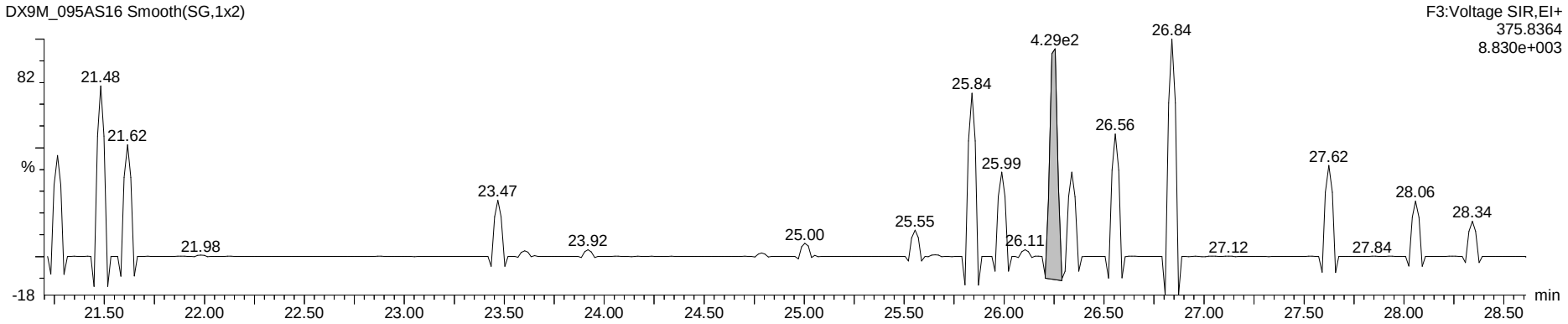
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

Name: DX9M_095AS16, Date: 17-Sep-2019, Time: 23:34:00, ID: L31654-12,W,, Description: 5,WG69303,1.0/100uL

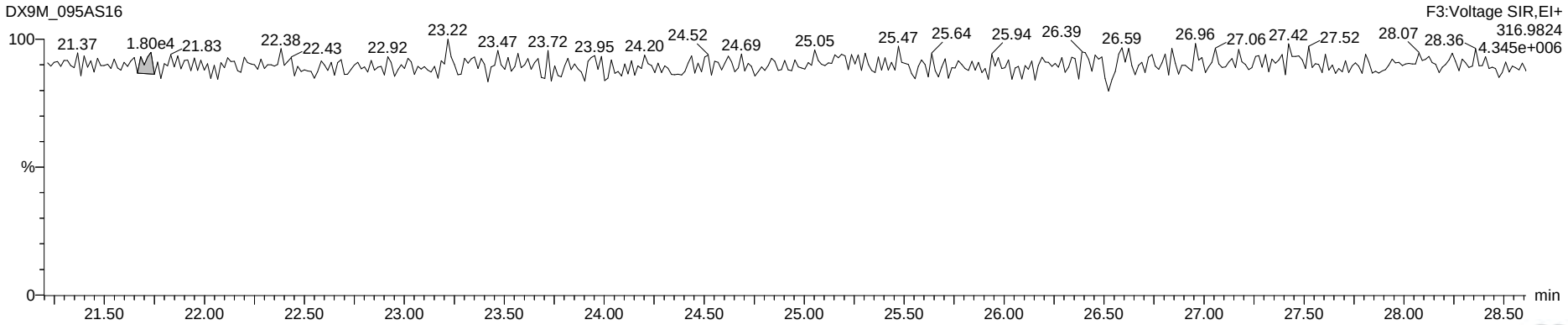
Total Tetra-Furans



Hexa DPE



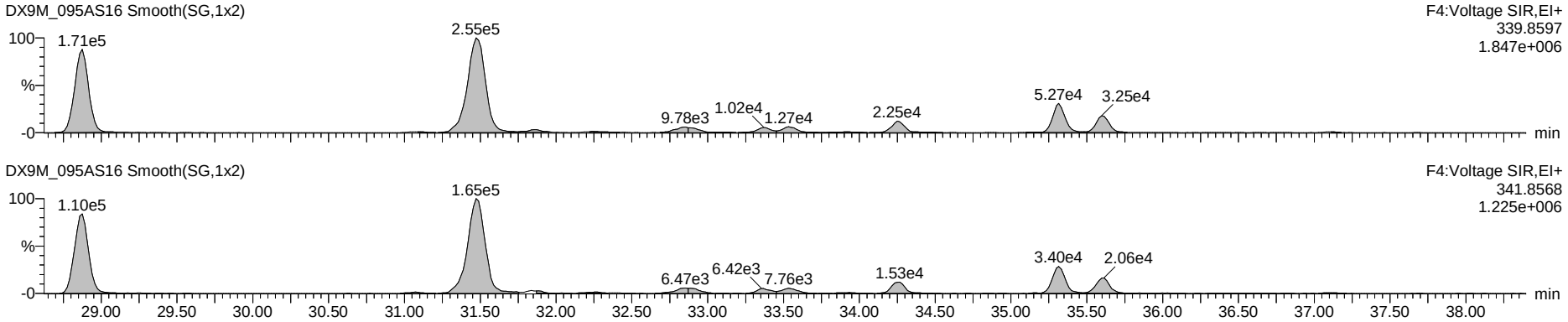
Tetra Lock



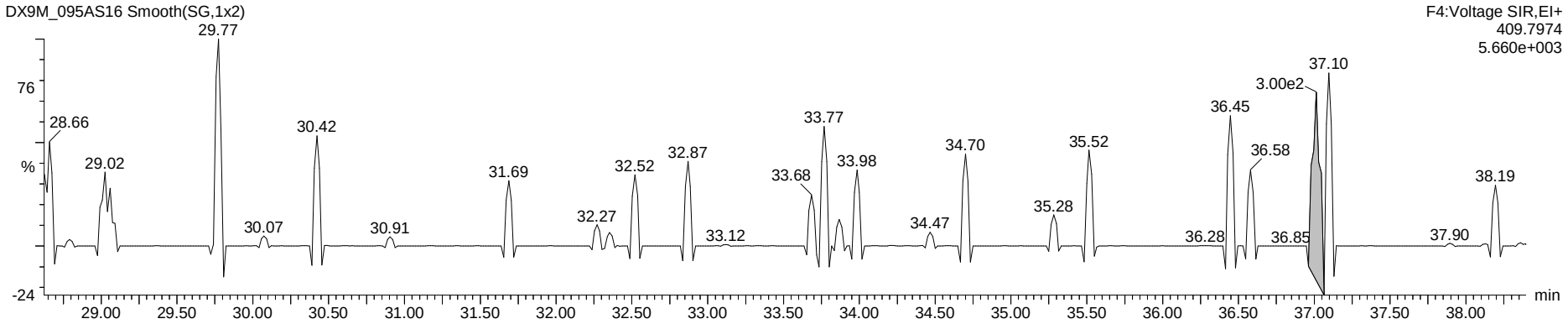
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

Name: DX9M_095AS16, Date: 17-Sep-2019, Time: 23:34:00, ID: L31654-12,W,, Description: 5,WG69303,1.0/100uL

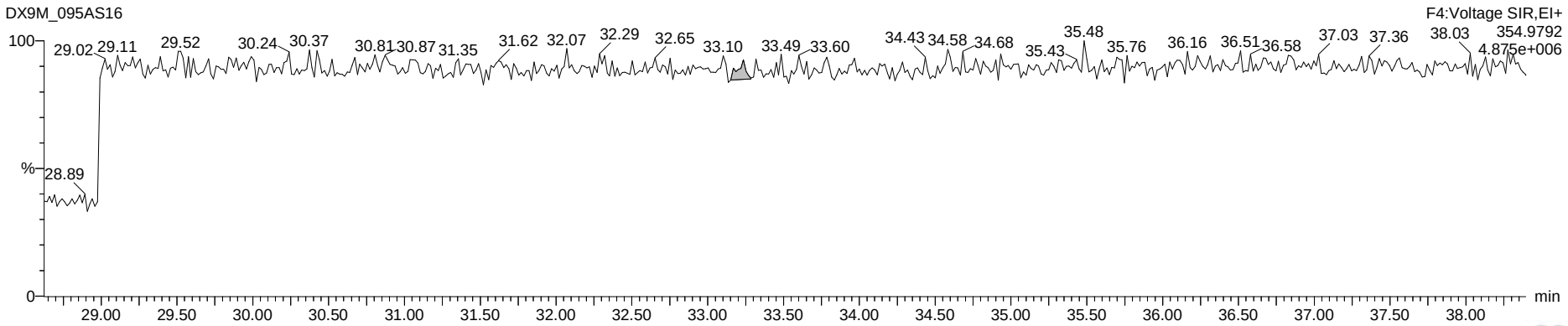
Total Penta-Furans



Hepta DPE



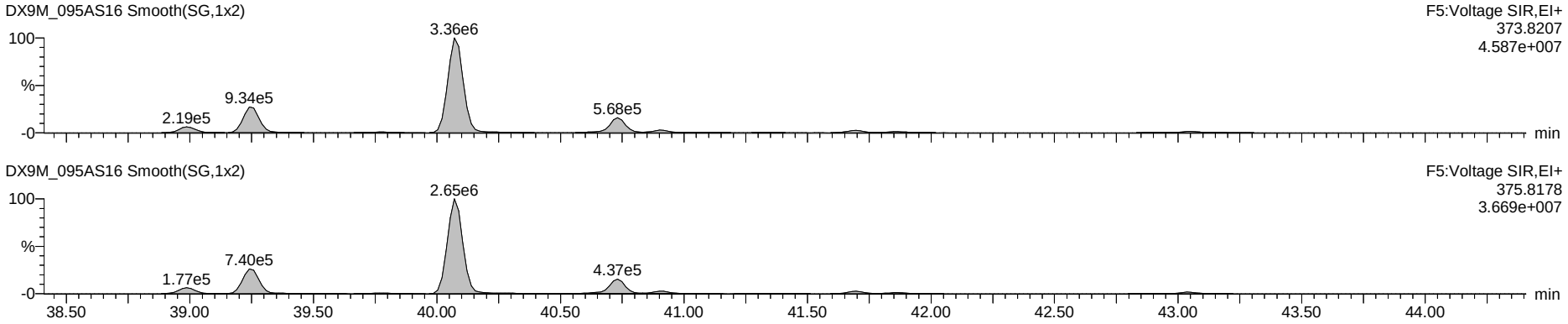
Penta Lock



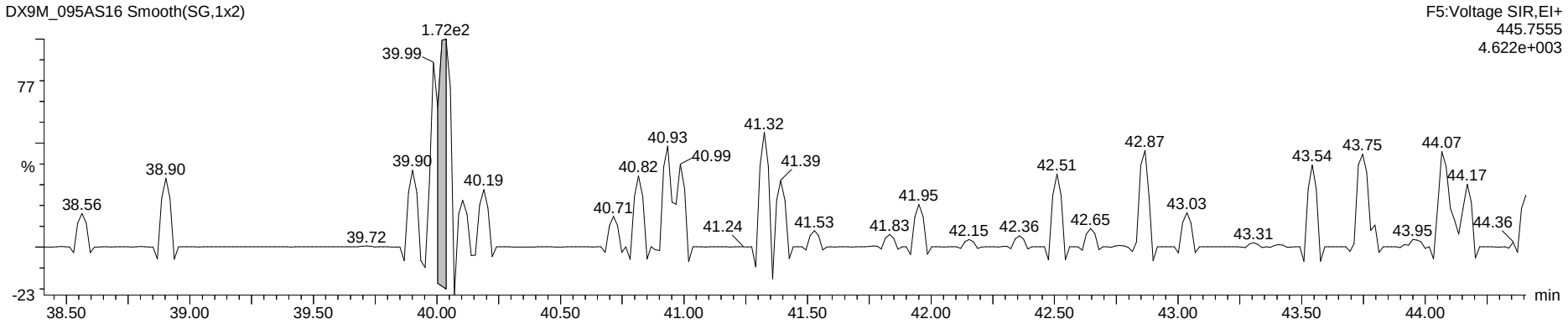
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

Name: DX9M_095AS16, Date: 17-Sep-2019, Time: 23:34:00, ID: L31654-12,W,, Description: 5,WG69303,1.0/100uL

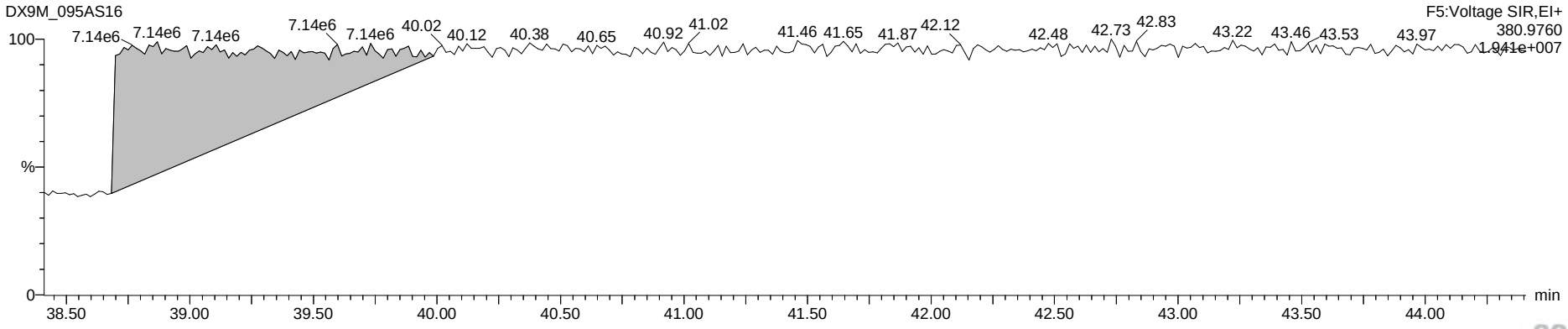
Total Hexa-Furans



Octa DPE



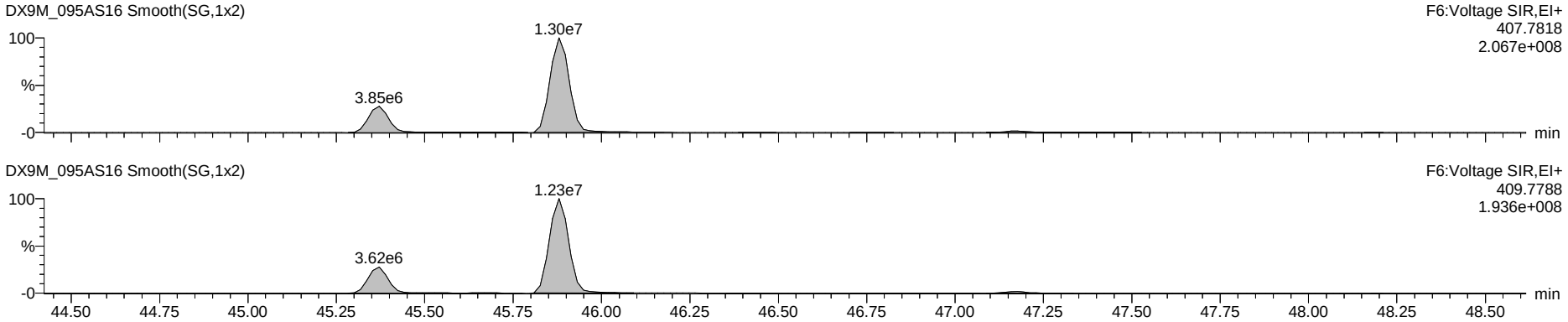
Hexa Lock



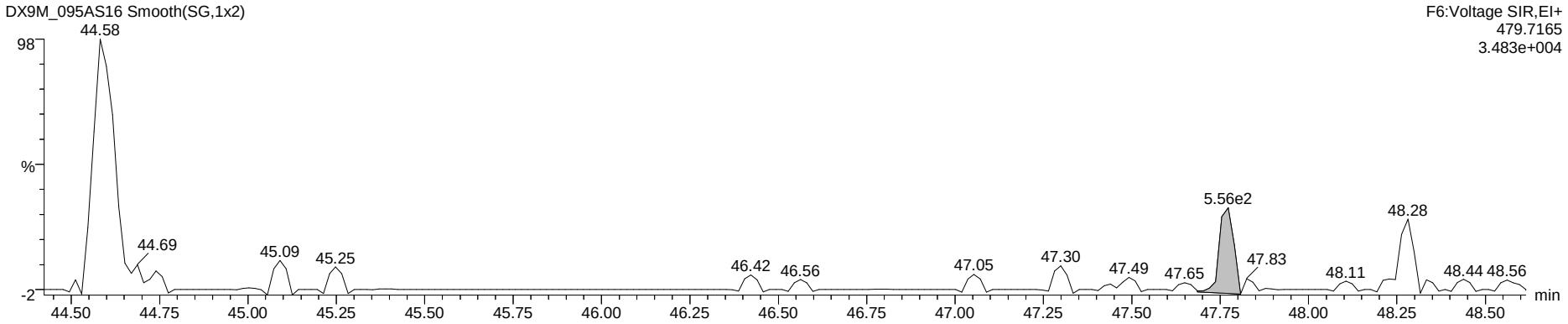
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

Name: DX9M_095AS16, Date: 17-Sep-2019, Time: 23:34:00, ID: L31654-12,W,, Description: 5,WG69303,1.0/100uL

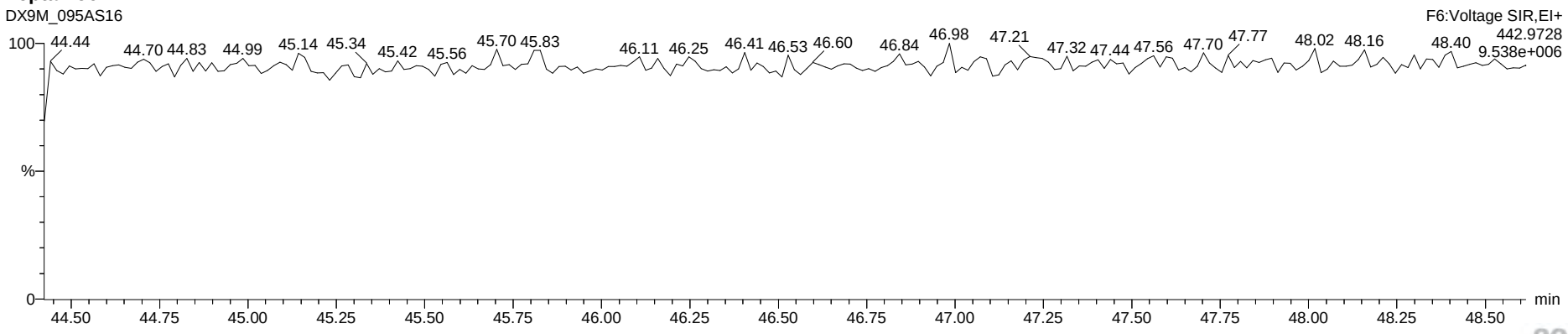
Total Hepta-Furans



Nona DPE



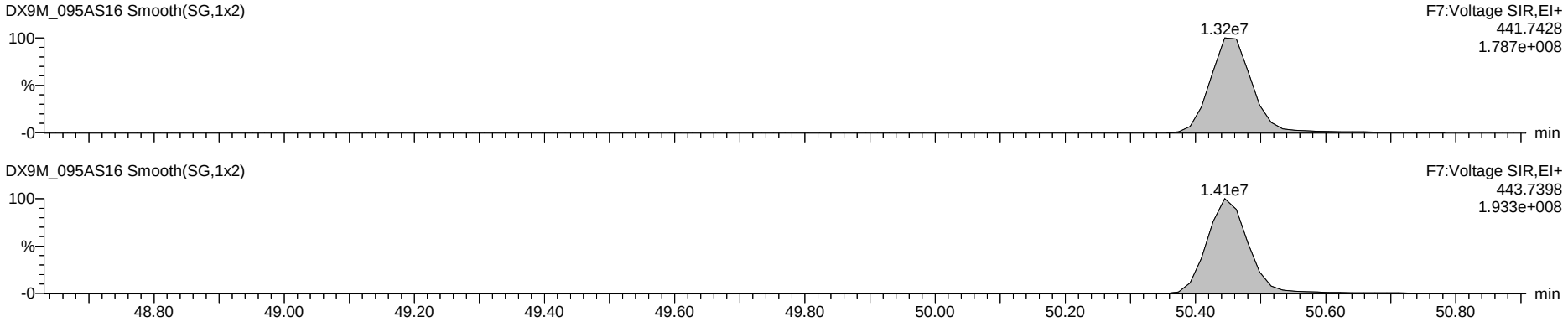
Hepta Lock



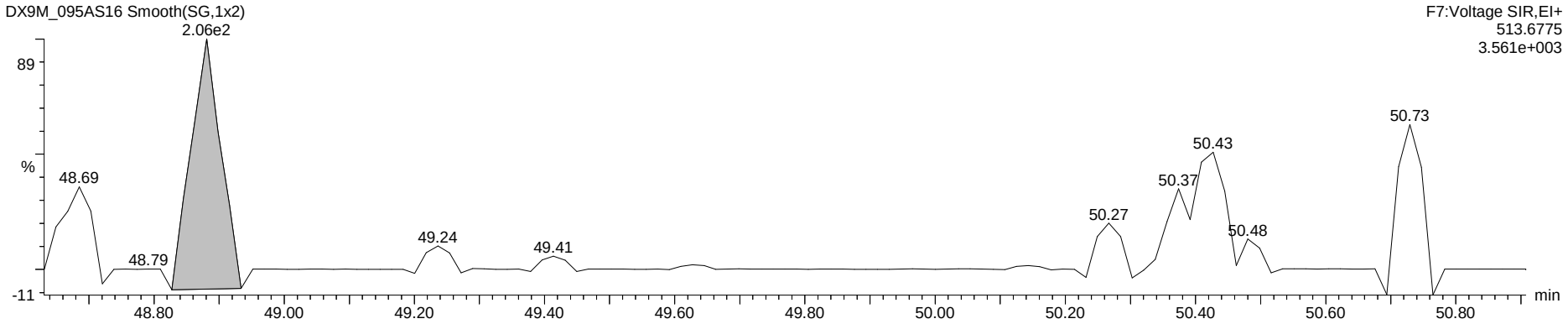
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

Name: DX9M_095AS16, Date: 17-Sep-2019, Time: 23:34:00, ID: L31654-12,W,, Description: 5,WG69303,1.0/100uL

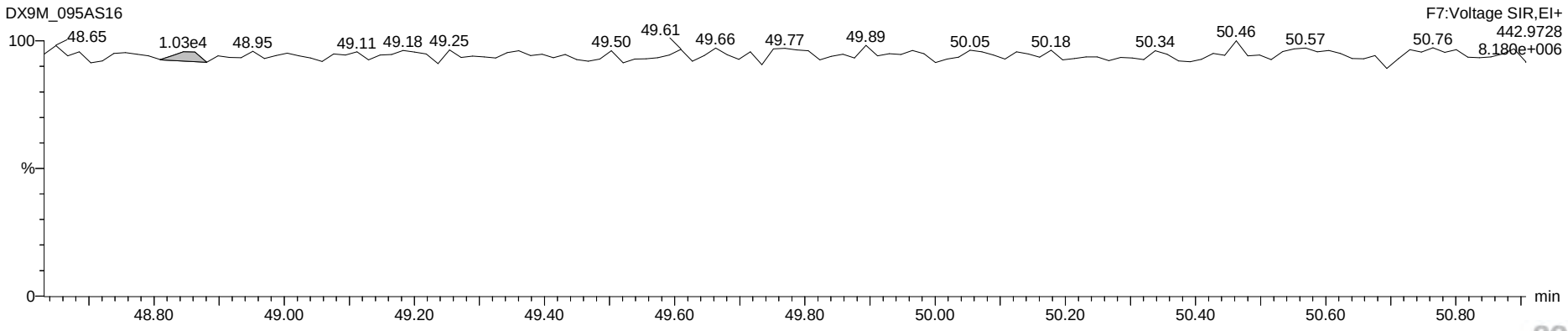
OCDF



Deca DPE



Octa Lock



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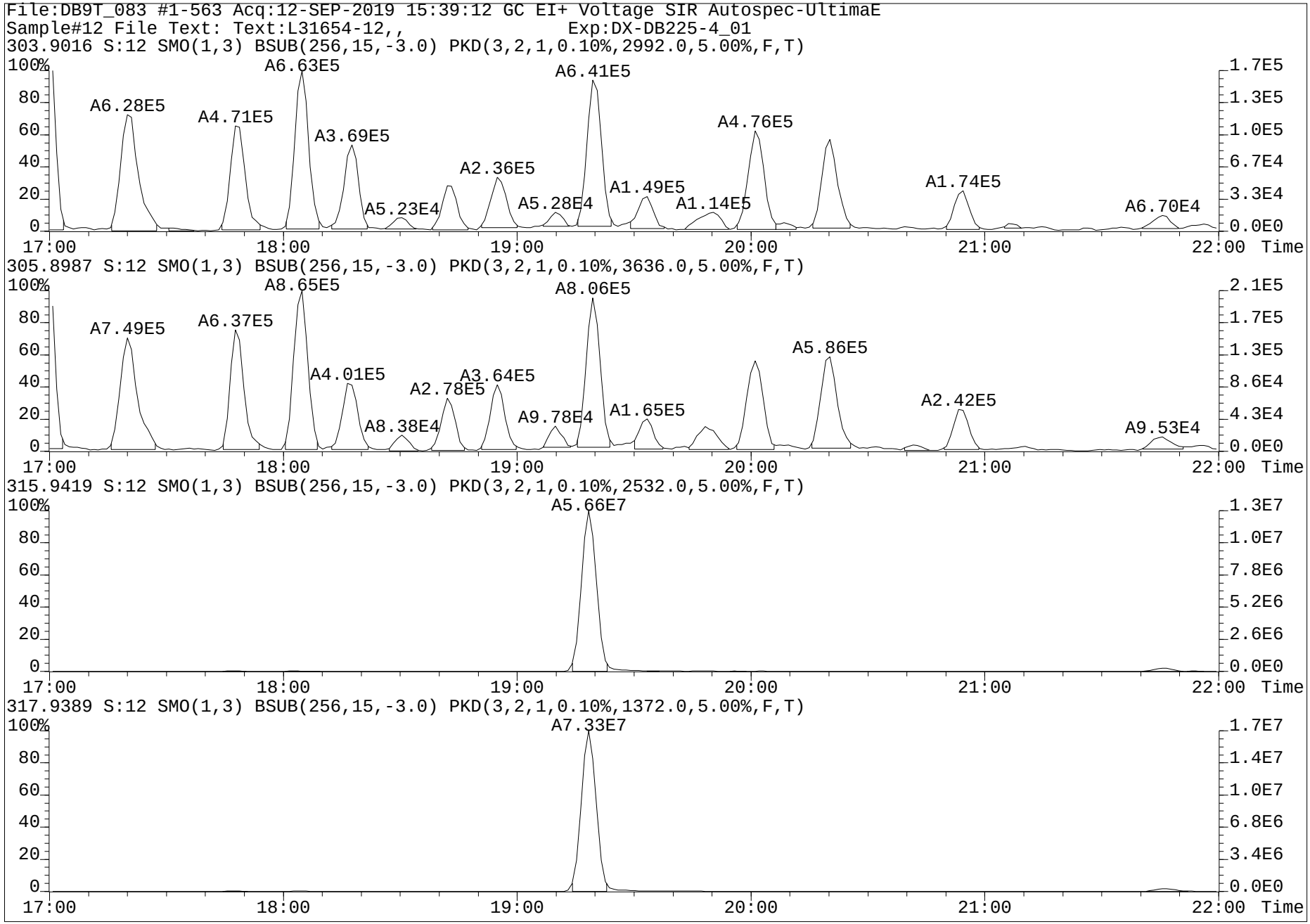
Run #15 Filename DB9T_083 S: 12 I: 1 Acquired: 12-SEP-19 15:39:12 Processed: 17-SEP-19 10:20:04
Run: db9t_083-b Analyte: db-hxd-s2 Cal: db9t_055-5a Results: db9t_083-b Version: V3.6 6-JAN-2000 17:51:42
Sample text: L31654-12,, Comments: 1,WG69303,2.0/20uL
sample size: 10.449000 conc units: pg/g total toxicity: 2.56 F1: 1.0000 F2: 1.0000

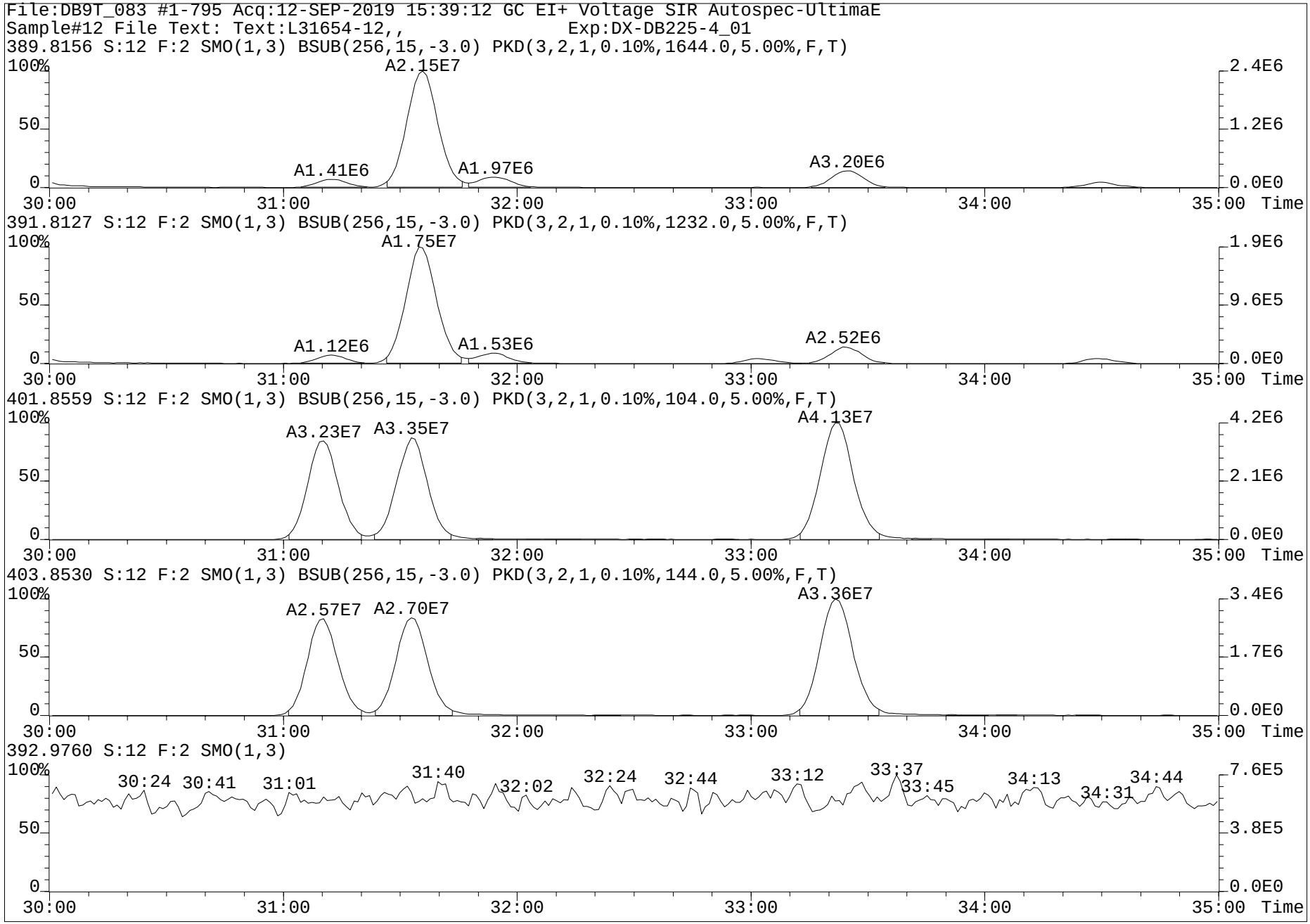
	Typ	Name	#Hom	Resp	RA		RT	Conc	Tox #1	DL	Rec	M?
1	Unk	2,3,7,8-TCDF	1	1.45e+06	0.80	y	19:19	2.751	0	0.1359	-	n
2	Unk	1,2,3,7,8,9-HxCDD	1	5.73e+06	1.27	y	33:25	22.861	2	0.2619	-	n
3	IS/RT	13C-2,3,7,8-TCDF	1	1.30e+08	0.77	y	19:18	145.722	-	0.0438	76.1	n
4	IS/RT	13C-1,2,3,4,7,8-HxCDD	1	5.80e+07	1.26	y	31:10	144.220	-	0.0151	75.3	n
5	IS/RT	13C-1,2,3,6,7,8-HxCDD	1	6.05e+07	1.24	y	31:33	143.878	-	0.0144	75.2	n
6	RS	13C-1,2,3,4-TCDD	1	1.21e+08	0.79	y	18:06	10.027	-	-	-	n
7	RS	13C-1,2,3,7,8,9-HxCDD	1	7.49e+07	1.23	y	33:22	12.493	-	-	-	n
8	Tot	Hexa DPE	0	*			NotFnd	*	-	-	-	n
9	Tot	Tetra Lock	-	-			-	-	-	-	-	n
10	Tot	Hexa Lock	-	-			-	-	-	-	-	n

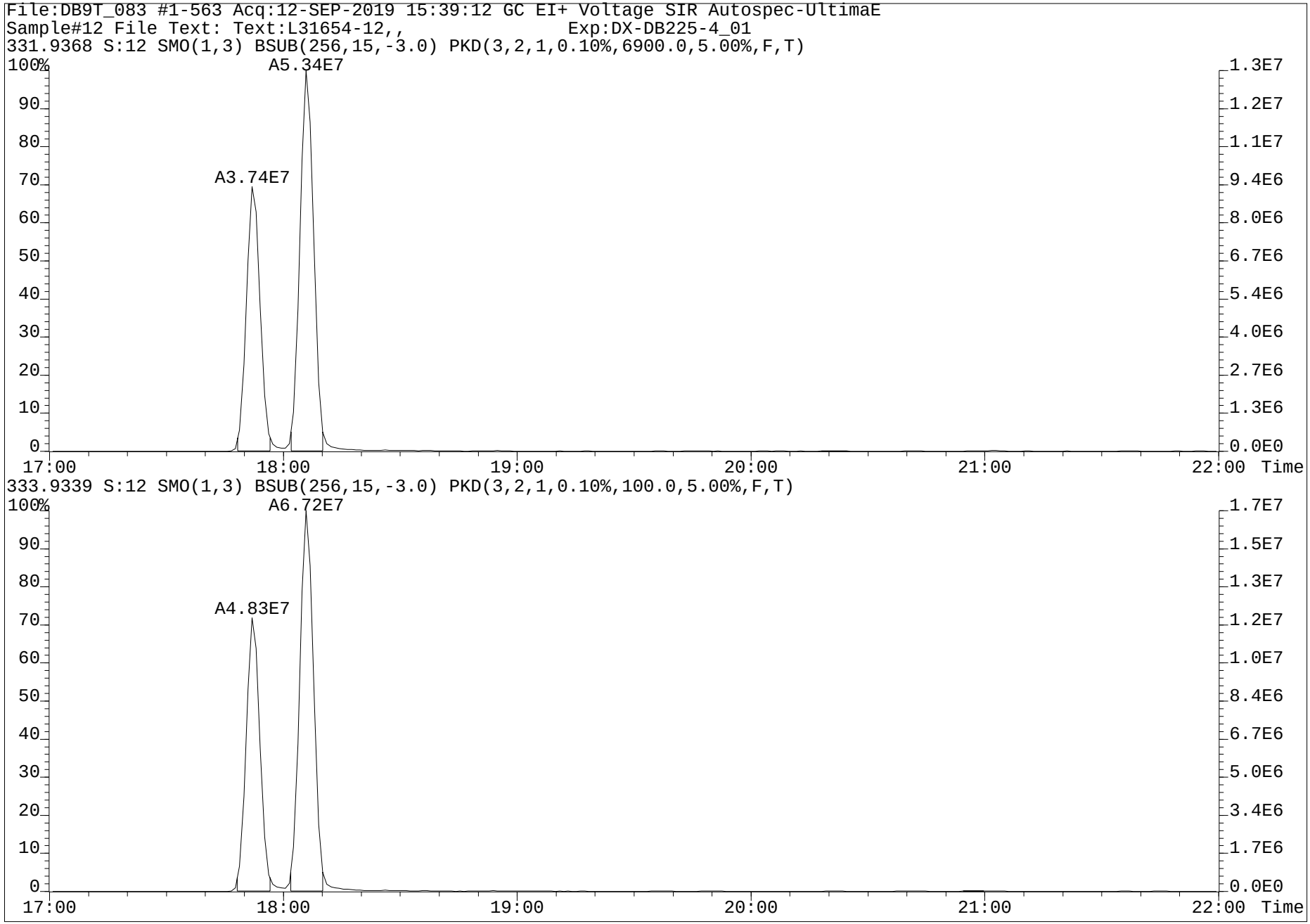
PV by RA 20SEP2019

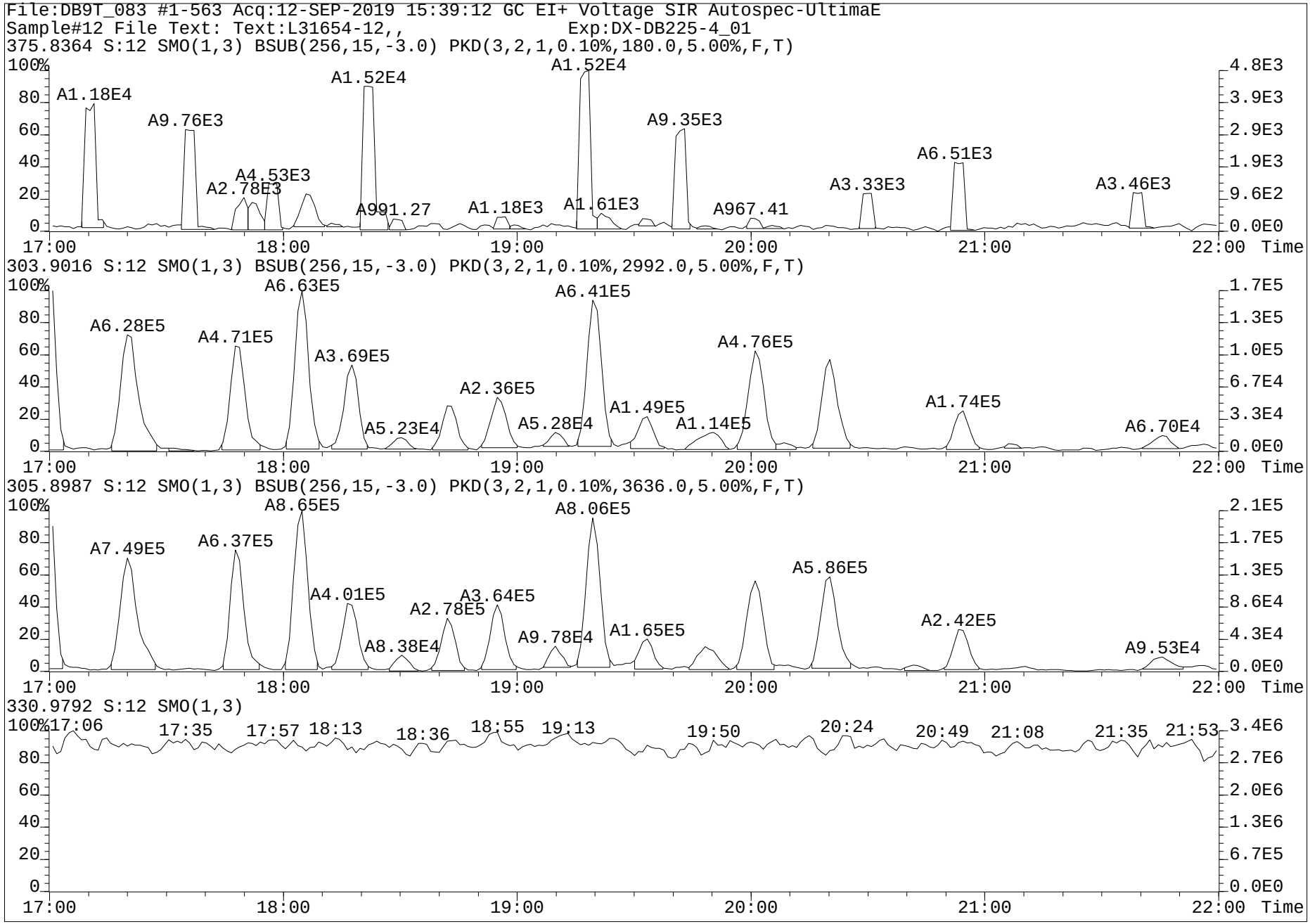
SV by HH 22-Sept-2019

SGS AXYS


File:DB9T_083 #1-563 Acq:12-SEP-2019 15:39:12 GC EI+ Voltage SIR Autospec-UltimaE
Sample#12 File Text: Text:L31654-12,, Exp:DX-DB225-4_01
303.9016 S:12 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,2992.0,5.00%,F,T)
A6.28E5
A4.71E5
A6.63E5
A3.69E5
A5.23E4
A2.36E5
A5.28E4
A6.41E5
A1.49E5
A1.14E5
A4.76E5
A1.74E5
A6.70E4
305.8987 S:12 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,3636.0,5.00%,F,T)
A7.49E5
A6.37E5
A8.65E5
A4.01E5
A8.38E4
A2.78E5
A3.64E5
A9.78E4
A8.06E5
A1.65E5
A5.86E5
A2.42E5
A9.53E4
315.9419 S:12 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,2532.0,5.00%,F,T)
A5.66E7
317.9389 S:12 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1372.0,5.00%,F,T)
A7.33E7
Time


File:DB9T_083 #1-795 Acq:12-SEP-2019 15:39:12 GC EI+ Voltage SIR Autospec-UltimaE
Sample#12 File Text: Text:L31654-12,, Exp:DX-DB225-4_01
389.8156 S:12 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1644.0,5.00%,F,T)
A2.15E7
A1.41E6
A1.97E6
A3.20E6
391.8127 S:12 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1232.0,5.00%,F,T)
A1.75E7
A1.12E6
A1.53E6
A2.52E6
401.8559 S:12 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,104.0,5.00%,F,T)
A3.23E7
A3.35E7
A4.13E7
403.8530 S:12 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,144.0,5.00%,F,T)
A2.57E7
A2.70E7
A3.36E7
392.9760 S:12 F:2 SMO(1,3)
30:24
30:41
31:01
31:40
32:02
32:24
32:44
33:12
33:37
33:45
34:13
34:31
34:44
100%
50
0
30:00
31:00
32:00
33:00
34:00
35:00
Time
2.4E6
1.2E6
0.0E0
1.9E6
9.6E5
4.2E6
2.1E6
3.4E6
1.7E6
7.6E5
3.8E5


File:DB9T_083 #1-563 Acq:12-SEP-2019 15:39:12 GC EI+ Voltage SIR Autospec-UltimaE
Sample#12 File Text: Text:L31654-12,, Exp:DX-DB225-4_01
331.9368 S:12 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,6900.0,5.00%,F,T)
A5.34E7
A3.74E7
333.9339 S:12 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,100.0,5.00%,F,T)
A6.72E7
A4.83E7
Time


File:DB9T_083 #1-563 Acq:12-SEP-2019 15:39:12 GC EI+ Voltage SIR Autospec-UltimaE
Sample#12 File Text: Text:L31654-12,, Exp:DX-DB225-4_01
375.8364 S:12 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,180.0,5.00%,F,T)
A1.18E4
A9.76E3
A2.78E3
A4.53E3
A1.52E4
A991.27
A1.18E3
A1.52E4
A1.61E3
A9.35E3
A967.41
A3.33E3
A6.51E3
A3.46E3
303.9016 S:12 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,2992.0,5.00%,F,T)
A6.28E5
A4.71E5
A6.63E5
A3.69E5
A5.23E4
A2.36E5
A5.28E4
A6.41E5
A1.49E5
A1.14E5
A4.76E5
A1.74E5
A6.70E4
305.8987 S:12 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,3636.0,5.00%,F,T)
A7.49E5
A6.37E5
A8.65E5
A4.01E5
A8.38E4
A2.78E5
A3.64E5
A9.78E4
A8.06E5
A1.65E5
A5.86E5
A2.42E5
A9.53E4
330.9792 S:12 SMO(1,3)
17:06
17:35
17:57
18:13
18:36
18:55
19:13
19:50
20:24
20:49
21:08
21:35
21:53
Time

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S5, Date: 12-Sep-2019, Time: 12:44:54, ID: WG69303-101,I,BLK, Description: 1,WG69303,1.0/20uL

	Name	Sample Size	Resp	Ratio	fails?	RT	pg	DL	%Rec	Noise 1	Noise 2
1	2,3,7,8-TCDF	10.000	2.31e2	0.42	YES	25.24	0.019	0.0169		5.35e2	3.35e2
2	1,2,3,7,8-PeCDF	10.000	5.76e2	1.45	NO	33.49	0.059	0.0114		3.06e2	1.08e2
3	2,3,4,7,8-PeCDF	10.000	2.34e2	1.26	YES	35.28	0.023	0.0100		3.06e2	1.08e2
4	1,2,3,4,7,8-HxCDF	10.000	1.89e2	1.64	YES	40.71	0.024	0.0533		1.36e3	9.98e2
5	1,2,3,6,7,8-HxCDF	10.000	1.68e2	2.36	YES	40.88	0.020	0.0502		1.36e3	9.98e2
6	2,3,4,6,7,8-HxCDF	10.000	4.41e2	0.98	YES	41.87	0.052	0.0483		1.36e3	9.98e2
7	1,2,3,7,8,9-HxCDF	10.000	5.95e2	0.64	YES	42.87	0.087	0.0602		1.36e3	9.98e2
8	1,2,3,4,6,7,8-HpCDF	10.000	7.88e2	0.69	YES	45.34	0.098	0.0531		9.40e2	1.75e3
9	1,2,3,4,7,8,9-HpCDF	10.000	3.45e2	0.57	YES	47.14	0.050	0.0653		9.40e2	1.75e3
10	OCDF	10.000	7.66e2	0.86	NO	50.41	0.111	0.0209		4.06e2	4.39e2
11	2,3,7,8-TCDD	10.000	3.90e2	0.44	YES	26.47	0.043	0.0348		5.94e2	5.84e2
12	1,2,3,7,8-PeCDD	10.000	1.83e2	0.43	YES	36.16	0.022	0.0176		3.97e2	3.08e2
13	1,2,3,4,7,8-HxCDD	10.000	1.13e2	0.80	YES	42.14	0.019	0.0462		1.08e3	5.49e2
14	1,2,3,6,7,8-HxCDD	10.000	1.37e2	1.14	NO	42.24	0.022	0.0463		1.08e3	5.49e2
15	1,2,3,7,8,9-HxCDD	10.000	1.44e2	0.05	YES	42.70	0.024	0.0467		1.08e3	5.49e2
16	1,2,3,4,6,7,8-HpCDD	10.000	6.61e2	1.40	YES	46.74	0.111	0.0412		8.26e2	7.30e2
17	OCDD	10.000	2.91e3	1.00	NO	50.32	0.489	0.0214		2.68e2	4.79e2
18	13C-2,3,7,8-TCDF	10.000	2.58e6	0.76	NO	25.20	148.950	0.0955	74.5	2.36e3	5.02e3
19	13C-1,2,3,7,8-PeCDF	10.000	2.11e6	1.54	NO	33.49	149.669	0.1471	74.8	3.45e3	5.80e3
20	13C-2,3,4,7,8-PeCDF	10.000	2.10e6	1.55	NO	35.25	144.811	0.1426	72.4	3.45e3	5.80e3
21	13C-1,2,3,4,7,8-HxCDF	10.000	1.43e6	0.52	NO	40.70	147.148	0.2886	73.6	1.03e4	5.36e3
22	13C-1,2,3,6,7,8-HxCDF	10.000	1.58e6	0.51	NO	40.87	148.550	0.2625	74.3	1.03e4	5.36e3
23	13C-2,3,4,6,7,8-HxCDF	10.000	1.50e6	0.53	NO	41.82	155.877	0.2912	77.9	1.03e4	5.36e3
24	13C-1,2,3,7,8,9-HxCDF	10.000	1.30e6	0.51	NO	42.87	152.592	0.3275	76.3	1.03e4	5.36e3
25	13C-1,2,3,4,6,7,8-HpCDF	10.000	1.29e6	0.47	NO	45.34	161.591	0.2196	80.8	6.54e3	3.29e3
26	13C-1,2,3,4,7,8,9-HpCDF	10.000	1.10e6	0.48	NO	47.12	169.399	0.2706	84.7	6.54e3	3.29e3
27	13C-2,3,7,8-TCDD	10.000	1.64e6	0.78	NO	26.42	148.720	0.2179	74.4	4.01e3	6.71e3
28	13C-1,2,3,7,8-PeCDD	10.000	1.70e6	0.65	NO	36.08	194.526	0.1516	97.3	3.46e3	2.47e3
29	13C-1,2,3,4,7,8-HxCDD	10.000	1.14e6	1.27	NO	42.10	147.080	0.1779	73.5	3.46e3	4.26e3
30	13C-1,2,3,6,7,8-HxCDD	10.000	1.34e6	1.27	NO	42.24	156.397	0.1610	78.2	3.46e3	4.26e3
31	13C-1,2,3,4,6,7,8-HpCDD	10.000	1.53e6	1.04	NO	46.72	176.396	0.1157	88.2	2.94e3	2.67e3
32	13C-OCDD	10.000	2.42e6	0.88	NO	50.30	380.800	0.1403	95.2	1.02e3	3.99e3
33	13C-1,2,3,4-TCDD	10.000	2.27e6	0.79	NO	26.07	5.651	0.0060	2.8	4.01e3	6.71e3
34	13C-1,2,3,7,8,9-HxCDD	10.000	1.60e6	1.25	NO	42.66	5.499	0.0047	2.7	3.46e3	4.26e3
35	37Cl-2,3,7,8-TCDD	10.000	1.79e5			26.44	14.716	0.0144	73.6		7.82e2
36	Total Tetra-Furans	10.000					0.118	0.0169			3.35e2
37	Total Tetra-Dioxins	10.000					0.204	0.0348			5.84e2
38	Total Penta-Furans	10.000					0.114	0.0108			1.08e2
39	Total Penta-Dioxins	10.000					0.034	0.0176			3.08e2
40	Total Hexa-Furans	10.000					0.284	0.0521			9.98e2
41	Total Hexa-Dioxins	10.000					0.274	0.0442			5.49e2
42	Total Hepta-Furans	10.000					0.207	0.0588			1.75e3
43	Total Hepta-Dioxins	10.000					0.207	0.0412			7.30e2
44	Hexa DPE	1.000	9.94e1			22.35					2.05e0
45	Hepta DPE	1.000	1.48e2			33.95					1.51e0
46	Octa DPE	1.000	8.57e1			43.34					1.30e0
47	Nona DPE	1.000	1.82e2			46.60					1.18e0
48	Deca DPE	1.000	9.56e1			49.13					3.75e0
49	Tetra Lock	1.000	1.62e4			21.37					1.65e5
50	Penta Lock	1.000	7.25e3			32.57					1.39e5
51	Hexa Lock	1.000	1.49e5			39.16					3.25e5
52	Hepta Lock	1.000	8.35e3			44.62					1.55e5
53	Octa Lock	1.000	6.38e3			49.24					1.50e5
54	13C-Tetra-Furans	10.000					148.950	0.0955			5.02e3
55	13C-Tetra-Dioxins	10.000					154.371	0.2238			6.71e3

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

SV IH 22 Sept. 2019

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S5, Date: 12-Sep-2019, Time: 12:44:54, ID: WG69303-101,I,BLK, Description: 1,WG69303,1.0/20uL

Tetrafurans

	RT	Ratio	Fails?	pg
1	26.09	1.798	YES	0.027
2	25.24	0.421	YES	0.019
3	24.92	2.149	YES	0.008
4	24.55	1.614	YES	0.025
5	23.33	1.324	YES	0.011
6	22.83	0.637	YES	0.010
7	22.72	1.094	YES	0.006
8	21.95	0.300	YES	0.012

Tetradioxins

	RT	Ratio	Fails?	pg
1	25.17	3.077	YES	0.104
2	24.70	1.749	YES	0.010
3	24.35	1.167	YES	0.018
4	26.47	0.442	YES	0.043
5	26.34	0.355	YES	0.018
6	26.06	0.827	NO	0.011

Pentafurans

	RT	Ratio	Fails?	pg
1	28.81	1.128	YES	0.026
2	33.49	1.451	NO	0.059
3	35.28	1.255	YES	0.023
4	37.35	5.400	YES	0.002
5	37.11	0.993	YES	0.004

Pentadioxins

	RT	Ratio	Fails?	pg
1	31.99	0.131	YES	0.004
2	36.16	0.431	YES	0.022
3	32.05	0.543	NO	0.009

Hexafurans

	RT	Ratio	Fails?	pg
1	41.87	0.978	YES	0.052
2	41.27	2.036	YES	0.015
3	40.71	1.640	YES	0.024
4	40.05	1.608	YES	0.029
5	39.24	0.611	YES	0.030
6	38.99	1.317	NO	0.017
7	43.05	1.270	NO	0.010
8	42.87	0.644	YES	0.087
9	40.88	2.365	YES	0.020

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S5, Date: 12-Sep-2019, Time: 12:44:54, ID: WG69303-101,I,BLK, Description: 1,WG69303,1.0/20uL

Hexadioxins

	RT	Ratio	Fails?	pg
1	39.99	1.514	YES	0.016
2	42.24	1.136	NO	0.022
3	40.87	4.195	YES	0.193
4	42.70	0.045	YES	0.024
5	42.14	0.798	YES	0.019

Heptafurans

	RT	Ratio	Fails?	pg
1	45.84	0.906	NO	0.059
2	45.34	0.693	YES	0.098
3	47.14	0.572	YES	0.050

Heptadioxins

	RT	Ratio	Fails?	pg
1	46.74	1.405	YES	0.111
2	45.81	1.296	YES	0.096

13C-TF

	RT	Ratio	Fails?	pg
1	25.20	0.759	NO	148.950

13C-TD

	RT	Ratio	Fails?	pg
1	26.42	0.776	NO	148.720
2	26.07	0.791	NO	5.651

13C-PF

	RT	Ratio	Fails?	pg
1	35.25	1.549	NO	144.811
2	33.49	1.538	NO	149.669

13C-PD

	RT	Ratio	Fails?	pg
1	36.08	0.646	NO	194.526

13C-HxF

	RT	Ratio	Fails?	pg
1	40.70	0.523	NO	147.148
2	42.87	0.514	NO	152.592
3	41.82	0.529	NO	155.877
4	40.87	0.514	NO	148.550

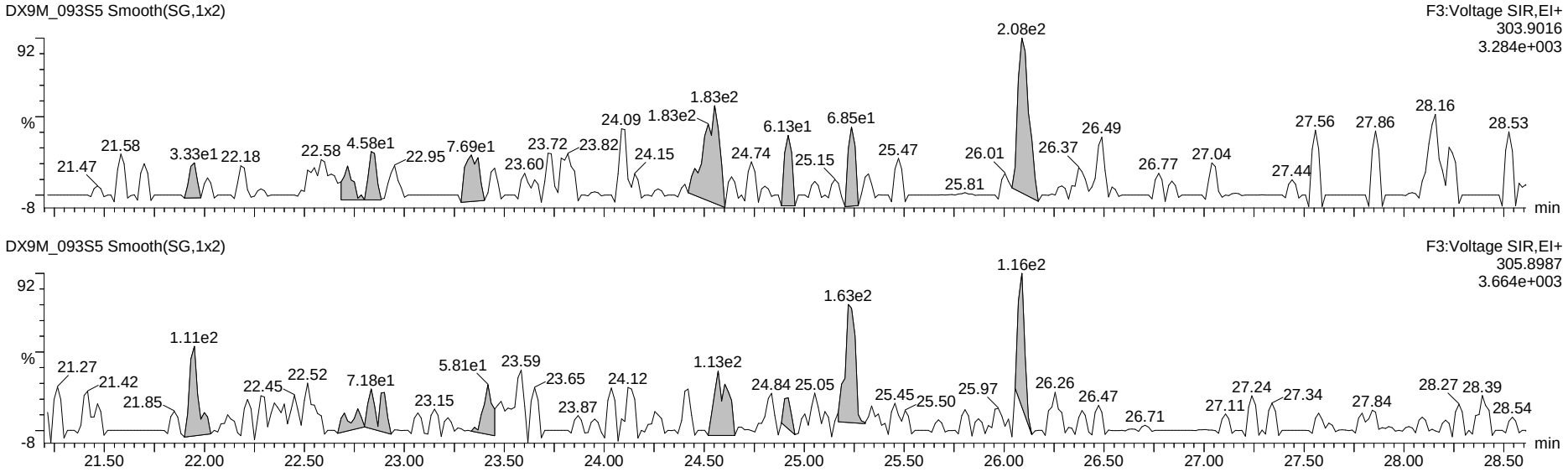
PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

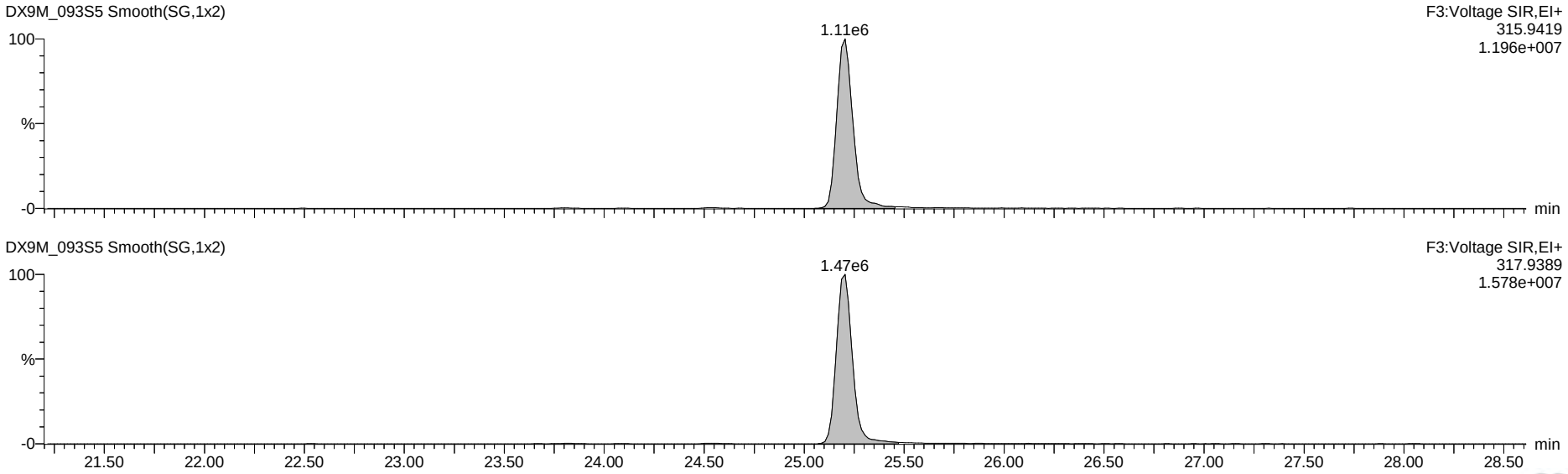
Method: G:\Masslynx\Inst_M\Exported_methods\DX_1613B_16.mdb 07 Sep 2017 16:45:23
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

Name: DX9M_093S5, Date: 12-Sep-2019, Time: 12:44:54, ID: WG69303-101,I,BLK, Description: 1,WG69303,1.0/20uL

Total Tetra-Furans



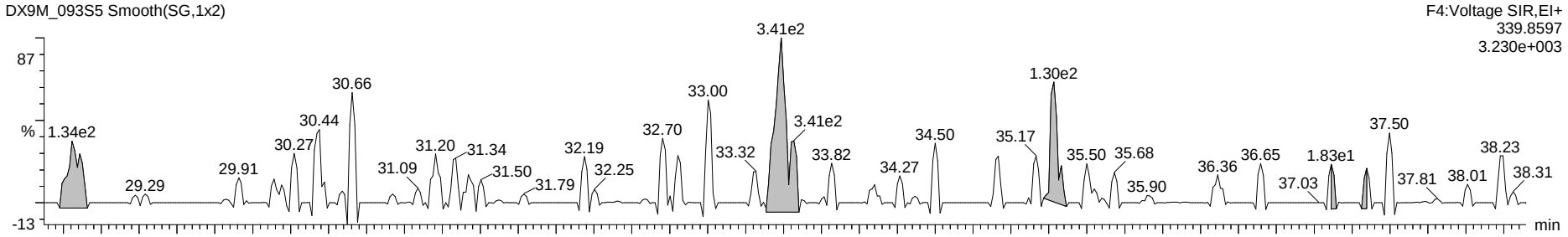
13C-Tetra-Furans

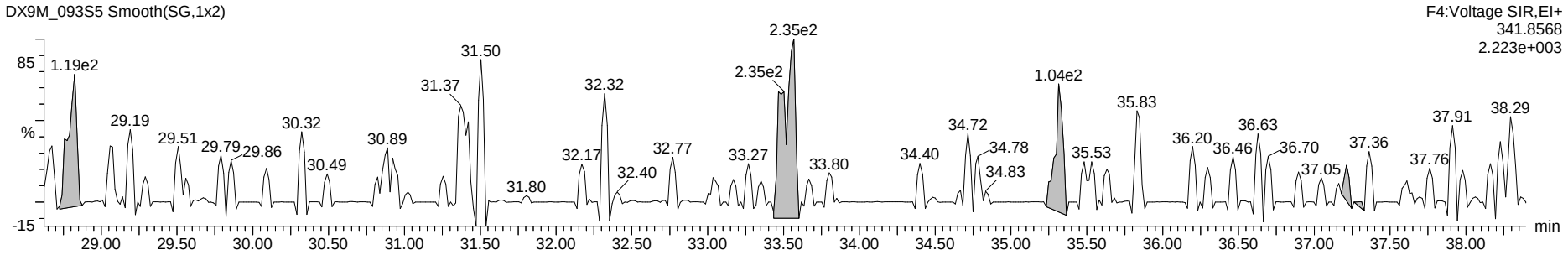


Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

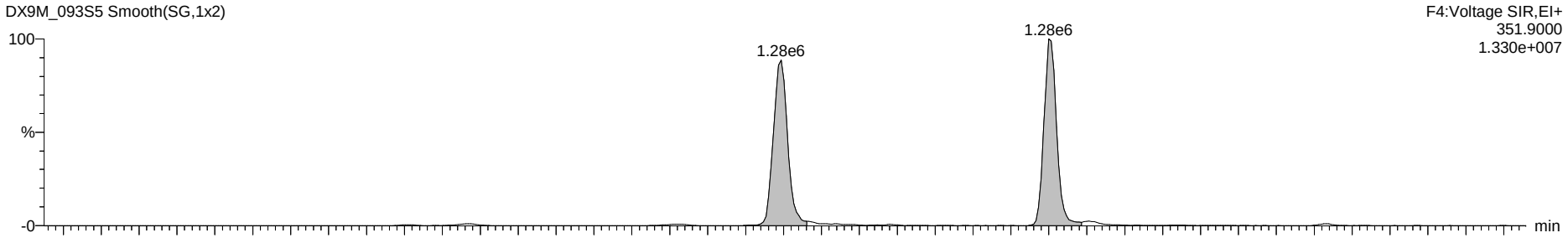
Name: DX9M_093S5, Date: 12-Sep-2019, Time: 12:44:54, ID: WG69303-101,I,BLK, Description: 1,WG69303,1.0/20uL

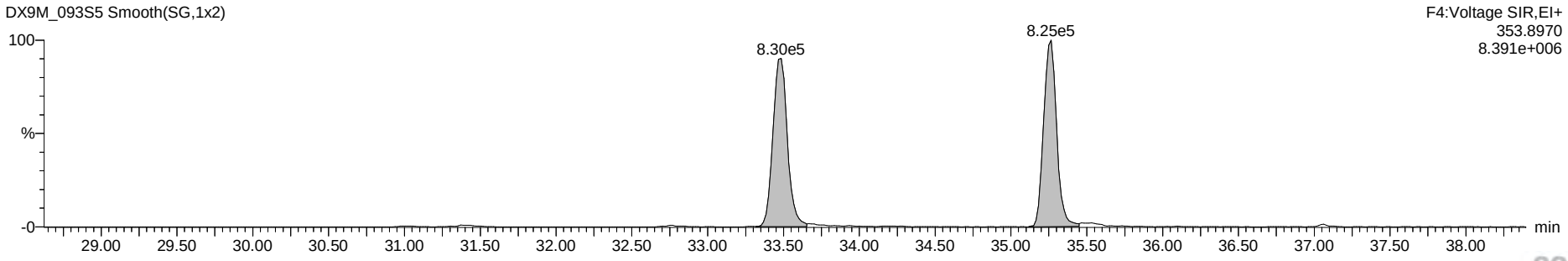
Total Penta-Furans





13C-Penta-Furans

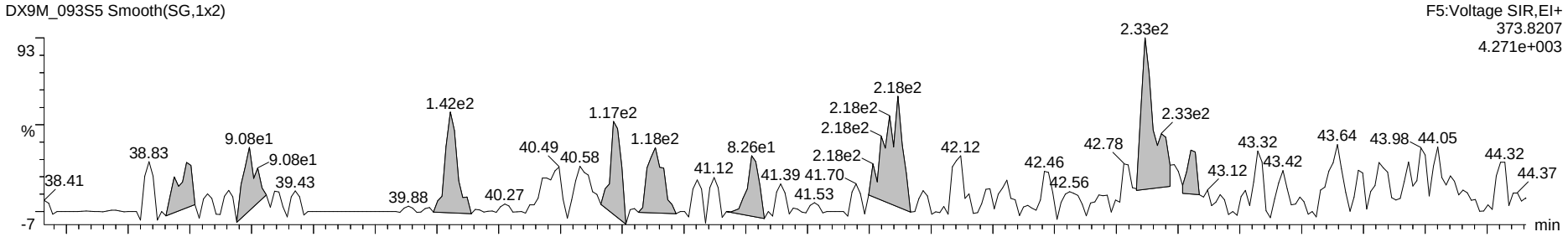


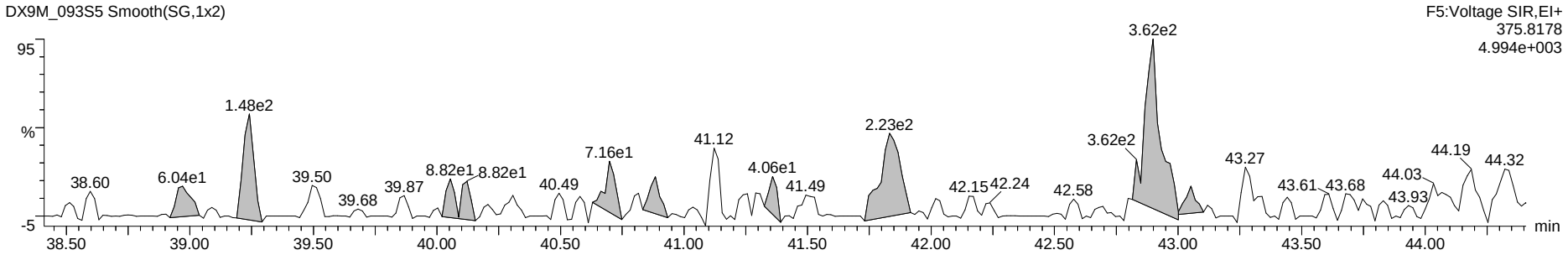


Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

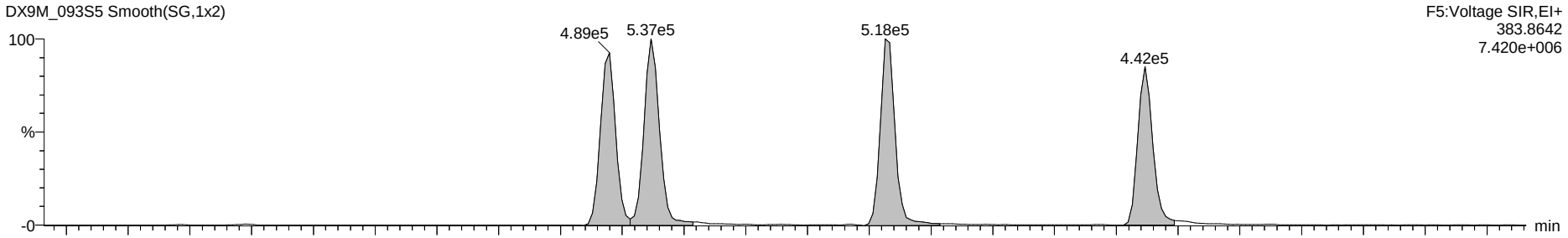
Name: DX9M_093S5, Date: 12-Sep-2019, Time: 12:44:54, ID: WG69303-101,I,BLK, Description: 1,WG69303,1.0/20uL

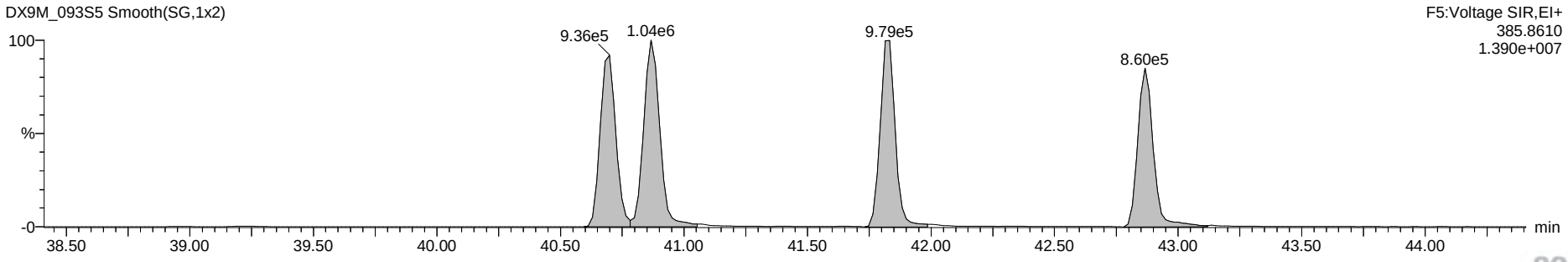
Total Hexa-Furans





13C-Hexa-Furans

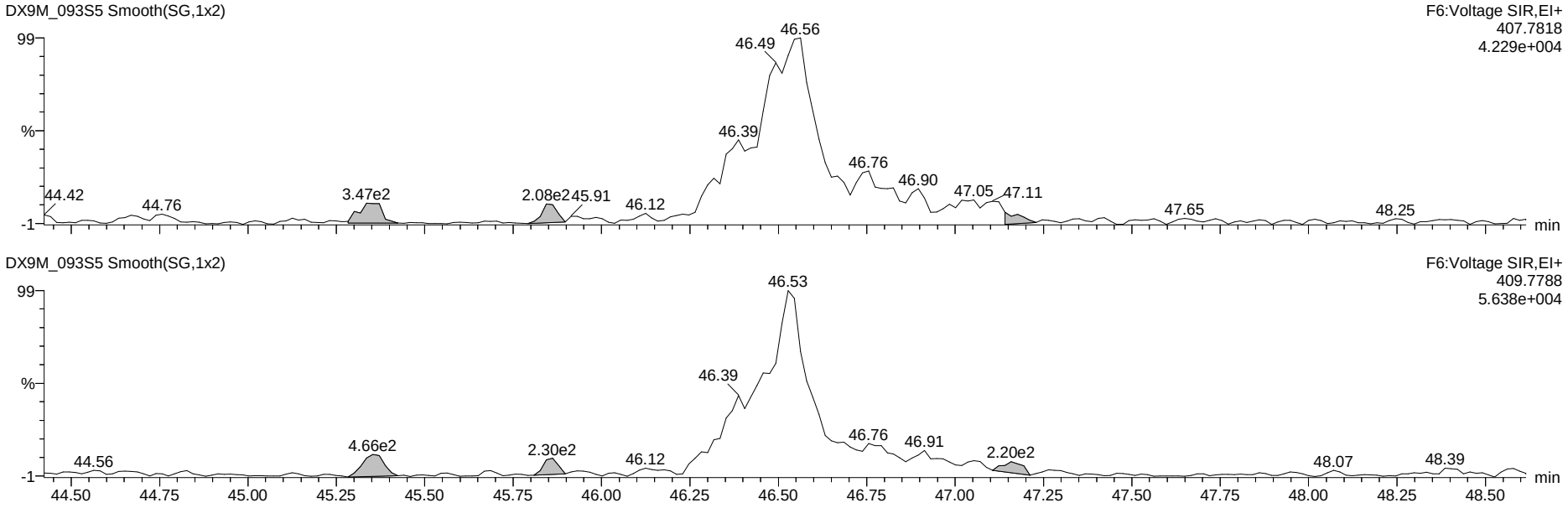




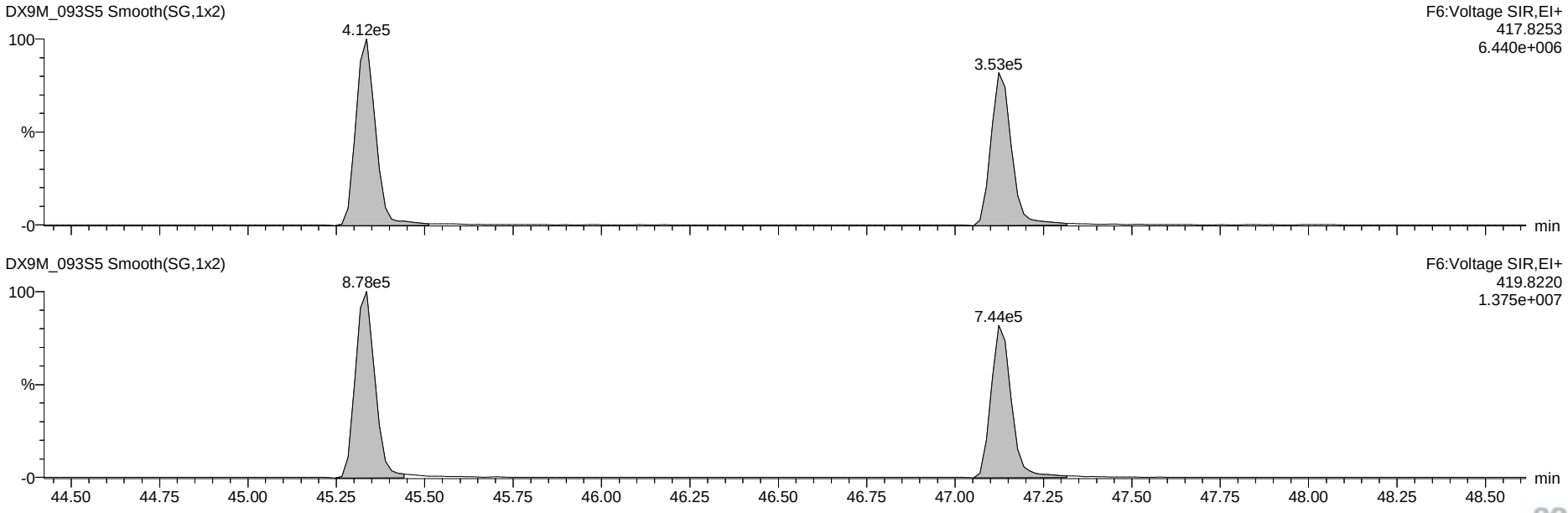
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S5, Date: 12-Sep-2019, Time: 12:44:54, ID: WG69303-101,I,BLK, Description: 1,WG69303,1.0/20uL

Total Hepta-Furans



13C-Hepta-Furans



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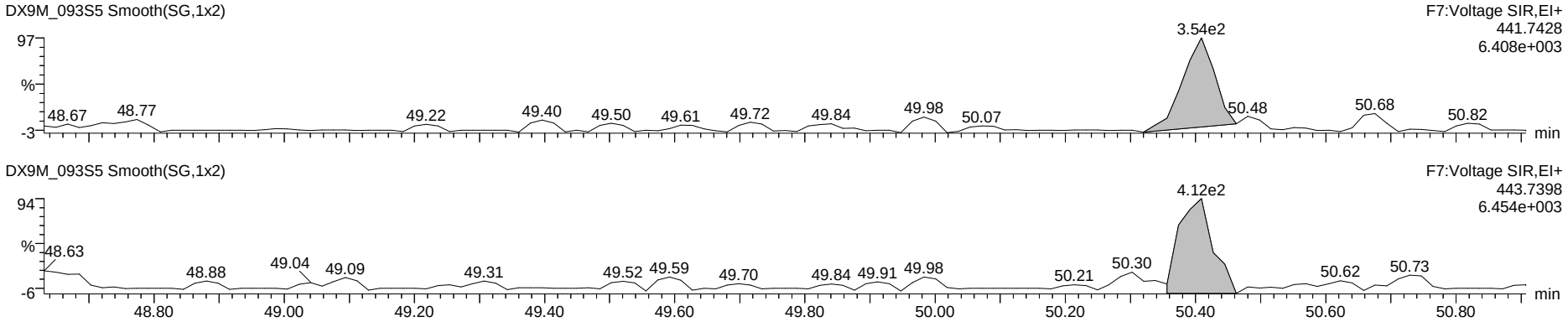
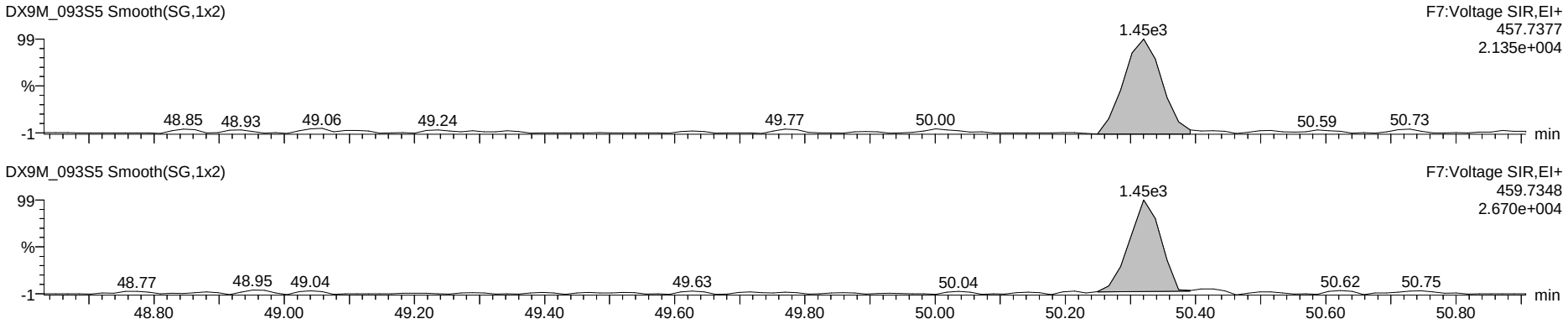
Name: DX9M_093S5, Date: 12-Sep-2019, Time: 12:44:54, ID: WG69303-101,I,BLK, Description: 1,WG69303,1.0/20uL

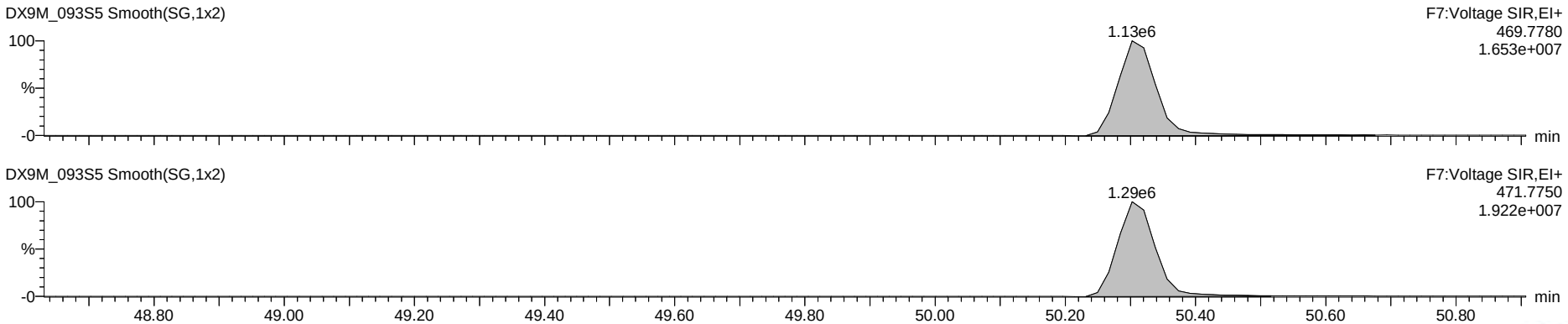
OCDF



OCDD



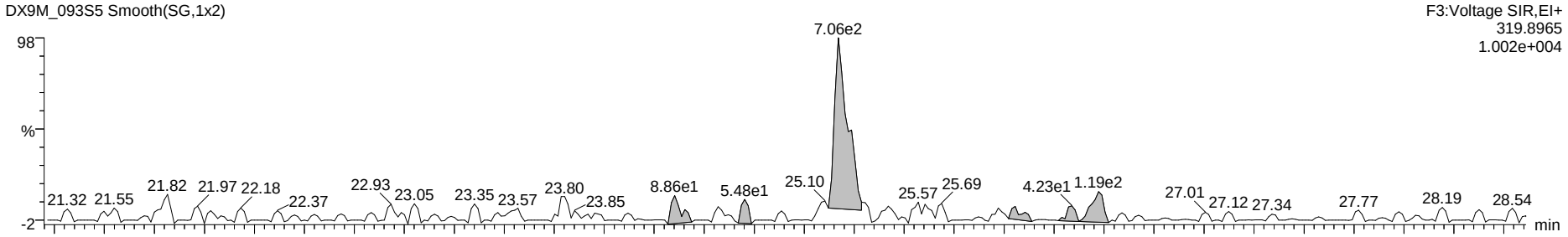
13C-OCDD

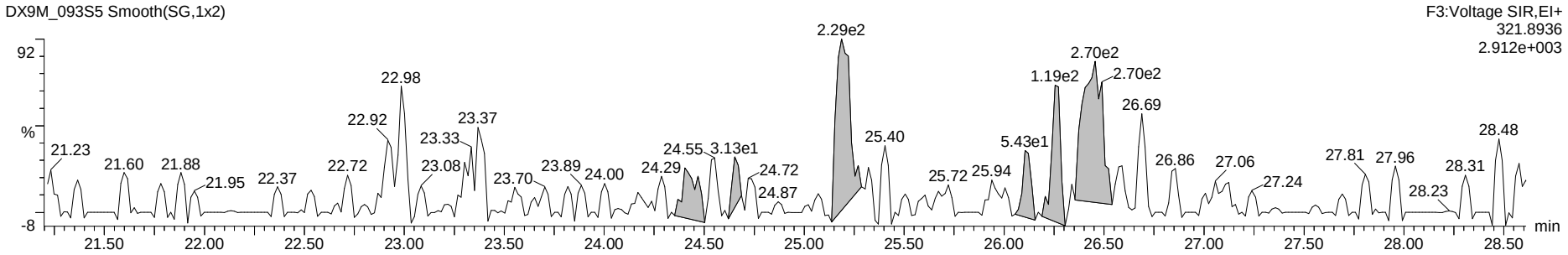


Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

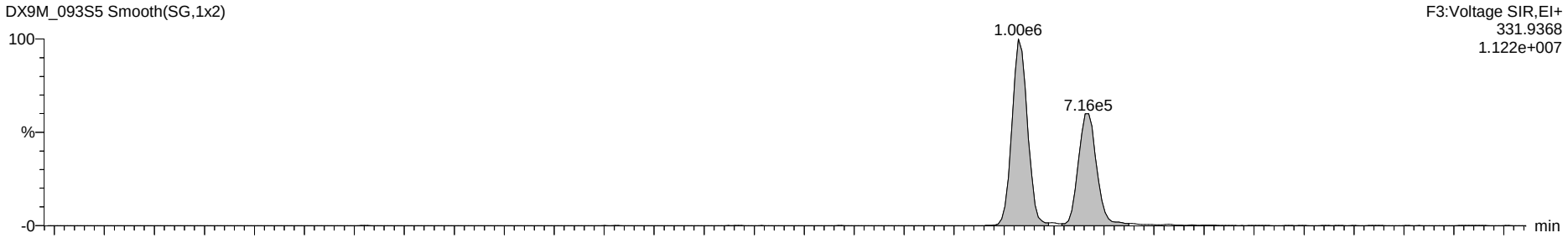
Name: DX9M_093S5, Date: 12-Sep-2019, Time: 12:44:54, ID: WG69303-101,I,BLK, Description: 1,WG69303,1.0/20uL

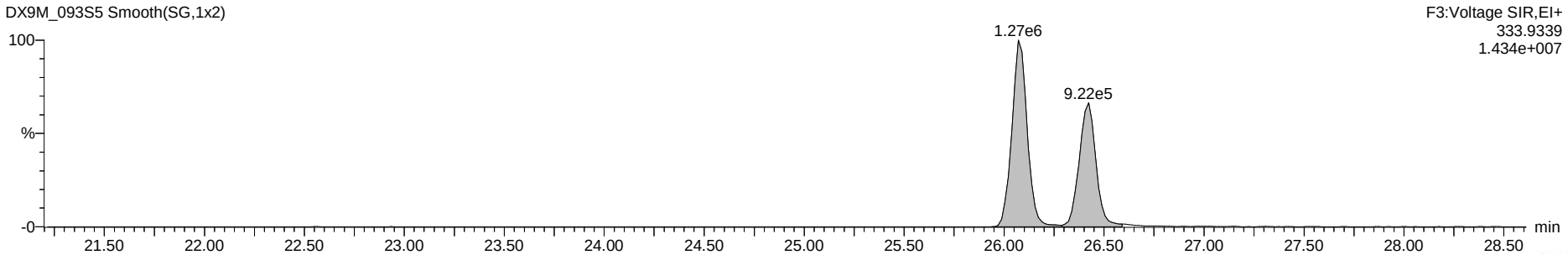
Total Tetra-Dioxins





13C-Tetra-Dioxins

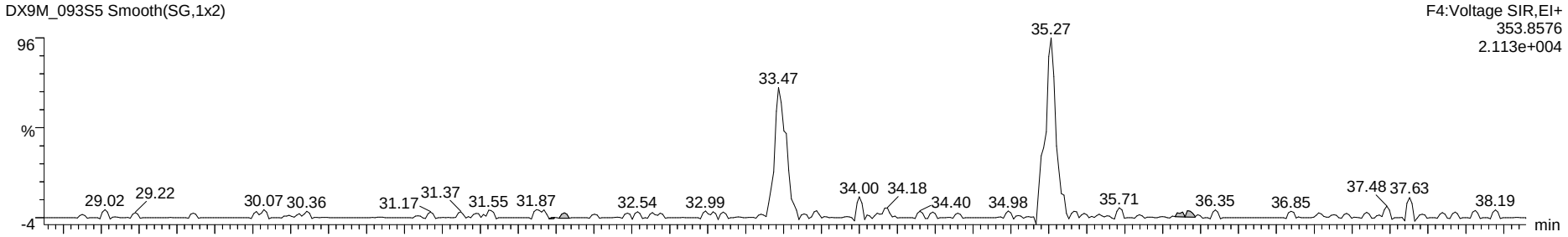


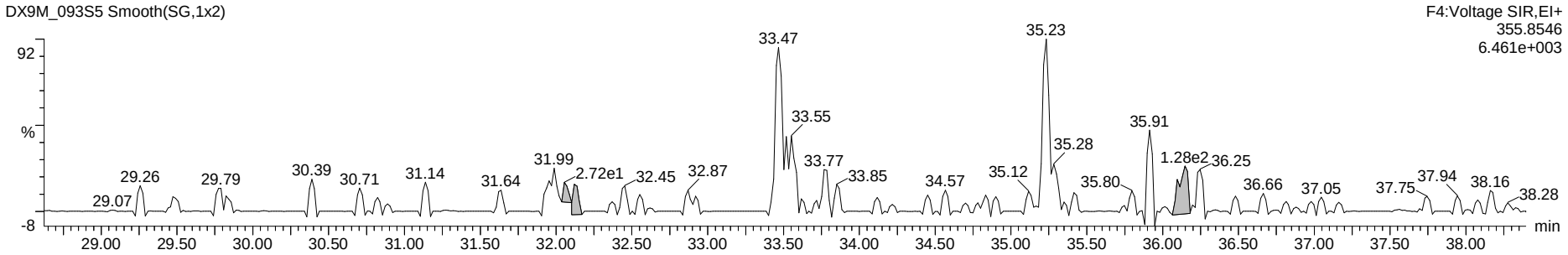


Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

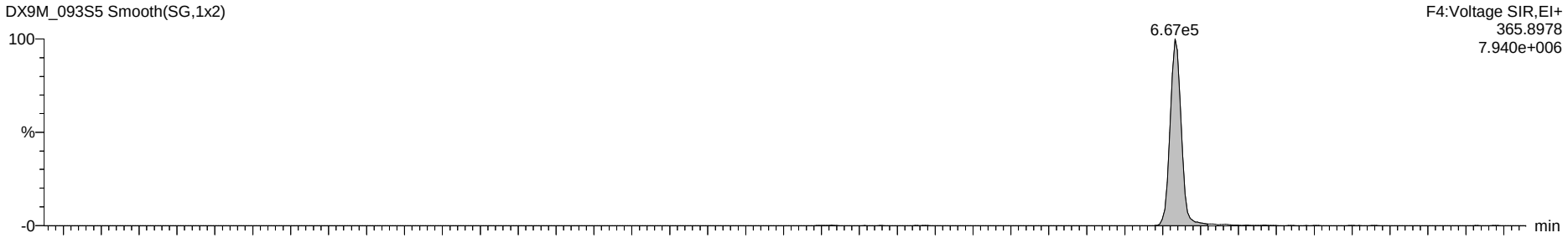
Name: DX9M_093S5, Date: 12-Sep-2019, Time: 12:44:54, ID: WG69303-101,I,BLK, Description: 1,WG69303,1.0/20uL

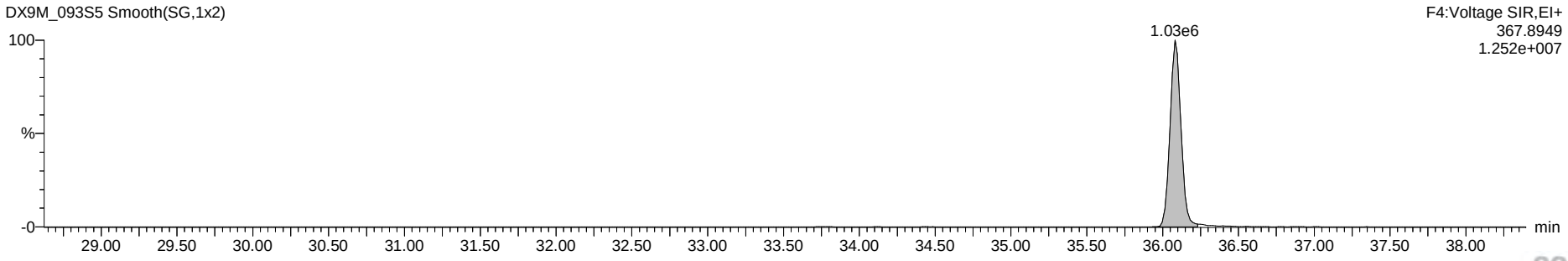
Total Penta-Dioxins





13C-Penta-Dioxins

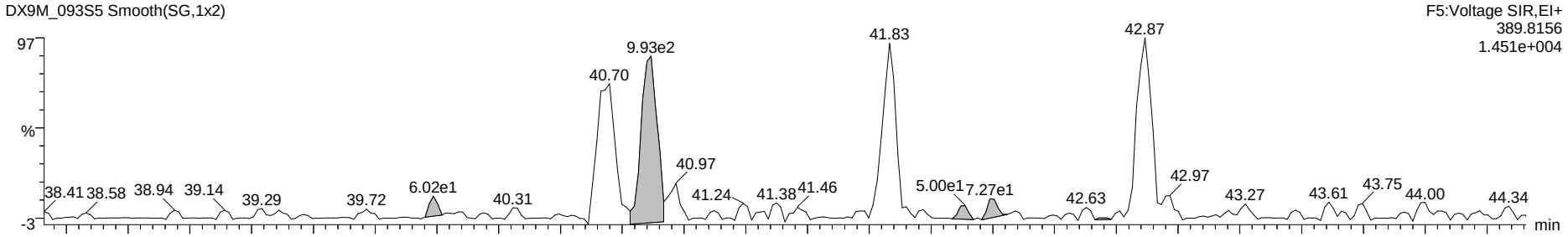


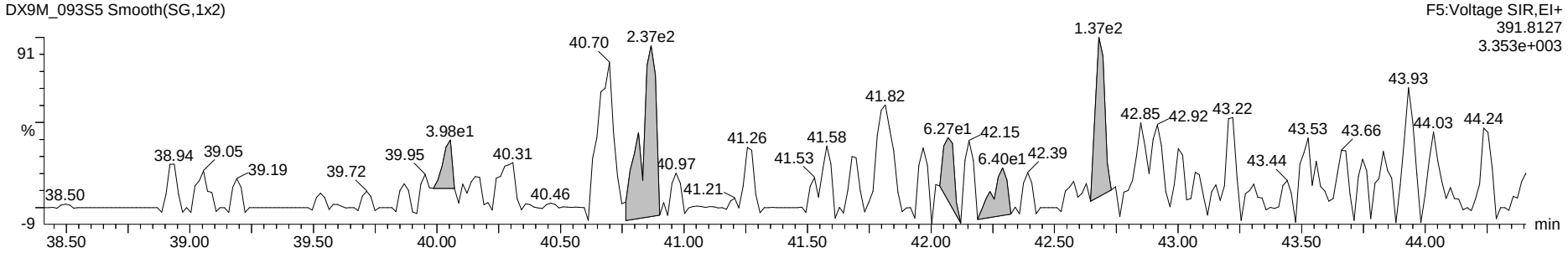


Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

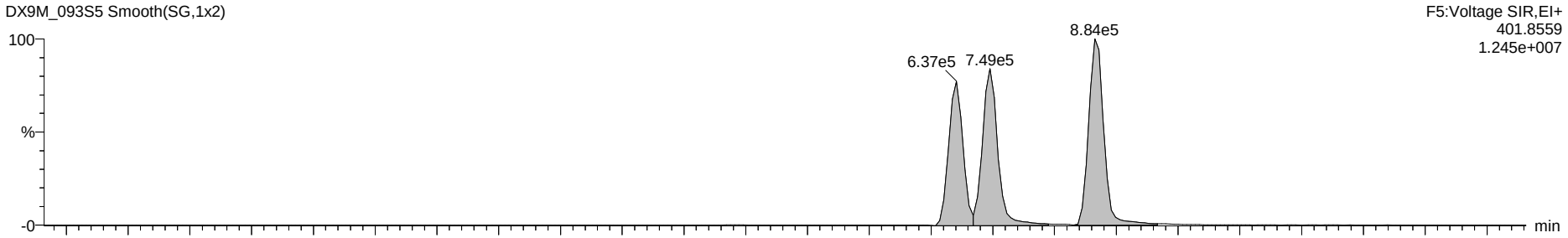
Name: DX9M_093S5, Date: 12-Sep-2019, Time: 12:44:54, ID: WG69303-101,I,BLK, Description: 1,WG69303,1.0/20uL

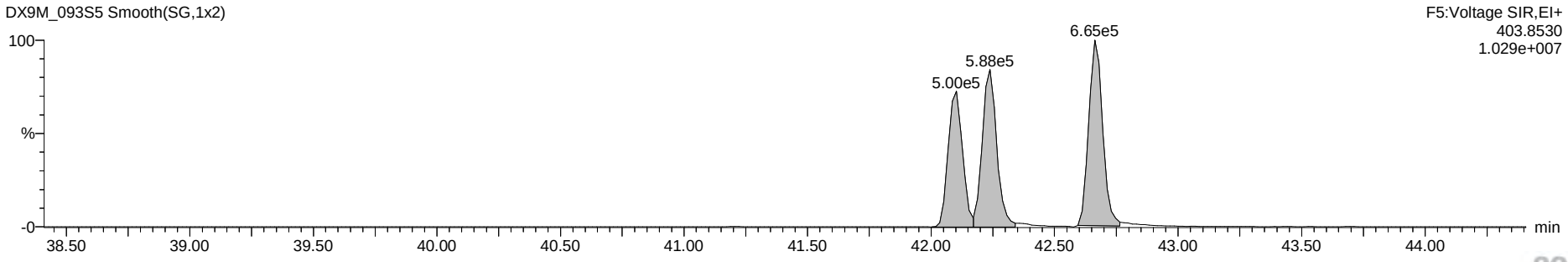
Total Hexa-Dioxins





13C-Hexa-Dioxins

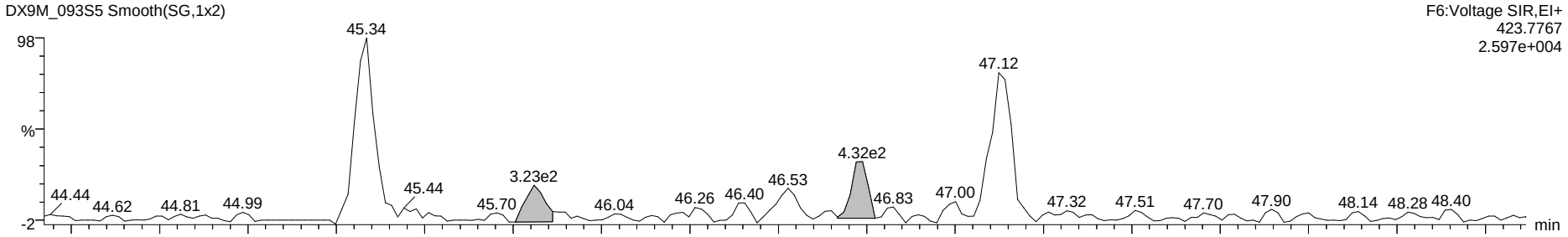


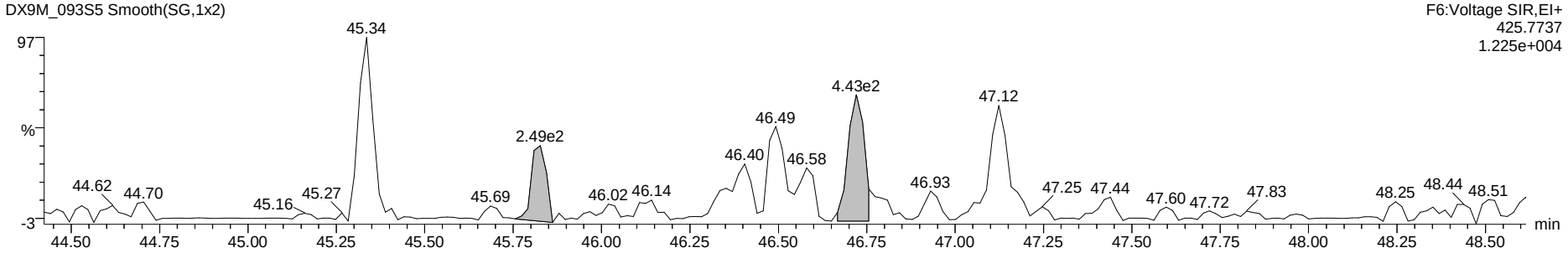


Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

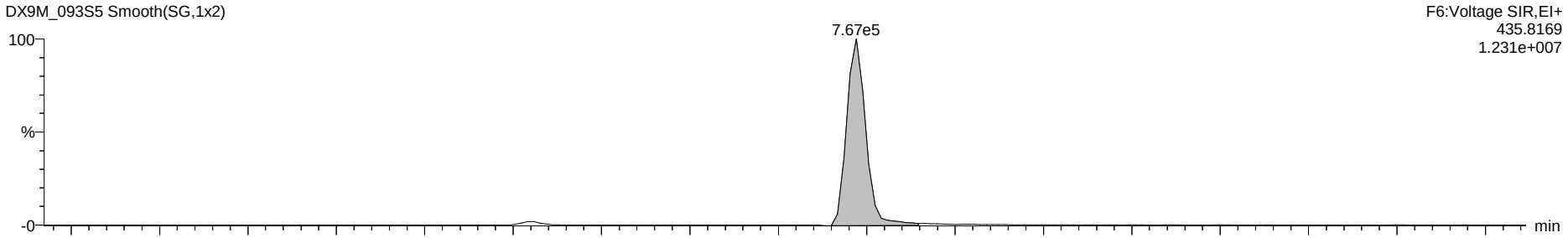
Name: DX9M_093S5, Date: 12-Sep-2019, Time: 12:44:54, ID: WG69303-101,I,BLK, Description: 1,WG69303,1.0/20uL

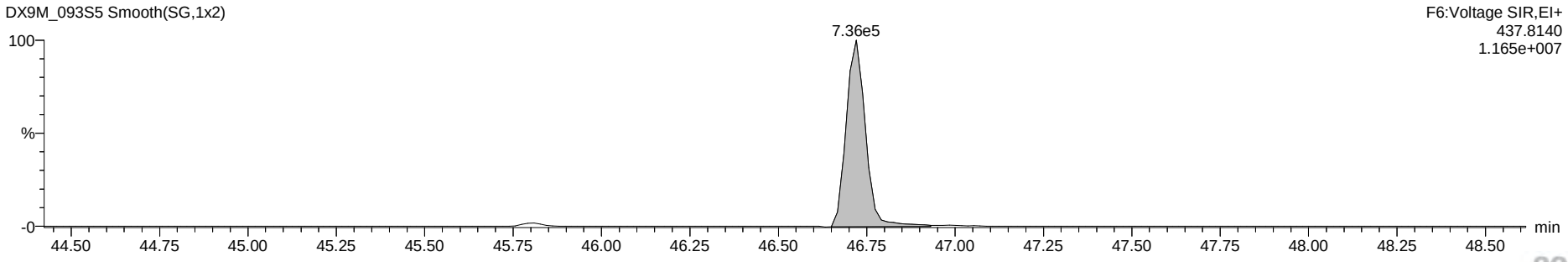
Total Hepta-Dioxins





13C-Hepta-Dioxins

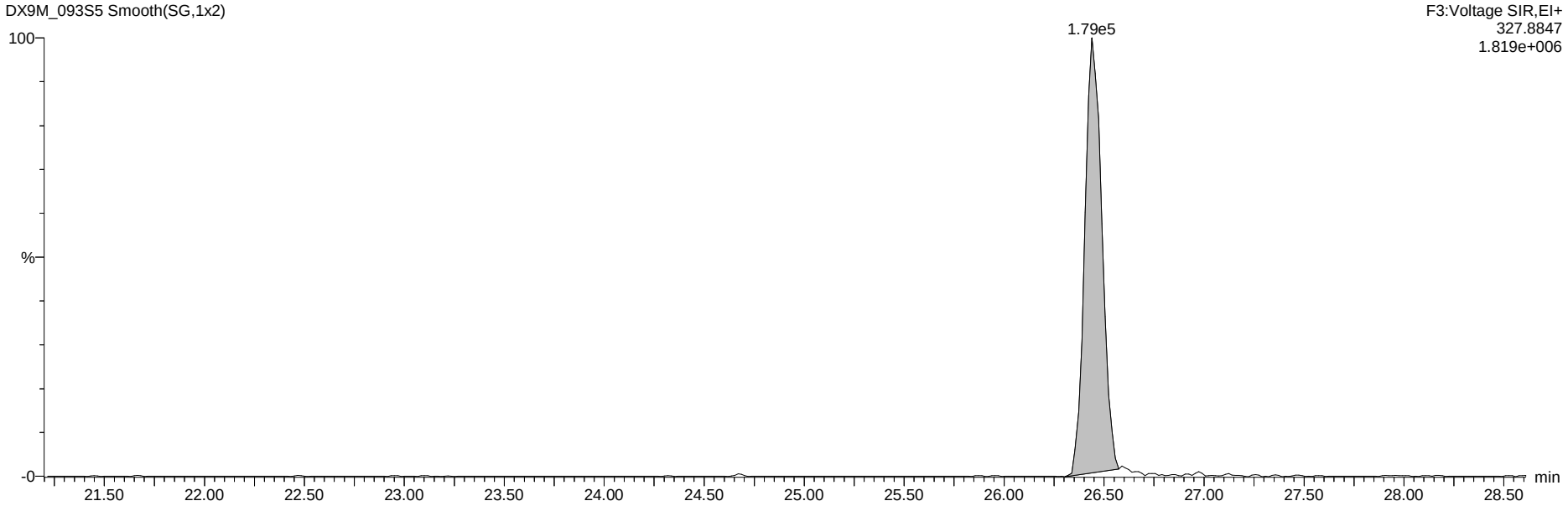




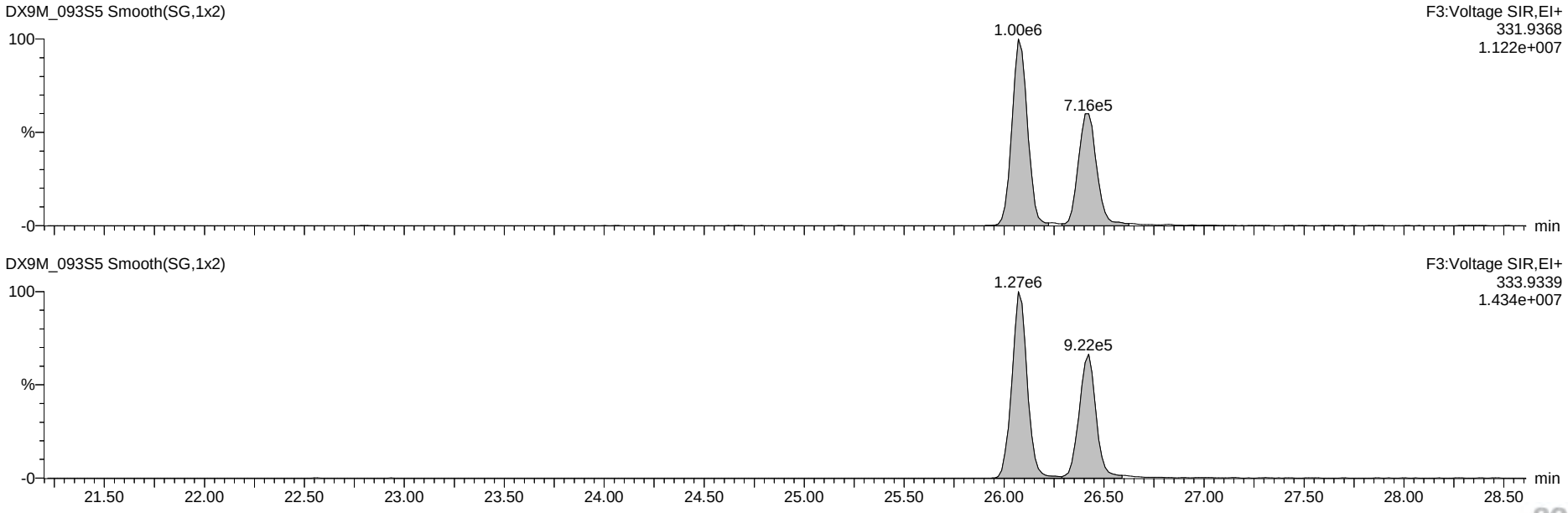
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S5, Date: 12-Sep-2019, Time: 12:44:54, ID: WG69303-101,I,BLK, Description: 1,WG69303,1.0/20uL

37Cl-2,3,7,8-TCDD



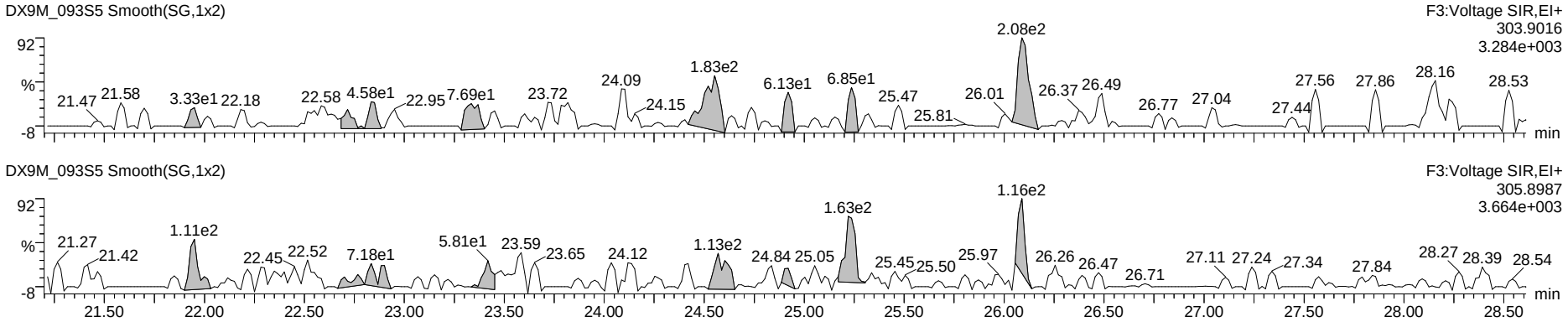
13C-Tetra-Dioxins



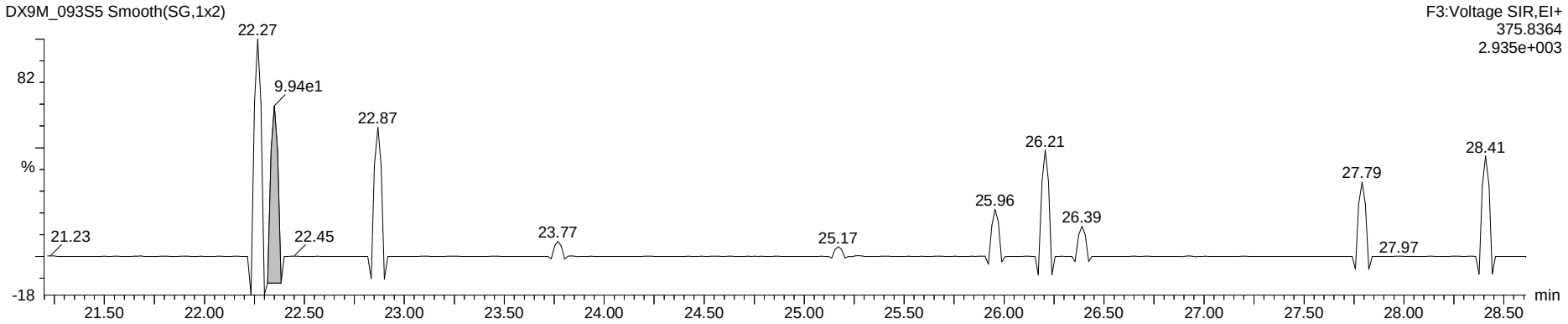
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S5, Date: 12-Sep-2019, Time: 12:44:54, ID: WG69303-101,I,BLK, Description: 1,WG69303,1.0/20uL

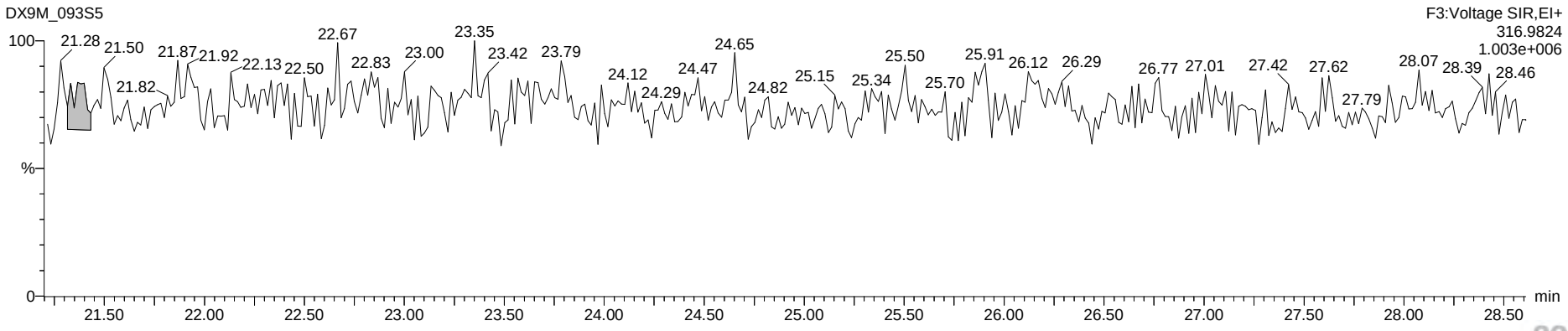
Total Tetra-Furans



Hexa DPE



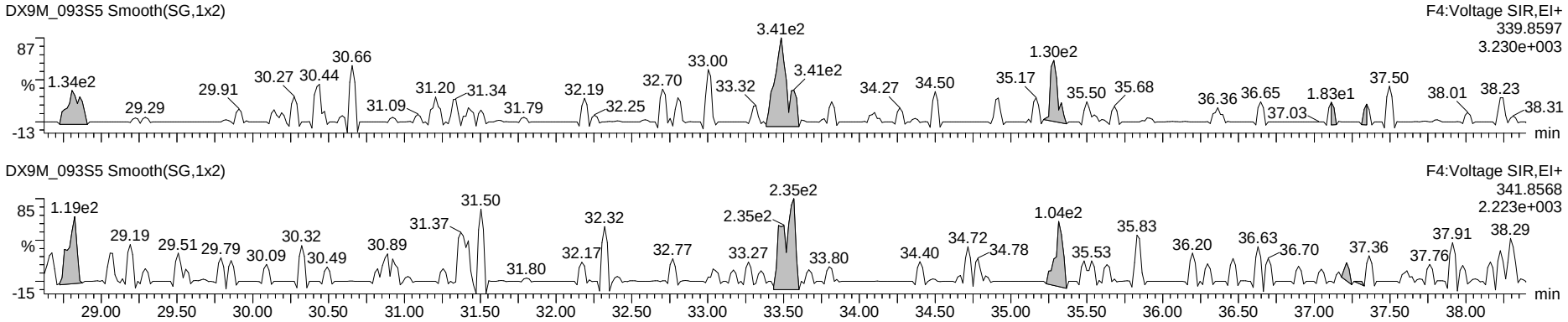
Tetra Lock



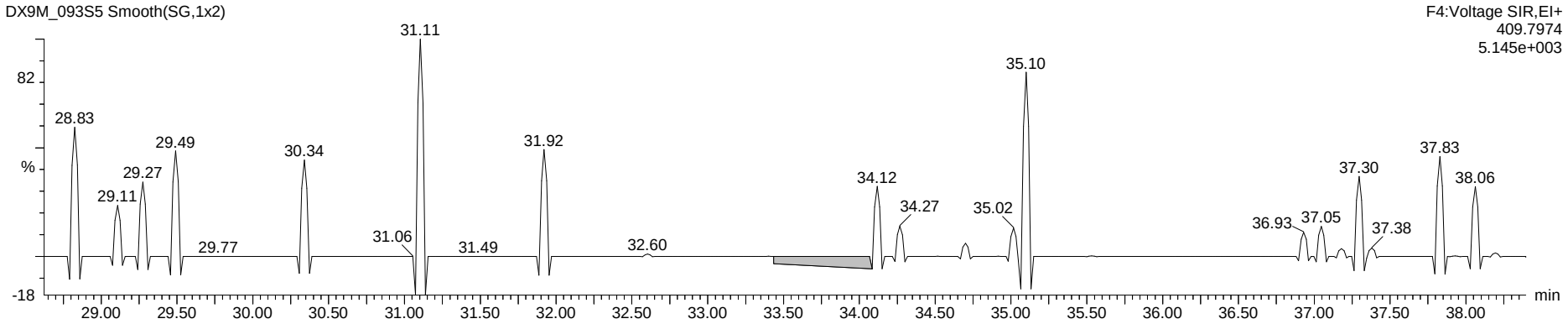
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S5, Date: 12-Sep-2019, Time: 12:44:54, ID: WG69303-101,I,BLK, Description: 1,WG69303,1.0/20uL

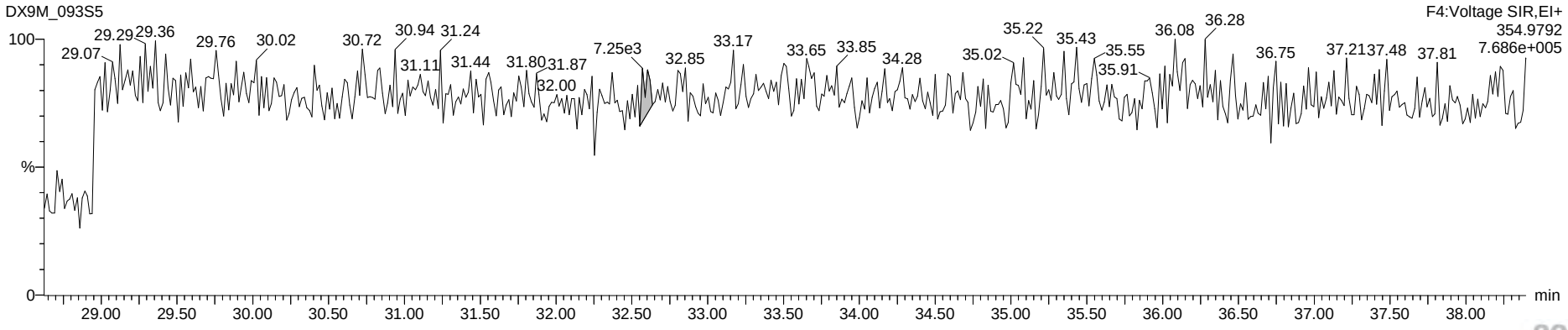
Total Penta-Furans



Hepta DPE



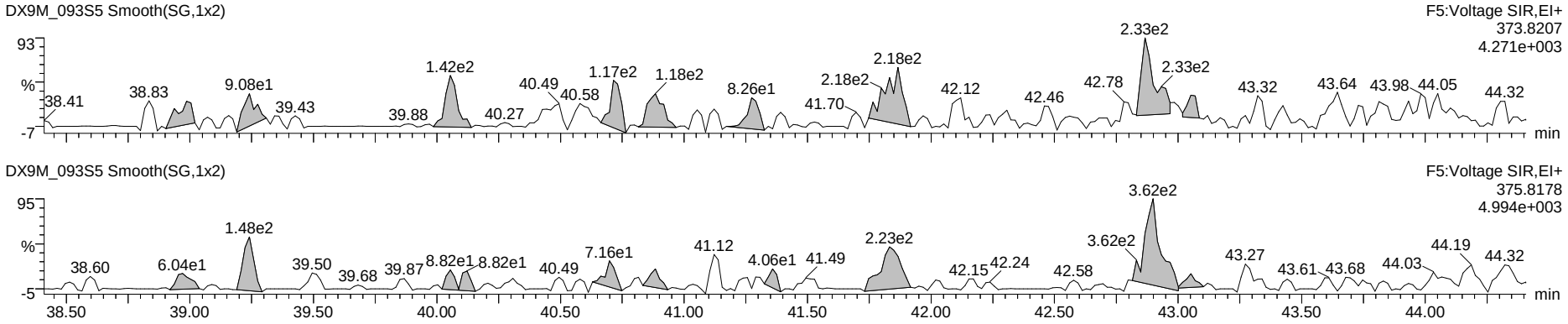
Penta Lock



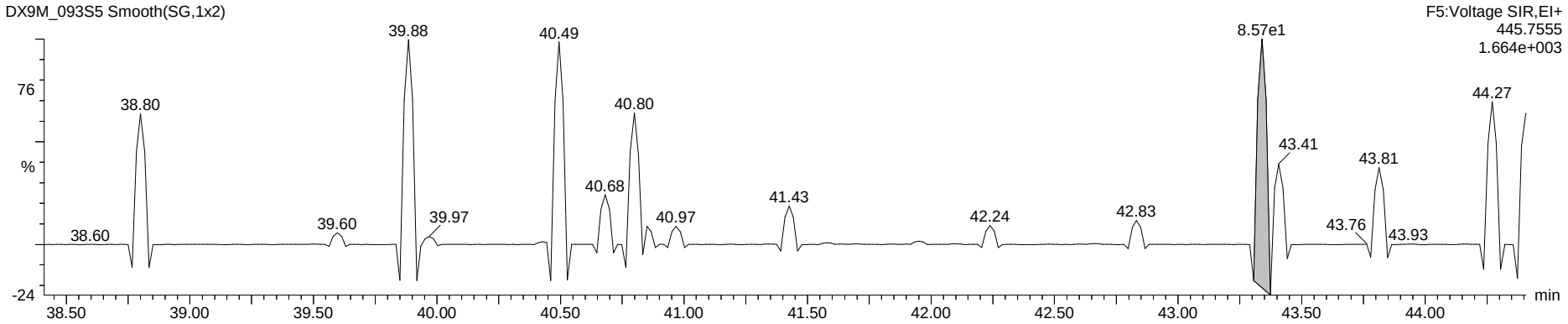
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S5, Date: 12-Sep-2019, Time: 12:44:54, ID: WG69303-101,I,BLK, Description: 1,WG69303,1.0/20uL

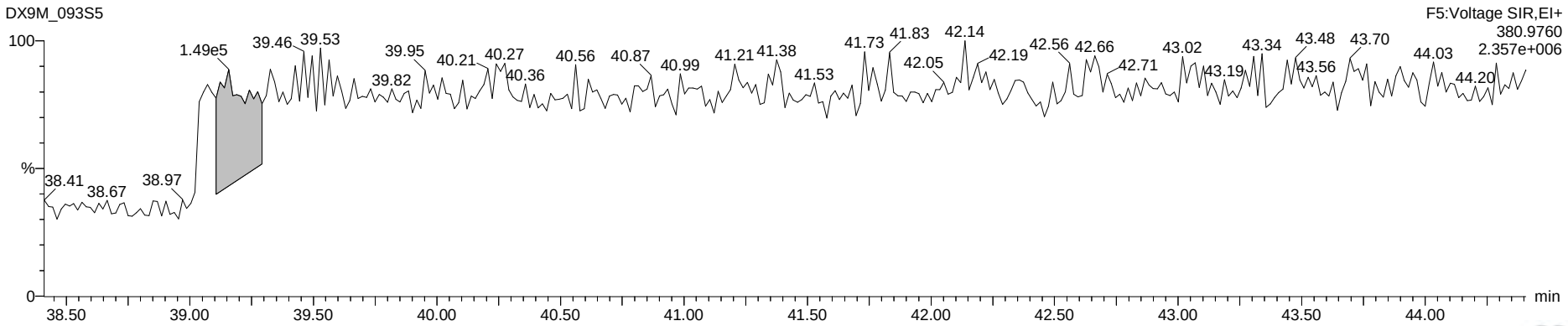
Total Hexa-Furans



Octa DPE



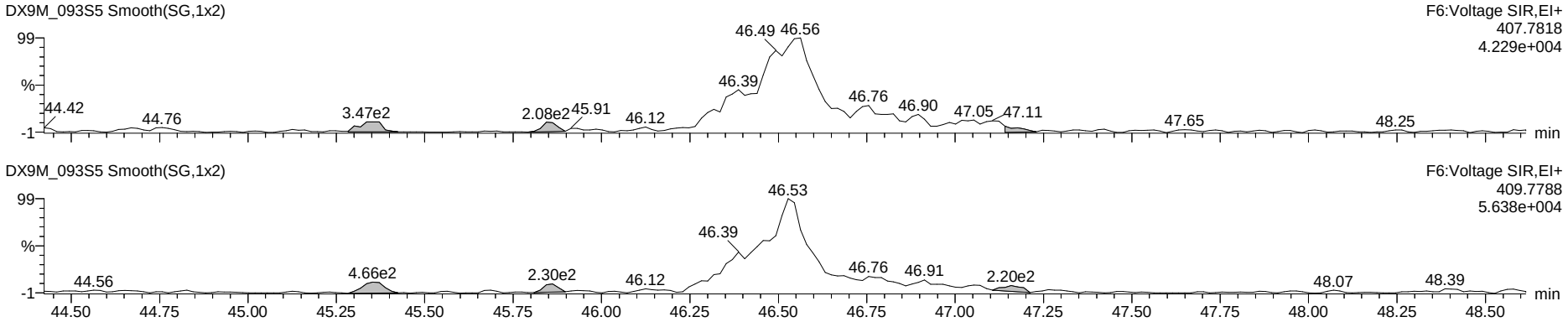
Hexa Lock



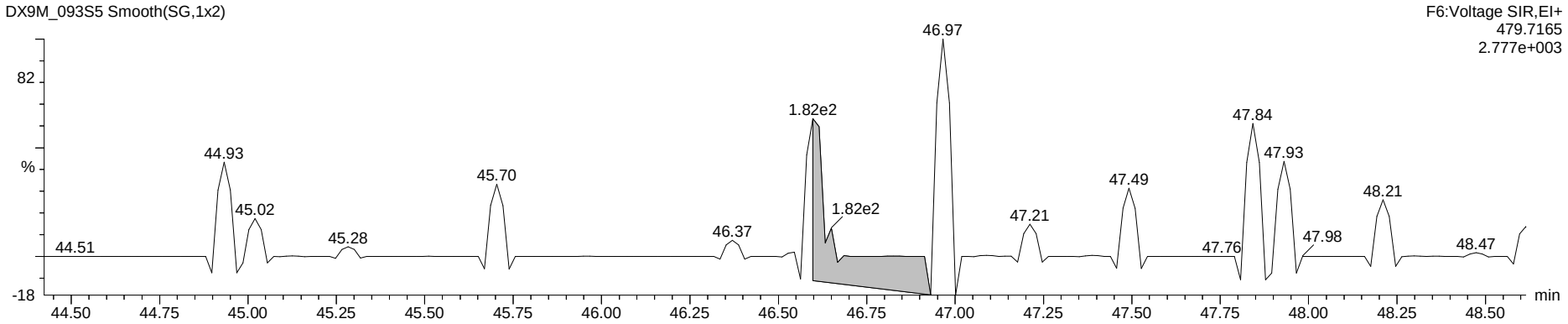
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S5, Date: 12-Sep-2019, Time: 12:44:54, ID: WG69303-101,I,BLK, Description: 1,WG69303,1.0/20uL

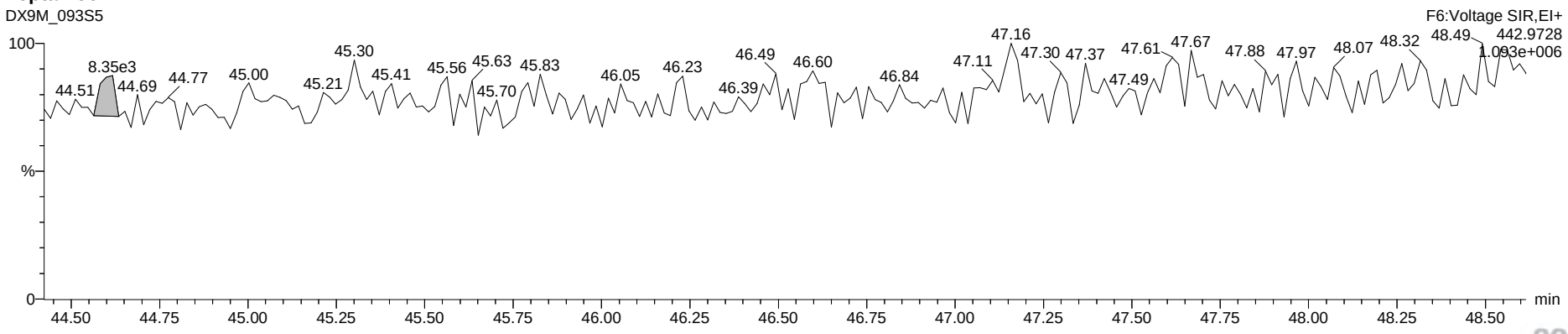
Total Hepta-Furans



Nona DPE



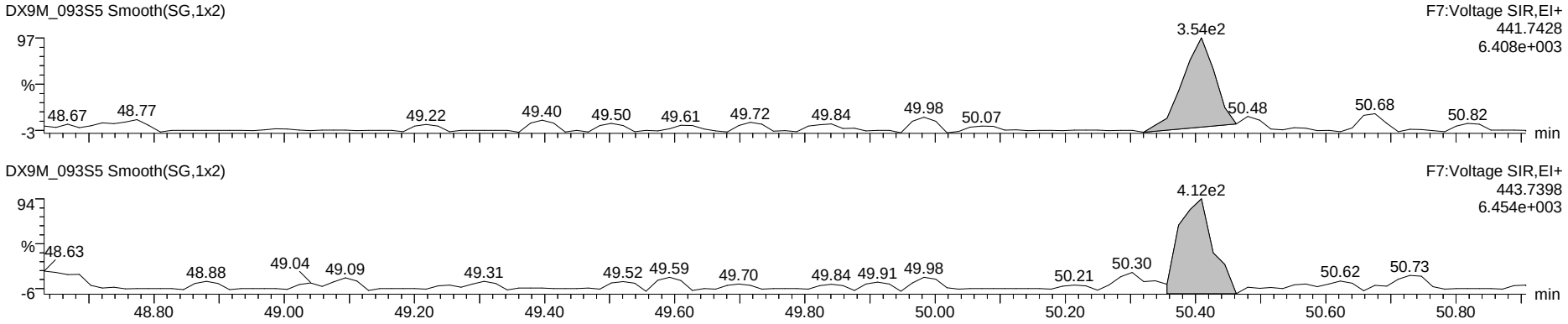
Hepta Lock



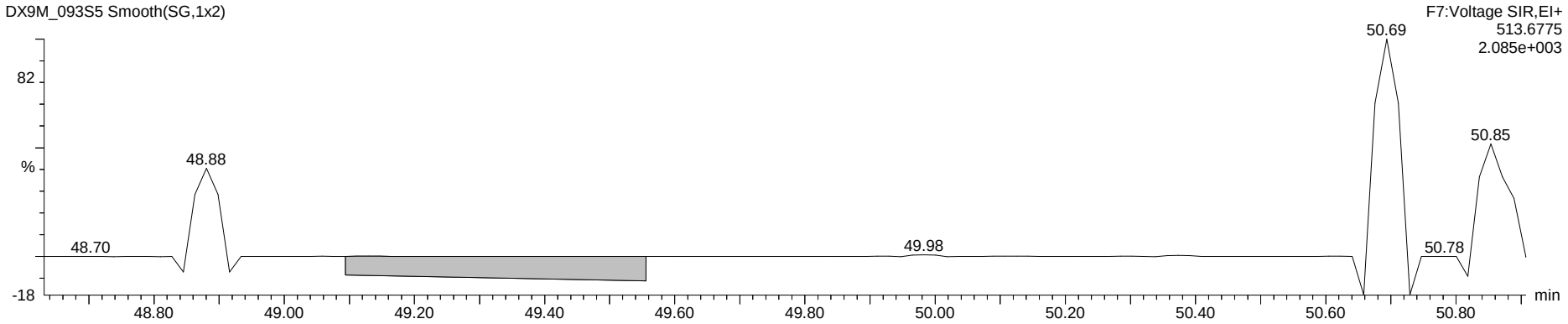
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S5, Date: 12-Sep-2019, Time: 12:44:54, ID: WG69303-101,I,BLK, Description: 1,WG69303,1.0/20uL

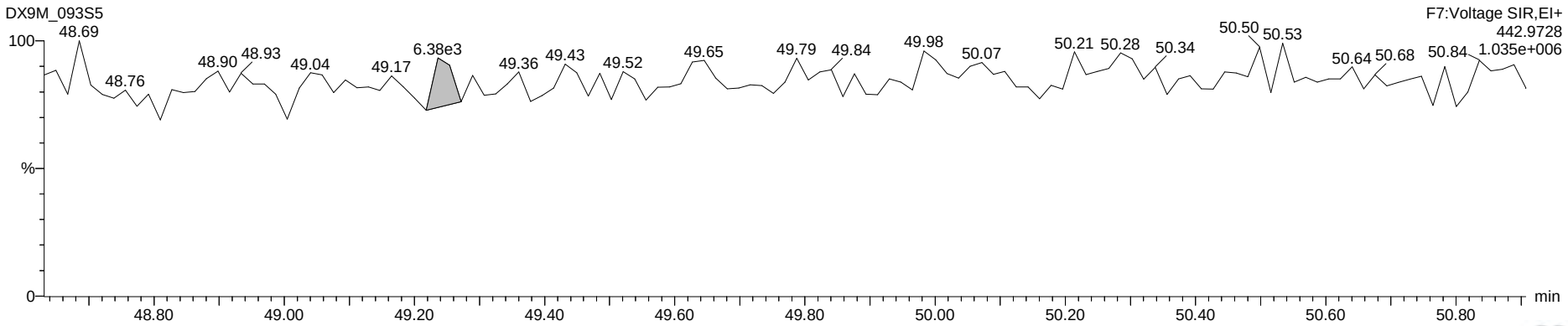
OCDF



Deca DPE



Octa Lock



Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S2, Date: 12-Sep-2019, Time: 10:01:18, ID: WG69303-102,I,SPM, Description: 1,WG69303,1.0/20uL

	Name	Sample Size	Resp	Ratio	fails?	RT	pg	DL	%Rec	Noise 1	Noise 2
1	2,3,7,8-TCDF	20.000	2.59e5	0.78	NO	25.24	9.275	0.0267		1.60e3	1.68e3
2	1,2,3,7,8-PeCDF	20.000	1.29e6	1.56	NO	33.52	50.022	0.0494		2.04e3	2.72e3
3	2,3,4,7,8-PeCDF	20.000	1.34e6	1.53	NO	35.30	50.221	0.0378		2.04e3	2.72e3
4	1,2,3,4,7,8-HxCDF	20.000	1.25e6	1.23	NO	40.73	48.225	0.0367		2.23e3	3.37e3
5	1,2,3,6,7,8-HxCDF	20.000	1.39e6	1.27	NO	40.90	52.170	0.0361		2.23e3	3.37e3
6	2,3,4,6,7,8-HxCDF	20.000	1.40e6	1.23	NO	41.85	49.825	0.0334		2.23e3	3.37e3
7	1,2,3,7,8,9-HxCDF	20.000	1.20e6	1.20	NO	42.90	49.312	0.0408		2.23e3	3.37e3
8	1,2,3,4,6,7,8-HpCDF	20.000	1.54e6	1.07	NO	45.35	55.684	0.0241		2.09e3	2.11e3
9	1,2,3,4,7,8,9-HpCDF	20.000	1.34e6	1.02	NO	47.16	52.812	0.0260		2.09e3	2.11e3
10	OCDF	20.000	2.27e6	0.91	NO	50.43	93.266	0.0175		1.23e3	1.39e3
11	2,3,7,8-TCDD	20.000	2.20e5	0.76	NO	26.46	10.390	0.0335		1.17e3	1.88e3
12	1,2,3,7,8-PeCDD	20.000	1.00e6	0.61	NO	36.11	49.304	0.0302		1.61e3	1.37e3
13	1,2,3,4,7,8-HxCDD	20.000	1.01e6	1.21	NO	42.12	49.596	0.0475		2.65e3	3.32e3
14	1,2,3,6,7,8-HxCDD	20.000	1.01e6	1.20	NO	42.27	50.521	0.0522		2.65e3	3.32e3
15	1,2,3,7,8,9-HxCDD	20.000	1.06e6	1.22	NO	42.70	53.303	0.0503		2.65e3	3.32e3
16	1,2,3,4,6,7,8-HpCDD	20.000	1.00e6	1.03	NO	46.74	48.758	0.0261		1.56e3	1.71e3
17	OCDD	20.000	2.05e6	0.87	NO	50.34	97.807	0.0304		1.15e3	2.78e3
18	13C-2,3,7,8-TCDF	20.000	3.02e6	0.73	NO	25.20	76.669	0.0617	76.7	4.60e3	5.84e3
19	13C-1,2,3,7,8-PeCDF	20.000	2.77e6	1.56	NO	33.49	86.611	0.1066	86.6	7.49e3	7.18e3
20	13C-2,3,4,7,8-PeCDF	20.000	2.81e6	1.56	NO	35.27	85.328	0.1034	85.3	7.49e3	7.18e3
21	13C-1,2,3,4,7,8-HxCDF	20.000	2.35e6	0.52	NO	40.70	77.289	0.0586	77.3	5.36e3	5.37e3
22	13C-1,2,3,6,7,8-HxCDF	20.000	2.48e6	0.51	NO	40.88	74.301	0.0533	74.3	5.36e3	5.37e3
23	13C-2,3,4,6,7,8-HxCDF	20.000	2.48e6	0.52	NO	41.83	82.417	0.0591	82.4	5.36e3	5.37e3
24	13C-1,2,3,7,8,9-HxCDF	20.000	2.30e6	0.50	NO	42.88	86.021	0.0665	86.0	5.36e3	5.37e3
25	13C-1,2,3,4,6,7,8-HpCDF	20.000	2.21e6	0.46	NO	45.34	88.193	0.0546	88.2	4.67e3	3.58e3
26	13C-1,2,3,4,7,8,9-HpCDF	20.000	2.03e6	0.45	NO	47.14	99.957	0.0673	100.0	4.67e3	3.58e3
27	13C-2,3,7,8-TCDD	20.000	1.92e6	0.75	NO	26.42	76.702	0.1232	76.7	5.14e3	8.12e3
28	13C-1,2,3,7,8-PeCDD	20.000	2.06e6	0.64	NO	36.10	103.591	0.0410	103.6	1.58e3	1.93e3
29	13C-1,2,3,4,7,8-HxCDD	20.000	1.97e6	1.25	NO	42.10	81.331	0.0657	81.3	4.30e3	5.31e3
30	13C-1,2,3,6,7,8-HxCDD	20.000	2.13e6	1.30	NO	42.26	79.479	0.0595	79.5	4.30e3	5.31e3
31	13C-1,2,3,4,6,7,8-HpCDD	20.000	2.63e6	1.07	NO	46.72	97.107	0.0456	97.1	5.58e3	1.87e3
32	13C-OCDD	20.000	4.28e6	0.91	NO	50.32	214.584	0.0226	107.3	1.01e3	1.71e3
33	13C-1,2,3,4-TCDD	20.000	2.58e6	0.82	NO	26.09	3.209	0.0038	3.2	5.14e3	8.12e3
34	13C-1,2,3,7,8,9-HxCDD	20.000	2.50e6	1.25	NO	42.68	4.310	0.0027	4.3	4.30e3	5.31e3
35	37Cl-2,3,7,8-TCDD	20.000	2.34e5			26.46	8.476	0.0215	84.8		2.55e3
36	Total Tetra-Furans	20.000					29.842	0.0267			1.68e3
37	Total Tetra-Dioxins	20.000					40.590	0.0335			1.88e3
38	Total Penta-Furans	20.000					129.931	0.0440			2.72e3
39	Total Penta-Dioxins	20.000					93.632	0.0302			1.37e3
40	Total Hexa-Furans	20.000					202.590	0.0362			3.37e3
41	Total Hexa-Dioxins	20.000					155.417	0.0476			3.32e3
42	Total Hepta-Furans	20.000					110.204	0.0251			2.11e3
43	Total Hepta-Dioxins	20.000					50.994	0.0261			1.71e3
44	Hexa DPE	1.000	1.86e2			24.57					2.13e0
45	Hepta DPE	1.000	2.77e2			35.30					8.24e1
46	Octa DPE	1.000	1.05e2			39.95					2.19e0
47	Nona DPE	1.000	2.52e2			46.33					3.69e2
48	Deca DPE	1.000	1.40e2			48.86					3.64e0
49	Tetra Lock	1.000	2.36e4			21.22					2.68e5
50	Penta Lock	1.000	2.30e4			32.90					2.16e5
51	Hexa Lock	1.000									6.84e5
52	Hepta Lock	1.000	9.90e3			44.77					2.82e5
53	Octa Lock	1.000	1.68e4			48.79					2.65e5
54	13C-Tetra-Furans	20.000					76.669	0.0617			5.84e3
55	13C-Tetra-Dioxins	20.000					79.911	0.1270			8.12e3

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

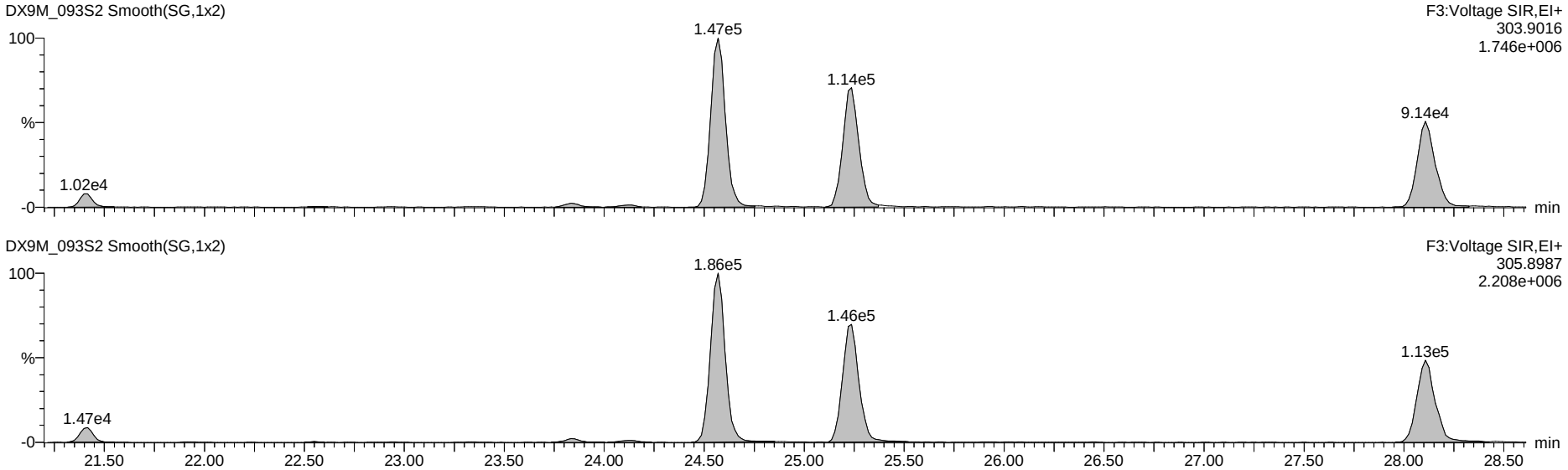
SV HH 22 Sept 2019

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

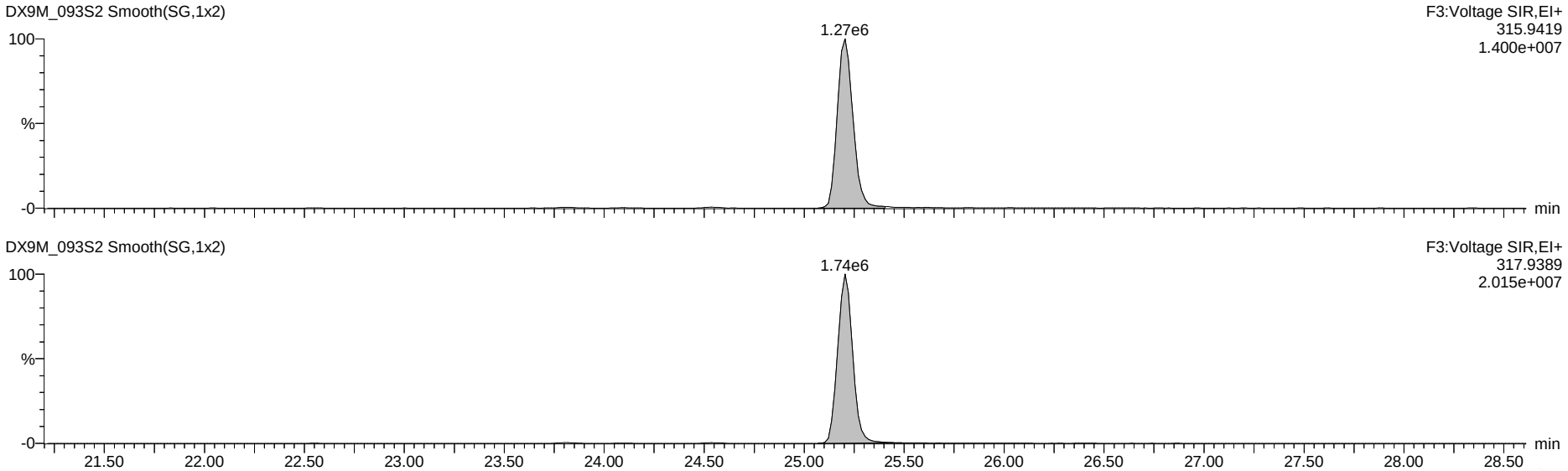
Method: G:\Masslynx\Inst_M\Exported_methods\DX_1613B_16.mdb 07 Sep 2017 16:45:23
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

Name: DX9M_093S2, Date: 12-Sep-2019, Time: 10:01:18, ID: WG69303-102,I,SPM, Description: 1,WG69303,1.0/20uL

Total Tetra-Furans



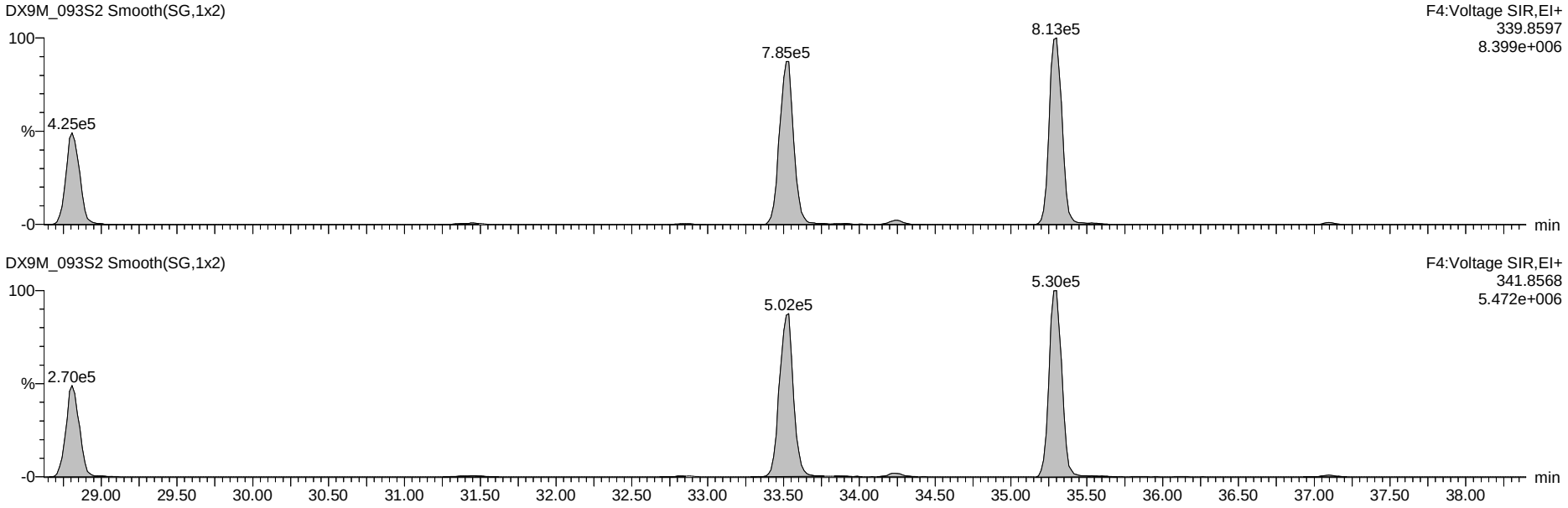
13C-Tetra-Furans



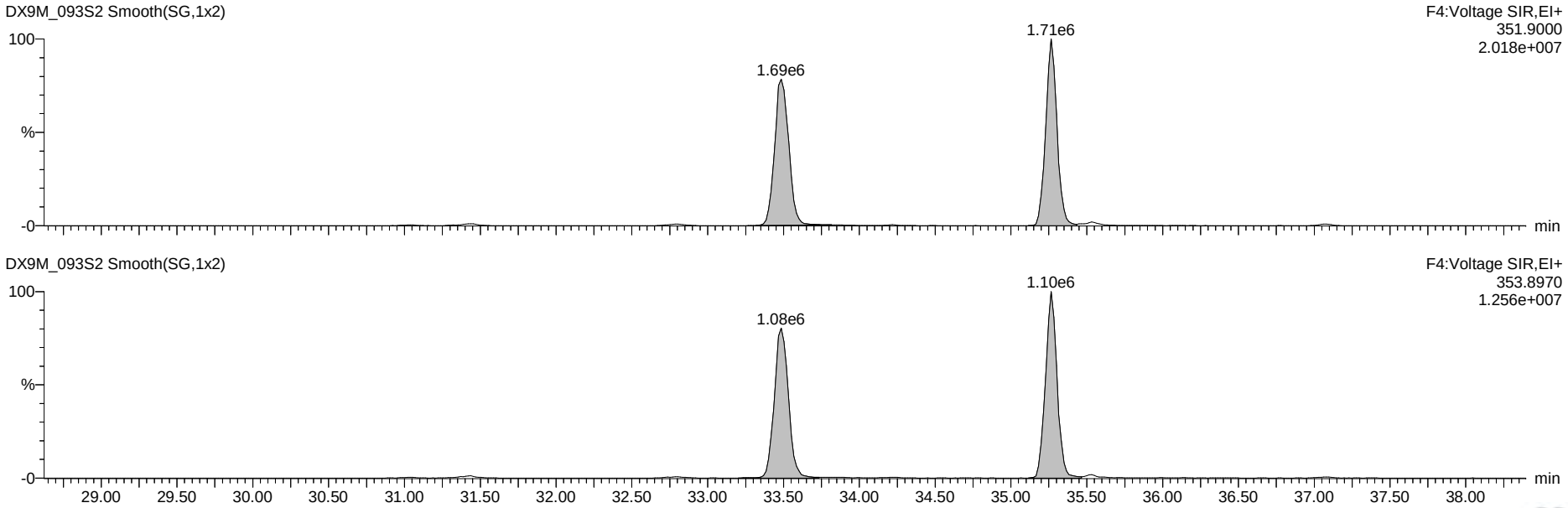
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S2, Date: 12-Sep-2019, Time: 10:01:18, ID: WG69303-102,I,SPM, Description: 1,WG69303,1.0/20uL

Total Penta-Furans



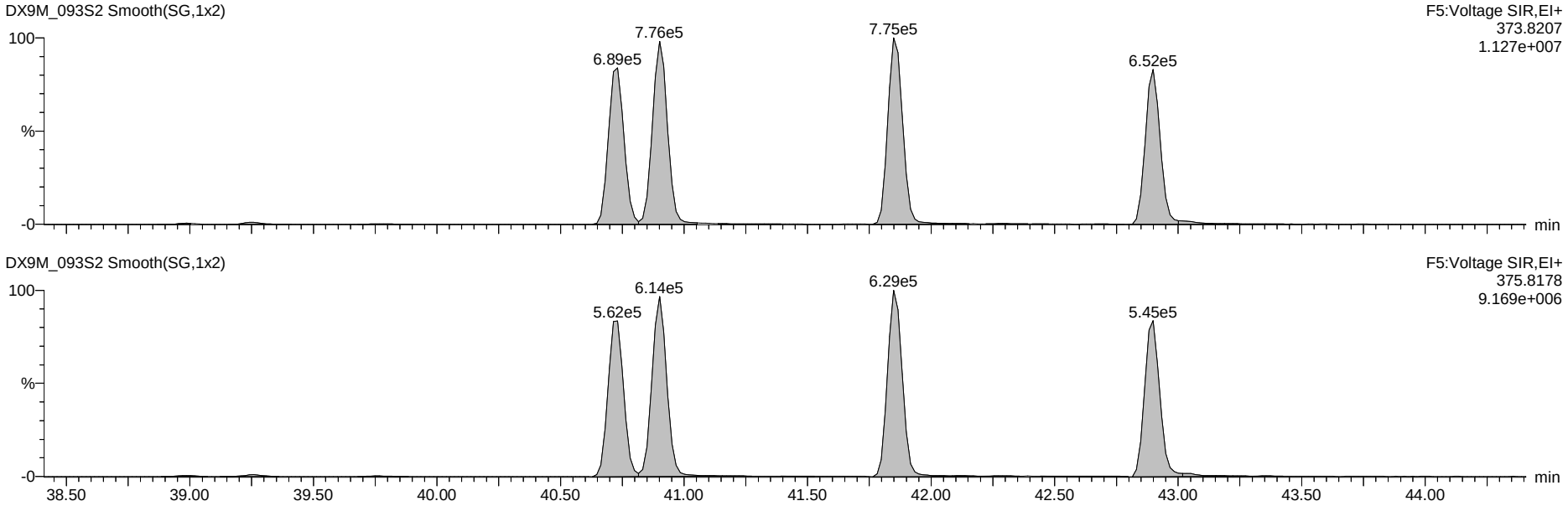
13C-Penta-Furans



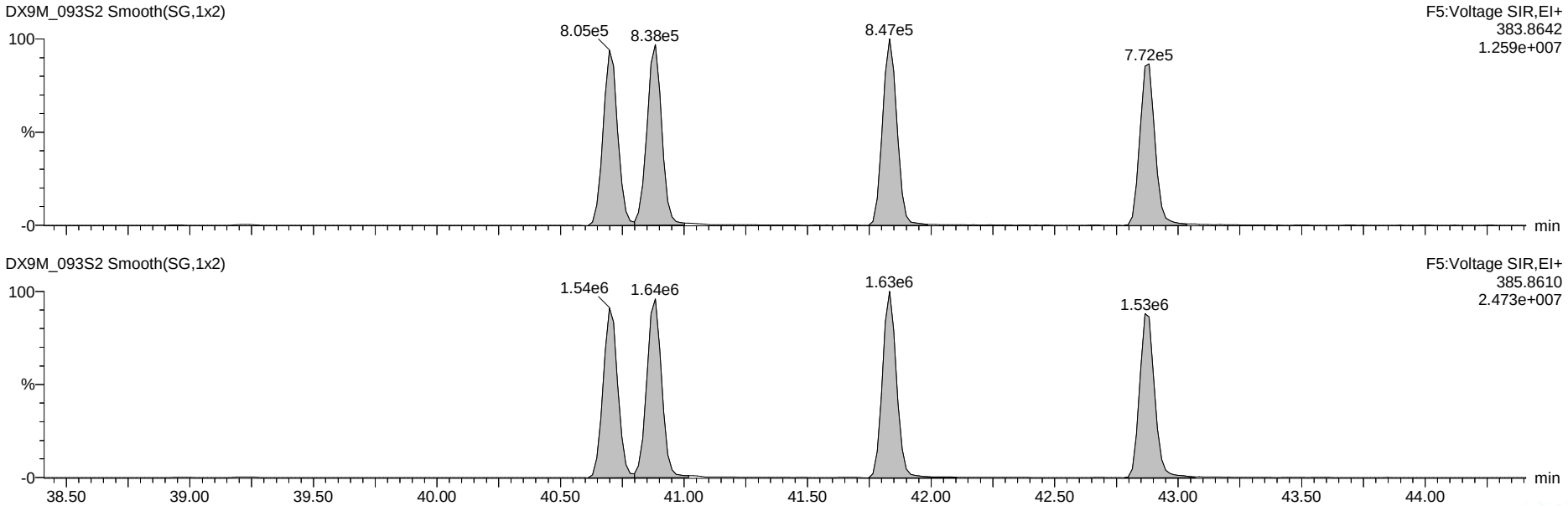
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S2, Date: 12-Sep-2019, Time: 10:01:18, ID: WG69303-102,I,SPM, Description: 1,WG69303,1.0/20uL

Total Hexa-Furans



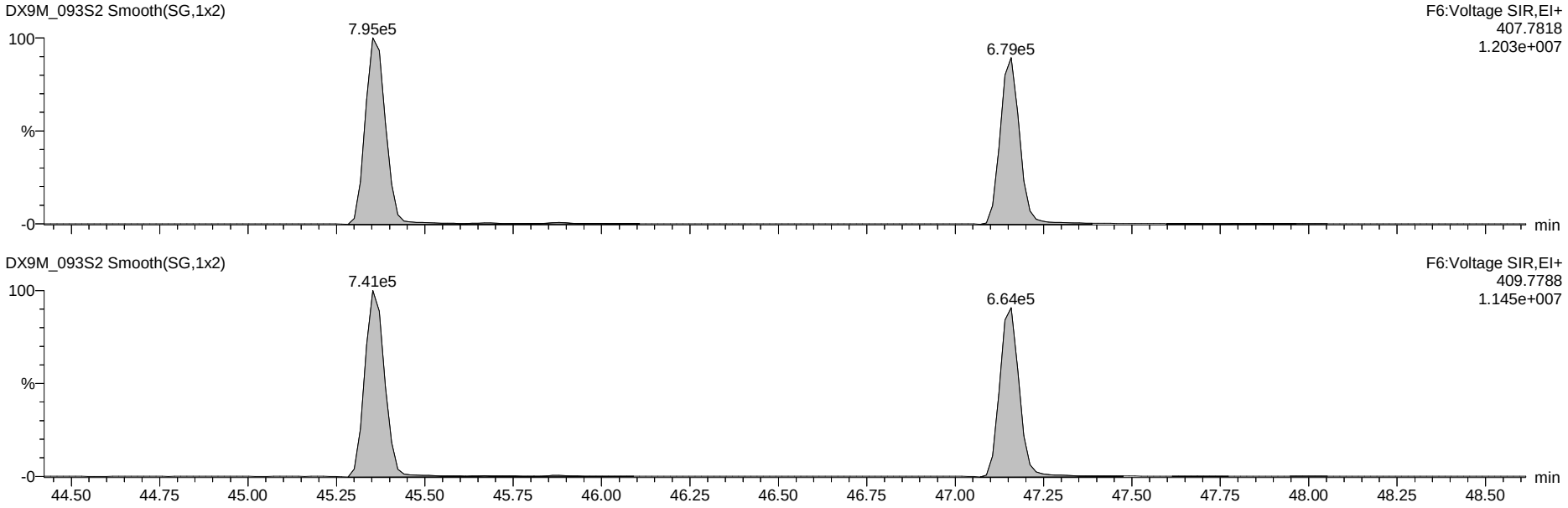
13C-Hexa-Furans



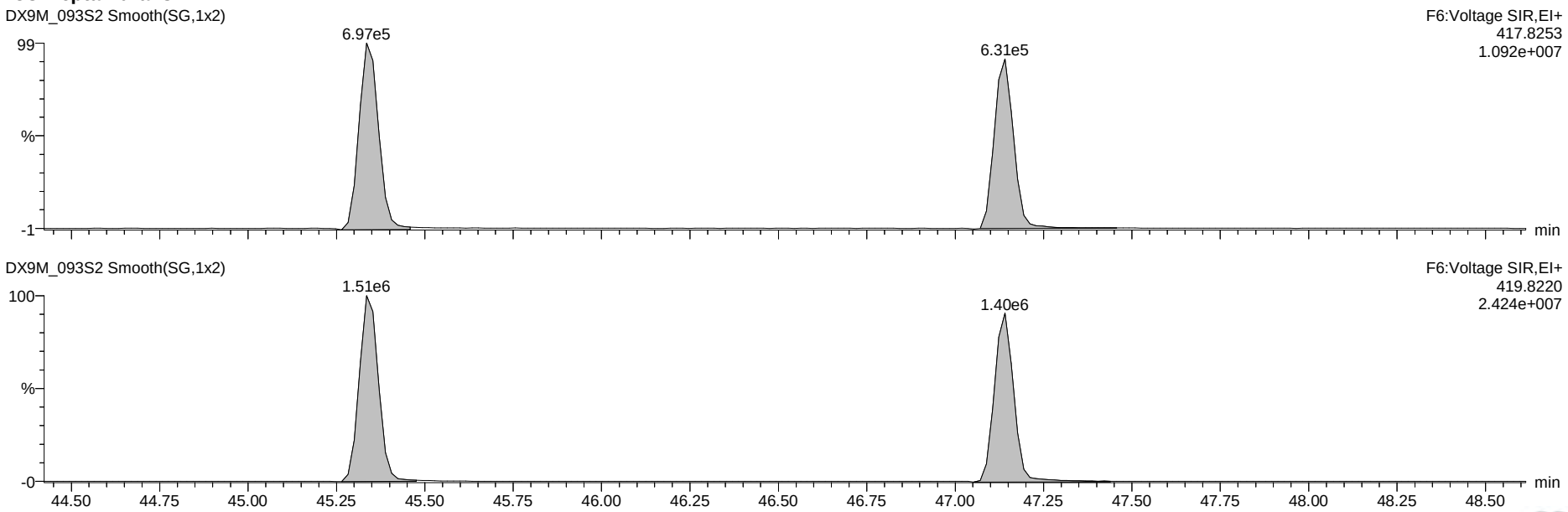
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S2, Date: 12-Sep-2019, Time: 10:01:18, ID: WG69303-102,I,SPM, Description: 1,WG69303,1.0/20uL

Total Hepta-Furans



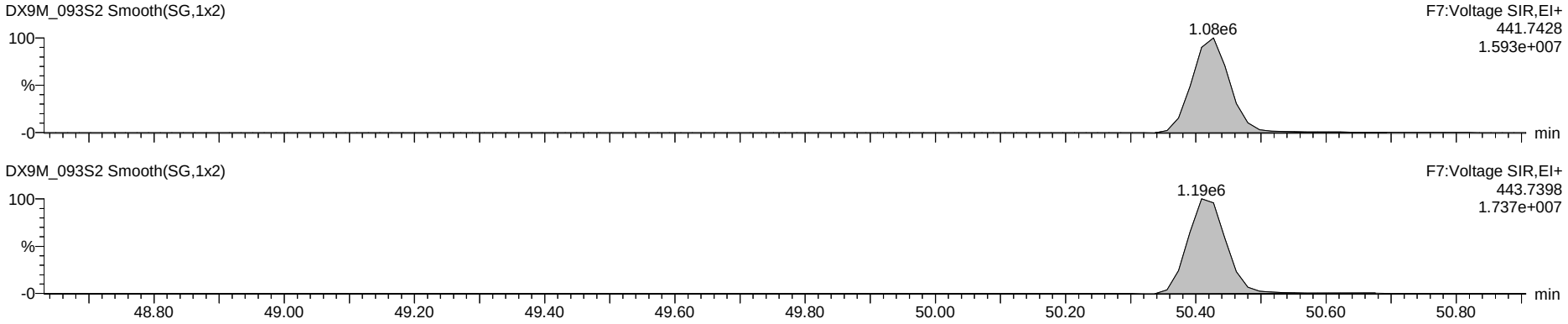
13C-Hepta-Furans



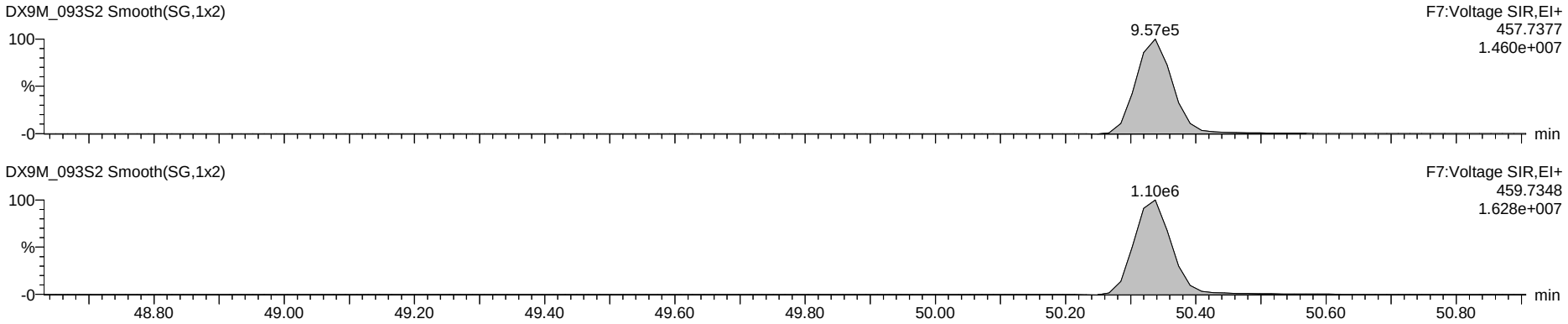
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S2, Date: 12-Sep-2019, Time: 10:01:18, ID: WG69303-102,I,SPM, Description: 1,WG69303,1.0/20uL

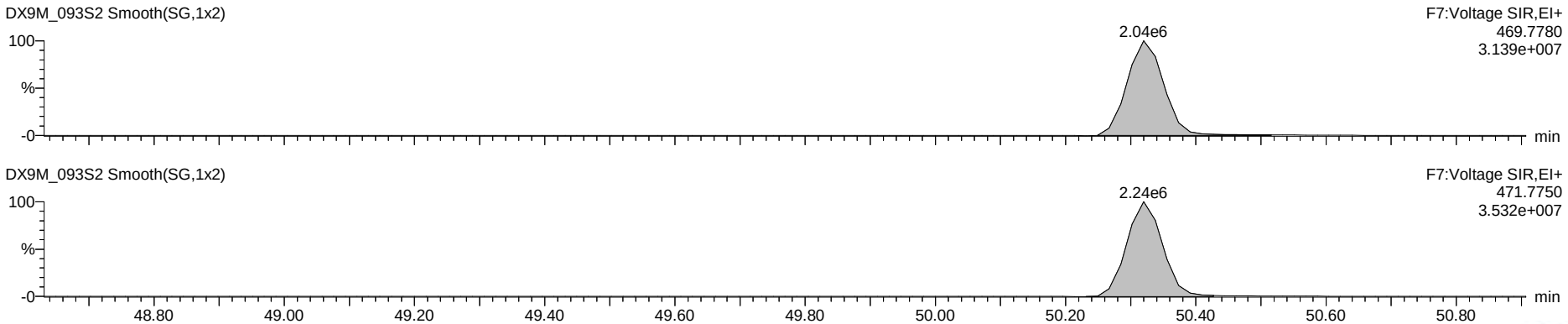
OCDF



OCDD



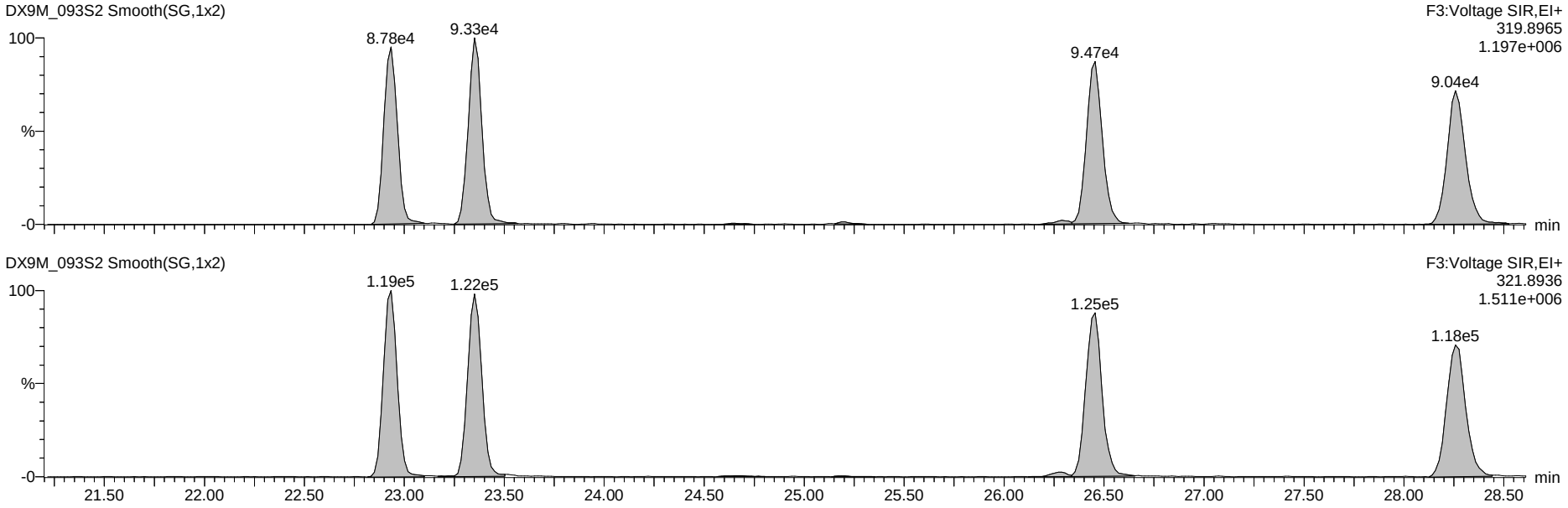
13C-OCDD



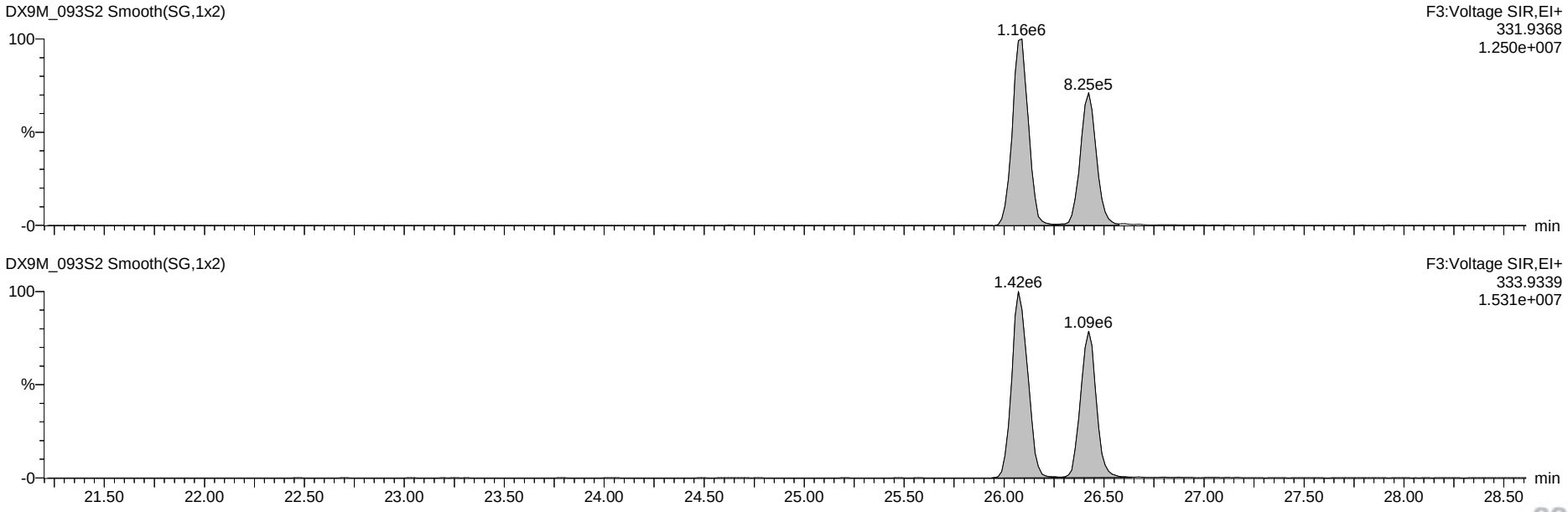
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S2, Date: 12-Sep-2019, Time: 10:01:18, ID: WG69303-102,I,SPM, Description: 1,WG69303,1.0/20uL

Total Tetra-Dioxins



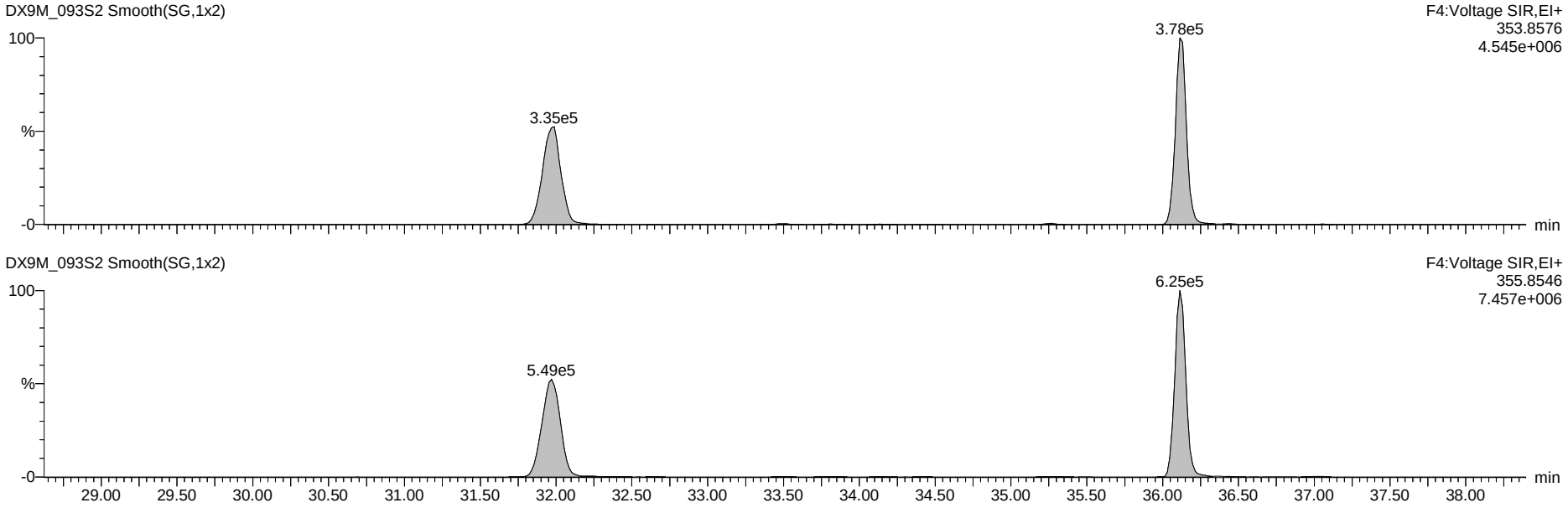
13C-Tetra-Dioxins



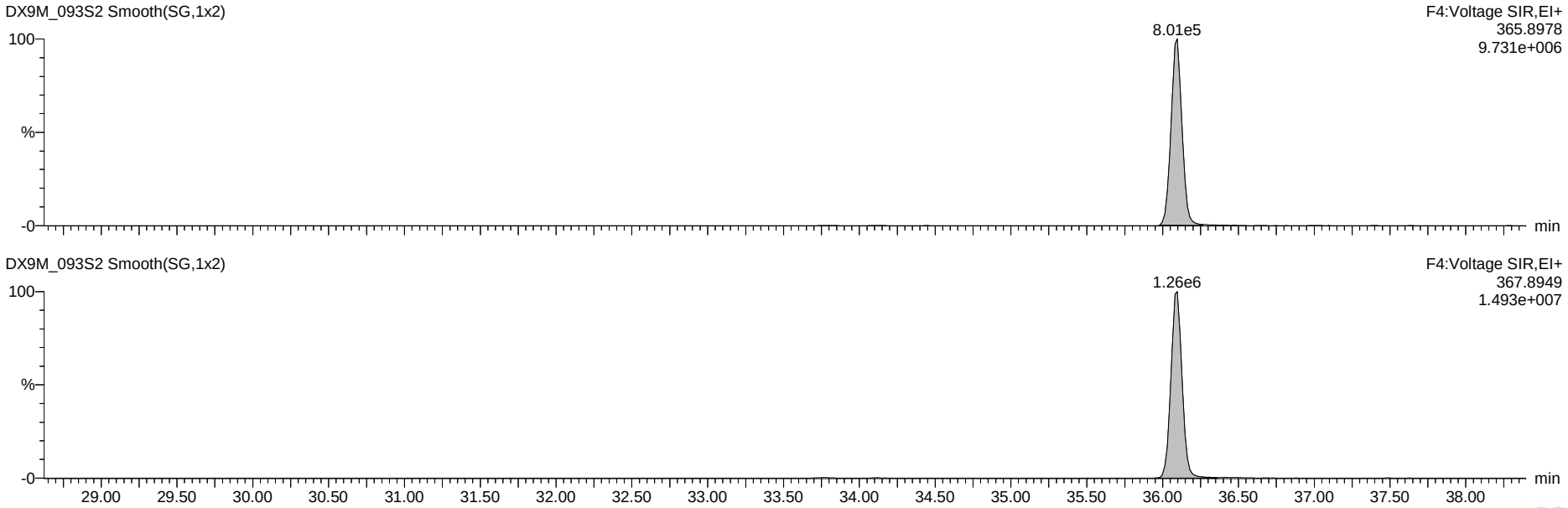
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S2, Date: 12-Sep-2019, Time: 10:01:18, ID: WG69303-102,I,SPM, Description: 1,WG69303,1.0/20uL

Total Penta-Dioxins



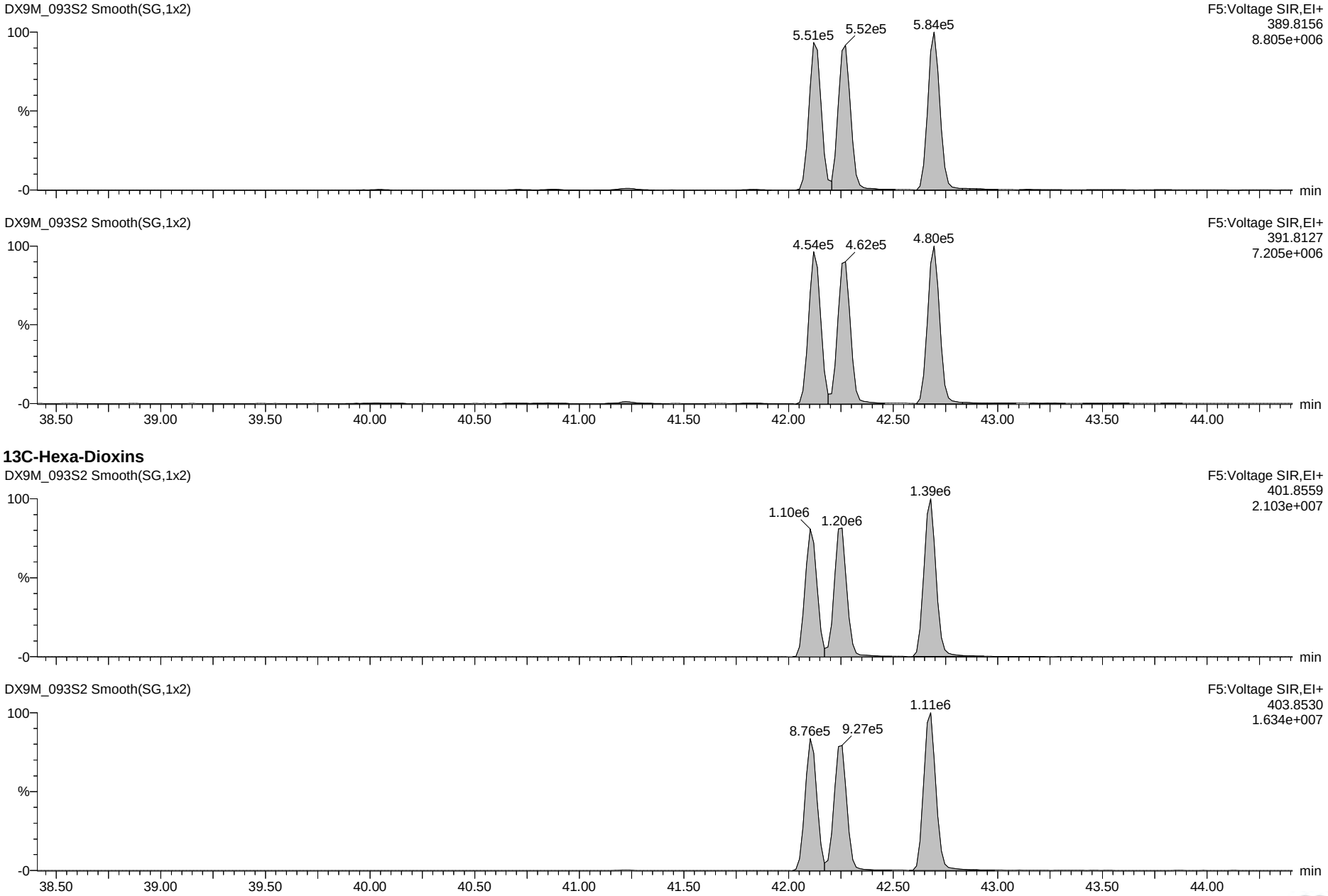
13C-Penta-Dioxins



Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S2, Date: 12-Sep-2019, Time: 10:01:18, ID: WG69303-102,I,SPM, Description: 1,WG69303,1.0/20uL

Total Hexa-Dioxins

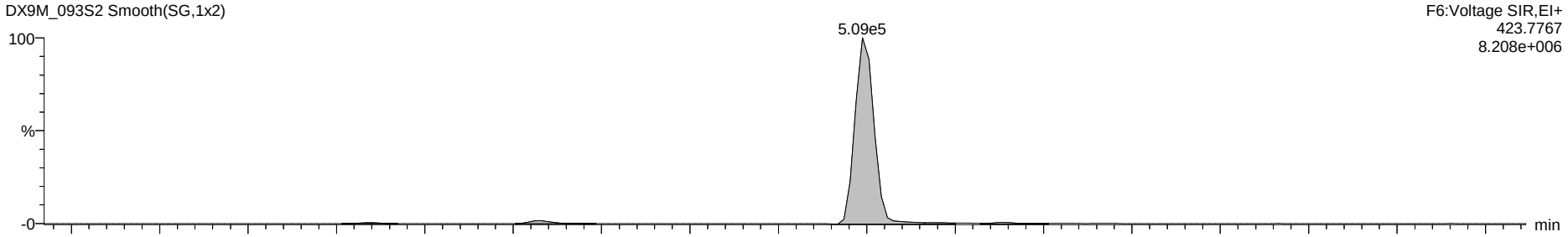


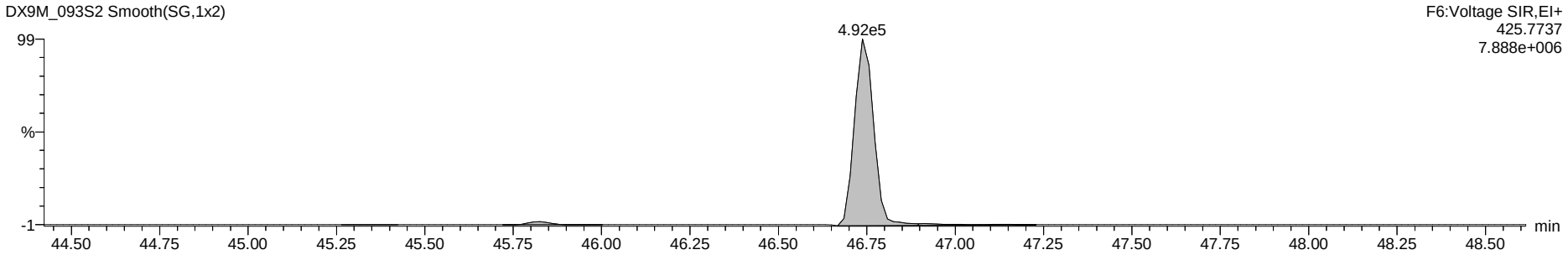
13C-Hexa-Dioxins

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

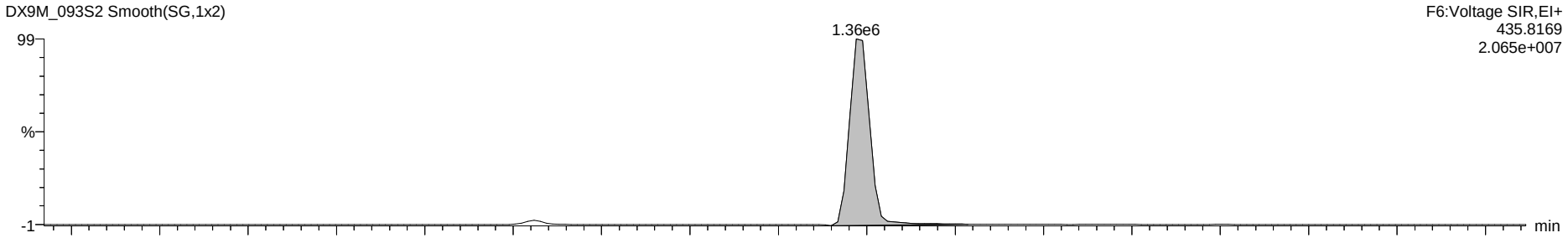
Name: DX9M_093S2, Date: 12-Sep-2019, Time: 10:01:18, ID: WG69303-102,I,SPM, Description: 1,WG69303,1.0/20uL

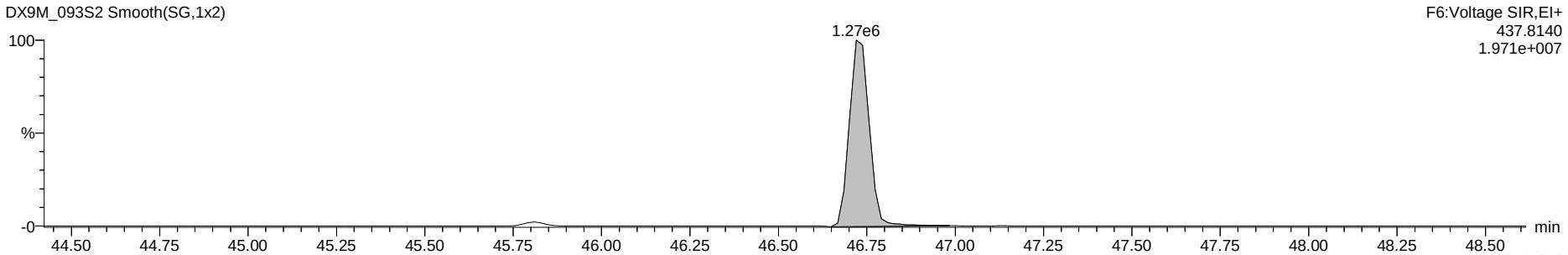
Total Hepta-Dioxins





13C-Hepta-Dioxins

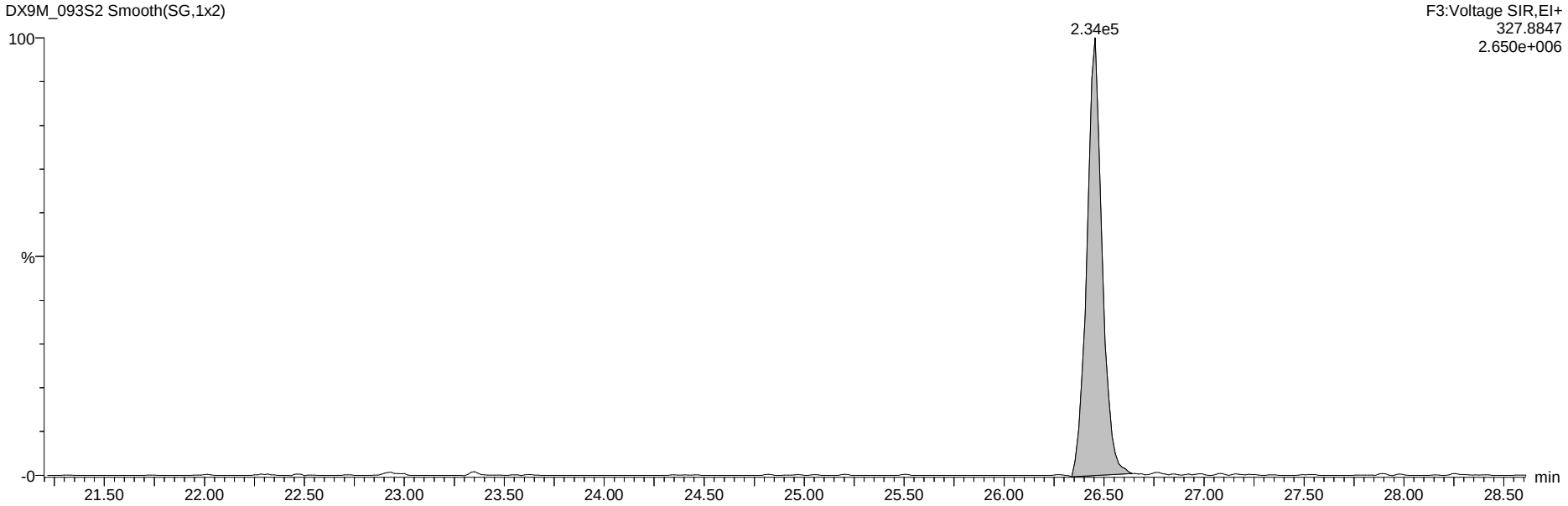




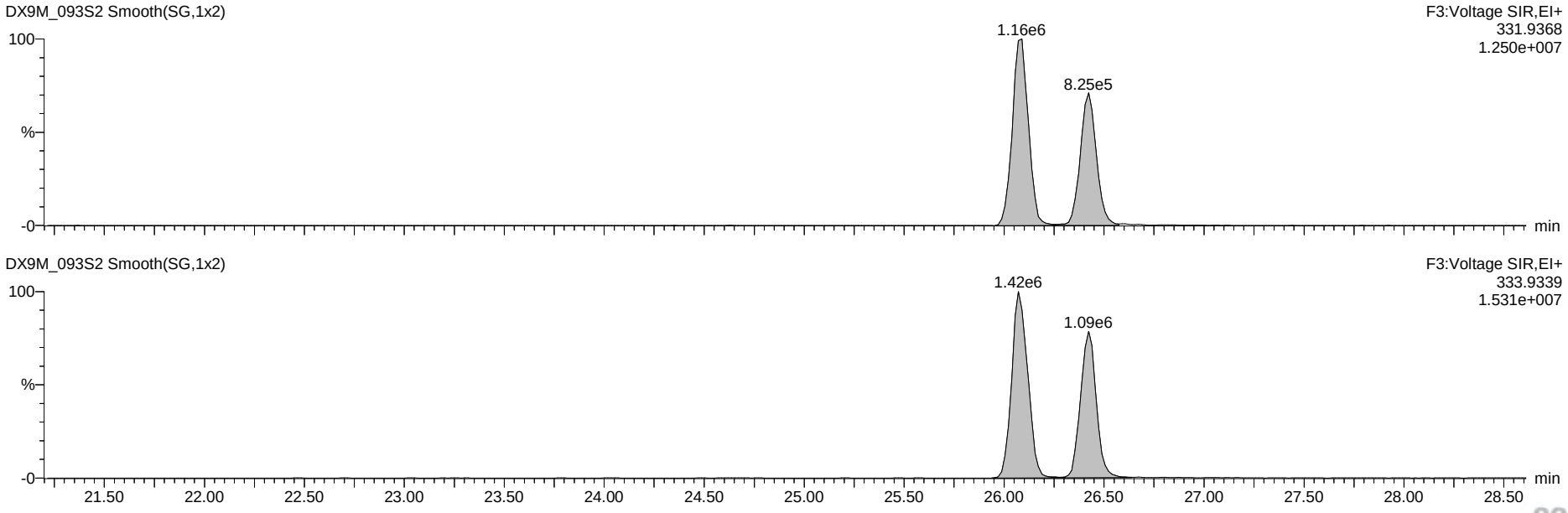
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S2, Date: 12-Sep-2019, Time: 10:01:18, ID: WG69303-102,I,SPM, Description: 1,WG69303,1.0/20uL

37Cl-2,3,7,8-TCDD



13C-Tetra-Dioxins



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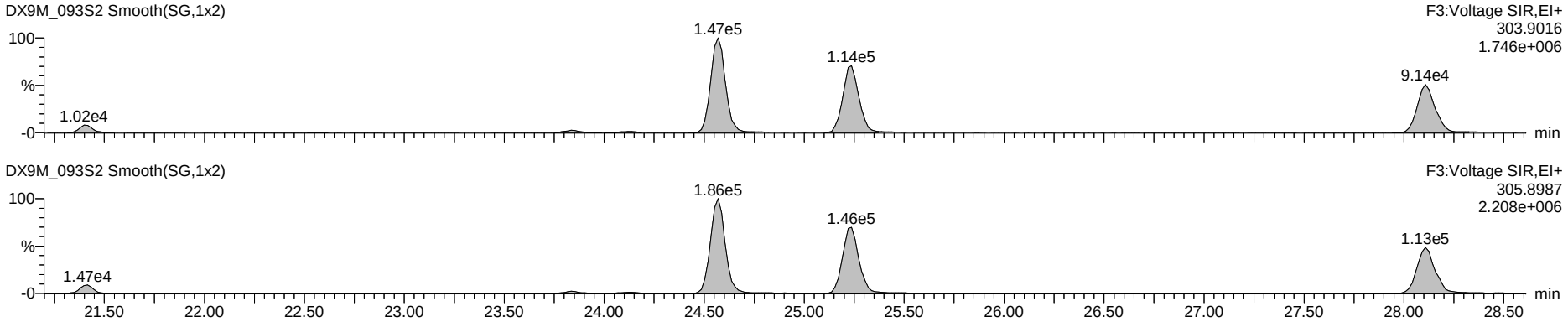
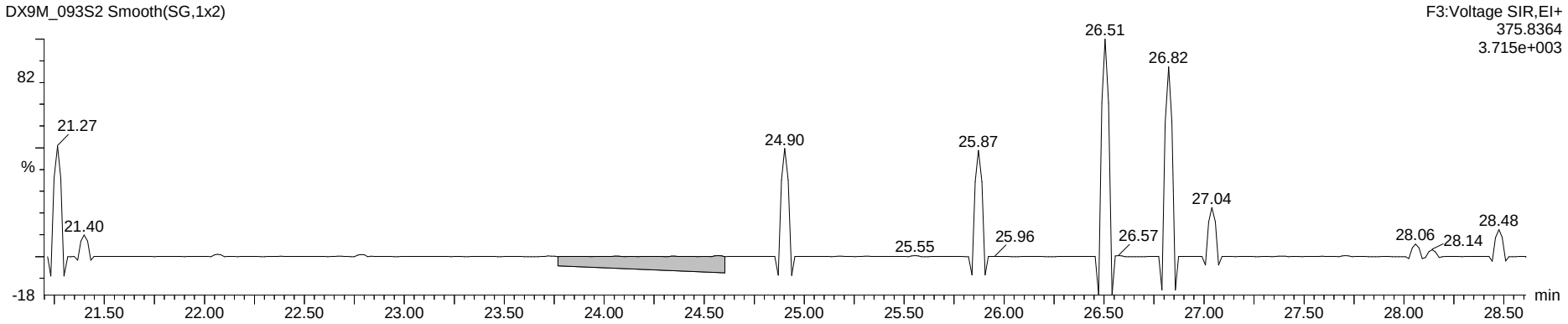
Name: DX9M_093S2, Date: 12-Sep-2019, Time: 10:01:18, ID: WG69303-102,I,SPM, Description: 1,WG69303,1.0/20uL

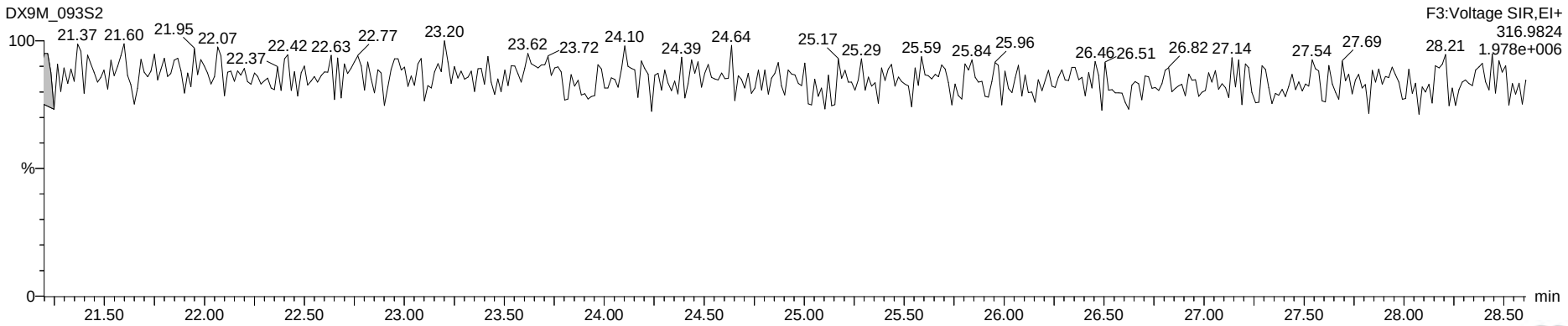
Total Tetra-Furans



Hexa DPE



Tetra Lock



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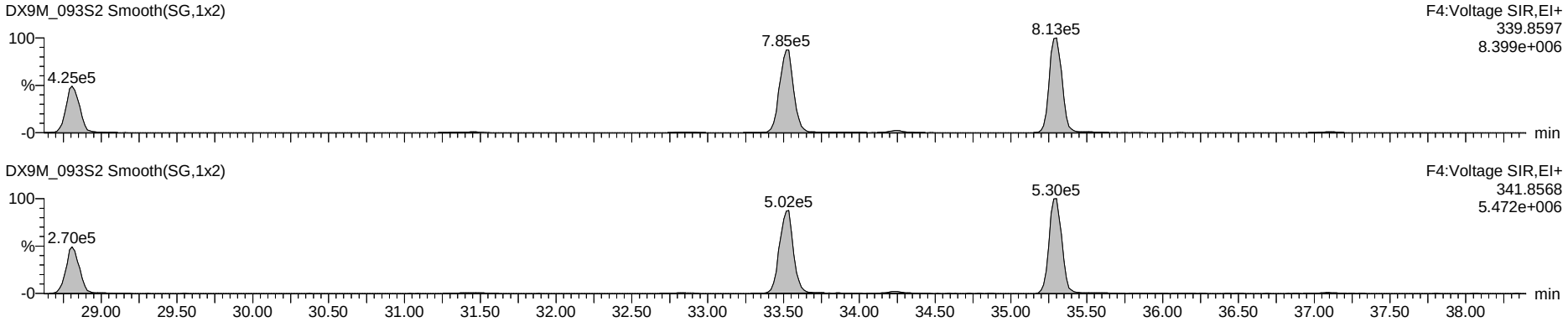
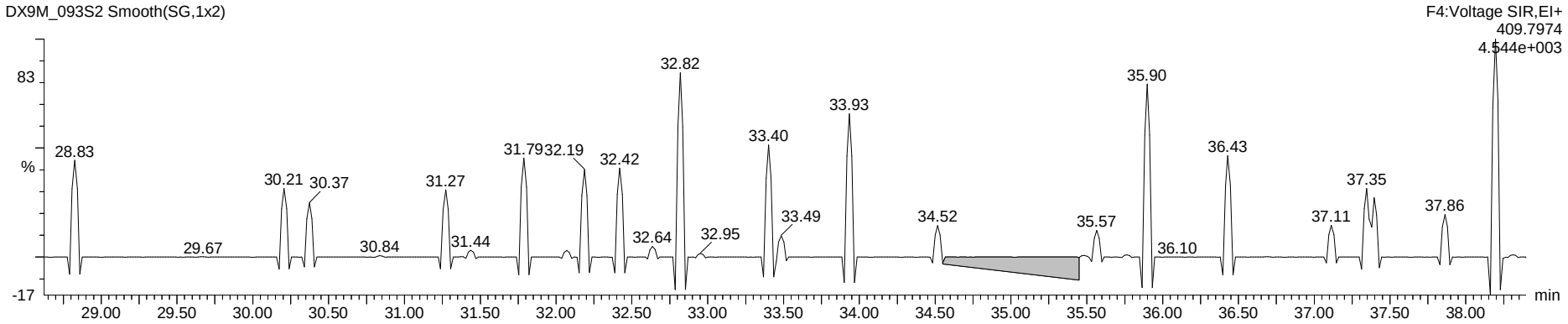
Name: DX9M_093S2, Date: 12-Sep-2019, Time: 10:01:18, ID: WG69303-102,I,SPM, Description: 1,WG69303,1.0/20uL

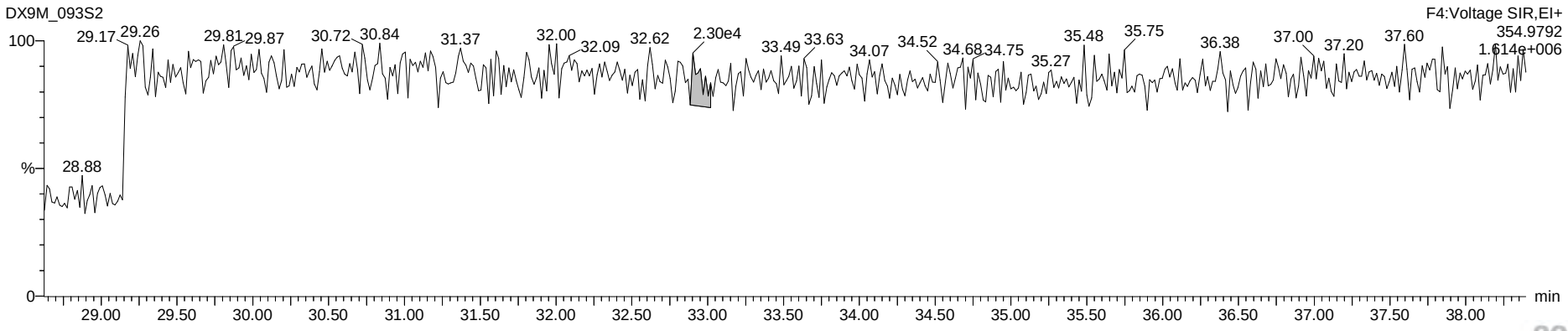
Total Penta-Furans



Hepta DPE



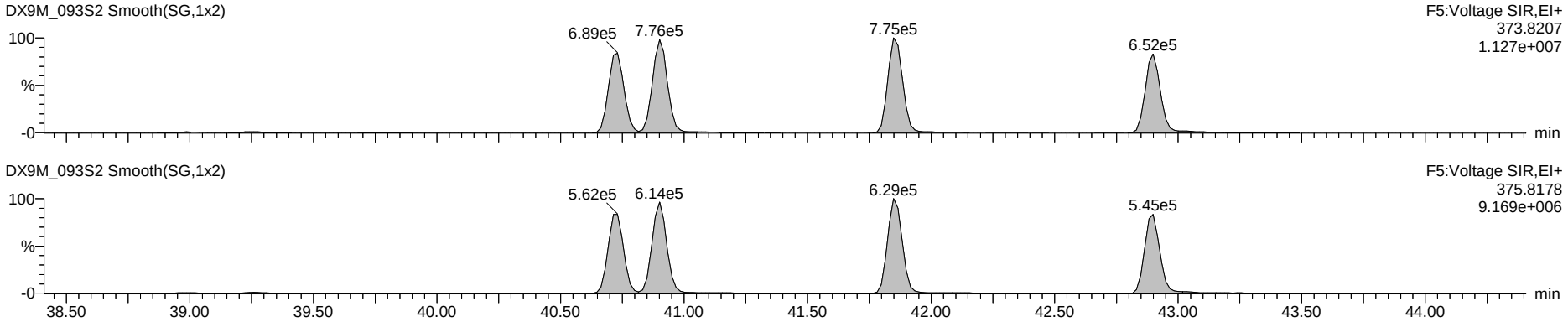
Penta Lock



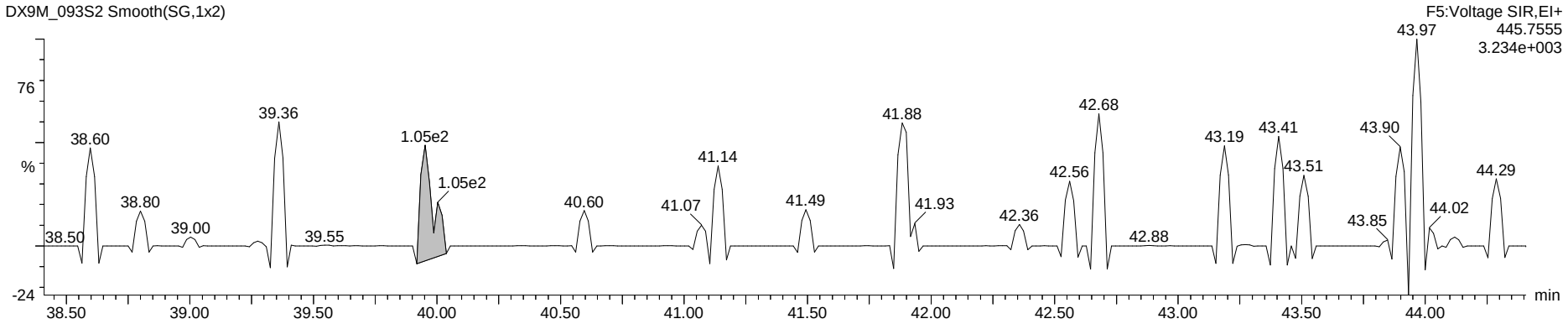
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S2, Date: 12-Sep-2019, Time: 10:01:18, ID: WG69303-102,I,SPM, Description: 1,WG69303,1.0/20uL

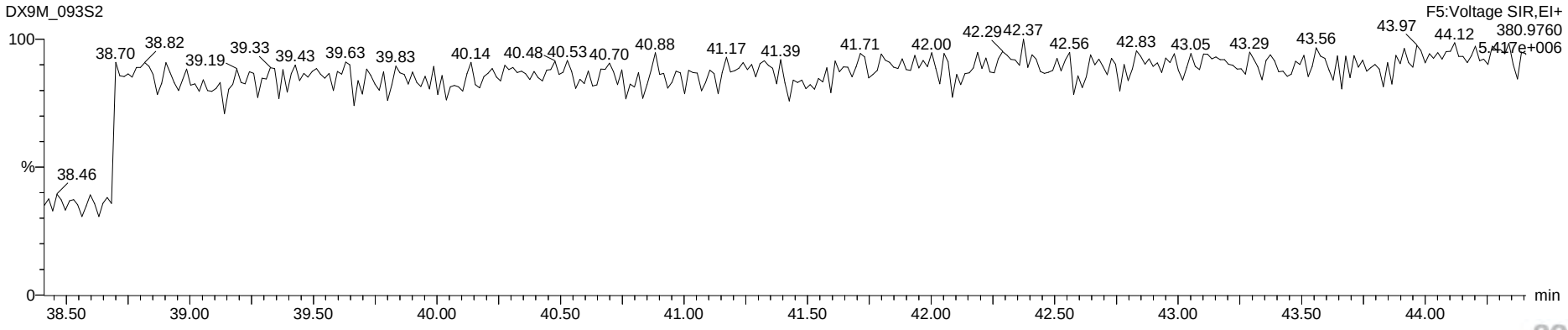
Total Hexa-Furans



Octa DPE



Hexa Lock



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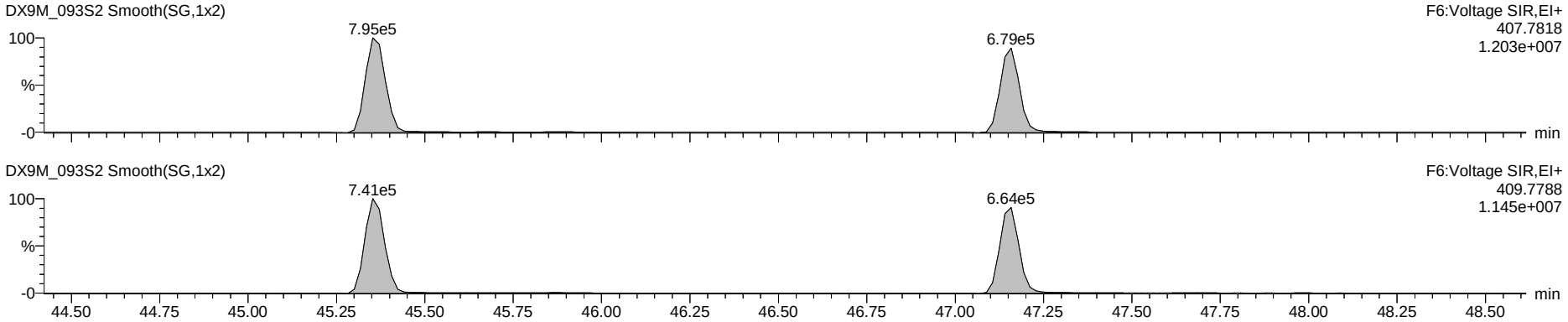
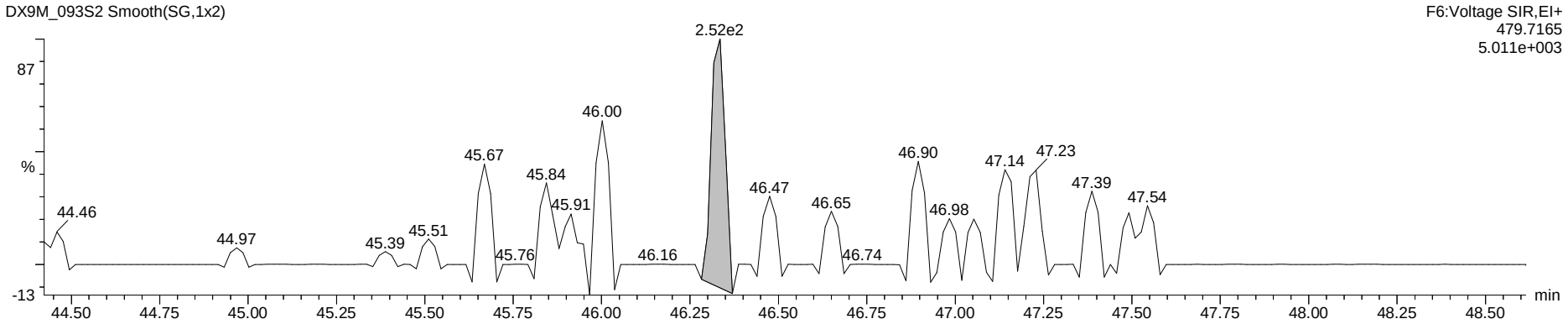
Name: DX9M_093S2, Date: 12-Sep-2019, Time: 10:01:18, ID: WG69303-102,I,SPM, Description: 1,WG69303,1.0/20uL

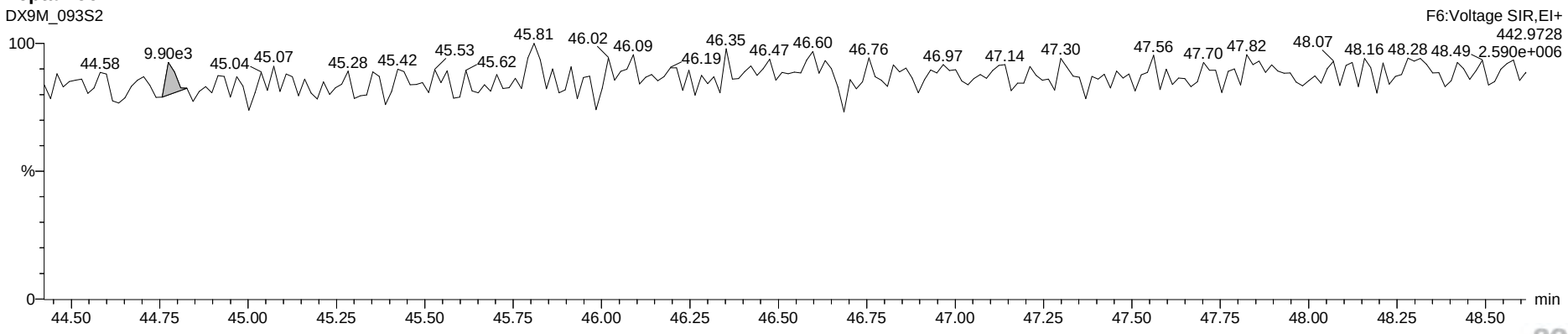
Total Hepta-Furans



Nona DPE



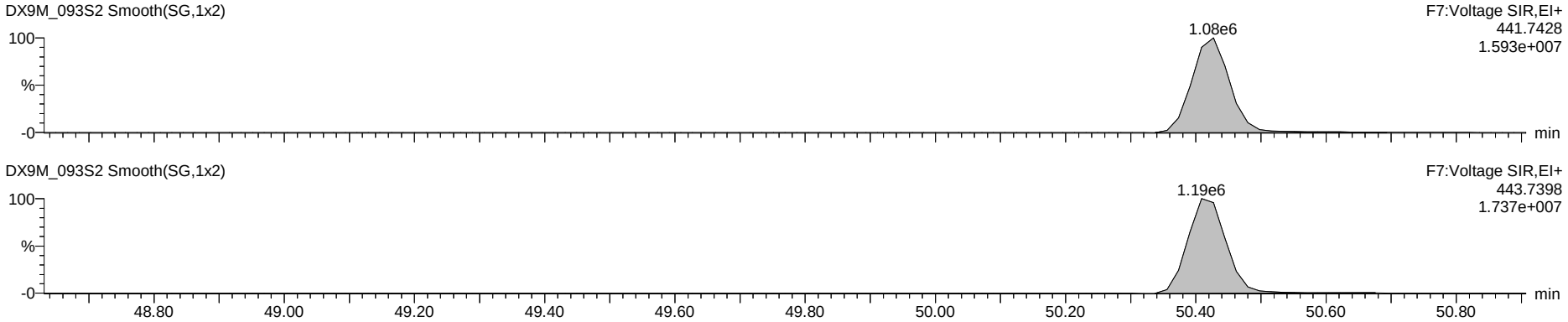
Hepta Lock



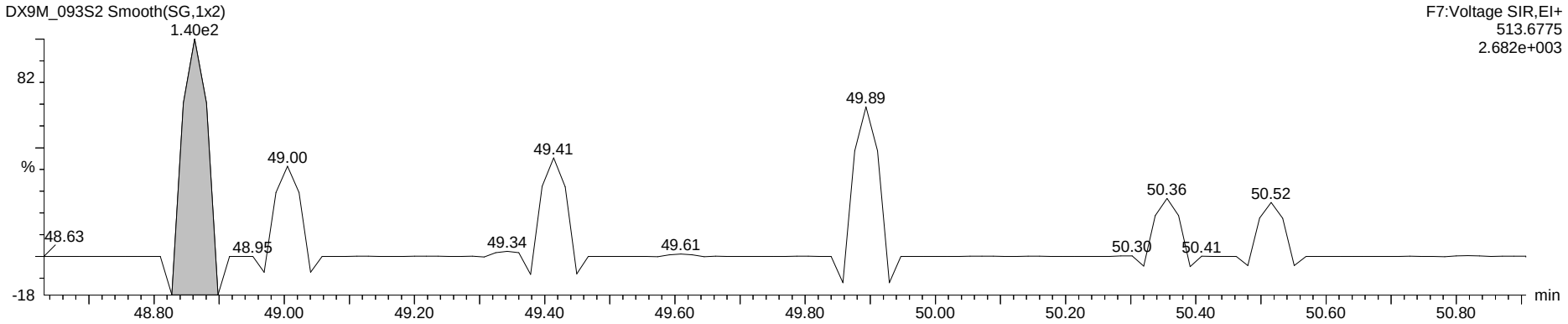
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S2, Date: 12-Sep-2019, Time: 10:01:18, ID: WG69303-102,I,SPM, Description: 1,WG69303,1.0/20uL

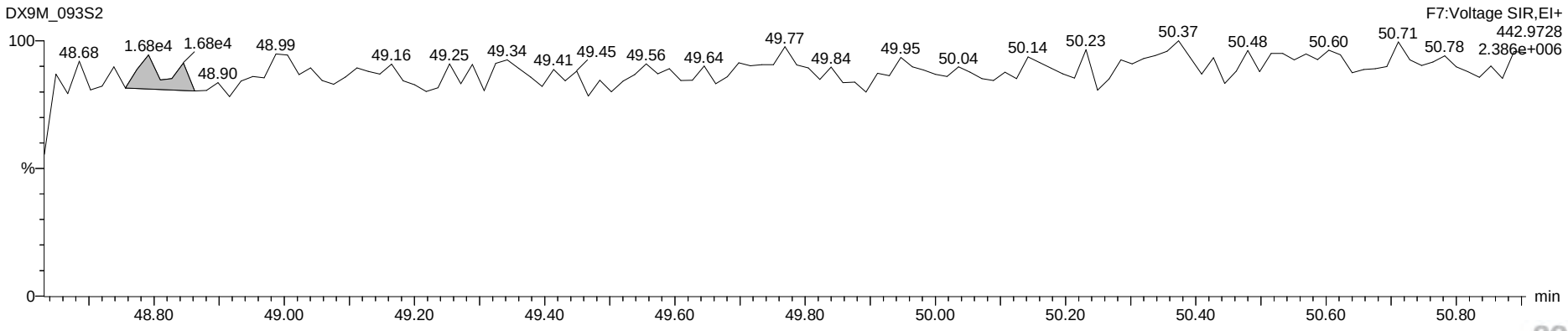
OCDF



Deca DPE



Octa Lock



Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S23, Date: 13-Sep-2019, Time: 05:32:31, ID: WG69303-103,,CRM, Description: 1,WG69303,1.0/20uL

	Name	Sample Size	Resp	Ratio	fails?	RT	pg	DL	%Rec	Noise 1	Noise 2
1	2,3,7,8-TCDF	8.670	1.18e4	0.74	NO	25.27	0.752	0.0575		2.94e3	1.18e3
2	1,2,3,7,8-PeCDF	8.670	1.83e3	1.60	NO	33.55	0.126	0.0827		2.13e3	2.29e3
3	2,3,4,7,8-PeCDF	8.670	2.45e3	1.70	NO	35.35	0.171	0.0770		2.13e3	2.29e3
4	1,2,3,4,7,8-HxCDF	8.670	8.21e3	1.32	NO	40.75	0.707	0.0559		1.32e3	2.22e3
5	1,2,3,6,7,8-HxCDF	8.670	5.67e3	1.15	NO	40.93	0.468	0.0555		1.32e3	2.22e3
6	2,3,4,6,7,8-HxCDF	8.670	4.69e3	1.19	NO	41.88	0.394	0.0548		1.32e3	2.22e3
7	1,2,3,7,8,9-HxCDF	8.670	1.27e3	1.35	NO	42.92	0.123	0.0649		1.32e3	2.22e3
8	1,2,3,4,6,7,8-HpCDF	8.670	1.58e5	1.05	NO	45.39	13.789	0.0709		2.46e3	2.35e3
9	1,2,3,4,7,8,9-HpCDF	8.670	1.13e4	1.00	NO	47.18	1.049	0.0773		2.46e3	2.35e3
10	OCDF	8.670	5.97e5	0.90	NO	50.46	44.487	0.0459		2.36e3	1.27e3
11	2,3,7,8-TCDD	8.670	2.40e3	0.75	NO	26.49	0.188	0.0401		1.17e3	9.73e2
12	1,2,3,7,8-PeCDD	8.670	4.07e3	0.57	NO	36.13	0.365	0.0857		2.26e3	2.07e3
13	1,2,3,4,7,8-HxCDD	8.670	9.58e3	1.15	NO	42.15	1.014	0.0658		2.08e3	1.60e3
14	1,2,3,6,7,8-HxCDD	8.670	3.57e4	1.24	NO	42.29	3.697	0.0680		2.08e3	1.60e3
15	1,2,3,7,8,9-HxCDD	8.670	2.67e4	1.21	NO	42.71	2.820	0.0676		2.08e3	1.60e3
16	1,2,3,4,6,7,8-HpCDD	8.670	1.35e6	1.03	NO	46.77	145.499	0.1485		2.84e3	5.67e3
17	OCDD	8.670	7.86e7	0.87	NO	50.37	6788.645	0.0496		1.88e3	1.50e3
18	13C-2,3,7,8-TCDF	8.670	3.90e6	0.79	NO	25.24	167.027	0.1370	72.4	6.77e3	7.63e3
19	13C-1,2,3,7,8-PeCDF	8.670	3.61e6	1.57	NO	33.53	189.950	0.1589	82.3	6.12e3	7.46e3
20	13C-2,3,4,7,8-PeCDF	8.670	3.47e6	1.54	NO	35.30	177.057	0.1541	76.8	6.12e3	7.46e3
21	13C-1,2,3,4,7,8-HxCDF	8.670	2.42e6	0.53	NO	40.73	163.600	0.2353	70.9	1.41e4	5.10e3
22	13C-1,2,3,6,7,8-HxCDF	8.670	2.60e6	0.52	NO	40.90	159.641	0.2141	69.2	1.41e4	5.10e3
23	13C-2,3,4,6,7,8-HxCDF	8.670	2.42e6	0.53	NO	41.87	164.725	0.2375	71.4	1.41e4	5.10e3
24	13C-1,2,3,7,8,9-HxCDF	8.670	2.26e6	0.53	NO	42.90	173.206	0.2670	75.1	1.41e4	5.10e3
25	13C-1,2,3,4,6,7,8-HpCDF	8.670	2.11e6	0.45	NO	45.37	172.954	0.2731	75.0	1.29e4	5.47e3
26	13C-1,2,3,4,7,8,9-HpCDF	8.670	1.97e6	0.44	NO	47.16	199.363	0.3365	86.4	1.29e4	5.47e3
27	13C-2,3,7,8-TCDD	8.670	2.68e6	0.79	NO	26.46	180.104	0.1906	78.1	2.86e3	9.89e3
28	13C-1,2,3,7,8-PeCDD	8.670	2.60e6	0.62	NO	36.11	220.347	0.1280	95.5	4.08e3	2.71e3
29	13C-1,2,3,4,7,8-HxCDD	8.670	2.12e6	1.33	NO	42.14	179.225	0.1685	77.7	3.97e3	7.02e3
30	13C-1,2,3,6,7,8-HxCDD	8.670	2.37e6	1.26	NO	42.27	180.963	0.1525	78.4	3.97e3	7.02e3
31	13C-1,2,3,4,6,7,8-HpCDD	8.670	2.75e6	1.01	NO	46.76	207.526	0.1406	90.0	4.66e3	5.60e3
32	13C-OCDD	8.670	5.44e6	0.90	NO	50.36	559.189	0.1673	121.2	4.80e3	4.17e3
33	13C-1,2,3,4-TCDD	8.670	3.54e6	0.79	NO	26.11	10.149	0.0081	4.4	2.86e3	9.89e3
34	13C-1,2,3,7,8,9-HxCDD	8.670	2.82e6	1.25	NO	42.70	11.190	0.0079	4.9	3.97e3	7.02e3
35	37Cl-2,3,7,8-TCDD	8.670	3.14e5			26.49	19.152	0.0303	83.0		2.24e3
36	Total Tetra-Furans	8.670					5.892	0.0575			1.18e3
37	Total Tetra-Dioxins	8.670					1.334	0.0401			9.73e2
38	Total Penta-Furans	8.670					3.710	0.0807			2.29e3
39	Total Penta-Dioxins	8.670					2.658	0.0857			2.07e3 T
40	Total Hexa-Furans	8.670					15.783	0.0569			2.22e3
41	Total Hexa-Dioxins	8.670					32.392	0.0639			1.60e3
42	Total Hepta-Furans	8.670					46.039	0.0741			2.35e3
43	Total Hepta-Dioxins	8.670					380.760	0.1485			5.67e3
44	Hexa DPE	1.000	2.34e2			25.75					4.70e0
45	Hepta DPE	1.000	2.88e2			37.65					7.22e2
46	Octa DPE	1.000	2.47e2			40.93					6.56e2
47	Nona DPE	1.000	7.24e3			48.28					4.15e2
48	Deca DPE	1.000	3.33e2			49.82					1.21e3
49	Tetra Lock	1.000	1.10e4			21.73					1.11e5
50	Penta Lock	1.000									7.29e4
51	Hexa Lock	1.000	2.42e5			39.14					2.73e5
52	Hepta Lock	1.000									1.39e5
53	Octa Lock	1.000	8.13e3			48.85					1.05e5
54	13C-Tetra-Furans	8.670					167.027	0.1370			7.63e3
55	13C-Tetra-Dioxins	8.670					190.253	0.1987			9.89e3

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

SVHH 22 Sept. 2019

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S23, Date: 13-Sep-2019, Time: 05:32:31, ID: WG69303-103,,CRM, Description: 1,WG69303,1.0/20uL

Tetrafurans

	RT	Ratio	Fails?	pg
1	25.27	0.743	NO	0.752
2	24.94	0.749	NO	0.384
3	24.60	0.773	NO	0.499
4	24.27	0.755	NO	0.060
5	24.15	0.815	NO	0.373
6	23.87	0.831	NO	0.617
7	23.42	0.773	NO	0.858
8	23.00	0.714	NO	0.534
9	22.55	0.993	YES	0.226
10	22.25	0.785	NO	0.504
11	21.43	0.670	NO	0.046
12	28.19	1.383	YES	0.639
13	26.27	0.561	YES	0.074
14	25.94	0.629	YES	0.326

Tetradioxins

	RT	Ratio	Fails?	pg
1	23.75	1.052	YES	0.070
2	23.39	0.819	NO	0.150
3	22.97	0.665	NO	0.185
4	27.61	0.262	YES	0.027
5	27.07	1.290	YES	0.072
6	26.49	0.747	NO	0.188
7	26.14	0.692	NO	0.102
8	25.24	2.908	YES	0.266
9	25.09	0.746	NO	0.047
10	24.90	1.242	YES	0.053
11	24.67	0.779	NO	0.175

Pentafurans

	RT	Ratio	Fails?	pg
1	35.62	1.848	YES	0.181
2	35.35	1.699	NO	0.171
3	34.25	2.183	YES	0.123
4	33.55	1.602	NO	0.126
5	32.85	1.784	YES	0.228
6	31.85	1.631	NO	0.086
7	31.52	1.850	YES	0.799
8	28.91	1.632	NO	1.995

Pentadioxins

	RT	Ratio	Fails?	pg
1	35.03	0.621	NO	0.187
2	34.48	0.638	NO	0.173
3	34.18	0.610	NO	0.290
4	33.87	0.875	YES	0.198
5	33.15	0.602	NO	0.381
6	32.00	0.633	NO	1.066
7	36.13	0.566	NO	0.365

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S23, Date: 13-Sep-2019, Time: 05:32:31, ID: WG69303-103,,CRM, Description: 1,WG69303,1.0/20uL

Hexafurans

	RT	Ratio	Fails?	pg
1	40.10	1.273	NO	6.461
2	39.28	1.190	NO	4.893
3	39.02	1.326	NO	1.657
4	43.07	1.275	NO	0.170
5	42.92	1.352	NO	0.123
6	41.88	1.187	NO	0.394
7	41.73	1.212	NO	0.810
8	40.93	1.150	NO	0.468
9	40.75	1.323	NO	0.707
10	40.68	1.341	NO	0.101

Hexadioxins

	RT	Ratio	Fails?	pg
1	41.44	1.128	NO	1.939
2	41.26	1.204	NO	9.296
3	40.88	1.536	YES	2.094
4	40.05	1.210	NO	11.533
5	42.71	1.212	NO	2.820
6	42.29	1.242	NO	3.697
7	42.15	1.150	NO	1.014

Heptafurans

	RT	Ratio	Fails?	pg
1	45.70	1.236	YES	0.348
2	45.39	1.052	NO	13.789
3	47.18	1.000	NO	1.049
4	45.90	1.035	NO	30.853

Heptadioxins

	RT	Ratio	Fails?	pg
1	45.84	1.040	NO	235.261
2	46.77	1.026	NO	145.499

13C-TF

	RT	Ratio	Fails?	pg
1	25.24	0.788	NO	167.027

13C-TD

	RT	Ratio	Fails?	pg
1	26.46	0.787	NO	180.104
2	26.11	0.788	NO	10.149

13C-PF

	RT	Ratio	Fails?	pg
1	35.30	1.539	NO	177.057
2	33.53	1.573	NO	189.950

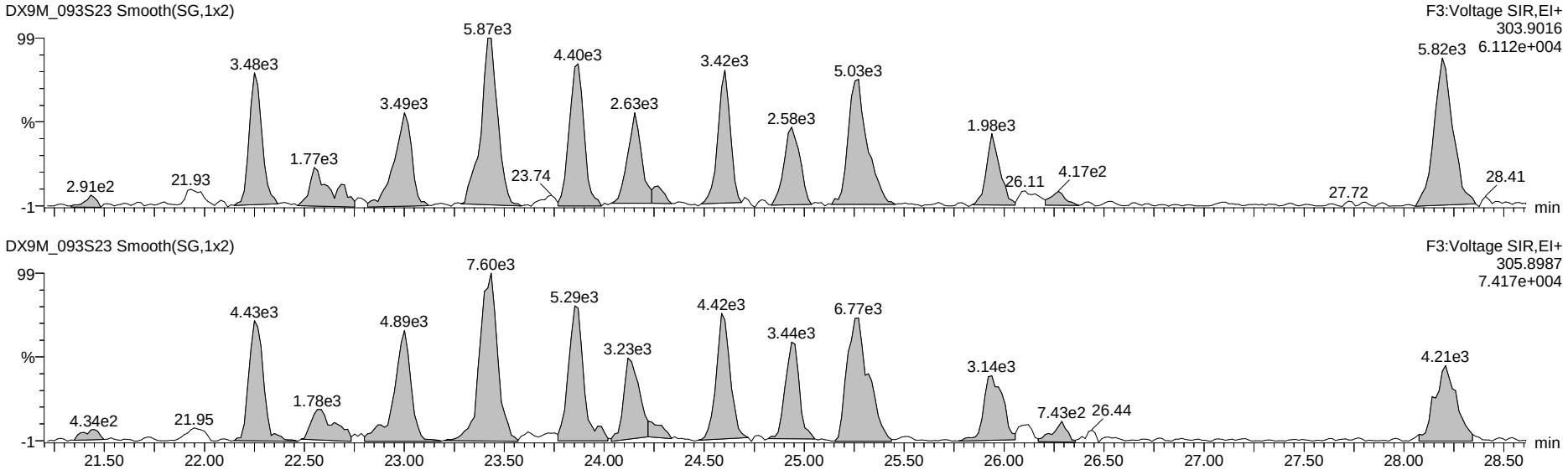
PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

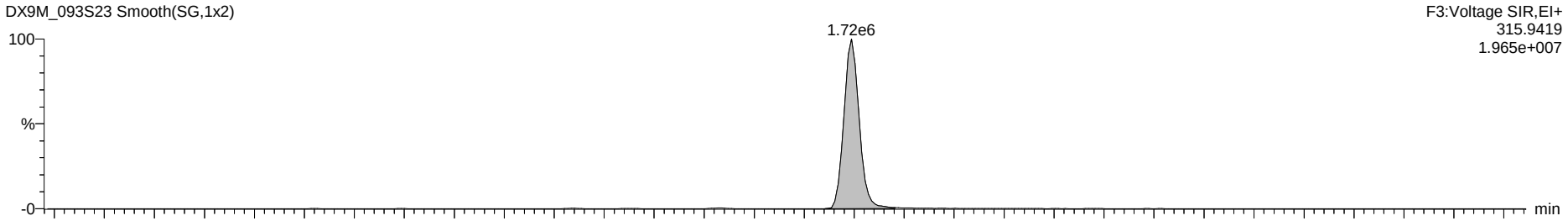
Method: G:\Masslynx\Inst_M\Exported_methods\DX_1613B_16.mdb 07 Sep 2017 16:45:23
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

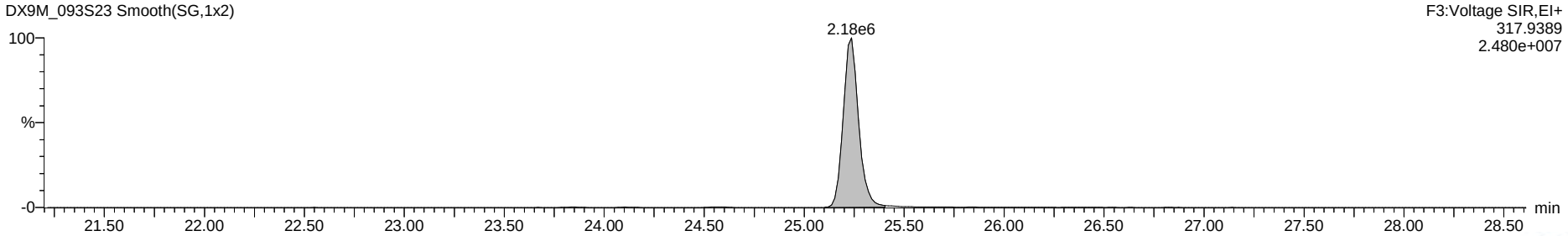
Name: DX9M_093S23, Date: 13-Sep-2019, Time: 05:32:31, ID: WG69303-103,,CRM, Description: 1,WG69303,1.0/20uL

Total Tetra-Furans



13C-Tetra-Furans





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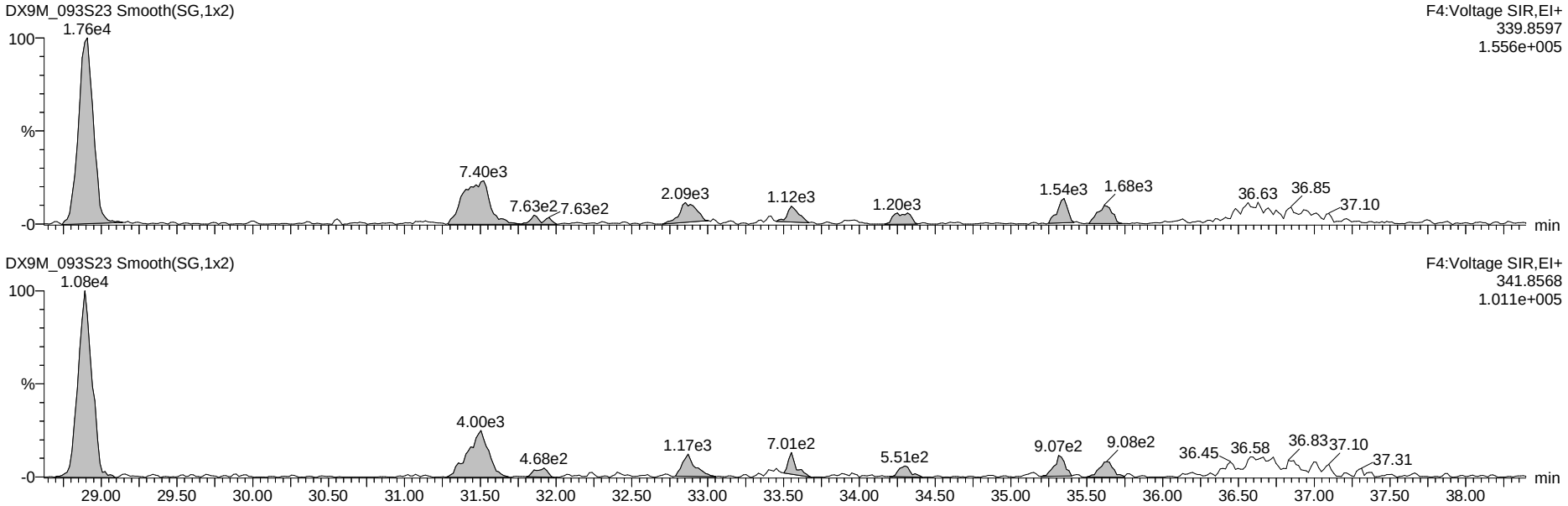
Name: DX9M_093S23, Date: 13-Sep-2019, Time: 05:32:31, ID: WG69303-103,,CRM, Description: 1,WG69303,1.0/20uL

Total Penta-Furans



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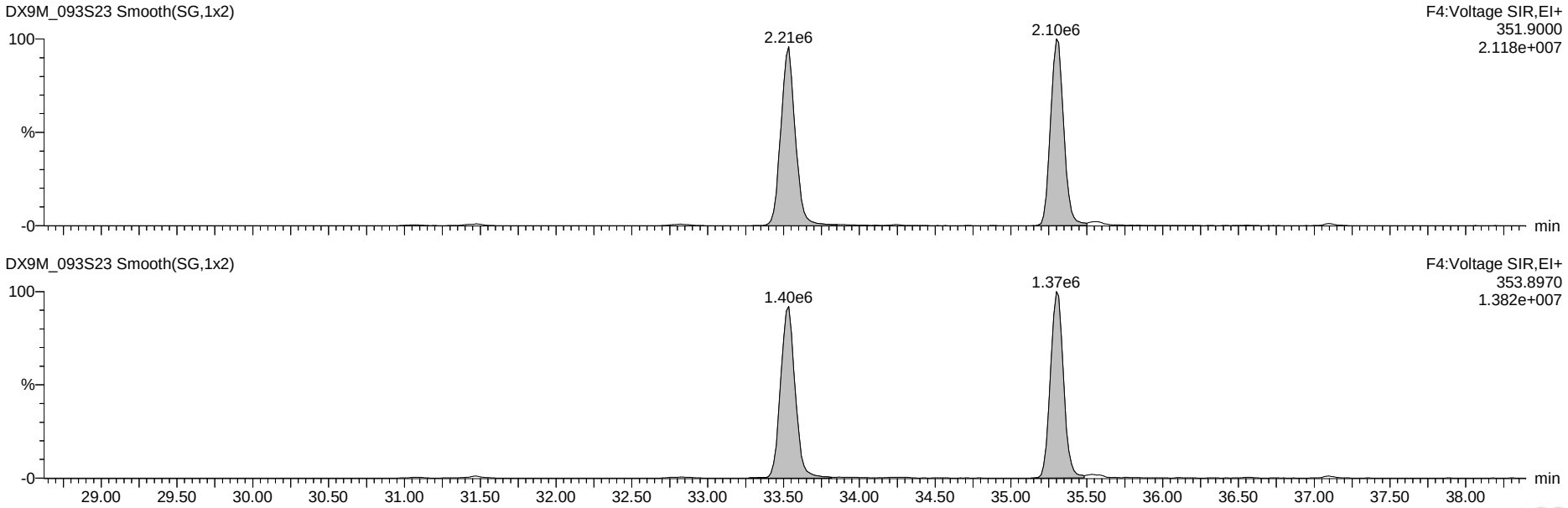

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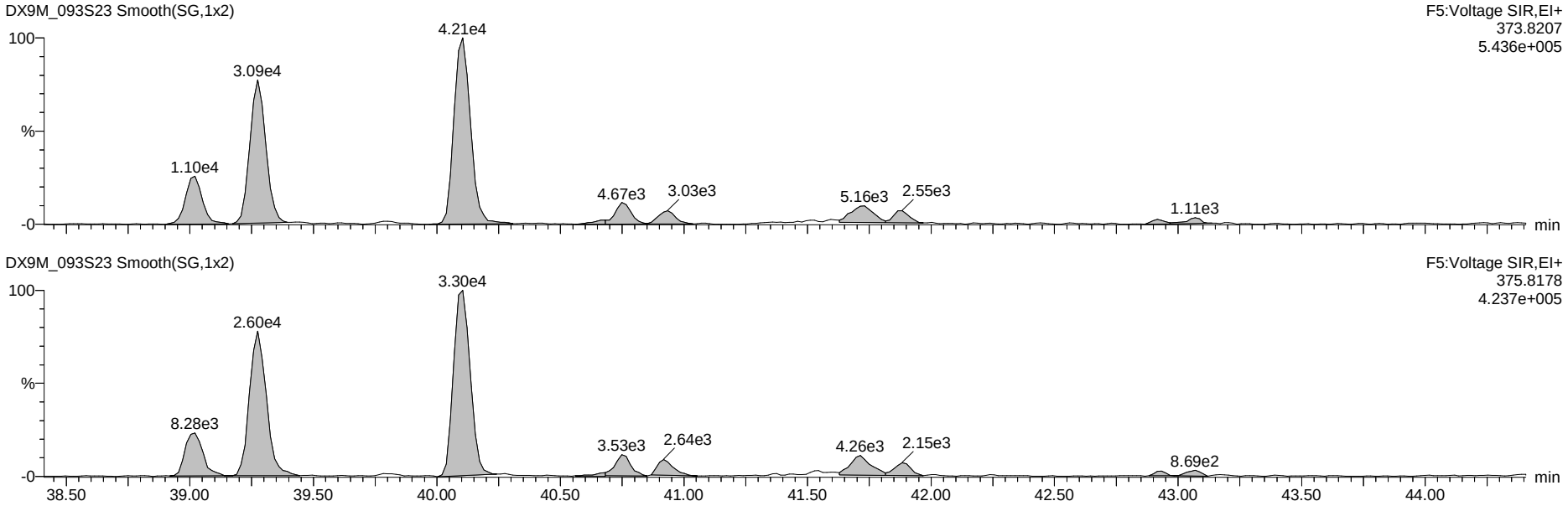
Name: DX9M_093S23, Date: 13-Sep-2019, Time: 05:32:31, ID: WG69303-103,,CRM, Description: 1,WG69303,1.0/20uL

Total Hexa-Furans



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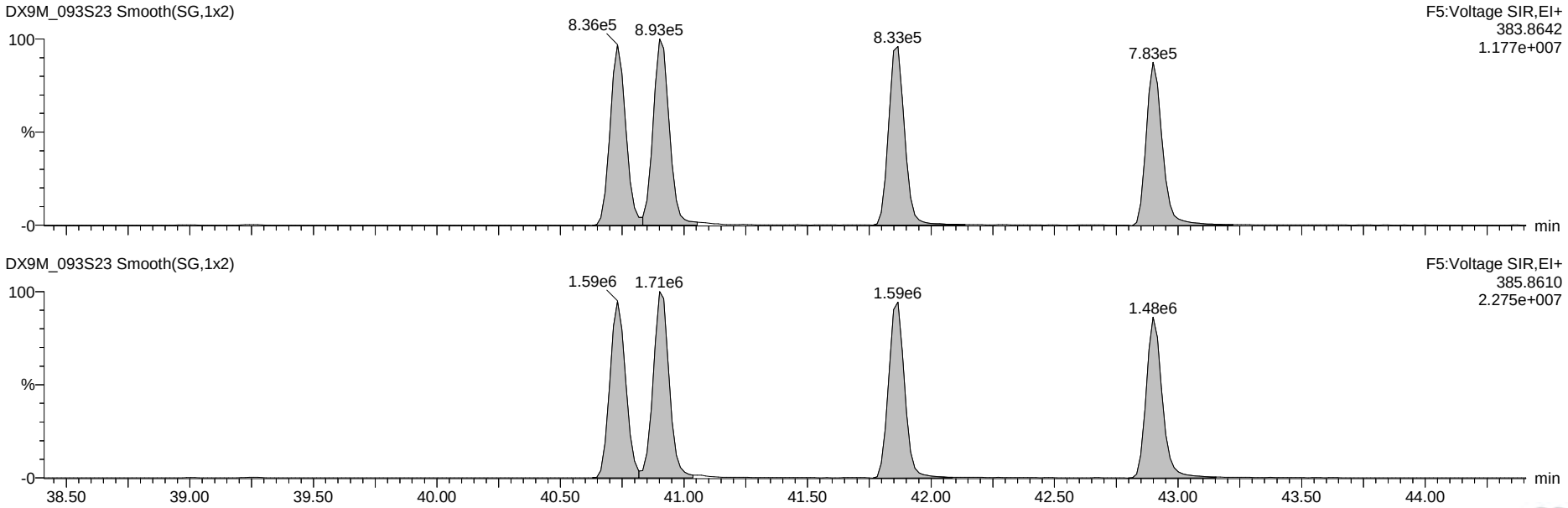

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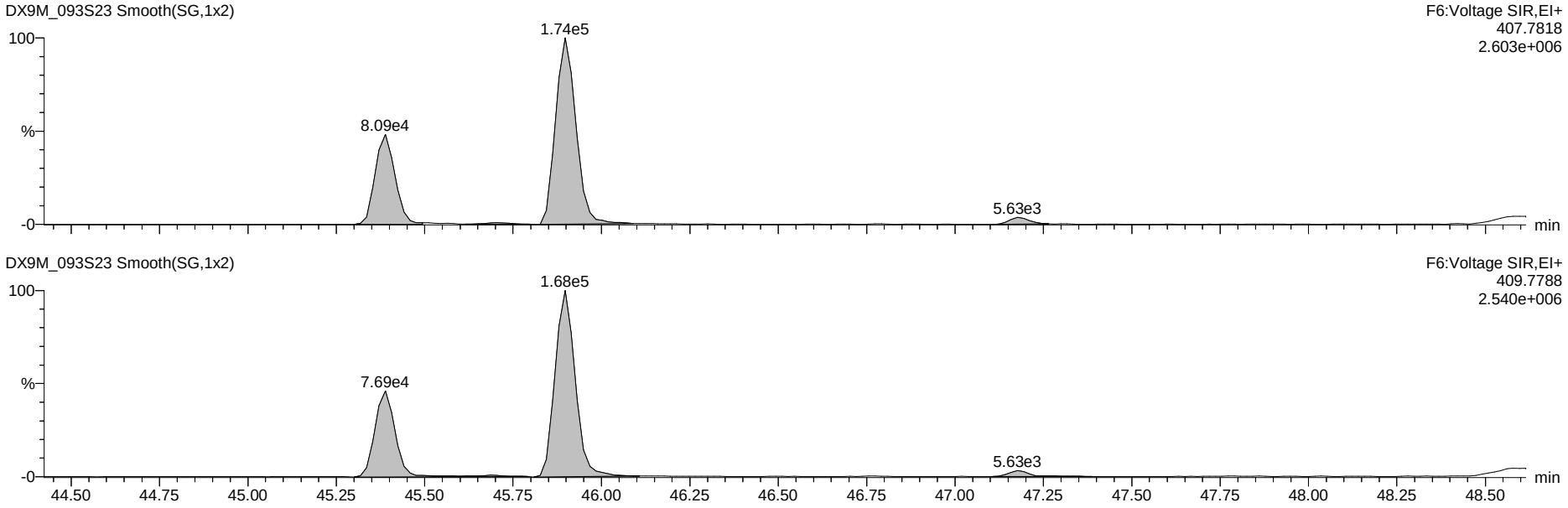
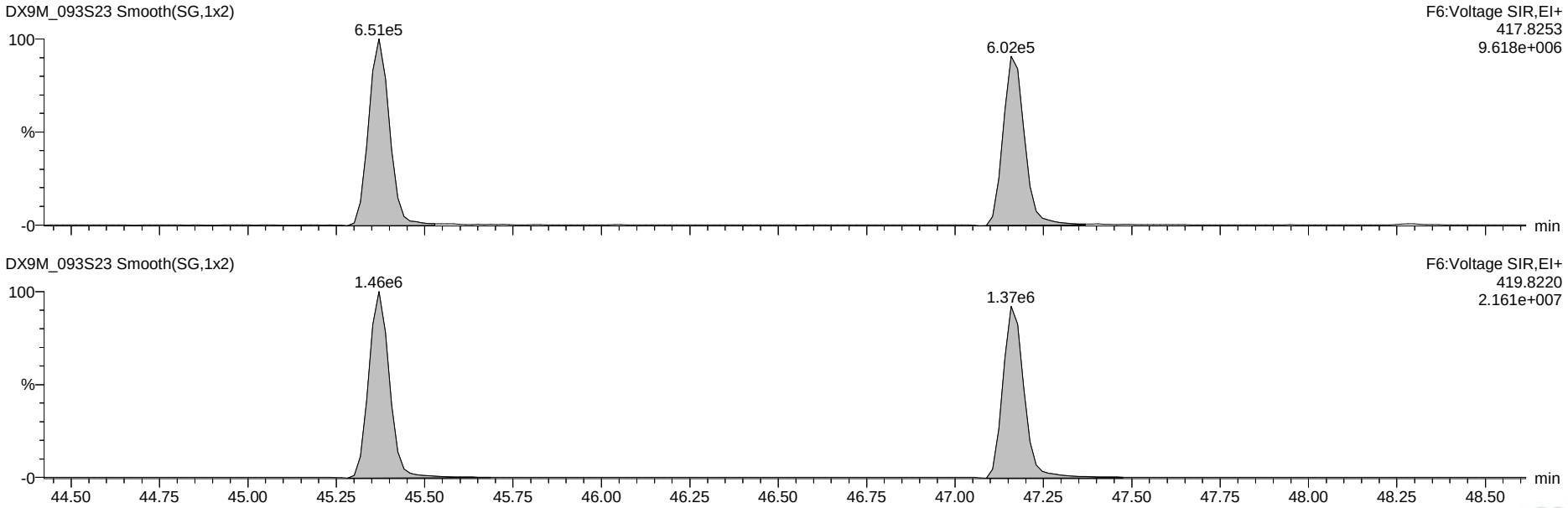
Name: DX9M_093S23, Date: 13-Sep-2019, Time: 05:32:31, ID: WG69303-103,,CRM, Description: 1,WG69303,1.0/20uL

Total Hepta-Furans



13C-Hepta-Furans



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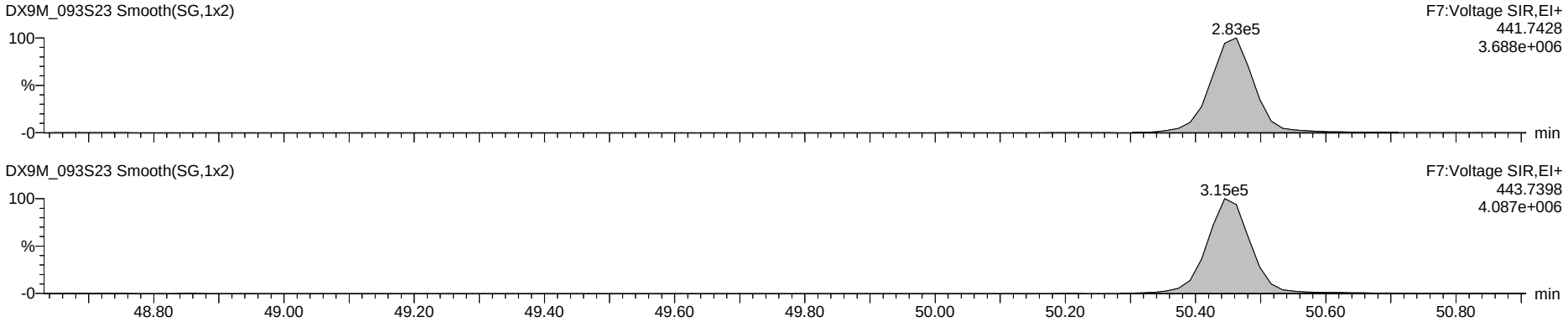
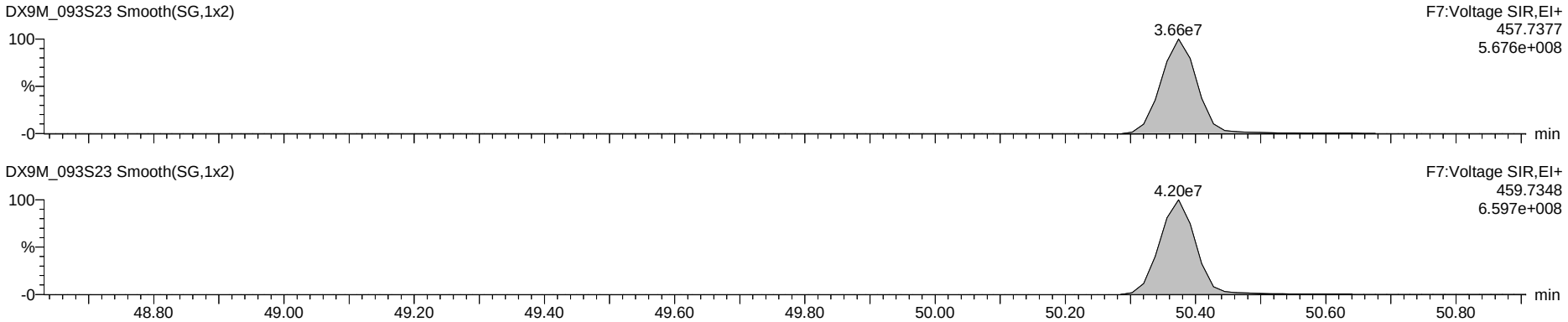
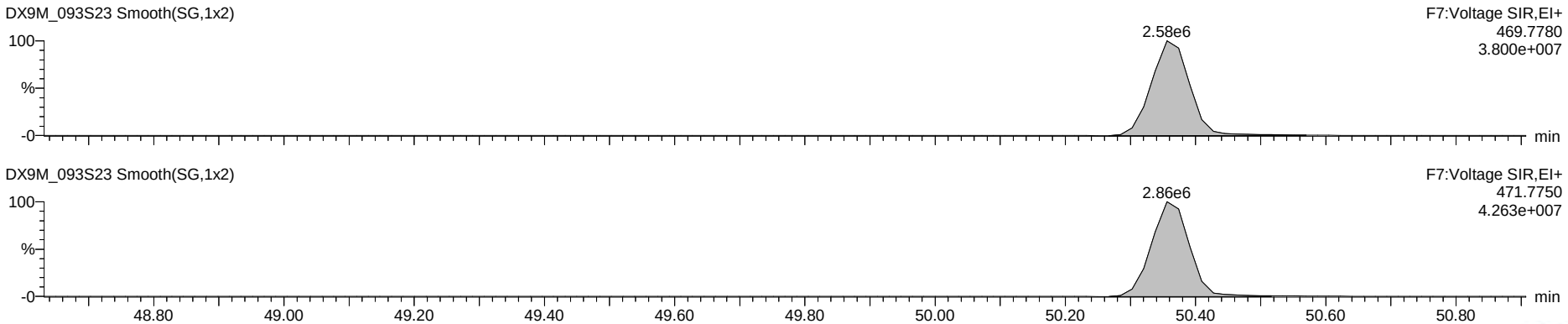
OCDF



OCDD



13C-OCDD



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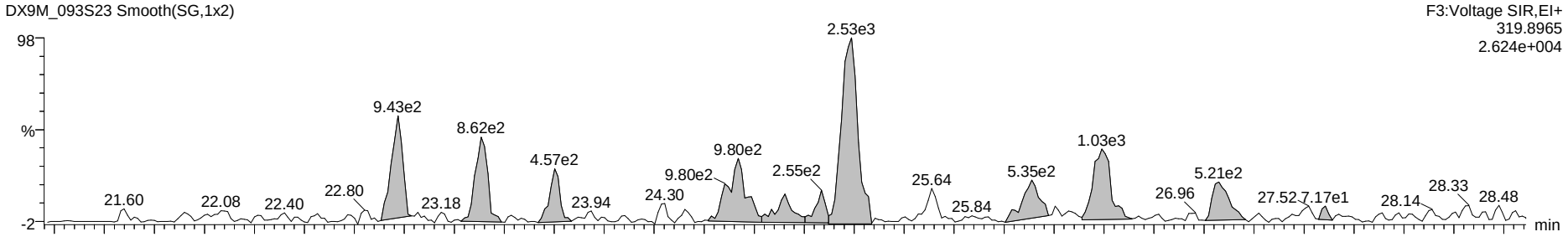
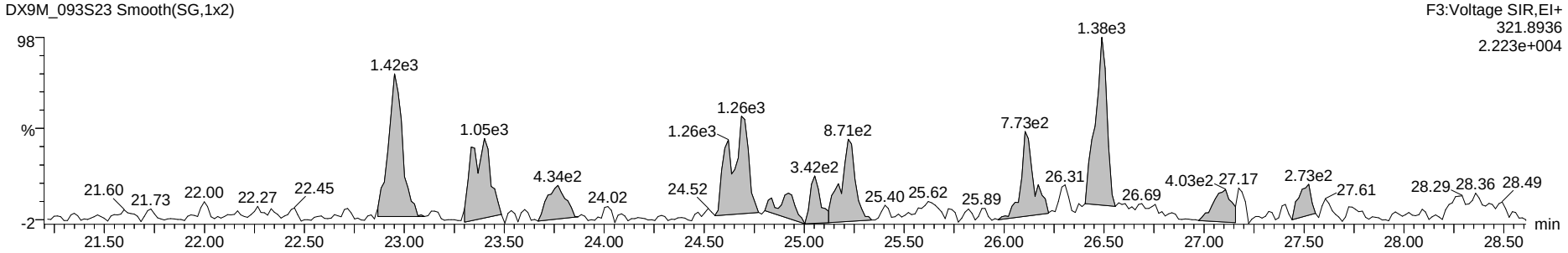
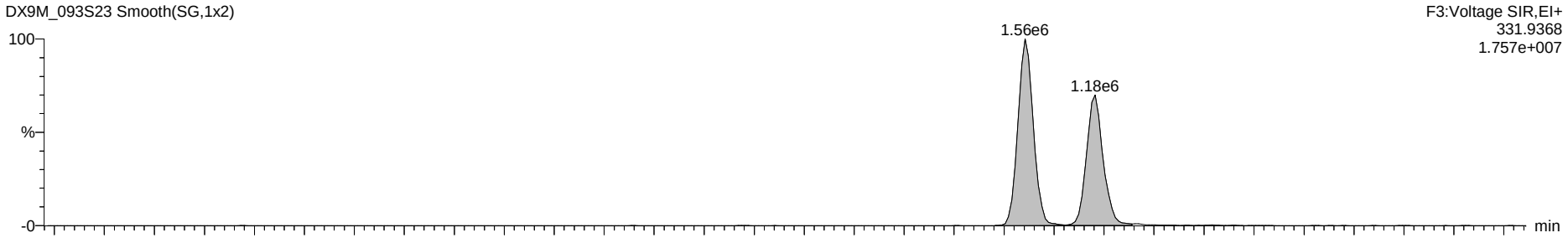
Name: DX9M_093S23, Date: 13-Sep-2019, Time: 05:32:31, ID: WG69303-103,,CRM, Description: 1,WG69303,1.0/20uL

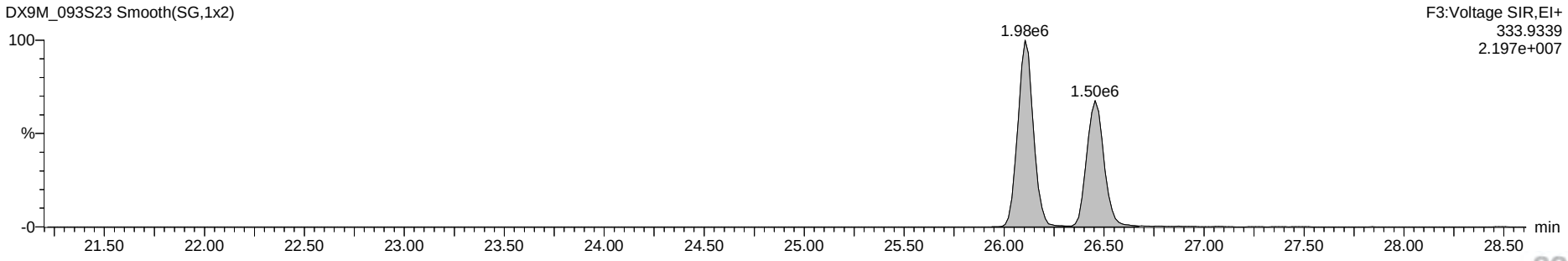
Total Tetra-Dioxins





13C-Tetra-Dioxins





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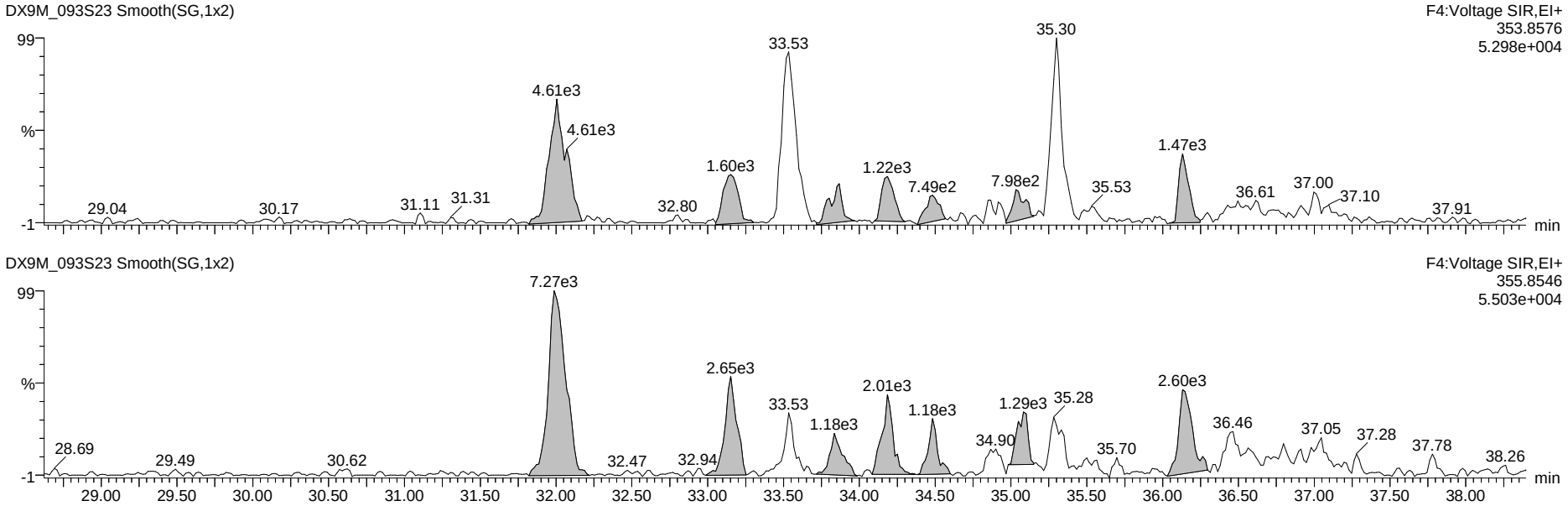
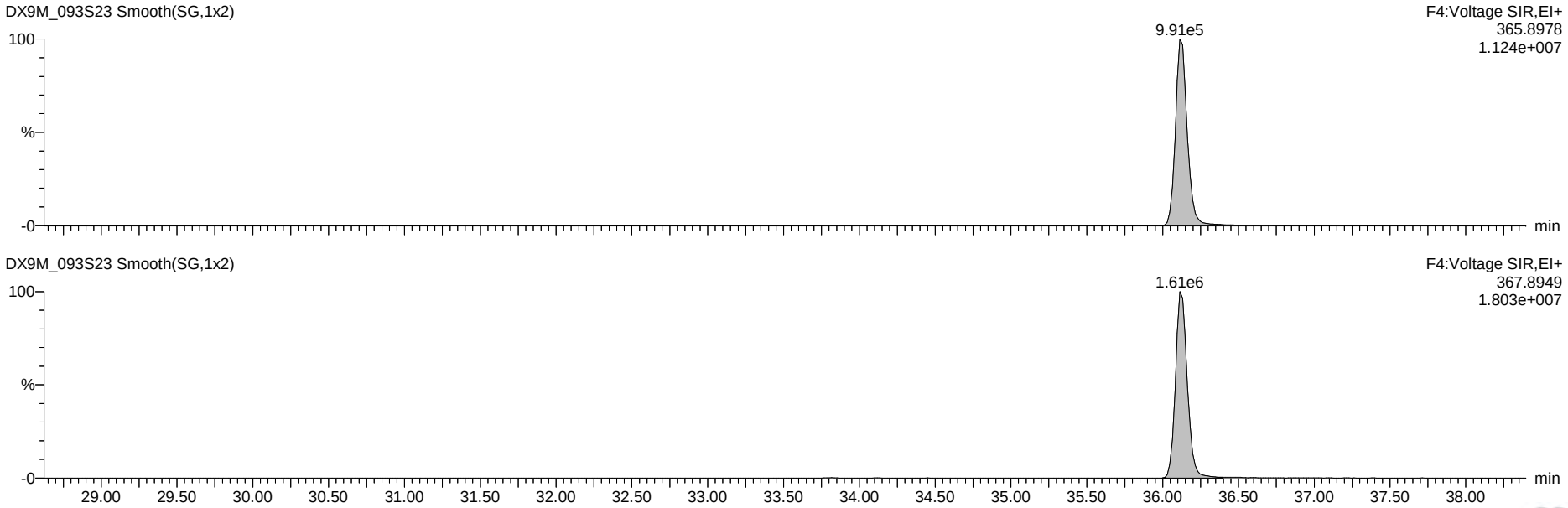
Name: DX9M_093S23, Date: 13-Sep-2019, Time: 05:32:31, ID: WG69303-103,,CRM, Description: 1,WG69303,1.0/20uL

Total Penta-Dioxins



13C-Penta-Dioxins



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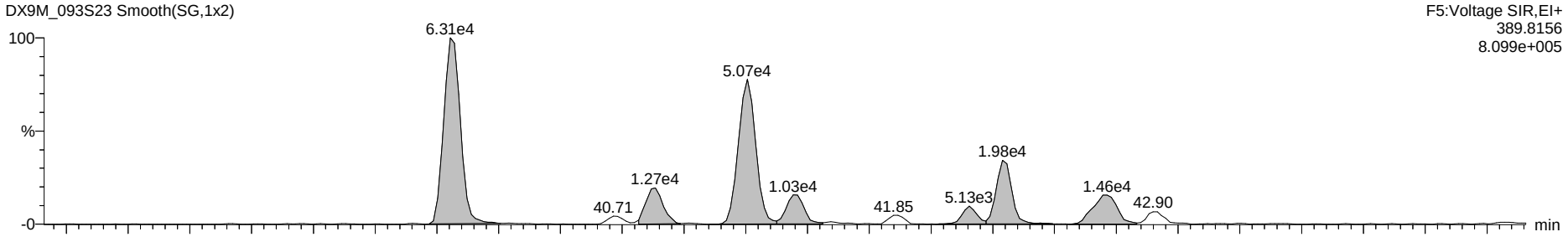
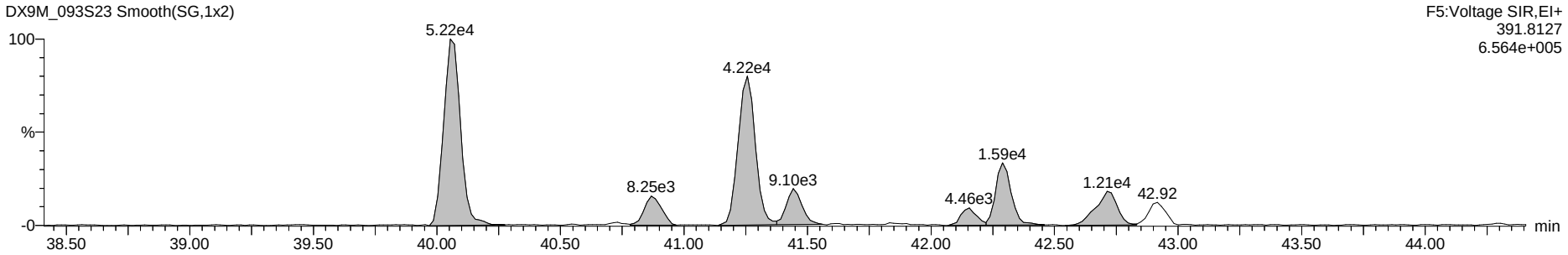
Name: DX9M_093S23, Date: 13-Sep-2019, Time: 05:32:31, ID: WG69303-103,,CRM, Description: 1,WG69303,1.0/20uL

Total Hexa-Dioxins





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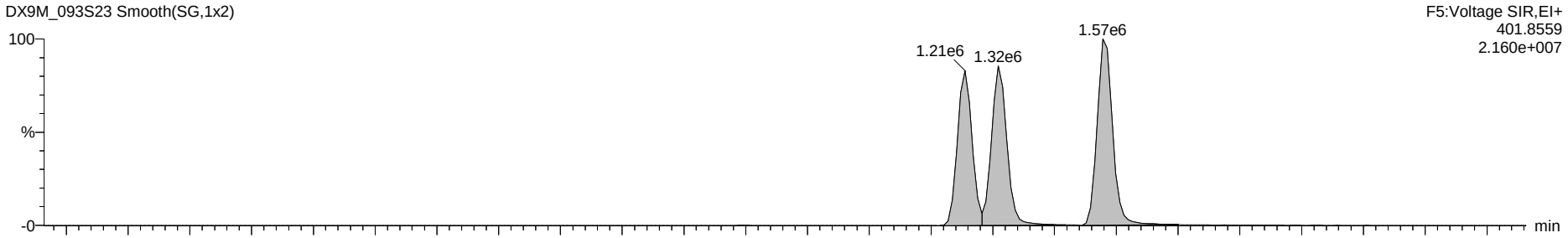

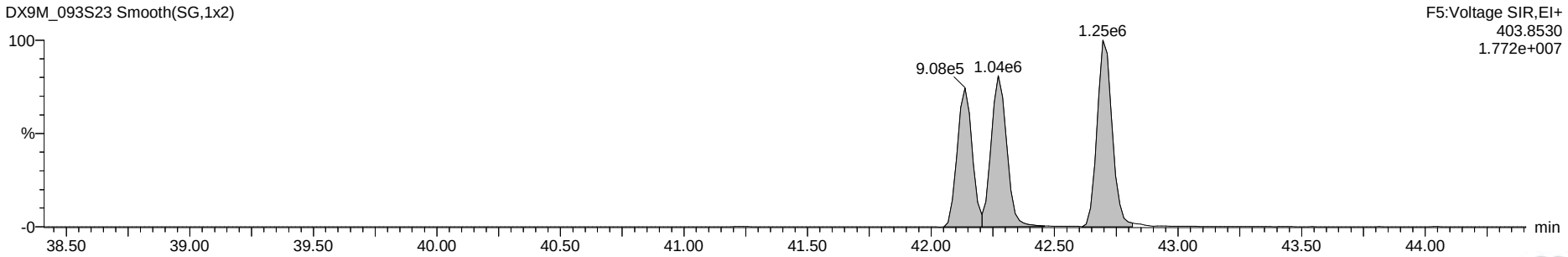

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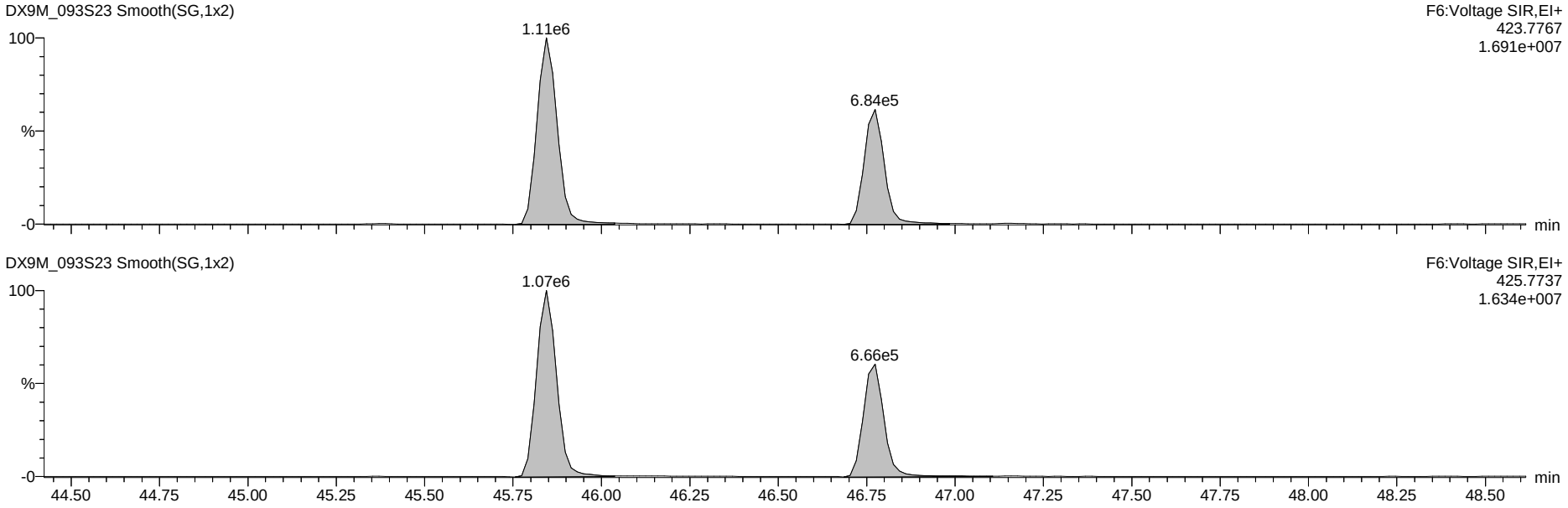
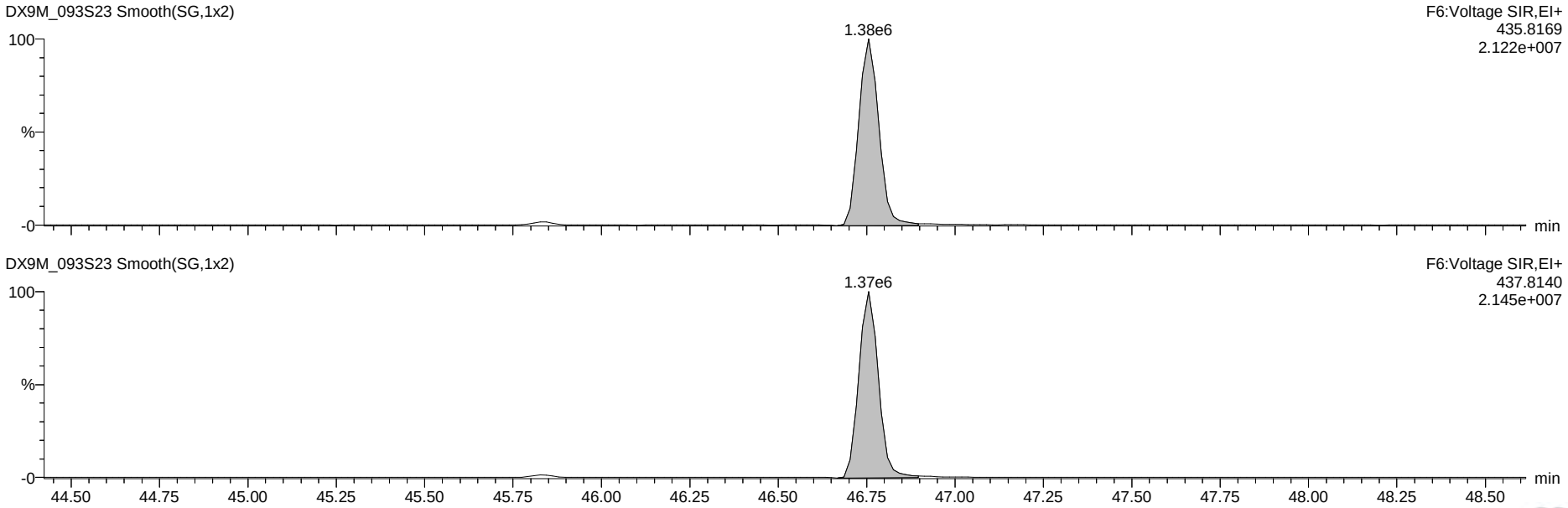
Name: DX9M_093S23, Date: 13-Sep-2019, Time: 05:32:31, ID: WG69303-103,,CRM, Description: 1,WG69303,1.0/20uL

Total Hepta-Dioxins



13C-Hepta-Dioxins



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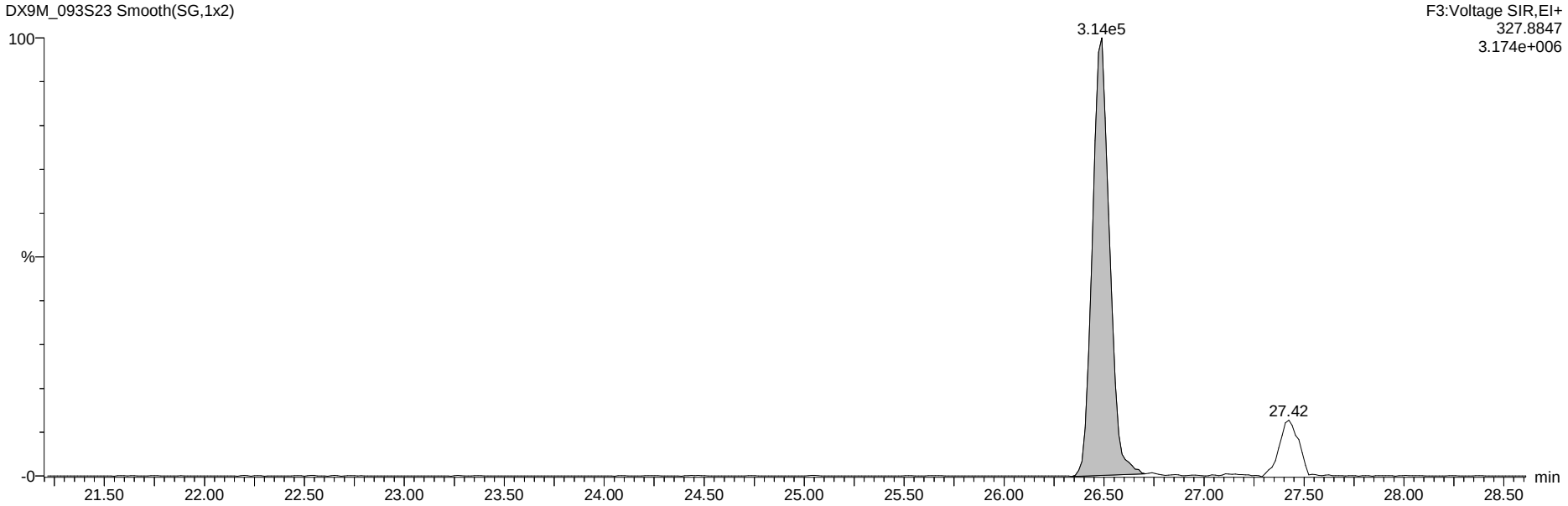
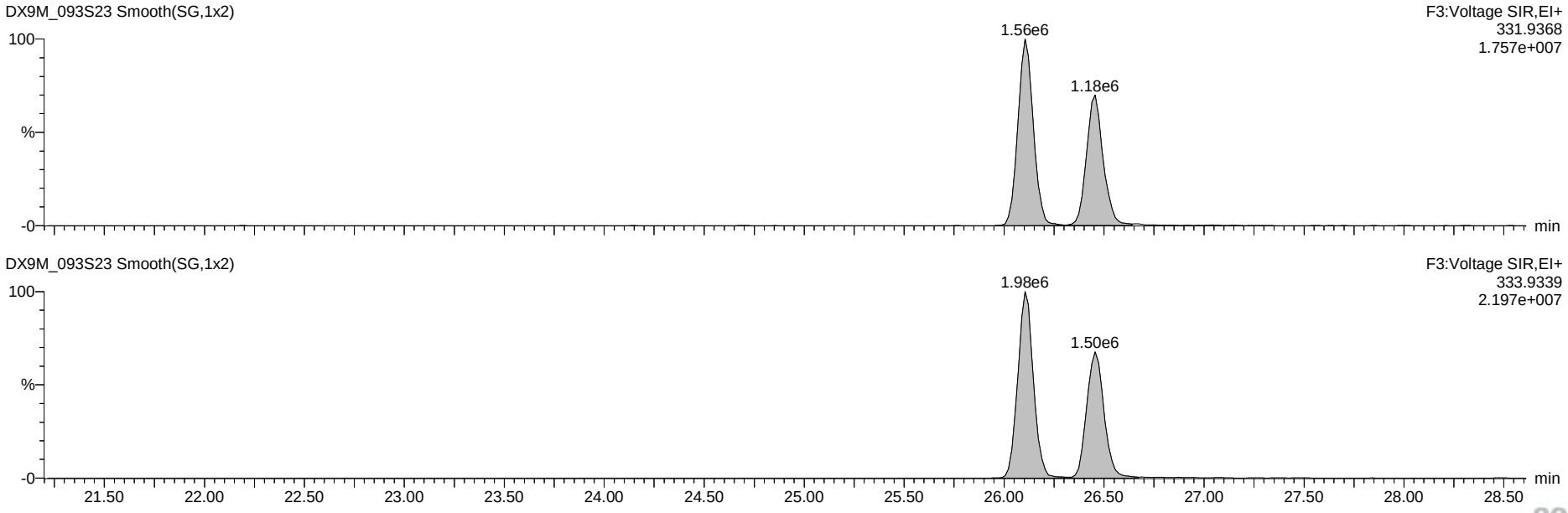
Name: DX9M_093S23, Date: 13-Sep-2019, Time: 05:32:31, ID: WG69303-103,,CRM, Description: 1,WG69303,1.0/20uL

37Cl-2,3,7,8-TCDD



13C-Tetra-Dioxins



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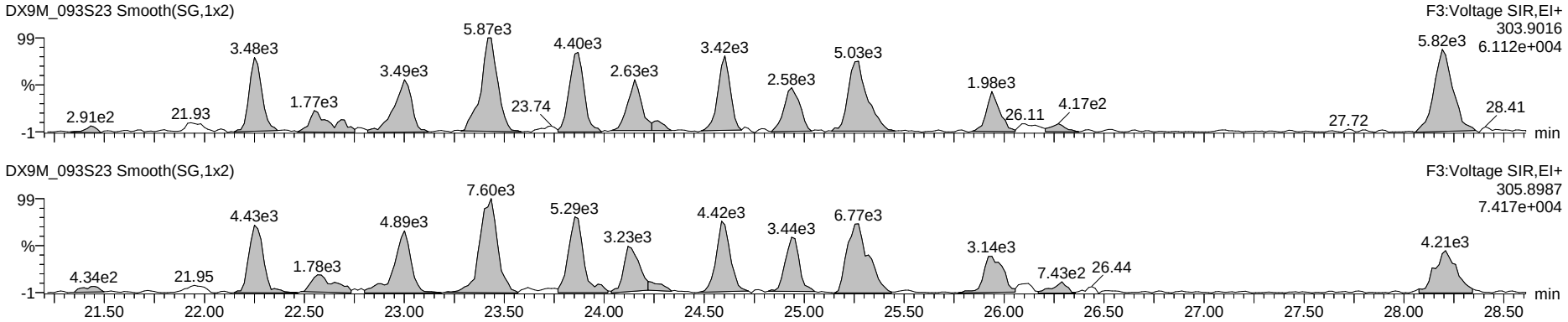
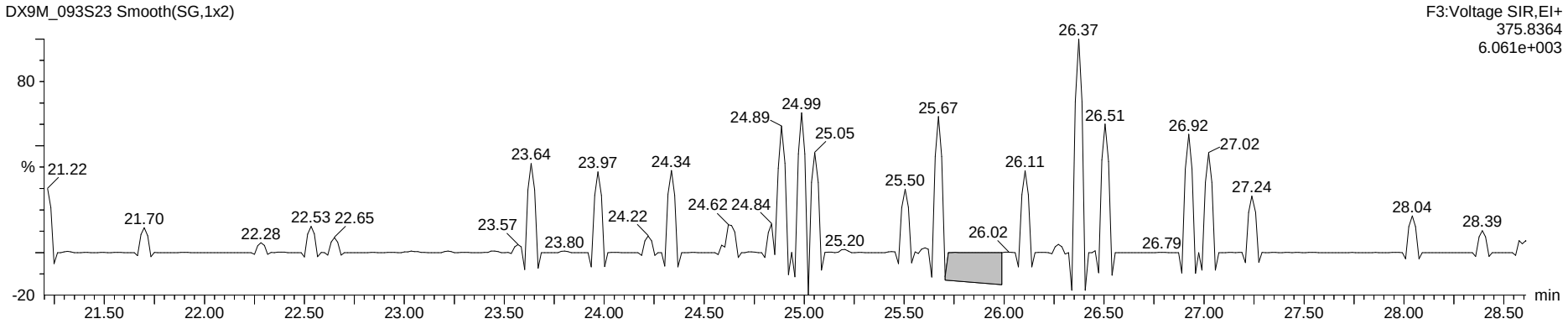
Name: DX9M_093S23, Date: 13-Sep-2019, Time: 05:32:31, ID: WG69303-103,,CRM, Description: 1,WG69303,1.0/20uL

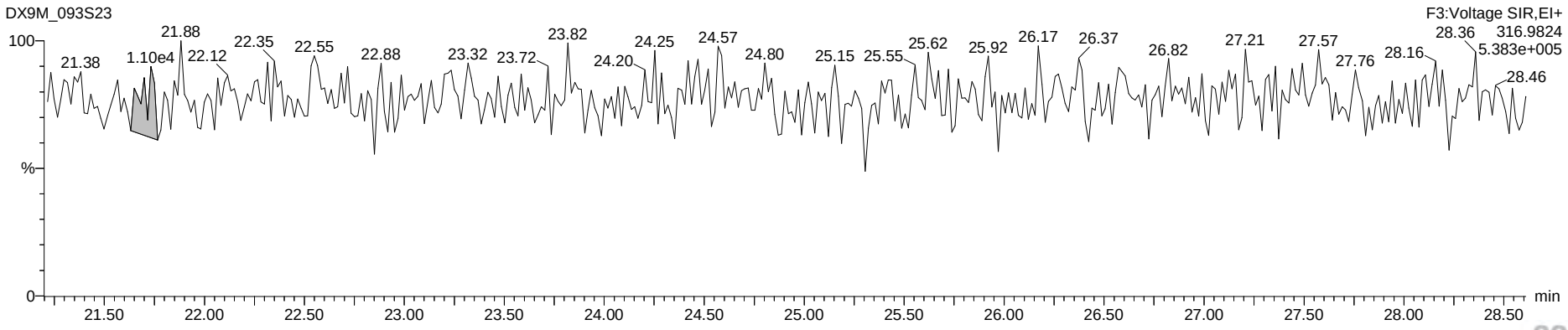
Total Tetra-Furans



Hexa DPE



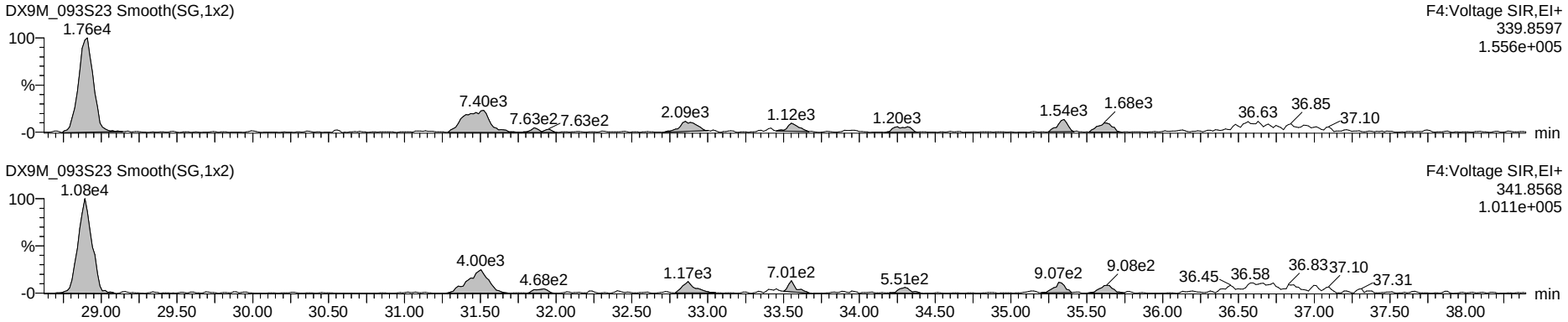
Tetra Lock



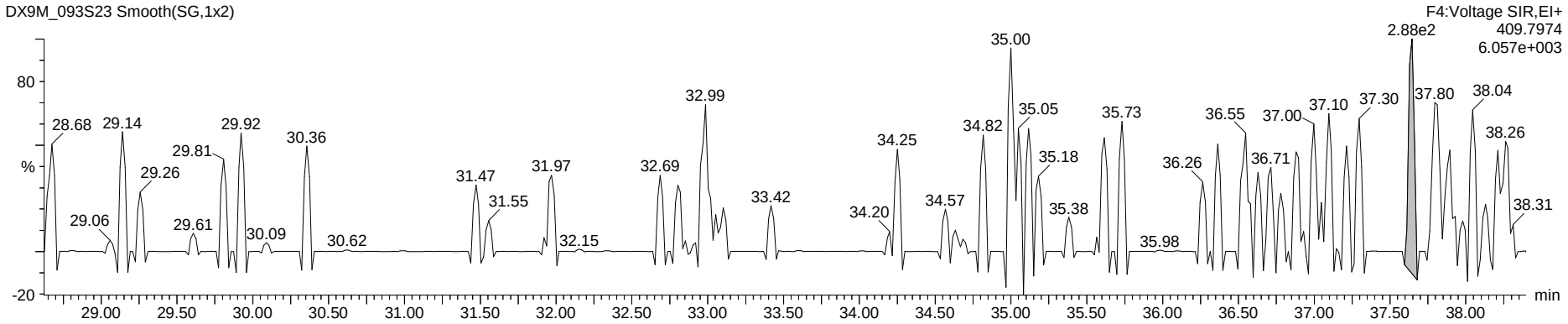
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S23, Date: 13-Sep-2019, Time: 05:32:31, ID: WG69303-103,,CRM, Description: 1,WG69303,1.0/20uL

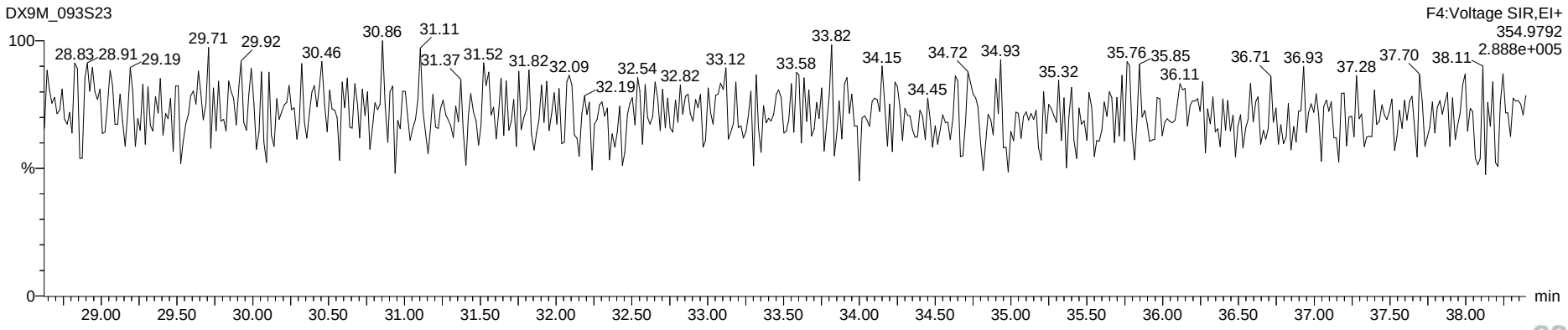
Total Penta-Furans



Hepta DPE



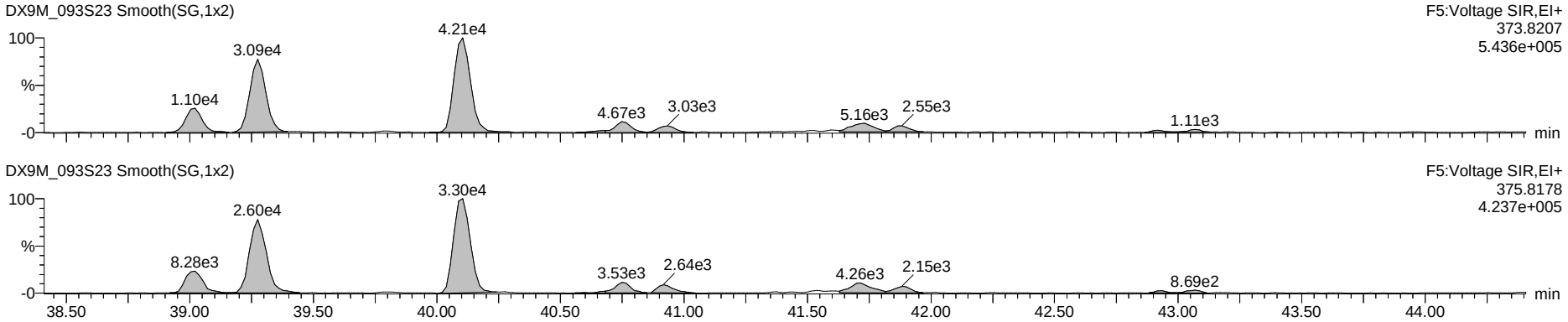
Penta Lock



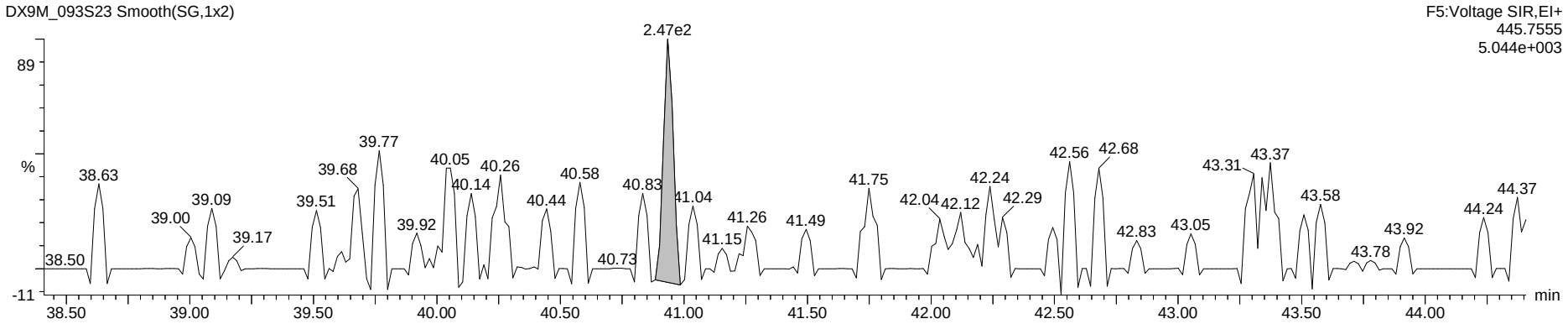
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S23, Date: 13-Sep-2019, Time: 05:32:31, ID: WG69303-103,,CRM, Description: 1,WG69303,1.0/20uL

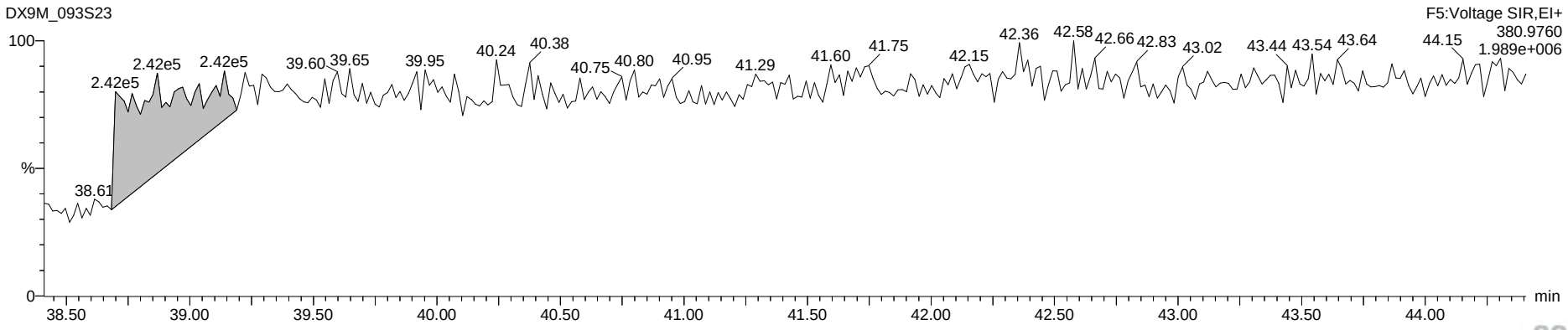
Total Hexa-Furans



Octa DPE



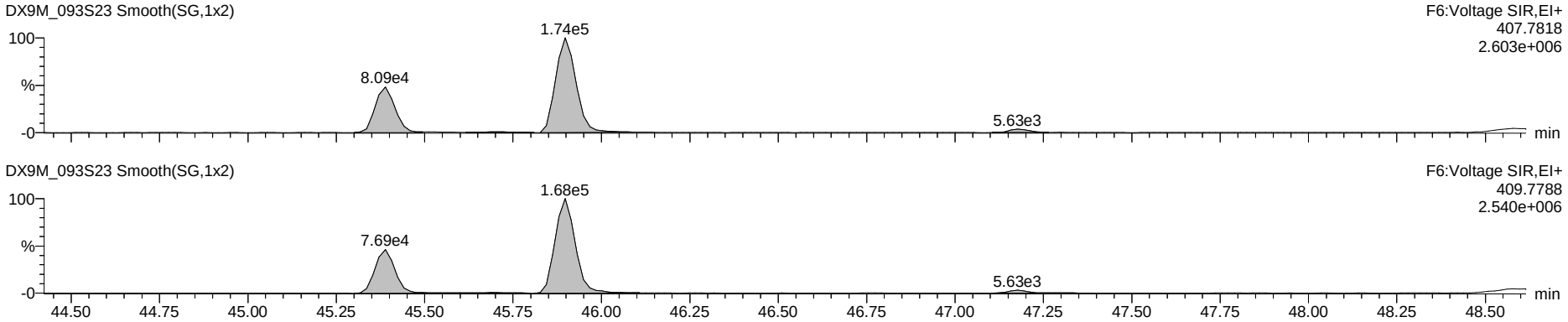
Hexa Lock



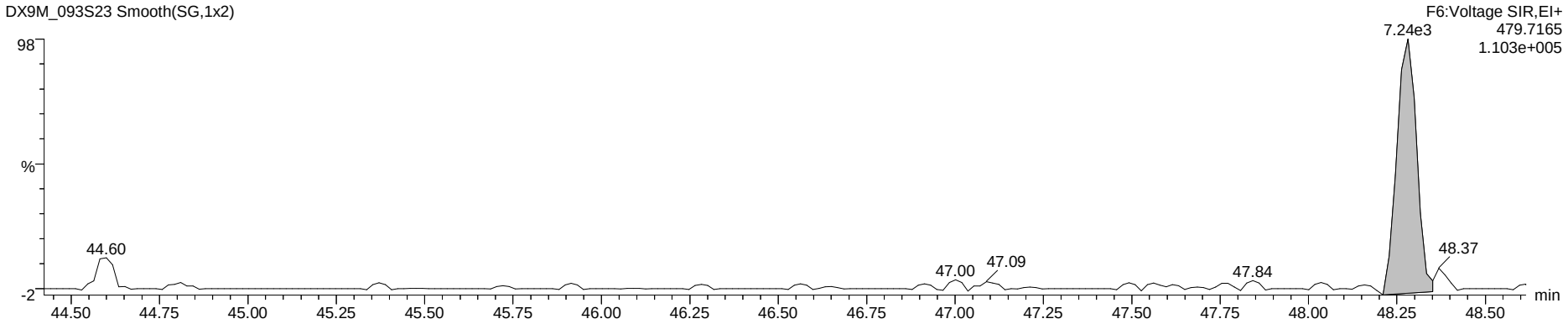
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S23, Date: 13-Sep-2019, Time: 05:32:31, ID: WG69303-103,,CRM, Description: 1,WG69303,1.0/20uL

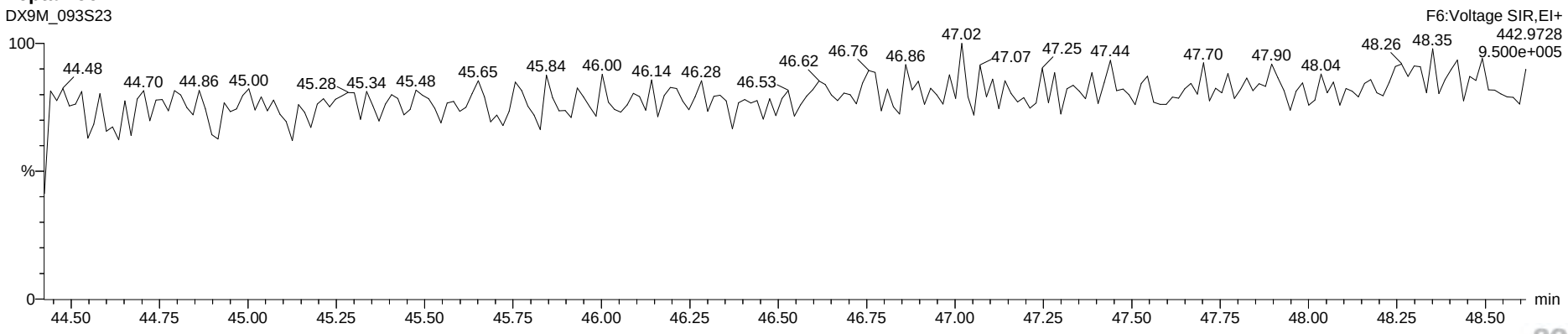
Total Hepta-Furans



Nona DPE



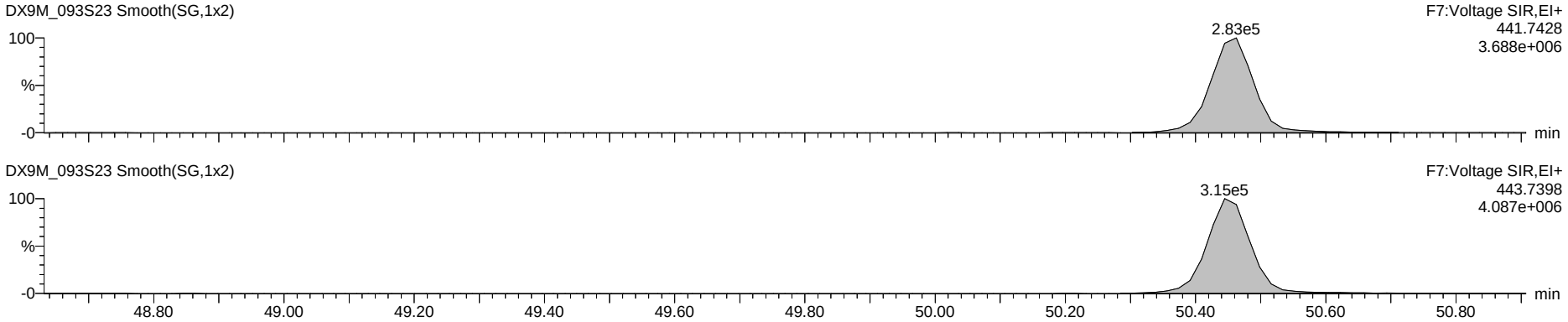
Hepta Lock



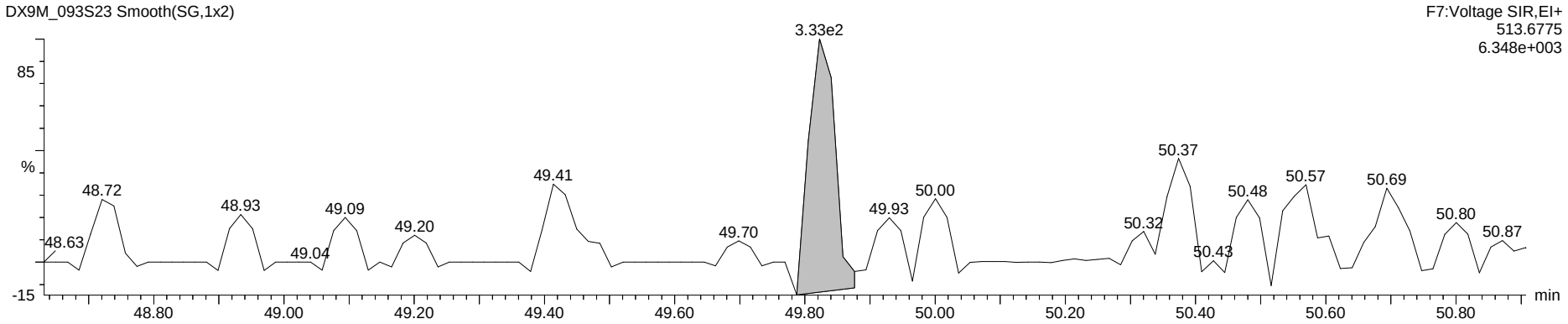
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S23, Date: 13-Sep-2019, Time: 05:32:31, ID: WG69303-103,,CRM, Description: 1,WG69303,1.0/20uL

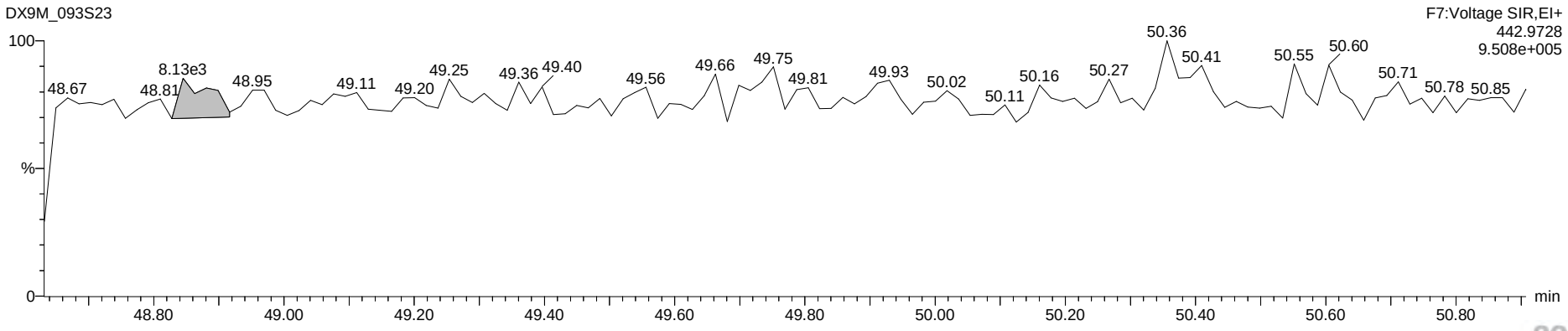
OCDF



Deca DPE



Octa Lock



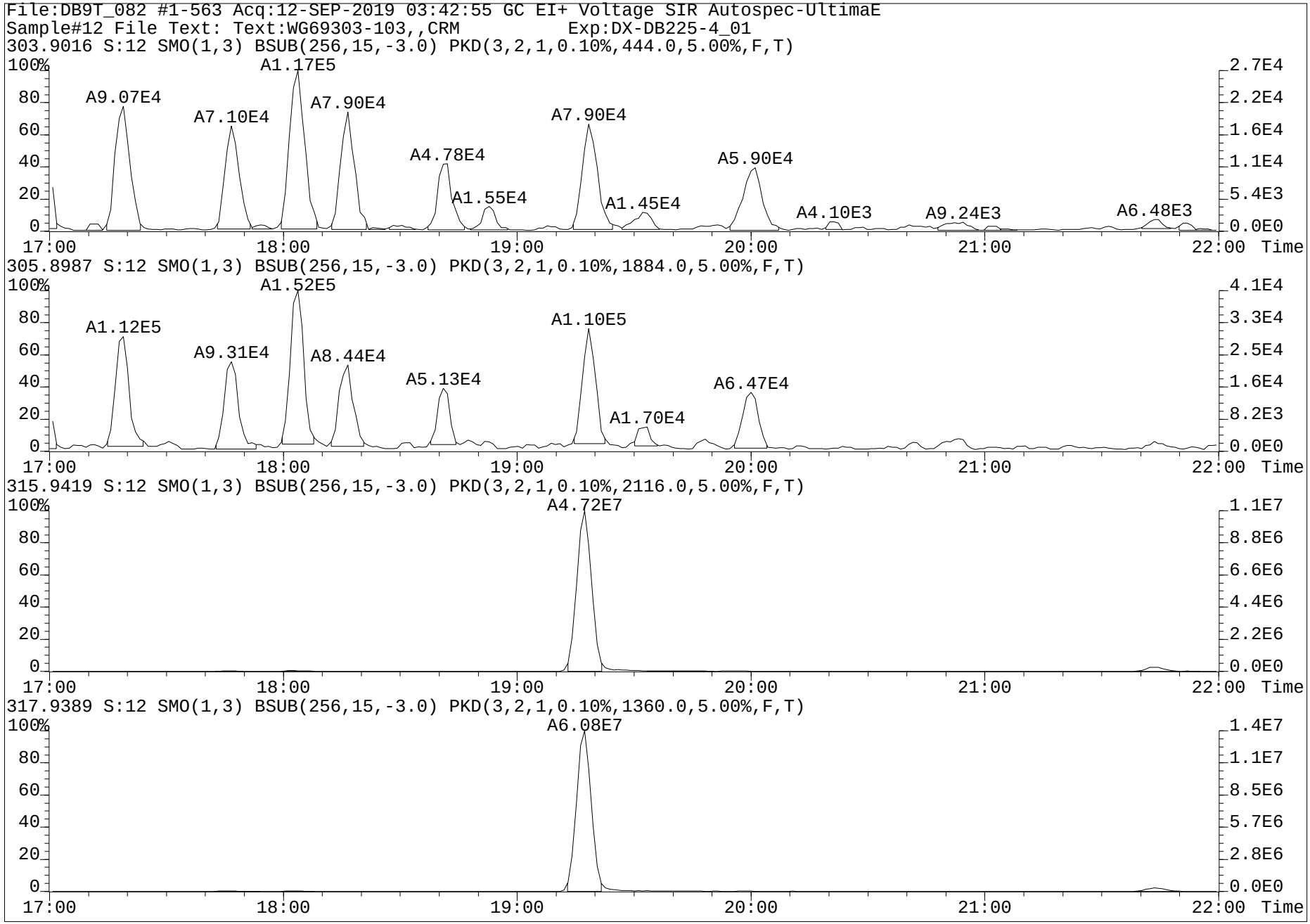
www.axysanalytical.com

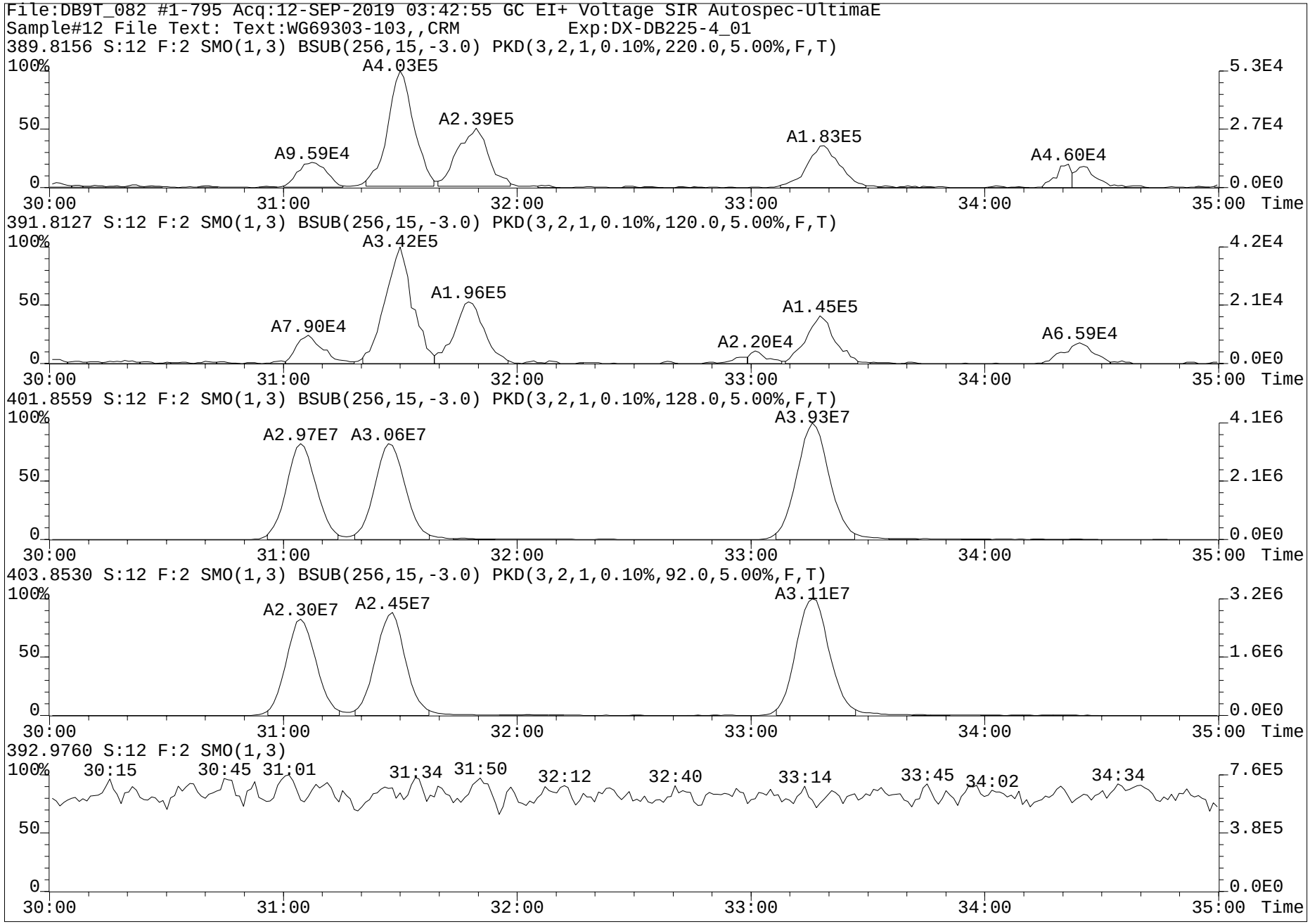
Run #11 Filename DB9T_082 S: 12 I: 1 Acquired: 12-SEP-19 03:42:55 Processed: 17-SEP-19 10:40:42
Run: db9t_082-a Analyte: db-hxd-s2 Cal: db9t_055-5a Results: db9t_082-a Version: V3.6 6-JAN-2000 17:51:42
Sample text: WG69303-103,,CRM Comments: 1,WG69303,2.0/20uL
sample size: 8.670000 conc units: pg/g total toxicity: 0.23 F1: 1.0000 F2: 1.0000

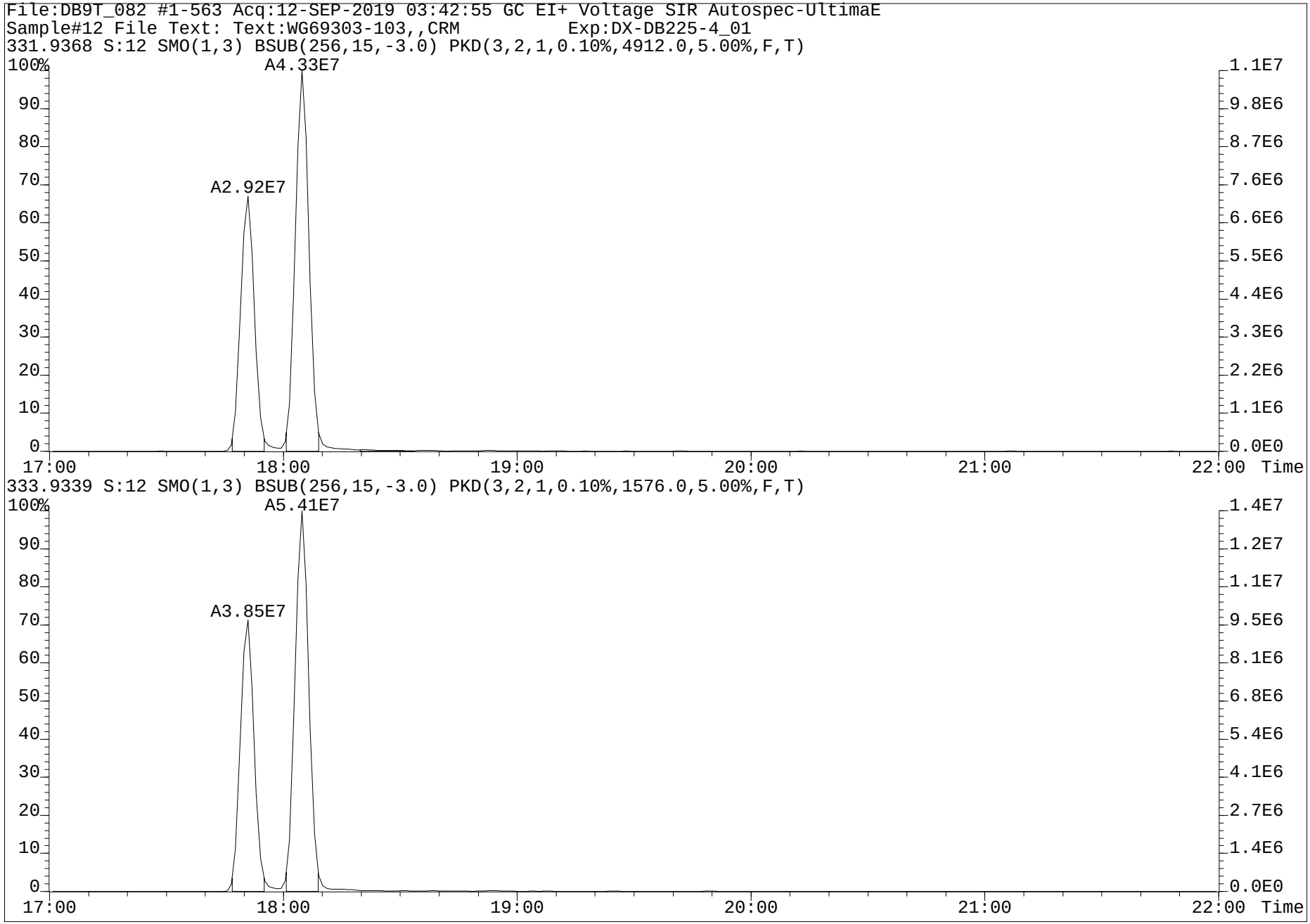
	Typ	Name	#Hom	Resp	RA		RT	Conc	Tox #1	DL	Rec	M?
1	Unk	2,3,7,8-TCDF	1	1.89e+05	0.72	y	19:18	0.520	0	0.0685	-	n
2	Unk	1,2,3,7,8,9-HxCDD	1	3.28e+05	1.26	y	33:19	1.735	0	0.0396	-	n
3	IS/RT	13C-2,3,7,8-TCDF	1	1.08e+08	0.78	y	19:17	180.684	-	0.0578	78.3	n
4	IS/RT	13C-1,2,3,4,7,8-HxCDD	1	5.27e+07	1.29	y	31:04	168.200	-	0.0169	72.9	n
5	IS/RT	13C-1,2,3,6,7,8-HxCDD	1	5.50e+07	1.25	y	31:27	168.114	-	0.0162	72.9	n
6	RS	13C-1,2,3,4-TCDD	1	9.74e+07	0.80	y	18:05	9.767	-	-	-	n
7	RS	13C-1,2,3,7,8,9-HxCDD	1	7.03e+07	1.26	y	33:16	14.127	-	-	-	n
8	Tot	Hexa DPE	0	*			NotFnd	*	-	-	-	n
9	Tot	Tetra Lock	-	-			-	-	-	-	-	n
10	Tot	Hexa Lock	-	-			-	-	-	-	-	n

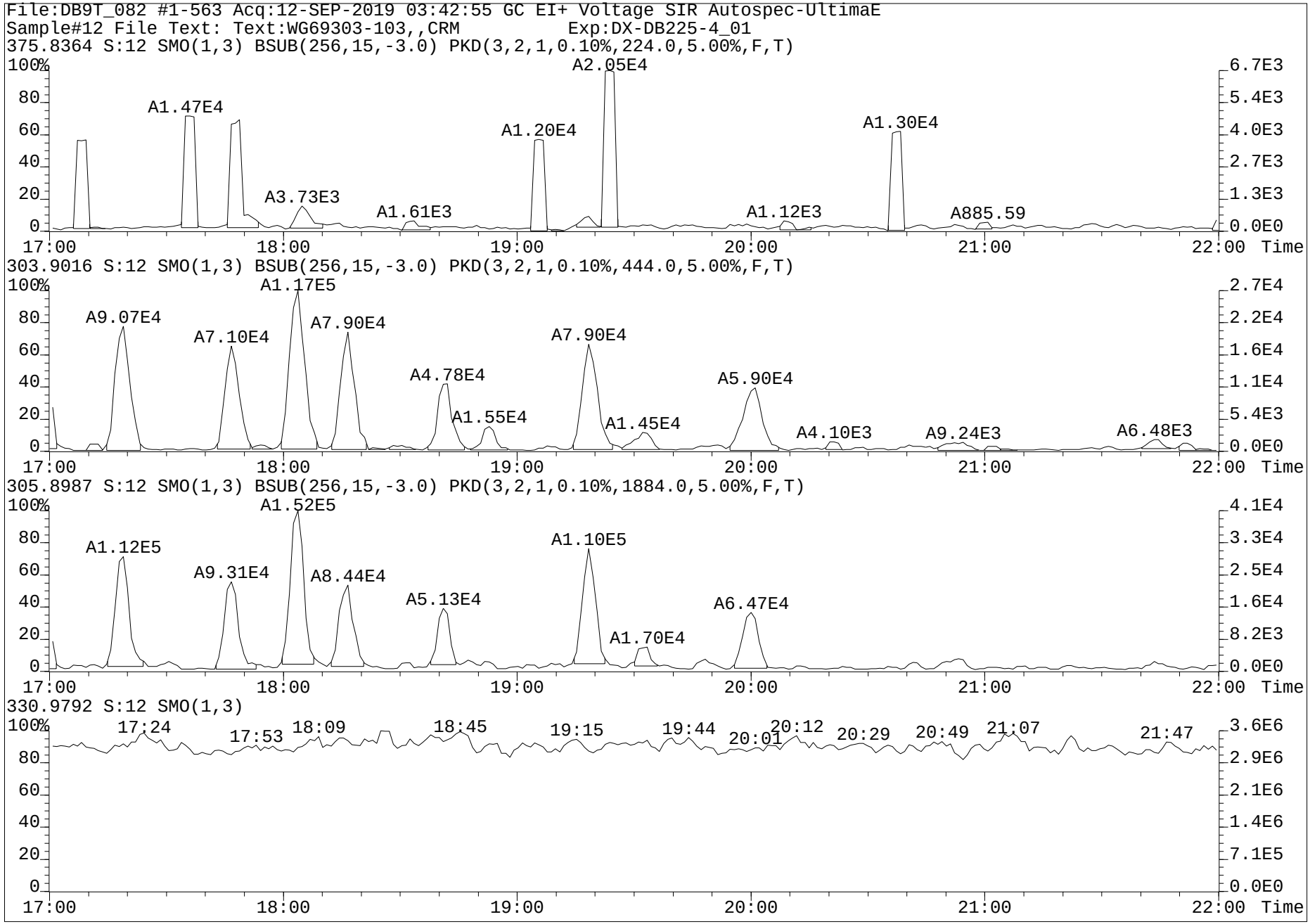
PV by RA 20SEP2019

SU by HH 22 Sept. 2019


File:DB9T_082 #1-563 Acq:12-SEP-2019 03:42:55 GC EI+ Voltage SIR Autospec-UltimaE
Sample#12 File Text: Text:WG69303-103,,CRM Exp:DX-DB225-4_01
303.9016 S:12 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,444.0,5.00%,F,T)
A9.07E4
A7.10E4
A1.17E5
A7.90E4
A4.78E4
A1.55E4
A7.90E4
A1.45E4
A5.90E4
A4.10E3
A9.24E3
A6.48E3
305.8987 S:12 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1884.0,5.00%,F,T)
A1.12E5
A9.31E4
A1.52E5
A8.44E4
A5.13E4
A1.10E5
A1.70E4
A6.47E4
315.9419 S:12 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,2116.0,5.00%,F,T)
A4.72E7
317.9389 S:12 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1360.0,5.00%,F,T)
A6.08E7
Time


File:DB9T_082 #1-795 Acq:12-SEP-2019 03:42:55 GC EI+ Voltage SIR Autospec-UltimaE
Sample#12 File Text: Text:WG69303-103,,CRM Exp:DX-DB225-4_01
389.8156 S:12 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,220.0,5.00%,F,T)
A4.03E5
A2.39E5
A9.59E4
A1.83E5
A4.60E4
391.8127 S:12 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,120.0,5.00%,F,T)
A3.42E5
A1.96E5
A7.90E4
A1.45E5
A2.20E4
A6.59E4
401.8559 S:12 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,128.0,5.00%,F,T)
A2.97E7
A3.06E7
A3.93E7
403.8530 S:12 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,92.0,5.00%,F,T)
A2.30E7
A2.45E7
A3.11E7
392.9760 S:12 F:2 SMO(1,3)
30:15
30:45
31:01
31:34
31:50
32:12
32:40
33:14
33:45
34:02
34:34
100%
50
0
30:00
31:00
32:00
33:00
34:00
35:00
Time
5.3E4
2.7E4
0.0E0
4.2E4
2.1E4
4.1E6
2.1E6
3.2E6
1.6E6
7.6E5
3.8E5


File:DB9T_082 #1-563 Acq:12-SEP-2019 03:42:55 GC EI+ Voltage SIR Autospec-UltimaE
Sample#12 File Text: Text:WG69303-103,,CRM Exp:DX-DB225-4_01
331.9368 S:12 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,4912.0,5.00%,F,T)
A4.33E7
A2.92E7
333.9339 S:12 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1576.0,5.00%,F,T)
A5.41E7
A3.85E7
17:00
18:00
19:00
20:00
21:00
22:00
Time


File:DB9T_082 #1-563 Acq:12-SEP-2019 03:42:55 GC EI+ Voltage SIR Autospec-UltimaE
Sample#12 File Text: Text:WG69303-103,,CRM Exp:DX-DB225-4_01
375.8364 S:12 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,224.0,5.00%,F,T)
A1.47E4
A3.73E3
A1.61E3
A1.20E4
A2.05E4
A1.12E3
A1.30E4
A885.59
303.9016 S:12 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,444.0,5.00%,F,T)
A9.07E4
A7.10E4
A1.17E5
A7.90E4
A4.78E4
A1.55E4
A7.90E4
A1.45E4
A5.90E4
A4.10E3
A9.24E3
A6.48E3
305.8987 S:12 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1884.0,5.00%,F,T)
A1.12E5
A9.31E4
A1.52E5
A8.44E4
A5.13E4
A1.10E5
A1.70E4
A6.47E4
330.9792 S:12 SMO(1,3)
17:24
17:53
18:09
18:45
19:15
19:44
20:01
20:12
20:29
20:49
21:07
21:47
Time

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-D.qld

Name: DX9M_093S34, Date: 13-Sep-2019, Time: 15:56:38, ID: WG69303-104,,CRM, Description: 1,WG69303,1.0/20uL

	Name	Sample Size	Resp	Ratio	fails?	RT	pg	DL	%Rec	Noise 1	Noise 2
1	2,3,7,8-TCDF	9.500	1.61e4	0.82	NO	25.25	0.734	0.0338		1.43e3	1.60e3
2	1,2,3,7,8-PeCDF	9.500	3.33e3	1.46	NO	33.55	0.173	0.0506		2.42e3	9.76e2
3	2,3,4,7,8-PeCDF	9.500	4.04e3	1.75	NO	35.28	0.209	0.0432		2.42e3	9.76e2
4	1,2,3,4,7,8-HxCDF	9.500	1.83e4	1.13	NO	40.73	1.165	0.0270		9.20e2	1.30e3
5	1,2,3,6,7,8-HxCDF	9.500	1.15e4	1.32	NO	40.92	0.666	0.0266		9.20e2	1.30e3
6	2,3,4,6,7,8-HxCDF	9.500	8.67e3	1.37	NO	41.87	0.533	0.0262		9.20e2	1.30e3
7	1,2,3,7,8,9-HxCDF	9.500	1.74e3	0.96	YES	42.90	0.127	0.0319		9.20e2	1.30e3
8	1,2,3,4,6,7,8-HpCDF	9.500	8.76e5	1.01	NO	45.37	55.860	0.0388		1.79e3	1.54e3
9	1,2,3,4,7,8,9-HpCDF	9.500	4.46e4	1.05	NO	47.16	3.429	0.0484		1.79e3	1.54e3
10	OCDF	9.500	4.76e6	0.90	NO	50.44	237.244	0.0318		3.02e3	7.33e2
11	2,3,7,8-TCDD	9.500	4.83e3	0.73	NO	26.46	0.291	0.0305		9.62e2	8.32e2
12	1,2,3,7,8-PeCDD	9.500	6.65e3	0.62	NO	36.13	0.389	0.0364		1.32e3	1.46e3
13	1,2,3,4,7,8-HxCDD	9.500	1.43e4	1.34	NO	42.14	1.208	0.0420		1.61e3	1.31e3
14	1,2,3,6,7,8-HxCDD	9.500	1.11e5	1.20	NO	42.27	7.873	0.0400		1.61e3	1.31e3
15	1,2,3,7,8,9-HxCDD	9.500	4.30e4	1.21	NO	42.70	3.330	0.0412		1.61e3	1.31e3
16	1,2,3,4,6,7,8-HpCDD	9.500	2.91e6	1.08	NO	46.76	255.207	0.1612		4.07e3	6.45e3
17	OCDD	9.500	1.47e8	0.93	NO	50.37	8529.639	0.1051		5.48e3	5.19e3
18	13C-2,3,7,8-TCDF	9.500	4.99e6	0.77	NO	25.22	178.142	0.1534	84.6	1.07e4	7.45e3
19	13C-1,2,3,7,8-PeCDF	9.500	4.36e6	1.56	NO	33.50	191.488	0.1933	91.0	7.19e3	1.14e4
20	13C-2,3,4,7,8-PeCDF	9.500	4.28e6	1.54	NO	35.28	182.265	0.1874	86.6	7.19e3	1.14e4
21	13C-1,2,3,4,7,8-HxCDF	9.500	2.99e6	0.51	NO	40.71	173.392	0.1882	82.4	1.17e4	4.98e3
22	13C-1,2,3,6,7,8-HxCDF	9.500	3.38e6	0.51	NO	40.88	178.233	0.1712	84.7	1.17e4	4.98e3
23	13C-2,3,4,6,7,8-HxCDF	9.500	3.01e6	0.53	NO	41.85	176.407	0.1900	83.8	1.17e4	4.98e3
24	13C-1,2,3,7,8,9-HxCDF	9.500	2.73e6	0.52	NO	42.88	179.893	0.2136	85.4	1.17e4	4.98e3
25	13C-1,2,3,4,6,7,8-HpCDF	9.500	2.64e6	0.45	NO	45.35	186.114	0.2185	88.4	1.03e4	5.66e3
26	13C-1,2,3,4,7,8,9-HpCDF	9.500	2.18e6	0.47	NO	47.14	189.545	0.2693	90.0	1.03e4	5.66e3
27	13C-2,3,7,8-TCDD	9.500	3.17e6	0.75	NO	26.44	177.997	0.2187	84.5	7.15e3	9.35e3
28	13C-1,2,3,7,8-PeCDD	9.500	3.64e6	0.64	NO	36.10	257.754	0.1103	122.4	2.18e3	4.43e3
29	13C-1,2,3,4,7,8-HxCDD	9.500	2.43e6	1.26	NO	42.12	176.337	0.1354	83.8	4.28e3	5.32e3
30	13C-1,2,3,6,7,8-HxCDD	9.500	3.16e6	1.25	NO	42.26	208.035	0.1225	98.8	4.28e3	5.32e3
31	13C-1,2,3,4,6,7,8-HpCDD	9.500	3.08e6	1.03	NO	46.74	199.972	0.1336	95.0	4.12e3	6.47e3
32	13C-OCDD	9.500	7.42e6	0.90	NO	50.36	655.211	0.1347	155.6	5.46e3	2.39e3
33	13C-1,2,3,4-TCDD	9.500	3.87e6	0.82	NO	26.09	10.121	0.0102	4.8	7.15e3	9.35e3
34	13C-1,2,3,7,8,9-HxCDD	9.500	2.99e6	1.30	NO	42.68	10.841	0.0068	5.1	4.28e3	5.32e3
35	37Cl-2,3,7,8-TCDD	9.500	3.59e5			26.46	18.306	0.0230	87.0		1.91e3
36	Total Tetra-Furans	9.500					5.696	0.0337			1.60e3
37	Total Tetra-Dioxins	9.500					1.504	0.0305			8.32e2
38	Total Penta-Furans	9.500					5.463	0.0474			9.76e2
39	Total Penta-Dioxins	9.500					4.010	0.0364			1.46e3 T
40	Total Hexa-Furans	9.500					42.659	0.0275			1.30e3
41	Total Hexa-Dioxins	9.500					50.320	0.0390			1.31e3
42	Total Hepta-Furans	9.500					235.678	0.0432			1.54e3
43	Total Hepta-Dioxins	9.500					613.125	0.1612			6.45e3
44	Hexa DPE	1.000	1.65e2			21.83					3.14e0
45	Hepta DPE	1.000	2.10e2			33.05					1.82e0
46	Octa DPE	1.000	1.20e2			40.80					1.55e0
47	Nona DPE	1.000	1.31e4			48.26					7.71e1
48	Deca DPE	1.000	1.68e2			49.11					6.04e2
49	Tetra Lock	1.000									1.94e5
50	Penta Lock	1.000									1.56e5
51	Hexa Lock	1.000	3.19e5			39.00					3.75e5
52	Hepta Lock	1.000	1.27e4			44.55					1.86e5
53	Octa Lock	1.000									1.79e5
54	13C-Tetra-Furans	9.500					178.142	0.1534			7.45e3
55	13C-Tetra-Dioxins	9.500					188.117	0.2289			9.35e3

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

SVHH 22 Sept. 2019

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-D.qld

Name: DX9M_093S34, Date: 13-Sep-2019, Time: 15:56:38, ID: WG69303-104,,CRM, Description: 1,WG69303,1.0/20uL

Tetrafurans

	RT	Ratio	Fails?	pg
1	23.40	0.772	NO	0.788
2	22.98	0.900	YES	0.503
3	22.58	0.702	NO	0.228
4	22.25	0.766	NO	0.489
5	21.92	0.697	NO	0.072
6	26.21	0.853	NO	0.072
7	25.94	0.779	NO	0.401
8	25.25	0.820	NO	0.734
9	24.92	0.774	NO	0.319
10	24.57	0.787	NO	0.492
11	24.27	0.569	YES	0.069
12	24.12	0.851	NO	0.388
13	23.84	1.010	YES	0.648
14	23.64	0.622	YES	0.025
15	28.16	1.720	YES	0.467

Tetradioxins

	RT	Ratio	Fails?	pg
1	26.46	0.726	NO	0.291
2	26.12	0.552	YES	0.133
3	25.62	1.428	YES	0.041
4	25.20	4.015	YES	0.213
5	25.02	0.719	NO	0.029
6	24.89	1.083	YES	0.032
7	24.69	0.955	YES	0.179
8	23.74	0.857	NO	0.062
9	23.35	0.827	NO	0.174
10	22.93	0.728	NO	0.272
11	28.29	0.499	YES	0.011
12	27.06	0.768	NO	0.067

Pentafurans

	RT	Ratio	Fails?	pg
1	28.88	1.607	NO	3.041
2	33.93	1.870	YES	0.046
3	33.55	1.461	NO	0.173
4	33.37	4.671	YES	0.050
5	32.87	1.312	YES	0.367
6	32.25	2.237	YES	0.025
7	31.87	2.151	YES	0.094
8	31.45	1.615	NO	1.093
9	35.58	1.387	NO	0.204
10	35.28	1.755	NO	0.209
11	34.25	1.264	YES	0.160

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-D.qld

Name: DX9M_093S34, Date: 13-Sep-2019, Time: 15:56:38, ID: WG69303-104,,CRM, Description: 1,WG69303,1.0/20uL

Pentadioxins

	RT	Ratio	Fails?	pg
1	33.09	0.629	NO	0.325
2	31.95	0.686	NO	2.040
3	35.10	0.856	YES	0.251
4	34.87	0.682	NO	0.081
5	34.48	0.685	NO	0.181
6	34.12	0.555	NO	0.330
7	33.83	0.599	NO	0.245
8	37.03	0.678	NO	0.100
9	36.45	0.526	NO	0.068
10	36.13	0.623	NO	0.389

Hexafurans

	RT	Ratio	Fails?	pg
1	39.78	0.621	YES	0.193
2	39.26	1.324	NO	10.145
3	39.00	1.267	NO	3.253
4	43.05	1.216	NO	0.250
5	42.90	0.959	YES	0.127
6	41.87	1.367	NO	0.533
7	41.70	1.261	NO	0.653
8	40.92	1.323	NO	0.666
9	40.73	1.125	NO	1.165
10	40.09	1.210	NO	25.540
11	40.68	1.137	NO	0.134

Hexadioxins

	RT	Ratio	Fails?	pg
1	40.85	1.396	NO	2.386
2	40.04	1.239	NO	18.781
3	42.70	1.210	NO	3.330
4	42.27	1.201	NO	7.873
5	42.14	1.341	NO	1.208
6	41.43	1.274	NO	2.031
7	41.24	1.219	NO	14.711

Heptafurans

	RT	Ratio	Fails?	pg
1	47.16	1.048	NO	3.429
2	45.88	1.064	NO	174.727
3	45.69	0.385	YES	1.662
4	45.37	1.013	NO	55.860

Heptadioxins

	RT	Ratio	Fails?	pg
1	46.76	1.075	NO	255.207
2	45.83	1.047	NO	357.918

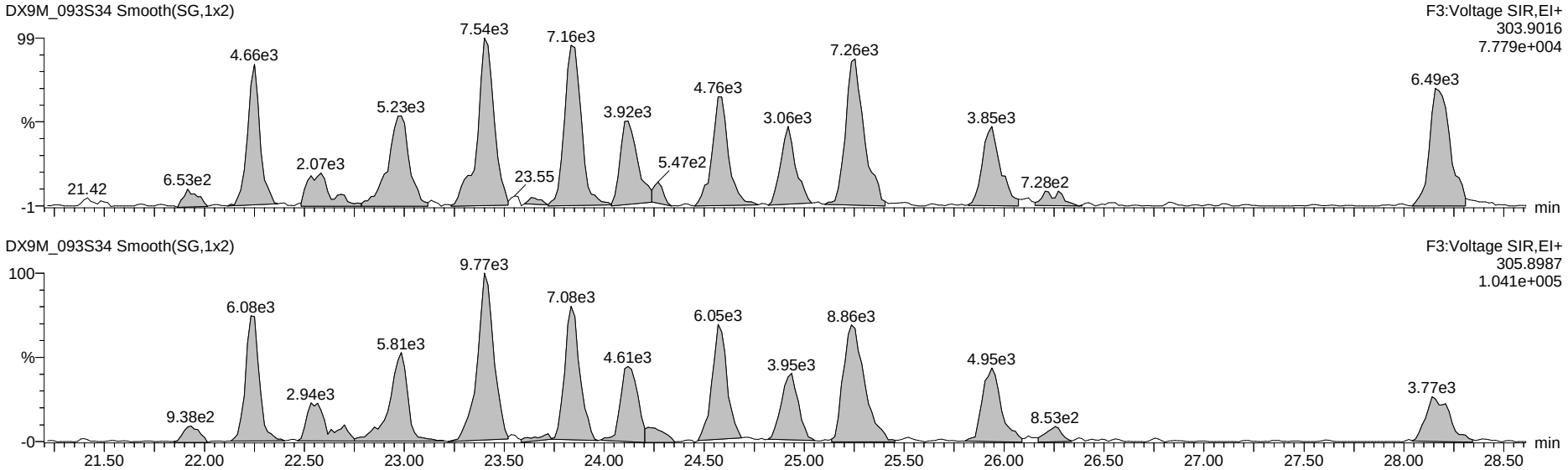
PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-D.qld

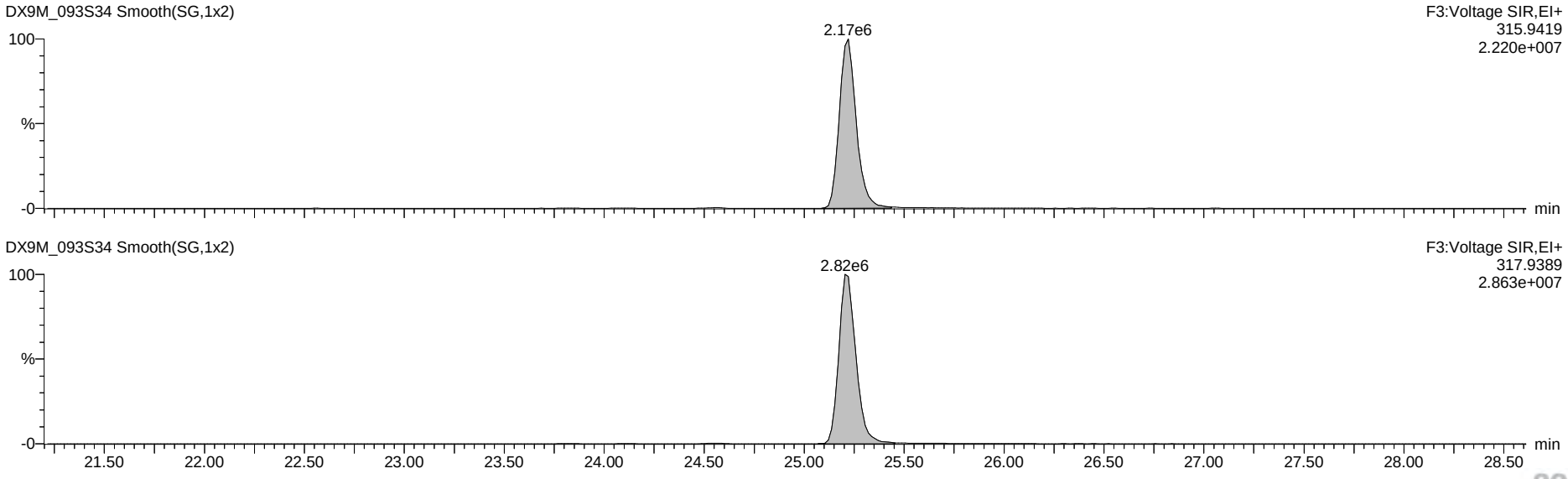
Method: G:\Masslynx\Inst_M\Master methods and layouts\Current Methods\DX_1613B_16.mdb 07 Sep 2017 16:45:23
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

Name: DX9M_093S34, Date: 13-Sep-2019, Time: 15:56:38, ID: WG69303-104,,CRM, Description: 1,WG69303,1.0/20uL

Total Tetra-Furans



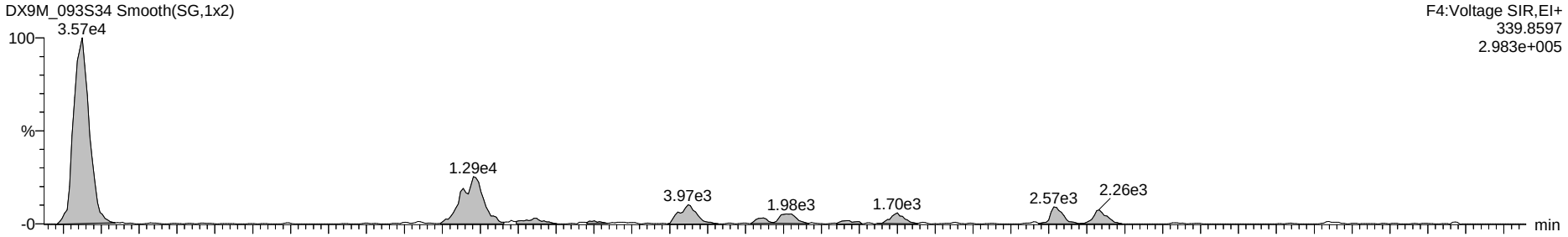
13C-Tetra-Furans

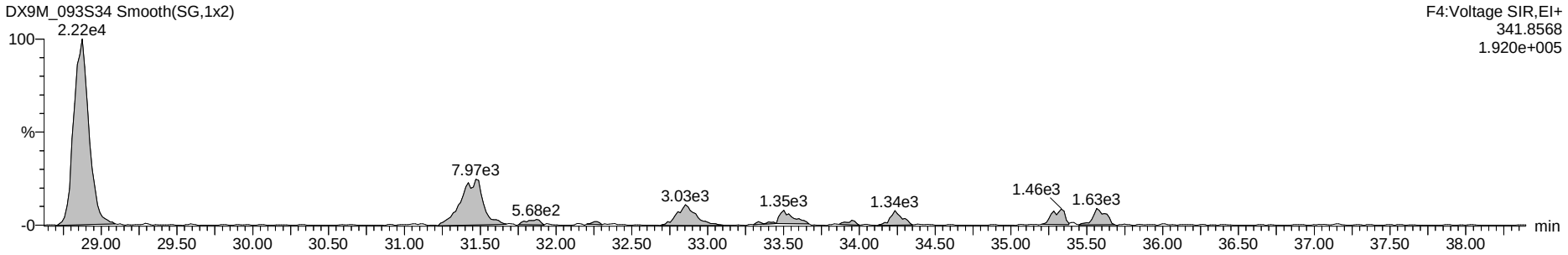


Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-D.qld

Name: DX9M_093S34, Date: 13-Sep-2019, Time: 15:56:38, ID: WG69303-104,,CRM, Description: 1,WG69303,1.0/20uL

Total Penta-Furans





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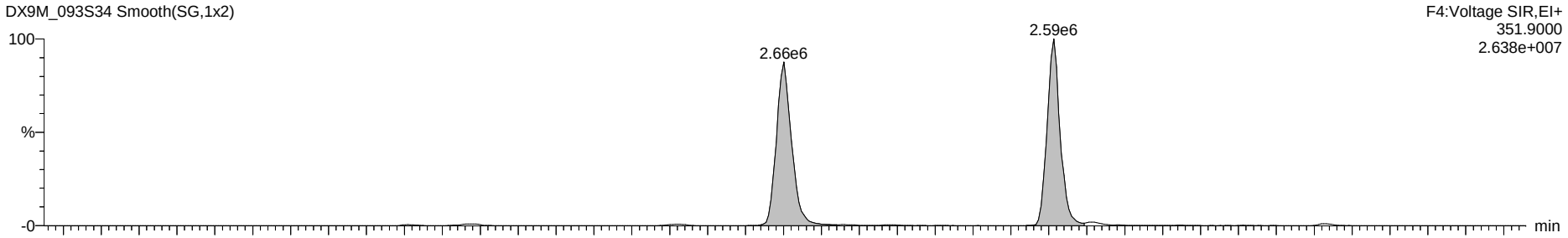

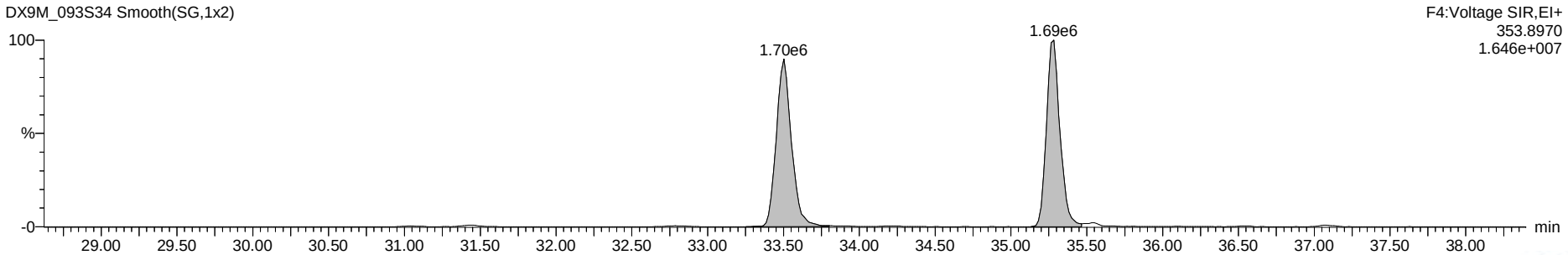

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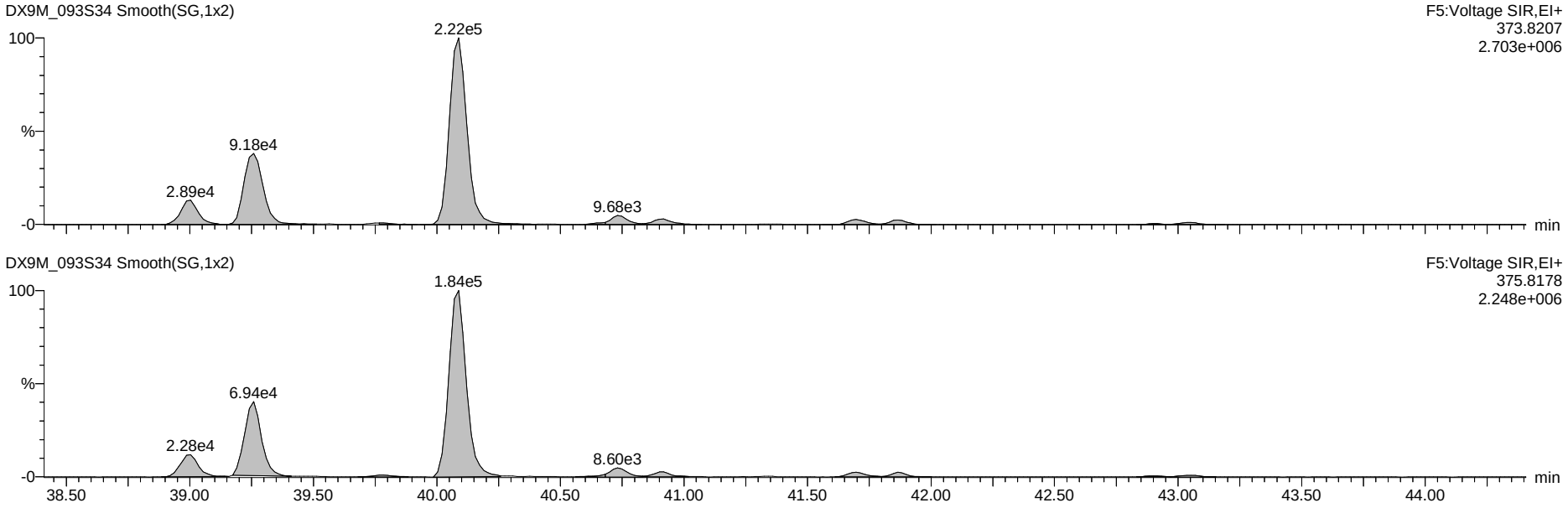
Name: DX9M_093S34, Date: 13-Sep-2019, Time: 15:56:38, ID: WG69303-104,,CRM, Description: 1,WG69303,1.0/20uL

Total Hexa-Furans



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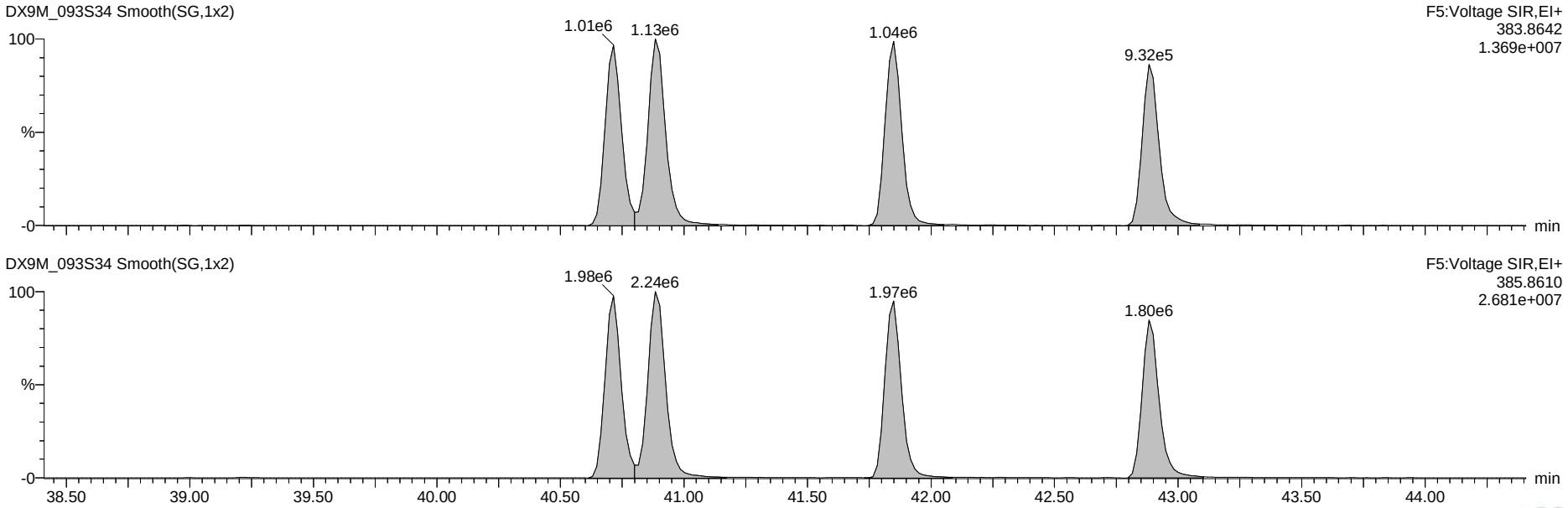

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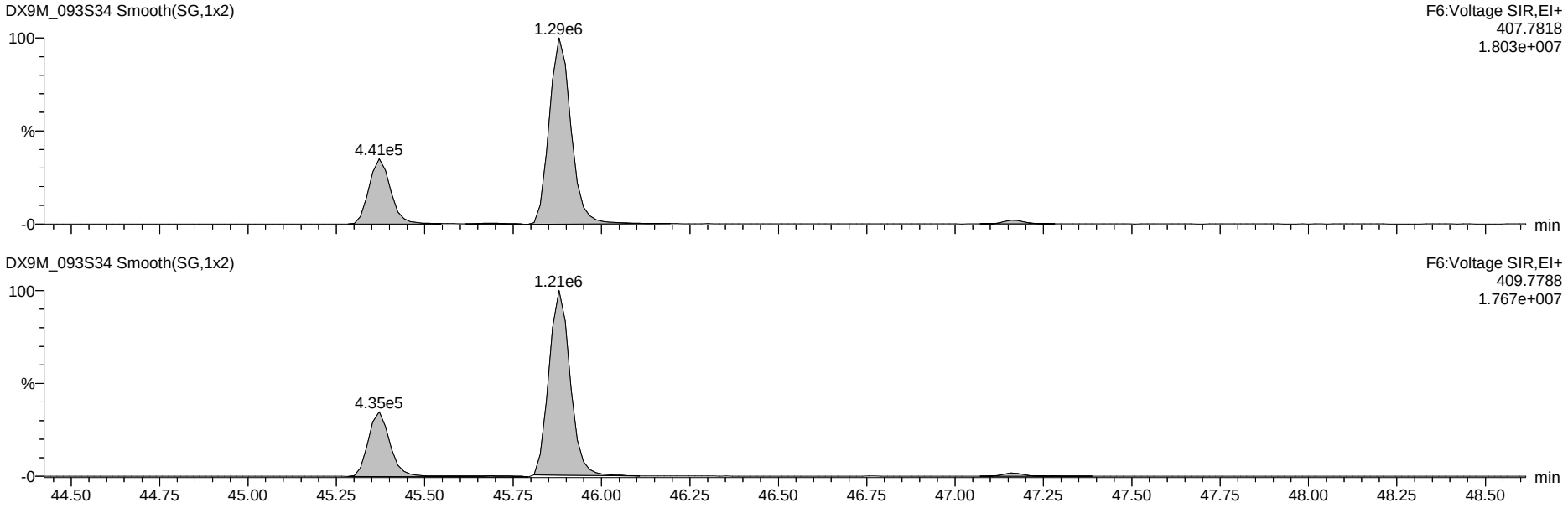
Total Hepta-Furans



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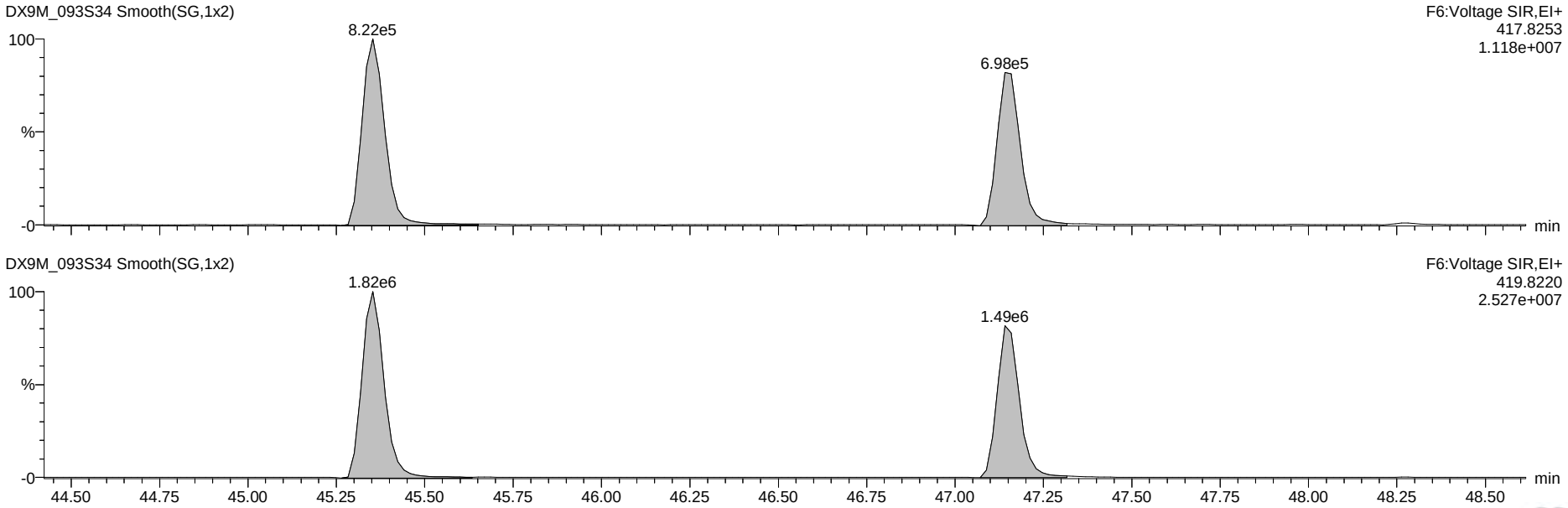

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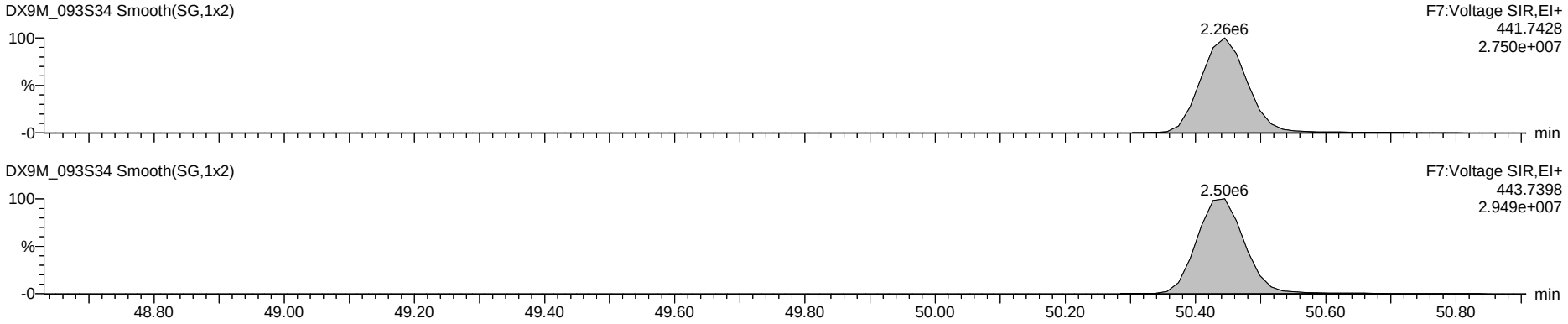
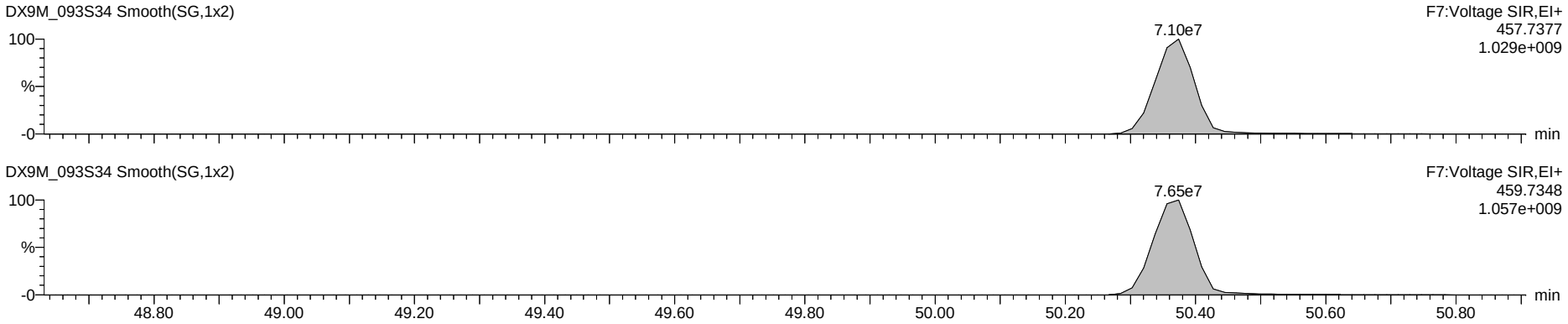
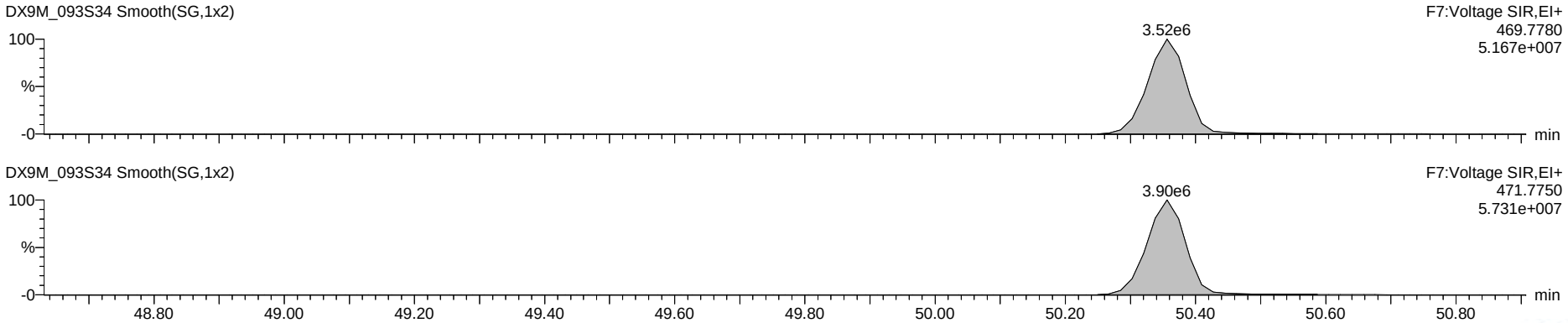
OCDF



OCDD



13C-OCDD



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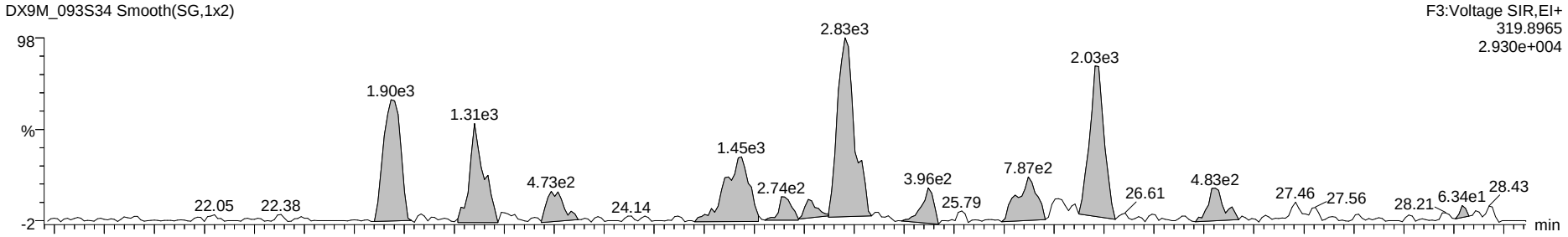
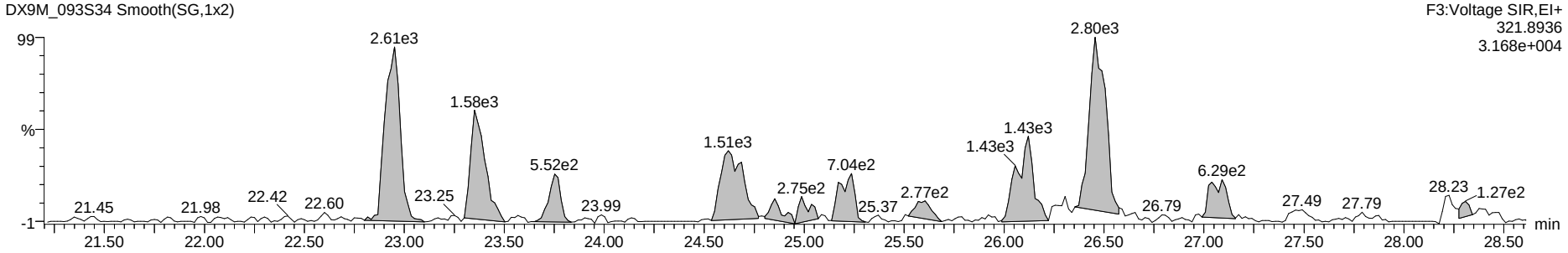
Name: DX9M_093S34, Date: 13-Sep-2019, Time: 15:56:38, ID: WG69303-104,,CRM, Description: 1,WG69303,1.0/20uL

Total Tetra-Dioxins





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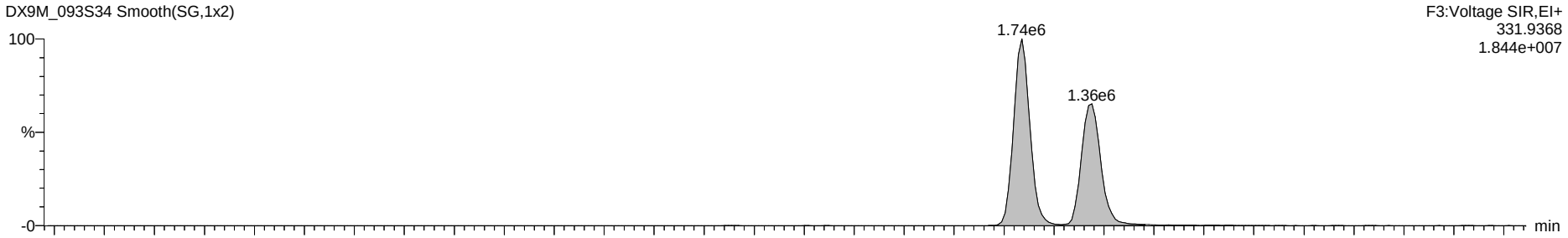

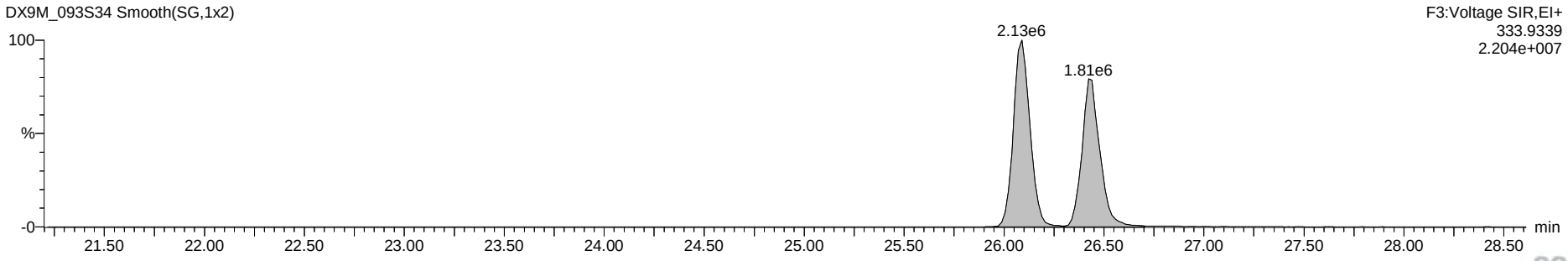

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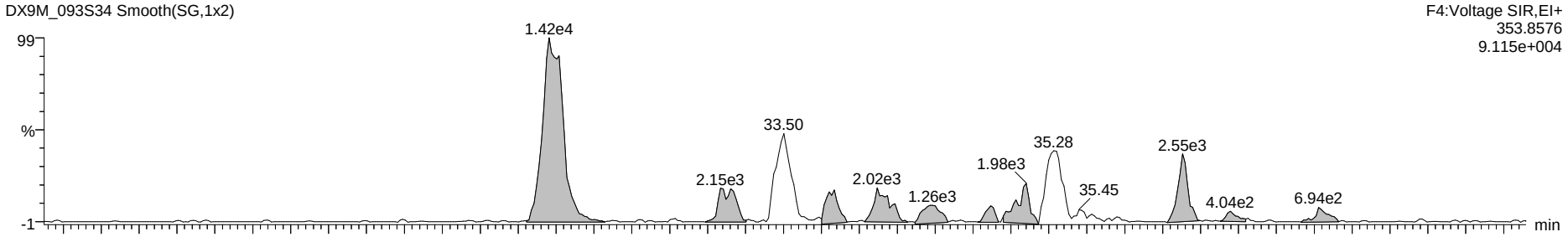
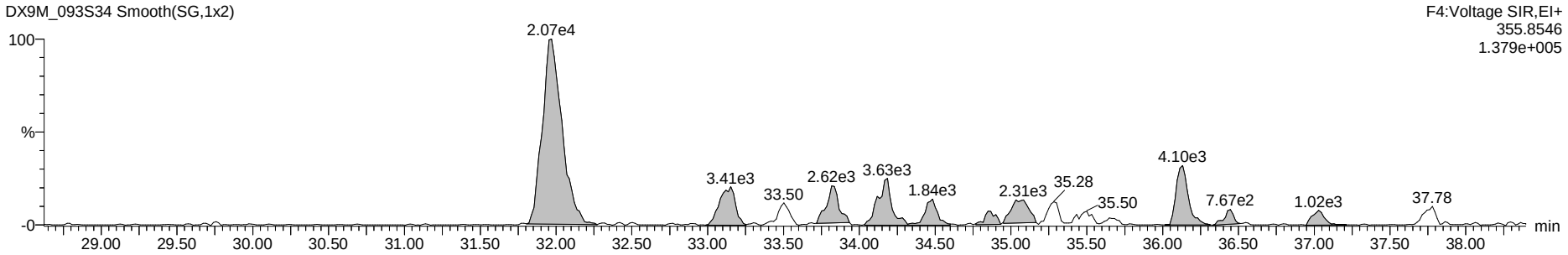
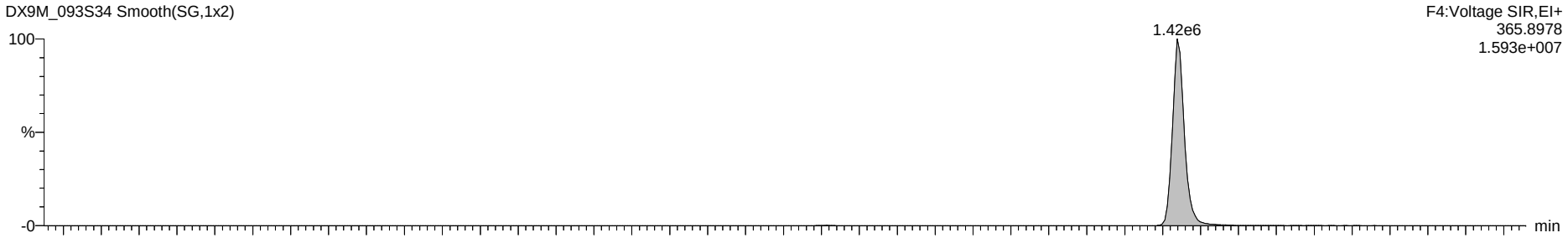
Name: DX9M_093S34, Date: 13-Sep-2019, Time: 15:56:38, ID: WG69303-104,,CRM, Description: 1,WG69303,1.0/20uL

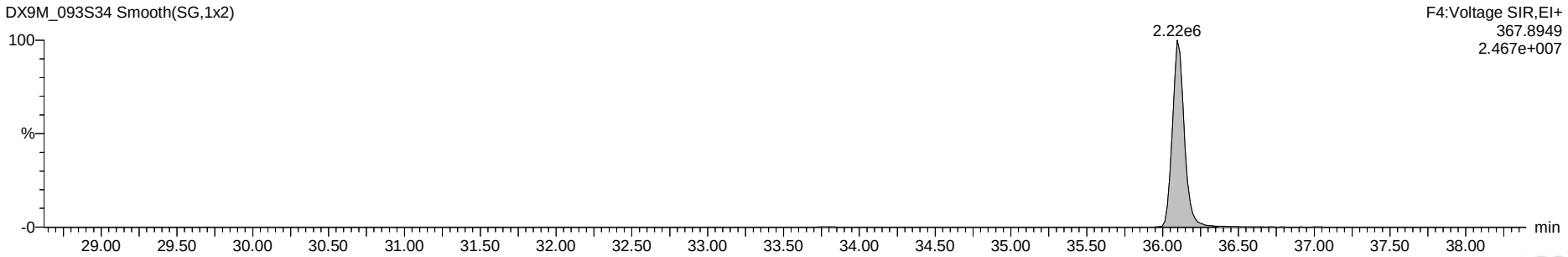
Total Penta-Dioxins





13C-Penta-Dioxins





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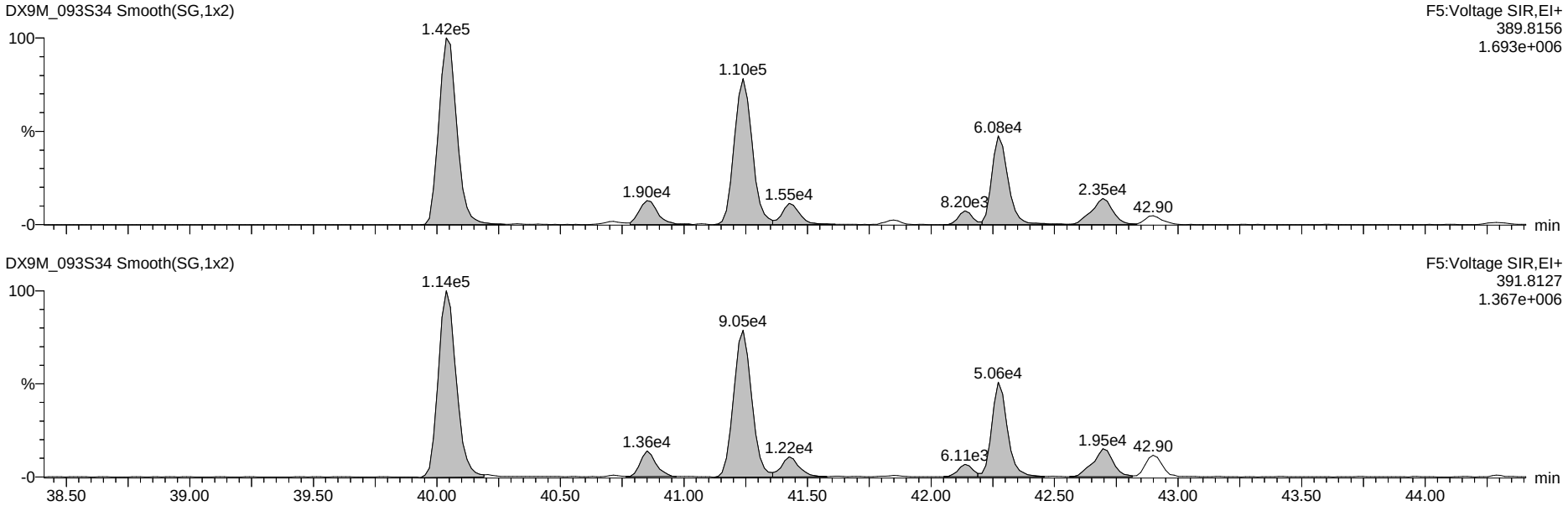
Name: DX9M_093S34, Date: 13-Sep-2019, Time: 15:56:38, ID: WG69303-104,,CRM, Description: 1,WG69303,1.0/20uL

Total Hexa-Dioxins



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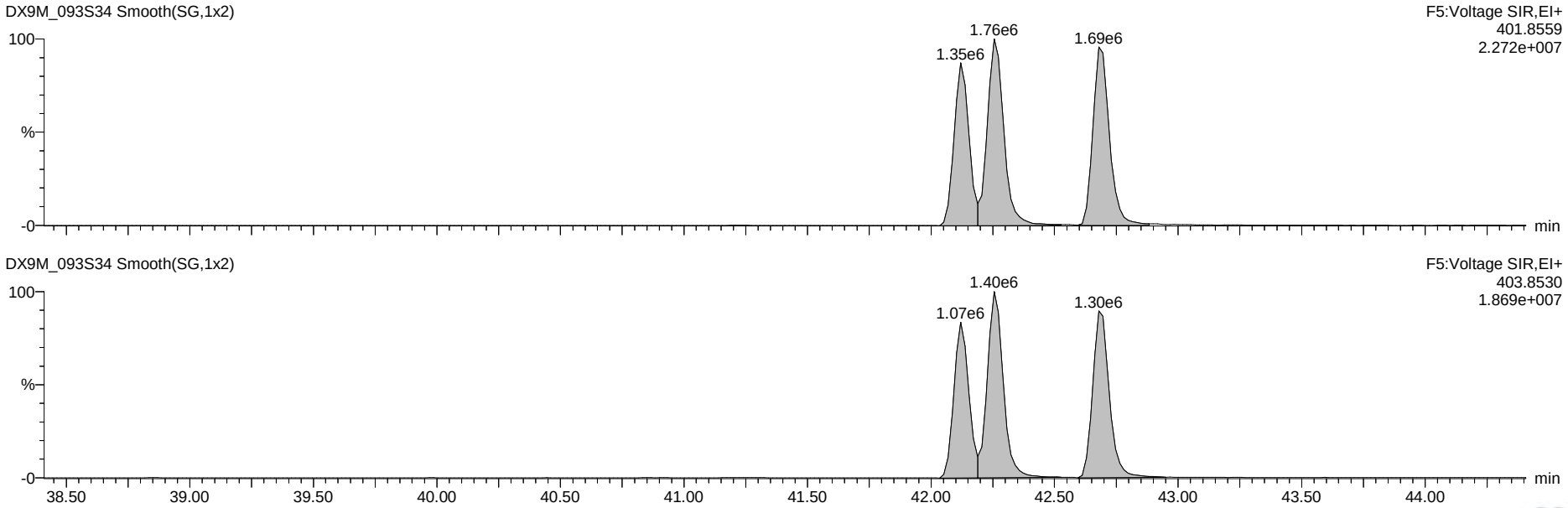

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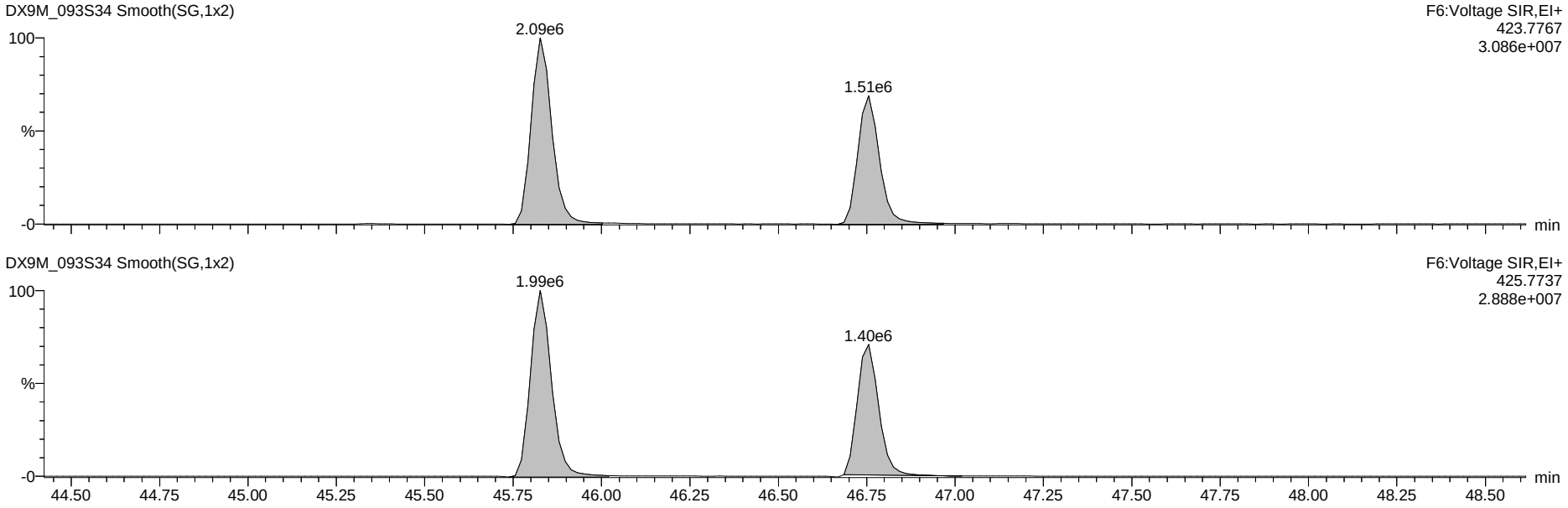
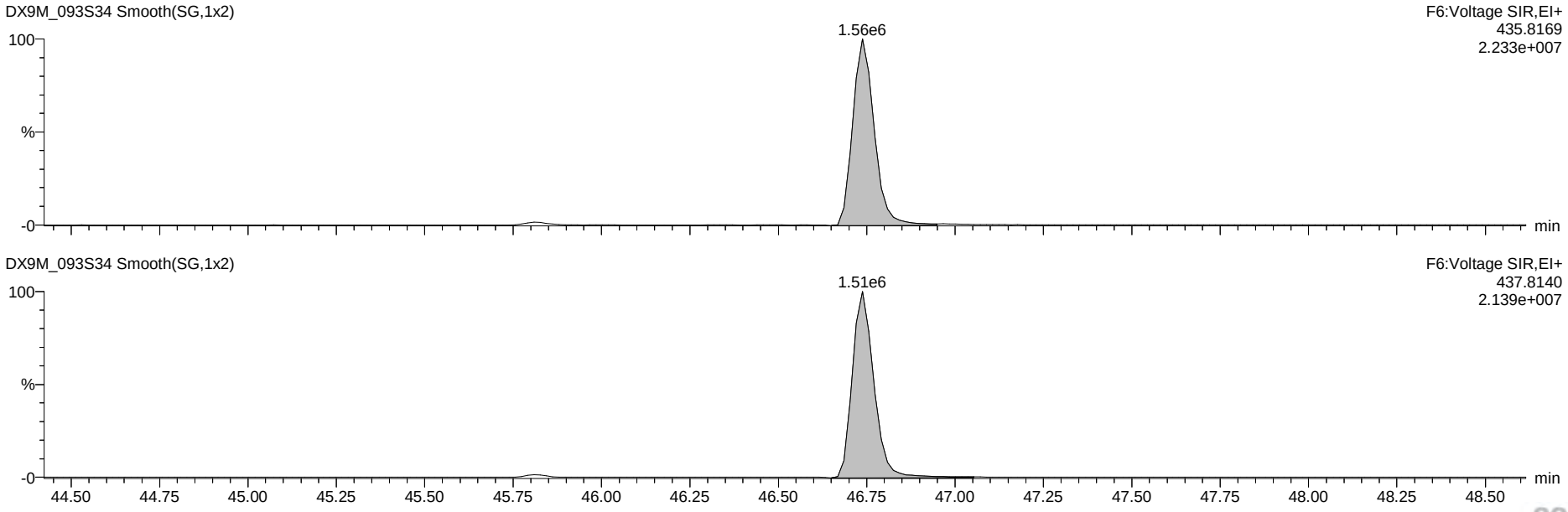
Name: DX9M_093S34, Date: 13-Sep-2019, Time: 15:56:38, ID: WG69303-104,,CRM, Description: 1,WG69303,1.0/20uL

Total Hepta-Dioxins



13C-Hepta-Dioxins



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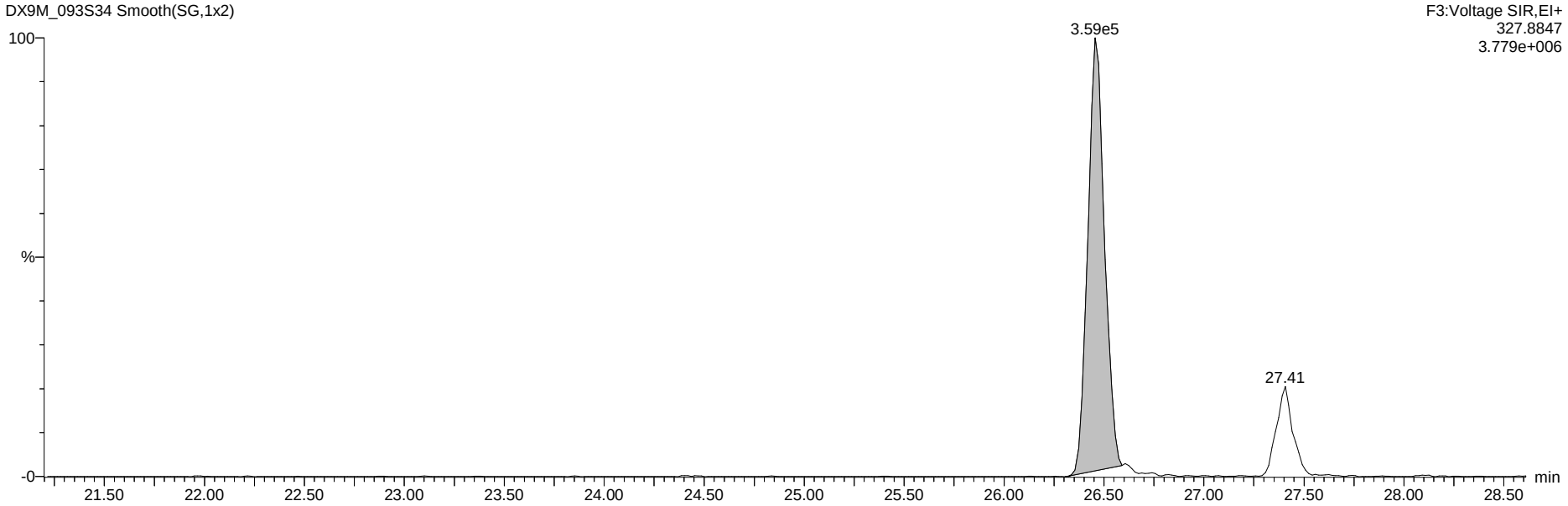
37Cl-2,3,7,8-TCDD



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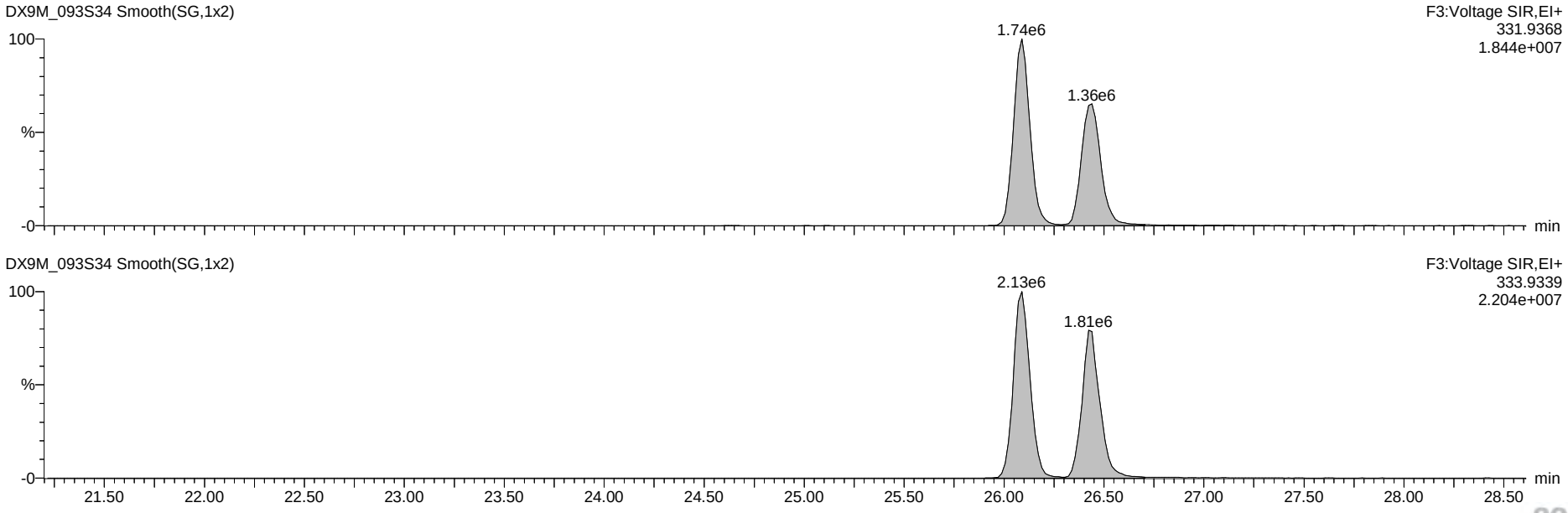

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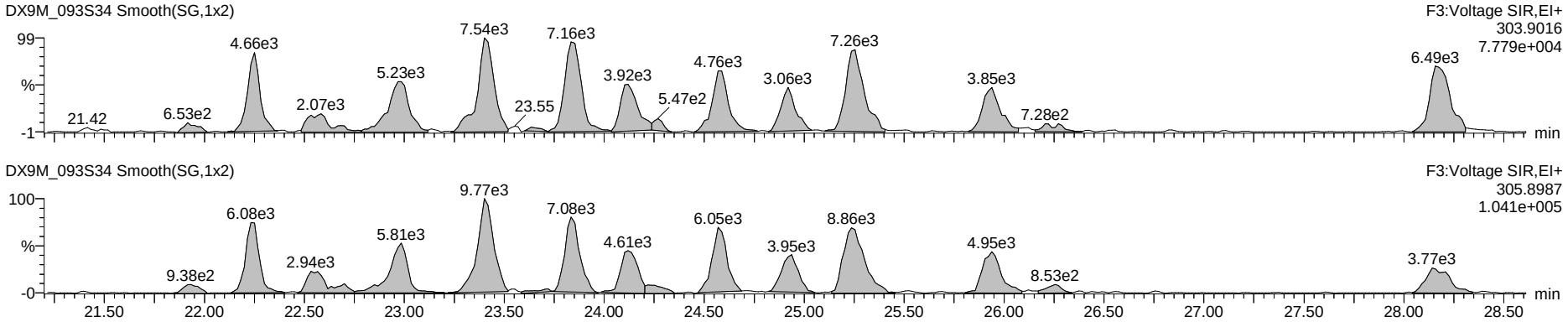
Name: DX9M_093S34, Date: 13-Sep-2019, Time: 15:56:38, ID: WG69303-104,,CRM, Description: 1,WG69303,1.0/20uL

Total Tetra-Furans



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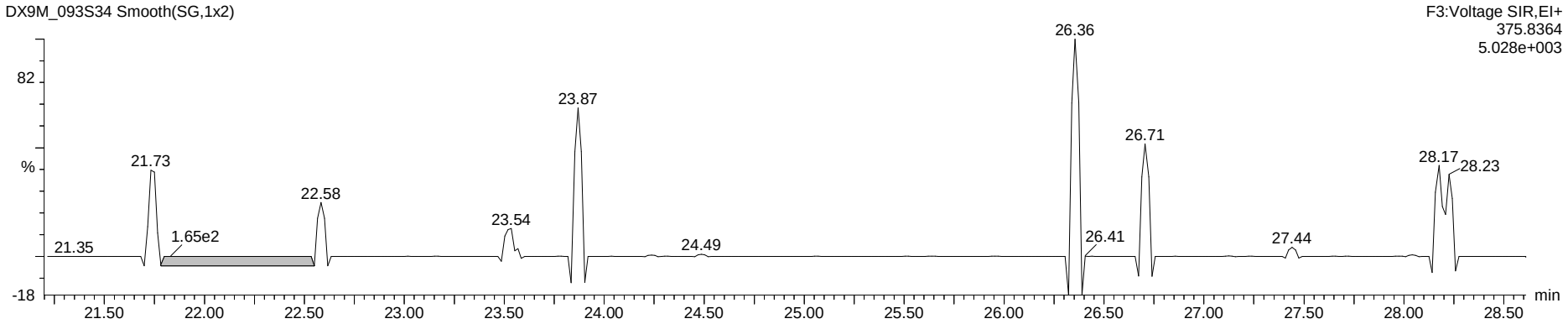
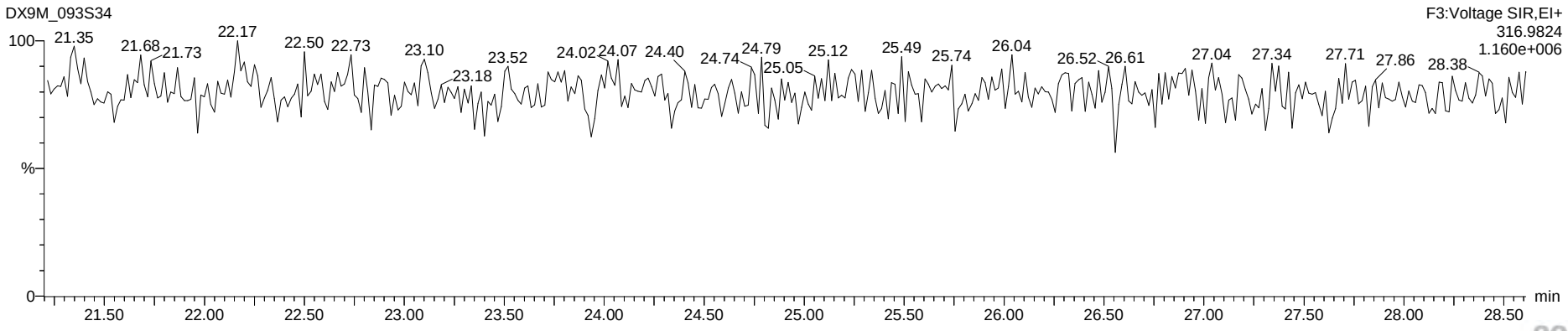


Tetra Lock



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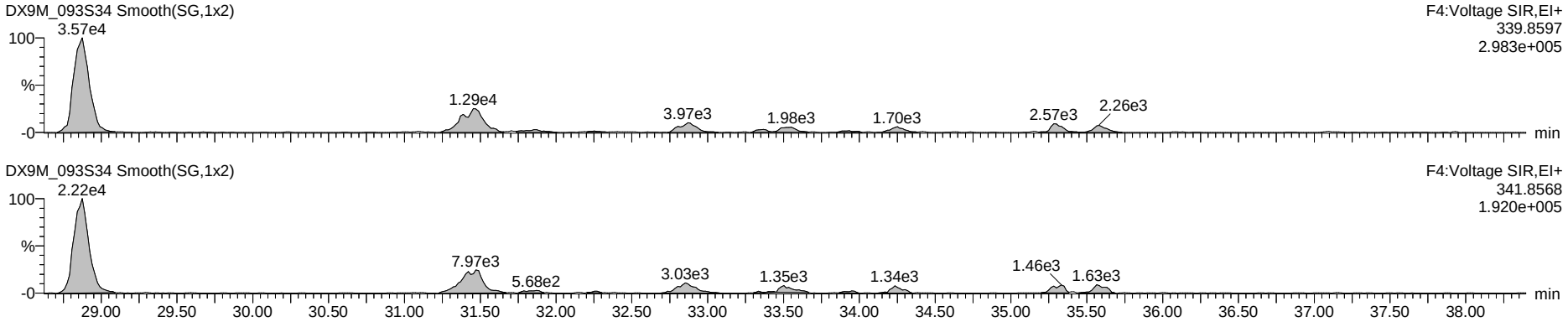
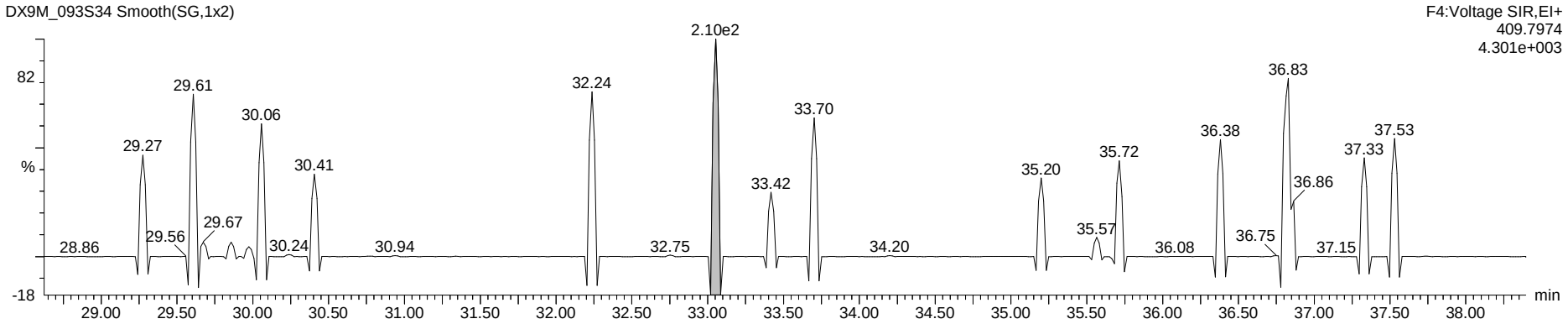
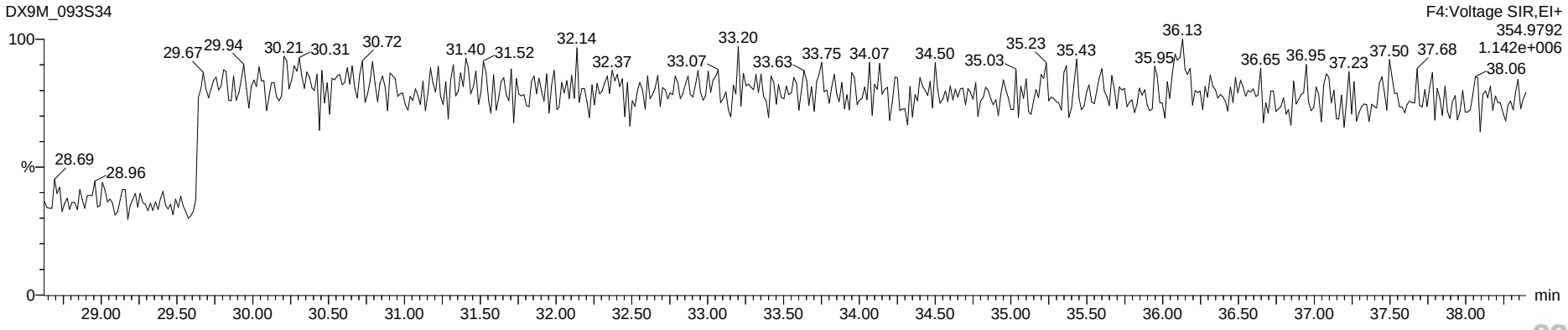
Total Penta-Furans



Hepta DPE



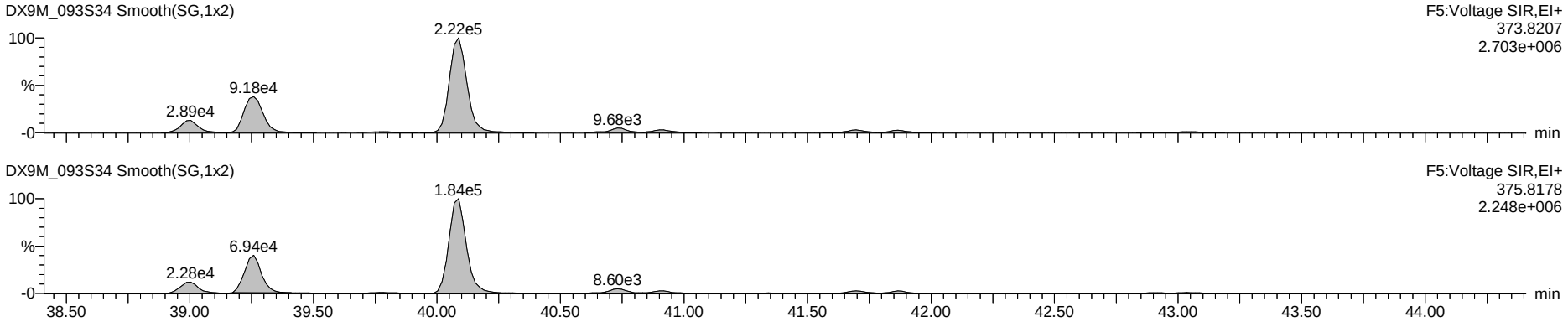
Penta Lock



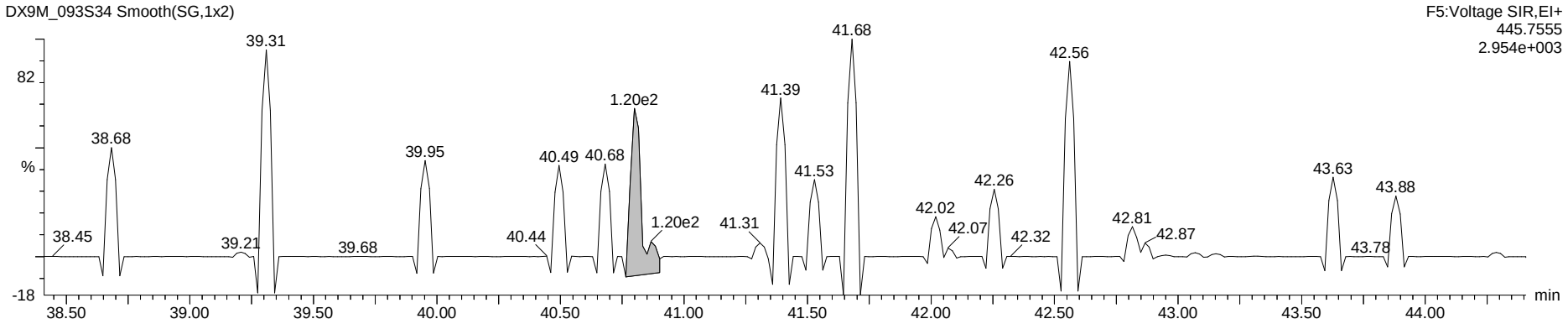
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-D.qld

Name: DX9M_093S34, Date: 13-Sep-2019, Time: 15:56:38, ID: WG69303-104,,CRM, Description: 1,WG69303,1.0/20uL

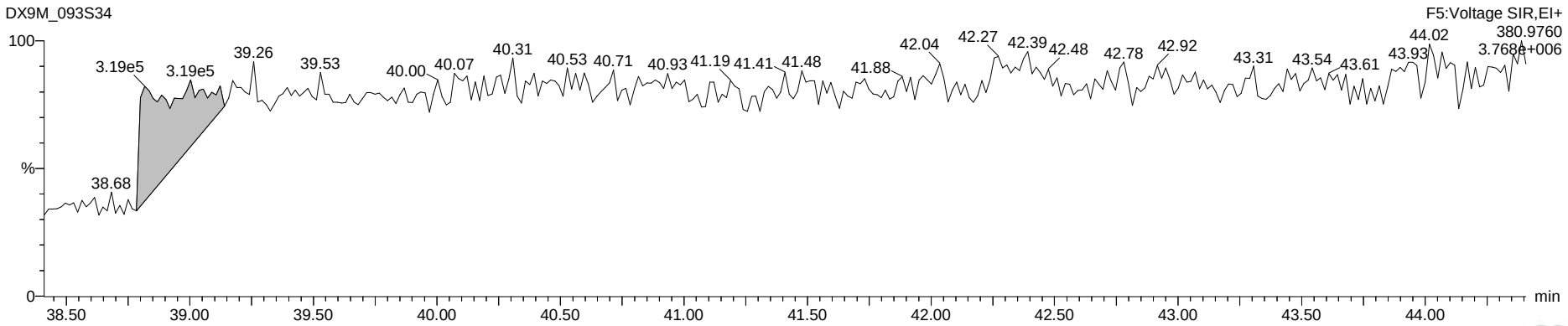
Total Hexa-Furans



Octa DPE



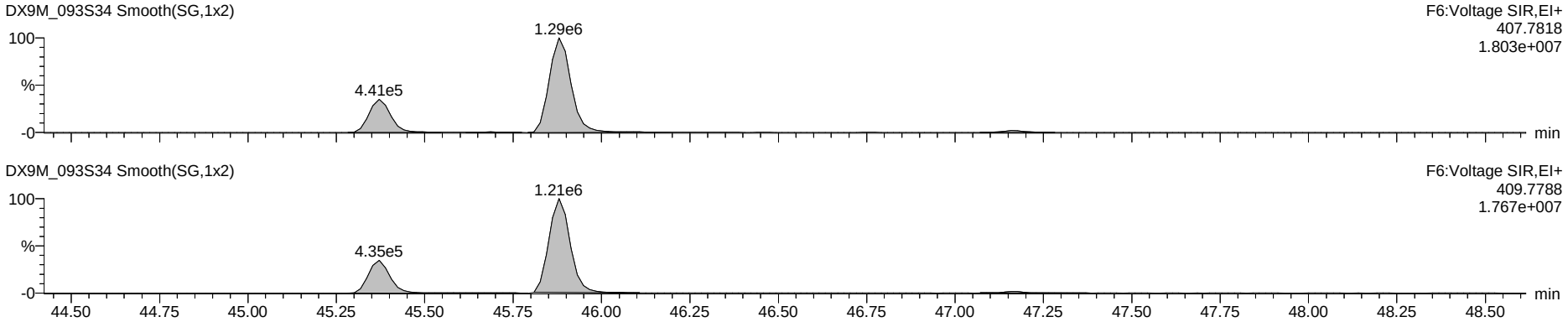
Hexa Lock



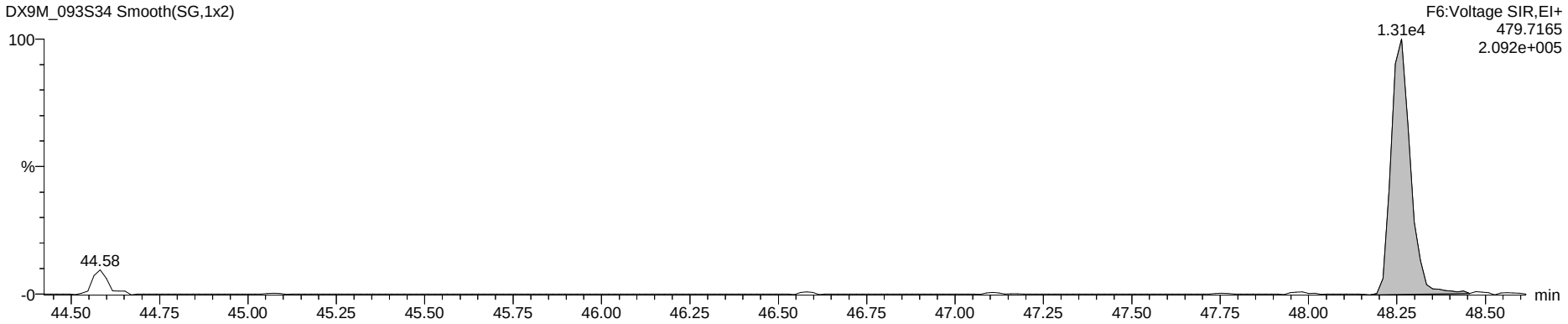
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-D.qld

Name: DX9M_093S34, Date: 13-Sep-2019, Time: 15:56:38, ID: WG69303-104,,CRM, Description: 1,WG69303,1.0/20uL

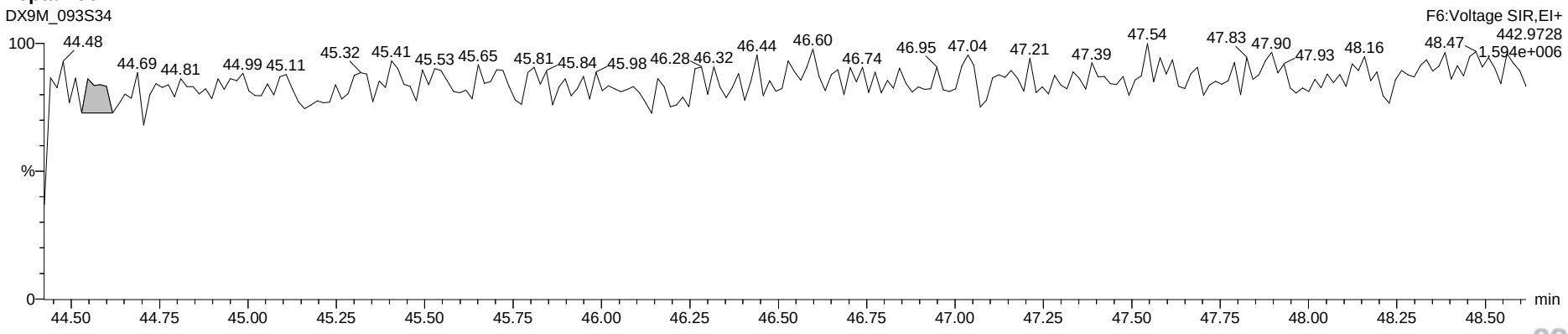
Total Hepta-Furans



Nona DPE



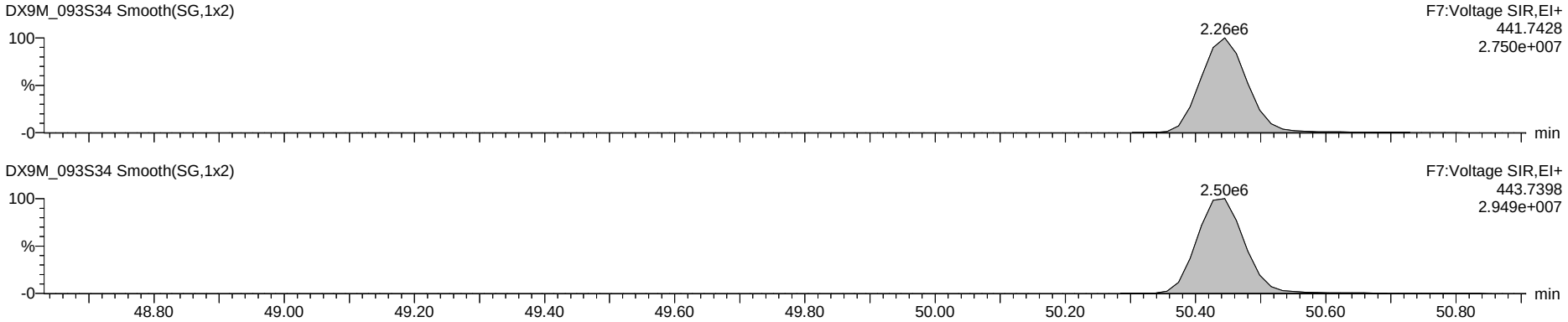
Hepta Lock



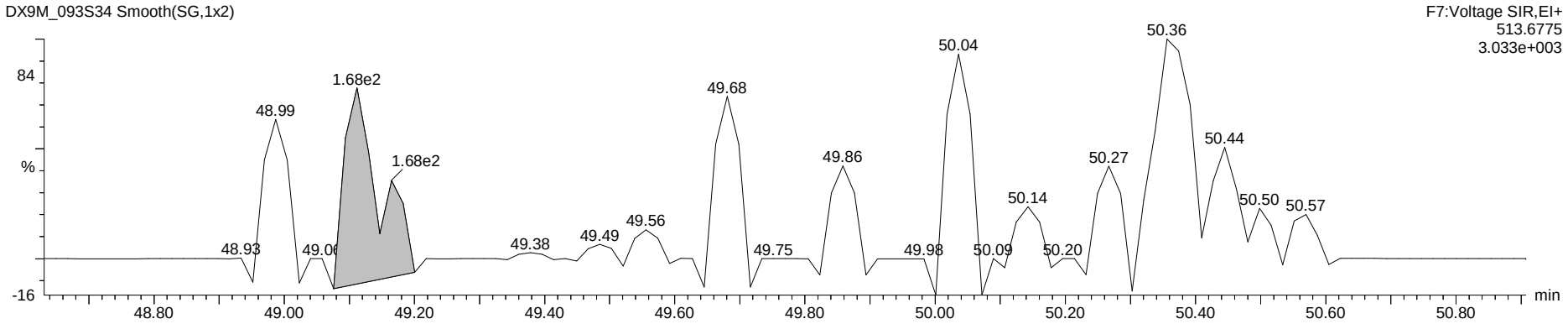
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-D.qld

Name: DX9M_093S34, Date: 13-Sep-2019, Time: 15:56:38, ID: WG69303-104,,CRM, Description: 1,WG69303,1.0/20uL

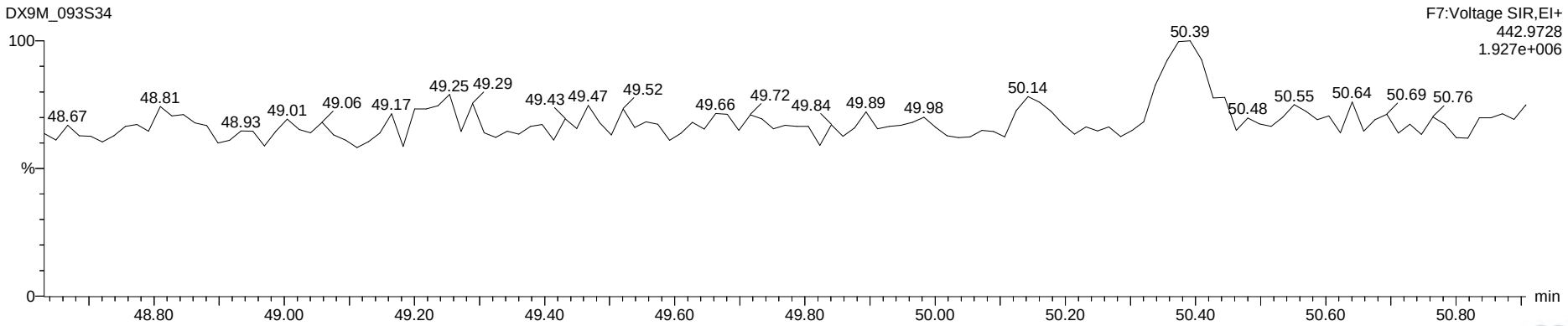
OCDF



Deca DPE



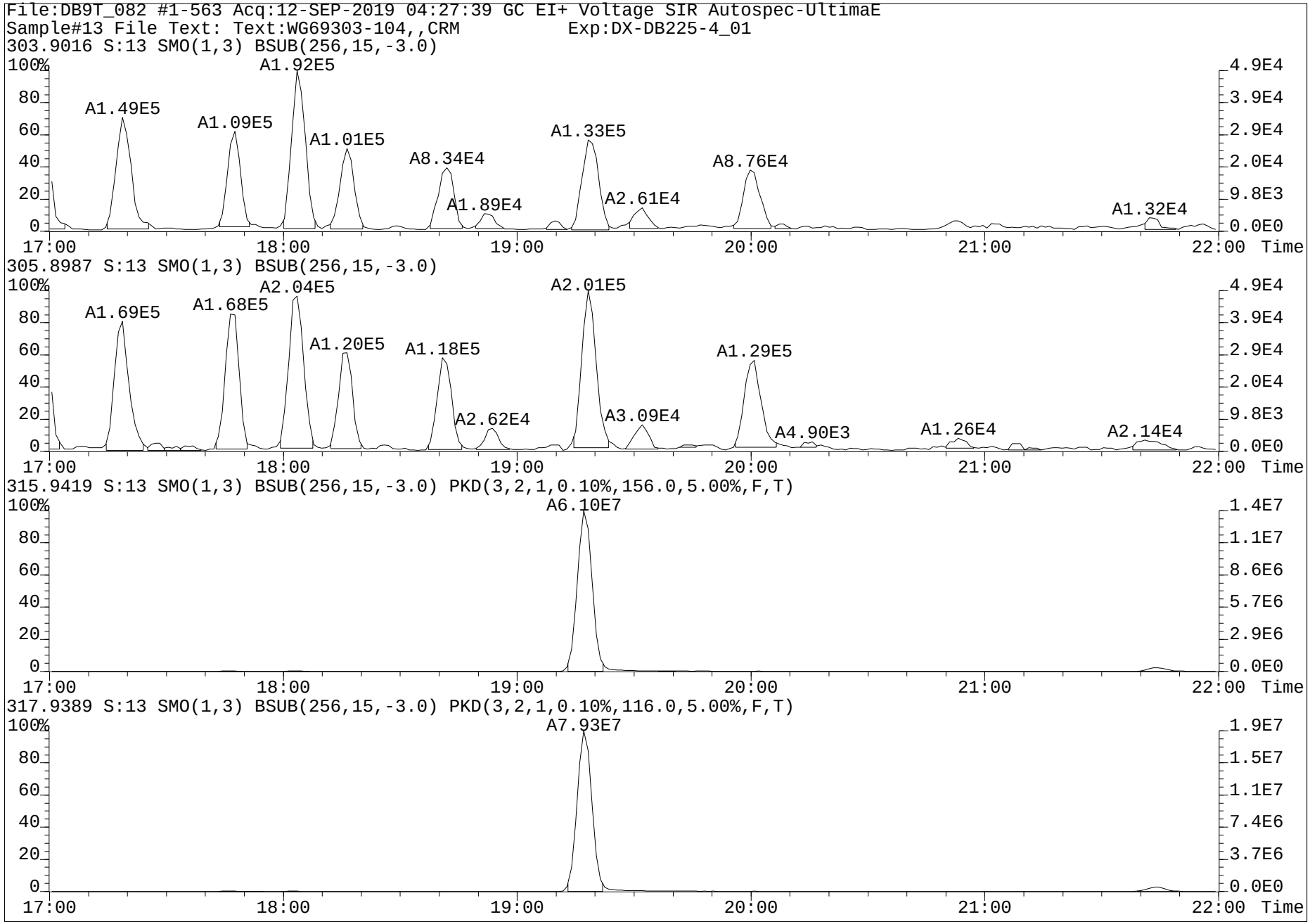
Octa Lock

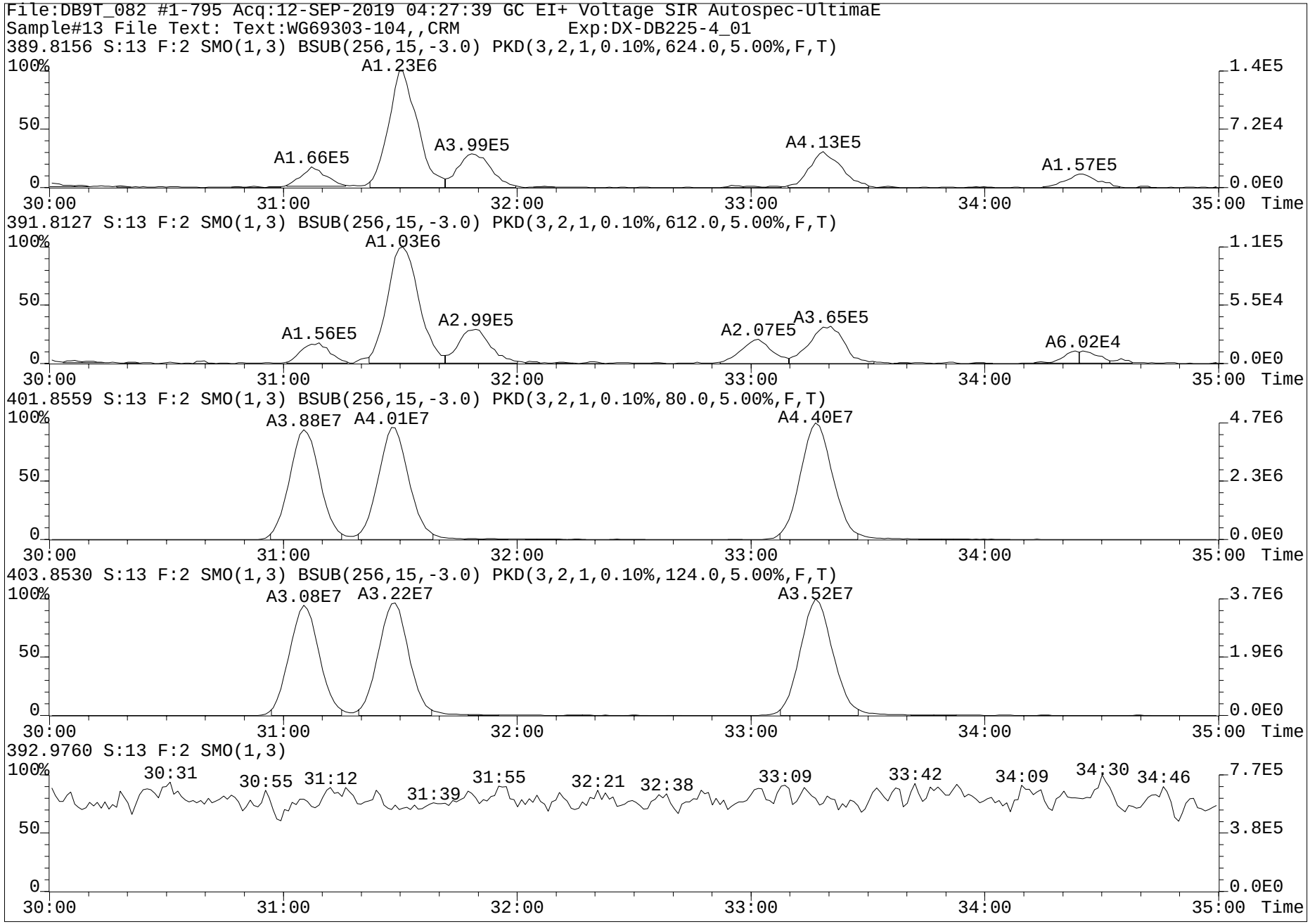


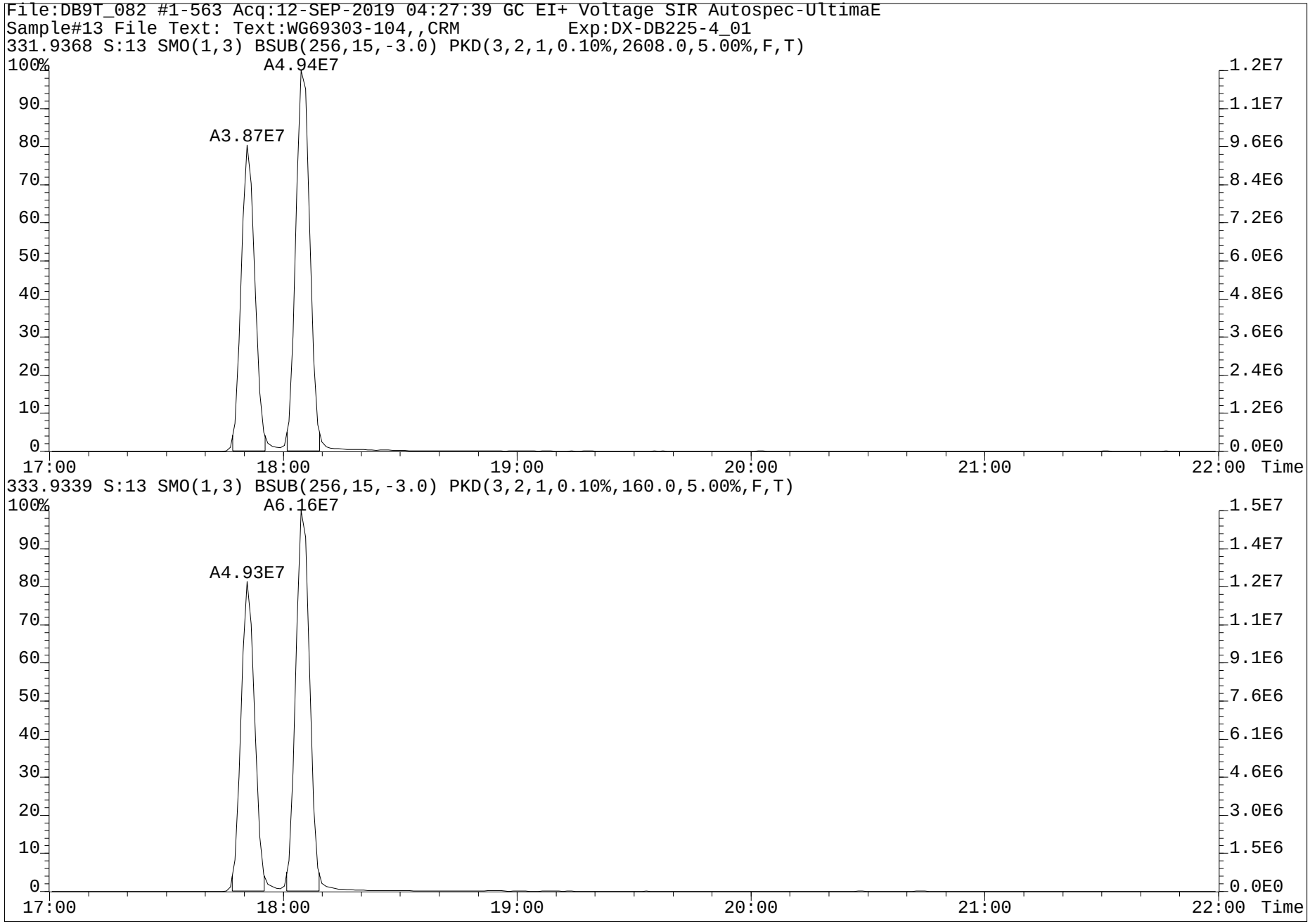
Run #12 Filename DB9T_082 S: 13 I: 1 Acquired: 12-SEP-19 04:27:39 Processed: 17-SEP-19 10:40:42
Run: db9t_082-a Analyte: db-hxd-s2 Cal: db9t_055-5a Results: db9t_082-a Version: V3.6 6-JAN-2000 17:51:42
Sample text: WG69303-104,,CRM Comments: 1,WG69303,2.0/20uL
sample size: 9.500000 conc units: pg/g total toxicity: 0.35 F1: 1.0000 F2: 1.0000

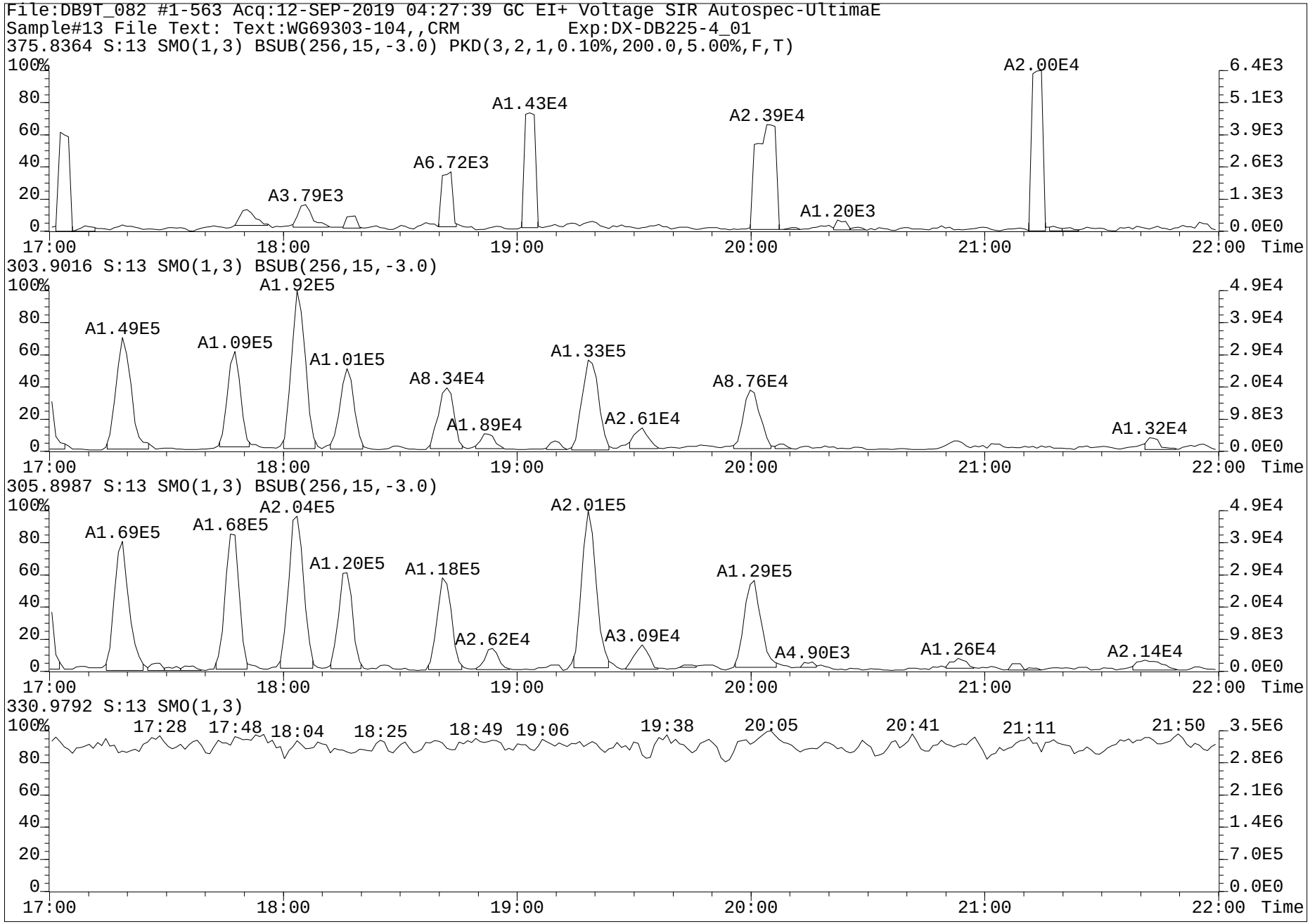
	Typ	Name	#Hom	Resp	RA		RT	Conc	Tox #1	DL	Rec	M?
1	Unk	2,3,7,8-TCDF	1	3.34e+05	0.66	y	19:18	0.646	0	0.0522	-	y
2	Unk	1,2,3,7,8,9-HxCDD	1	7.78e+05	1.13	y	33:19	2.854	0	0.1008	-	n
3	IS/RT	13C-2,3,7,8-TCDF	1	1.40e+08	0.77	y	19:17	188.091	-	0.0037	89.3	n
4	IS/RT	13C-1,2,3,4,7,8-HxCDD	1	6.96e+07	1.26	y	31:05	180.117	-	0.0125	85.6	n
5	IS/RT	13C-1,2,3,6,7,8-HxCDD	1	7.23e+07	1.24	y	31:28	179.064	-	0.0119	85.1	n
6	RS	13C-1,2,3,4-TCDD	1	1.11e+08	0.80	y	18:05	10.153	-	-	-	n
7	RS	13C-1,2,3,7,8,9-HxCDD	1	7.92e+07	1.25	y	33:17	14.515	-	-	-	n
8	Tot	Hexa DPE	0	*			NotFnd	*	-	-	-	n
9	Tot	Tetra Lock	-	-			-	-	-	-	-	n
10	Tot	Hexa Lock	-	-			-	-	-	-	-	n

PV by RA 20SEP2019
SV by HH 22 Sept. 2019


File:DB9T_082 #1-563 Acq:12-SEP-2019 04:27:39 GC EI+ Voltage SIR Autospec-UltimaE
Sample#13 File Text: Text:WG69303-104,,CRM Exp:DX-DB225-4_01
303.9016 S:13 SMO(1,3) BSUB(256,15,-3.0)
A1.49E5
A1.09E5
A1.92E5
A1.01E5
A8.34E4
A1.89E4
A1.33E5
A2.61E4
A8.76E4
A1.32E4
305.8987 S:13 SMO(1,3) BSUB(256,15,-3.0)
A1.69E5
A1.68E5
A2.04E5
A1.20E5
A1.18E5
A2.62E4
A2.01E5
A3.09E4
A1.29E5
A4.90E3
A1.26E4
A2.14E4
315.9419 S:13 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,156.0,5.00%,F,T)
A6.10E7
317.9389 S:13 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,116.0,5.00%,F,T)
A7.93E7
Time


File:DB9T_082 #1-795 Acq:12-SEP-2019 04:27:39 GC EI+ Voltage SIR Autospec-UltimaE
Sample#13 File Text: Text:WG69303-104,,CRM Exp:DX-DB225-4_01
389.8156 S:13 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,624.0,5.00%,F,T)
A1.23E6
A1.66E5
A3.99E5
A4.13E5
A1.57E5
391.8127 S:13 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,612.0,5.00%,F,T)
A1.03E6
A1.56E5
A2.99E5
A2.07E5
A3.65E5
A6.02E4
401.8559 S:13 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,80.0,5.00%,F,T)
A3.88E7
A4.01E7
A4.40E7
403.8530 S:13 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,124.0,5.00%,F,T)
A3.08E7
A3.22E7
A3.52E7
392.9760 S:13 F:2 SMO(1,3)
30:31
30:55
31:12
31:39
31:55
32:21
32:38
33:09
33:42
34:09
34:30
34:46
100%
50
0
30:00
31:00
32:00
33:00
34:00
35:00
Time
1.4E5
7.2E4
0.0E0
1.1E5
5.5E4
4.7E6
2.3E6
3.7E6
1.9E6
7.7E5
3.8E5


File:DB9T_082 #1-563 Acq:12-SEP-2019 04:27:39 GC EI+ Voltage SIR Autospec-UltimaE
Sample#13 File Text: Text:WG69303-104,,CRM Exp:DX-DB225-4_01
331.9368 S:13 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,2608.0,5.00%,F,T)
A4.94E7
A3.87E7
100%
90
80
70
60
50
40
30
20
10
0
1.2E7
1.1E7
9.6E6
8.4E6
7.2E6
6.0E6
4.8E6
3.6E6
2.4E6
1.2E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time
333.9339 S:13 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,160.0,5.00%,F,T)
A6.16E7
A4.93E7
100%
90
80
70
60
50
40
30
20
10
0
1.5E7
1.4E7
1.2E7
1.1E7
9.1E6
7.6E6
6.1E6
4.6E6
3.0E6
1.5E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time


File:DB9T_082 #1-563 Acq:12-SEP-2019 04:27:39 GC EI+ Voltage SIR Autospec-UltimaE
Sample#13 File Text: Text:WG69303-104,,CRM Exp:DX-DB225-4_01
375.8364 S:13 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,200.0,5.00%,F,T)
A3.79E3
A6.72E3
A1.43E4
A2.39E4
A1.20E3
A2.00E4
303.9016 S:13 SMO(1,3) BSUB(256,15,-3.0)
A1.49E5
A1.09E5
A1.92E5
A1.01E5
A8.34E4
A1.89E4
A1.33E5
A2.61E4
A8.76E4
A1.32E4
305.8987 S:13 SMO(1,3) BSUB(256,15,-3.0)
A1.69E5
A1.68E5
A2.04E5
A1.20E5
A1.18E5
A2.62E4
A2.01E5
A3.09E4
A1.29E5
A4.90E3
A1.26E4
A2.14E4
330.9792 S:13 SMO(1,3)
17:28 17:48 18:04 18:25 18:49 19:06 19:38 20:05 20:41 21:11 21:50
Time

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-D.qld

Name: DX9M_093S35, Date: 13-Sep-2019, Time: 16:51:40, ID: WG69303-105,,CRM, Description: 1,WG69303,1.0/20uL

	Name	Sample Size	Resp	Ratio	fails?	RT	pg	DL	%Rec	Noise 1	Noise 2
1	2,3,7,8-TCDF	9.480	6.51e3	0.79	NO	25.27	0.786	0.0704		8.25e2	1.61e3
2	1,2,3,7,8-PeCDF	9.480	1.42e3	1.43	NO	33.53	0.190	0.1187		7.98e2	2.08e3
3	2,3,4,7,8-PeCDF	9.480	1.61e3	1.43	NO	35.32	0.220	0.1013		7.98e2	2.08e3
4	1,2,3,4,7,8-HxCDF	9.480	6.28e3	1.21	NO	40.73	1.039	0.0766		8.27e2	1.52e3
5	1,2,3,6,7,8-HxCDF	9.480	4.29e3	1.10	NO	40.90	0.641	0.0703		8.27e2	1.52e3
6	2,3,4,6,7,8-HxCDF	9.480	3.78e3	1.19	NO	41.87	0.593	0.0710		8.27e2	1.52e3
7	1,2,3,7,8,9-HxCDF	9.480	8.15e2	0.40	YES	42.92	0.153	0.0887		8.27e2	1.52e3
8	1,2,3,4,6,7,8-HpCDF	9.480	1.76e5	1.04	NO	45.37	28.677	0.0917		1.51e3	1.58e3
9	1,2,3,4,7,8,9-HpCDF	9.480	1.06e4	1.01	NO	47.16	1.968	0.1028		1.51e3	1.58e3
10	OCDF	9.480	8.72e5	0.92	NO	50.43	122.176	0.0514		9.51e2	1.30e3
11	2,3,7,8-TCDD	9.480	2.06e3	0.66	NO	26.47	0.328	0.0762		1.11e3	7.35e2
12	1,2,3,7,8-PeCDD	9.480	2.36e3	0.55	NO	36.11	0.468	0.1795		1.76e3	1.85e3
13	1,2,3,4,7,8-HxCDD	9.480	6.94e3	1.15	NO	42.14	1.504	0.0864		1.21e3	9.51e2
14	1,2,3,6,7,8-HxCDD	9.480	2.62e4	1.17	NO	42.27	5.615	0.0924		1.21e3	9.51e2
15	1,2,3,7,8,9-HxCDD	9.480	1.73e4	1.25	NO	42.70	3.769	0.0903		1.21e3	9.51e2
16	1,2,3,4,6,7,8-HpCDD	9.480	9.36e5	1.10	NO	46.76	204.430	0.3033		3.66e3	4.04e3
17	OCDD	9.480	6.75e7	0.88	NO	50.36	10982.907	0.0998		2.01e3	1.75e3
18	13C-2,3,7,8-TCDF	9.480	1.88e6	0.75	NO	25.24	178.672	0.1883	84.7	4.00e3	3.88e3
19	13C-1,2,3,7,8-PeCDF	9.480	1.69e6	1.52	NO	33.50	197.663	0.5414	93.7	7.08e3	1.13e4
20	13C-2,3,4,7,8-PeCDF	9.480	1.63e6	1.57	NO	35.28	183.907	0.5249	87.2	7.08e3	1.13e4
21	13C-1,2,3,4,7,8-HxCDF	9.480	1.15e6	0.52	NO	40.71	175.991	0.3460	83.4	6.84e3	5.12e3
22	13C-1,2,3,6,7,8-HxCDF	9.480	1.31e6	0.53	NO	40.88	182.289	0.3148	86.4	6.84e3	5.12e3
23	13C-2,3,4,6,7,8-HxCDF	9.480	1.19e6	0.51	NO	41.83	182.487	0.3492	86.5	6.84e3	5.12e3
24	13C-1,2,3,7,8,9-HxCDF	9.480	1.07e6	0.51	NO	42.88	184.460	0.3927	87.4	6.84e3	5.12e3
25	13C-1,2,3,4,6,7,8-HpCDF	9.480	1.04e6	0.45	NO	45.35	192.364	0.3712	91.2	5.03e3	5.54e3
26	13C-1,2,3,4,7,8,9-HpCDF	9.480	9.06e5	0.47	NO	47.14	206.709	0.4575	98.0	5.03e3	5.54e3
27	13C-2,3,7,8-TCDD	9.480	1.20e6	0.79	NO	26.46	178.898	0.5812	84.8	1.01e4	5.40e3
28	13C-1,2,3,7,8-PeCDD	9.480	1.07e6	0.64	NO	36.11	201.668	0.2574	95.6	2.62e3	2.81e3
29	13C-1,2,3,4,7,8-HxCDD	9.480	9.47e5	1.23	NO	42.12	181.002	0.2167	85.8	3.11e3	2.87e3
30	13C-1,2,3,6,7,8-HxCDD	9.480	1.05e6	1.27	NO	42.26	180.821	0.1960	85.7	3.11e3	2.87e3
31	13C-1,2,3,4,6,7,8-HpCDD	9.480	1.24e6	1.01	NO	46.74	211.663	0.1591	100.3	2.12e3	2.79e3
32	13C-OCDD	9.480	2.64e6	0.89	NO	50.34	614.447	0.1898	145.6	5.42e2	3.77e3
33	13C-1,2,3,4-TCDD	9.480	1.46e6	0.80	NO	26.11	3.831	0.0102	1.8	1.01e4	5.40e3
34	13C-1,2,3,7,8,9-HxCDD	9.480	1.14e6	1.25	NO	42.68	4.139	0.0041	2.0	3.11e3	2.87e3
35	37Cl-2,3,7,8-TCDD	9.480	1.50e5			26.49	20.273	0.0963	96.1		2.82e3
36	Total Tetra-Furans	9.480					7.262	0.0704			1.61e3
37	Total Tetra-Dioxins	9.480					1.464	0.0762			7.35e2
38	Total Penta-Furans	9.480					5.698	0.1113			2.08e3
39	Total Penta-Dioxins	9.480					5.074	0.1795			1.85e3
40	Total Hexa-Furans	9.480					28.196	0.0752			1.52e3
41	Total Hexa-Dioxins	9.480					50.982	0.0855			9.51e2
42	Total Hepta-Furans	9.480					114.695	0.0970			1.58e3
43	Total Hepta-Dioxins	9.480					558.783	0.3033			4.04e3
44	Hexa DPE	1.000	2.14e2			25.87					2.67e0
45	Hepta DPE	1.000	3.08e2			37.63					2.08e2
46	Octa DPE	1.000	1.56e2			43.54					1.63e0
47	Nona DPE	1.000	5.80e3			48.26					6.44e2
48	Deca DPE	1.000	1.14e2			50.48					1.28e2
49	Tetra Lock	1.000	8.09e4			21.05					1.75e5
50	Penta Lock	1.000	1.09e4			33.25					1.64e5
51	Hexa Lock	1.000									3.54e5
52	Hepta Lock	1.000	2.18e4			44.46					1.73e5
53	Octa Lock	1.000	2.99e4			49.22					1.63e5
54	13C-Tetra-Furans	9.480					178.672	0.1883			3.88e3
55	13C-Tetra-Dioxins	9.480					182.729	0.5914			5.40e3

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

SV HH 22 Sept. 2019

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-D.qld

Name: DX9M_093S35, Date: 13-Sep-2019, Time: 16:51:40, ID: WG69303-105,,CRM, Description: 1,WG69303,1.0/20uL

Tetrafurans

	RT	Ratio	Fails?	pg
1	24.59	0.593	YES	0.586
2	24.27	1.185	YES	0.149
3	24.15	0.728	NO	0.378
4	23.87	0.826	NO	0.843
5	23.43	0.729	NO	1.058
6	23.00	0.823	NO	0.717
7	22.53	0.726	NO	0.266
8	22.27	0.908	YES	0.749
9	21.95	1.076	YES	0.109
10	28.19	1.414	YES	0.815
11	25.94	1.088	YES	0.396
12	25.27	0.794	NO	0.786
13	24.95	0.749	NO	0.371
14	23.69	0.988	YES	0.038

Tetradioxins

	RT	Ratio	Fails?	pg
1	25.25	3.312	YES	0.194
2	24.70	0.778	NO	0.169
3	23.39	0.650	YES	0.294
4	22.97	0.950	YES	0.350
5	26.52	0.460	YES	0.128
6	26.47	0.659	NO	0.328

Pentafurans

	RT	Ratio	Fails?	pg
1	28.88	1.563	NO	2.895
2	34.25	1.182	YES	0.214
3	33.88	1.159	YES	0.071
4	33.53	1.429	NO	0.190
5	33.35	2.189	YES	0.091
6	32.87	1.249	YES	0.453
7	31.92	0.799	YES	0.084
8	31.47	1.790	YES	1.191
9	35.88	2.577	YES	0.025
10	35.62	1.863	YES	0.243
11	35.32	1.428	NO	0.220
12	35.17	1.995	YES	0.023

PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-D.qld

Name: DX9M_093S35, Date: 13-Sep-2019, Time: 16:51:40, ID: WG69303-105,,CRM, Description: 1,WG69303,1.0/20uL

Pentadioxins

	RT	Ratio	Fails?	pg
1	33.14	0.632	NO	0.651
2	31.95	0.578	NO	1.851
3	37.03	1.141	YES	0.179
4	36.45	0.952	YES	0.088
5	36.11	0.551	NO	0.468
6	35.45	0.945	YES	0.153
7	35.05	0.605	NO	0.294
8	34.87	0.808	YES	0.147
9	34.47	0.614	NO	0.369
10	34.12	0.484	YES	0.501
11	33.82	0.678	NO	0.372

Hexafurans

	RT	Ratio	Fails?	pg
1	43.03	1.118	NO	0.315
2	42.92	0.404	YES	0.153
3	41.87	1.186	NO	0.593
4	41.70	1.423	NO	0.591
5	40.90	1.097	NO	0.641
6	40.73	1.213	NO	1.039
7	40.65	1.031	YES	0.239
8	40.09	1.154	NO	14.076
9	39.77	1.635	YES	0.164
10	39.26	1.281	NO	7.783
11	39.00	1.142	NO	2.601

Hexadioxins

	RT	Ratio	Fails?	pg
1	42.14	1.146	NO	1.504
2	41.43	1.121	NO	3.028
3	41.24	1.313	NO	15.064
4	40.85	1.232	NO	2.793
5	40.04	1.250	NO	19.209
6	42.70	1.250	NO	3.769
7	42.27	1.168	NO	5.615

Heptafurans

	RT	Ratio	Fails?	pg
1	47.16	1.013	NO	1.968
2	45.88	1.044	NO	83.543
3	45.69	0.802	YES	0.507
4	45.37	1.040	NO	28.677

Heptadioxins

	RT	Ratio	Fails?	pg
1	46.76	1.105	NO	204.430
2	45.83	0.999	NO	354.353

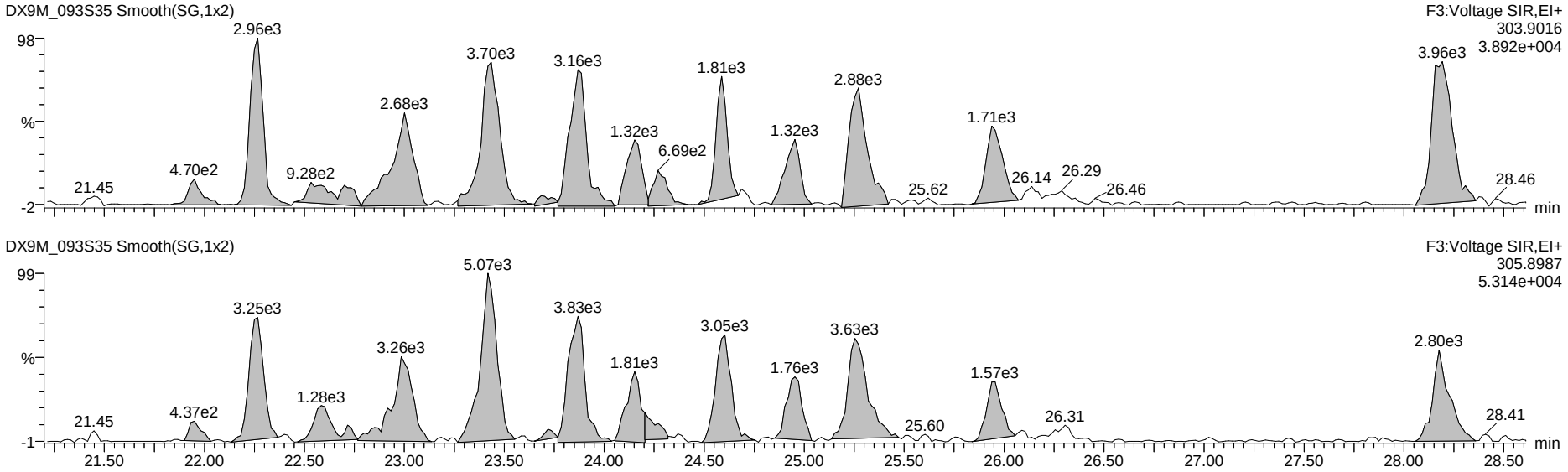
PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-D.qld

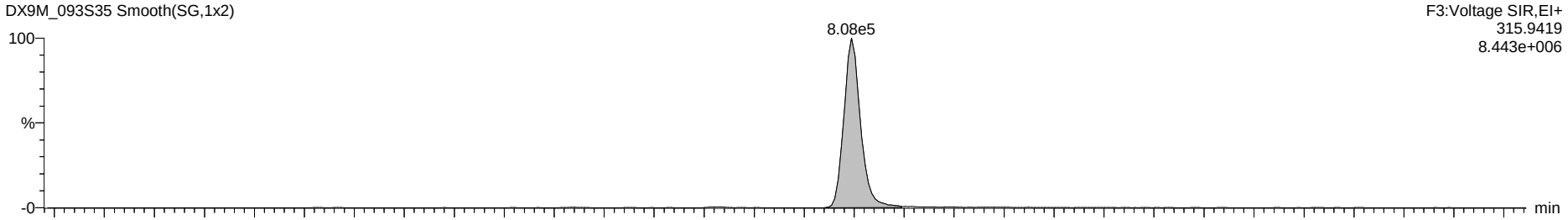
Method: G:\Masslynx\Inst_M\Master methods and layouts\Current Methods\DX_1613B_16.mdb 07 Sep 2017 16:45:23
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

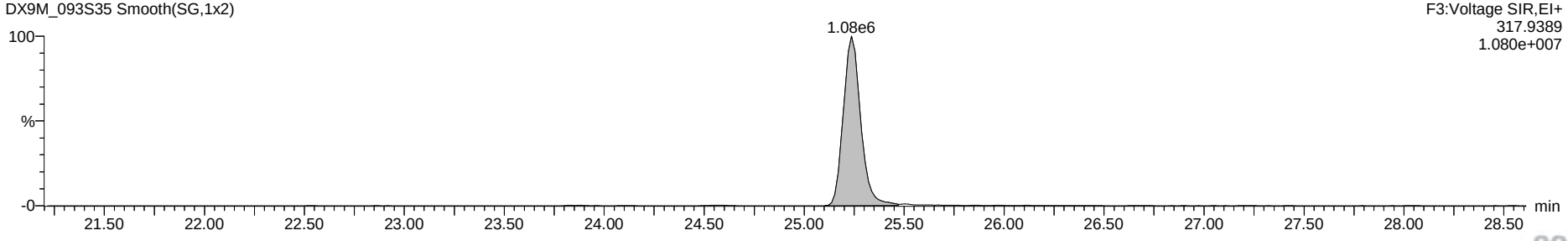
Name: DX9M_093S35, Date: 13-Sep-2019, Time: 16:51:40, ID: WG69303-105,,CRM, Description: 1,WG69303,1.0/20uL

Total Tetra-Furans



13C-Tetra-Furans





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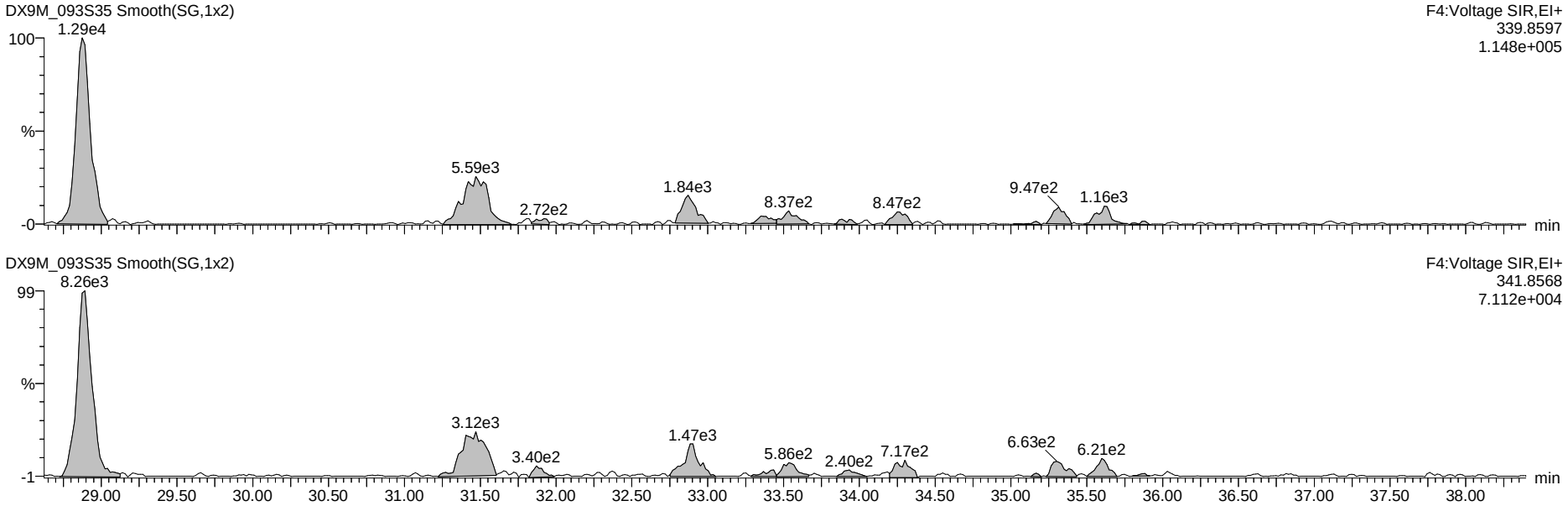
Name: DX9M_093S35, Date: 13-Sep-2019, Time: 16:51:40, ID: WG69303-105,,CRM, Description: 1,WG69303,1.0/20uL

Total Penta-Furans



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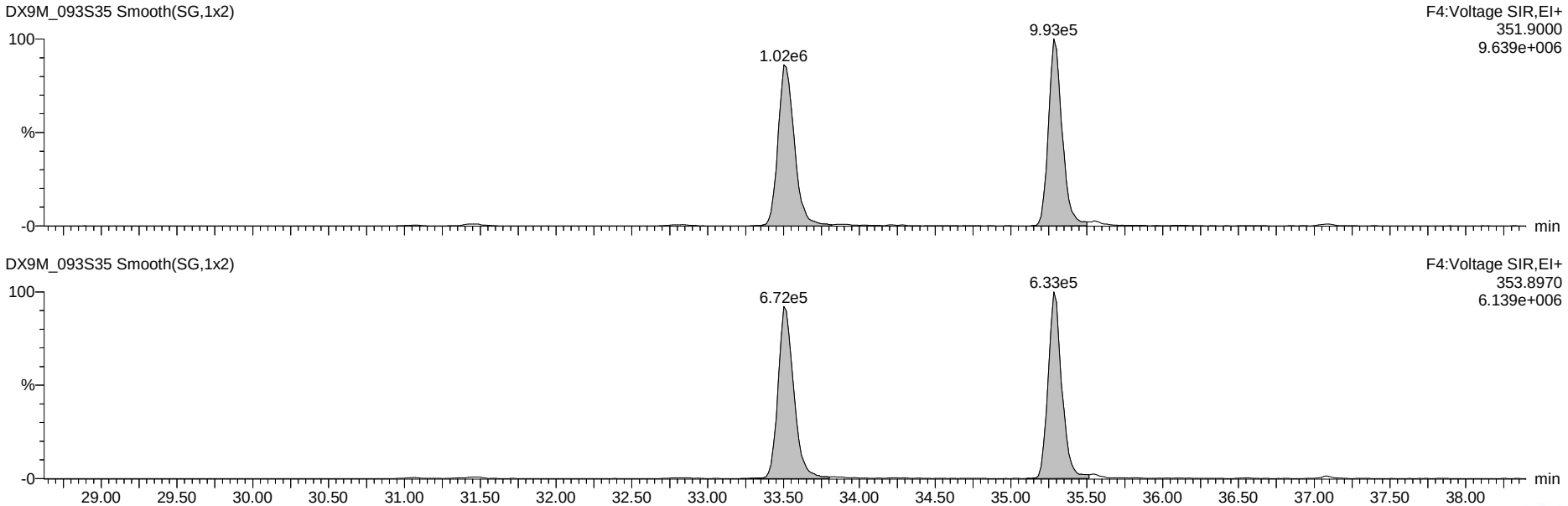

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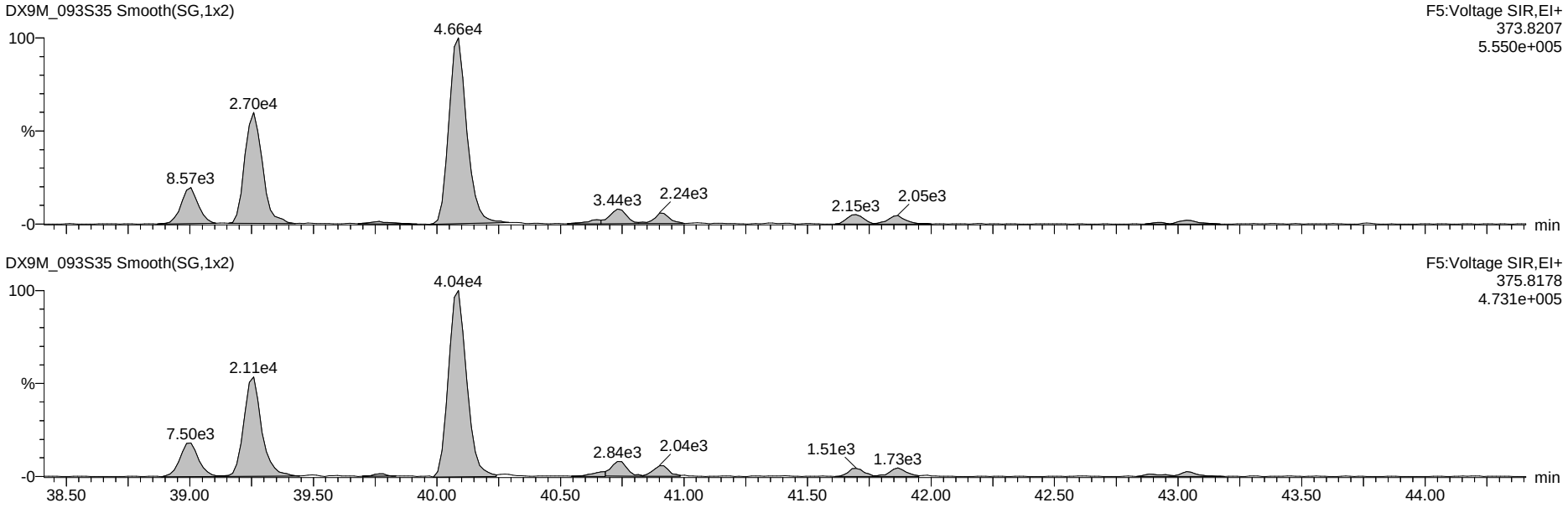
Name: DX9M_093S35, Date: 13-Sep-2019, Time: 16:51:40, ID: WG69303-105,,CRM, Description: 1,WG69303,1.0/20uL

Total Hexa-Furans



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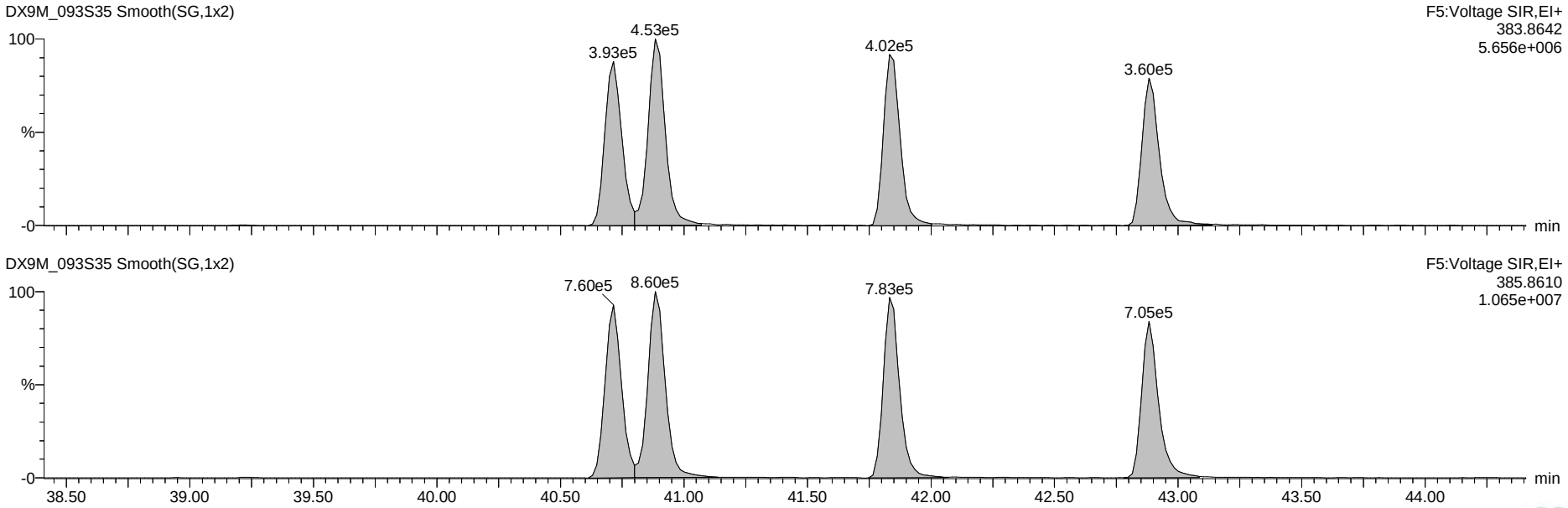

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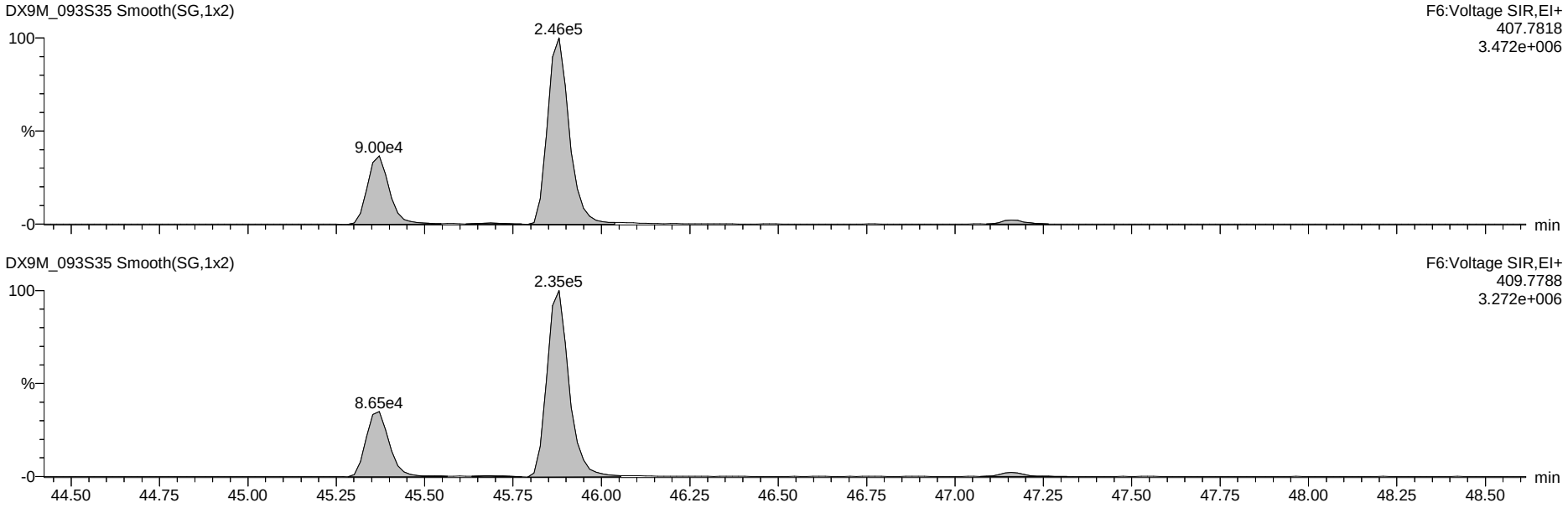
Total Hepta-Furans



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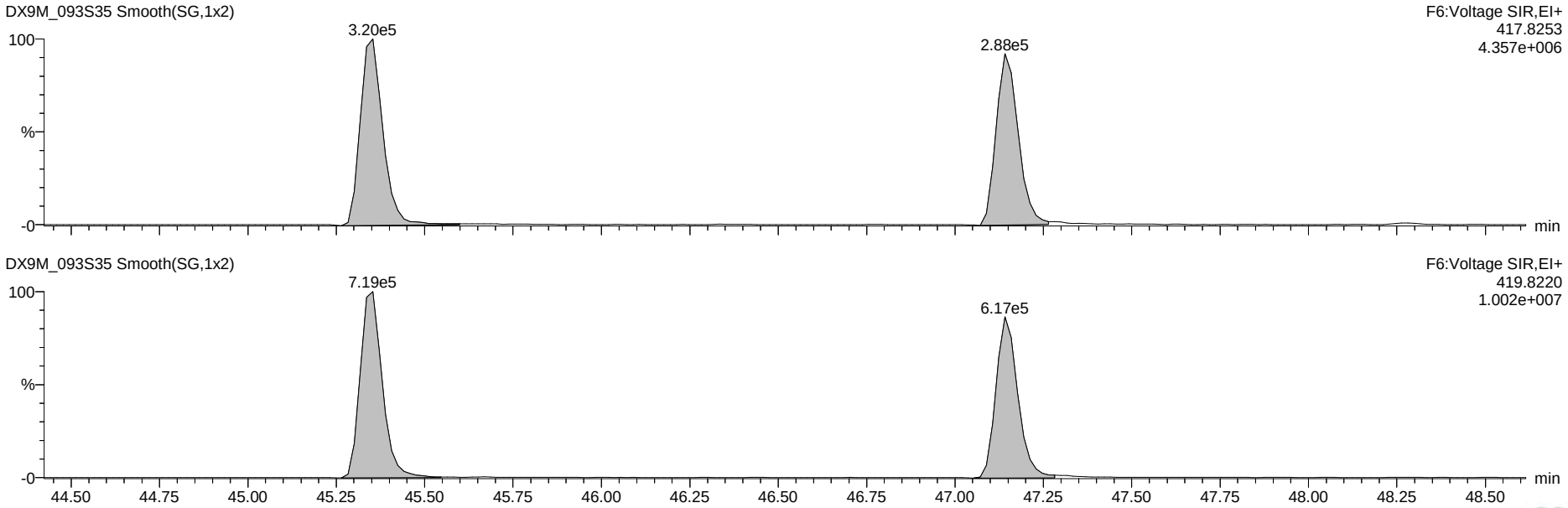

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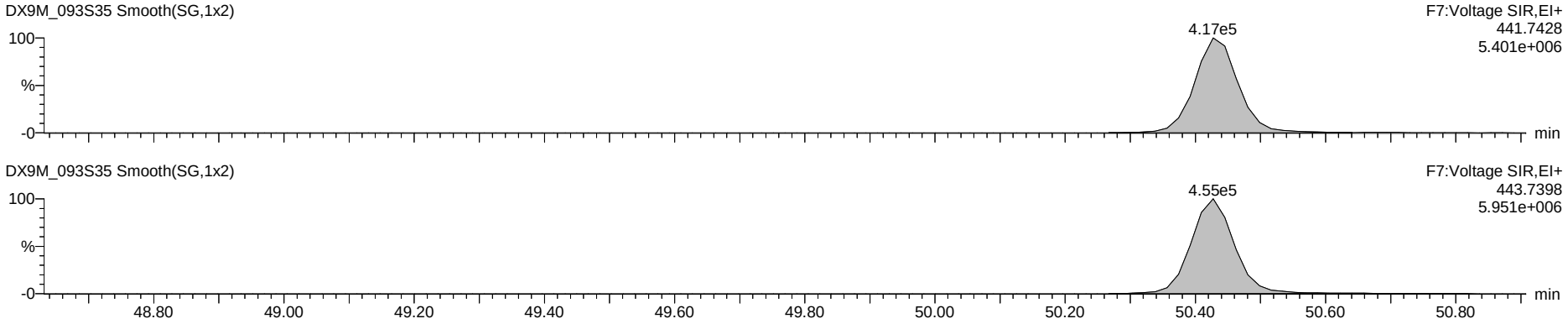
OCDF



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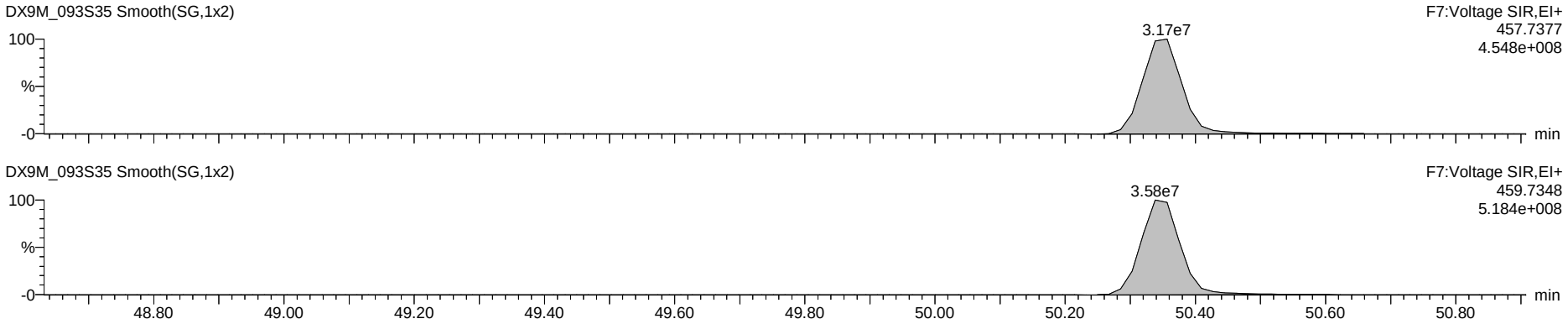
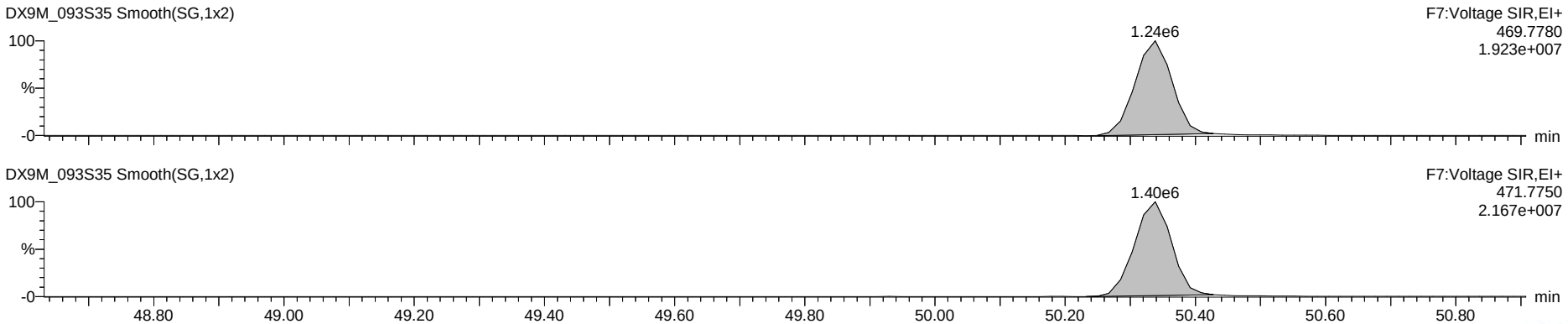


13C-OCDD



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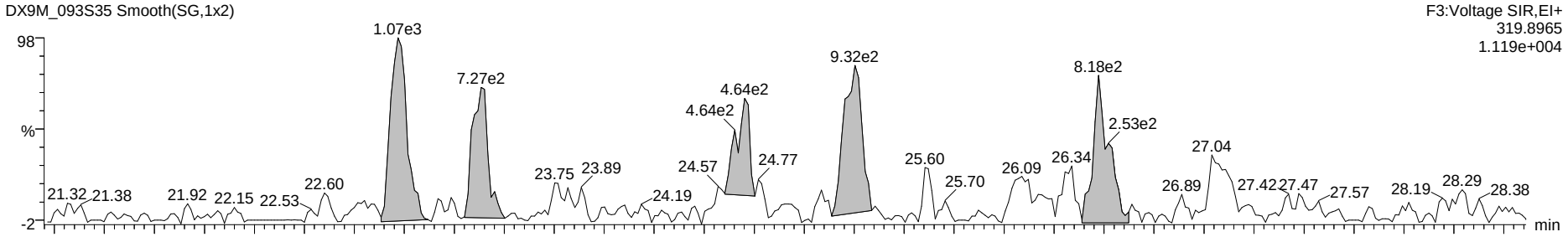
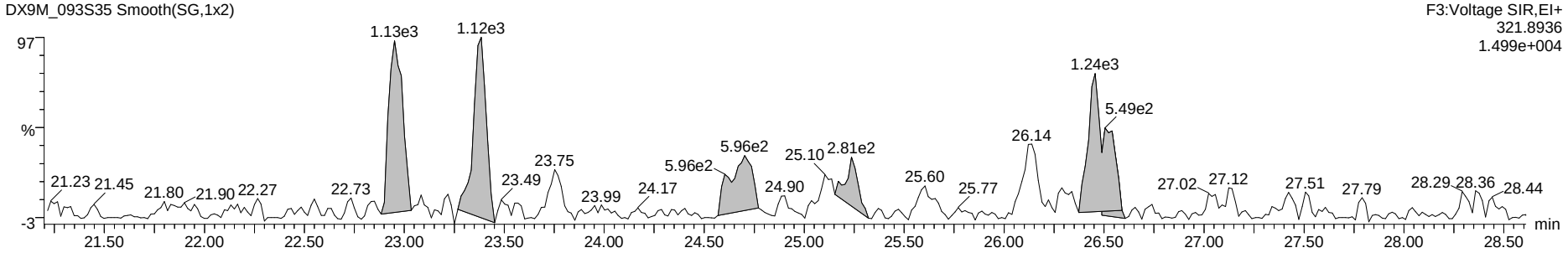
Name: DX9M_093S35, Date: 13-Sep-2019, Time: 16:51:40, ID: WG69303-105,,CRM, Description: 1,WG69303,1.0/20uL

Total Tetra-Dioxins





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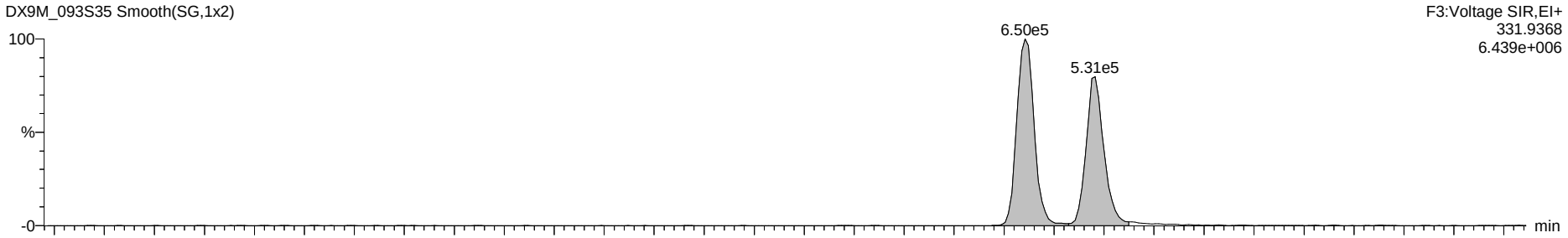

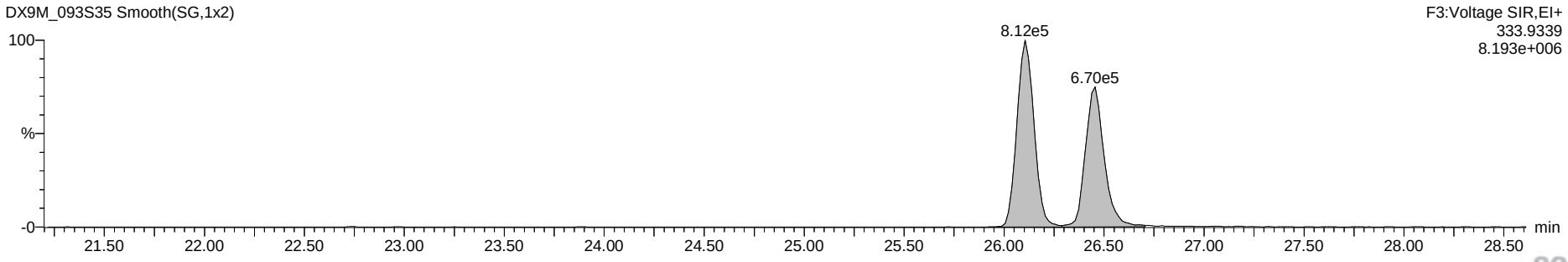

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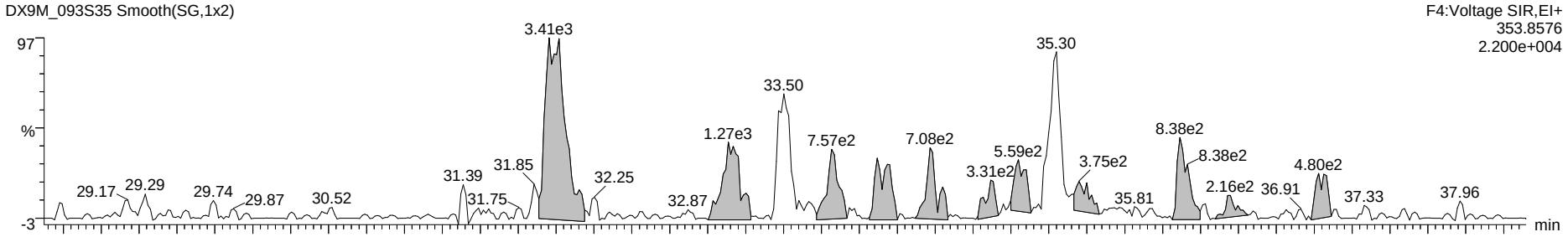
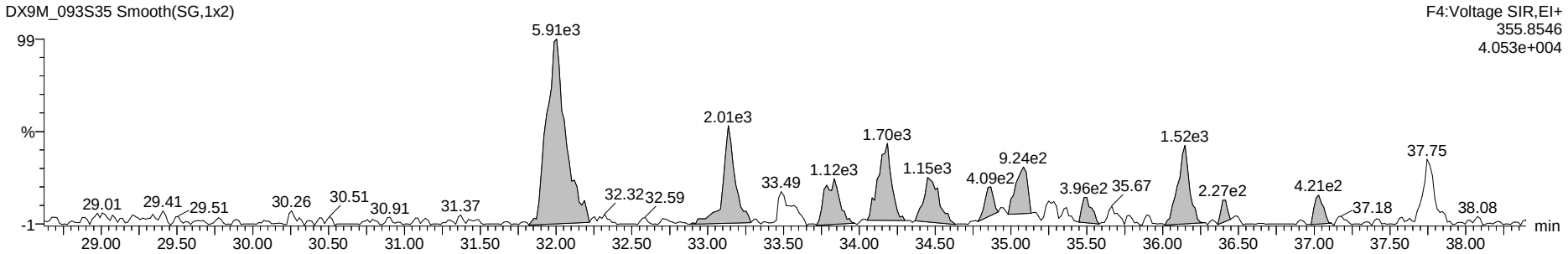
Name: DX9M_093S35, Date: 13-Sep-2019, Time: 16:51:40, ID: WG69303-105,,CRM, Description: 1,WG69303,1.0/20uL

Total Penta-Dioxins





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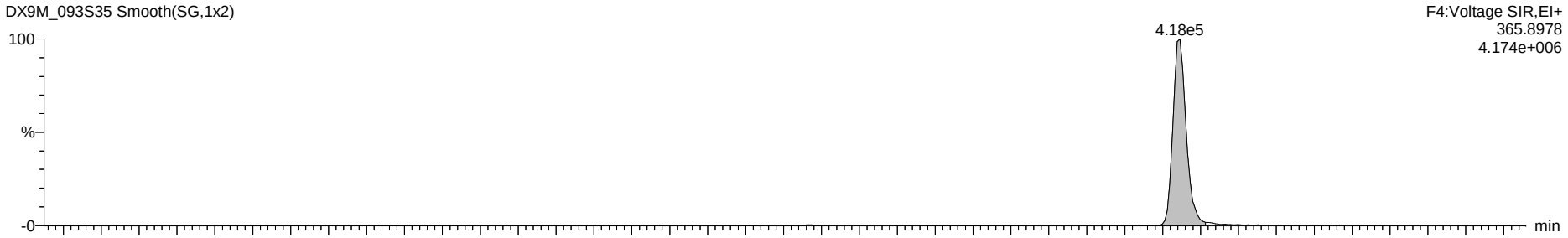

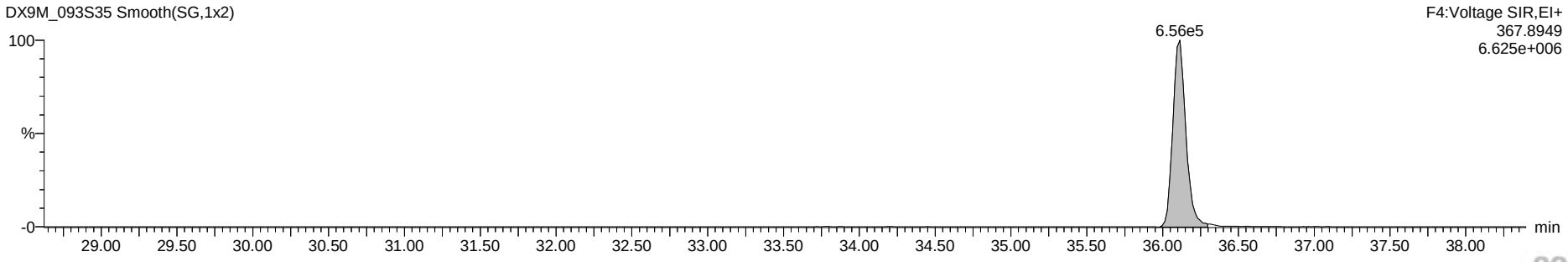

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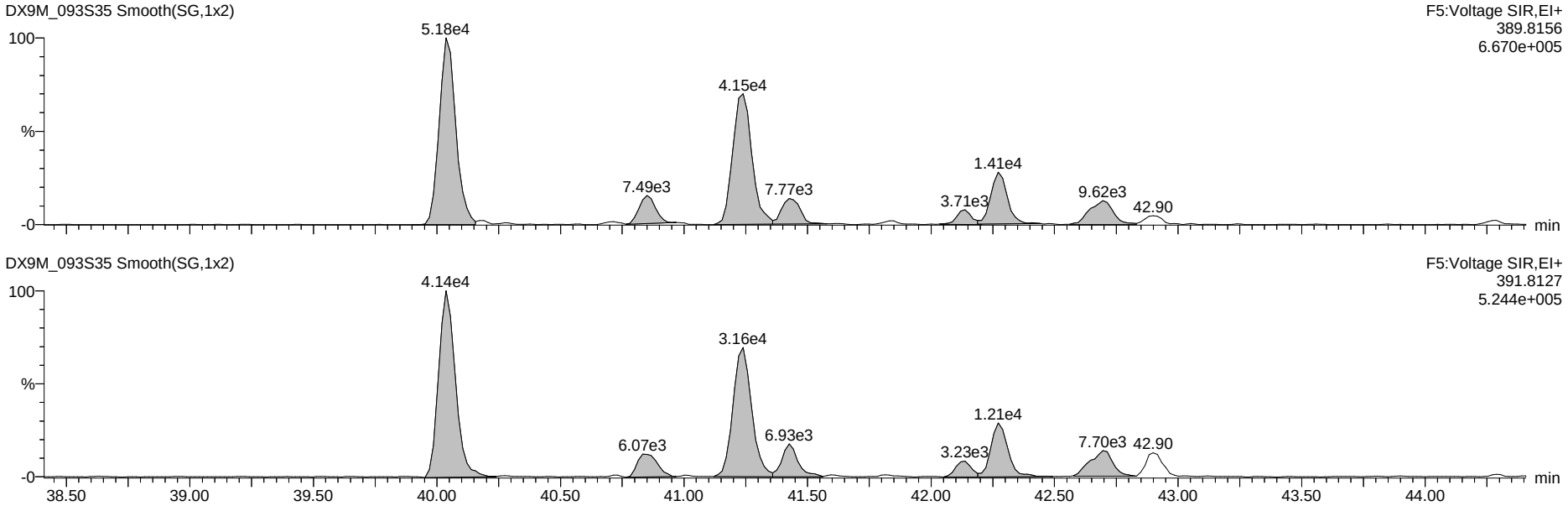
Name: DX9M_093S35, Date: 13-Sep-2019, Time: 16:51:40, ID: WG69303-105,,CRM, Description: 1,WG69303,1.0/20uL

Total Hexa-Dioxins



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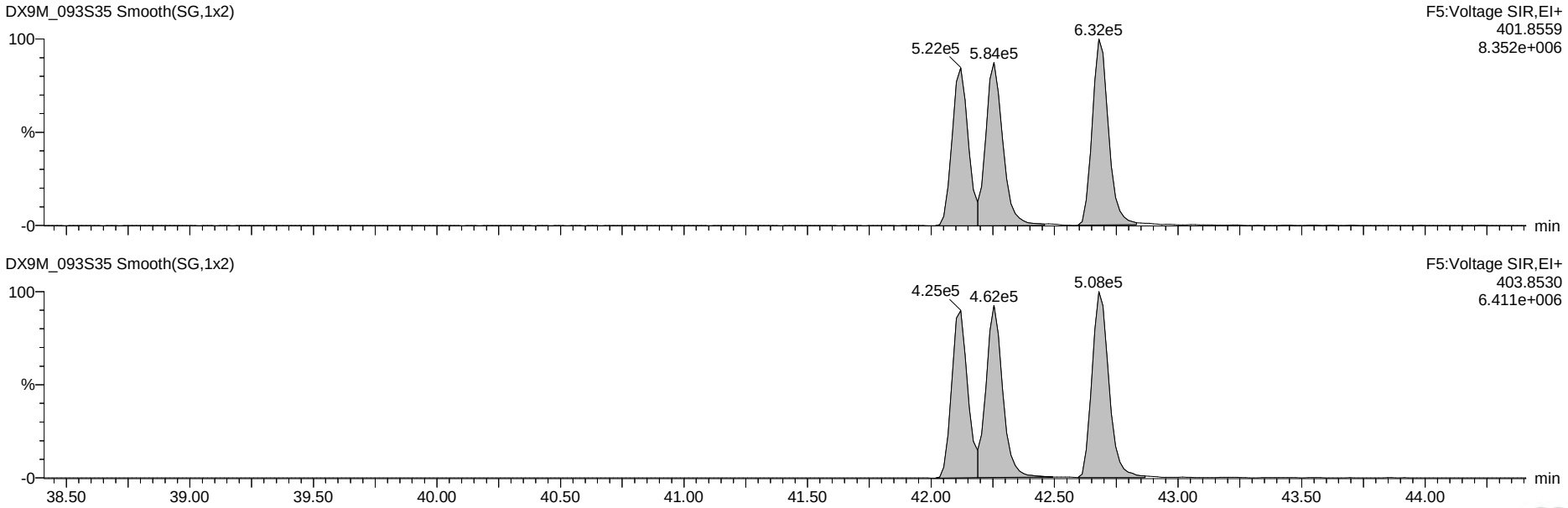

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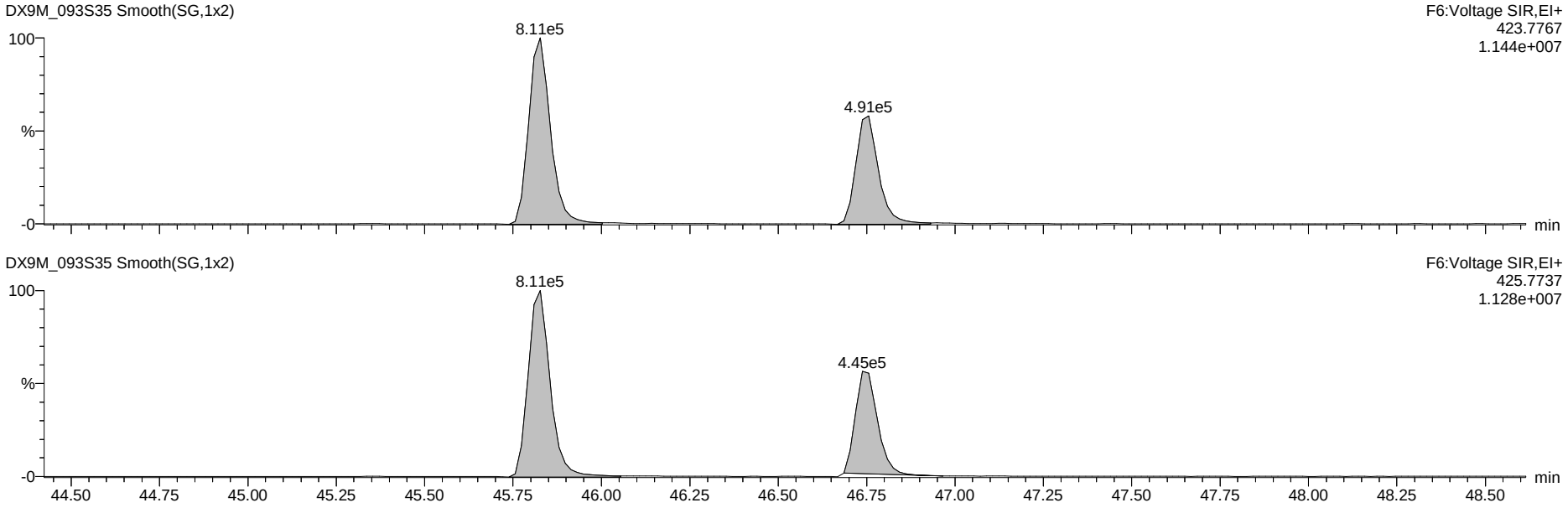
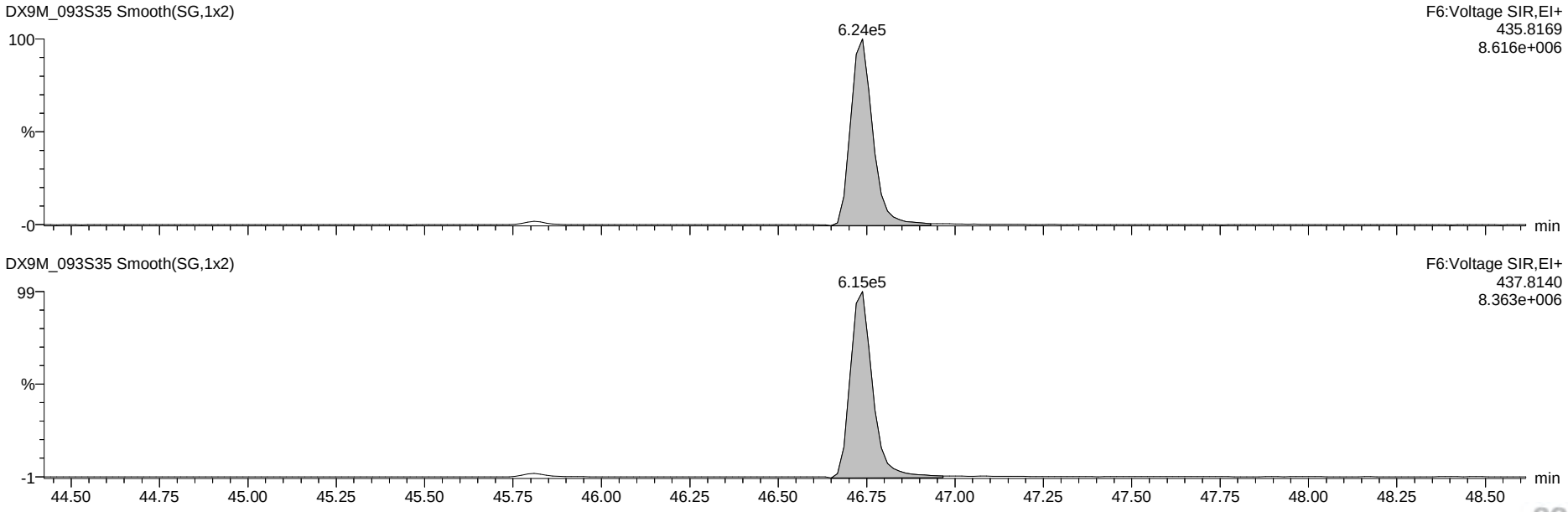
Total Hepta-Dioxins



13C-Hepta-Dioxins



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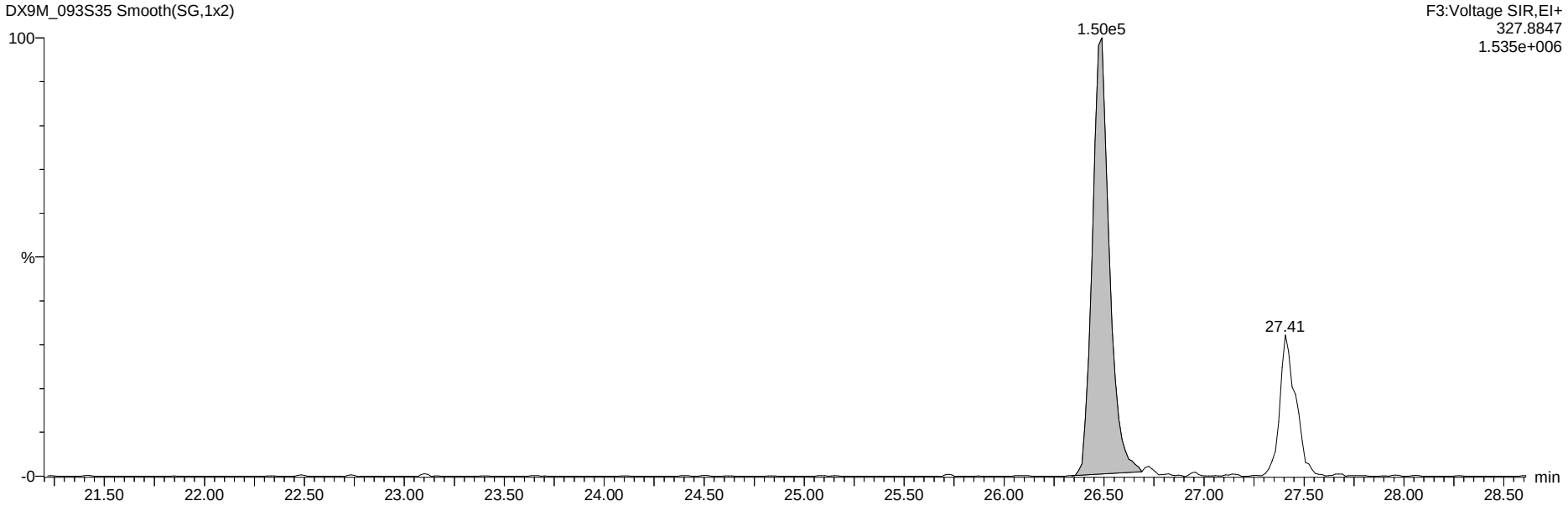
37Cl-2,3,7,8-TCDD



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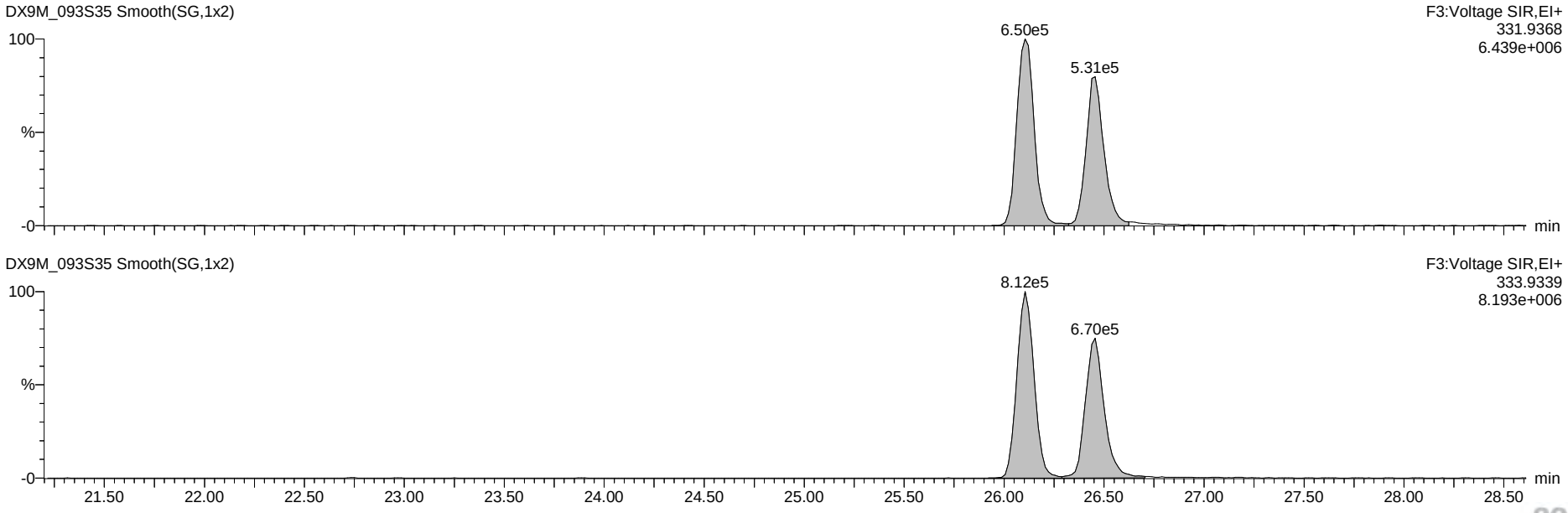

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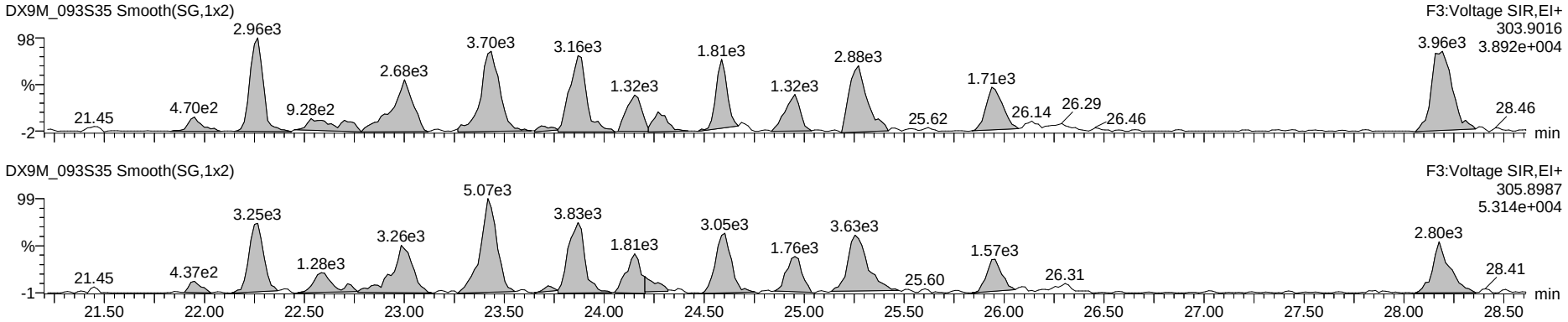
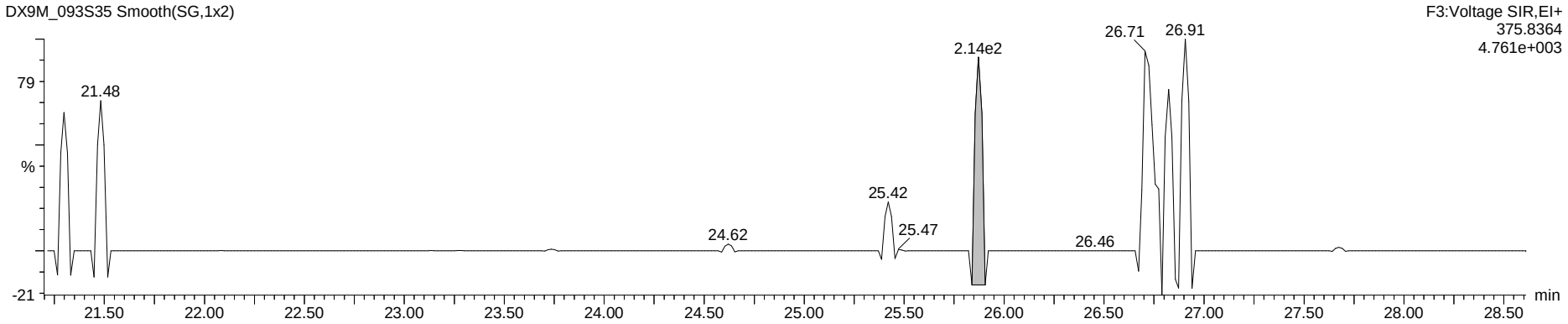
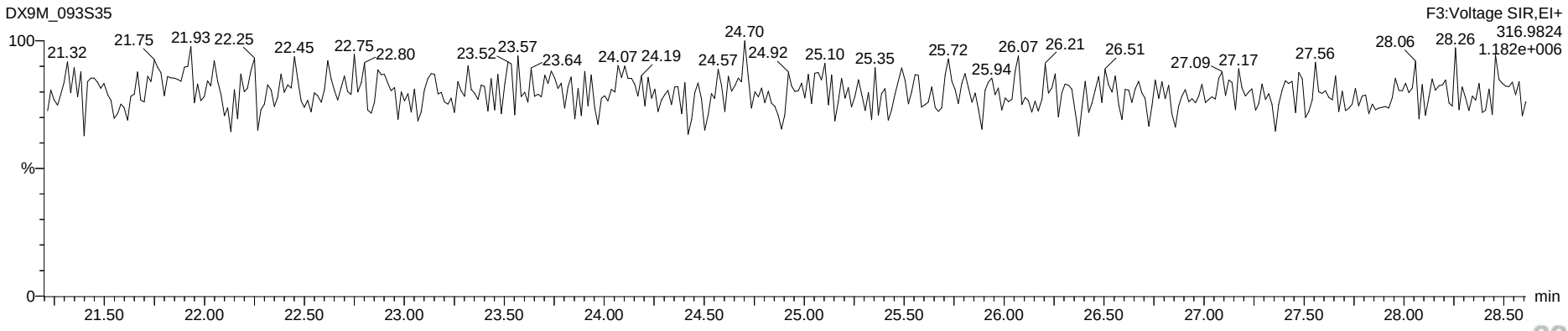
Total Tetra-Furans



Hexa DPE



Tetra Lock



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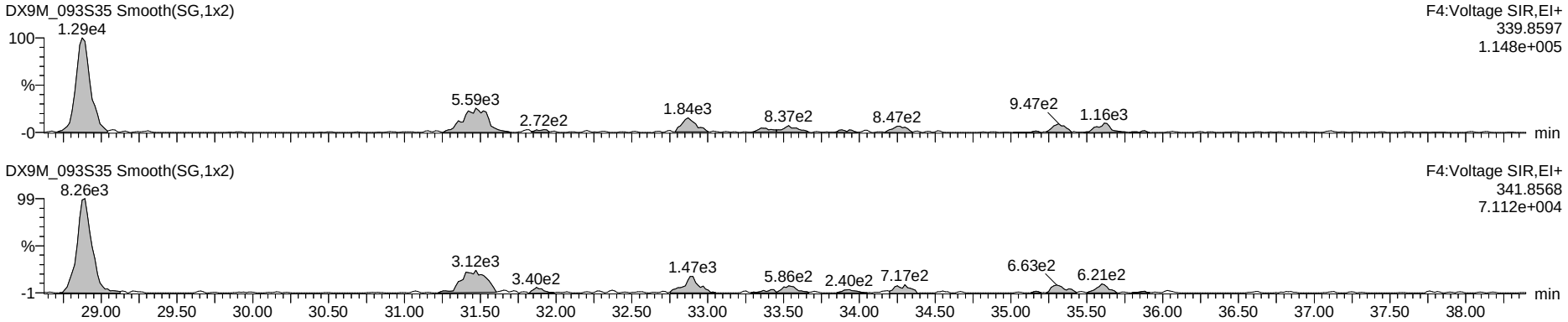
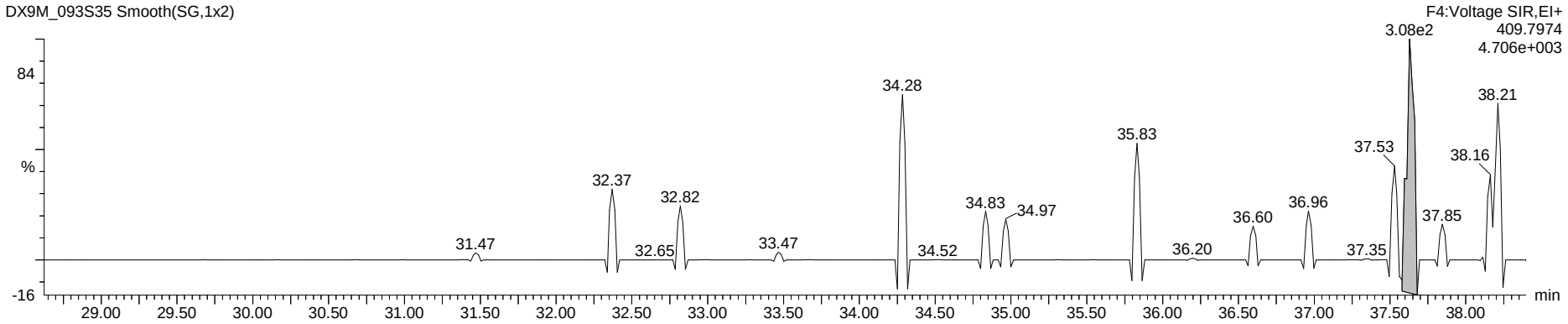
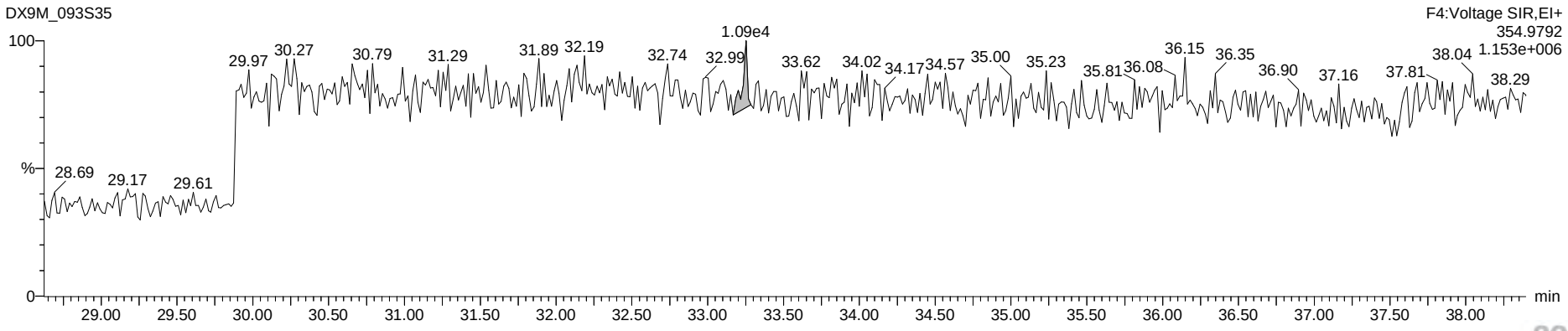
Total Penta-Furans



Hepta DPE



Penta Lock



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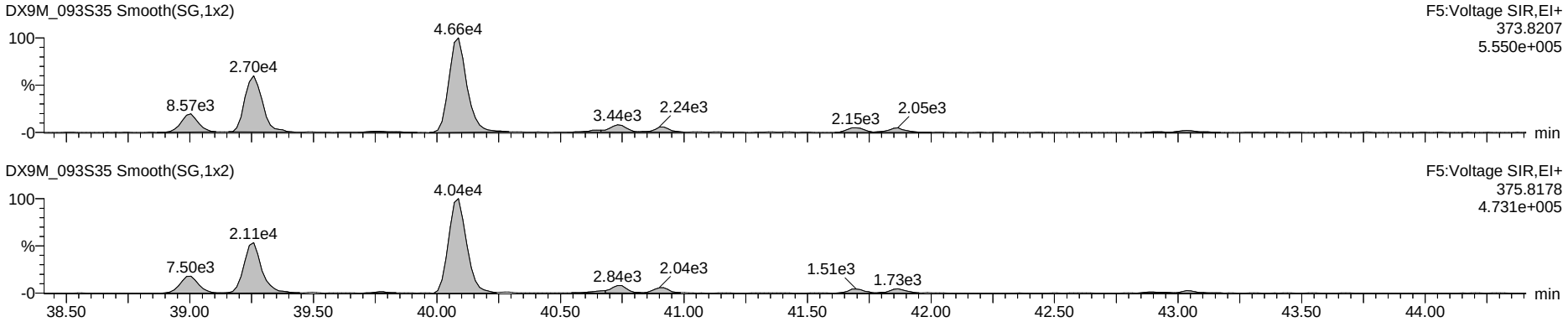
Name: DX9M_093S35, Date: 13-Sep-2019, Time: 16:51:40, ID: WG69303-105,,CRM, Description: 1,WG69303,1.0/20uL

Total Hexa-Furans



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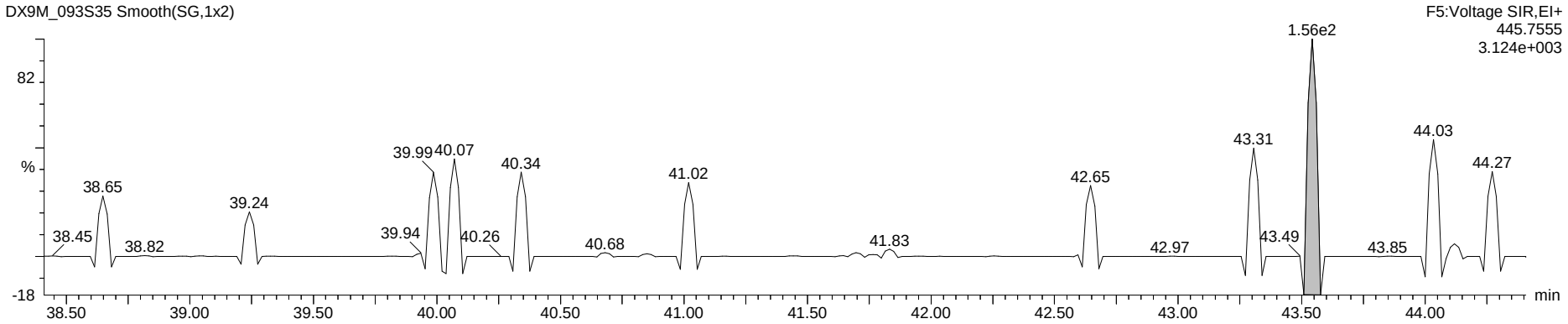

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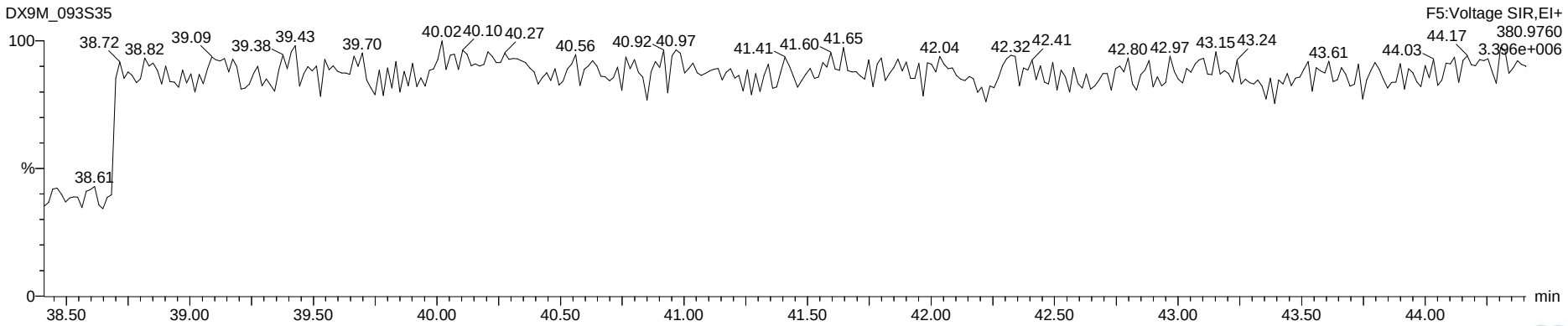
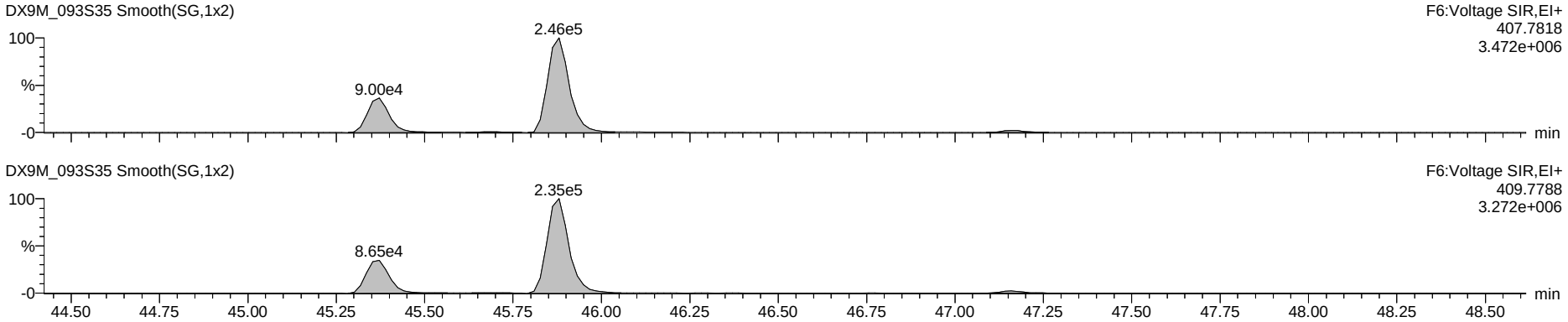


Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-D.qld

Name: DX9M_093S35, Date: 13-Sep-2019, Time: 16:51:40, ID: WG69303-105,,CRM, Description: 1,WG69303,1.0/20uL

Total Hepta-Furans



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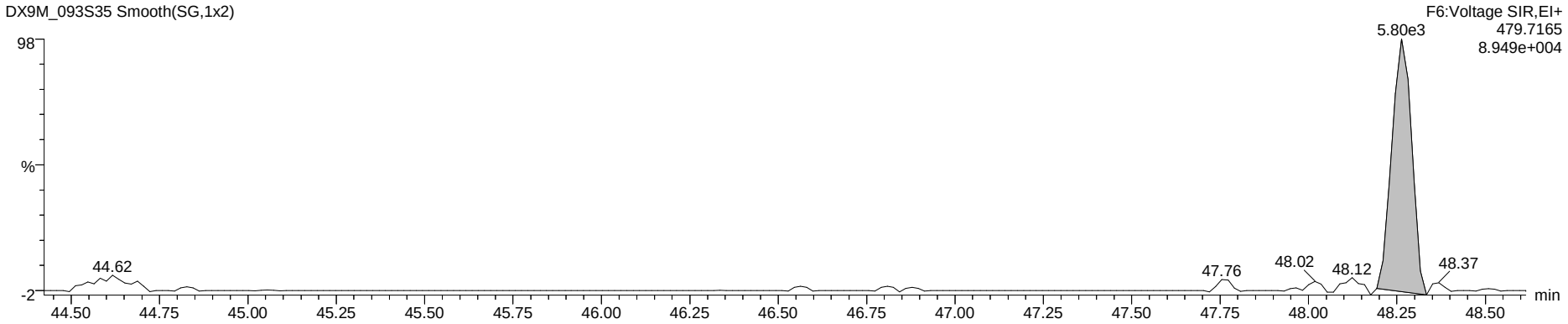
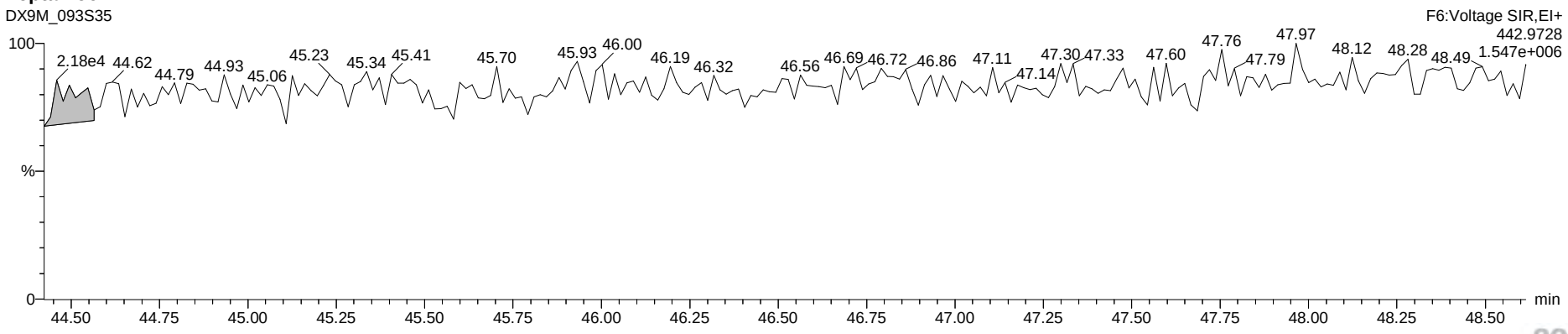


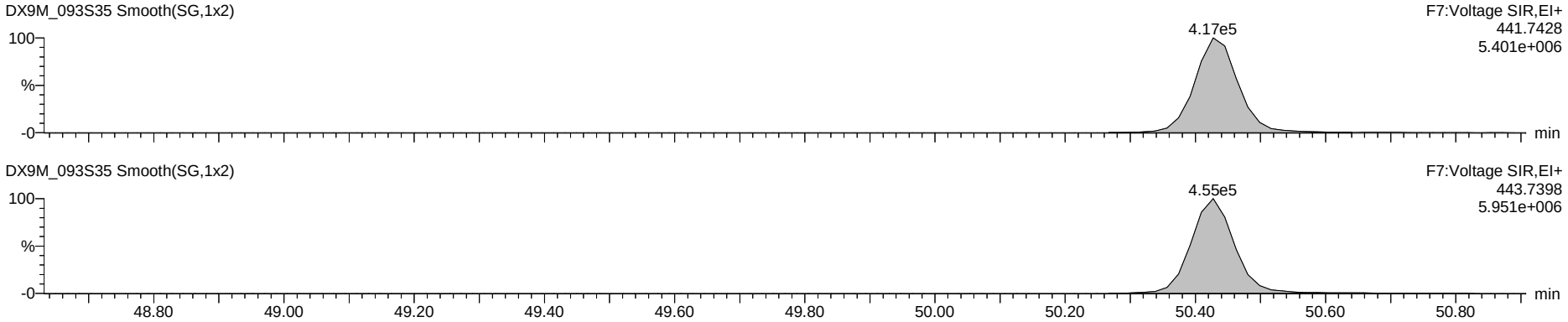
Hepta Lock



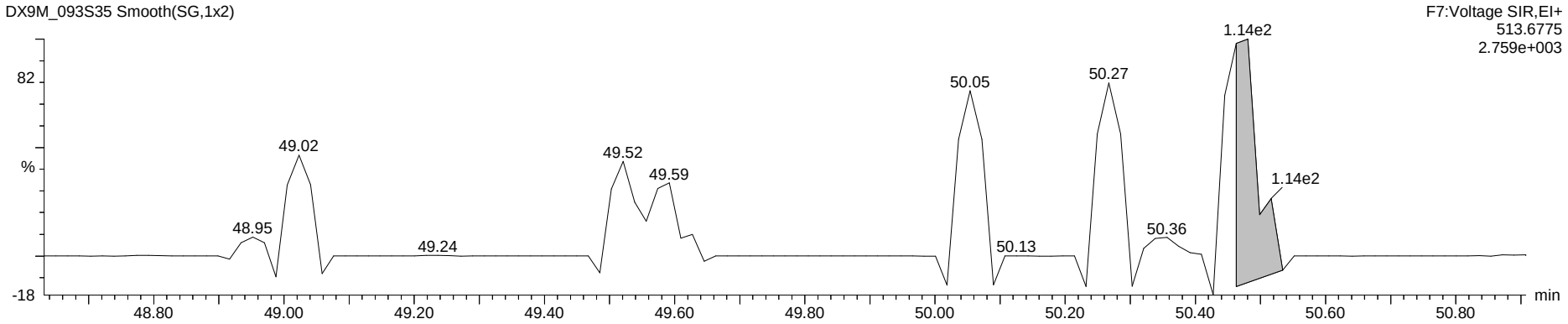
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-D.qld

Name: DX9M_093S35, Date: 13-Sep-2019, Time: 16:51:40, ID: WG69303-105,,CRM, Description: 1,WG69303,1.0/20uL

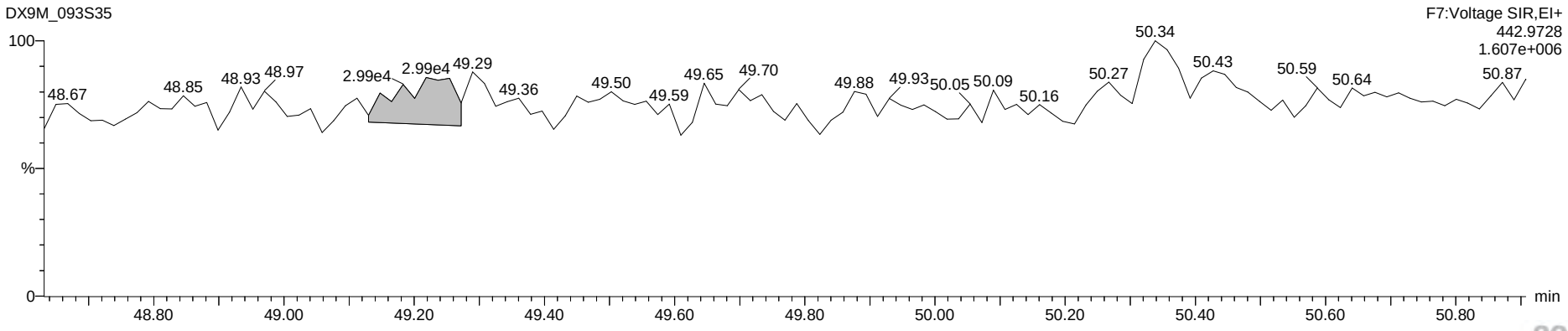
OCDF



Deca DPE



Octa Lock



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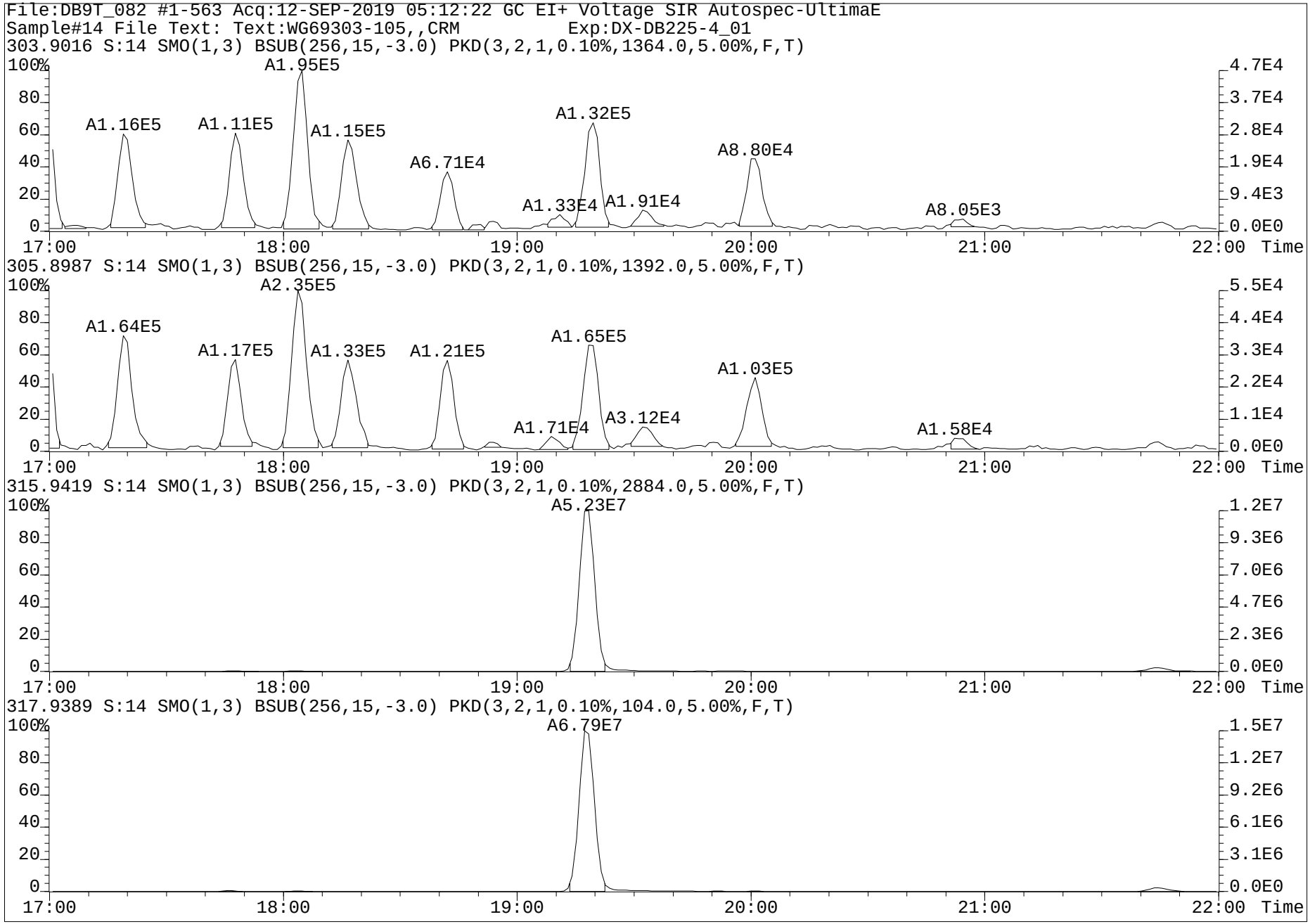
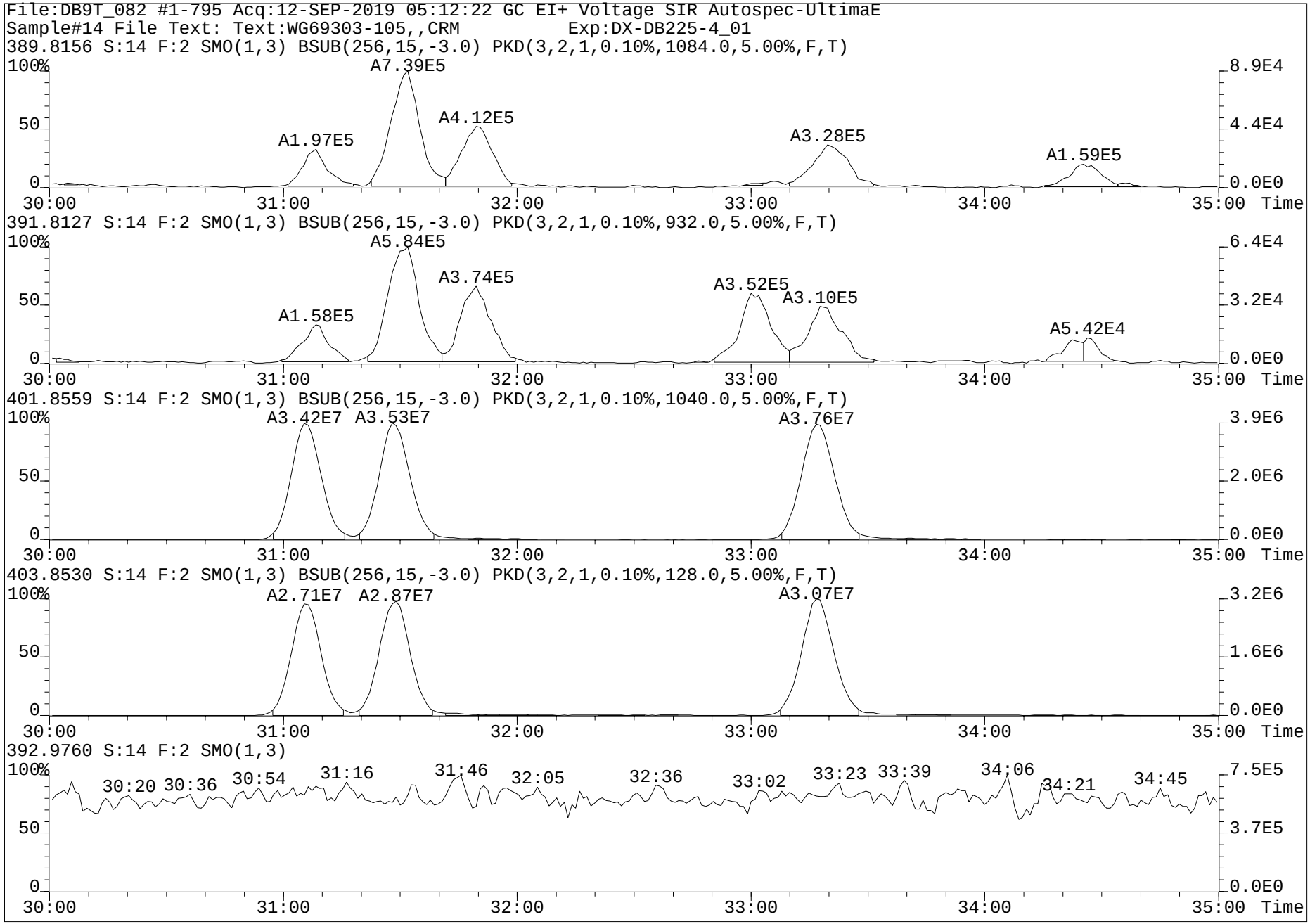
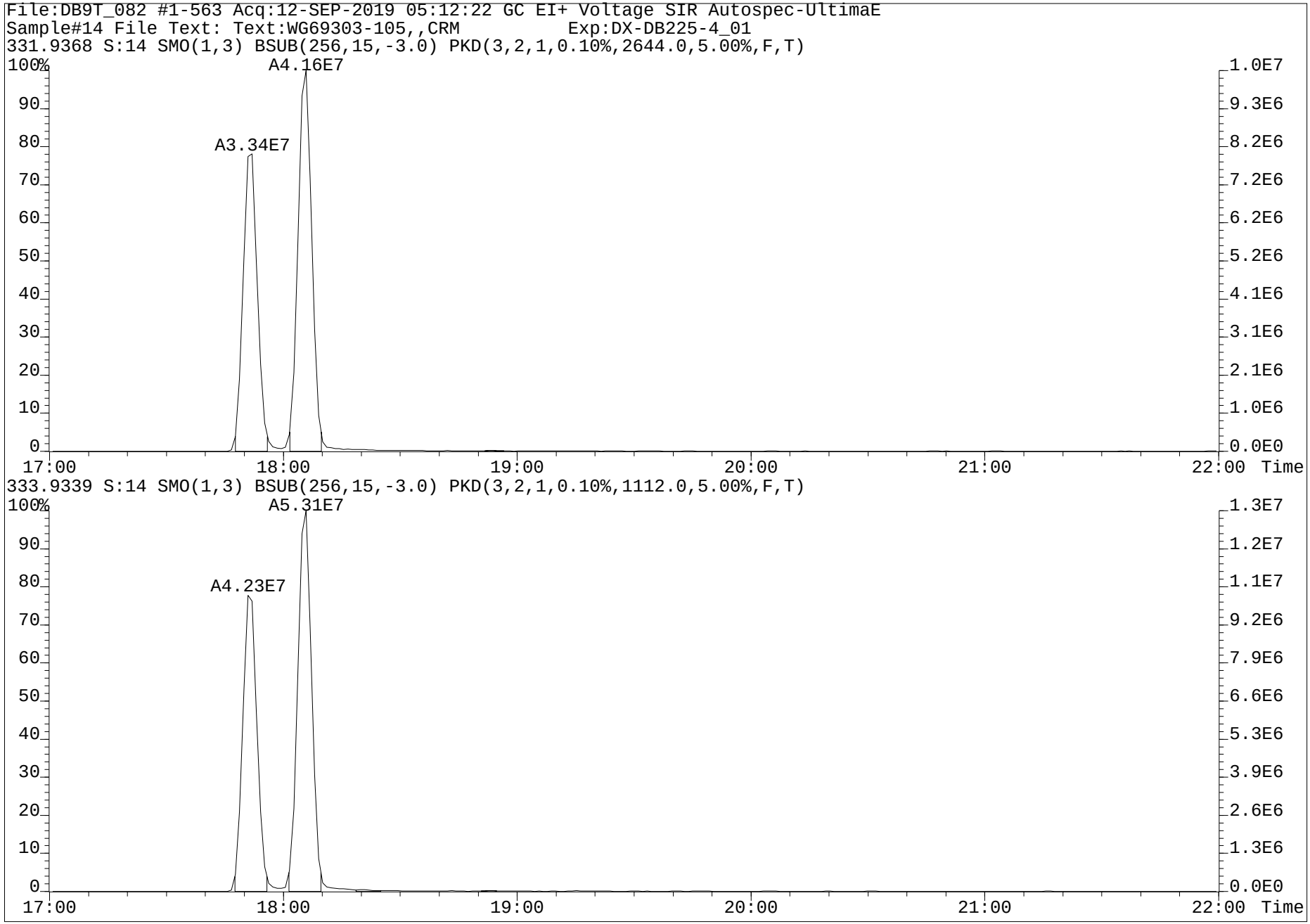
Run #13 Filename DB9T_082 S: 14 I: 1 Acquired: 12-SEP-19 05:12:22 Processed: 17-SEP-19 10:40:42
Run: db9t_082-a Analyte: db-hxd-s2 Cal: db9t_055-5a Results: db9t_082-a Version: V3.6 6-JAN-2000 17:51:42
Sample text: WG69303-105,,CRM Comments: 1,WG69303,2.0/20uL
sample size: 9.480000 conc units: pg/g total toxicity: 0.33 F1: 1.0000 F2: 1.0000

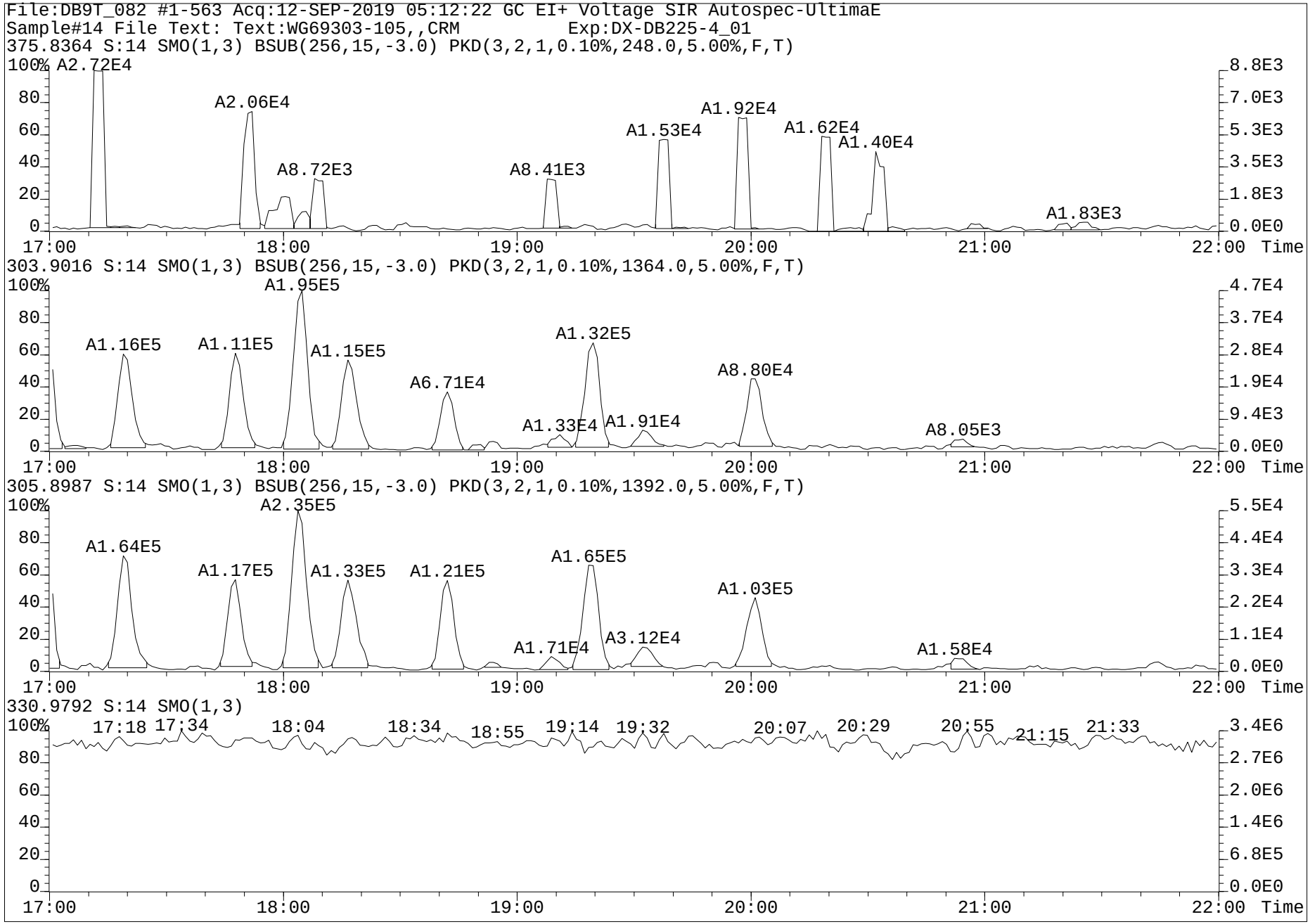
	Typ	Name	#Hom	Resp	RA		PT	Conc	Tox #1	DL	Rec	M?
1	Unk	2,3,7,8-TCDF	1	2.96e+05	0.80	y	19:19	0.671	0	0.0696	-	n
2	Unk	1,2,3,7,8,9-HxCDD	1	6.39e+05	1.06	y	33:20	2.659	0	0.1866	-	n
3	IS/RT	13C-2,3,7,8-TCDF	1	1.20e+08	0.77	y	19:18	189.062	-	0.0475	89.6	n
4	IS/RT	13C-1,2,3,4,7,8-HxCDD	1	6.13e+07	1.26	y	31:06	184.272	-	0.0844	87.3	n
5	IS/RT	13C-1,2,3,6,7,8-HxCDD	1	6.40e+07	1.23	y	31:29	184.216	-	0.0807	87.3	n
6	RS	13C-1,2,3,4-TCDD	1	9.48e+07	0.78	y	18:06	8.688	-	-	-	n
7	RS	13C-1,2,3,7,8,9-HxCDD	1	6.83e+07	1.22	y	33:17	12.544	-	-	-	n
8	Tot	Hexa DPE	0	*			NotFnd	*	-	-	-	n
9	Tot	Tetra Lock	-	-			-	-	-	-	-	n
10	Tot	Hexa Lock	-	-			-	-	-	-	-	n

PVby RA 20SEP2019
SVby HH 22Sept2019


File:DB9T_082 #1-563 Acq:12-SEP-2019 05:12:22 GC EI+ Voltage SIR Autospec-UltimaE
Sample#14 File Text: Text:WG69303-105,,CRM Exp:DX-DB225-4_01
303.9016 S:14 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1364.0,5.00%,F,T)
A1.16E5
A1.11E5
A1.95E5
A1.15E5
A6.71E4
A1.33E4
A1.32E5
A1.91E4
A8.80E4
A8.05E3
305.8987 S:14 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1392.0,5.00%,F,T)
A1.64E5
A1.17E5
A2.35E5
A1.33E5
A1.21E5
A1.71E4
A1.65E5
A3.12E4
A1.03E5
A1.58E4
315.9419 S:14 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,2884.0,5.00%,F,T)
A5.23E7
317.9389 S:14 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,104.0,5.00%,F,T)
A6.79E7
Time


File:DB9T_082 #1-795 Acq:12-SEP-2019 05:12:22 GC EI+ Voltage SIR Autospec-UltimaE
Sample#14 File Text: Text:WG69303-105,,CRM Exp:DX-DB225-4_01
389.8156 S:14 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1084.0,5.00%,F,T)
A1.97E5
A7.39E5
A4.12E5
A3.28E5
A1.59E5
391.8127 S:14 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,932.0,5.00%,F,T)
A1.58E5
A5.84E5
A3.74E5
A3.52E5
A3.10E5
A5.42E4
401.8559 S:14 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1040.0,5.00%,F,T)
A3.42E7
A3.53E7
A3.76E7
403.8530 S:14 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,128.0,5.00%,F,T)
A2.71E7
A2.87E7
A3.07E7
392.9760 S:14 F:2 SMO(1,3)
30:20 30:36 30:54 31:16 31:46 32:05 32:36 33:02 33:23 33:39 34:06 34:21 34:45
100%
50
0
30:00
31:00
32:00
33:00
34:00
35:00 Time
8.9E4
4.4E4
0.0E0
6.4E4
3.2E4
3.9E6
2.0E6
3.2E6
1.6E6
7.5E5
3.7E5


File:DB9T_082 #1-563 Acq:12-SEP-2019 05:12:22 GC EI+ Voltage SIR Autospec-UltimaE
Sample#14 File Text: Text:WG69303-105,,CRM Exp:DX-DB225-4_01
331.9368 S:14 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,2644.0,5.00%,F,T)
A4.16E7
A3.34E7
333.9339 S:14 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1112.0,5.00%,F,T)
A5.31E7
A4.23E7
Time


File:DB9T_082 #1-563 Acq:12-SEP-2019 05:12:22 GC EI+ Voltage SIR Autospec-UltimaE
Sample#14 File Text: Text:WG69303-105,,CRM Exp:DX-DB225-4_01
375.8364 S:14 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,248.0,5.00%,F,T)
A2.72E4
A2.06E4
A8.72E3
A8.41E3
A1.53E4
A1.92E4
A1.62E4
A1.40E4
A1.83E3
303.9016 S:14 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1364.0,5.00%,F,T)
A1.95E5
A1.16E5
A1.11E5
A1.15E5
A6.71E4
A1.32E5
A1.33E4
A1.91E4
A8.80E4
A8.05E3
305.8987 S:14 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1392.0,5.00%,F,T)
A2.35E5
A1.64E5
A1.17E5
A1.33E5
A1.21E5
A1.65E5
A1.71E4
A3.12E4
A1.03E5
A1.58E4
330.9792 S:14 SMO(1,3)
17:18
17:34
18:04
18:34
18:55
19:14
19:32
20:07
20:29
20:55
21:15
21:33
100%
80
60
40
20
0
17:00
18:00
19:00
20:00
21:00
22:00
Time
8.8E3
7.0E3
5.3E3
3.5E3
1.8E3
0.0E0
4.7E4
3.7E4
2.8E4
1.9E4
9.4E3
5.5E4
4.4E4
3.3E4
2.2E4
1.1E4
3.4E6
2.7E6
2.0E6
1.4E6
6.8E5

Method: G:\Masslynx\Inst_M\Projects\190510DX.PRO\MethDB\DX_Log.mdb 21 Nov 2008 11:39:44
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

Compound name: -

#	Name	ID	Sample Text	Acq Date	Acq Time
1	DX9M_065CS1	DX041D-CAL,,/01-67	1,,1.0uL Cal Win/Res	25-Jun-19	09:11:15
2	DX9M_065CS2	DX041D-CAL,,/01-67	1,,1.0uL Cal Win/Res	25-Jun-19	10:10:46
3	DX9M_065CS3	DX042D-CAL,,/01	1,,1.0uL Cal Win/Res	25-Jun-19	11:05:52
4	DX9M_065CS4	DX042C-CAL,,/01	1,,1.0uL CS-2	25-Jun-19	12:04:13
5	DX9M_065CS5	DX042B-CAL,,/01	1,,1.0uL CS-1	25-Jun-19	12:57:52
6	DX9M_065CS6	DX042B-CAL,,/01	1,,1.0uL CS-1	25-Jun-19	13:58:52
7	DX9M_065CS7	DX042B2-CAL,,/01	1,,1.0uL Cal Win/Res	25-Jun-19	14:55:33
8	DX9M_065CS8	DX042A-CAL,,/01	1,,1.0uL CS-0.2 Sens	25-Jun-19	15:49:54
9	DX9M_065CS9	DX042G-CAL,,/01	1,,1.0uL CS-6	25-Jun-19	16:57:12
10	DX9M_065CS10	DX042F-CAL,,/01	1,,1.0uL CS-5	25-Jun-19	18:00:03
11	DX9M_065CS11	DX042F-CAL,,/01	1,,1.0uL CS-5	25-Jun-19	18:57:54
12	DX9M_065CS12	DX042E-CAL,,/01	1,,1.0uL CS-4	25-Jun-19	19:52:17
13	DX9M_065CS13	DX005A-SSV,,/01	1,,1.0uL Cal	25-Jun-19	22:05:10
14	DX9M_065CS14	DX041D-CAL,,/01-67	1,,1.0uL Cal Win/Res	25-Jun-19	22:57:42
15	DX9M_065CS15	DX042D-CAL,,/01	1,,1.0uL Cal Win/Res	25-Jun-19	23:52:55

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_065C-6A.qld

Name: DX9M_065CS6, Date: 25-Jun-2019, Time: 13:58:52, ID: DX042B-CAL,,/01, Description: 1,,1.0uL CS-1

#	Name	Amount	Resp	Ratio	fails?	RT	RRF	Mean RRF	RRF SD	RRF %R	S/N	1° S/N
1	2,3,7,8-TCDF	0.500	2.65e4	0.75	NO	25.29	0.915	0.9272	0.018	1.96	221	196
2	1,2,3,7,8-PeCDF	2.500	1.07e5	1.49	NO	33.58	0.938	0.9296	0.023	2.43	335	237
3	2,3,4,7,8-PeCDF	2.500	1.07e5	1.60	NO	35.37	0.898	0.9500	0.033	3.48	411	262
4	1,2,3,4,7,8-HxCDF	2.500	9.19e4	1.22	NO	40.77	1.132	1.1051	0.022	1.95	437	500
5	1,2,3,6,7,8-HxCDF	2.500	9.45e4	1.31	NO	40.95	1.047	1.0740	0.019	1.76	456	477
6	2,3,4,6,7,8-HxCDF	2.500	9.42e4	1.28	NO	41.90	1.167	1.1366	0.028	2.45	475	524
7	1,2,3,7,8,9-HxCDF	2.500	7.70e4	1.24	NO	42.95	1.084	1.0544	0.026	2.45	351	388
8	1,2,3,4,6,7,8-HpCDF	2.500	7.77e4	1.03	NO	45.41	1.223	1.2500	0.038	3.06	443	553
9	1,2,3,4,7,8,9-HpCDF	2.500	6.31e4	1.11	NO	47.21	1.226	1.2532	0.027	2.15	357	413
10	OCDF	5.000	1.05e5	0.88	NO	50.48	1.078	1.1384	0.075	6.56	199835	11399
11	2,3,7,8-TCDD	0.500	1.88e4	0.80	NO	26.51	1.021	1.1017	0.047	4.28	99	91
12	1,2,3,7,8-PeCDD	2.500	7.00e4	0.59	NO	36.18	0.974	0.9887	0.009	0.96	449	681
13	1,2,3,4,7,8-HxCDD	2.500	6.59e4	1.32	NO	42.17	1.028	1.0282	0.015	1.44	814	561
14	1,2,3,6,7,8-HxCDD	2.500	6.61e4	1.31	NO	42.32	0.917	0.9421	0.023	2.49	756	518
15	1,2,3,7,8,9-HxCDD	2.500	6.52e4	1.21	NO	42.75	0.957	0.9731	0.020	2.10	752	525
16	1,2,3,4,6,7,8-HpCDD	2.500	5.30e4	0.99	NO	46.79	0.764	0.7796	0.021	2.71	548	599
17	OCDD	5.000	9.66e4	0.87	NO	50.39	0.992	0.9813	0.074	7.59	642809	748328
18	13C-2,3,7,8-TCDF	100.000	5.80e6	0.76	NO	25.27	1.533	1.5227	0.041	2.68	2782	4179
19	13C-1,2,3,7,8-PeCDF	100.000	4.55e6	1.58	NO	33.57	1.204	1.2375	0.076	6.17	2439	1681
20	13C-2,3,4,7,8-PeCDF	100.000	4.77e6	1.58	NO	35.33	1.260	1.2765	0.081	6.33	3055	2093
21	13C-1,2,3,4,7,8-HxCDF	100.000	3.25e6	0.51	NO	40.75	1.233	1.2136	0.017	1.43	1594	3507
22	13C-1,2,3,6,7,8-HxCDF	100.000	3.61e6	0.51	NO	40.92	1.371	1.3340	0.030	2.28	1626	3469
23	13C-2,3,4,6,7,8-HxCDF	100.000	3.23e6	0.51	NO	41.88	1.226	1.2025	0.016	1.34	1625	3503
24	13C-1,2,3,7,8,9-HxCDF	100.000	2.84e6	0.51	NO	42.92	1.079	1.0693	0.029	2.70	1290	2824
25	13C-1,2,3,4,6,7,8-HpCDF	100.000	2.54e6	0.46	NO	45.39	0.965	0.9996	0.154	15.39	2243	2355
26	13C-1,2,3,4,7,8,9-HpCDF	100.000	2.06e6	0.44	NO	47.19	0.782	0.8111	0.137	16.87	1756	1863
27	13C-2,3,7,8-TCDD	100.000	3.69e6	0.80	NO	26.49	0.975	0.9686	0.032	3.31	1495	3166
28	13C-1,2,3,7,8-PeCDD	100.000	2.87e6	0.62	NO	36.16	0.759	0.7690	0.046	5.95	2526	3540
29	13C-1,2,3,4,7,8-HxCDD	100.000	2.56e6	1.27	NO	42.15	0.974	0.9685	0.020	2.02	3362	2615
30	13C-1,2,3,6,7,8-HxCDD	100.000	2.88e6	1.27	NO	42.29	1.094	1.0706	0.020	1.85	3342	2650
31	13C-1,2,3,4,6,7,8-HpCDD	100.000	2.78e6	1.04	NO	46.77	1.055	1.0837	0.164	15.09	3464	4321
32	13C-OCDD	200.000	3.89e6	0.88	NO	50.37	0.739	0.7969	0.168	21.03	3235	2228
33	13C-1,2,3,4-TCDD	100.000	3.78e6	0.78	NO	26.16	37845.685	40244.29...	2071.896	5.15	1641	3517
34	13C-1,2,3,7,8,9-HxCDD	100.000	2.63e6	1.29	NO	42.73	26337.064	29034.26...	3025.332	10.42	3098	2465
35	37Cl-2,3,7,8-TCDD	0.500	1.83e4			26.52	0.966	1.0674 -	0.080	7.49	121	
36	Total Tetra-Furans	0.500						0.9276	0.016	1.76		
37	Total Tetra-Dioxins	0.500						1.1017	0.047	4.28		
38	Total Penta-Furans	2.500						0.9296	0.023	2.43		
39	Total Penta-Dioxins	2.500						0.9887	0.009	0.96		
40	Total Hexa-Furans	2.500						1.1051	0.022	1.95		
41	Total Hexa-Dioxins	2.500						1.0282	0.015	1.44		
42	Total Hepta-Furans	2.500						1.2500	0.038	3.06		
43	Total Hepta-Dioxins	2.500						0.7796	0.021	2.71		
44	Hexa DPE	0.000	2.35e2			22.12	0.000				6	
45	Hepta DPE	0.000	2.88e2			37.56	0.000				2205	
46	Octa DPE	0.000	1.14e2			38.53	0.000				1	
47	Nona DPE	0.000	5.53e1			46.19	0.000				1593	
48	Deca DPE	0.000	8.43e1			48.81	0.000				1659	
49	Tetra Lock	0.000	1.03e4			23.70	0.000				1	
50	Penta Lock	0.000	5.19e5			29.07	0.000				1	
51	Hexa Lock	0.000										
52	Hepta Lock	0.000	2.49e4			47.30	0.000				1	
53	Octa Lock	0.000										
54	13C-Tetra-Furans	100.000						1.5227	0.041	2.68		
55	13C-Tetra-Dioxins	100.000						0.9686	0.032	3.31		

pv'd by KB 22-JUL-2019

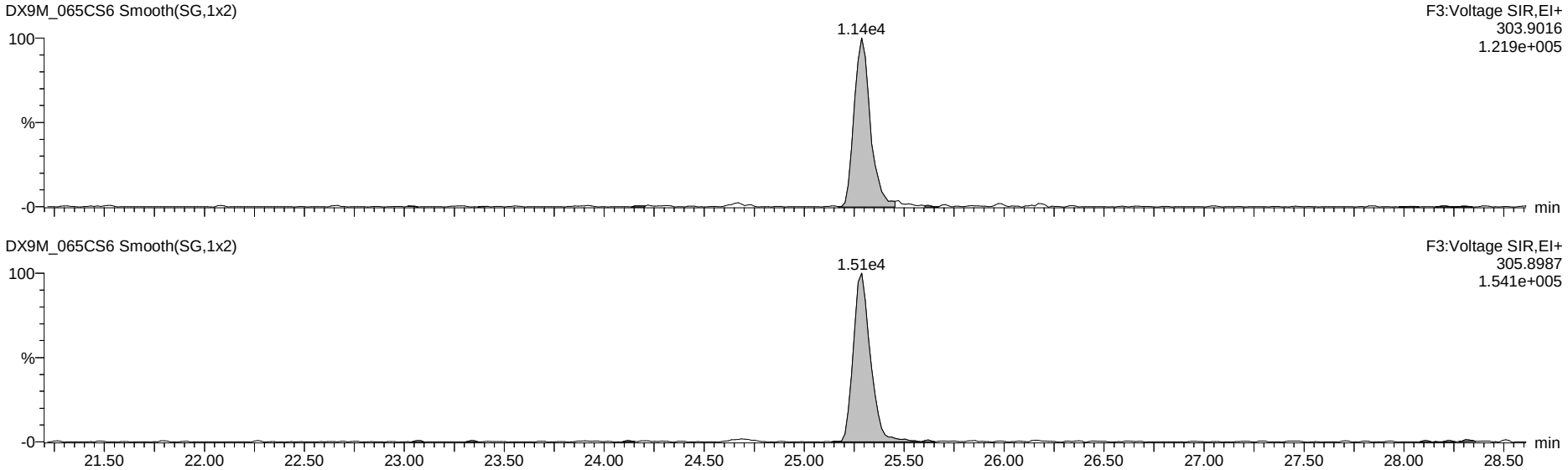
SV: JM 22-JUL-19

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_065C-7A.qld

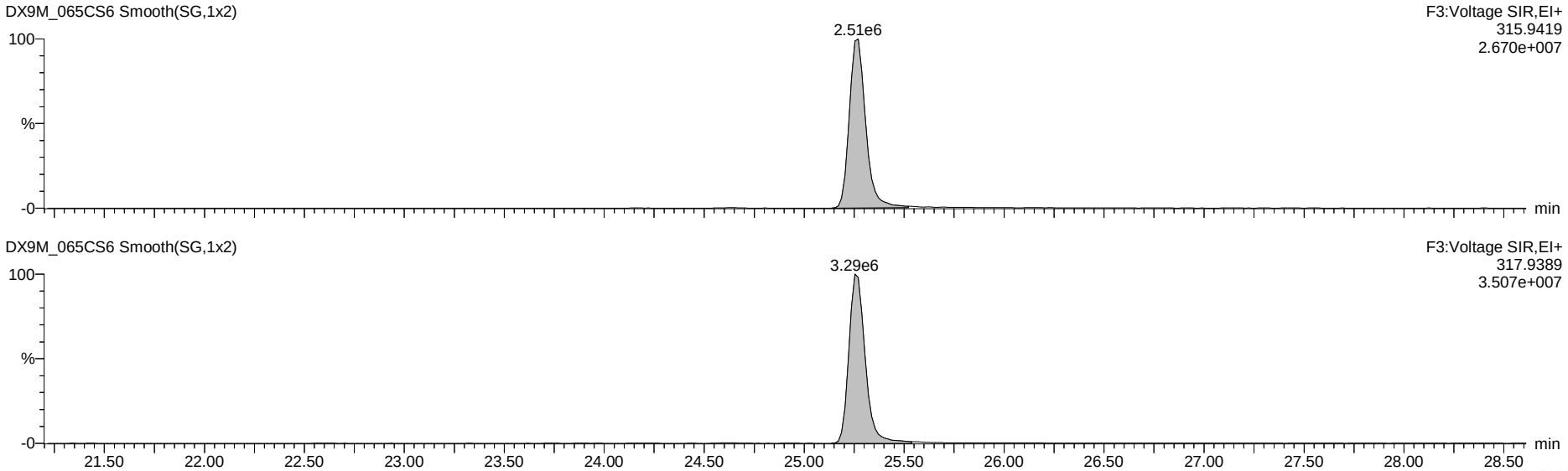
Method: G:\Masslynx\Inst_M\Projects\190510DX.PRO\MethDB\DX_1613B_16.mdb 18 Jul 2019 14:33:32
Calibration: 22 Jul 2019 09:01:47

Name: DX9M_065CS6, Date: 25-Jun-2019, Time: 13:58:52, ID: DX042B-CAL,,/01, Description: 1,,1.0uL CS-1

Total Tetra-Furans



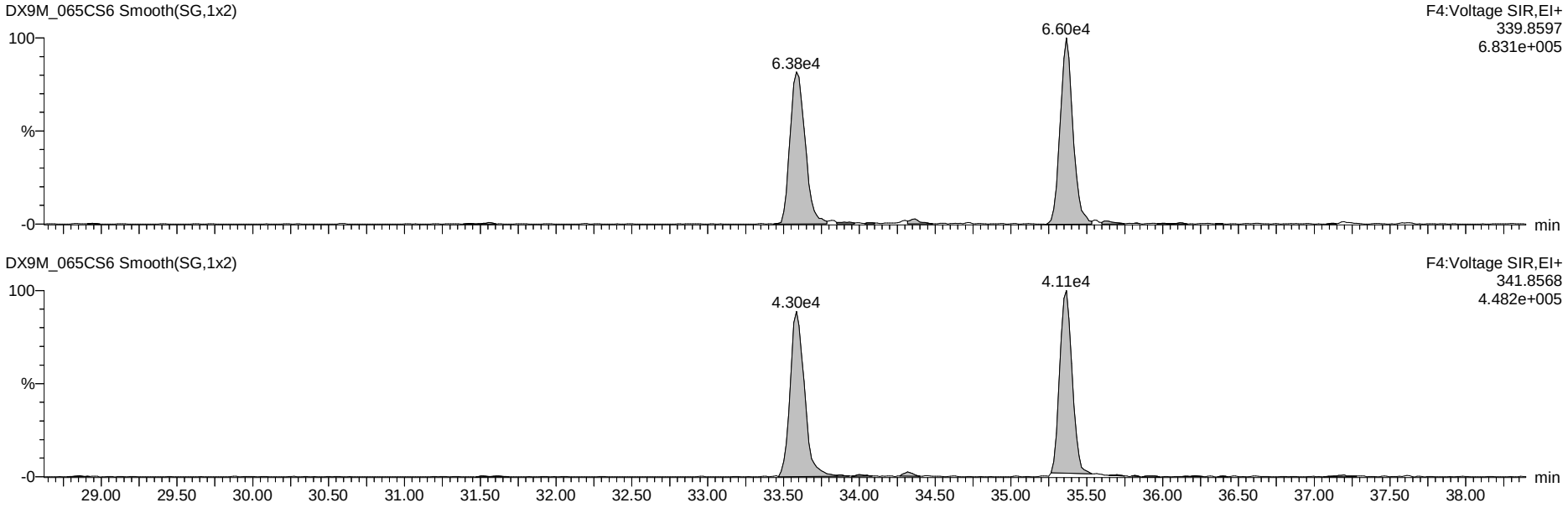
13C-Tetra-Furans



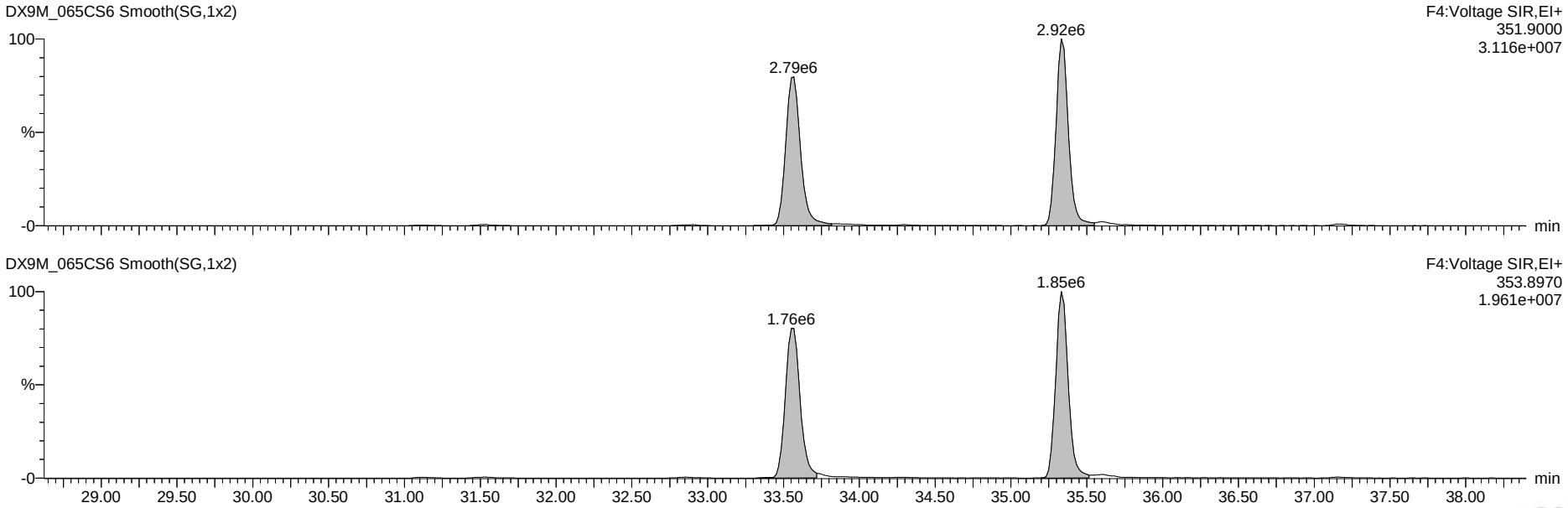
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_065C-7A.qld

Name: DX9M_065CS6, Date: 25-Jun-2019, Time: 13:58:52, ID: DX042B-CAL,,/01, Description: 1,,1.0uL CS-1

Total Penta-Furans



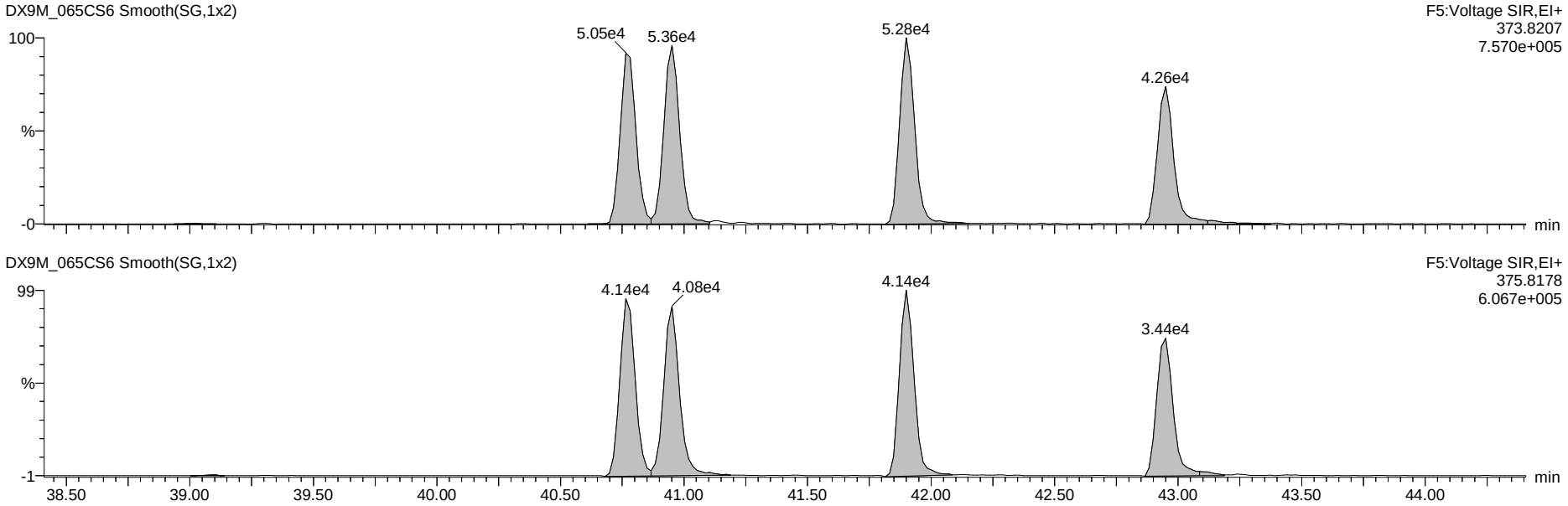
13C-Penta-Furans



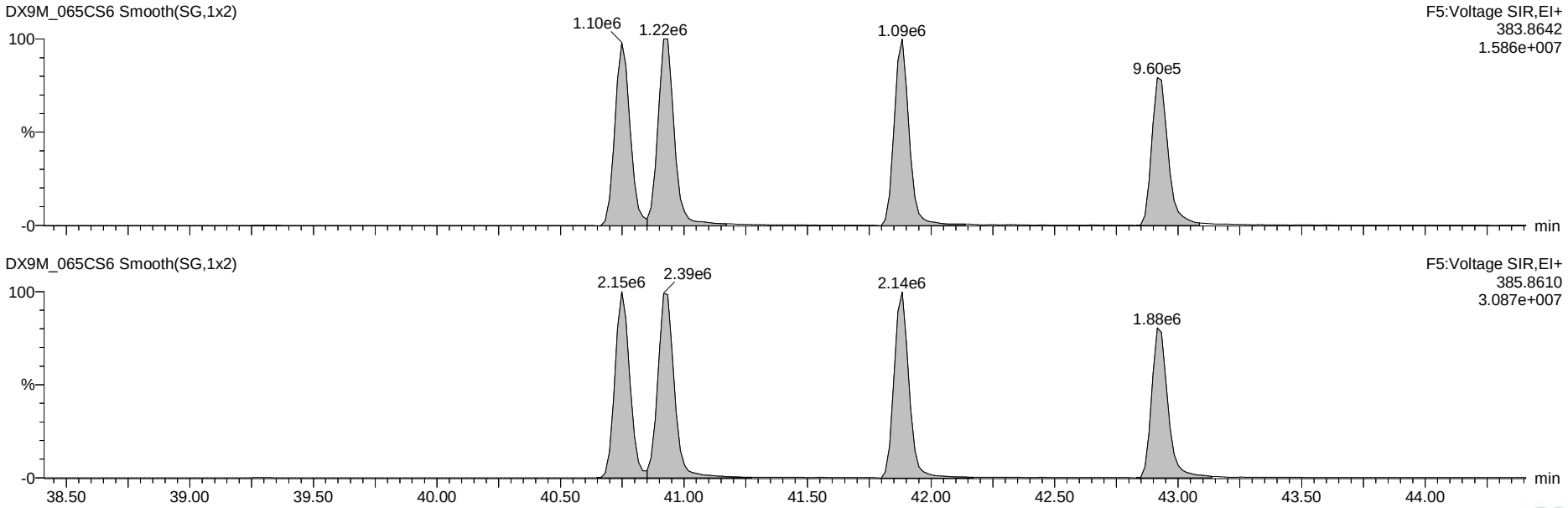
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_065C-7A.qld

Name: DX9M_065CS6, Date: 25-Jun-2019, Time: 13:58:52, ID: DX042B-CAL,,/01, Description: 1,,1.0uL CS-1

Total Hexa-Furans



13C-Hexa-Furans



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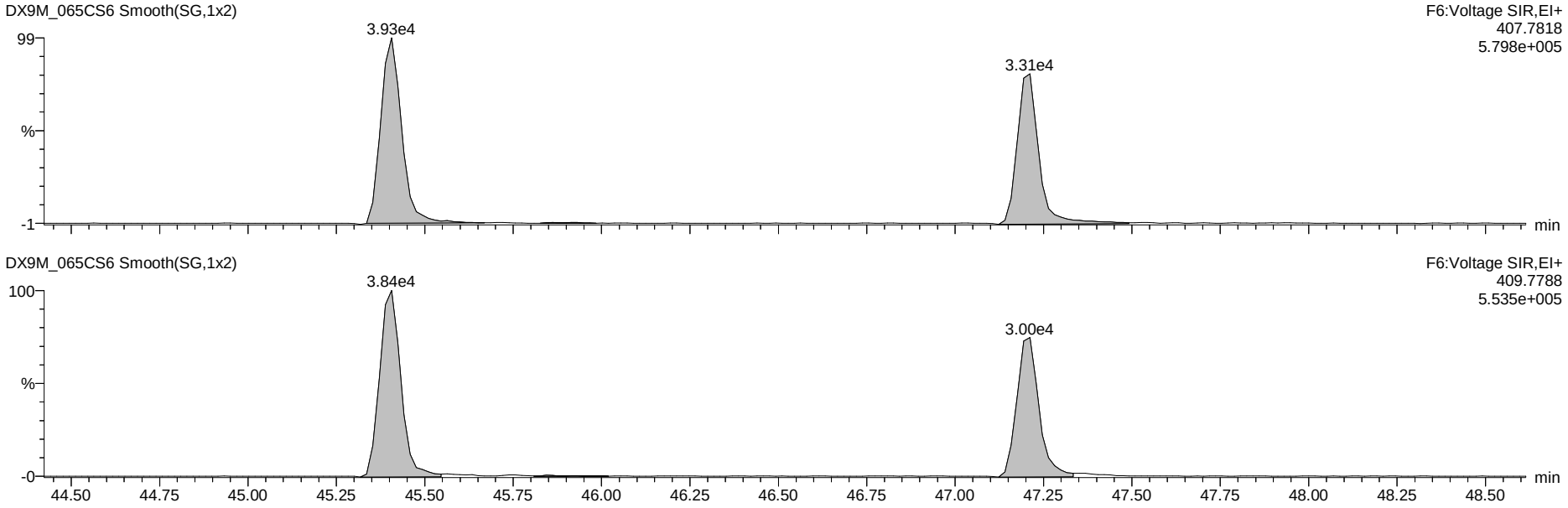
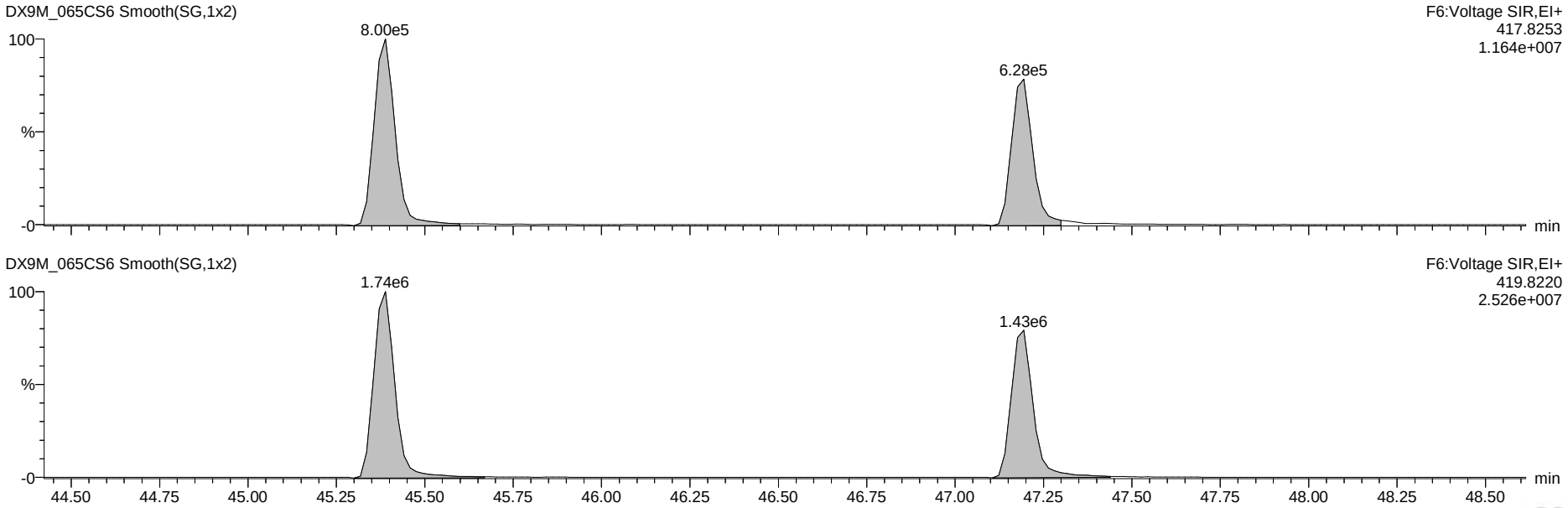
Name: DX9M_065CS6, Date: 25-Jun-2019, Time: 13:58:52, ID: DX042B-CAL,,/01, Description: 1,,1.0uL CS-1

Total Hepta-Furans



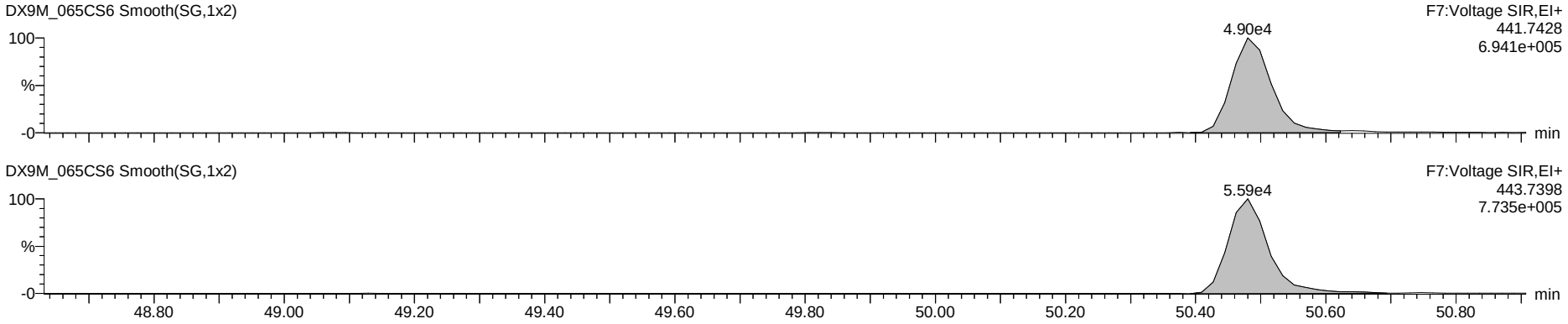
13C-Hepta-Furans



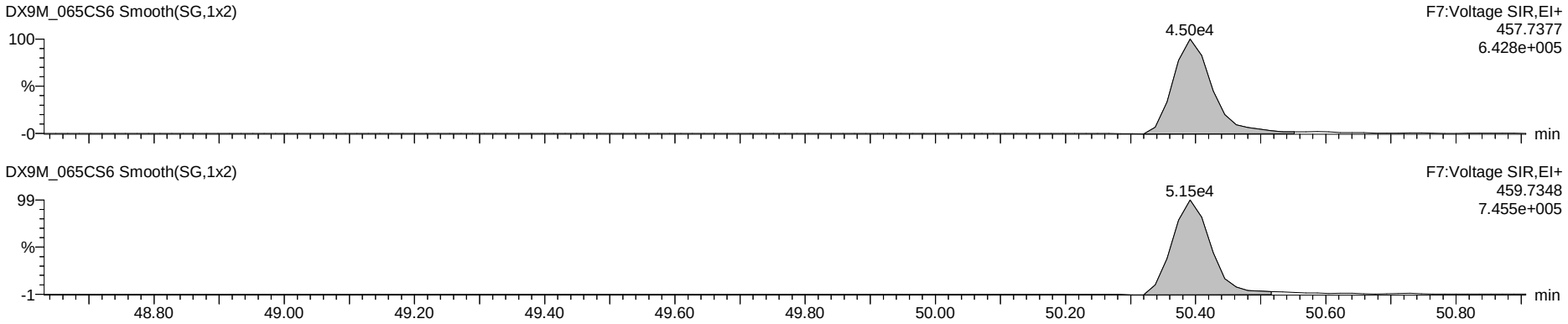
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_065C-7A.qld

Name: DX9M_065CS6, Date: 25-Jun-2019, Time: 13:58:52, ID: DX042B-CAL,,/01, Description: 1,,1.0uL CS-1

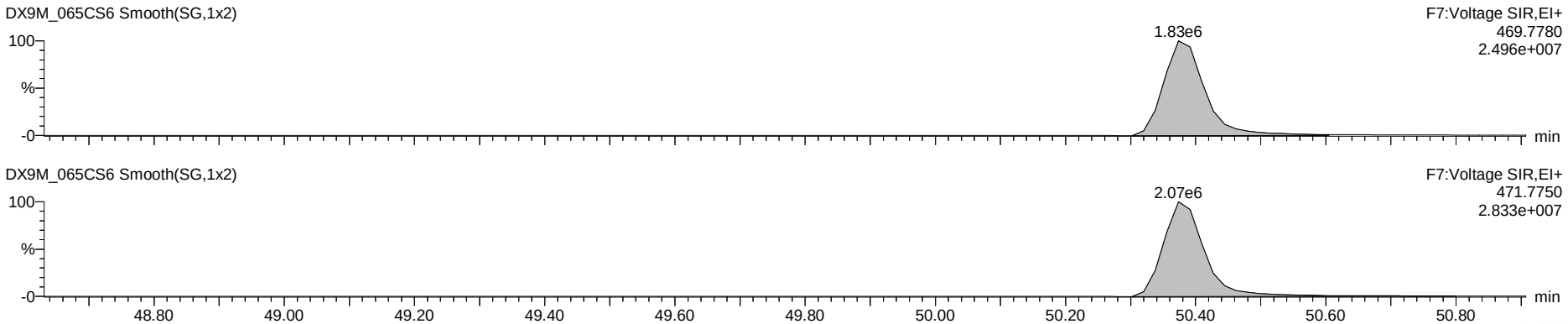
OCDF



OCDD



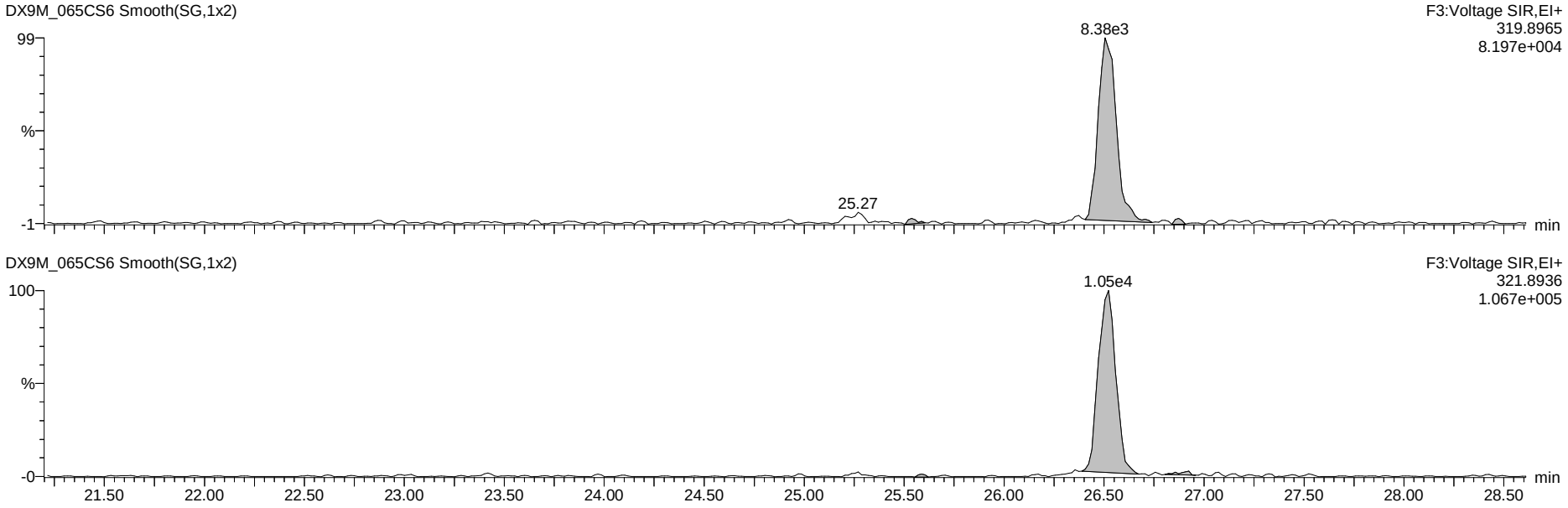
13C-OCDD



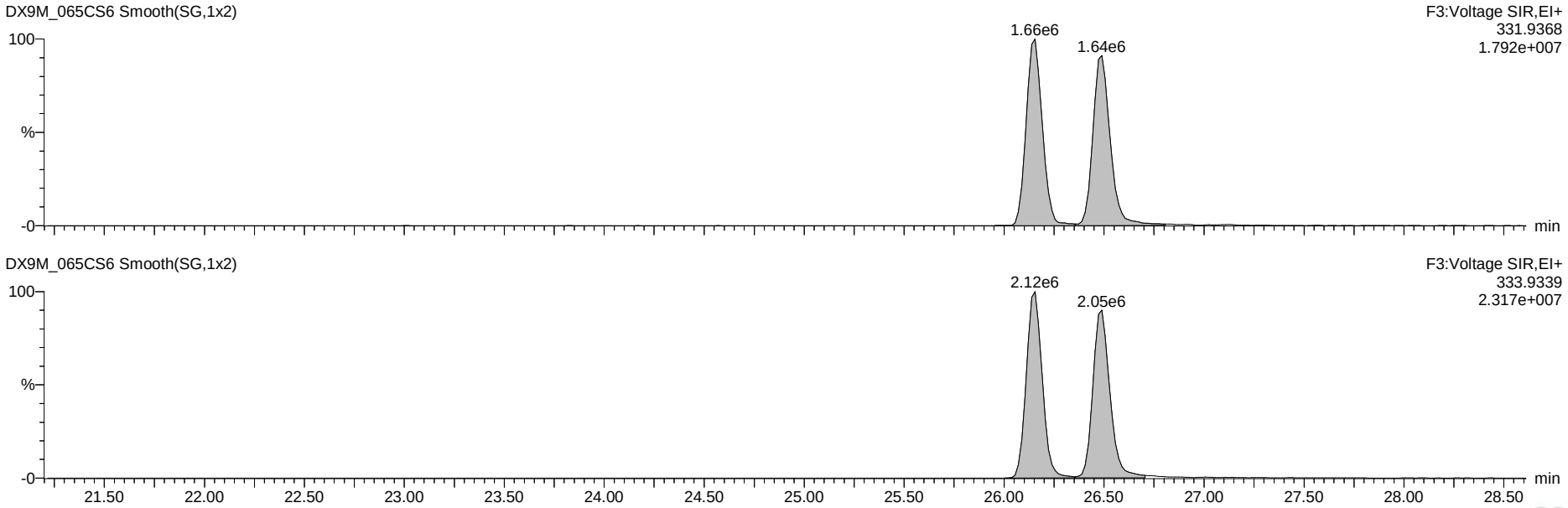
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_065C-7A.qld

Name: DX9M_065CS6, Date: 25-Jun-2019, Time: 13:58:52, ID: DX042B-CAL,,/01, Description: 1,,1.0uL CS-1

Total Tetra-Dioxins



13C-Tetra-Dioxins



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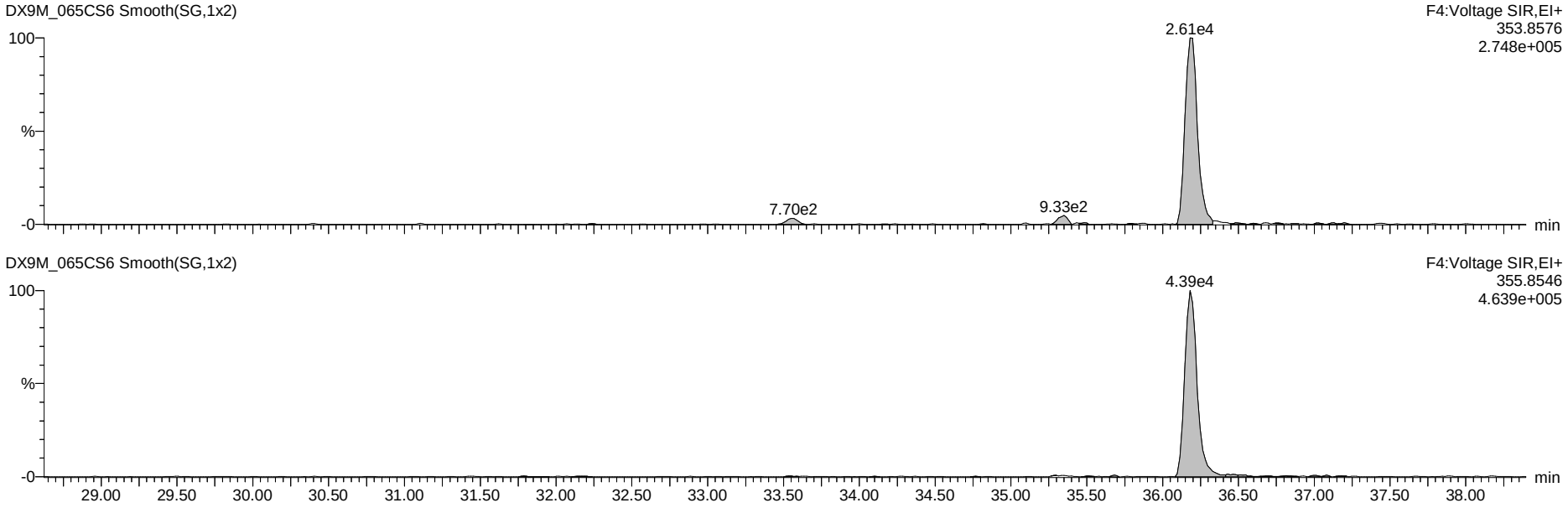
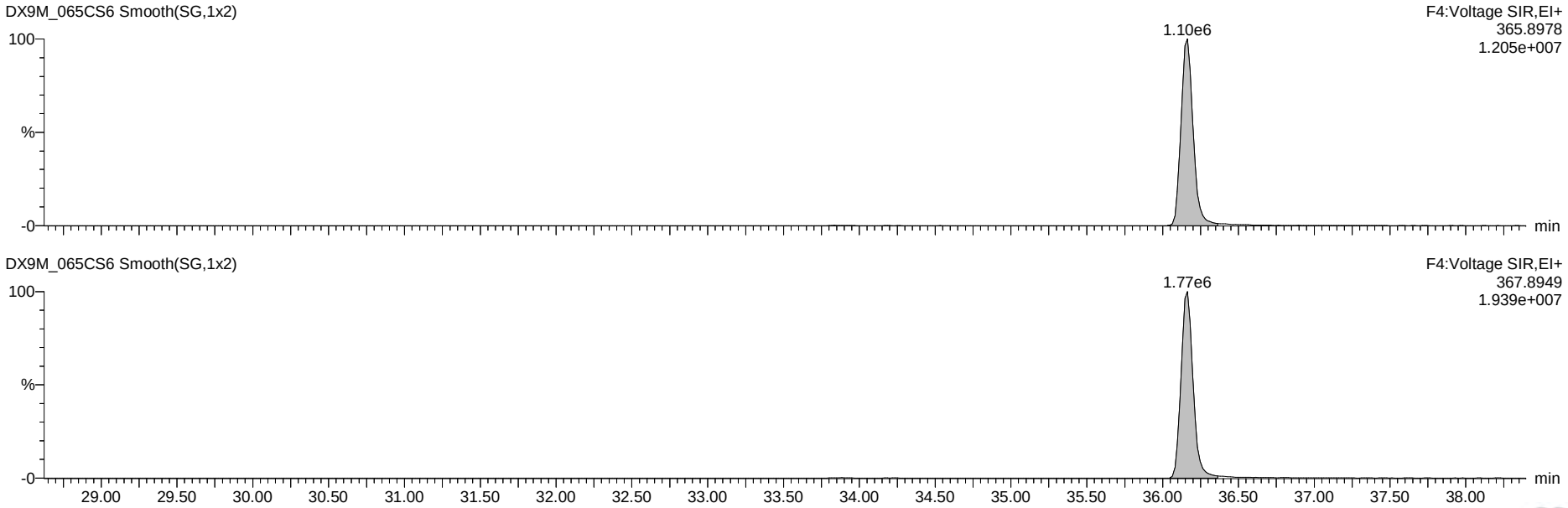
Total Penta-Dioxins



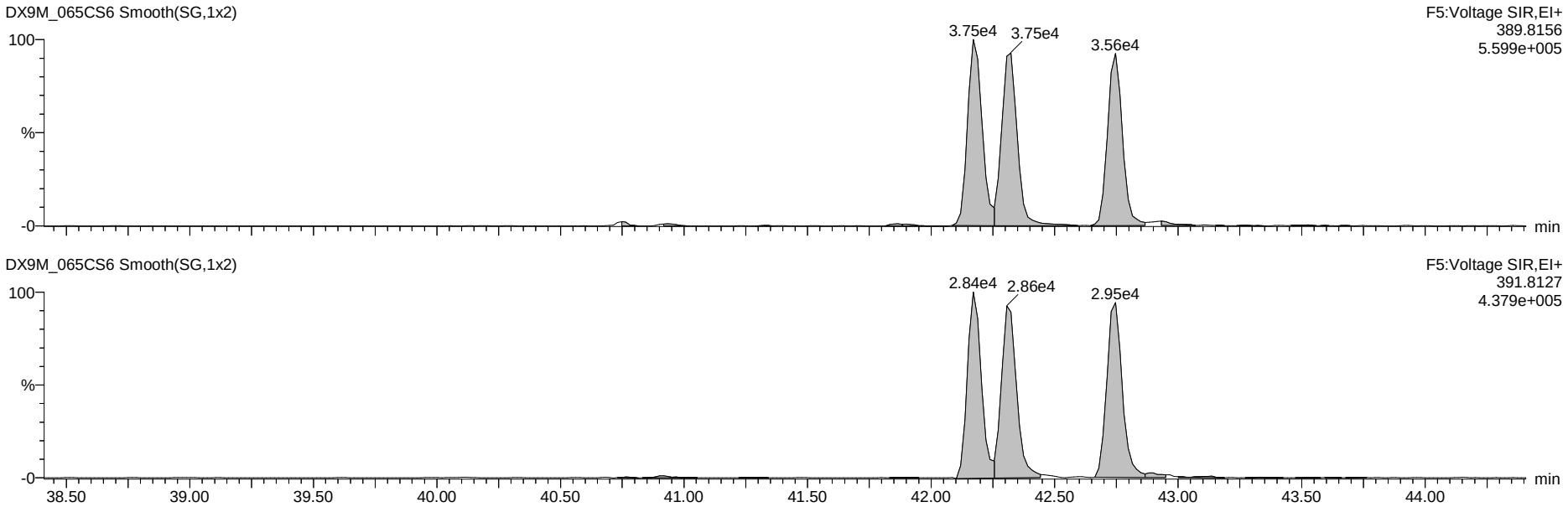
13C-Penta-Dioxins



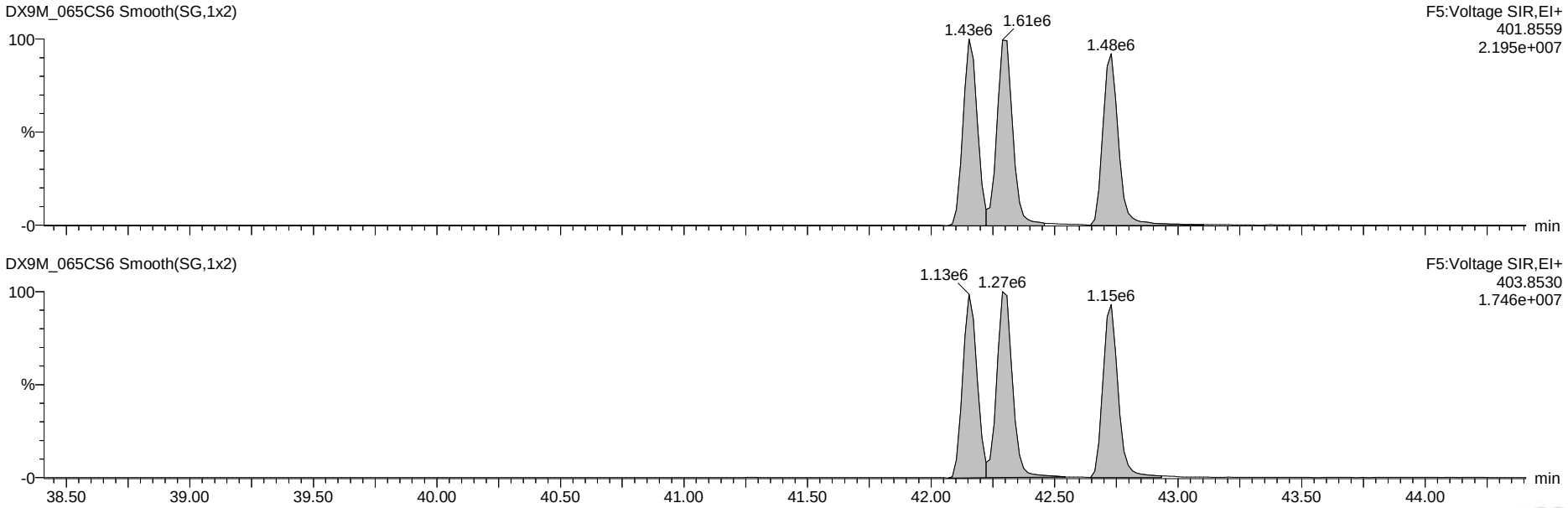
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_065C-7A.qld

Name: DX9M_065CS6, Date: 25-Jun-2019, Time: 13:58:52, ID: DX042B-CAL,,/01, Description: 1,,1.0uL CS-1

Total Hexa-Dioxins



13C-Hexa-Dioxins



Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_065C-7A.qld

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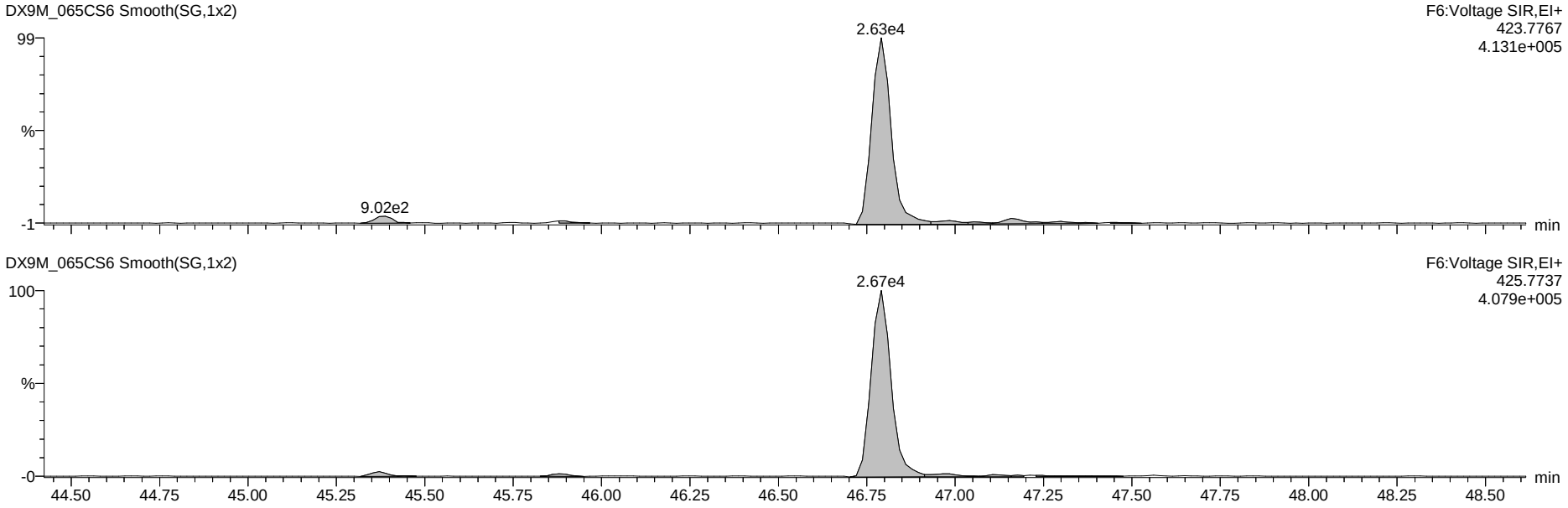
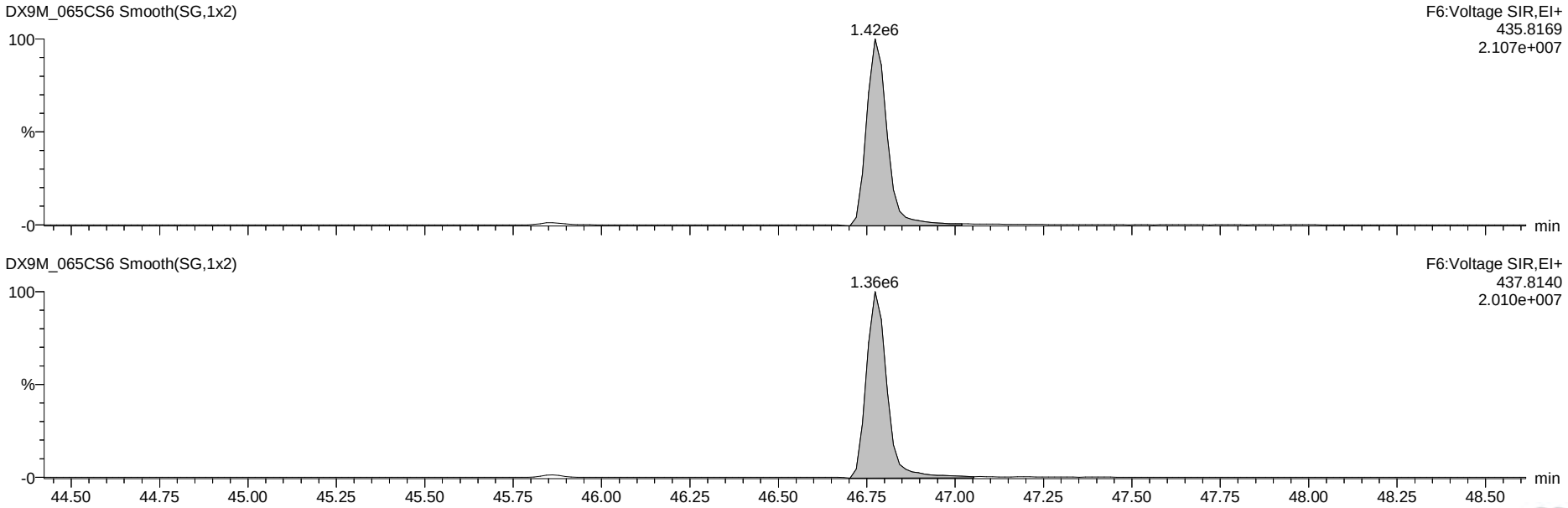
Total Hepta-Dioxins



13C-Hepta-Dioxins



Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_065C-7A.qld

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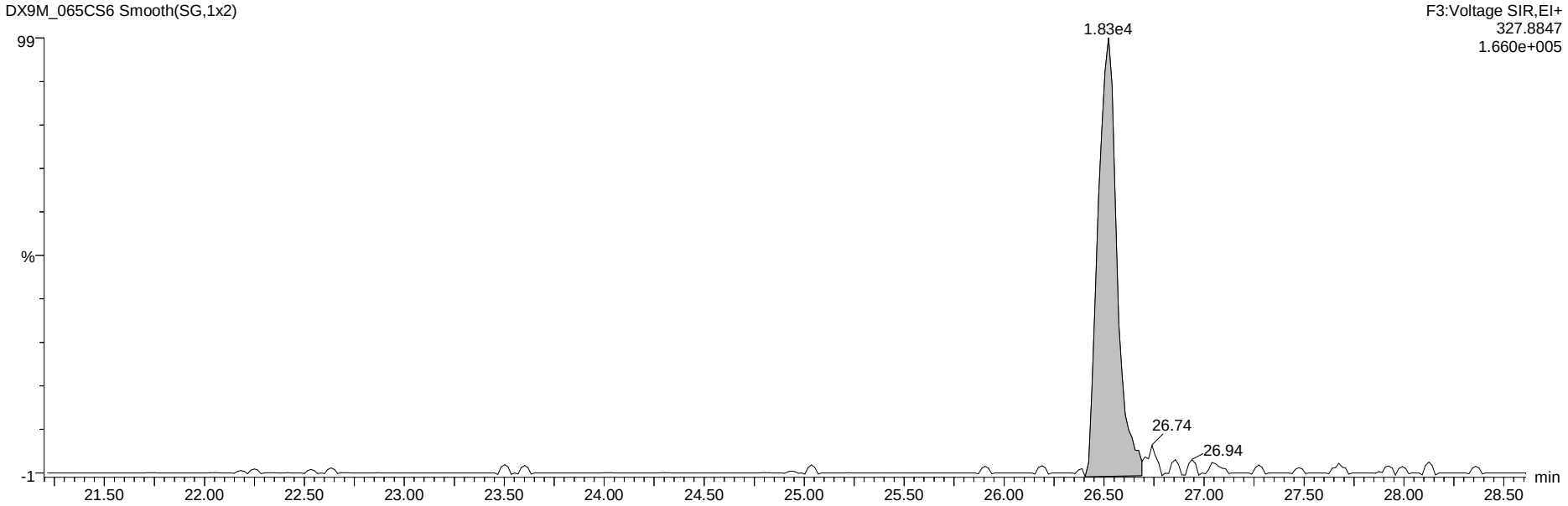
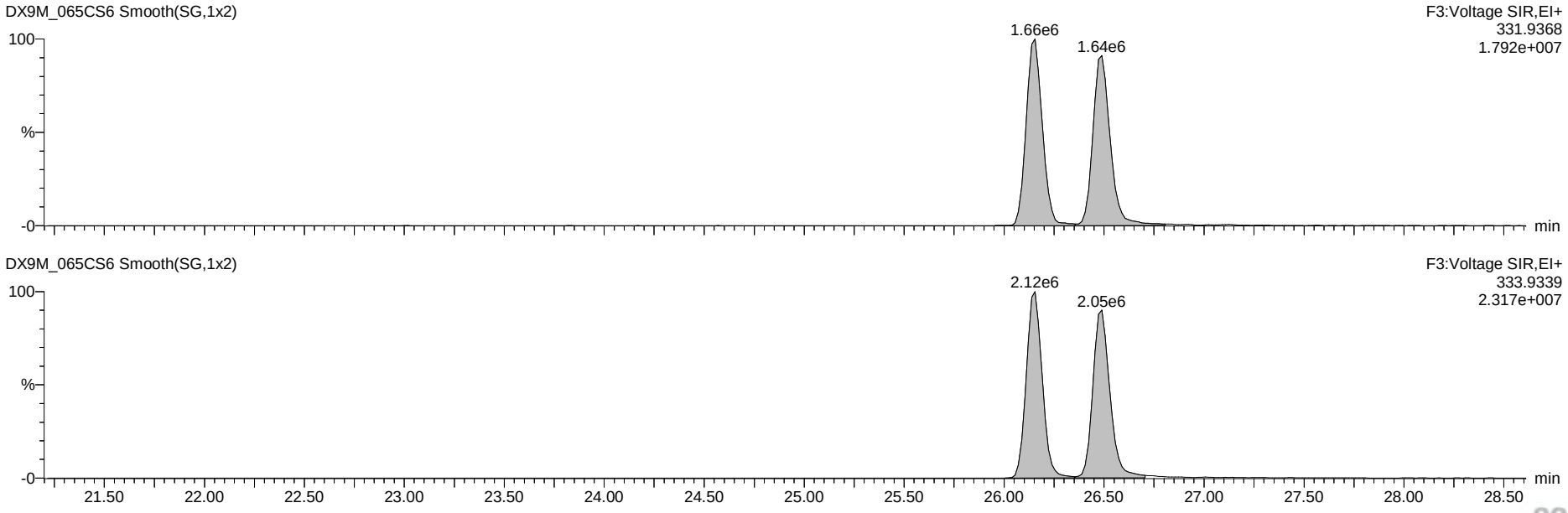
37Cl-2,3,7,8-TCDD



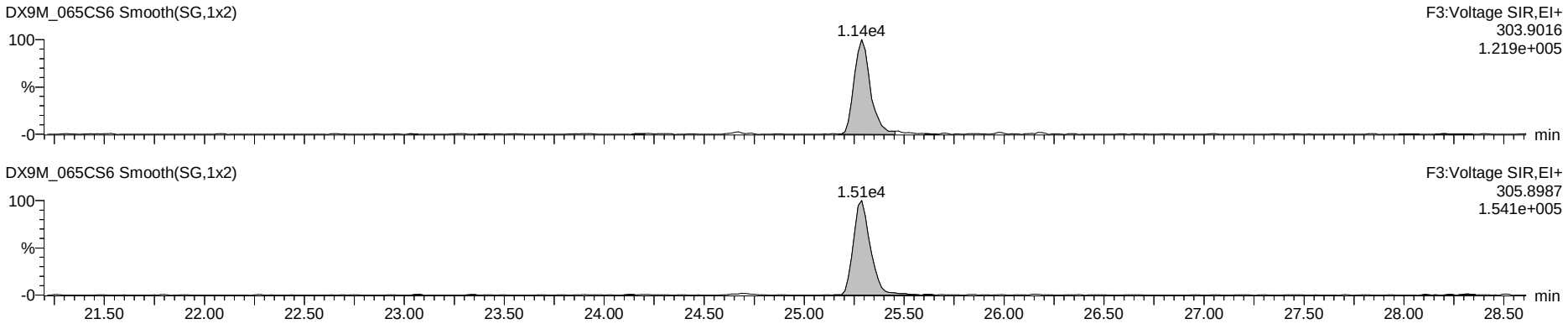
13C-Tetra-Dioxins



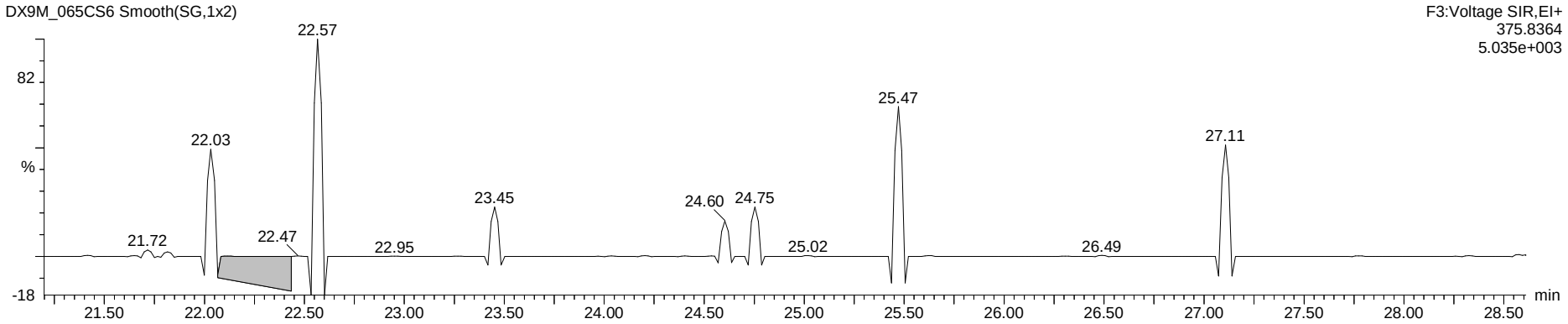
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_065C-7A.qld

Name: DX9M_065CS6, Date: 25-Jun-2019, Time: 13:58:52, ID: DX042B-CAL,,/01, Description: 1,,1.0uL CS-1

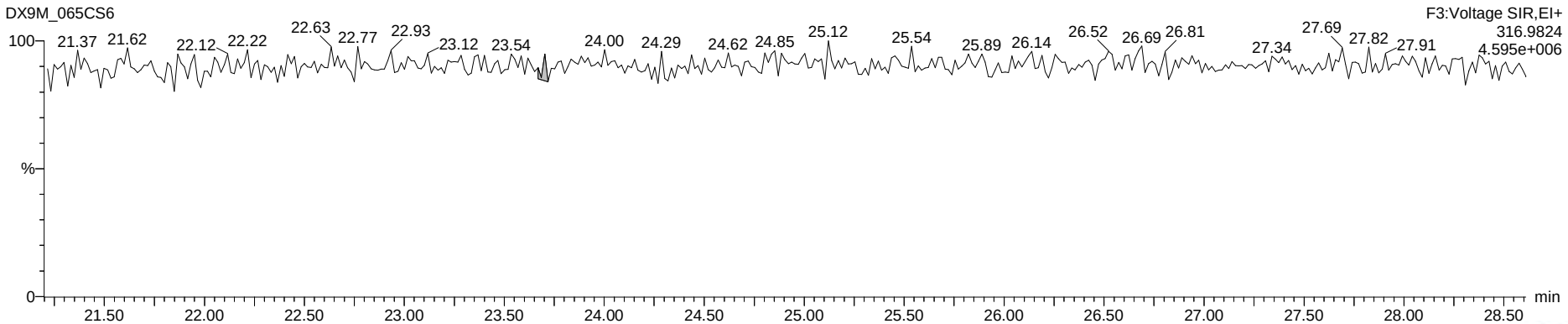
Total Tetra-Furans



Hexa DPE



Tetra Lock



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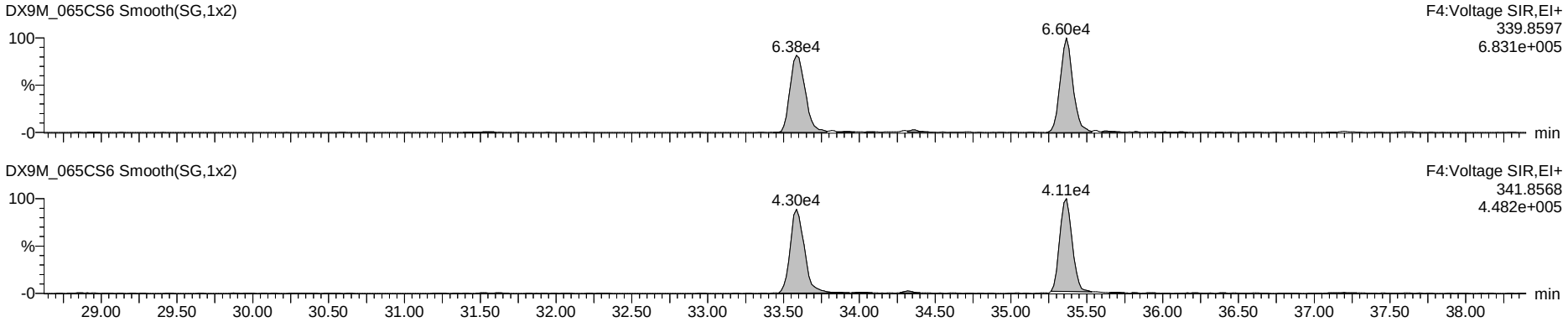
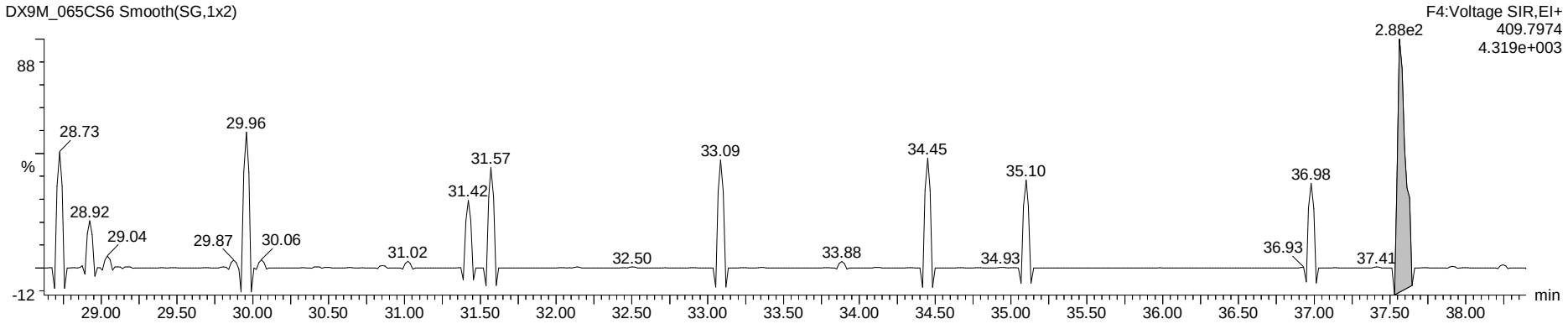
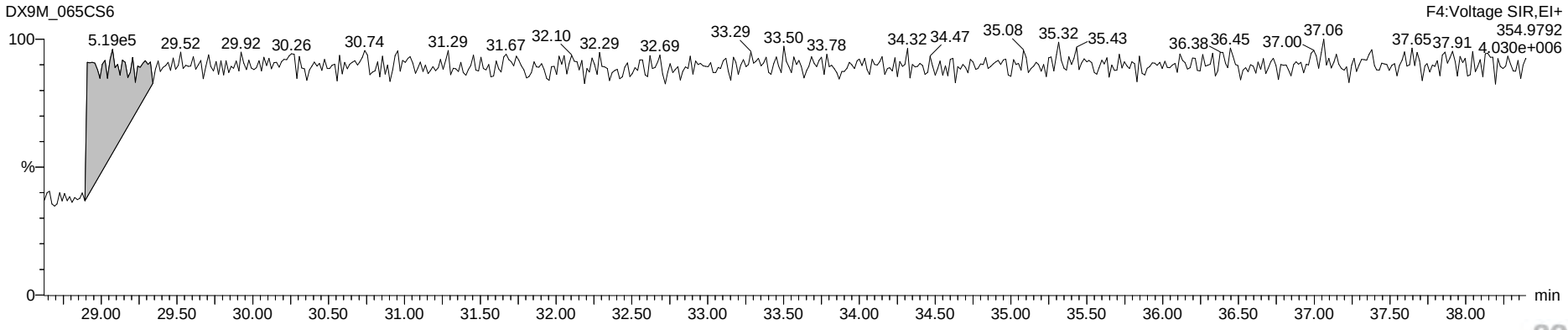
Total Penta-Furans



Hepta DPE



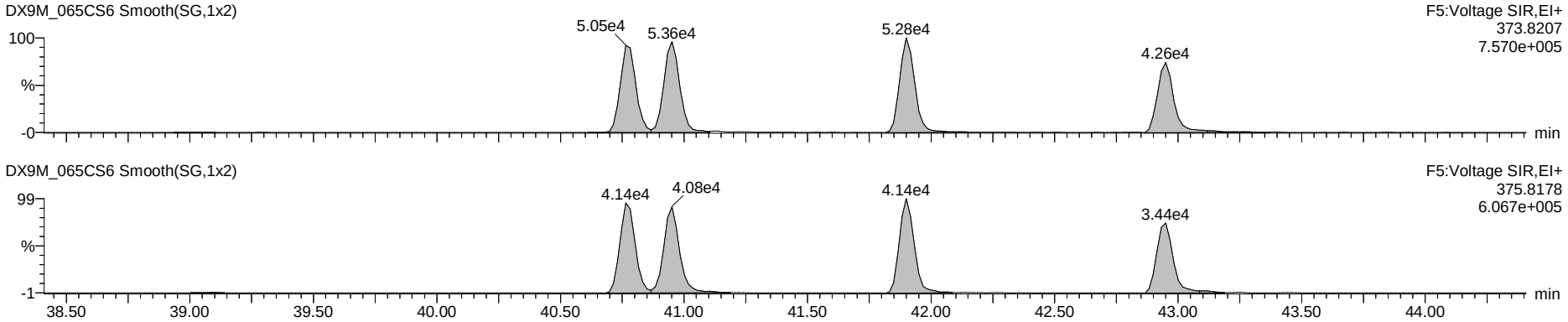
Penta Lock



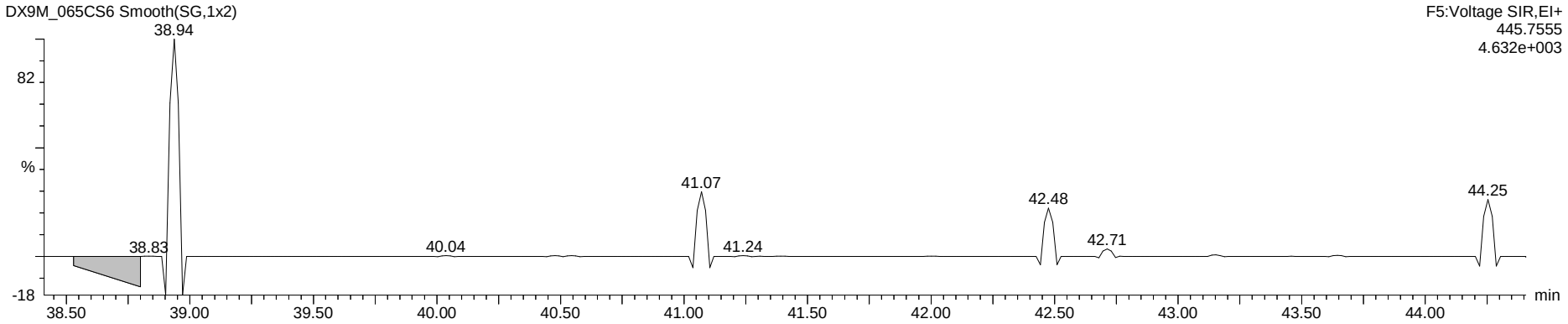
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_065C-7A.qld

Name: DX9M_065CS6, Date: 25-Jun-2019, Time: 13:58:52, ID: DX042B-CAL,,/01, Description: 1,,1.0uL CS-1

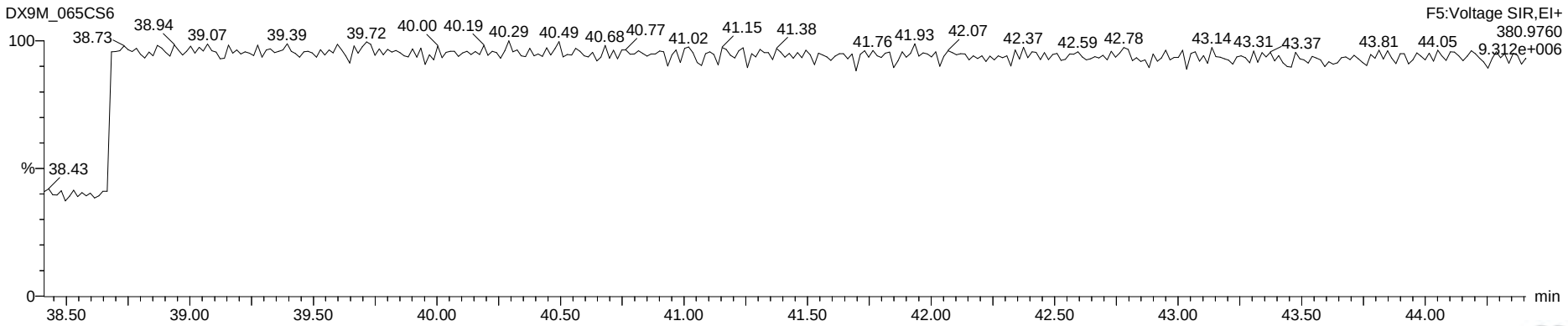
Total Hexa-Furans



Octa DPE



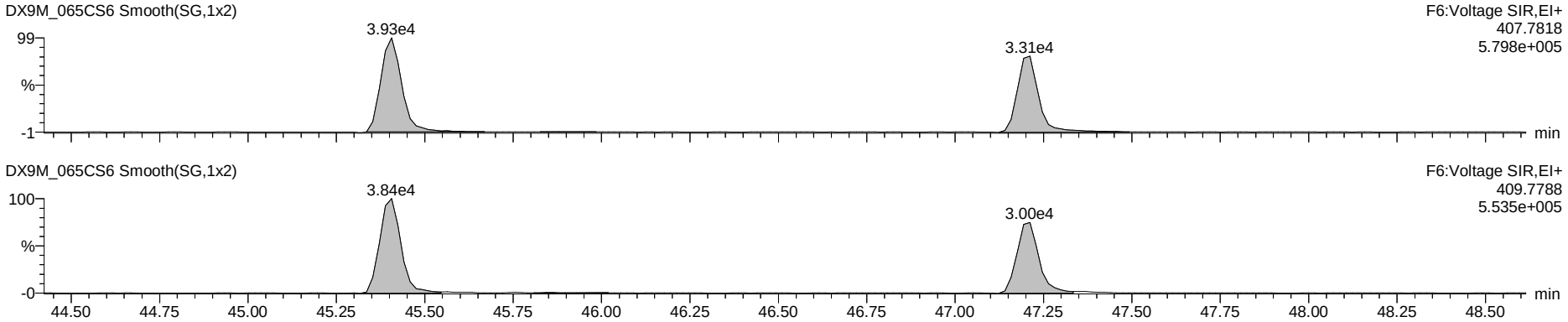
Hexa Lock



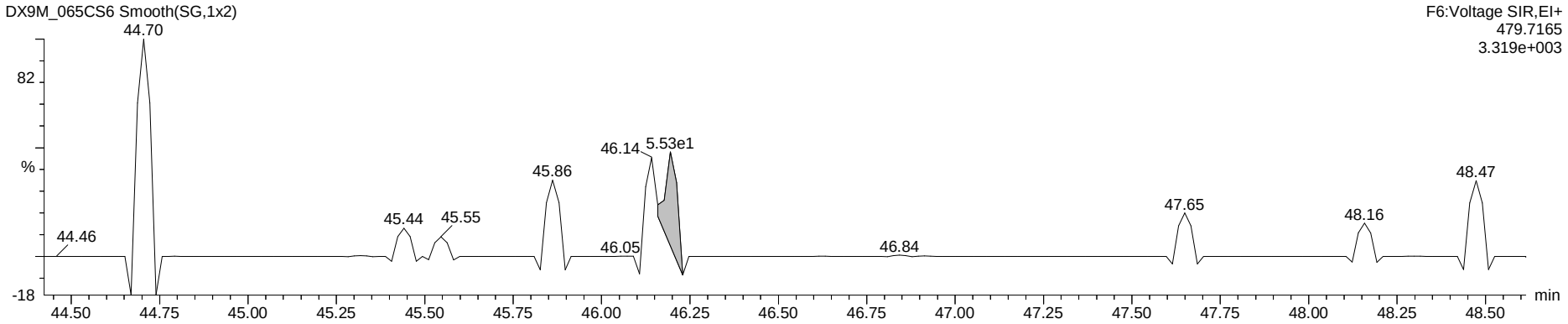
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_065C-7A.qld

Name: DX9M_065CS6, Date: 25-Jun-2019, Time: 13:58:52, ID: DX042B-CAL,,/01, Description: 1,,1.0uL CS-1

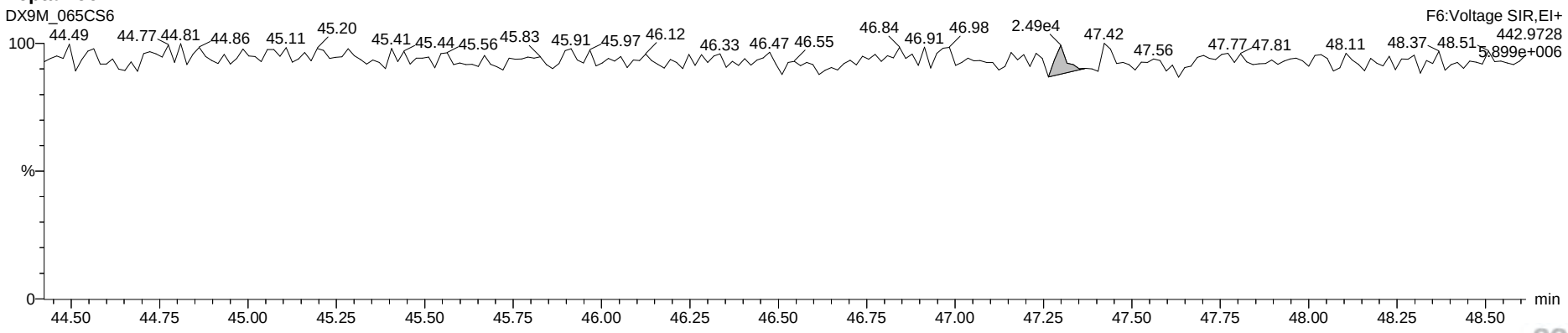
Total Hepta-Furans



Nona DPE



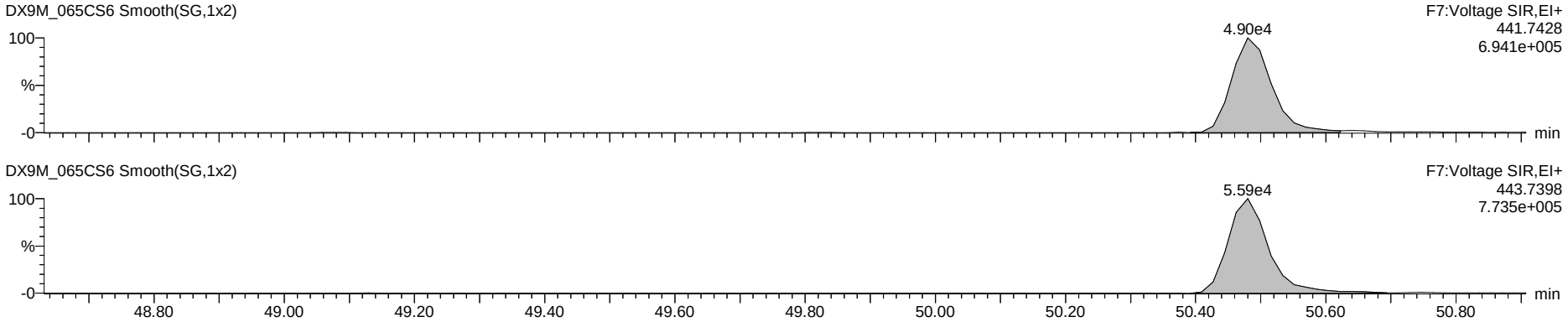
Hepta Lock



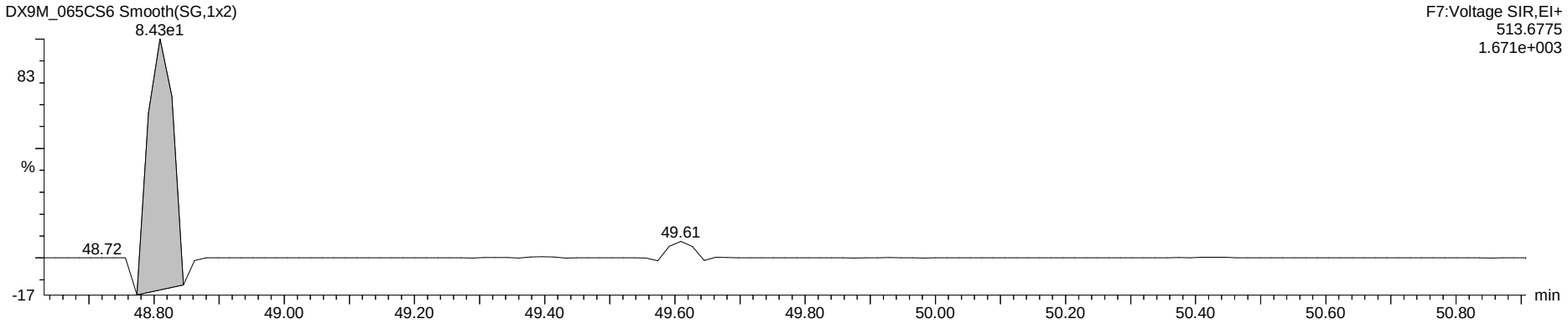
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_065C-7A.qld

Name: DX9M_065CS6, Date: 25-Jun-2019, Time: 13:58:52, ID: DX042B-CAL,,/01, Description: 1,,1.0uL CS-1

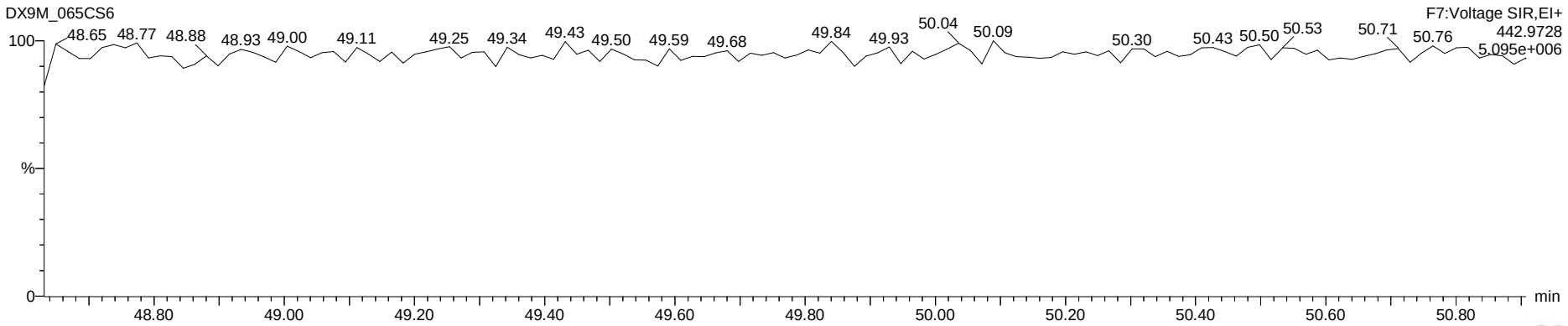
OCDF



Deca DPE



Octa Lock



Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_065C-6A.qld

Name: DX9M_065CS4, Date: 25-Jun-2019, Time: 12:04:13, ID: DX042C-CAL,,/01, Description: 1,,1.0uL CS-2

#	Name	Amount	Resp	Ratio	fails?	RT	RRF	Mean RRF	RRF SD	RRF %R	S/N	1° S/N
1	2,3,7,8-TCDF	2.000	1.15e5	0.79	NO	25.29	0.921	0.9272	0.018	1.96	426	480
2	1,2,3,7,8-PeCDF	10.000	4.39e5	1.48	NO	33.58	0.892	0.9296	0.023	2.43	1253	697
3	2,3,4,7,8-PeCDF	10.000	4.75e5	1.46	NO	35.37	0.938	0.9500	0.033	3.48	1662	914
4	1,2,3,4,7,8-HxCDF	10.000	3.76e5	1.20	NO	40.78	1.076	1.1051	0.022	1.95	2090	1245
5	1,2,3,6,7,8-HxCDF	10.000	4.12e5	1.22	NO	40.95	1.074	1.0740	0.019	1.76	2249	1335
6	2,3,4,6,7,8-HxCDF	10.000	3.91e5	1.24	NO	41.90	1.125	1.1366	0.028	2.45	2268	1344
7	1,2,3,7,8,9-HxCDF	10.000	3.30e5	1.21	NO	42.95	1.058	1.0544	0.026	2.45	1867	1091
8	1,2,3,4,6,7,8-HpCDF	10.000	3.46e5	1.07	NO	45.41	1.269	1.2500	0.038	3.06	1248	1686
9	1,2,3,4,7,8,9-HpCDF	10.000	2.78e5	1.00	NO	47.21	1.287	1.2532	0.027	2.15	961	1349
10	OCDF	20.000	4.74e5	0.89	NO	50.50	1.125	1.1384	0.075	6.56	1599	8576
11	2,3,7,8-TCDD	2.000	8.57e4	0.81	NO	26.51	1.108	1.1017	0.047	4.28	316	386
12	1,2,3,7,8-PeCDD	10.000	3.05e5	0.60	NO	36.18	0.987	0.9887	0.009	0.96	693	2323
13	1,2,3,4,7,8-HxCDD	10.000	2.88e5	1.21	NO	42.19	1.034	1.0282	0.015	1.44	1718	1228
14	1,2,3,6,7,8-HxCDD	10.000	2.85e5	1.22	NO	42.32	0.936	0.9421	0.023	2.49	1694	1183
15	1,2,3,7,8,9-HxCDD	10.000	2.85e5	1.28	NO	42.75	0.979	0.9731	0.020	2.10	1803	1218
16	1,2,3,4,6,7,8-HpCDD	10.000	2.34e5	1.06	NO	46.79	0.791	0.7796	0.021	2.71	1404	1291
17	OCDD	20.000	4.27e5	0.90	NO	50.39	1.014	0.9813	0.074	7.59	5007	3175
18	13C-2,3,7,8-TCDF	100.000	6.23e6	0.76	NO	25.25	1.517	1.5227	0.041	2.68	3881	4186
19	13C-1,2,3,7,8-PeCDF	100.000	4.92e6	1.52	NO	33.55	1.198	1.2375	0.076	6.17	1252	1648
20	13C-2,3,4,7,8-PeCDF	100.000	5.07e6	1.54	NO	35.33	1.235	1.2765	0.081	6.33	1492	1955
21	13C-1,2,3,4,7,8-HxCDF	100.000	3.49e6	0.52	NO	40.75	1.210	1.2136	0.017	1.43	2290	2500
22	13C-1,2,3,6,7,8-HxCDF	100.000	3.83e6	0.51	NO	40.93	1.328	1.3340	0.030	2.28	2350	2621
23	13C-2,3,4,6,7,8-HxCDF	100.000	3.47e6	0.51	NO	41.88	1.204	1.2025	0.016	1.34	2318	2603
24	13C-1,2,3,7,8,9-HxCDF	100.000	3.12e6	0.52	NO	42.93	1.082	1.0693	0.029	2.70	1974	2162
25	13C-1,2,3,4,6,7,8-HpCDF	100.000	2.73e6	0.47	NO	45.39	0.946	0.9996	0.154	15.39	2299	3588
26	13C-1,2,3,4,7,8,9-HpCDF	100.000	2.16e6	0.46	NO	47.19	0.750	0.8111	0.137	16.87	1816	2845
27	13C-2,3,7,8-TCDD	100.000	3.87e6	0.77	NO	26.47	0.942	0.9686	0.032	3.31	1599	1504
28	13C-1,2,3,7,8-PeCDD	100.000	3.09e6	0.63	NO	36.16	0.752	0.7690	0.046	5.95	3362	5308
29	13C-1,2,3,4,7,8-HxCDD	100.000	2.79e6	1.28	NO	42.15	0.966	0.9685	0.020	2.02	2808	5035
30	13C-1,2,3,6,7,8-HxCDD	100.000	3.04e6	1.24	NO	42.31	1.055	1.0706	0.020	1.85	3034	5570
31	13C-1,2,3,4,6,7,8-HpCDD	100.000	2.95e6	1.06	NO	46.79	1.024	1.0837	0.164	15.09	3314	6345
32	13C-OCDD	200.000	4.22e6	0.88	NO	50.39	0.731	0.7969	0.168	21.03	1284	30104068
33	13C-1,2,3,4-TCDD	100.000	4.11e6	0.79	NO	26.14	41075.180	40244.29...	2071.896	5.15	1758	1688
34	13C-1,2,3,7,8,9-HxCDD	100.000	2.88e6	1.25	NO	42.73	28849.645	29034.26...	3025.332	10.42	2944	5368
35	37Cl-2,3,7,8-TCDD	2.000	8.90e4			26.51	1.083	1.0674	0.080	7.49	744	
36	Total Tetra-Furans	2.000						0.9276	0.016	1.76		
37	Total Tetra-Dioxins	2.000						1.1017	0.047	4.28		
38	Total Penta-Furans	10.000						0.9296	0.023	2.43		
39	Total Penta-Dioxins	10.000						0.9887	0.009	0.96		
40	Total Hexa-Furans	10.000						1.1051	0.022	1.95		
41	Total Hexa-Dioxins	10.000						1.0282	0.015	1.44		
42	Total Hepta-Furans	10.000						1.2500	0.038	3.06		
43	Total Hepta-Dioxins	10.000						0.7796	0.021	2.71		
44	Hexa DPE	0.000	2.71e2			22.20	0.000				6	
45	Hepta DPE	0.000	3.16e2			37.58	0.000				12	
46	Octa DPE	0.000	9.81e0			38.48	0.000				169	
47	Nona DPE	0.000	1.18e2			46.65	0.000				2291	
48	Deca DPE	0.000	6.75e1			48.85	0.000				1291	
49	Tetra Lock	0.000	2.76e4			23.62	0.000				1	
50	Penta Lock	0.000	1.00e6			29.29	0.000				1	
51	Hexa Lock	0.000	1.81e6			38.78	0.000				1	
52	Hepta Lock	0.000	2.59e4			47.16	0.000				0	
53	Octa Lock	0.000										
54	13C-Tetra-Furans	100.000						1.5227	0.041	2.68		
55	13C-Tetra-Dioxins	100.000						0.9686	0.032	3.31		

pv'd by KB 22-JUL-2019

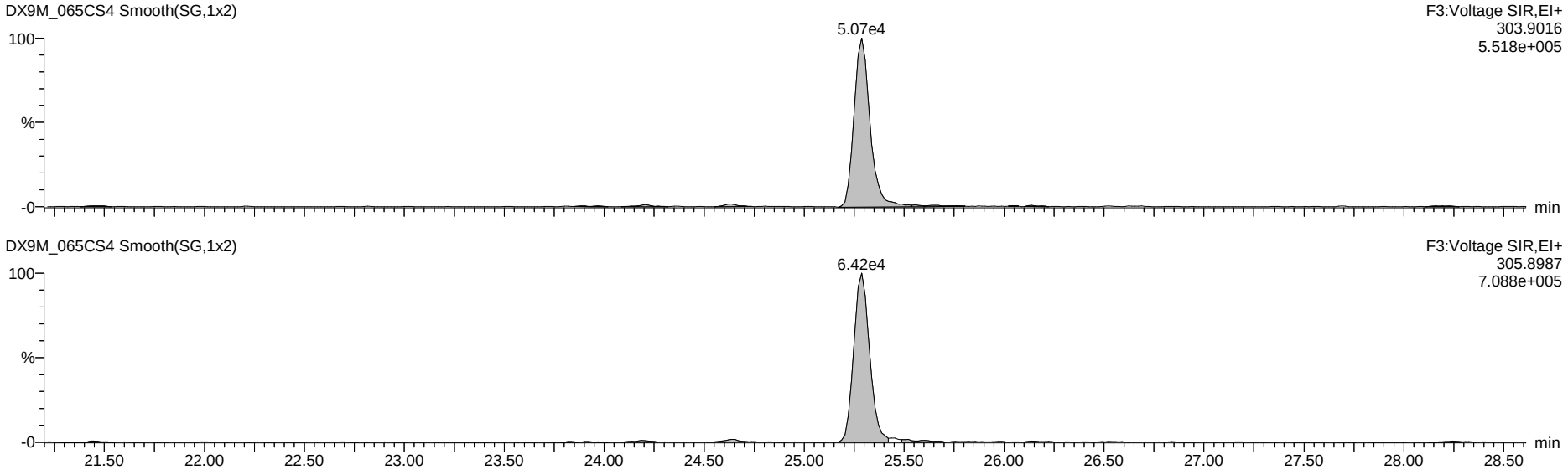
22-JUL-19

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_065C-7A.qld

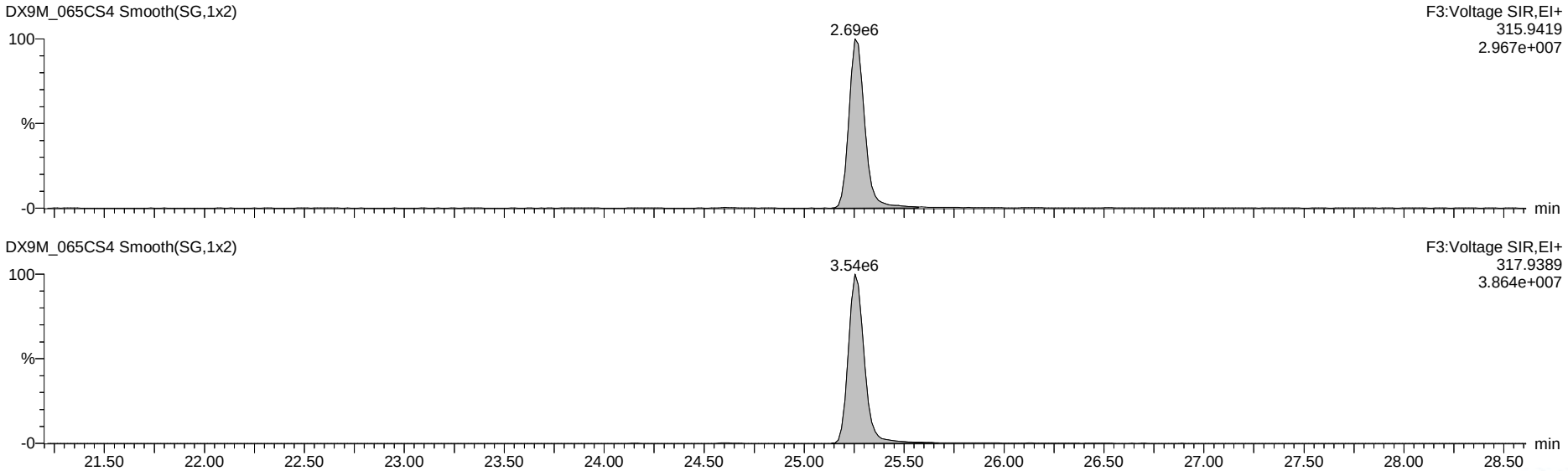
Method: G:\Masslynx\Inst_M\Projects\190510DX.PRO\MethDB\DX_1613B_16.mdb 18 Jul 2019 14:33:32
Calibration: 22 Jul 2019 09:01:47

Name: DX9M_065CS4, Date: 25-Jun-2019, Time: 12:04:13, ID: DX042C-CAL,,/01, Description: 1,,1.0uL CS-2

Total Tetra-Furans



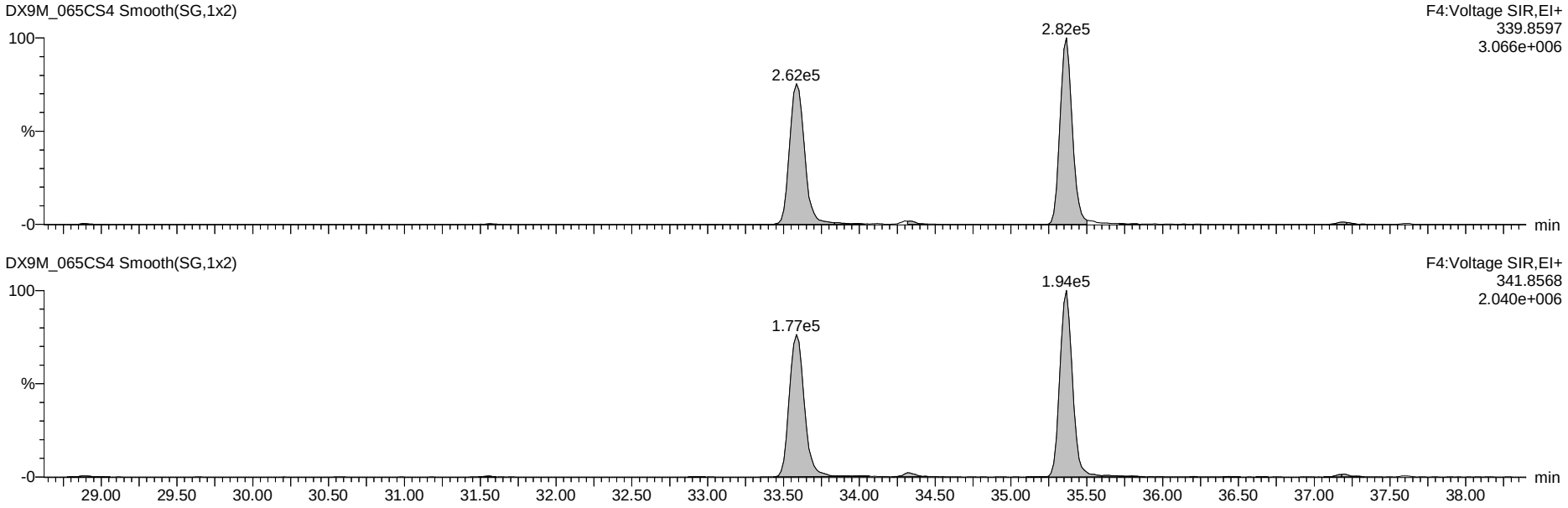
13C-Tetra-Furans



Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_065C-7A.qld

Name: DX9M_065CS4, Date: 25-Jun-2019, Time: 12:04:13, ID: DX042C-CAL,,/01, Description: 1,,1.0uL CS-2

Total Penta-Furans



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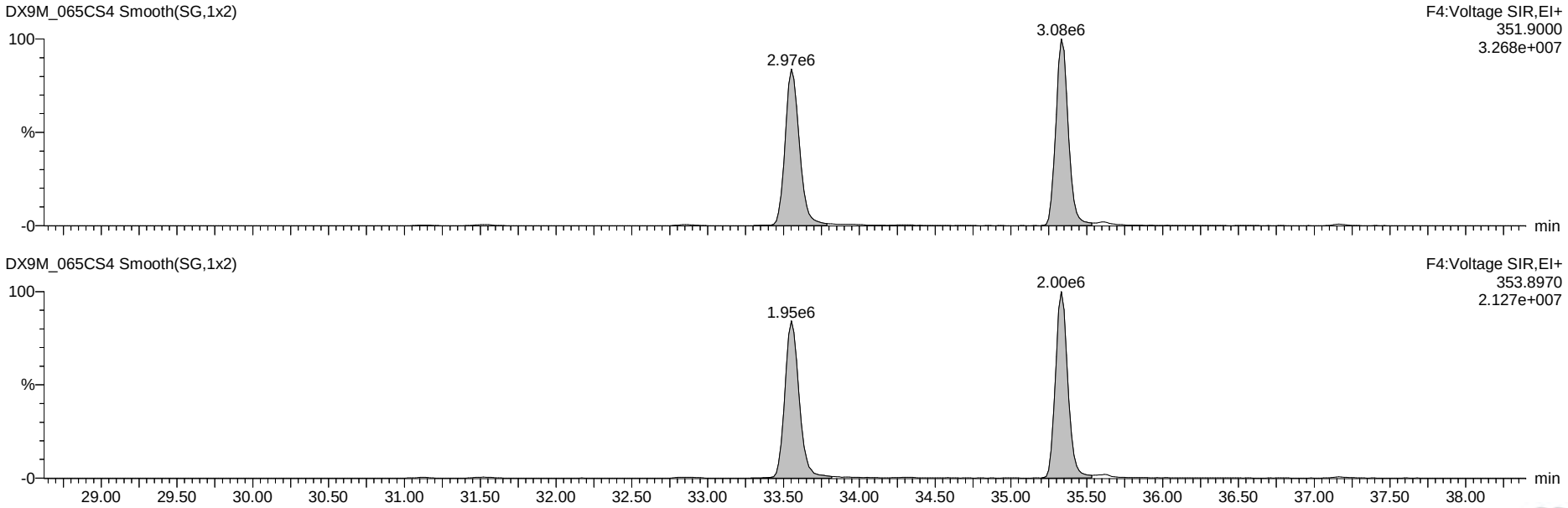

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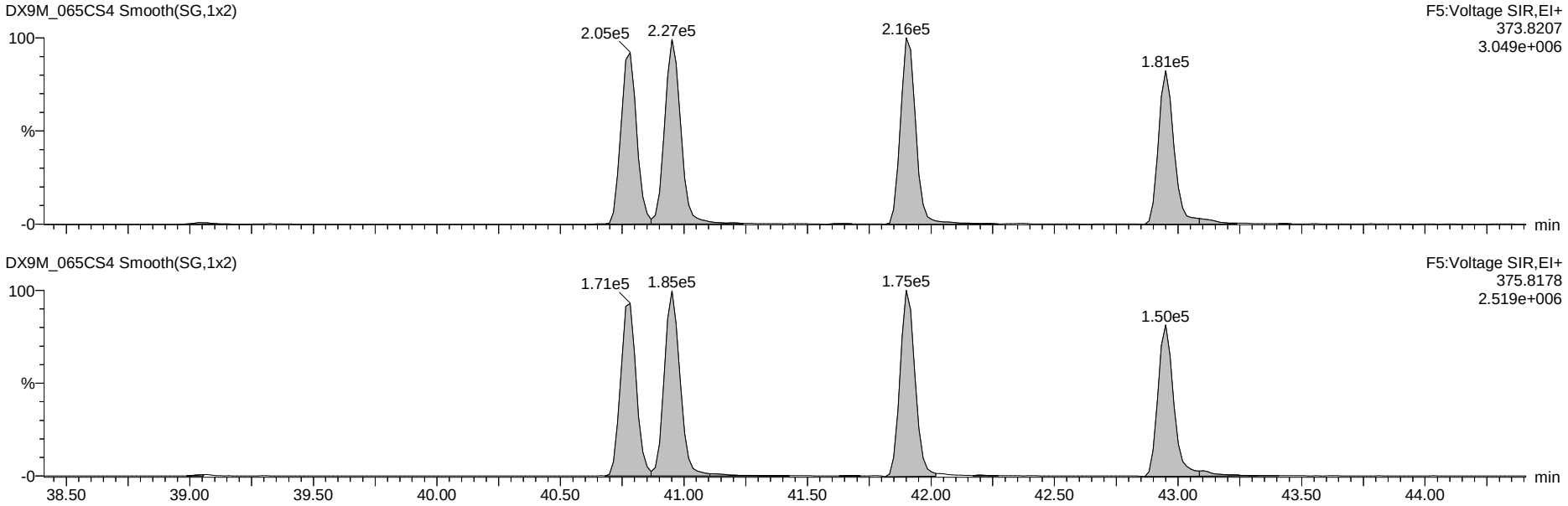
Total Hexa-Furans



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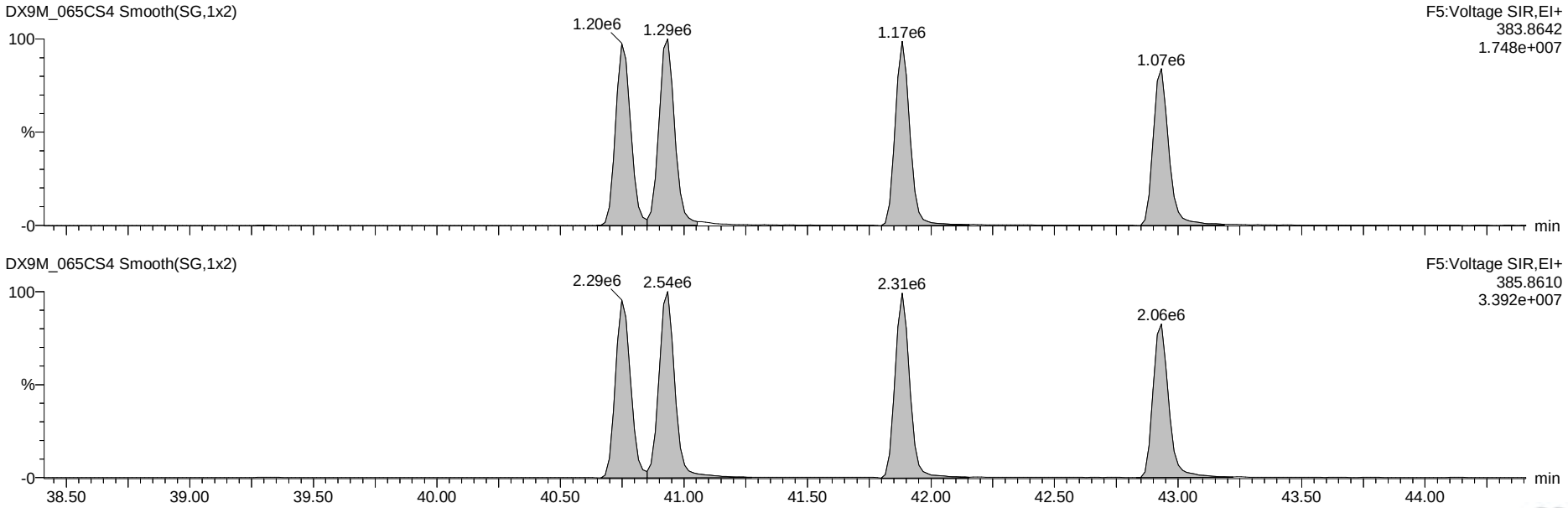

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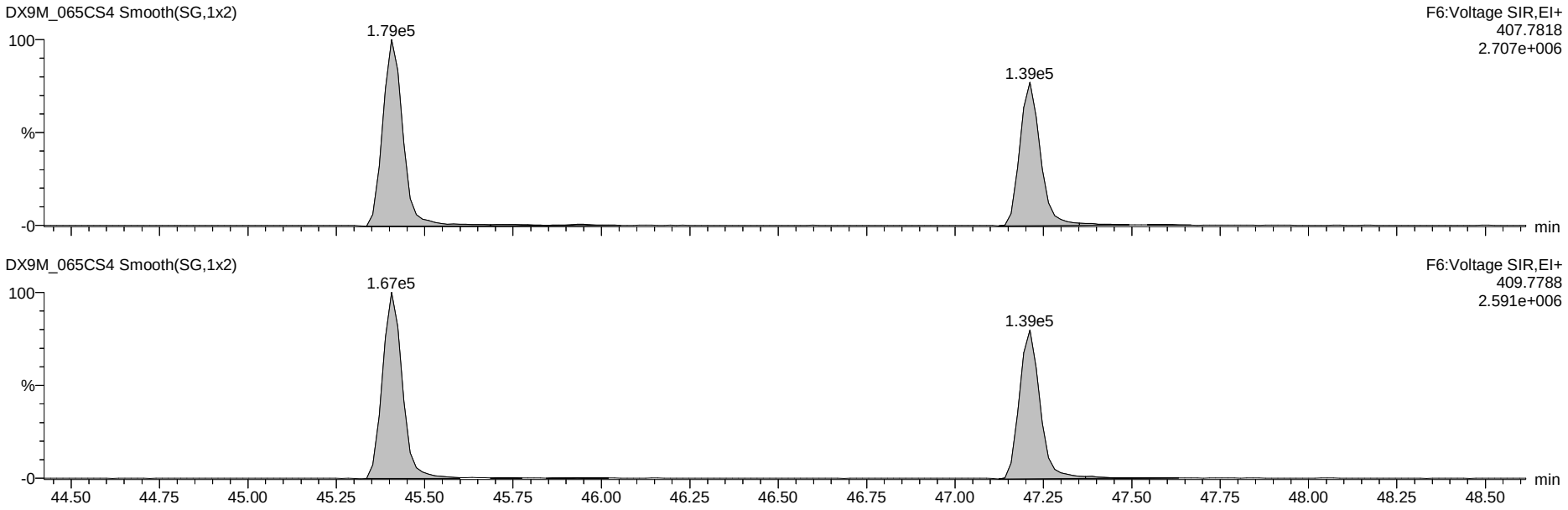
Total Hepta-Furans



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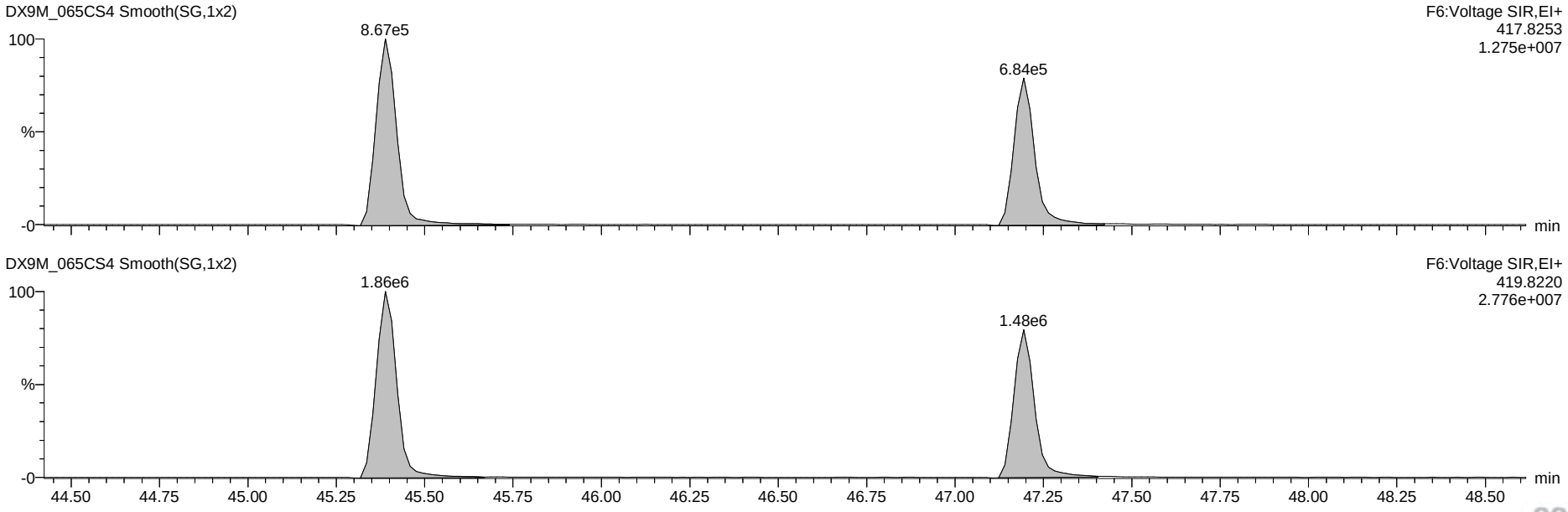

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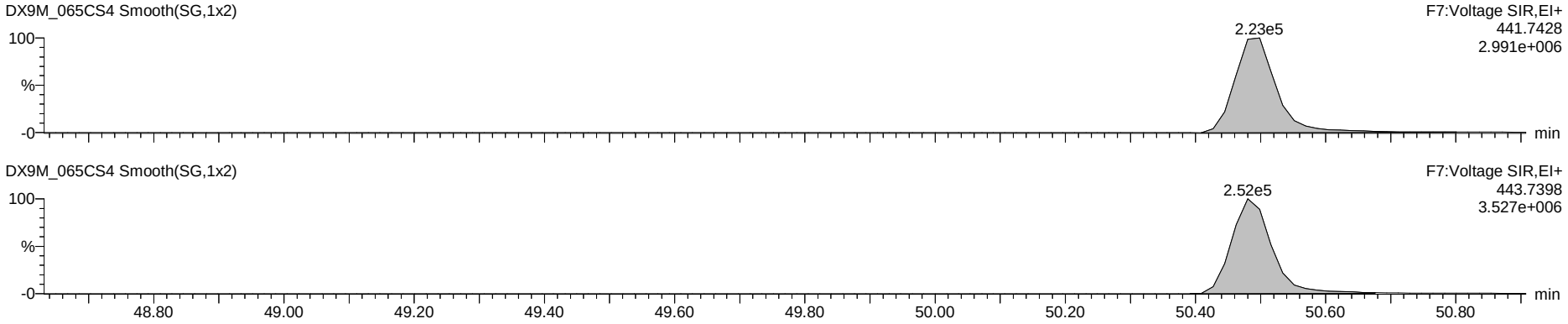
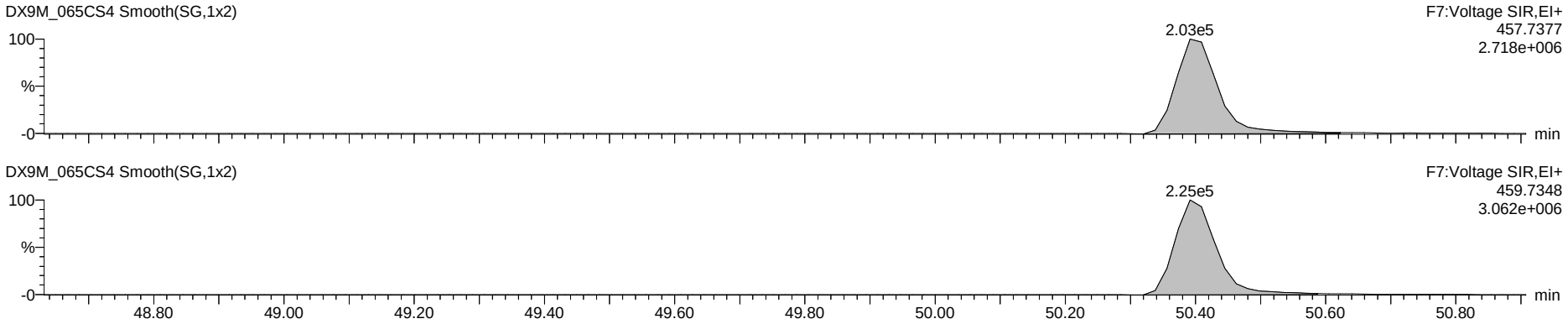
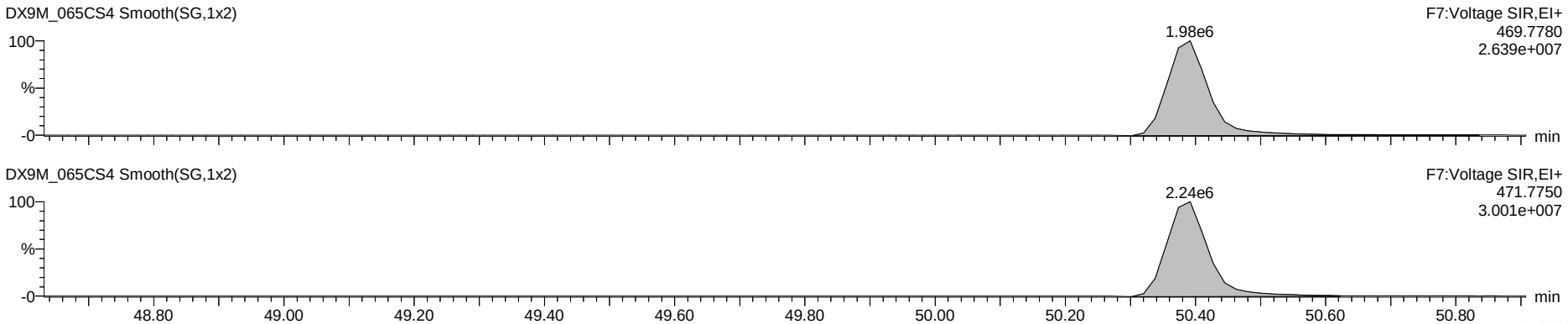
OCDF



OCDD



13C-OCDD



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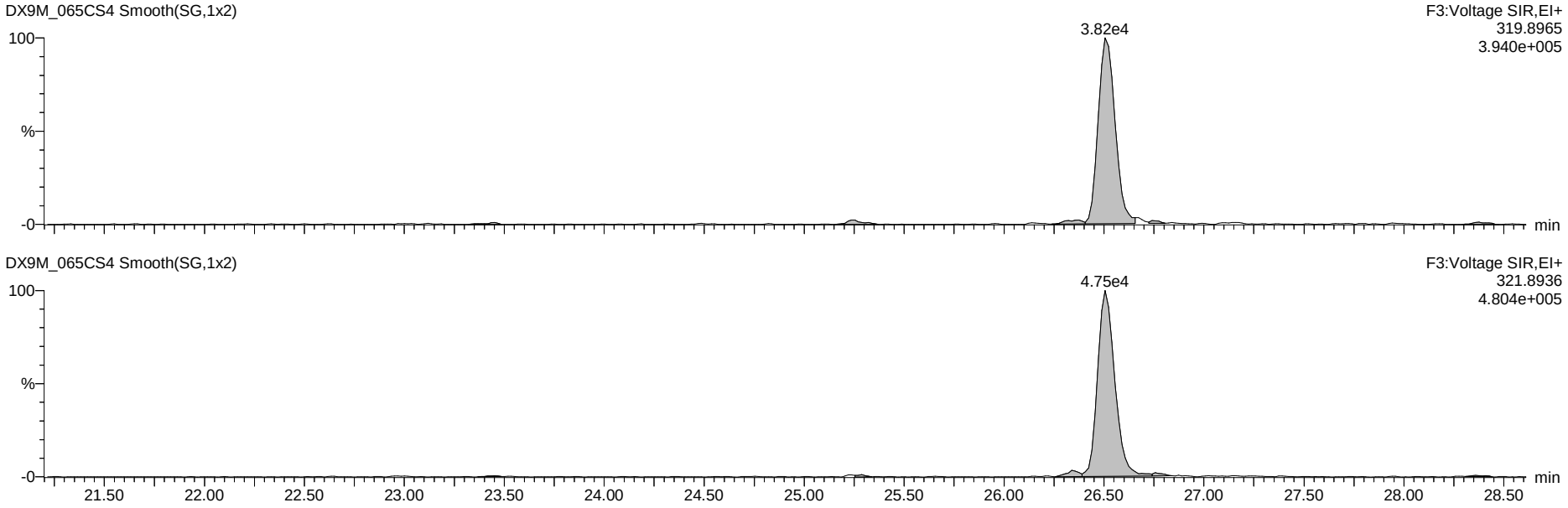
Total Tetra-Dioxins



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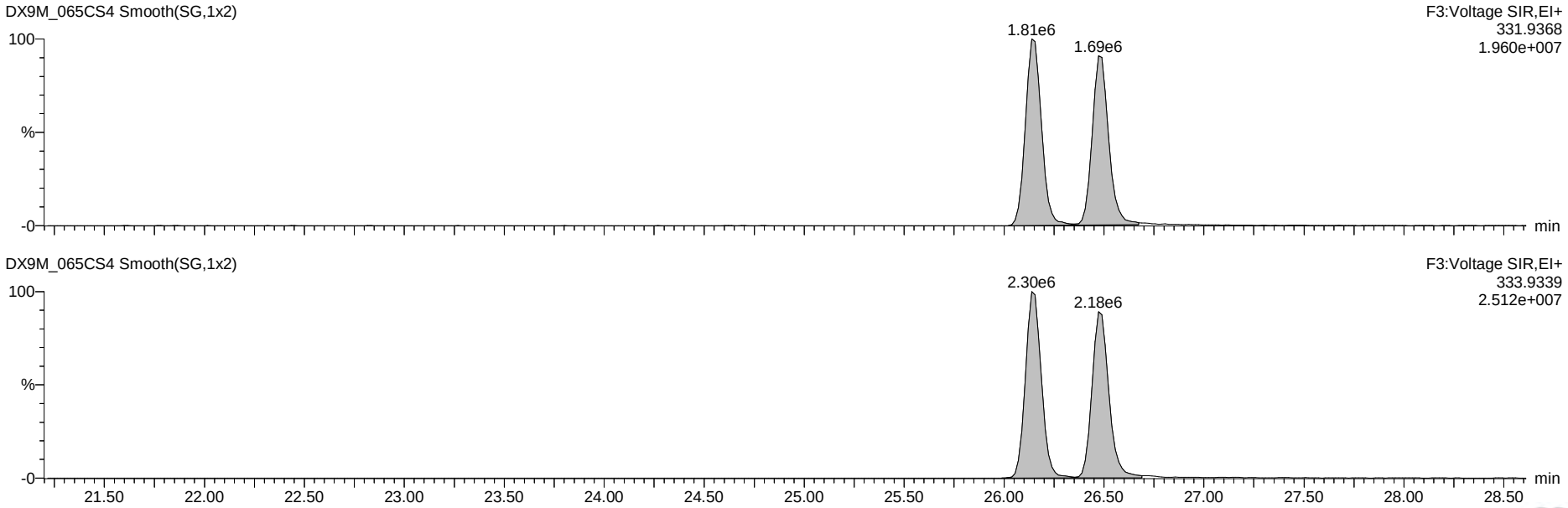

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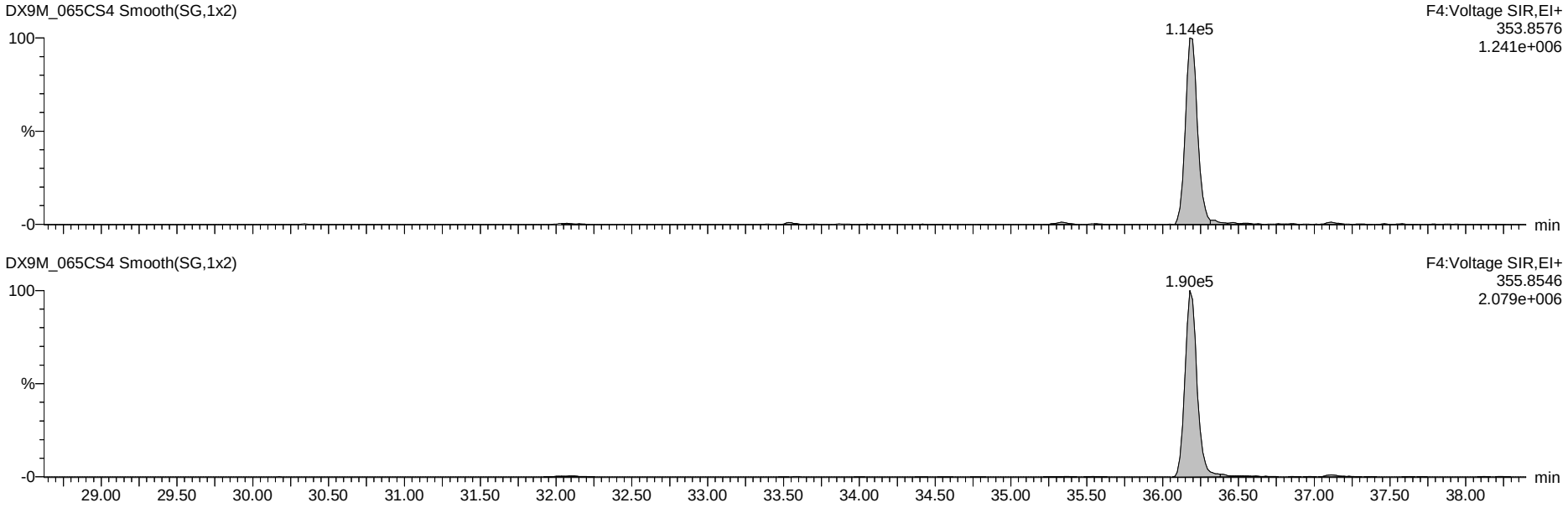
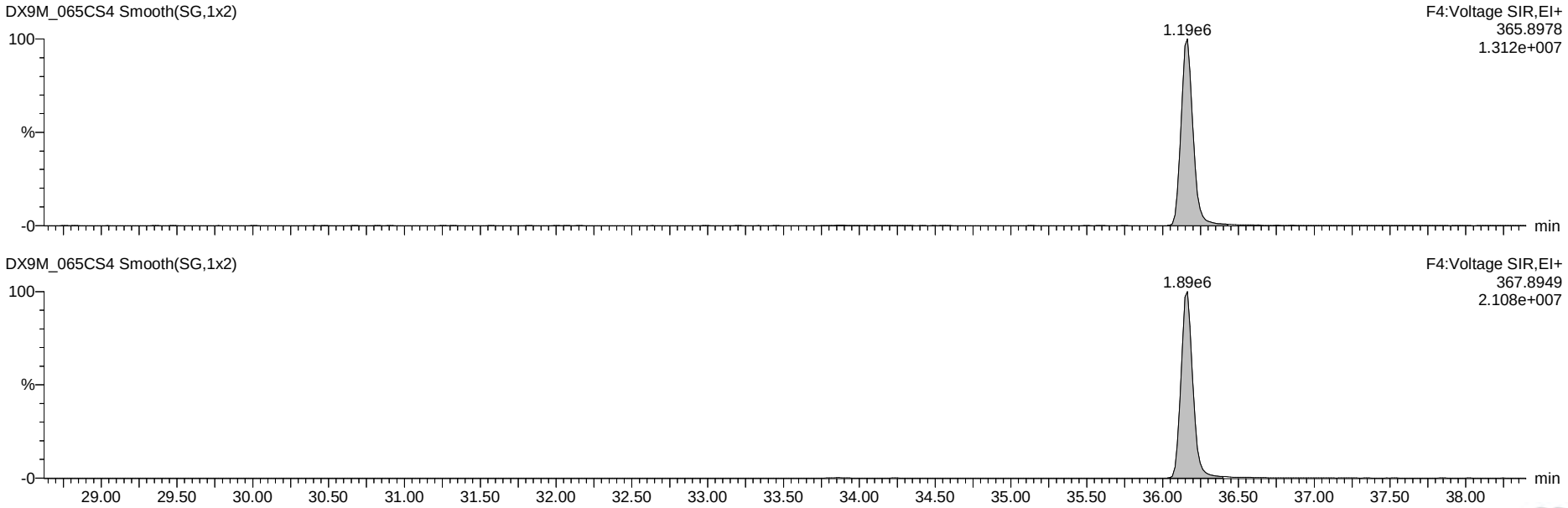
Total Penta-Dioxins



13C-Penta-Dioxins



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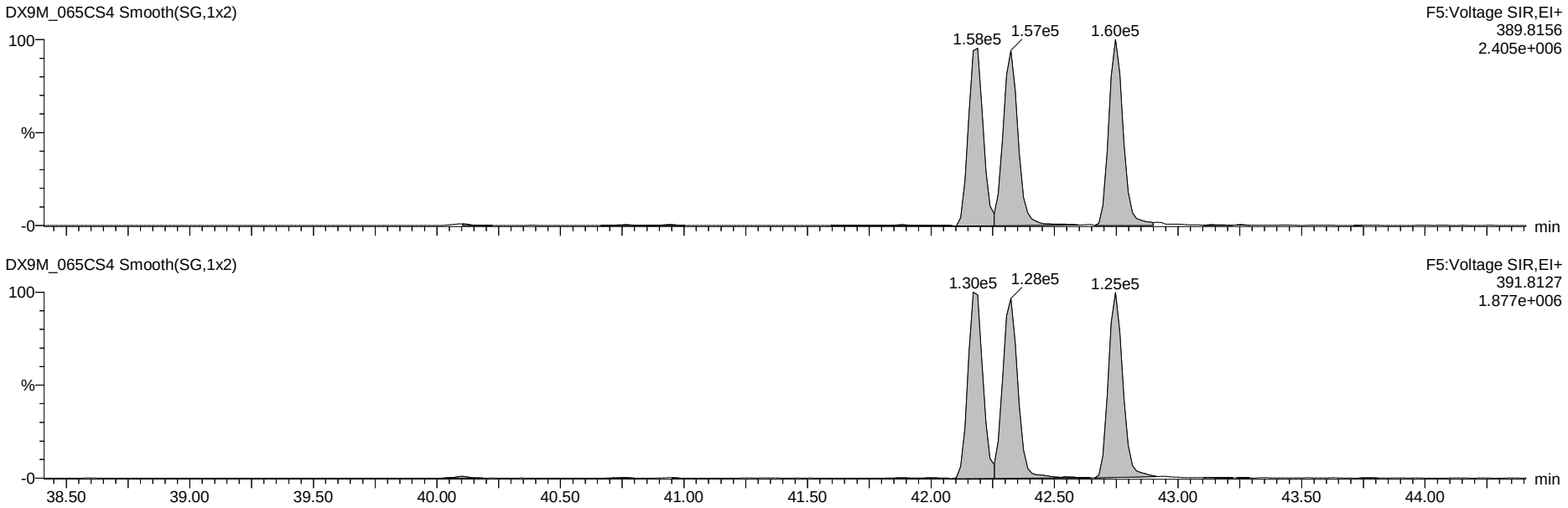
Total Hexa-Dioxins



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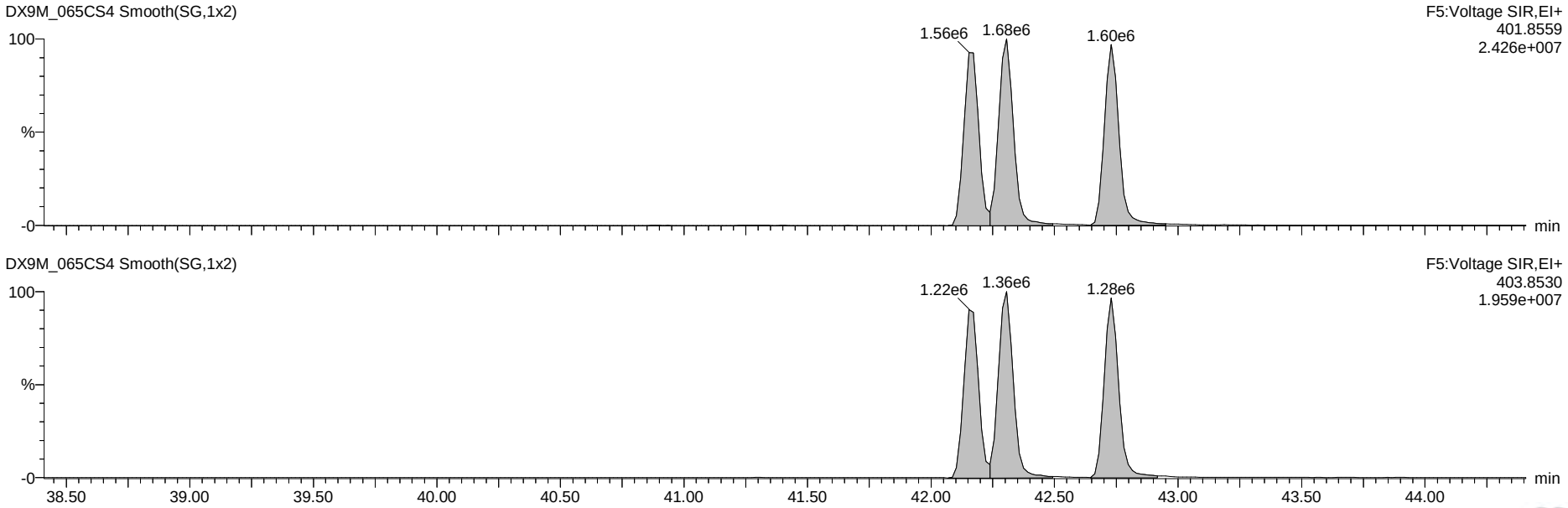

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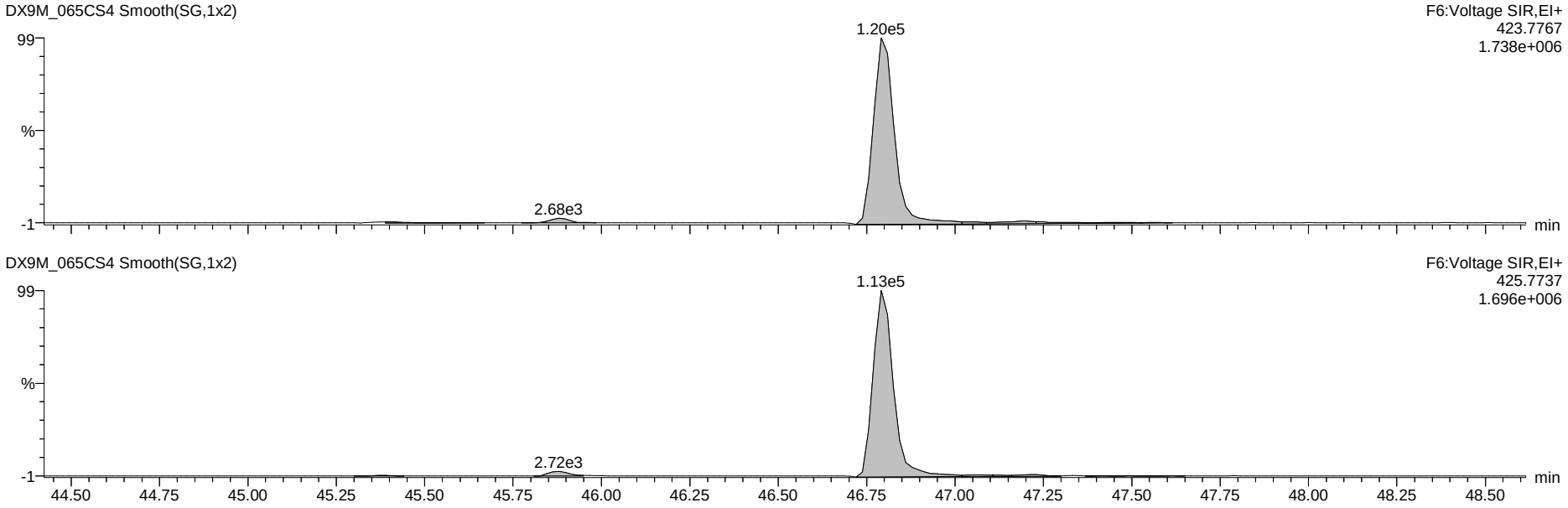
Total Hepta-Dioxins



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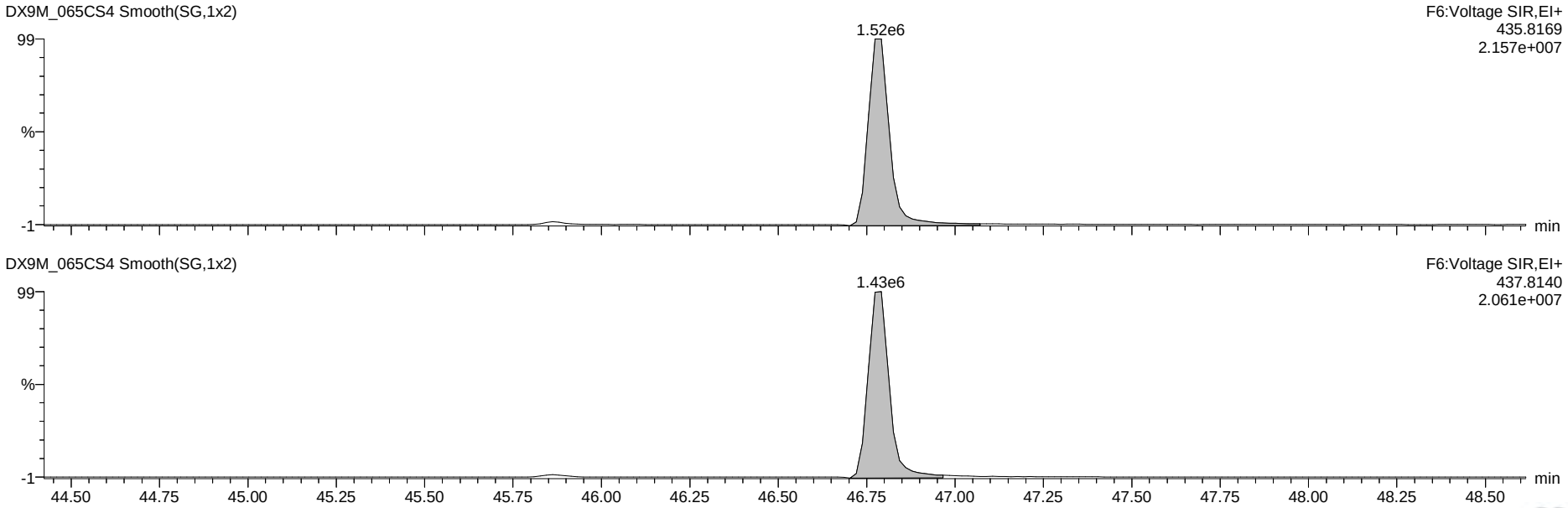

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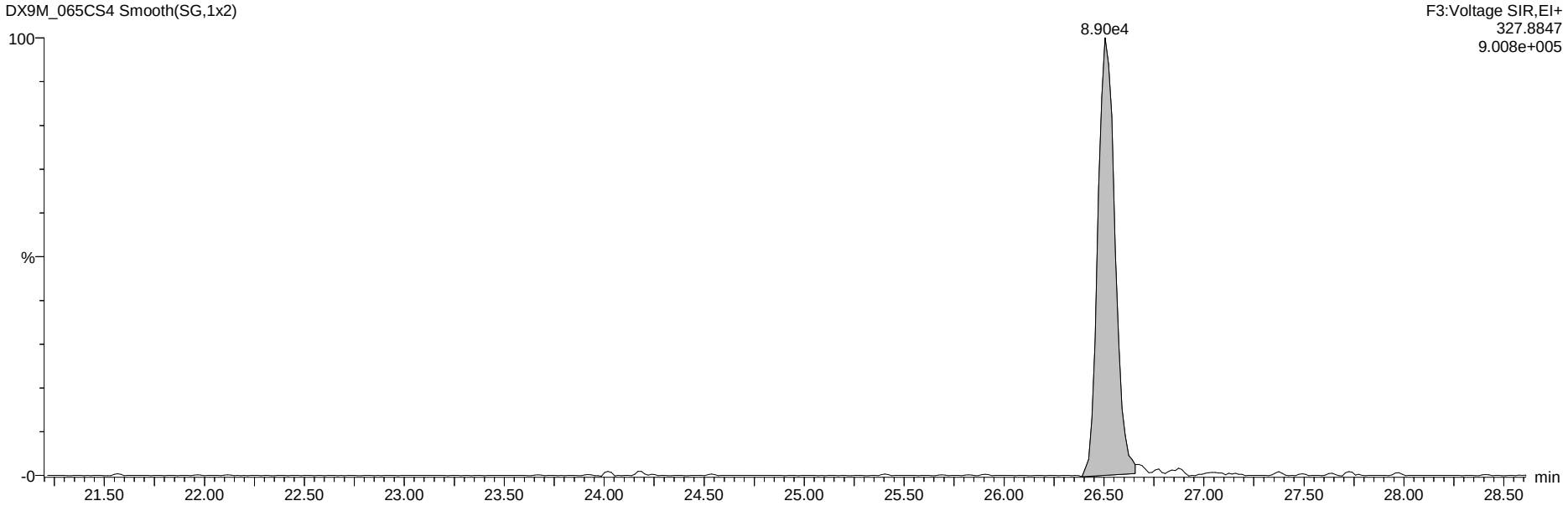
Name: DX9M_065CS4, Date: 25-Jun-2019, Time: 12:04:13, ID: DX042C-CAL,,/01, Description: 1,,1.0uL CS-2

37Cl-2,3,7,8-TCDD



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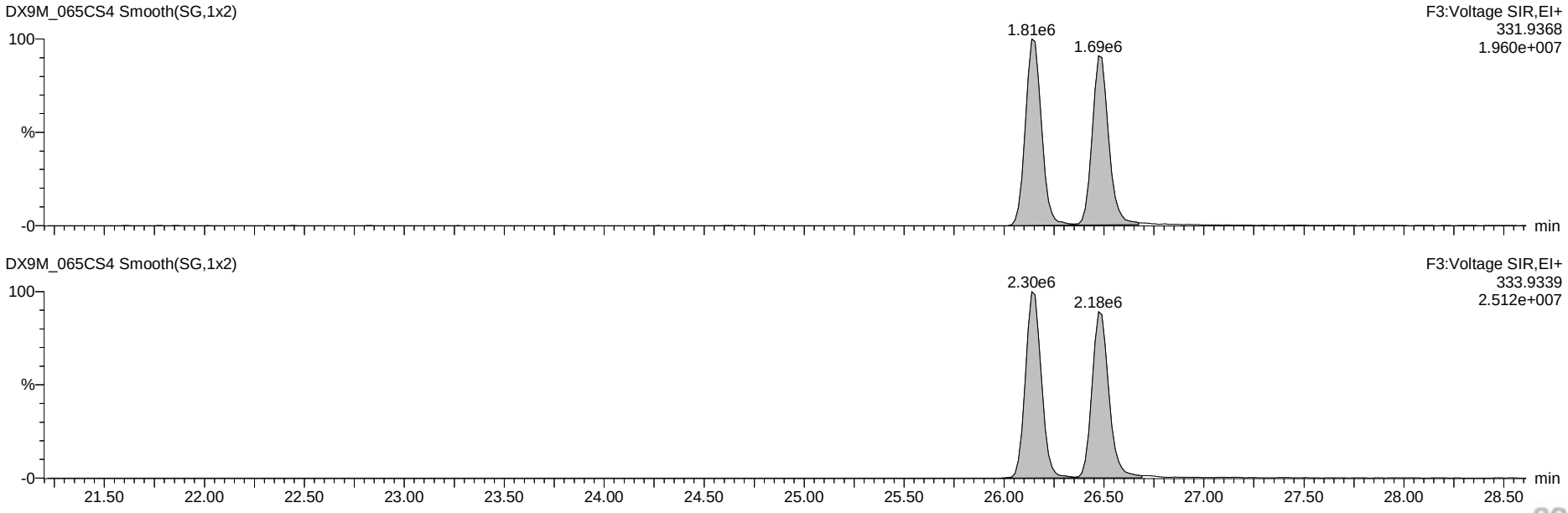

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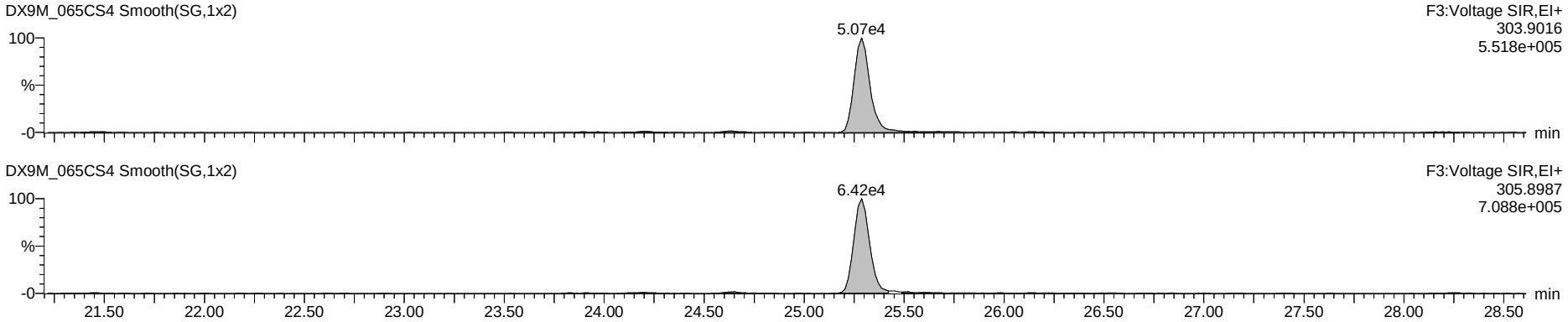
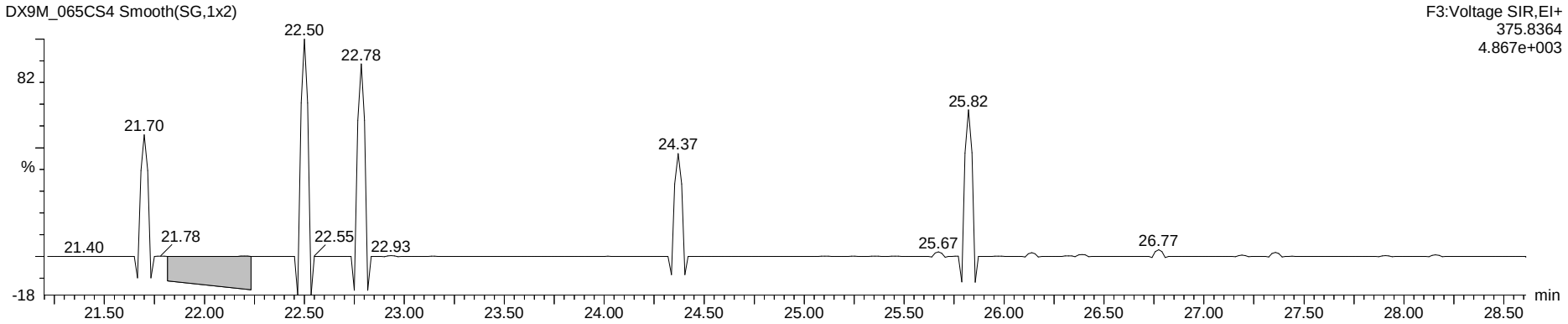
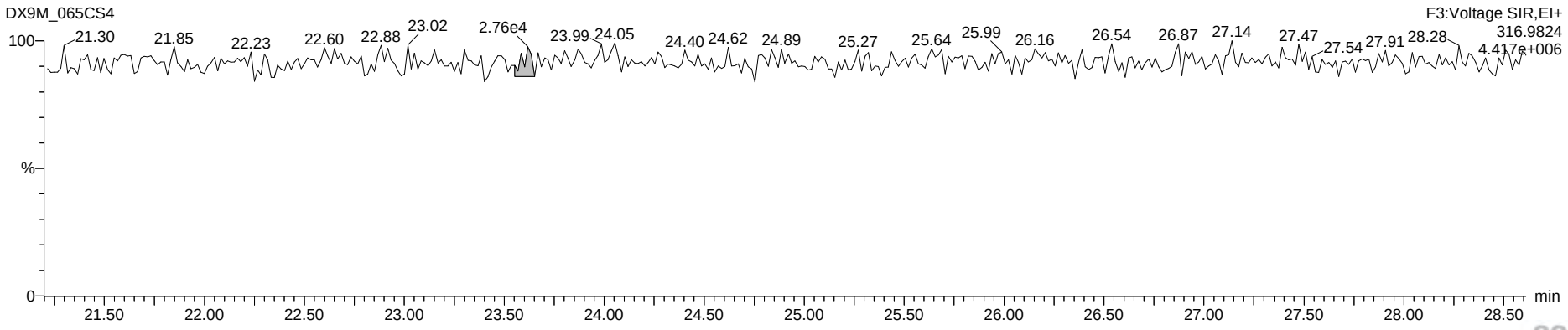
Total Tetra-Furans



Hexa DPE



Tetra Lock



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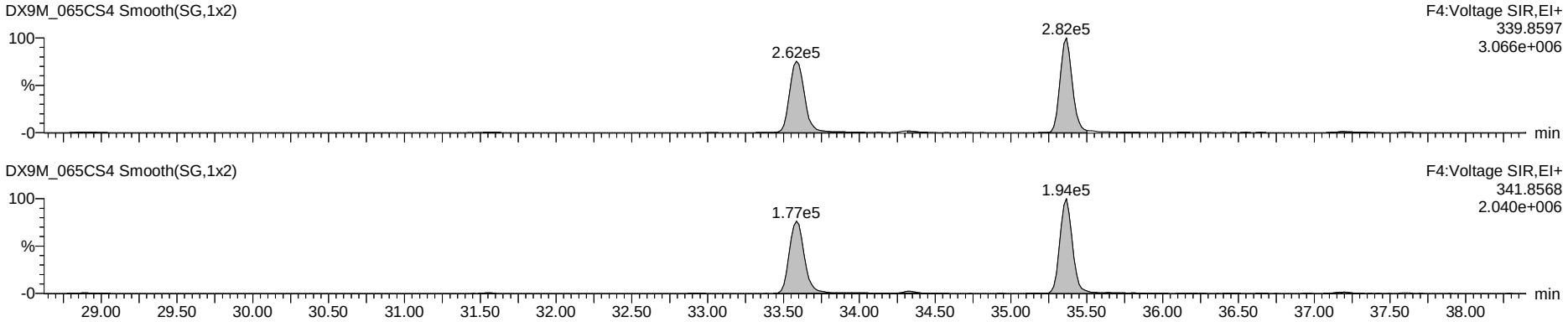
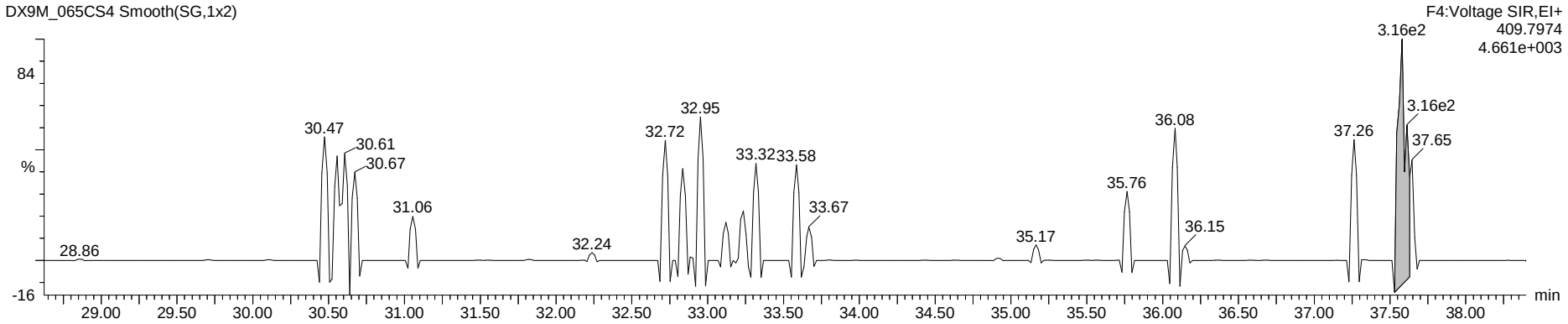
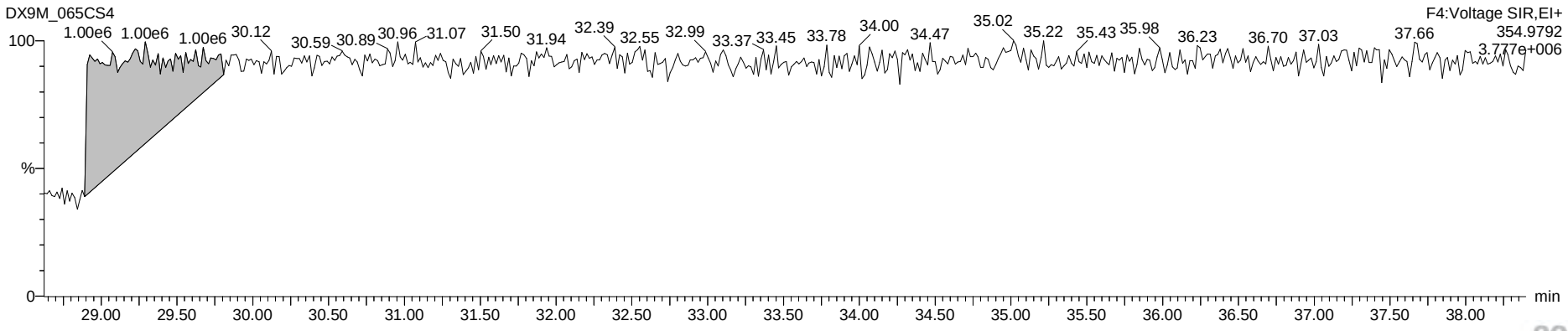
Total Penta-Furans



Hepta DPE



Penta Lock



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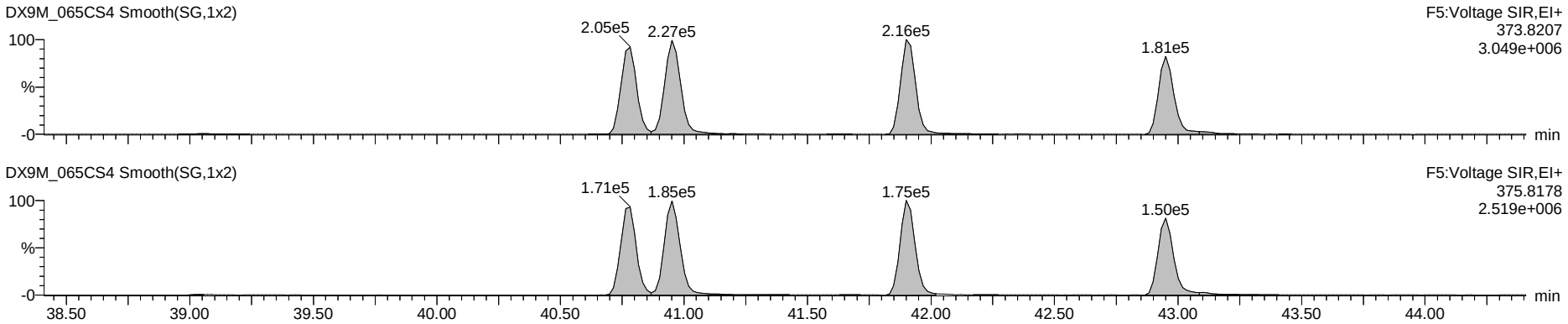
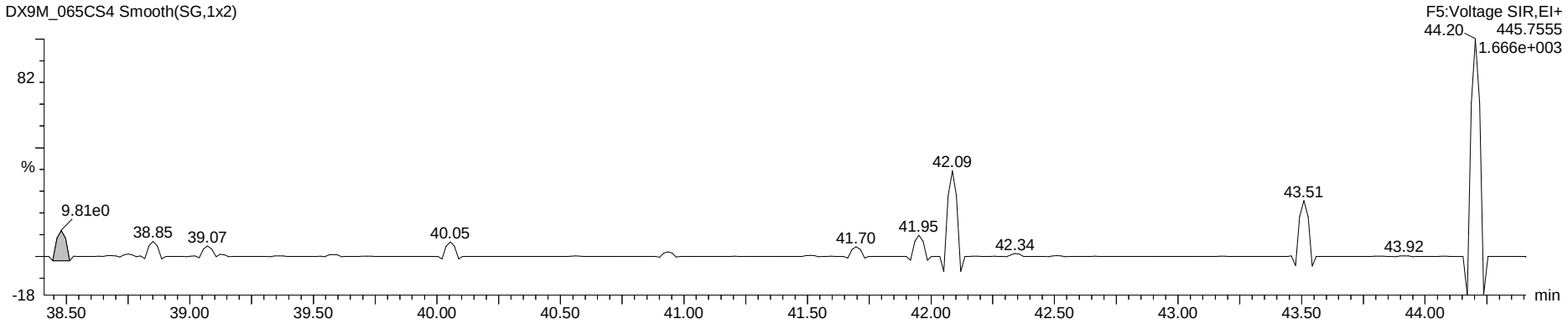
Total Hexa-Furans



Octa DPE



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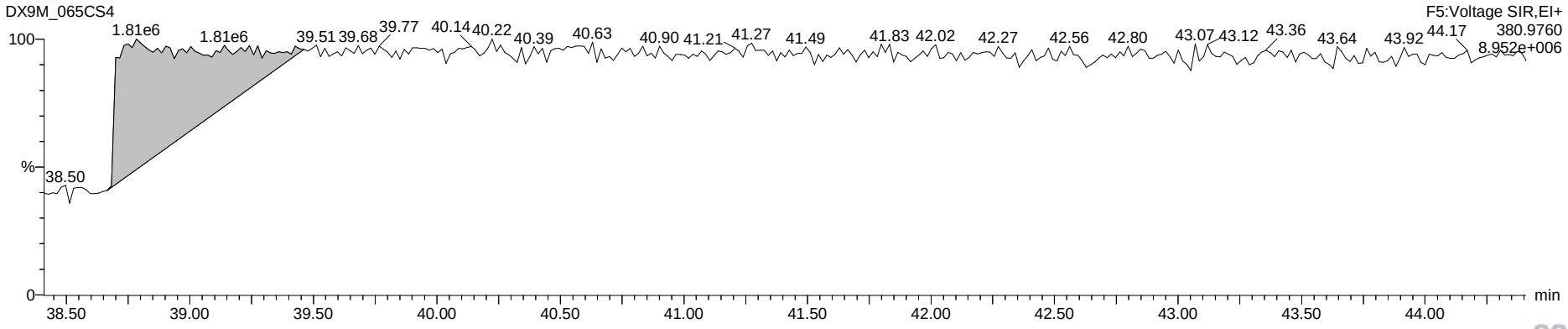

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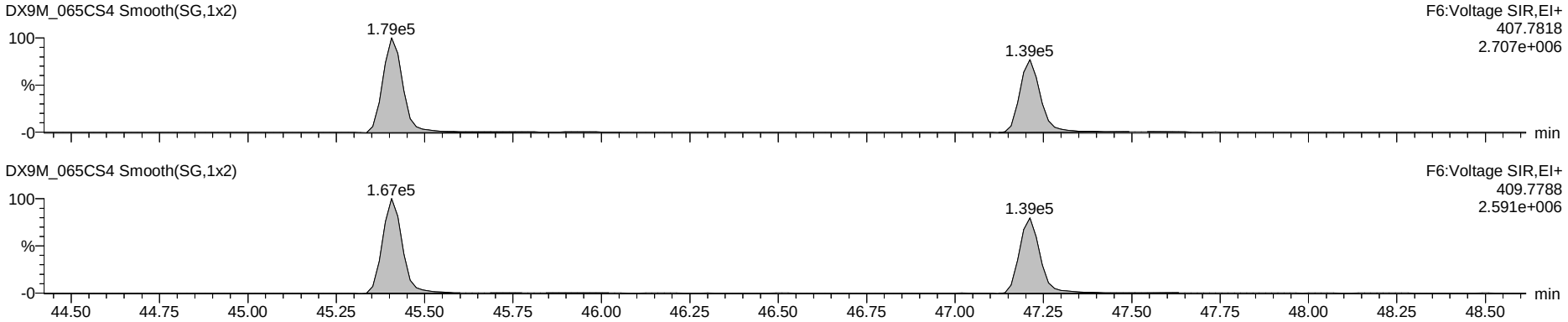
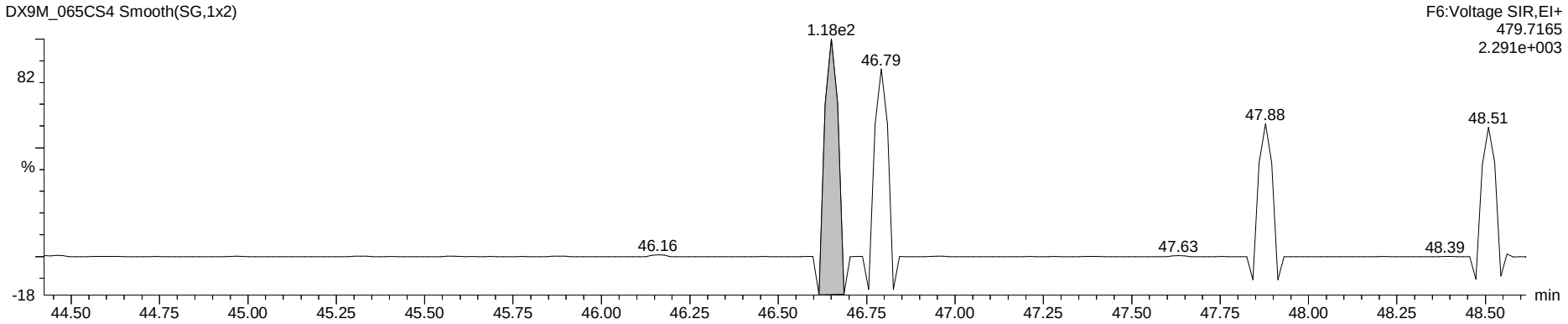
Total Hepta-Furans



Nona DPE



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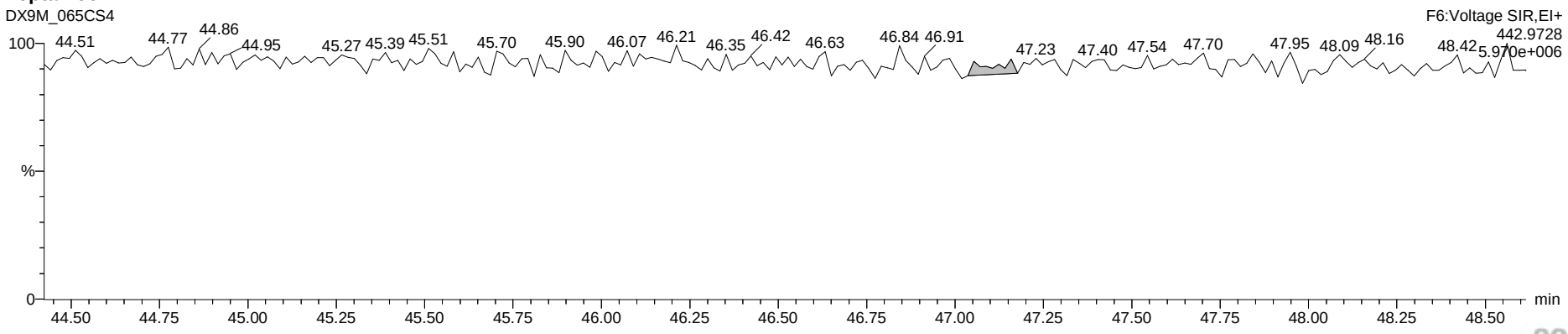

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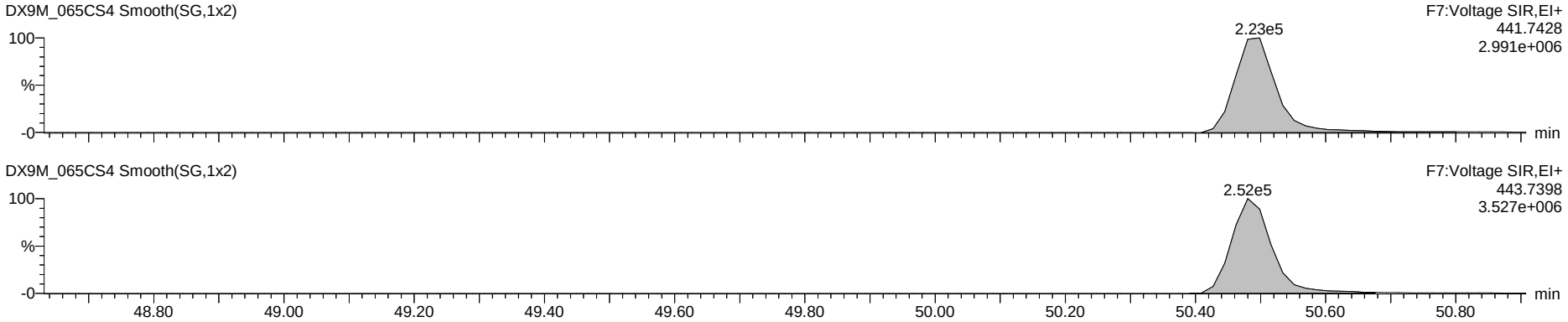
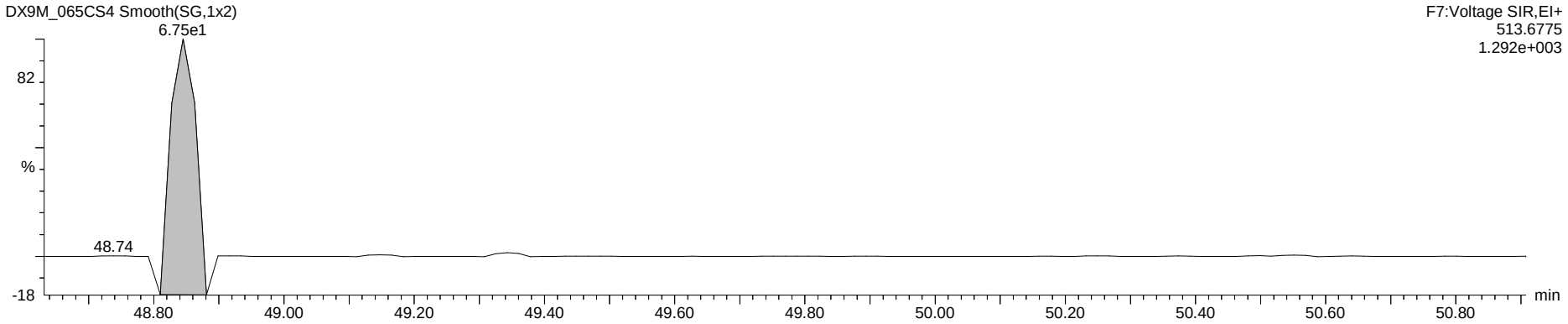
OCDF



Deca DPE



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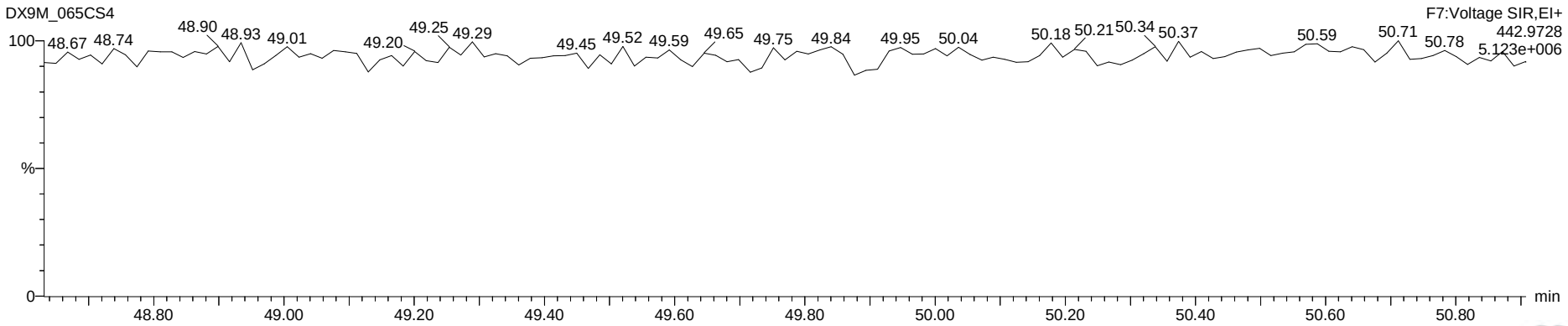

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#	Name	Amount	Resp.	Ratio	fails?	RT	RRF	Mean RRF	RRF SD	RRF %R	S/N	1° S/N
1	2,3,7,8-TCDF	10.000	5.16e5	0.77	NO	25.29	0.942	0.9272	0.018	1.96	781	930
2	1,2,3,7,8-PeCDF	50.000	2.04e6	1.55	NO	33.58	0.934	0.9296	0.023	2.43	2971	1837
3	2,3,4,7,8-PeCDF	50.000	2.14e6	1.54	NO	35.37	0.968	0.9500	0.033	3.48	3601	2184
4	1,2,3,4,7,8-HxCDF	50.000	1.68e6	1.20	NO	40.78	1.118	1.1051	0.022	1.95	2347	3369
5	1,2,3,6,7,8-HxCDF	50.000	1.73e6	1.24	NO	40.95	1.067	1.0740	0.019	1.76	2471	3360
6	2,3,4,6,7,8-HxCDF	50.000	1.66e6	1.24	NO	41.90	1.117	1.1366	0.028	2.45	2470	3421
7	1,2,3,7,8,9-HxCDF	50.000	1.30e6	1.24	NO	42.95	1.013	1.0544	0.026	2.45	2013	2746
8	1,2,3,4,6,7,8-HpCDF	50.000	1.41e6	1.03	NO	45.41	1.281	1.2500	0.038	3.06	6401	3681
9	1,2,3,4,7,8,9-HpCDF	50.000	1.12e6	1.06	NO	47.21	1.257	1.2532	0.027	2.15	5081	2825
10	OCDF	100.000	1.89e6	0.89	NO	50.50	1.136	1.1384	0.075	6.56	34393	1639445
11	2,3,7,8-TCDD	10.000	4.01e5	0.78	NO	26.51	1.146	1.1017	0.047	4.28	1156	694
12	1,2,3,7,8-PeCDD	50.000	1.33e6	0.62	NO	36.18	0.992	0.9887	0.009	0.96	1912	3274
13	1,2,3,4,7,8-HxCDD	50.000	1.23e6	1.24	NO	42.19	1.010	1.0282	0.015	1.44	2482	2834
14	1,2,3,6,7,8-HxCDD	50.000	1.25e6	1.25	NO	42.32	0.944	0.9421	0.023	2.49	2523	2891
15	1,2,3,7,8,9-HxCDD	50.000	1.22e6	1.25	NO	42.75	0.963	0.9731	0.020	2.10	2524	2846
16	1,2,3,4,6,7,8-HpCDD	50.000	9.80e5	1.03	NO	46.79	0.799	0.7796	0.021	2.71	1795	2249
17	OCDD	100.000	1.71e6	0.88	NO	50.41	1.022	0.9813	0.074	7.59	10584051	35127
18	13C-2,3,7,8-TCDF	100.000	5.48e6	0.77	NO	25.25	1.458	1.5227	0.041	2.68	3882	5604
19	13C-1,2,3,7,8-PeCDF	100.000	4.36e6	1.58	NO	33.55	1.162	1.2375	0.076	6.17	2735	1882
20	13C-2,3,4,7,8-PeCDF	100.000	4.43e6	1.54	NO	35.33	1.179	1.2765	0.081	6.33	3169	2233
21	13C-1,2,3,4,7,8-HxCDF	100.000	3.00e6	0.52	NO	40.75	1.187	1.2136	0.017	1.43	1445	2420
22	13C-1,2,3,6,7,8-HxCDF	100.000	3.24e6	0.51	NO	40.94	1.281	1.3340	0.030	2.28	1497	2492
23	13C-2,3,4,6,7,8-HxCDF	100.000	2.97e6	0.51	NO	41.88	1.176	1.2025	0.016	1.34	1486	2460
24	13C-1,2,3,7,8,9-HxCDF	100.000	2.57e6	0.52	NO	42.93	1.015	1.0693	0.029	2.70	1175	1979
25	13C-1,2,3,4,6,7,8-HpCDF	100.000	2.20e6	0.45	NO	45.39	0.870	0.9996	0.154	15.39	1915	2872
26	13C-1,2,3,4,7,8,9-HpCDF	100.000	1.78e6	0.45	NO	47.19	0.705	0.8111	0.137	16.87	1559	2259
27	13C-2,3,7,8-TCDD	100.000	3.50e6	0.77	NO	26.47	0.931	0.9686	0.032	3.31	1963	2488
28	13C-1,2,3,7,8-PeCDD	100.000	2.69e6	0.63	NO	36.16	0.716	0.7690	0.046	5.95	8798	3181
29	13C-1,2,3,4,7,8-HxCDD	100.000	2.43e6	1.25	NO	42.15	0.960	0.9685	0.020	2.02	2229	2224
30	13C-1,2,3,6,7,8-HxCDD	100.000	2.65e6	1.25	NO	42.31	1.050	1.0706	0.020	1.85	2369	2392
31	13C-1,2,3,4,6,7,8-HpCDD	100.000	2.45e6	1.08	NO	46.79	0.970	1.0837	0.164	15.09	3010	3211
32	13C-OCDD	200.000	3.34e6	0.89	NO	50.39	0.659	0.7969	0.168	21.03	21859661	24727460
33	13C-1,2,3,4-TCDD	100.000	3.76e6	0.80	NO	26.14	37567.902	40244.29...	2071.896	5.15	2238	2778
34	13C-1,2,3,7,8,9-HxCDD	100.000	2.53e6	1.27	NO	42.73	25295.346	29034.26...	3025.332	10.42	2319	2289
35	37Cl-2,3,7,8-TCDD	10.000	3.79e5			26.51	1.009	1.0674	0.080	7.49	959	
36	Total Tetra-Furans	10.000						0.9276	0.016	1.76		
37	Total Tetra-Dioxins	10.000						1.1017	0.047	4.28		
38	Total Penta-Furans	50.000						0.9296	0.023	2.43		
39	Total Penta-Dioxins	50.000						0.9887	0.009	0.96		
40	Total Hexa-Furans	50.000						1.1051	0.022	1.95		
41	Total Hexa-Dioxins	50.000						1.0282	0.015	1.44		
42	Total Hepta-Furans	50.000						1.2500	0.038	3.06		
43	Total Hepta-Dioxins	50.000						0.7796	0.021	2.71		
44	Hexa DPE	0.000	1.40e2			21.32	0.000				3045	
45	Hepta DPE	0.000	8.93e2			37.60	0.000				25610	
46	Octa DPE	0.000	9.32e1			41.17	0.000				1871	
47	Nona DPE	0.000	4.51e1			46.62	0.000				874	
48	Deca DPE	0.000	2.09e1			50.73	0.000				800	
49	Tetra Lock	0.000	3.03e4			24.44	0.000				1	
50	Penta Lock	0.000	5.02e5			28.98	0.000				1	
51	Hexa Lock	0.000	1.20e6			39.00	0.000				1	
52	Hepta Lock	0.000	2.69e4			47.46	0.000				1	
53	Octa Lock	0.000										
54	13C-Tetra-Furans	100.000						1.5227	0.041	2.68		
55	13C-Tetra-Dioxins	100.000						0.9686	0.032	3.31		

pv'd by KB 22-JUL-2019

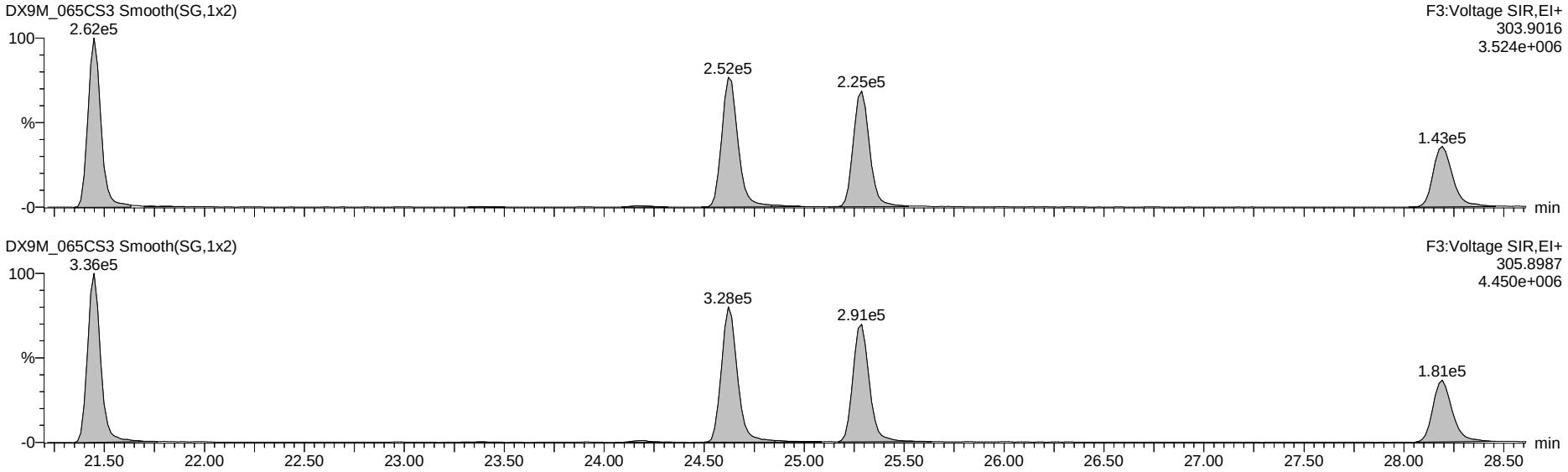
SV 22-JUL-19

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_065C-7A.qld

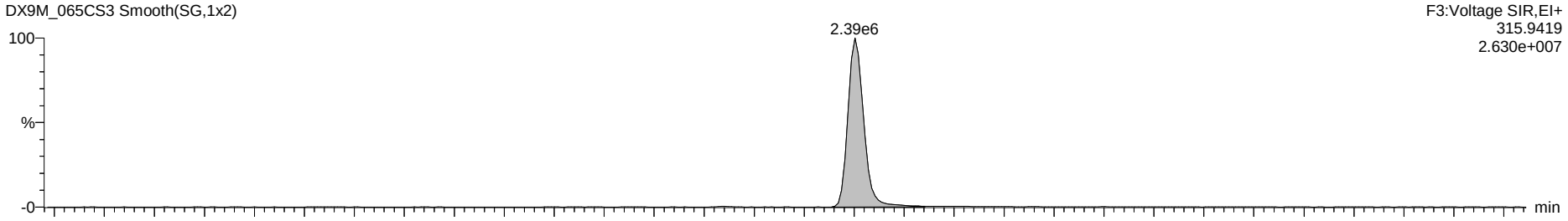
Method: G:\Masslynx\Inst_M\Projects\190510DX.PRO\MethDB\DX_1613B_16.mdb 18 Jul 2019 14:33:32
Calibration: 22 Jul 2019 09:01:47

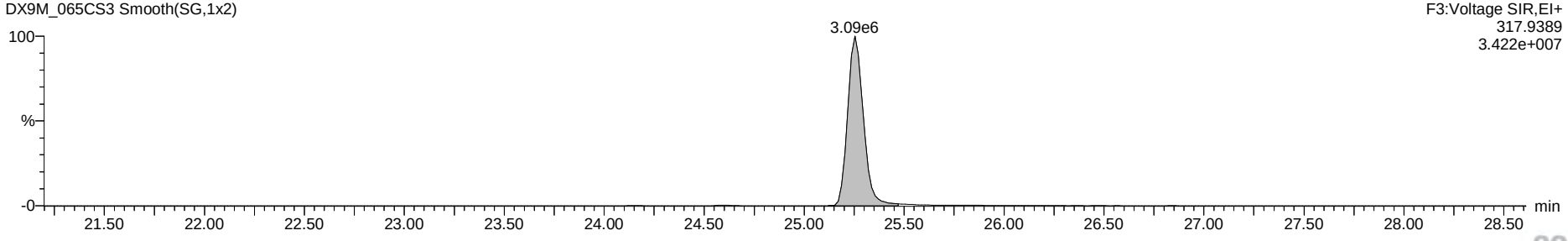
Name: DX9M_065CS3, Date: 25-Jun-2019, Time: 11:05:52, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

Total Tetra-Furans



13C-Tetra-Furans





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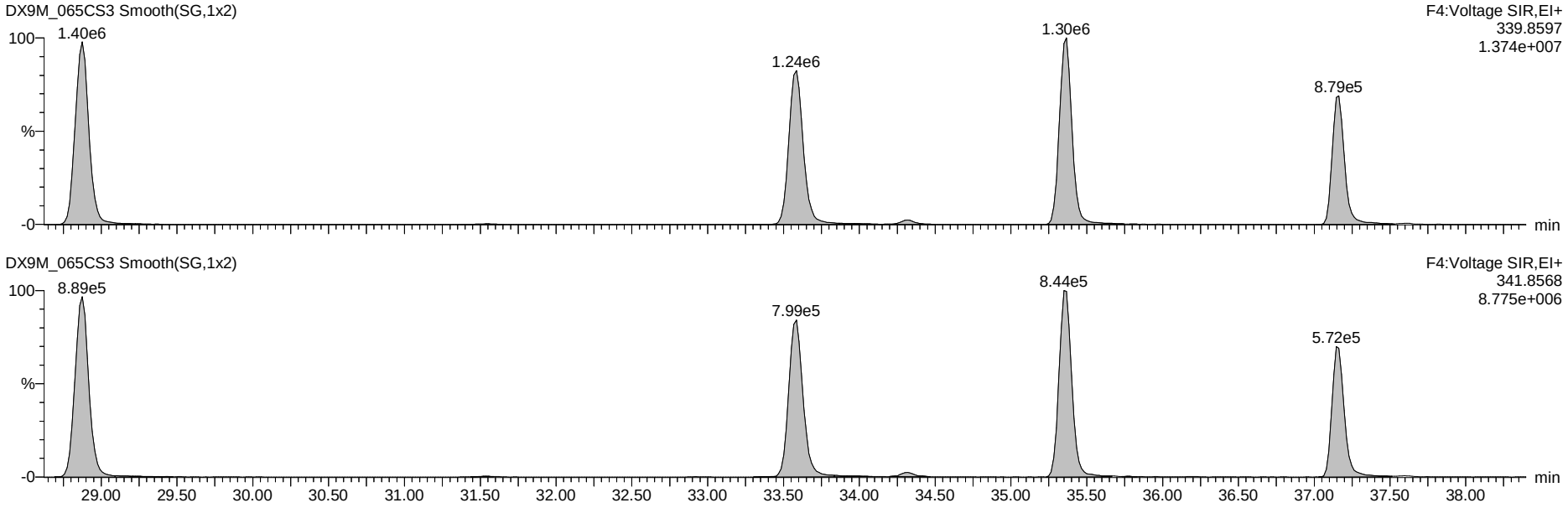
Name: DX9M_065CS3, Date: 25-Jun-2019, Time: 11:05:52, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

Total Penta-Furans



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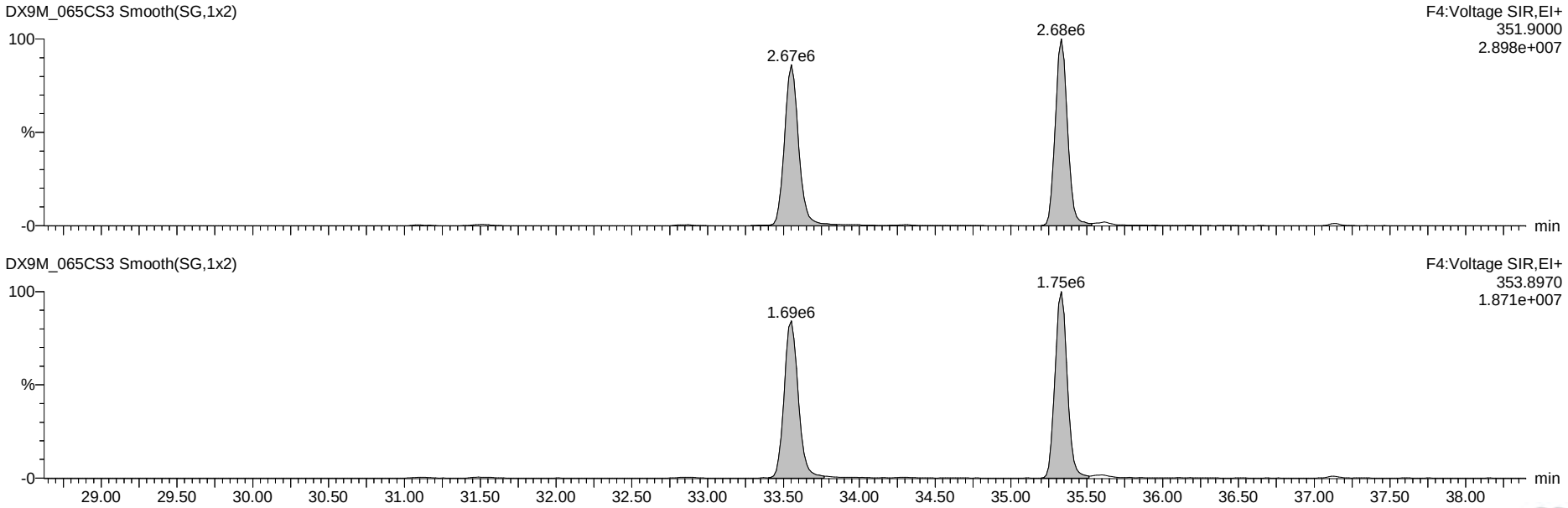

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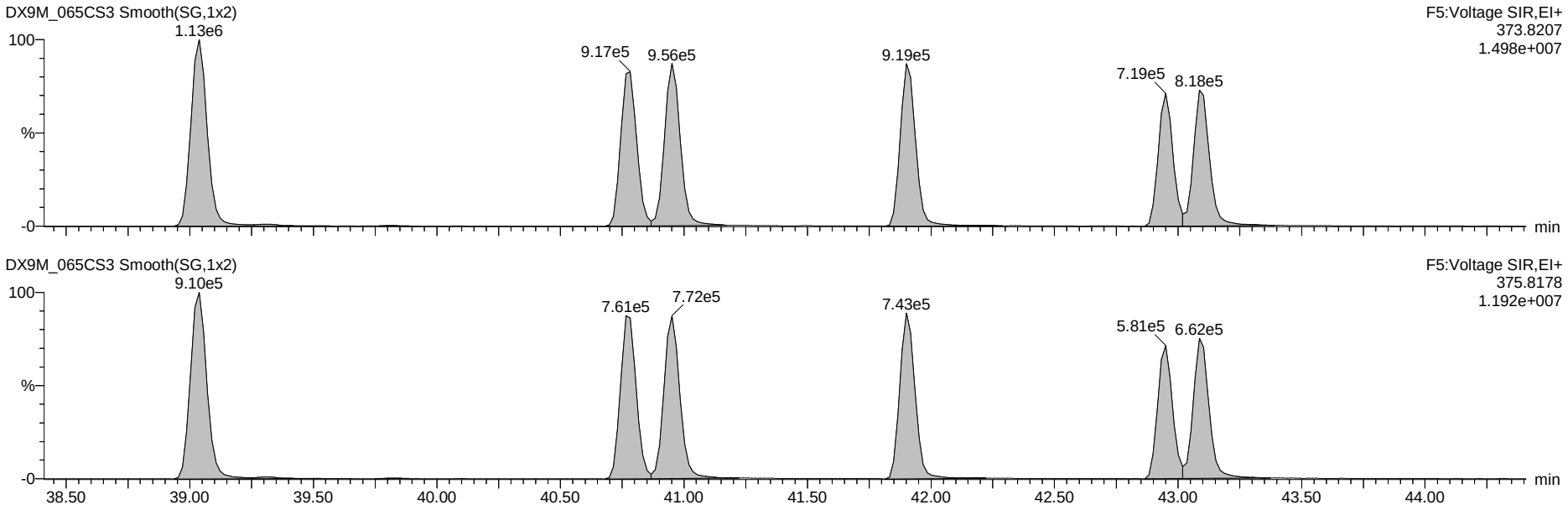
Total Hexa-Furans



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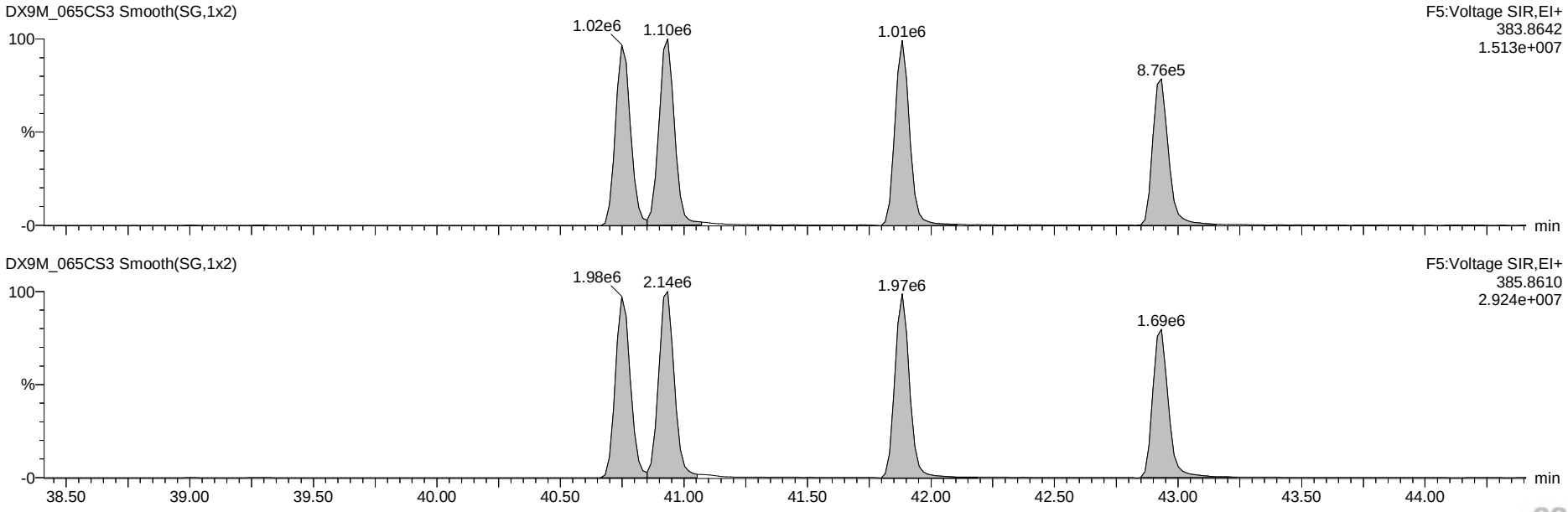

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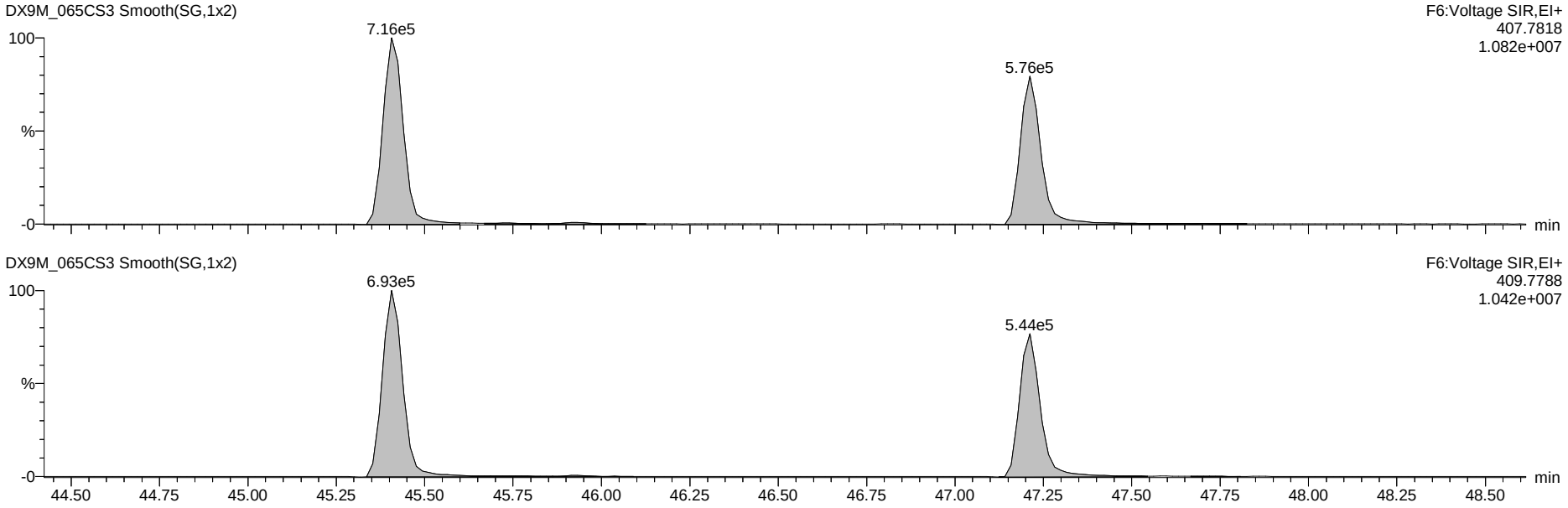
Total Hepta-Furans



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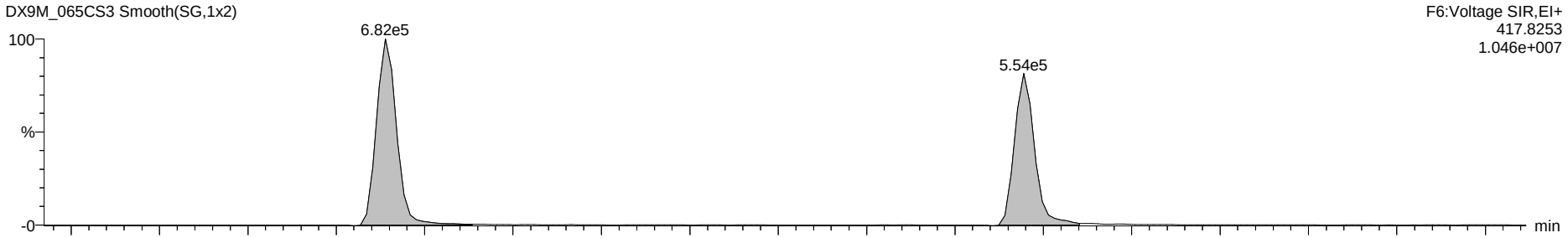

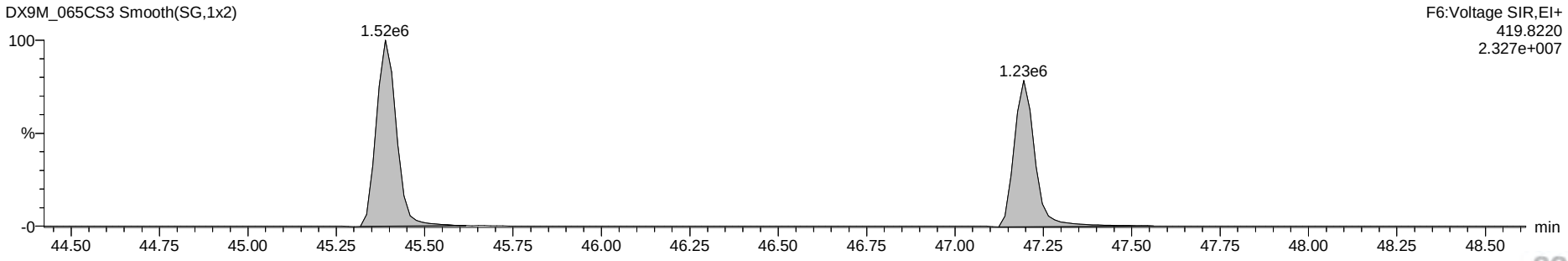

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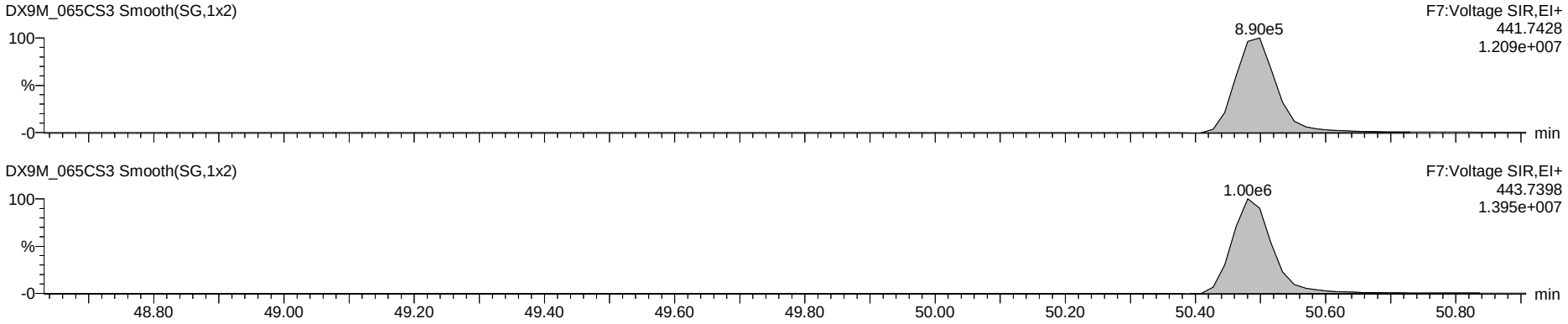
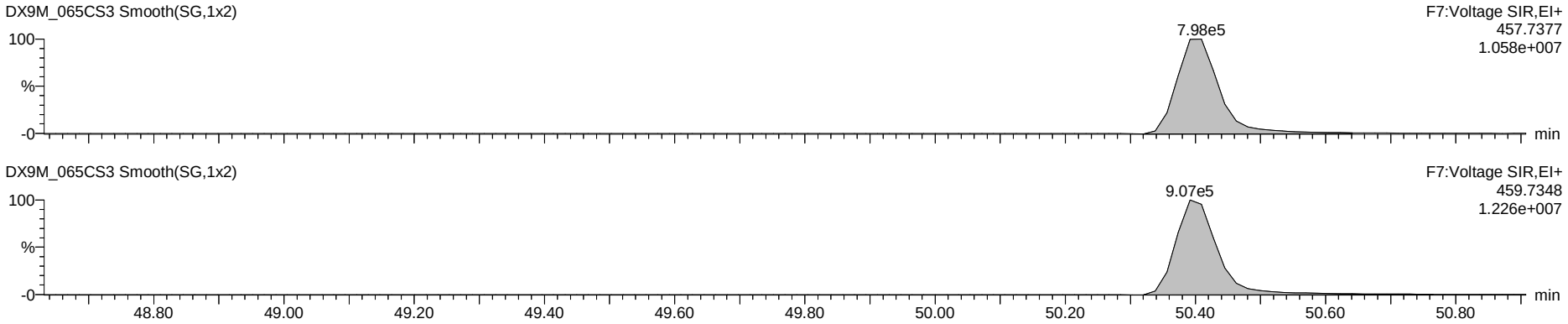
OCDF



OCDD



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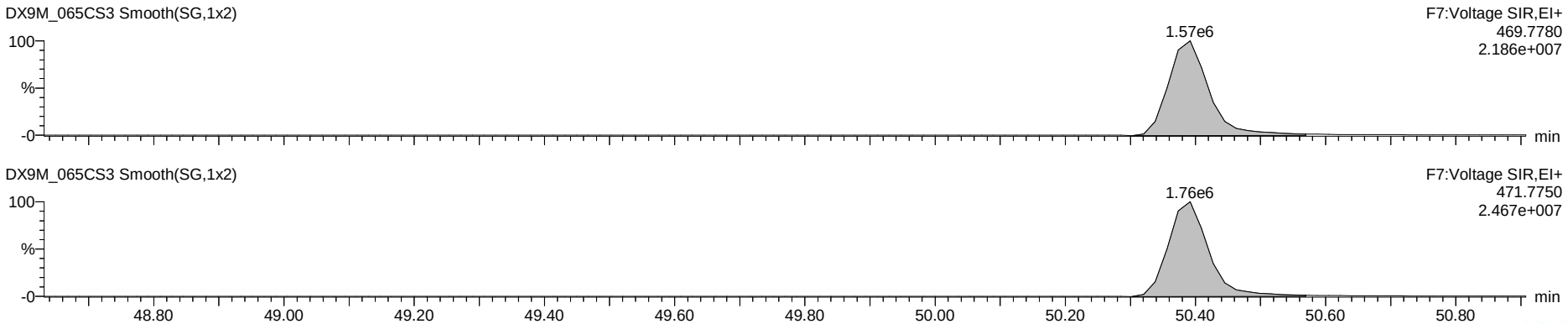

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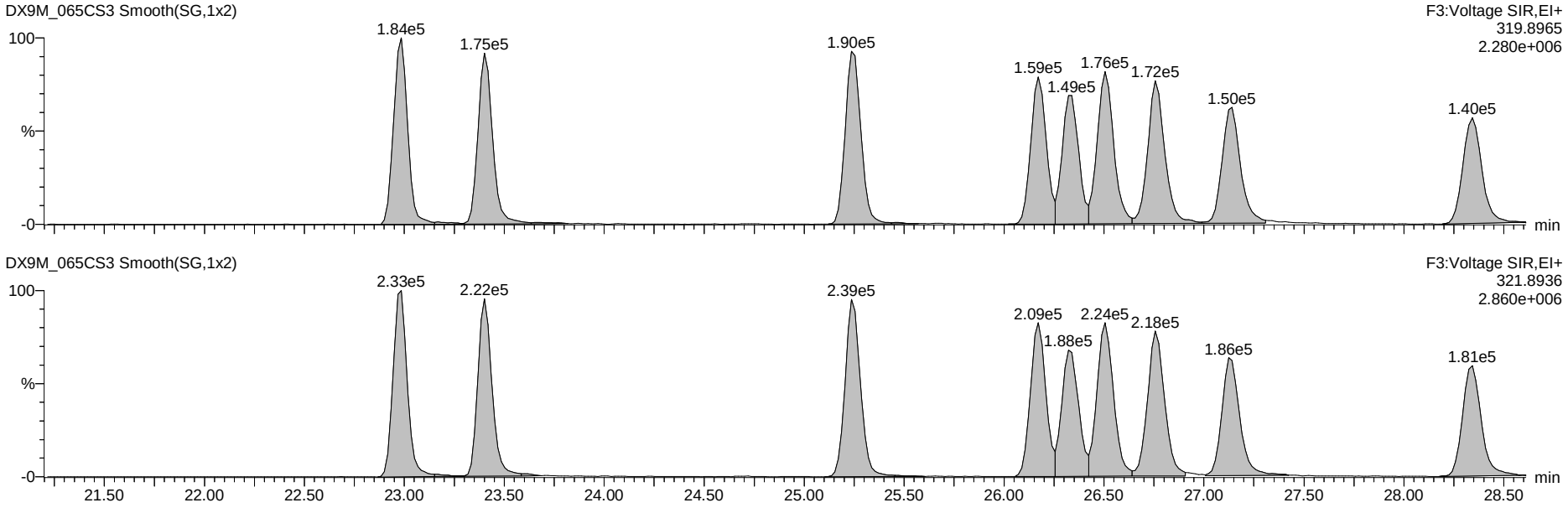
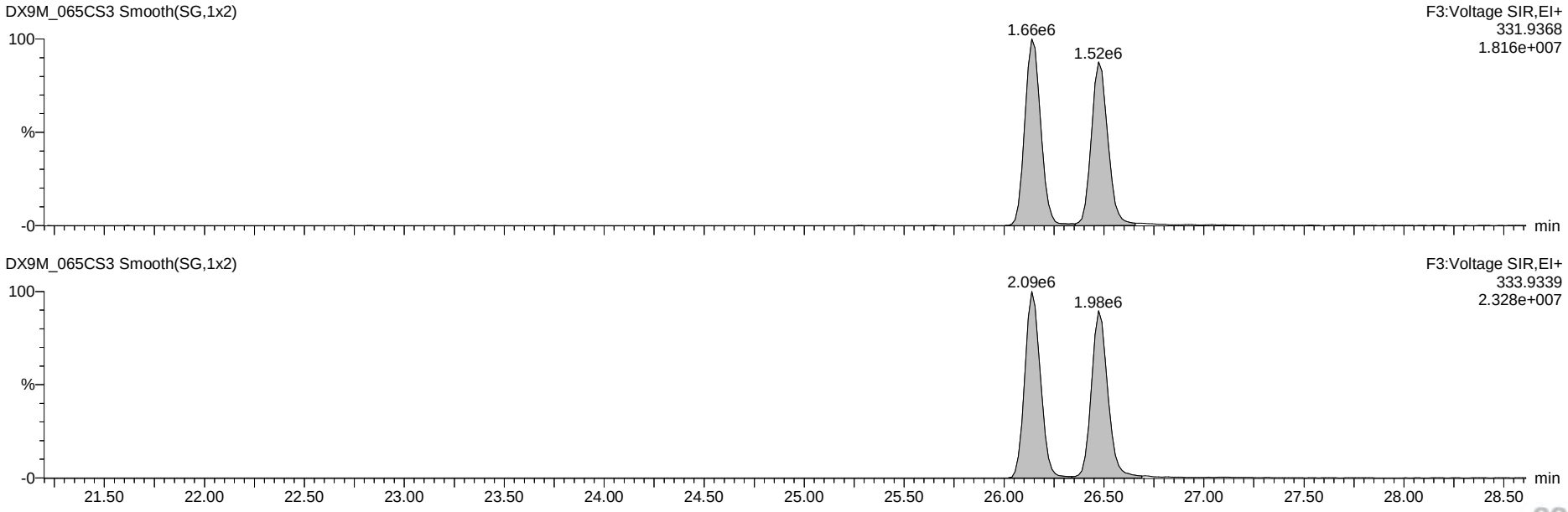
Total Tetra-Dioxins



13C-Tetra-Dioxins



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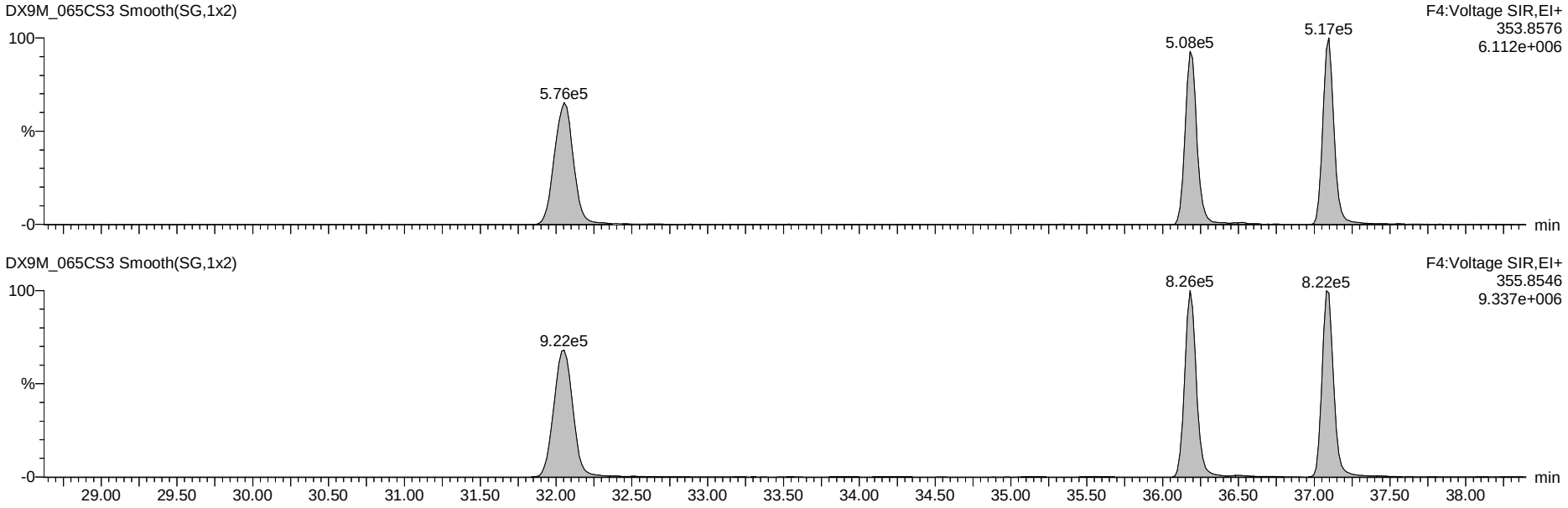
Total Penta-Dioxins



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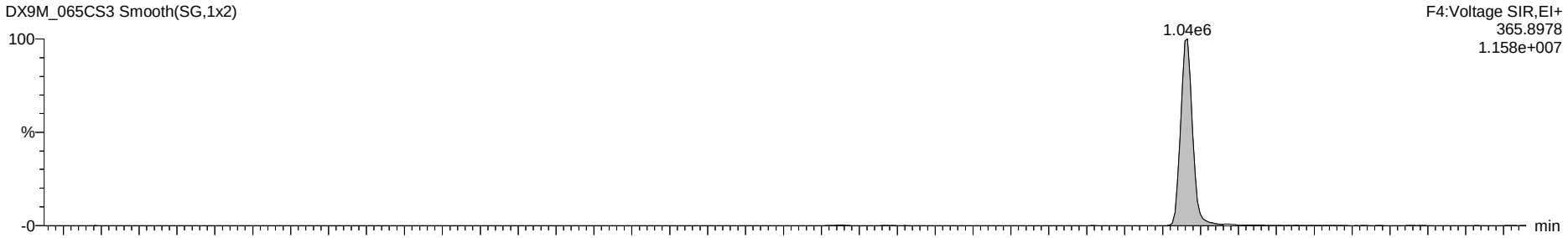

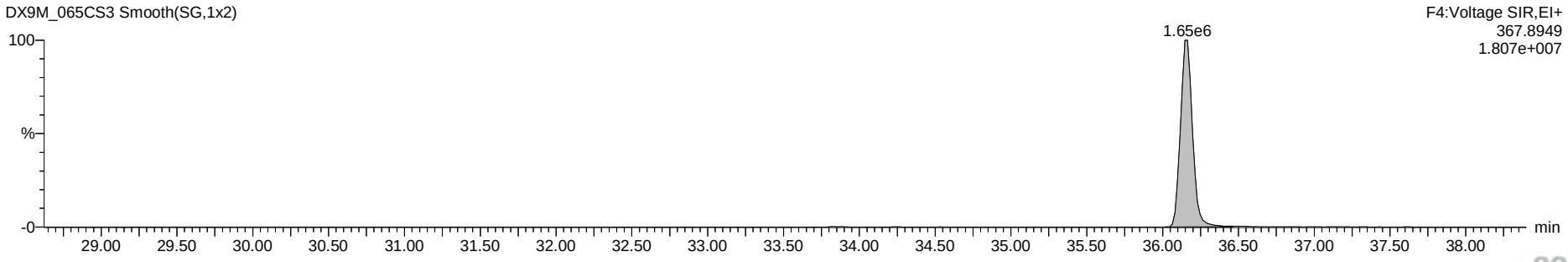

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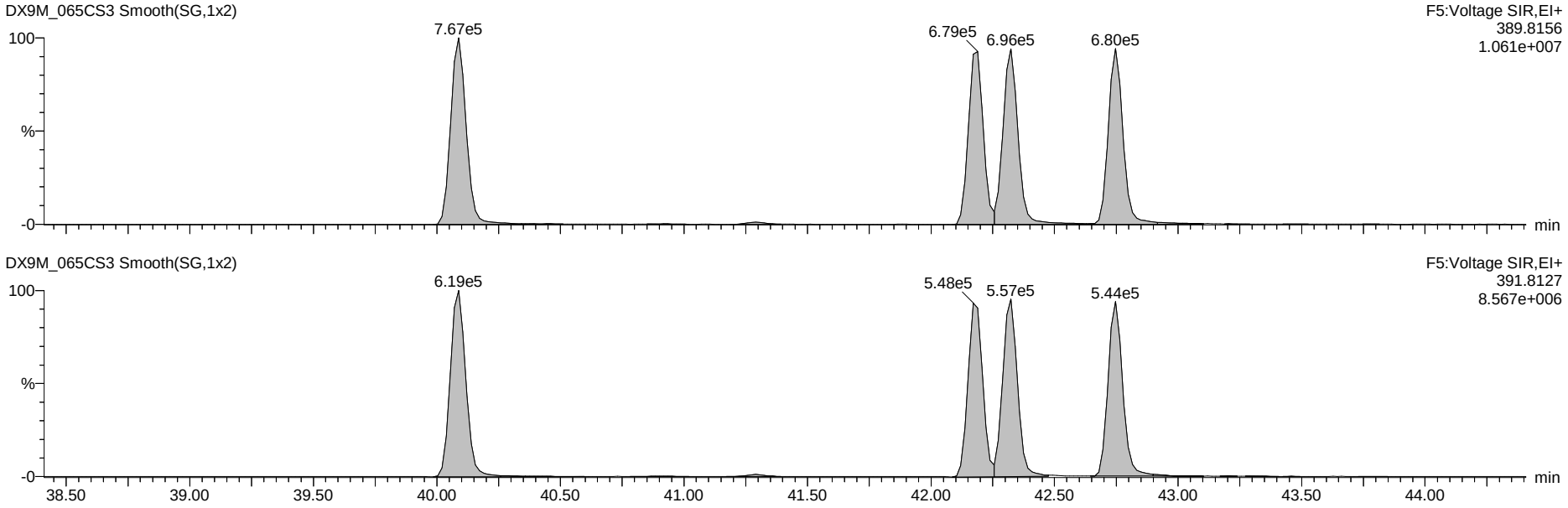
Total Hexa-Dioxins



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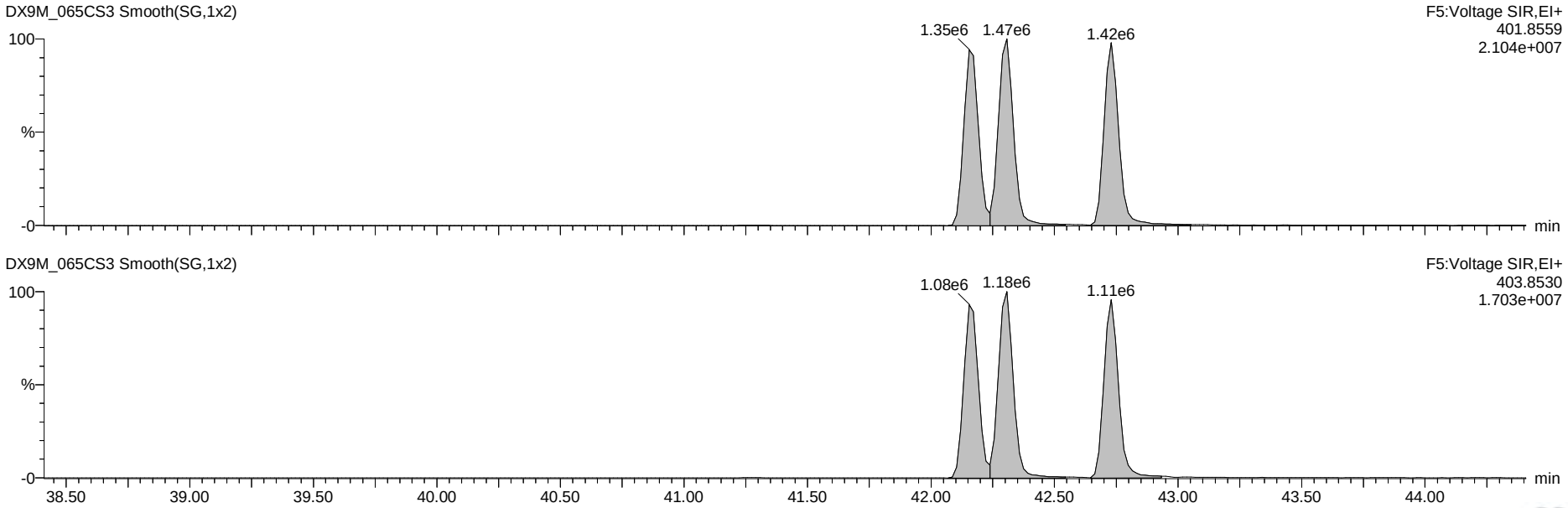

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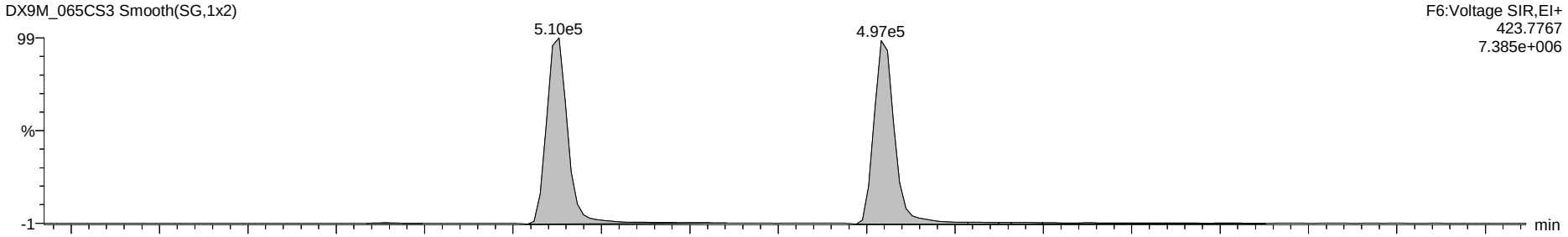
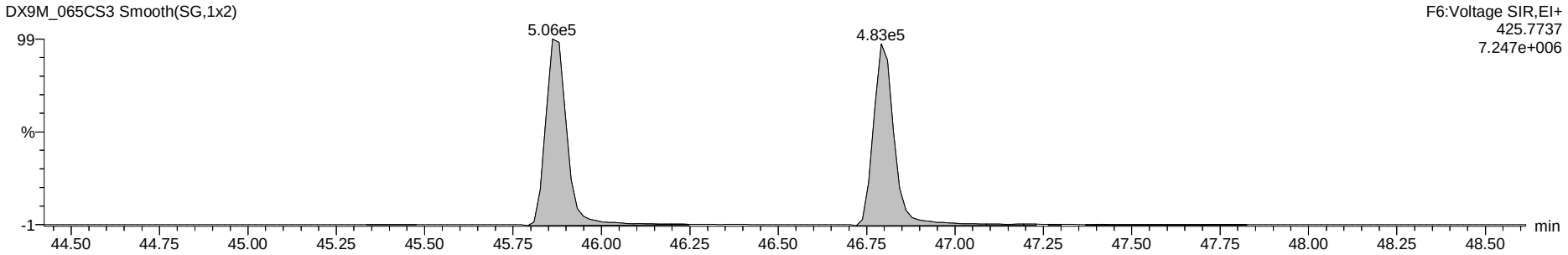
Total Hepta-Dioxins





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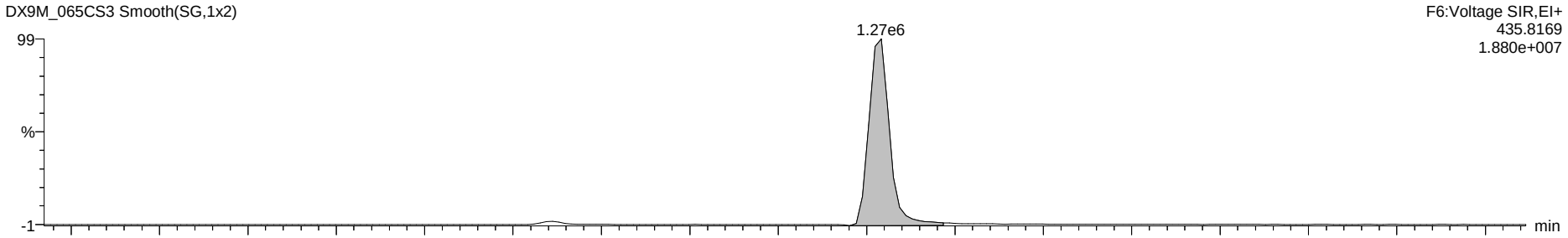

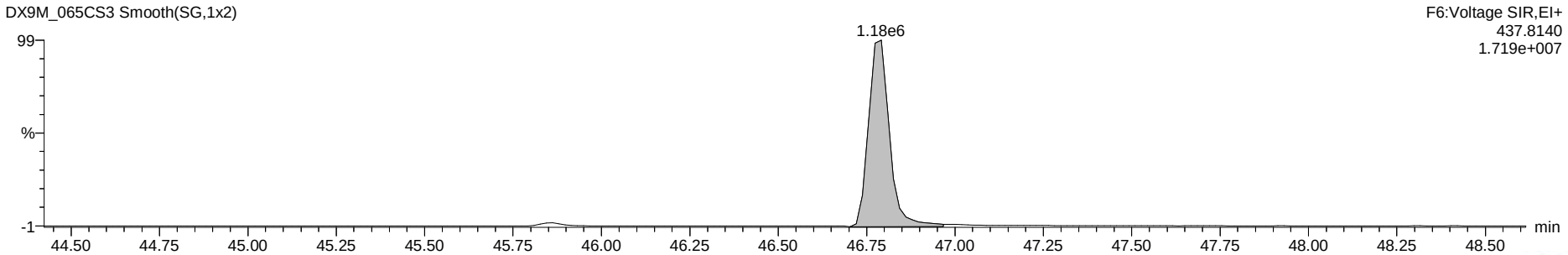

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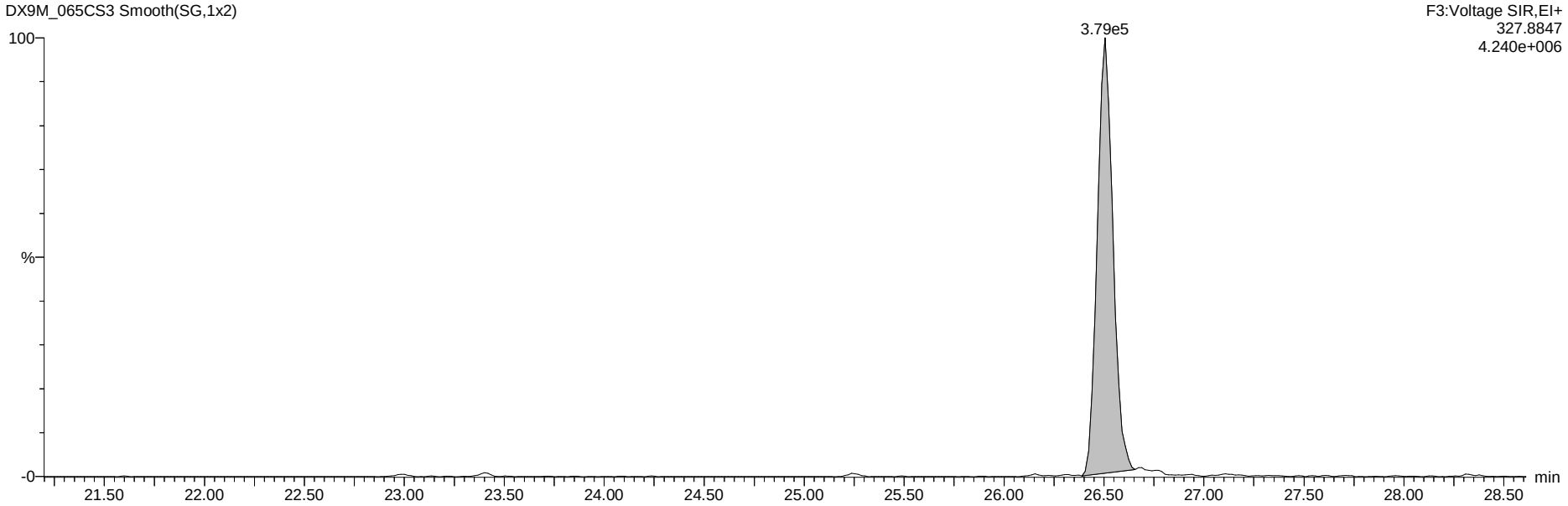
37Cl-2,3,7,8-TCDD



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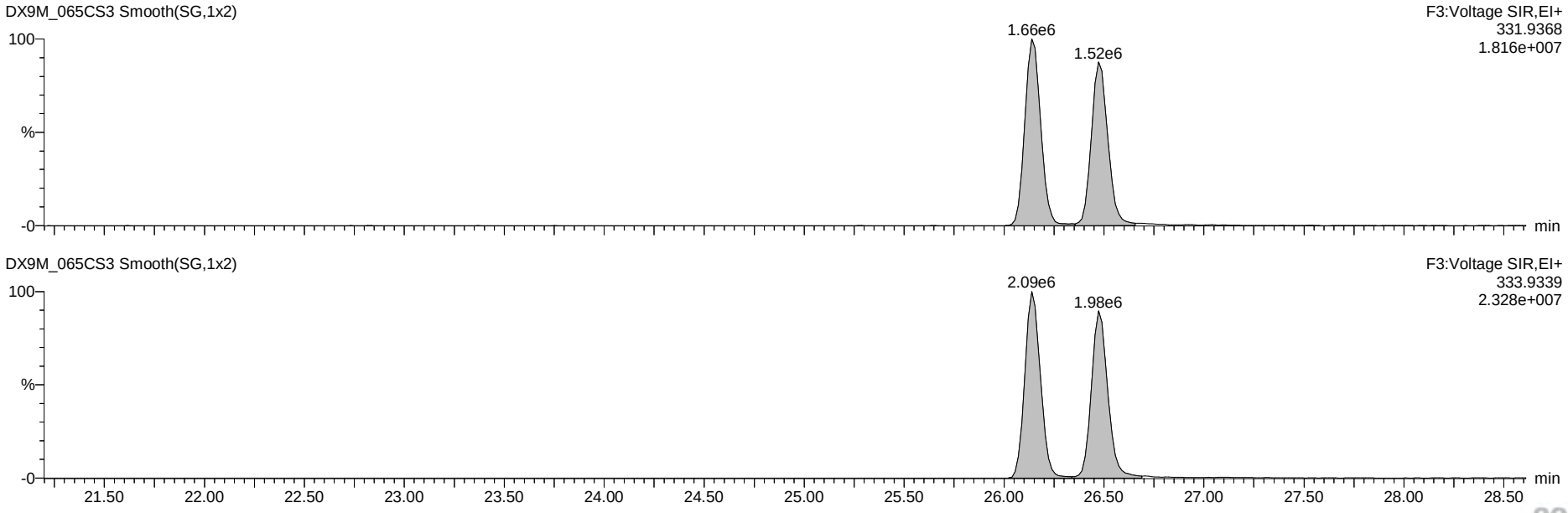

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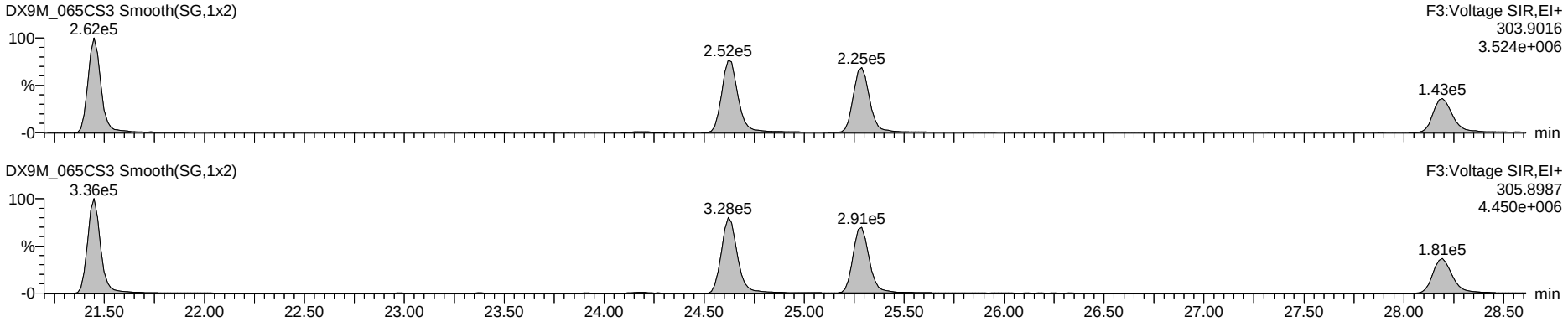
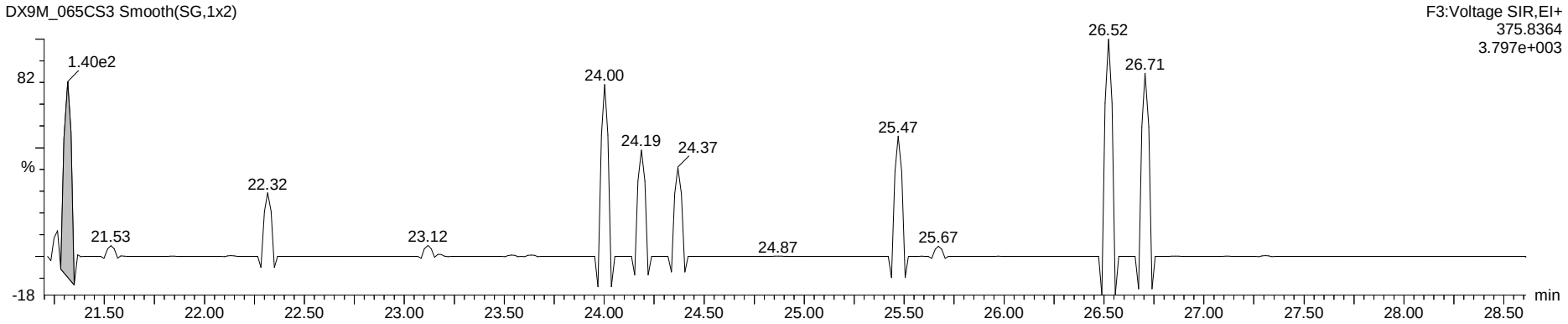
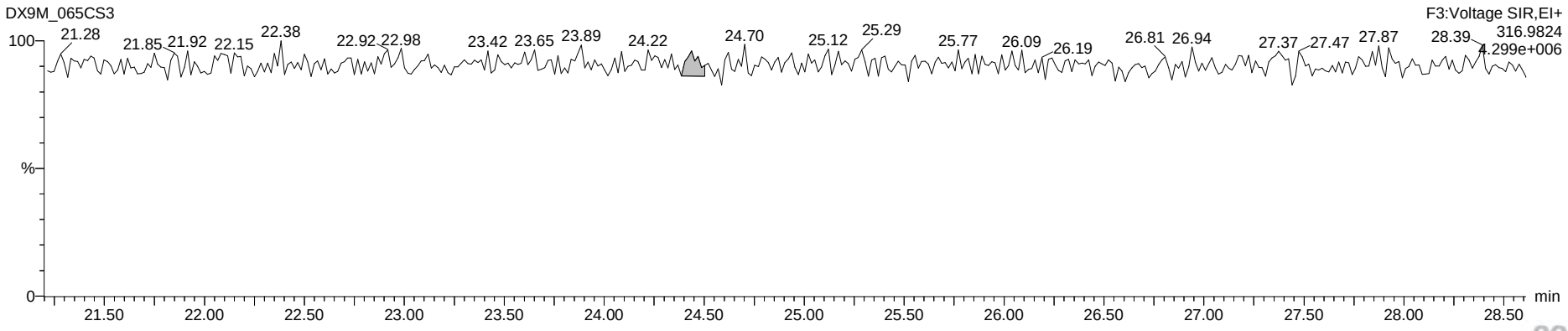
Total Tetra-Furans



Hexa DPE



Tetra Lock



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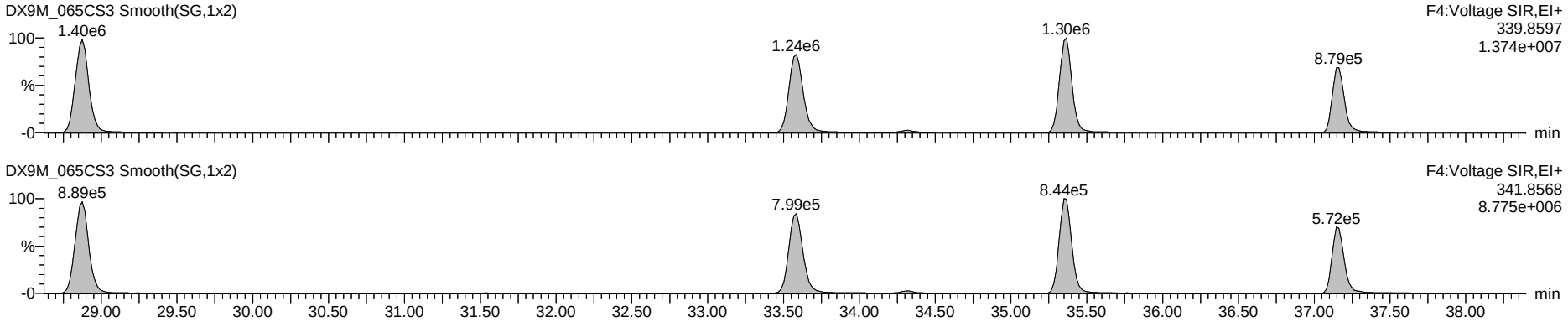
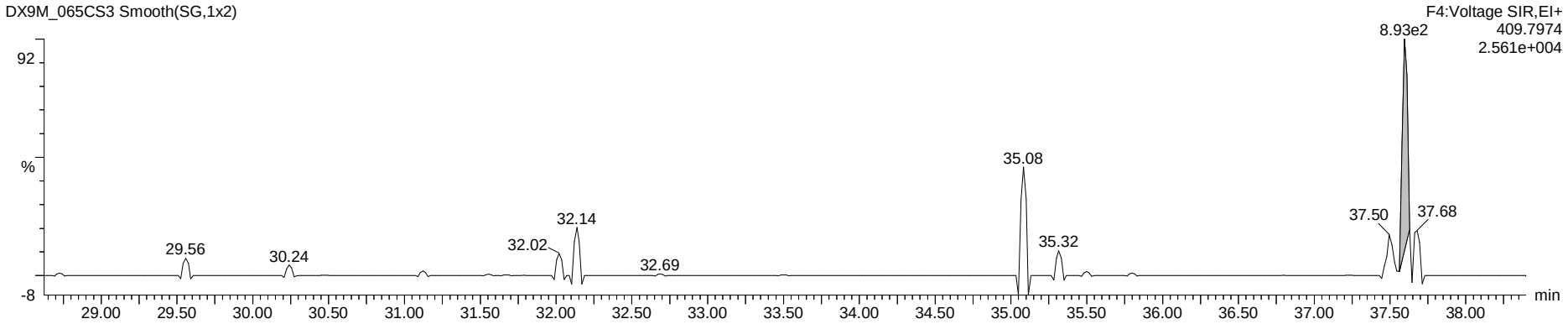
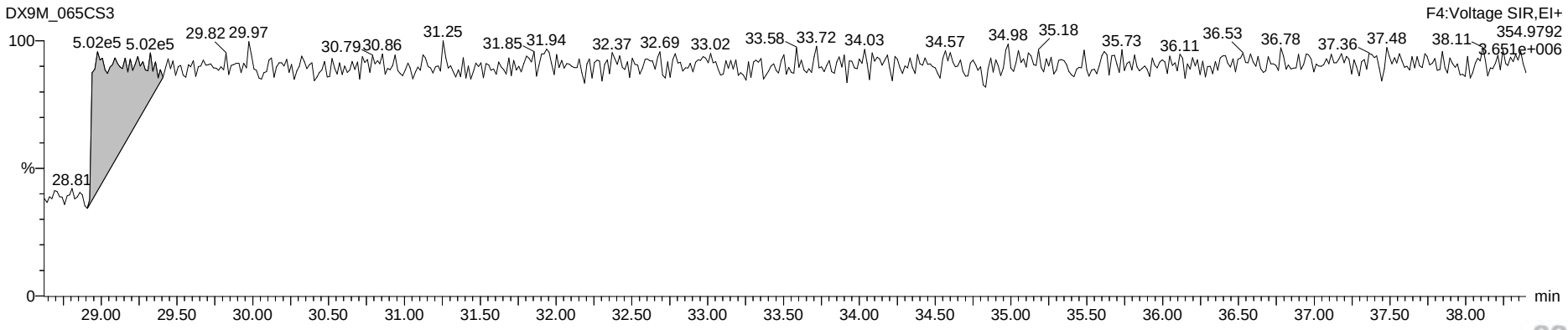
Total Penta-Furans



Hepta DPE



Penta Lock



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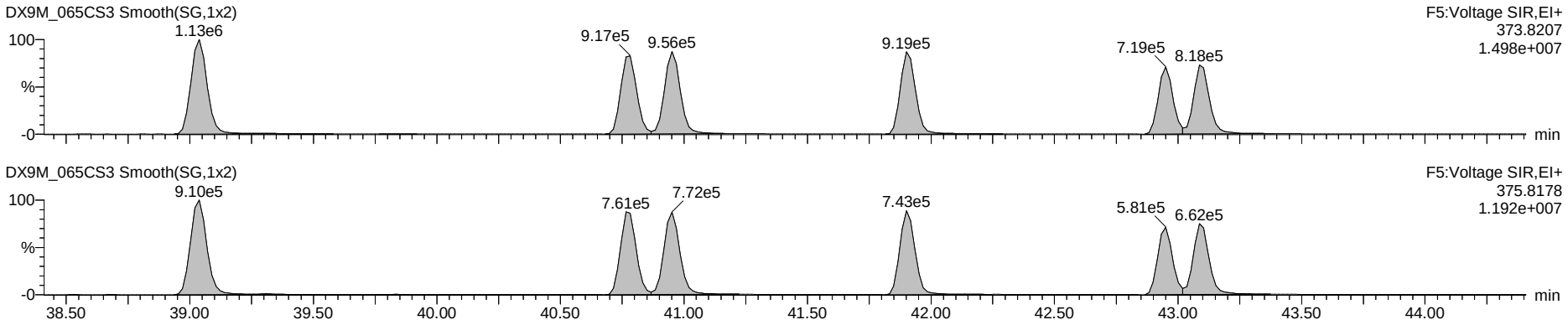
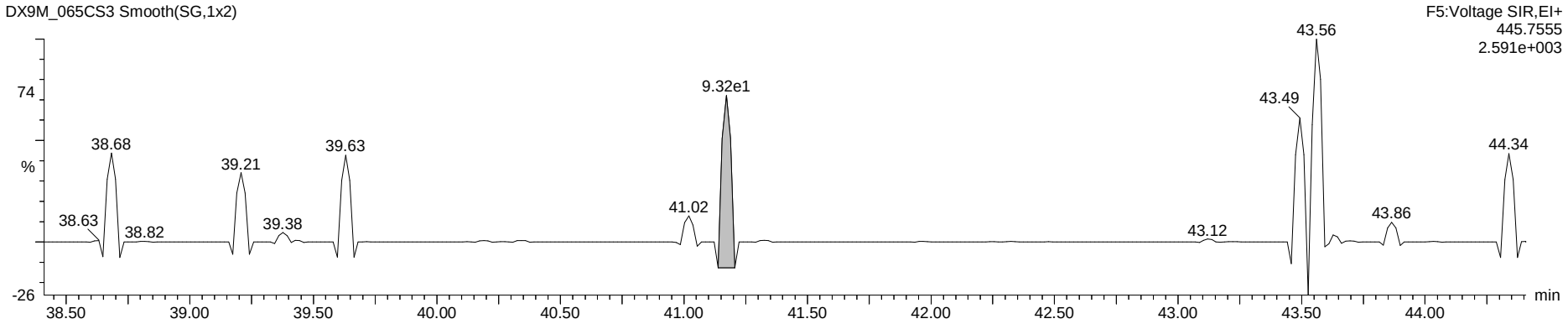
Name: DX9M_065CS3, Date: 25-Jun-2019, Time: 11:05:52, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

Total Hexa-Furans



Octa DPE



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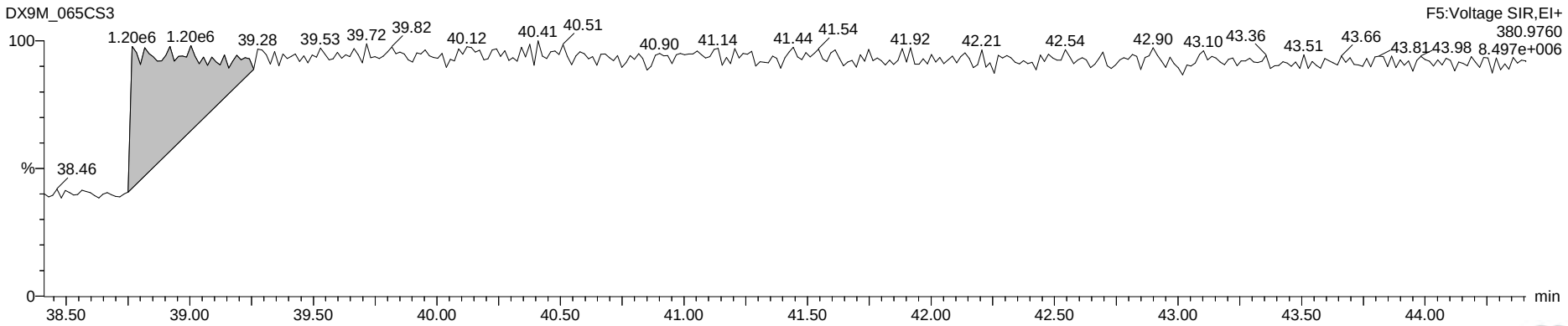

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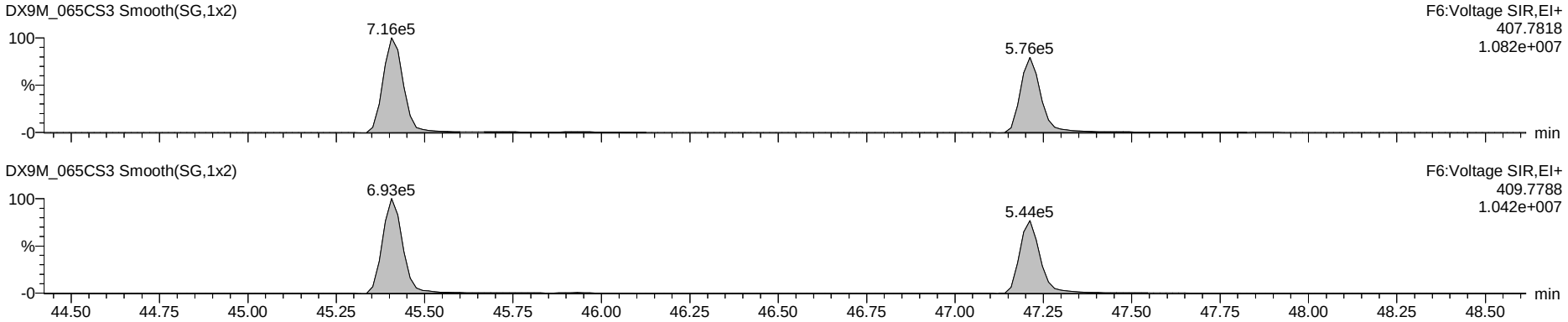
Total Hepta-Furans



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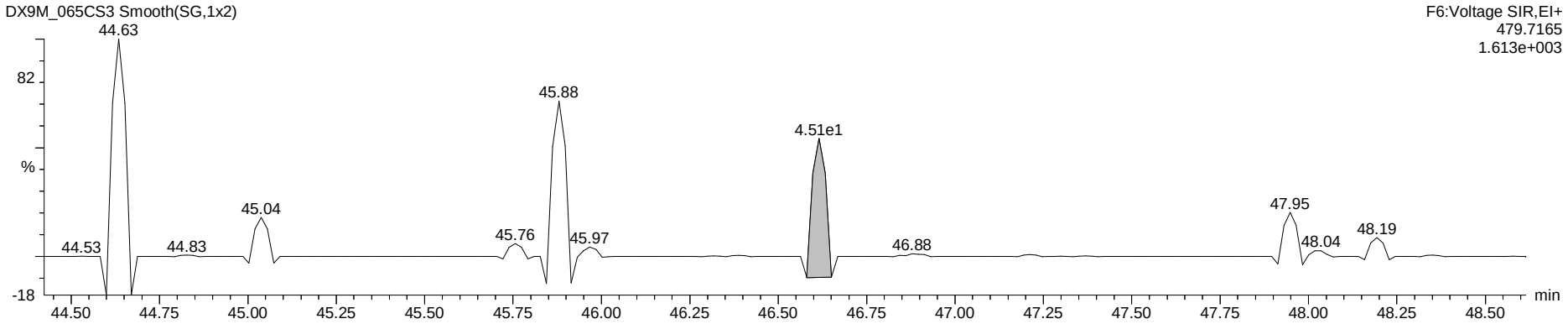

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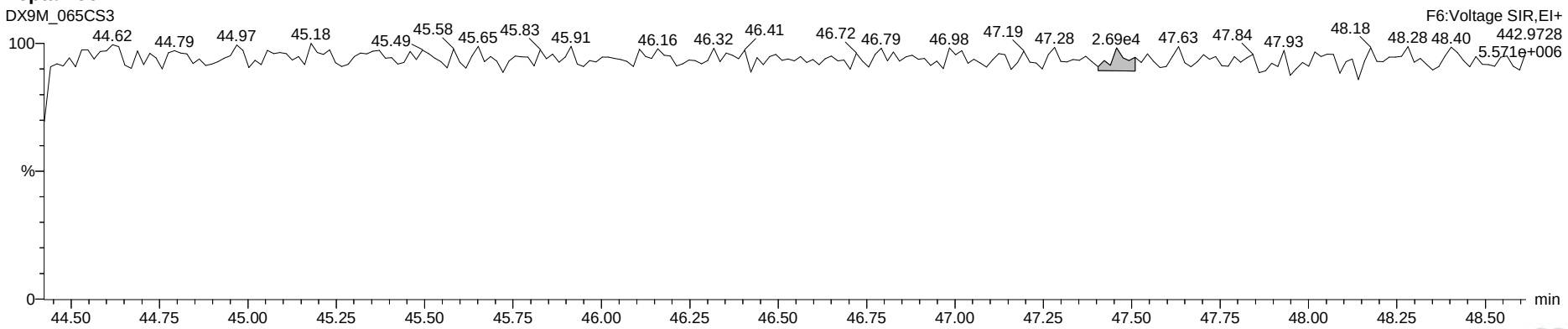

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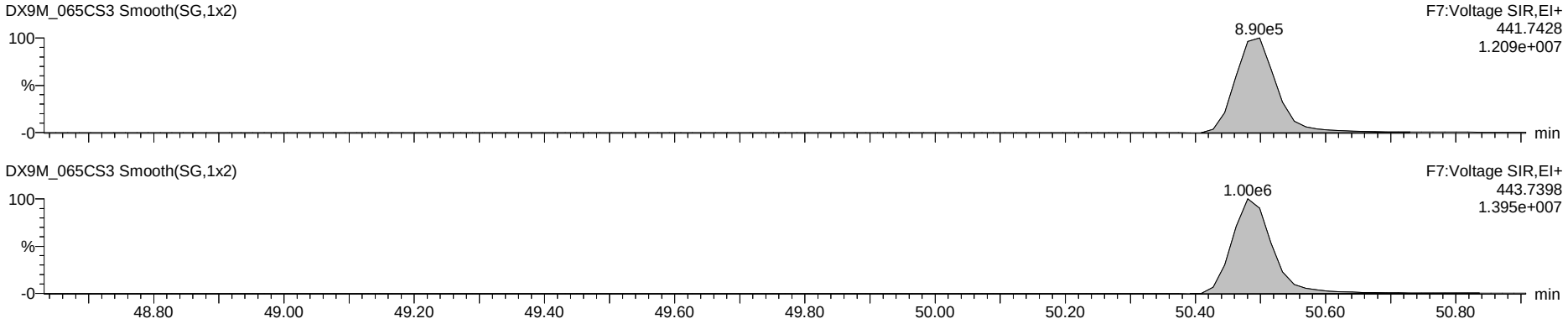
OCDF



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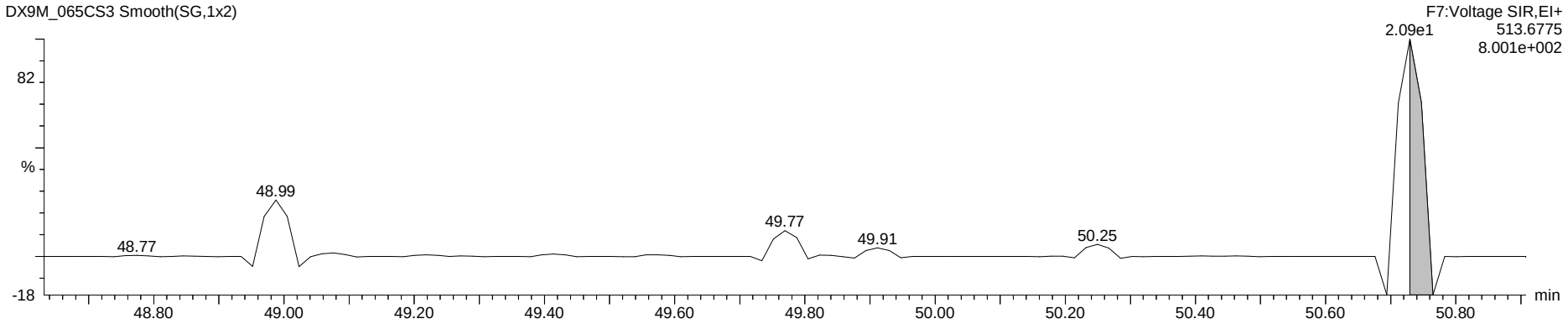

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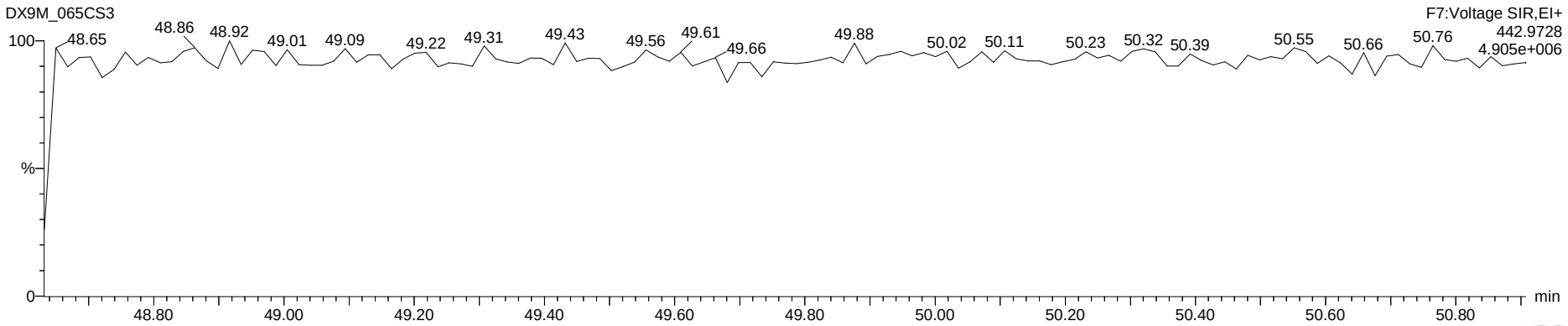

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Name: DX9M_065CS12, Date: 25-Jun-2019, Time: 19:52:17, ID: DX042E-CAL,,/01, Description: 1,,1.0uL CS-4

#	Name	Amount	Resp.	Ratio	fails?	RT	RRF	Mean RRF	RRF SD	RRF %R...	S/N	1° S/N
1	2,3,7,8-TCDF	40.000	2.31e6	0.77	NO	25.29	0.950	0.9272	0.018	1.96	4644	5801
2	1,2,3,7,8-PeCDF	200.000	9.67e6	1.52	NO	33.58	0.952	0.9296	0.023	2.43	17300	11387
3	2,3,4,7,8-PeCDF	200.000	1.03e7	1.52	NO	35.35	0.982	0.9500	0.033	3.48	21400	14042
4	1,2,3,4,7,8-HxCDF	200.000	7.99e6	1.19	NO	40.78	1.104	1.1051	0.022	1.95	8482	11795
5	1,2,3,6,7,8-HxCDF	200.000	8.66e6	1.19	NO	40.95	1.095	1.0740	0.019	1.76	9268	12742
6	2,3,4,6,7,8-HxCDF	200.000	8.33e6	1.24	NO	41.90	1.166	1.1366	0.028	2.45	9402	12510
7	1,2,3,7,8,9-HxCDF	200.000	6.81e6	1.18	NO	42.95	1.062	1.0544	0.026	2.45	7764	10292
8	1,2,3,4,6,7,8-HpCDF	200.000	7.23e6	1.05	NO	45.41	1.278	1.2500	0.038	3.06	12710	19037
9	1,2,3,4,7,8,9-HpCDF	200.000	5.79e6	1.04	NO	47.21	1.273	1.2532	0.027	2.15	9898	14522
10	OCDF	400.000	1.08e7	0.89	NO	50.48	1.228	1.1384	0.075	6.56	94766	81736
11	2,3,7,8-TCDD	40.000	1.77e6	0.79	NO	26.51	1.116	1.1017	0.047	4.28	5463	5325
12	1,2,3,7,8-PeCDD	200.000	6.40e6	0.61	NO	36.18	1.000	0.9887	0.009	0.96	15743	20146
13	1,2,3,4,7,8-HxCDD	200.000	6.09e6	1.25	NO	42.17	1.049	1.0282	0.015	1.44	10183	12462
14	1,2,3,6,7,8-HxCDD	200.000	6.17e6	1.24	NO	42.32	0.980	0.9421	0.023	2.49	10073	12103
15	1,2,3,7,8,9-HxCDD	200.000	6.09e6	1.21	NO	42.75	1.006	0.9731	0.020	2.10	10037	12155
16	1,2,3,4,6,7,8-HpCDD	200.000	4.83e6	1.04	NO	46.79	0.802	0.7796	0.021	2.71	14801	10863
17	OCDD	400.000	9.00e6	0.89	NO	50.41	1.022	0.9813	0.074	7.59	16956	95417
18	13C-2,3,7,8-TCDF	100.000	6.08e6	0.77	NO	25.25	1.499	1.5227	0.041	2.68	3766	4567
19	13C-1,2,3,7,8-PeCDF	100.000	5.08e6	1.56	NO	33.55	1.251	1.2375	0.076	6.17	2433	2480
20	13C-2,3,4,7,8-PeCDF	100.000	5.26e6	1.56	NO	35.33	1.296	1.2765	0.081	6.33	2915	2940
21	13C-1,2,3,4,7,8-HxCDF	100.000	3.62e6	0.51	NO	40.75	1.216	1.2136	0.017	1.43	2586	2307
22	13C-1,2,3,6,7,8-HxCDF	100.000	3.96e6	0.51	NO	40.93	1.329	1.3340	0.030	2.28	2715	2412
23	13C-2,3,4,6,7,8-HxCDF	100.000	3.57e6	0.51	NO	41.88	1.201	1.2025	0.016	1.34	2652	2347
24	13C-1,2,3,7,8,9-HxCDF	100.000	3.21e6	0.51	NO	42.93	1.077	1.0693	0.029	2.70	2204	1940
25	13C-1,2,3,4,6,7,8-HpCDF	100.000	2.83e6	0.46	NO	45.39	0.950	0.9996	0.154	15.39	1926	3491
26	13C-1,2,3,4,7,8,9-HpCDF	100.000	2.27e6	0.46	NO	47.19	0.764	0.8111	0.137	16.87	1507	2712
27	13C-2,3,7,8-TCDD	100.000	3.96e6	0.78	NO	26.47	0.976	0.9686	0.032	3.31	1961	1606
28	13C-1,2,3,7,8-PeCDD	100.000	3.20e6	0.63	NO	36.16	0.789	0.7690	0.046	5.95	3866	4823
29	13C-1,2,3,4,7,8-HxCDD	100.000	2.90e6	1.27	NO	42.15	0.976	0.9685	0.020	2.02	4406	4676
30	13C-1,2,3,6,7,8-HxCDD	100.000	3.15e6	1.24	NO	42.31	1.057	1.0706	0.020	1.85	4617	4979
31	13C-1,2,3,4,6,7,8-HpCDD	100.000	3.01e6	1.03	NO	46.77	1.011	1.0837	0.164	15.09	3960	5282
32	13C-OCDD	200.000	4.40e6	0.91	NO	50.39	0.740	0.7969	0.168	21.03	29809986	11245
33	13C-1,2,3,4-TCDD	100.000	4.06e6	0.80	NO	26.14	40575.914	40244.29...	2071.896	5.15	2031	1679
34	13C-1,2,3,7,8,9-HxCDD	100.000	2.98e6	1.25	NO	42.73	29763.699	29034.26...	3025.332	10.42	4410	4737
35	37Cl-2,3,7,8-TCDD	40.000	1.81e6			26.51	1.113	1.0674	0.080	7.49	2504	
36	Total Tetra-Furans	40.000						0.9276	0.016	1.76		
37	Total Tetra-Dioxins	40.000						1.1017	0.047	4.28		
38	Total Penta-Furans	200.000						0.9296	0.023	2.43		
39	Total Penta-Dioxins	200.000						0.9887	0.009	0.96		
40	Total Hexa-Furans	200.000						1.1051	0.022	1.95		
41	Total Hexa-Dioxins	200.000						1.0282	0.015	1.44		
42	Total Hepta-Furans	200.000						1.2500	0.038	3.06		
43	Total Hepta-Dioxins	200.000						0.7796	0.021	2.71		
44	Hexa DPE	0.000	2.36e2			24.75	0.000				4420	
45	Hepta DPE	0.000	5.94e3			37.60	0.000				49	
46	Octa DPE	0.000	1.07e2			38.50	0.000				2153	
47	Nona DPE	0.000	5.04e1			47.77	0.000				1945	
48	Deca DPE	0.000	5.13e1			50.69	0.000				1963	
49	Tetra Lock	0.000	1.22e4			24.32	0.000				0	
50	Penta Lock	0.000										
51	Hexa Lock	0.000	1.69e6			38.77	0.000				1	
52	Hepta Lock	0.000	2.70e4			47.25	0.000				1	
53	Octa Lock	0.000										
54	13C-Tetra-Furans	100.000						1.5227	0.041	2.68		
55	13C-Tetra-Dioxins	100.000						0.9686	0.032	3.31		

pv'd by KB 22-JUL-2019

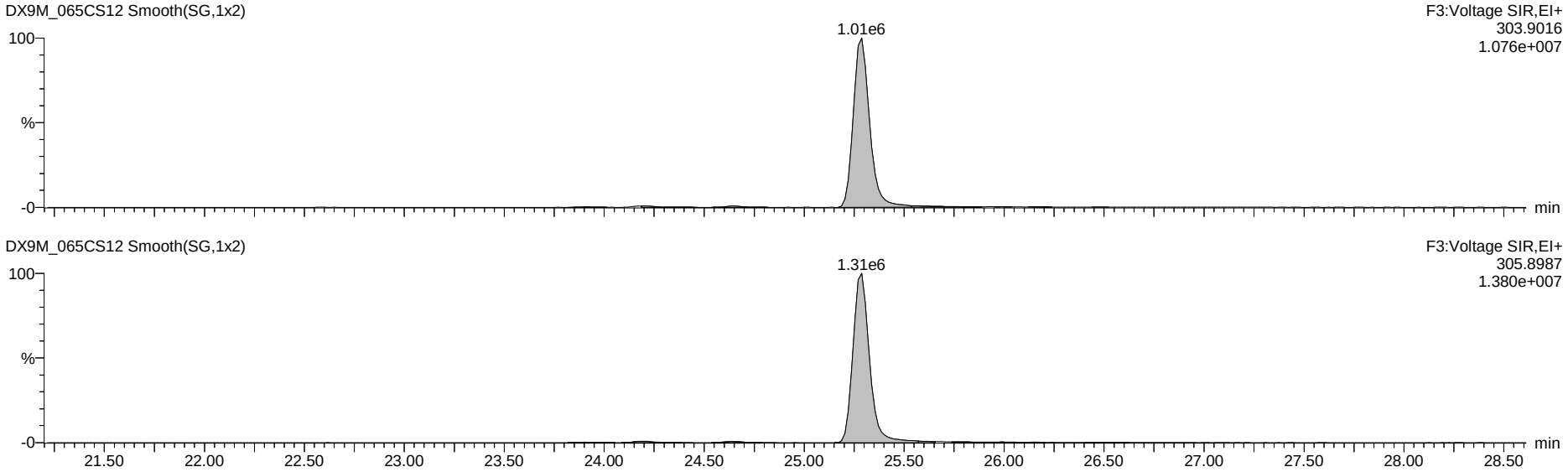
22-JUL-19

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_065C-7A.qld

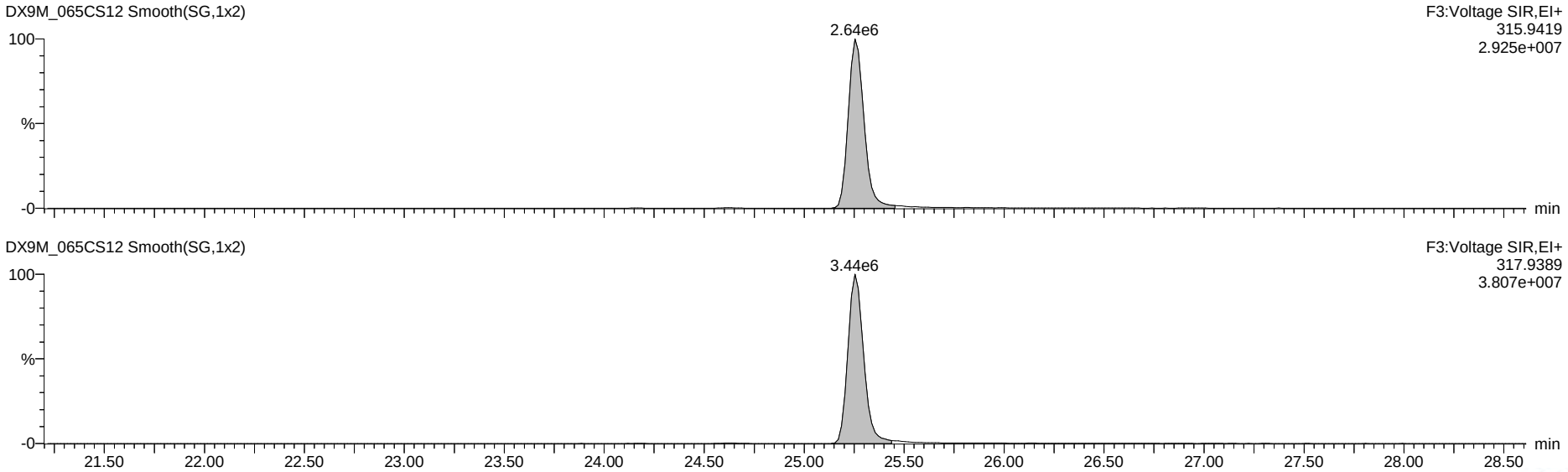
Method: G:\Masslynx\Inst_M\Projects\190510DX.PRO\MethDB\DX_1613B_16.mdb 18 Jul 2019 14:33:32
Calibration: 22 Jul 2019 09:01:47

Name: DX9M_065CS12, Date: 25-Jun-2019, Time: 19:52:17, ID: DX042E-CAL,,/01, Description: 1,,1.0uL CS-4

Total Tetra-Furans



13C-Tetra-Furans



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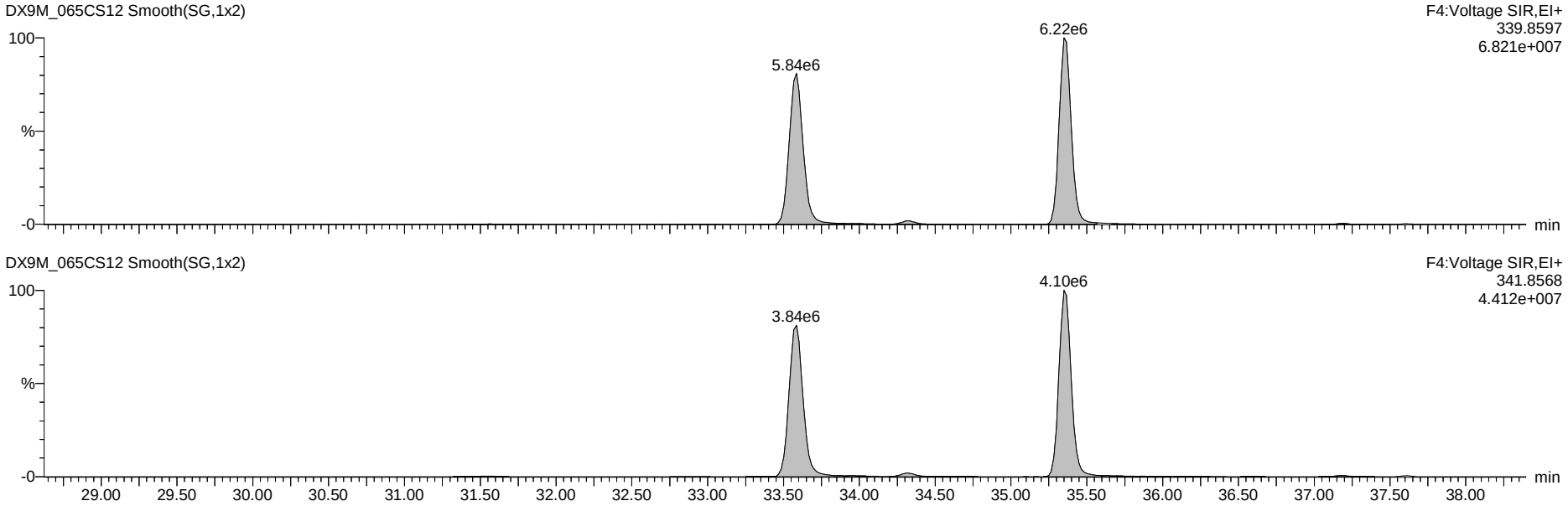
Total Penta-Furans



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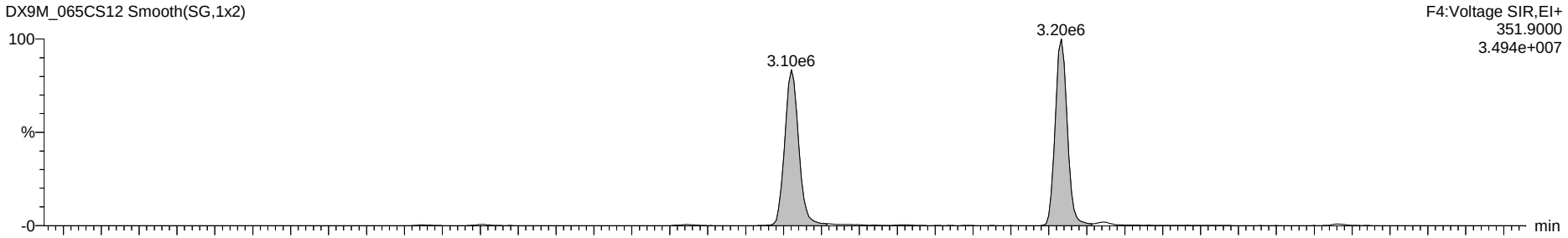

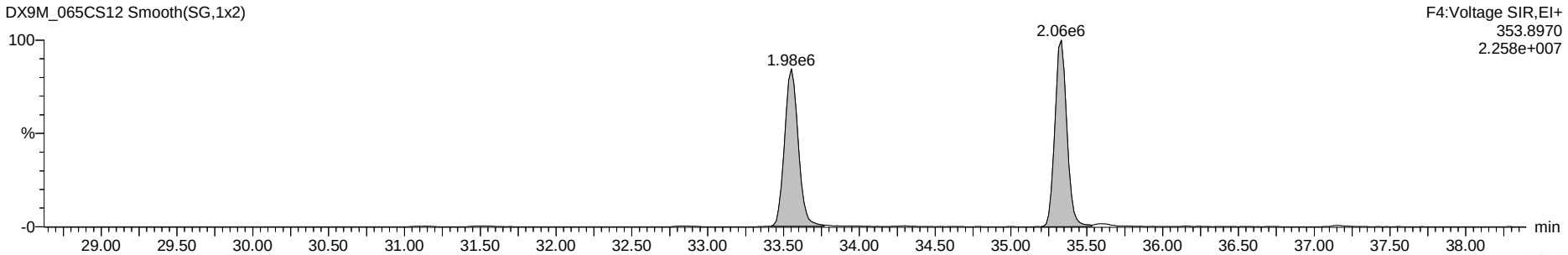

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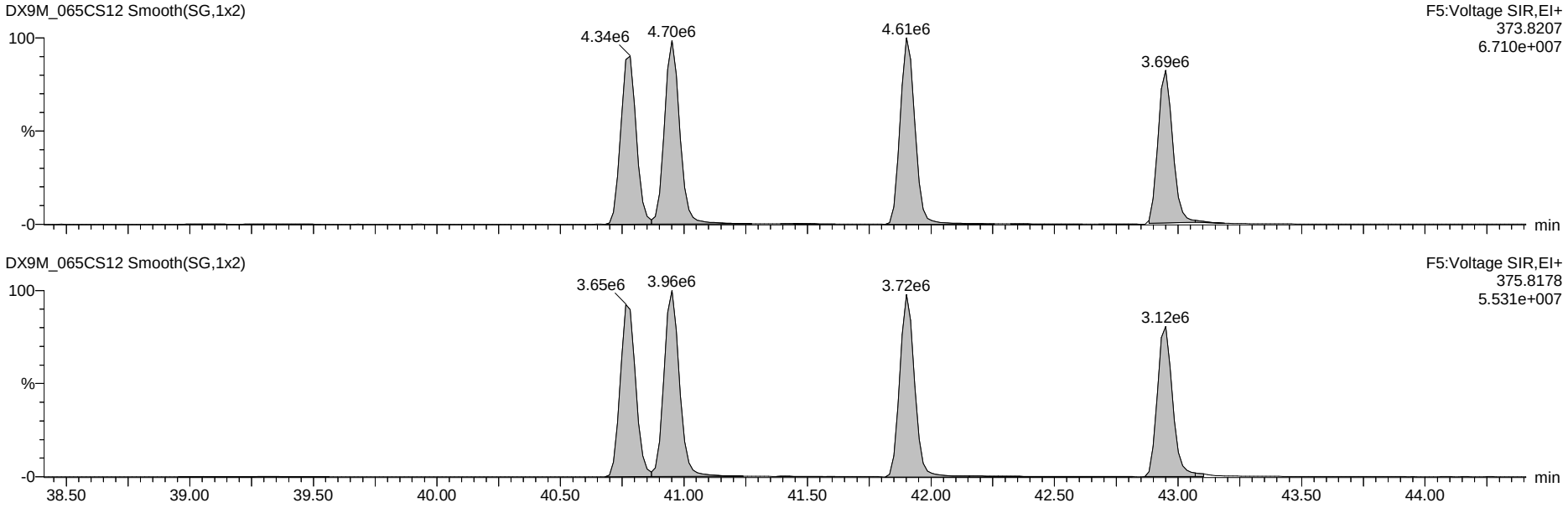
Total Hexa-Furans



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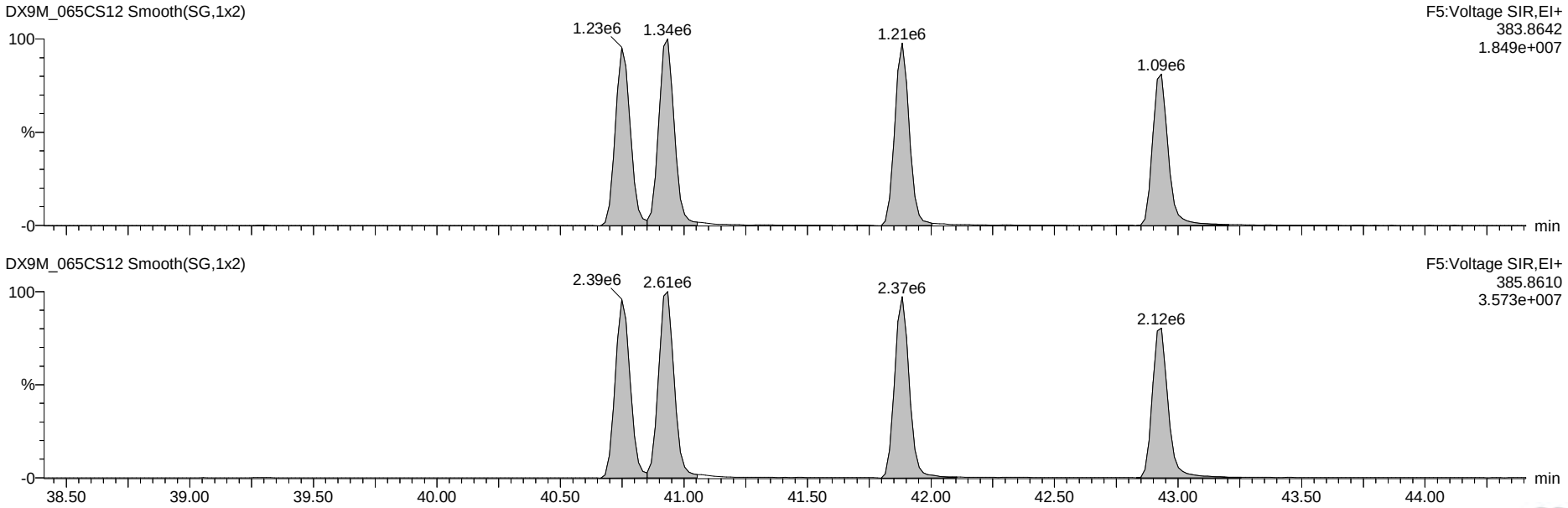

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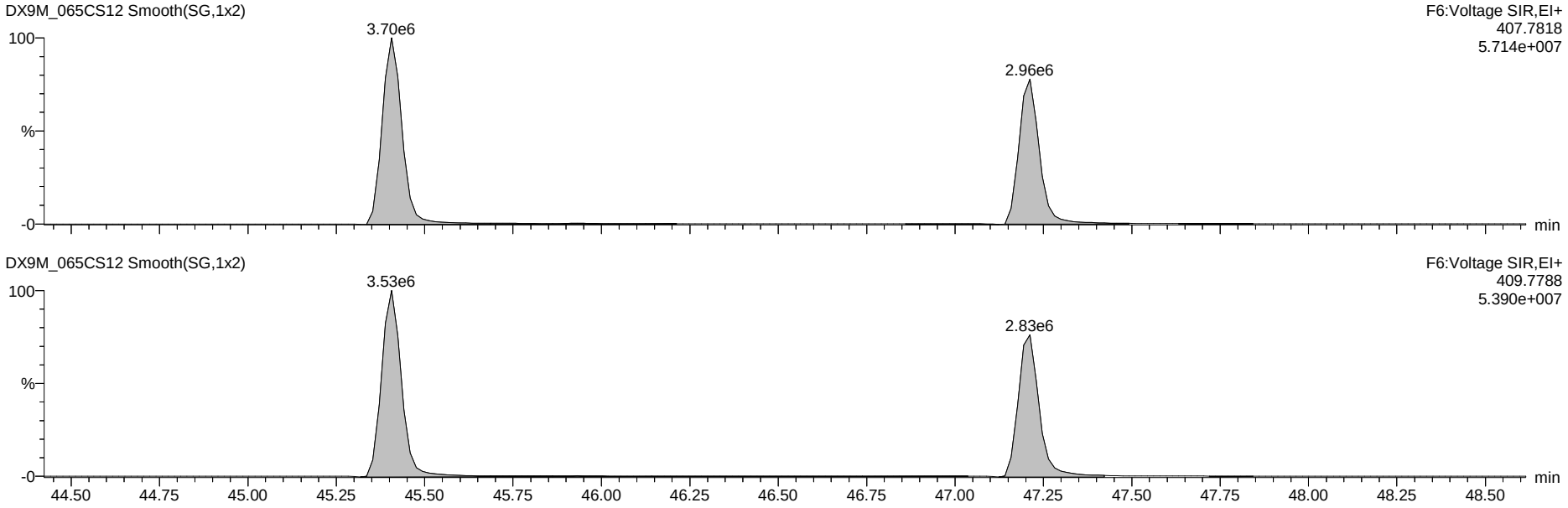
Total Hepta-Furans



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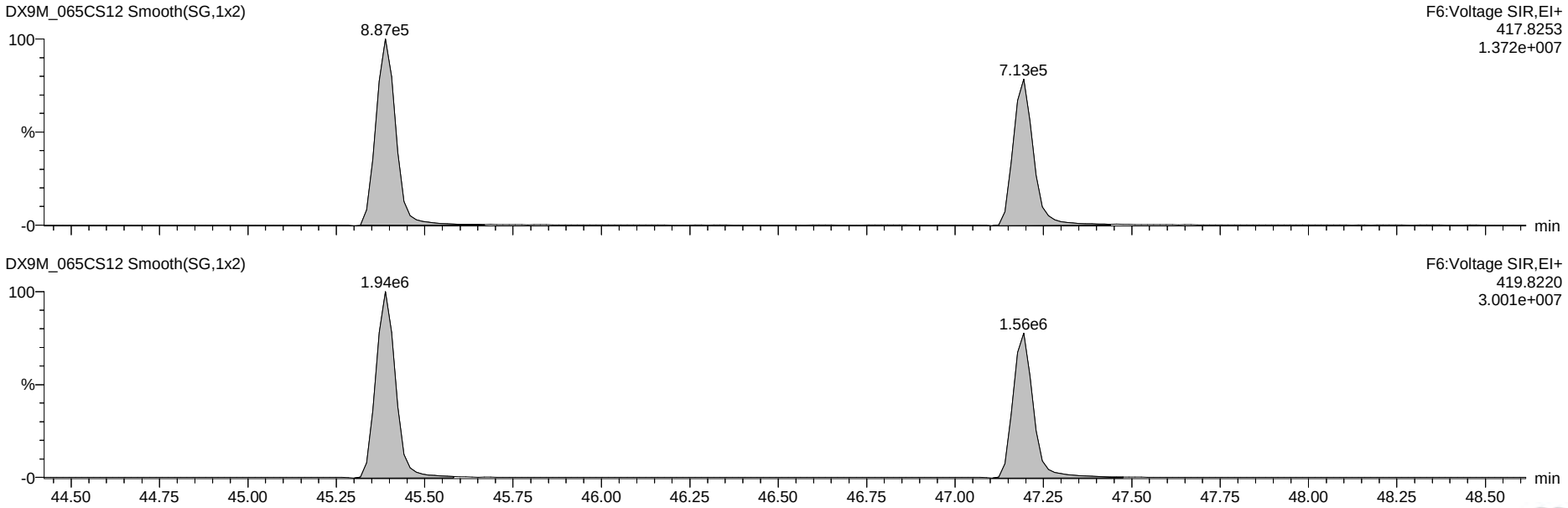

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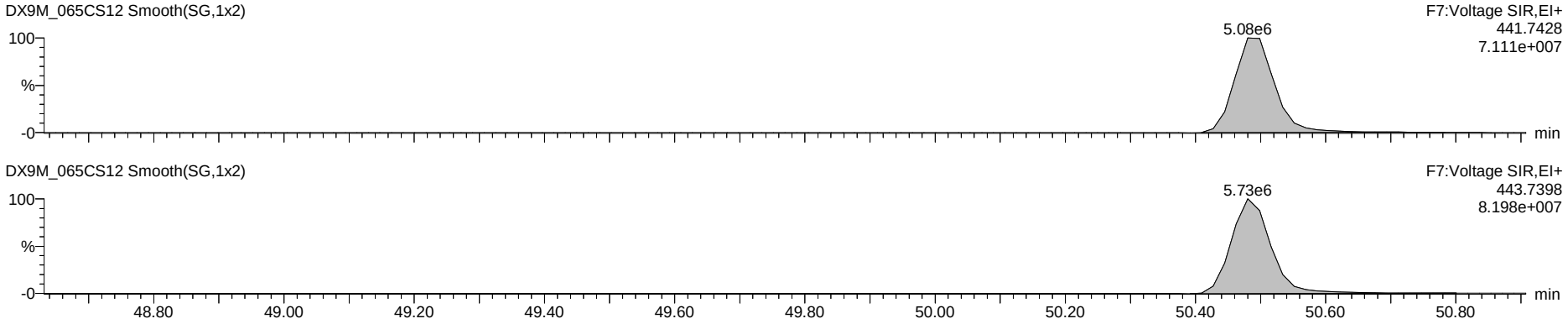
OCDF



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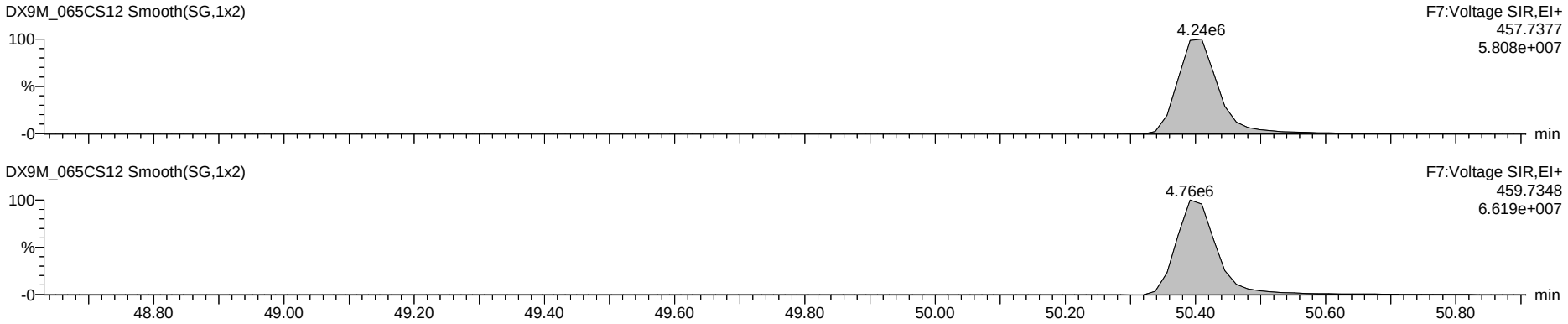

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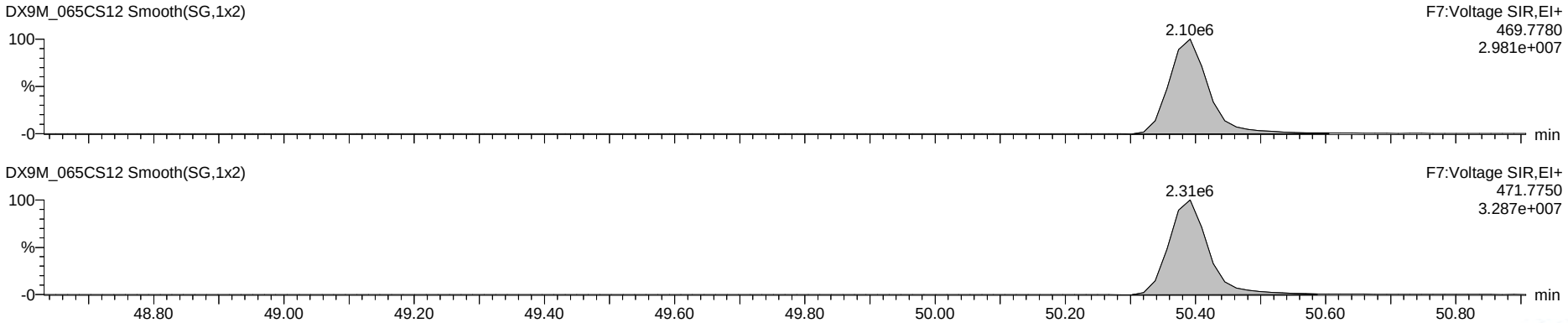

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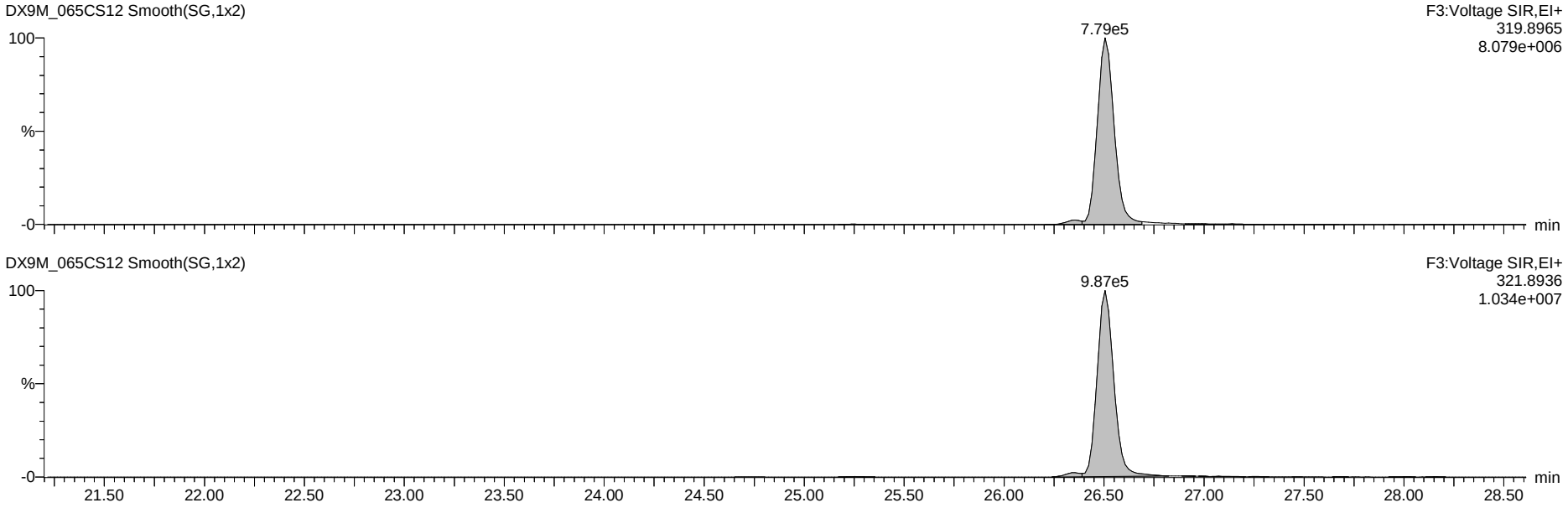
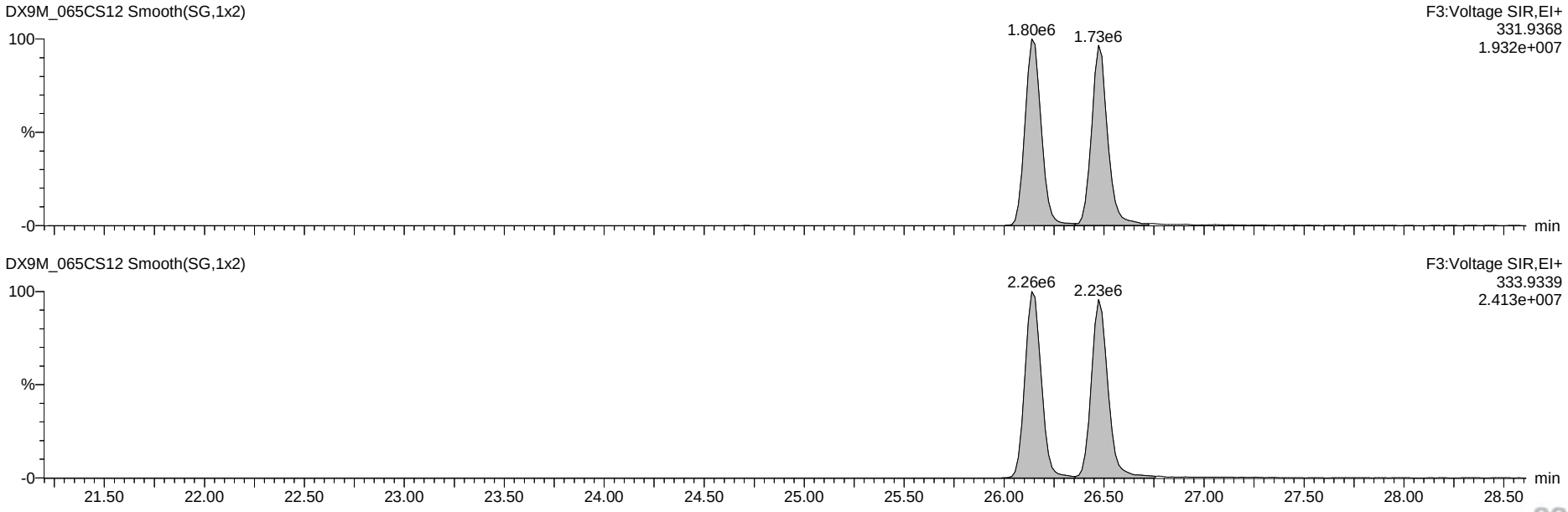
Name: DX9M_065CS12, Date: 25-Jun-2019, Time: 19:52:17, ID: DX042E-CAL,,/01, Description: 1,,1.0uL CS-4

Total Tetra-Dioxins



13C-Tetra-Dioxins



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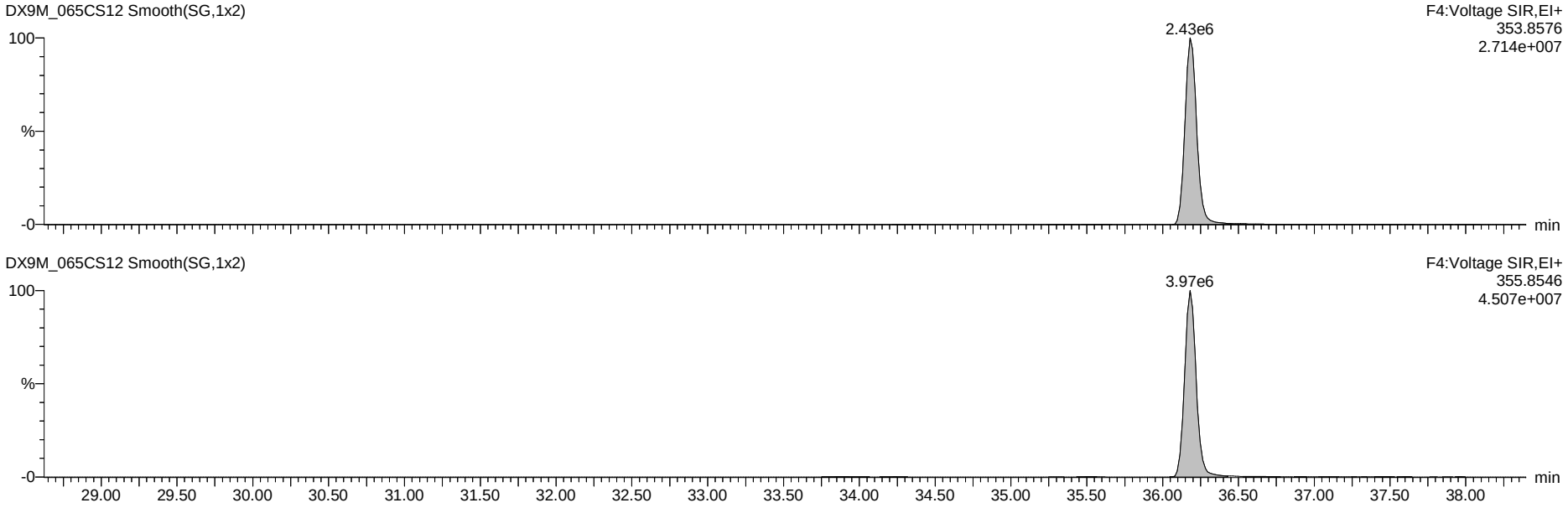
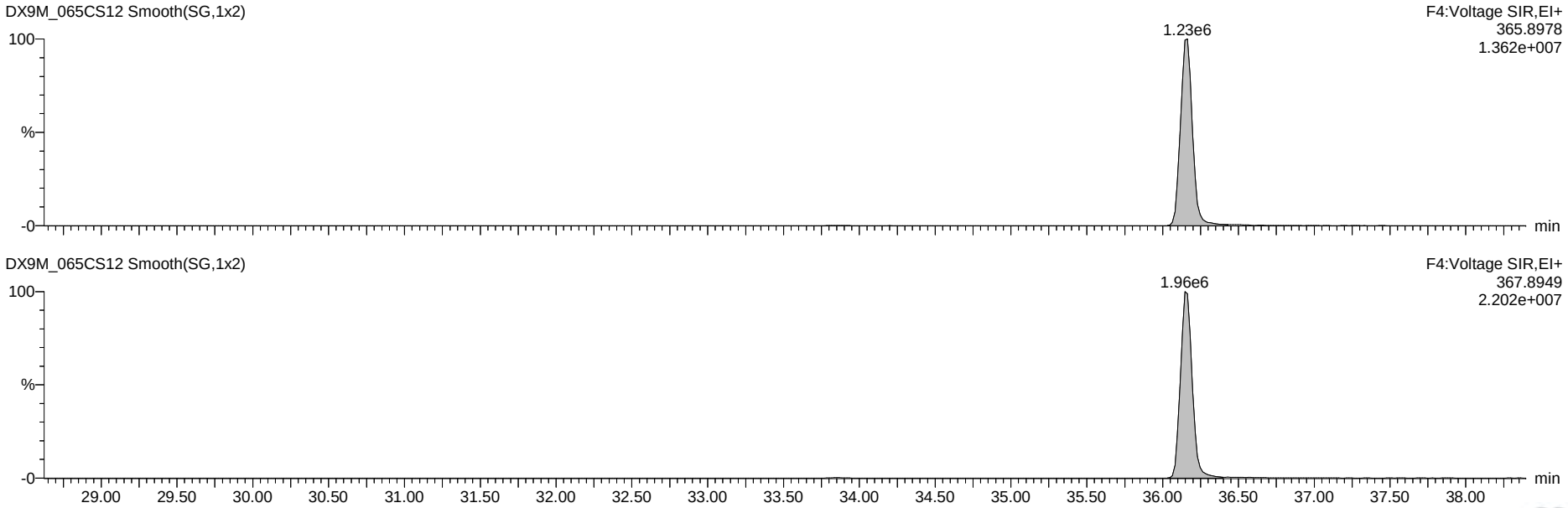
Total Penta-Dioxins



13C-Penta-Dioxins



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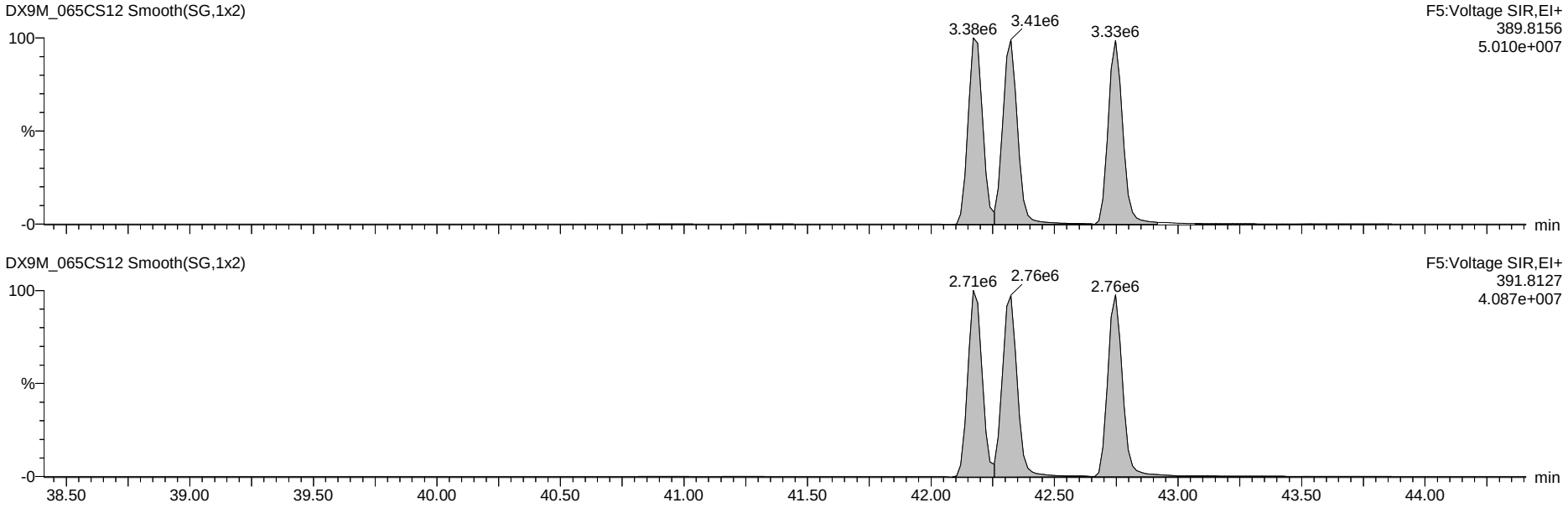
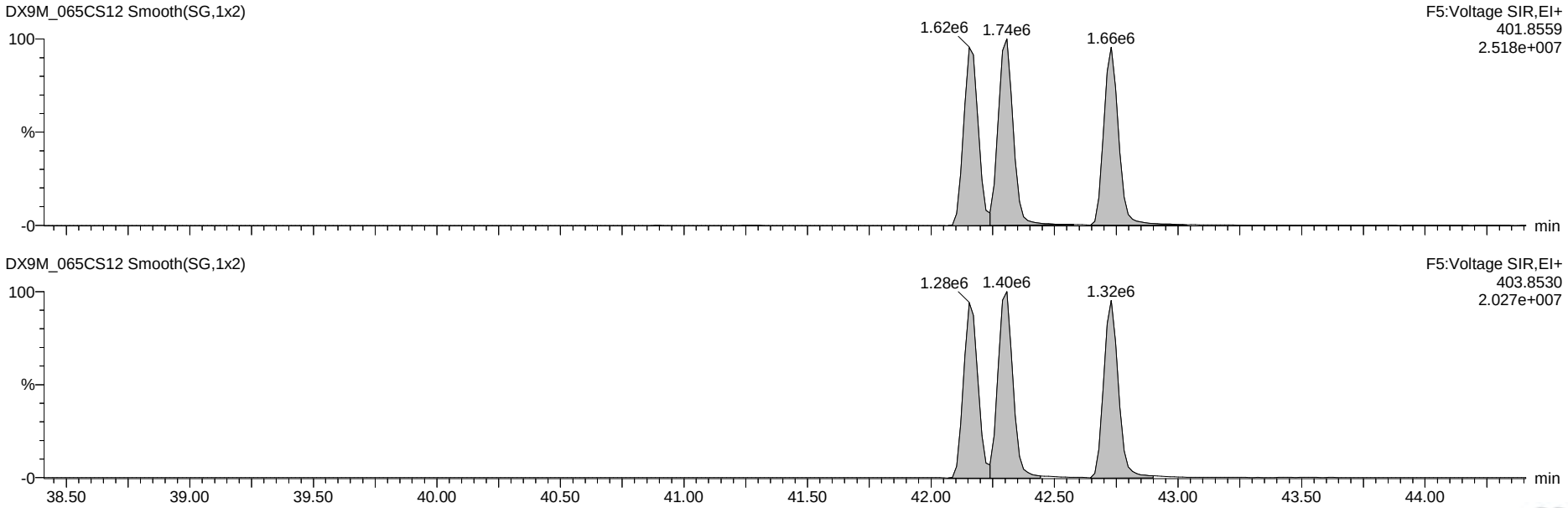
Total Hexa-Dioxins



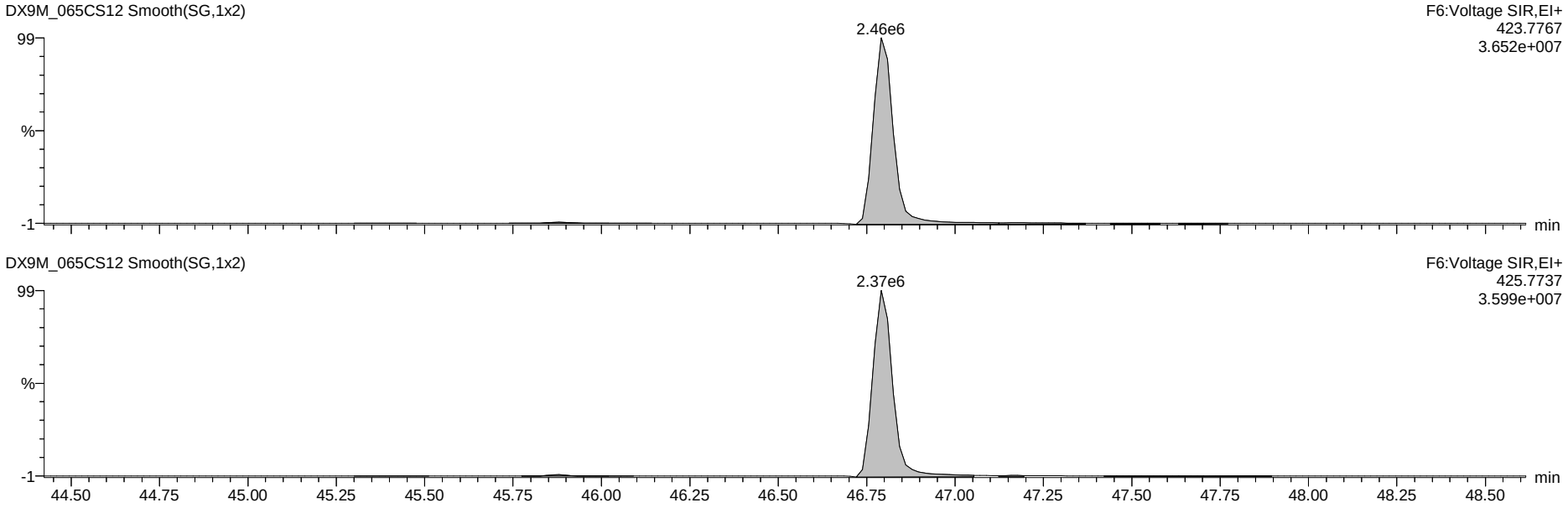
13C-Hexa-Dioxins



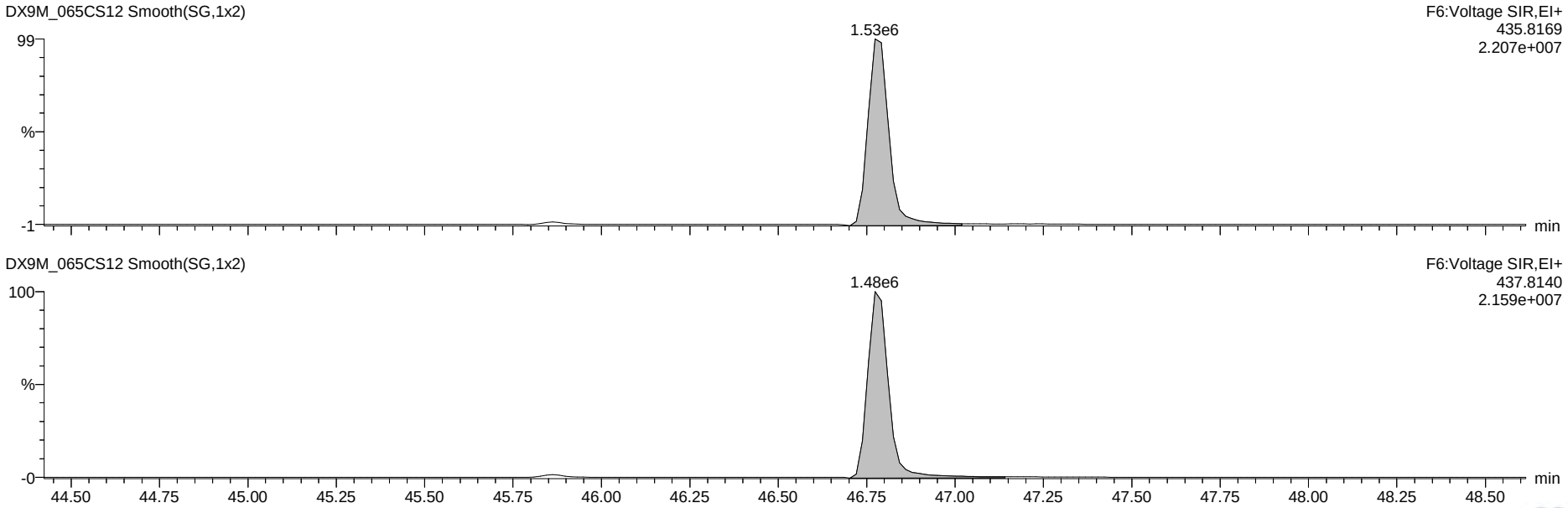
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_065C-7A.qld

Name: DX9M_065CS12, Date: 25-Jun-2019, Time: 19:52:17, ID: DX042E-CAL,,/01, Description: 1,,1.0uL CS-4

Total Hepta-Dioxins



13C-Hepta-Dioxins



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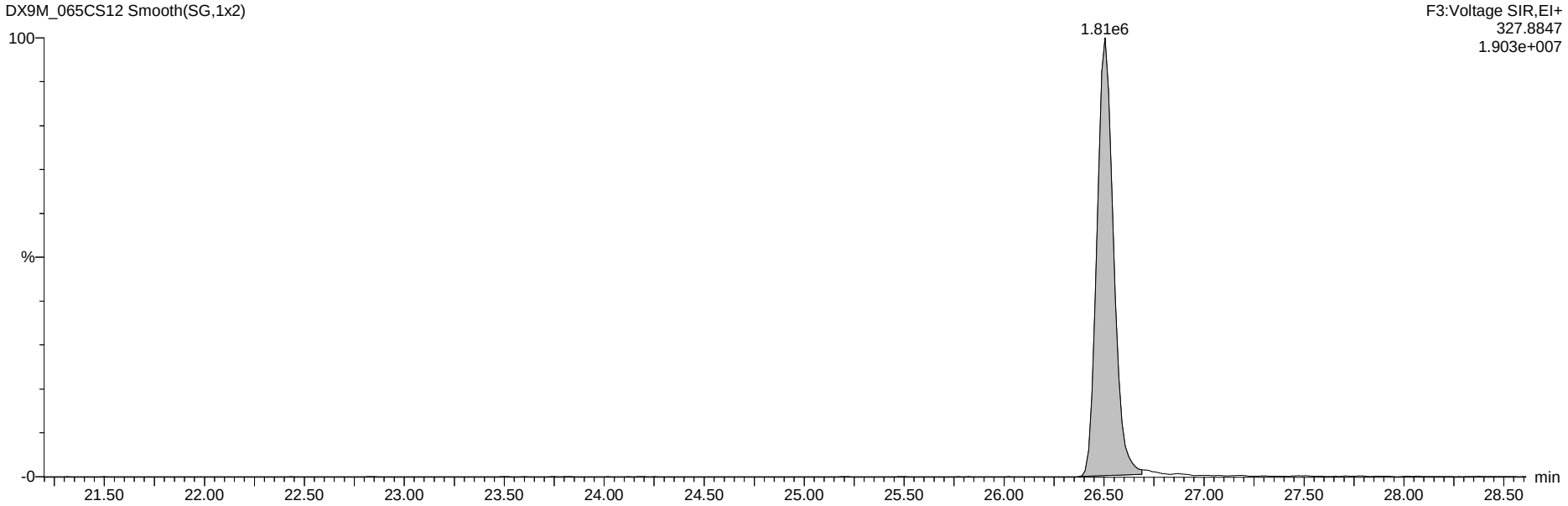
Name: DX9M_065CS12, Date: 25-Jun-2019, Time: 19:52:17, ID: DX042E-CAL,,/01, Description: 1,,1.0uL CS-4

37Cl-2,3,7,8-TCDD



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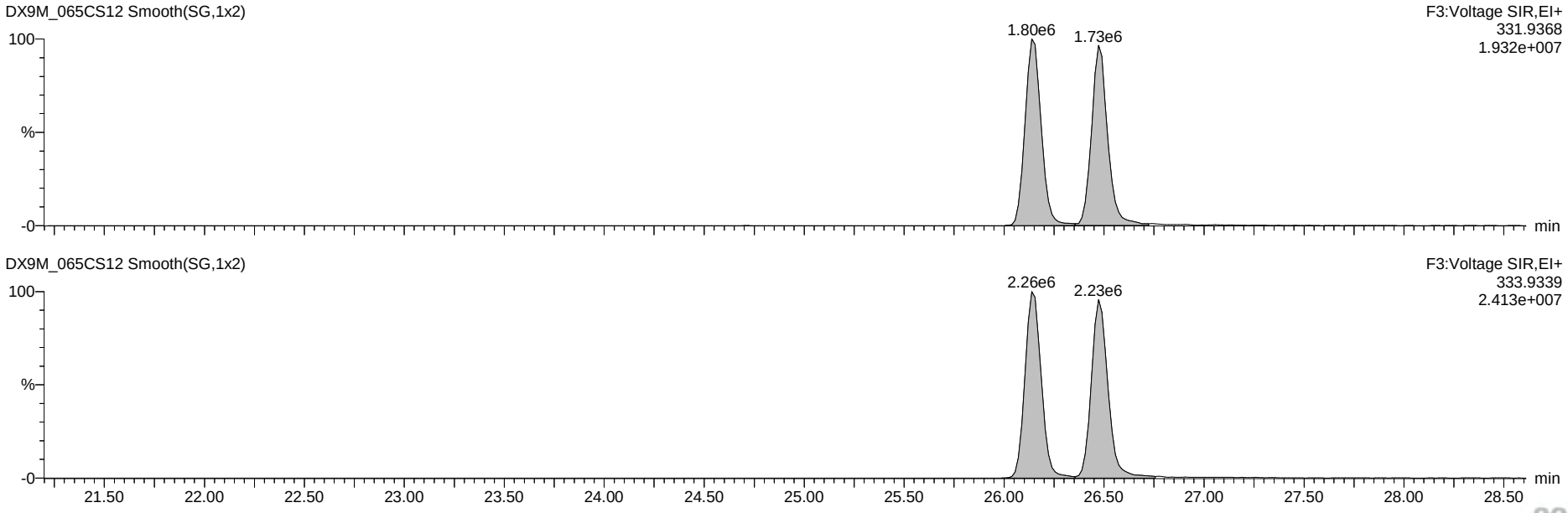

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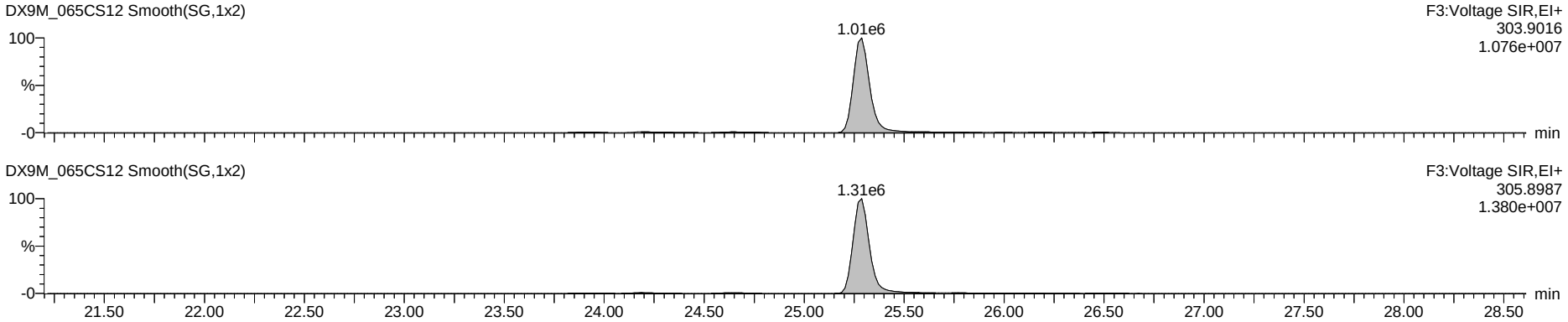
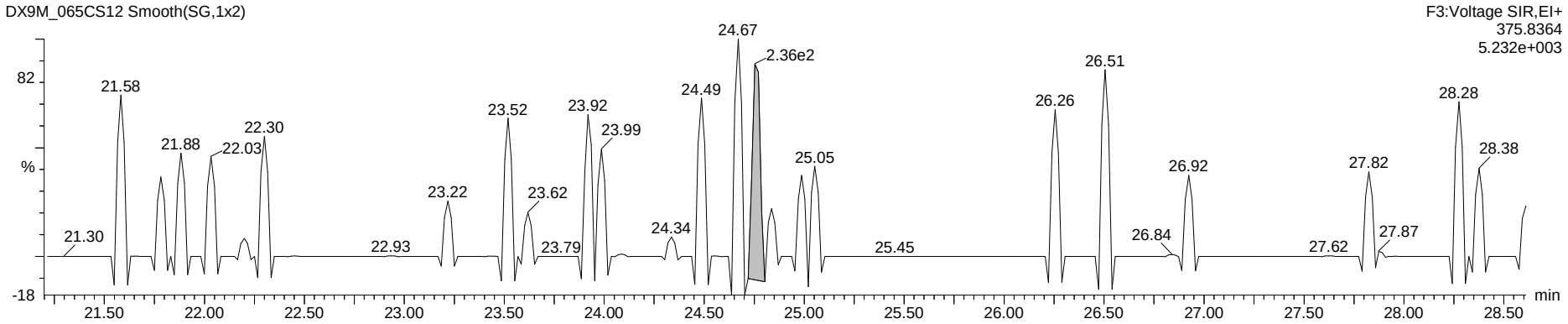
Name: DX9M_065CS12, Date: 25-Jun-2019, Time: 19:52:17, ID: DX042E-CAL,,/01, Description: 1,,1.0uL CS-4

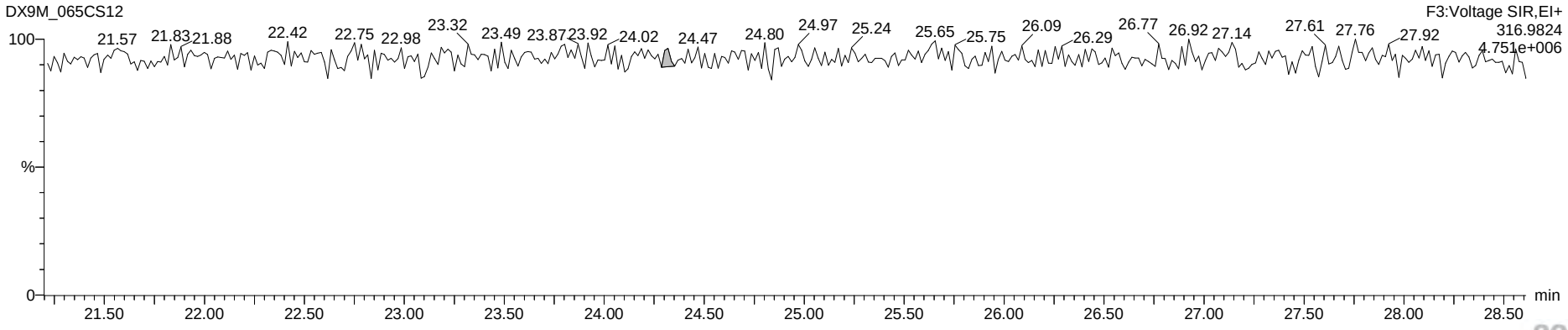
Total Tetra-Furans



Hexa DPE



Tetra Lock



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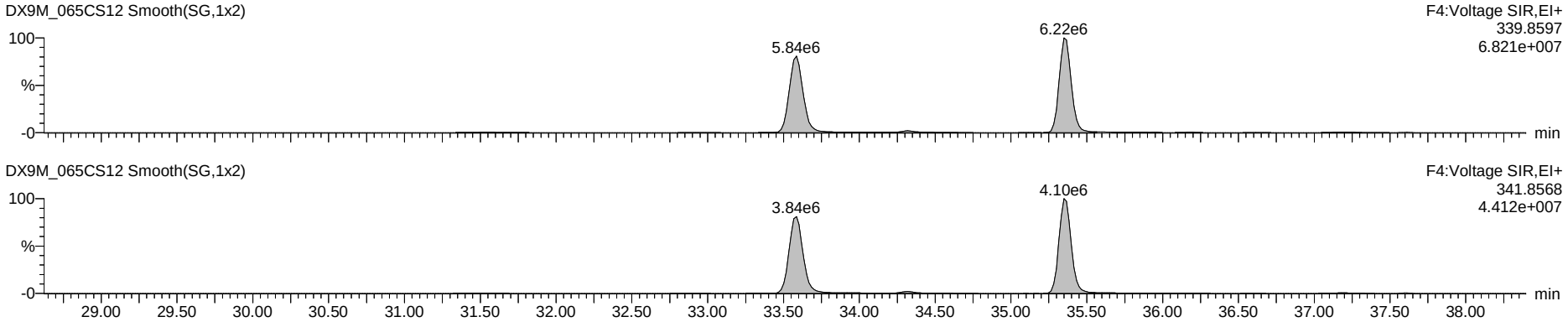
Total Penta-Furans



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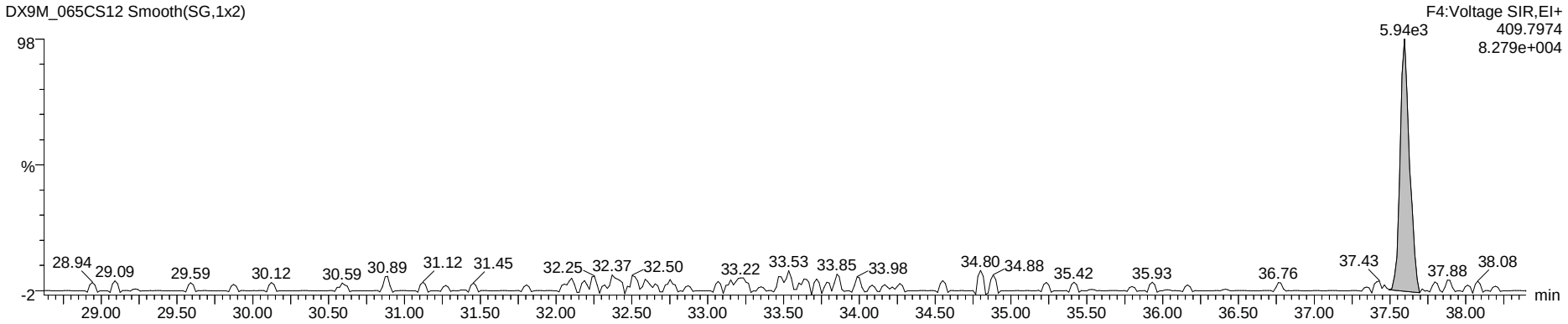
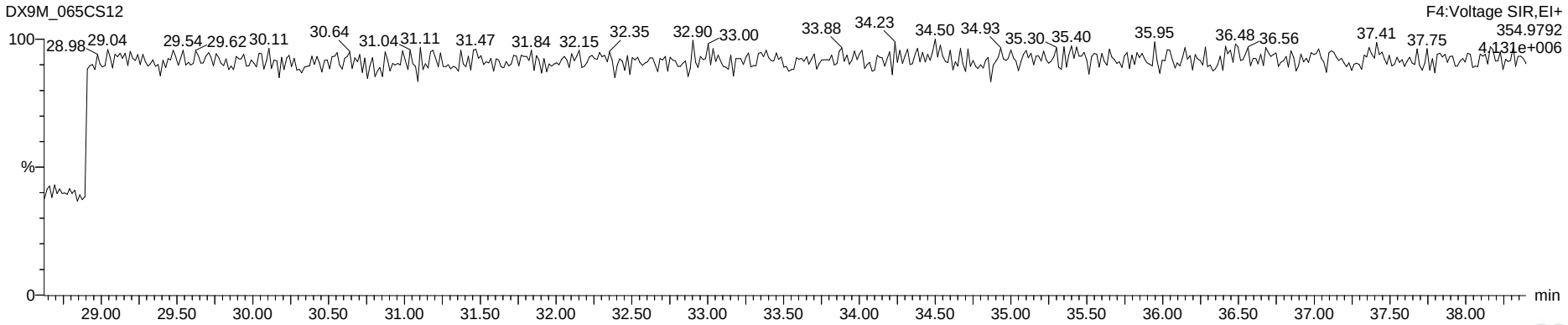


Penta Lock



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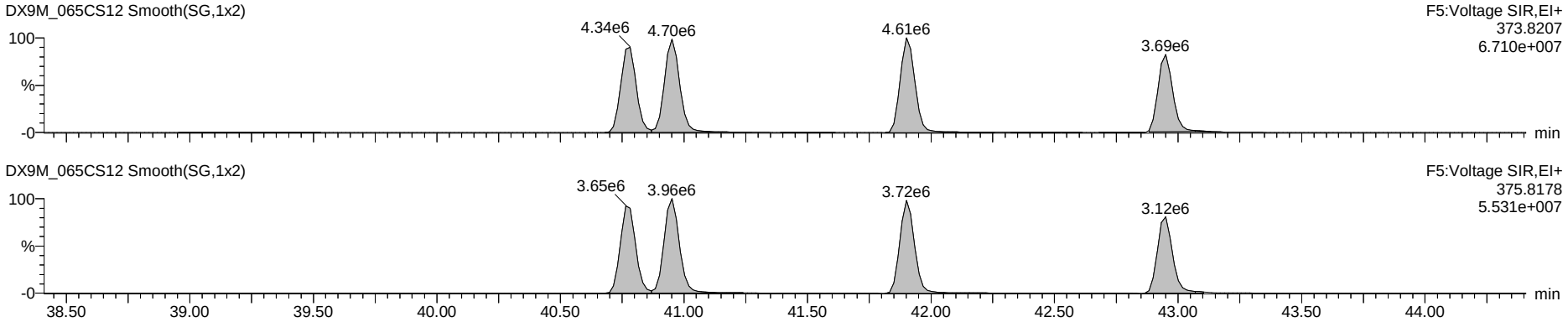
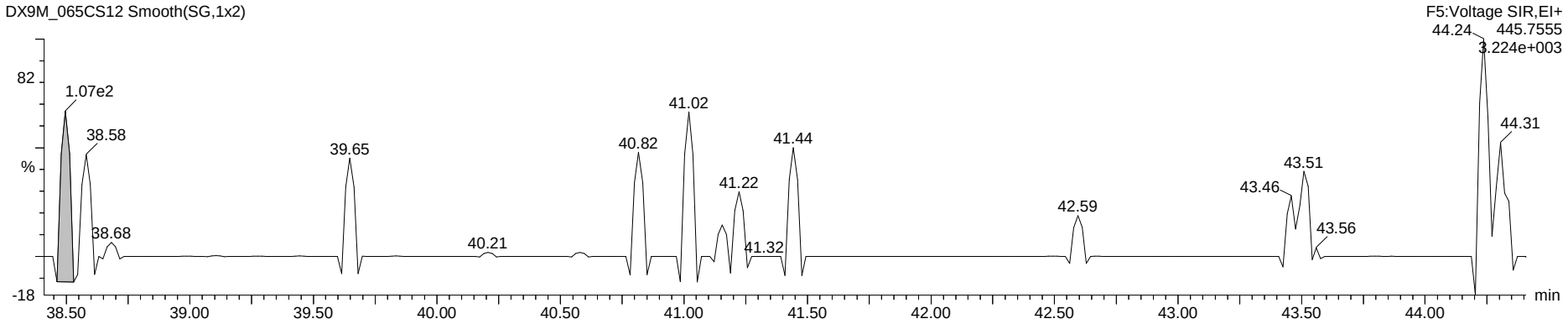
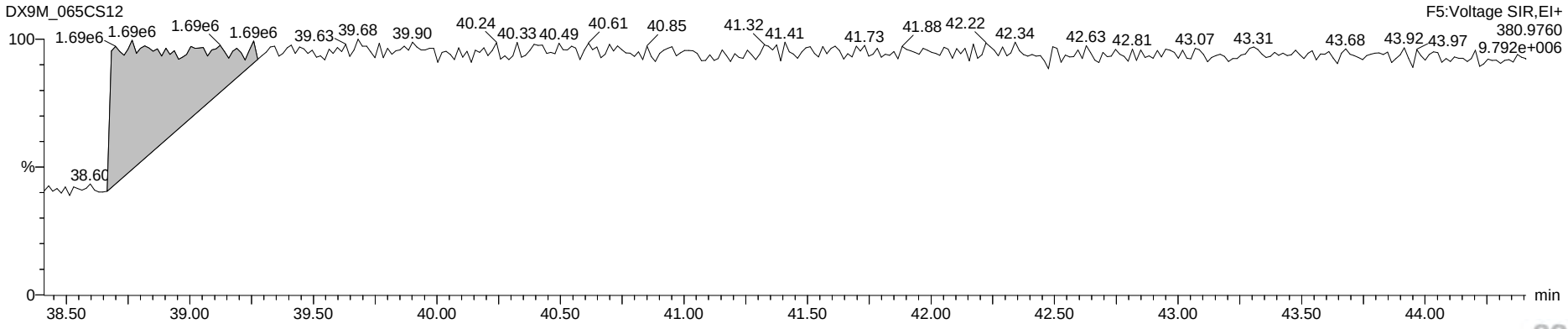
Total Hexa-Furans



Octa DPE



Hexa Lock



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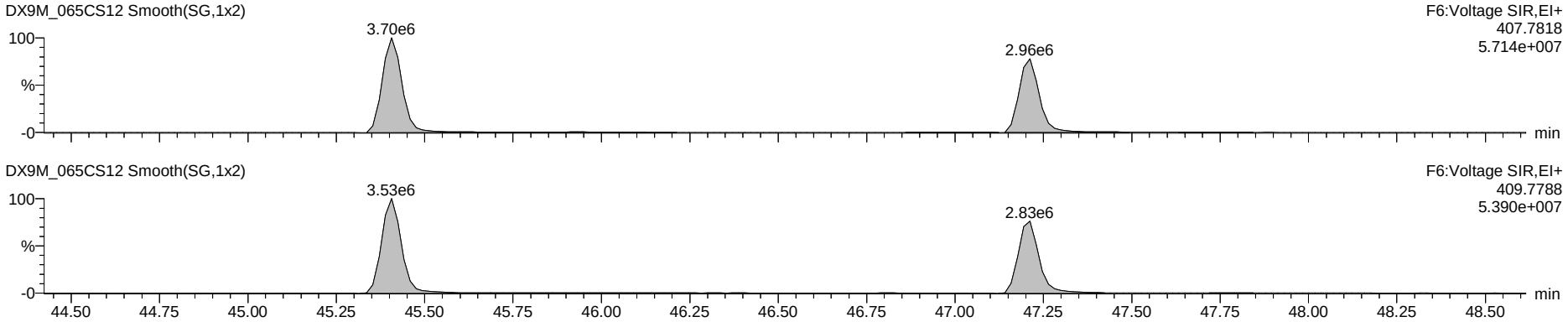
Total Hepta-Furans



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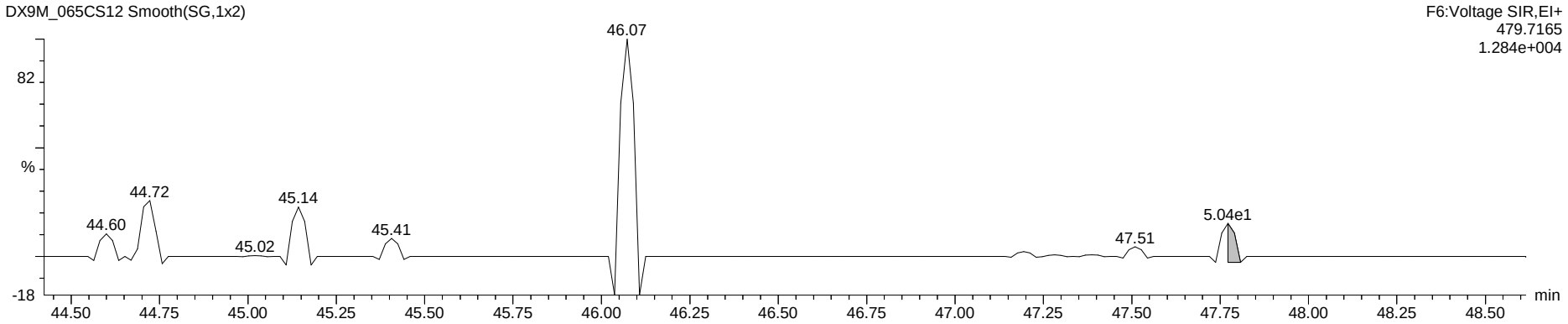
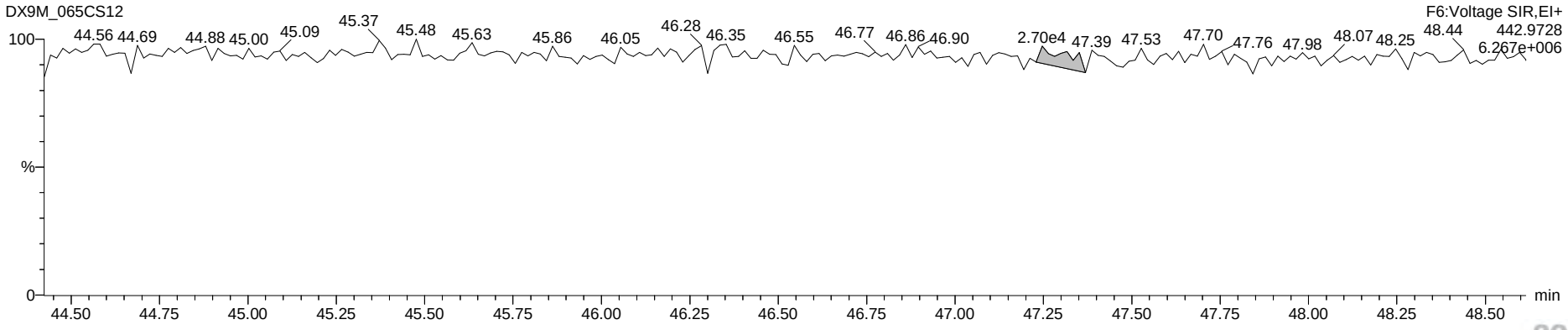


Hepta Lock



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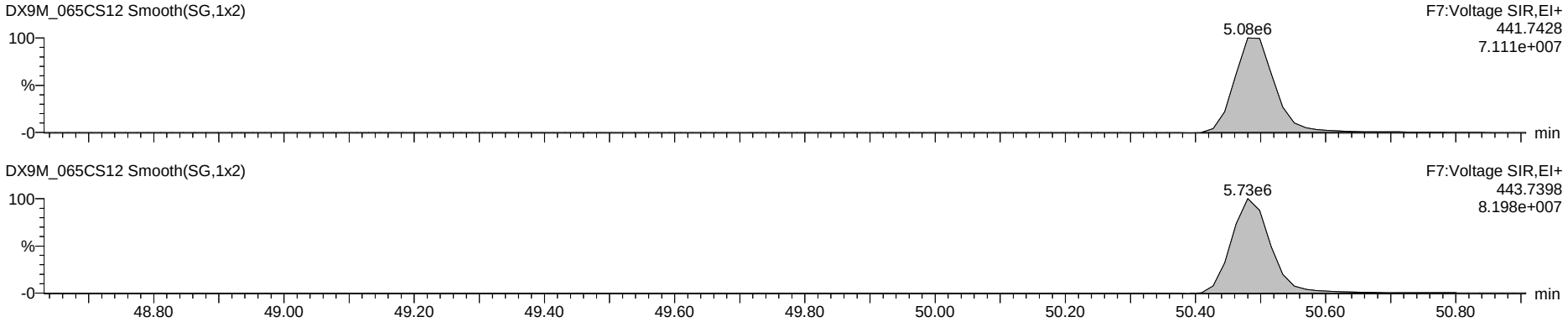
OCDF



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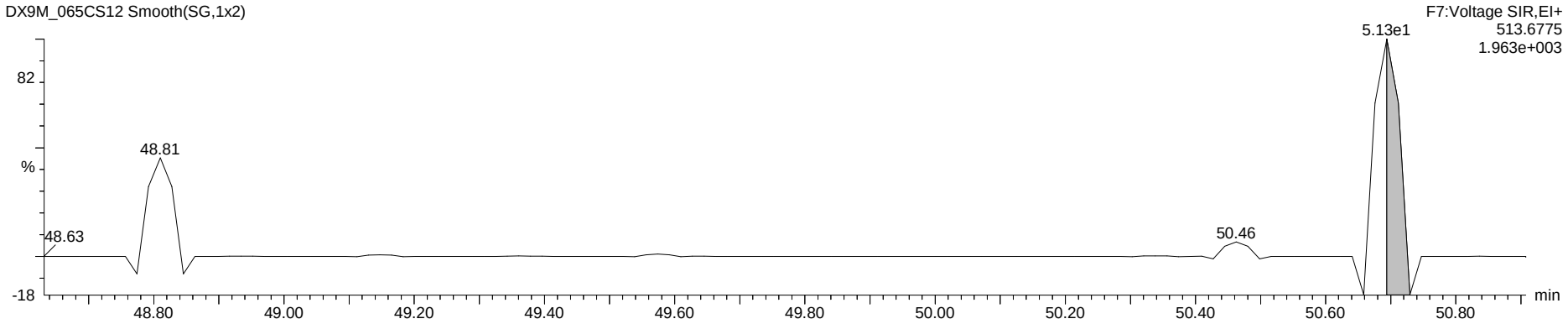

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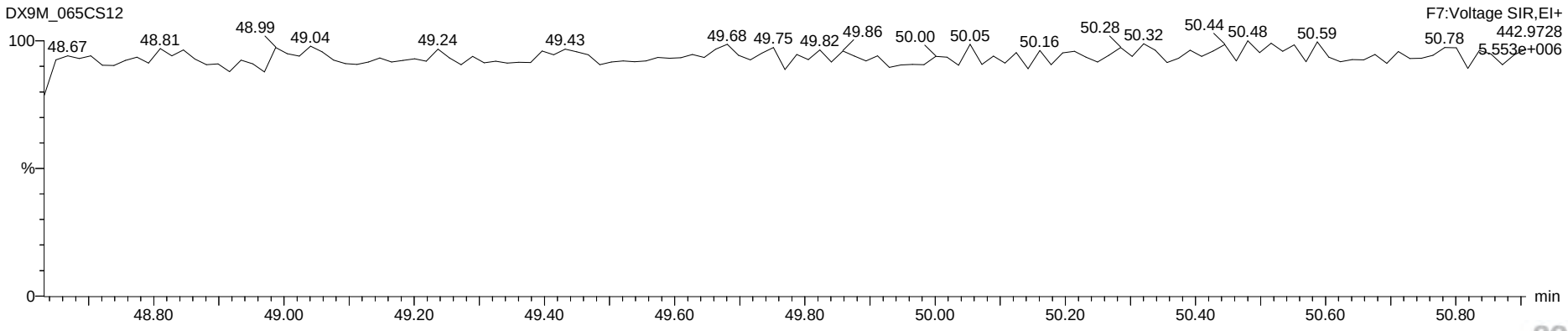

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#	Name	Amount	Resp.	Ratio	fails?	RT	RRF	Mean RRF	RRF SD	RRF %R...	S/N	1° S/N
1	2,3,7,8-TCDF	200.000	1.19e7	0.78	NO	25.29	0.908	0.9272	0.018	1.96	11383	18899
2	1,2,3,7,8-PeCDF	1000.000	5.40e7	1.57	NO	33.60	0.932	0.9296	0.023	2.43	36201	26663
3	2,3,4,7,8-PeCDF	1000.000	5.75e7	1.51	NO	35.37	0.965	0.9500	0.033	3.48	44953	34219
4	1,2,3,4,7,8-HxCDF	1000.000	4.55e7	1.20	NO	40.78	1.094	1.1051	0.022	1.95	82940	49235
5	1,2,3,6,7,8-HxCDF	1000.000	4.93e7	1.21	NO	40.97	1.088	1.0740	0.019	1.76	85923	50644
6	2,3,4,6,7,8-HxCDF	1000.000	4.50e7	1.16	NO	41.92	1.108	1.1366	0.028	2.45	79542	48327
7	1,2,3,7,8,9-HxCDF	1000.000	3.92e7	1.20	NO	42.95	1.055	1.0544	0.026	2.45	71371	42786
8	1,2,3,4,6,7,8-HpCDF	1000.000	4.11e7	1.07	NO	45.41	1.264	1.2500	0.038	3.06	72776	32226
9	1,2,3,4,7,8,9-HpCDF	1000.000	3.33e7	0.99	NO	47.21	1.259	1.2532	0.027	2.15	58562	27920
10	OCDF	2000.000	6.47e7	0.90	NO	50.50	1.222	1.1384	0.075	6.56	547043	541837
11	2,3,7,8-TCDD	200.000	9.60e6	0.78	NO	26.52	1.118	1.1017	0.047	4.28	23358	25068
12	1,2,3,7,8-PeCDD	1000.000	3.53e7	0.62	NO	36.20	0.991	0.9887	0.009	0.96	32283	58641
13	1,2,3,4,7,8-HxCDD	1000.000	3.44e7	1.24	NO	42.19	1.019	1.0282	0.015	1.44	55482	49356
14	1,2,3,6,7,8-HxCDD	1000.000	3.45e7	1.24	NO	42.32	0.933	0.9421	0.023	2.49	53771	48249
15	1,2,3,7,8,9-HxCDD	1000.000	3.39e7	1.24	NO	42.75	0.960	0.9731	0.020	2.10	51966	46817
16	1,2,3,4,6,7,8-HpCDD	1000.000	2.69e7	1.03	NO	46.81	0.773	0.7796	0.021	2.71	35669	39415
17	OCDD	2000.000	5.33e7	0.88	NO	50.43	1.006	0.9813	0.074	7.59	488135	554913
18	13C-2,3,7,8-TCDF	100.000	6.58e6	0.77	NO	25.27	1.566	1.5227	0.041	2.68	3610	5024
19	13C-1,2,3,7,8-PeCDF	100.000	5.80e6	1.53	NO	33.57	1.380	1.2375	0.076	6.17	3669	3165
20	13C-2,3,4,7,8-PeCDF	100.000	5.96e6	1.54	NO	35.35	1.420	1.2765	0.081	6.33	4458	3737
21	13C-1,2,3,4,7,8-HxCDF	100.000	4.16e6	0.52	NO	40.77	1.231	1.2136	0.017	1.43	3068	5466
22	13C-1,2,3,6,7,8-HxCDF	100.000	4.53e6	0.52	NO	40.93	1.342	1.3340	0.030	2.28	3289	5892
23	13C-2,3,4,6,7,8-HxCDF	100.000	4.06e6	0.52	NO	41.88	1.201	1.2025	0.016	1.34	3038	5478
24	13C-1,2,3,7,8,9-HxCDF	100.000	3.71e6	0.52	NO	42.93	1.099	1.0693	0.029	2.70	2860	5079
25	13C-1,2,3,4,6,7,8-HpCDF	100.000	3.25e6	0.46	NO	45.39	0.962	0.9996	0.154	15.39	3270	3534
26	13C-1,2,3,4,7,8,9-HpCDF	100.000	2.64e6	0.45	NO	47.19	0.782	0.8111	0.137	16.87	2727	2939
27	13C-2,3,7,8-TCDD	100.000	4.29e6	0.80	NO	26.49	1.023	0.9686	0.032	3.31	2569	2020
28	13C-1,2,3,7,8-PeCDD	100.000	3.57e6	0.63	NO	36.16	0.849	0.7690	0.046	5.95	5735	6690
29	13C-1,2,3,4,7,8-HxCDD	100.000	3.37e6	1.28	NO	42.17	0.998	0.9685	0.020	2.02	6951	4971
30	13C-1,2,3,6,7,8-HxCDD	100.000	3.69e6	1.23	NO	42.31	1.093	1.0706	0.020	1.85	7182	5378
31	13C-1,2,3,4,6,7,8-HpCDD	100.000	3.48e6	1.04	NO	46.79	1.029	1.0837	0.164	15.09	11333	8084
32	13C-OCDD	200.000	5.29e6	0.89	NO	50.41	0.783	0.7969	0.168	21.03	36909271	21904788
33	13C-1,2,3,4-TCDD	100.000	4.20e6	0.79	NO	26.16	41984.719	40244.29...	2071.696	5.15	2541	2065
34	13C-1,2,3,7,8,9-HxCDD	100.000	3.38e6	1.22	NO	42.73	33794.978	29034.26...	3025.332	10.42	6470	4879
35	37Cl-2,3,7,8-TCDD	200.000	9.79e6			26.52	1.166	1.0674	0.080	7.49	10875	
36	Total Tetra-Furans	200.000						0.9276	0.016	1.76		
37	Total Tetra-Dioxins	200.000						1.1017	0.047	4.28		
38	Total Penta-Furans	1000.000						0.9296	0.023	2.43		
39	Total Penta-Dioxins	1000.000						0.9887	0.009	0.96		
40	Total Hexa-Furans	1000.000						1.1051	0.022	1.95		
41	Total Hexa-Dioxins	1000.000						1.0282	0.015	1.44		
42	Total Hepta-Furans	1000.000						1.2500	0.038	3.06		
43	Total Hepta-Dioxins	1000.000						0.7796	0.021	2.71		
44	Hexa DPE	0.000	2.40e2			23.64	0.000				34	
45	Hepta DPE	0.000	3.21e4			37.60	0.000				206	
46	Octa DPE	0.000	7.55e1			40.58	0.000				303	
47	Nona DPE	0.000	1.30e2			47.93	0.000				1348	
48	Deca DPE	0.000	4.24e0			50.41	0.000				59	
49	Tetra Lock	0.000	9.34e3			23.85	0.000				0	
50	Penta Lock	0.000	1.18e6			29.19	0.000				1	
51	Hexa Lock	0.000										
52	Hepta Lock	0.000	4.33e4			47.21	0.000				1	
53	Octa Lock	0.000	4.33e4			49.01	0.000				1	
54	13C-Tetra-Furans	100.000						1.5227	0.041	2.68		
55	13C-Tetra-Dioxins	100.000						0.9686	0.032	3.31		

pv'd by KB 22-JUL-2019

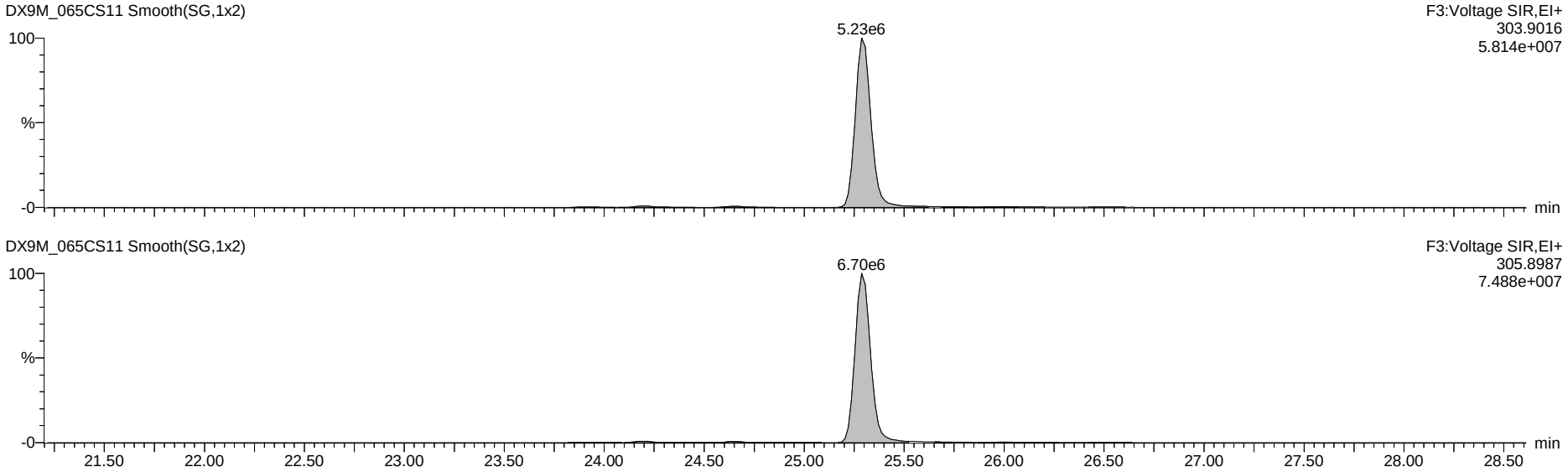
SV:pm 22-JUL-19

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_065C-7A.qld

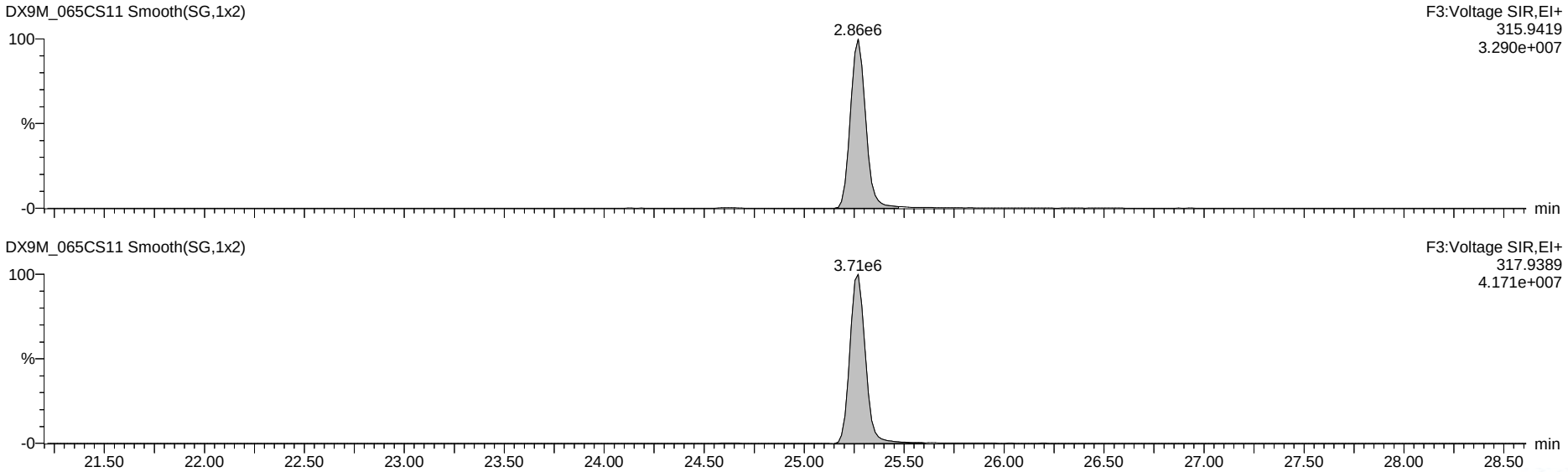
Method: G:\Masslynx\Inst_M\Projects\190510DX.PRO\MethDB\DX_1613B_16.mdb 18 Jul 2019 14:33:32
Calibration: 22 Jul 2019 09:01:47

Name: DX9M_065CS11, Date: 25-Jun-2019, Time: 18:57:54, ID: DX042F-CAL,,/01, Description: 1,,1.0uL CS-5

Total Tetra-Furans



13C-Tetra-Furans



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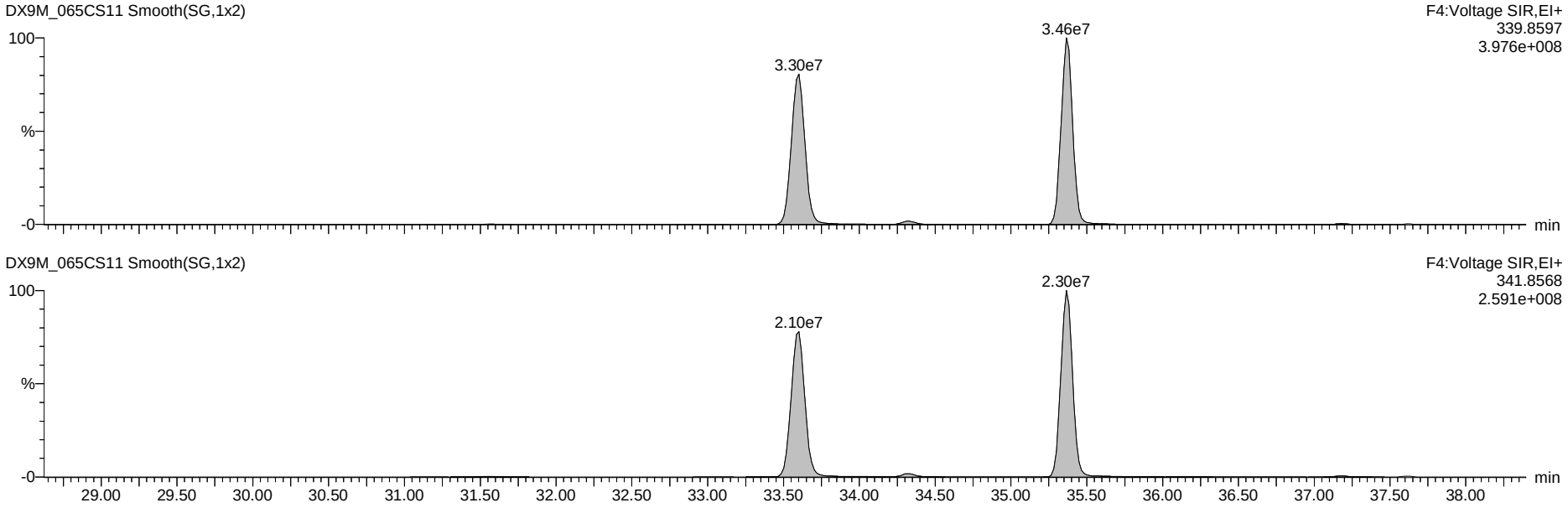
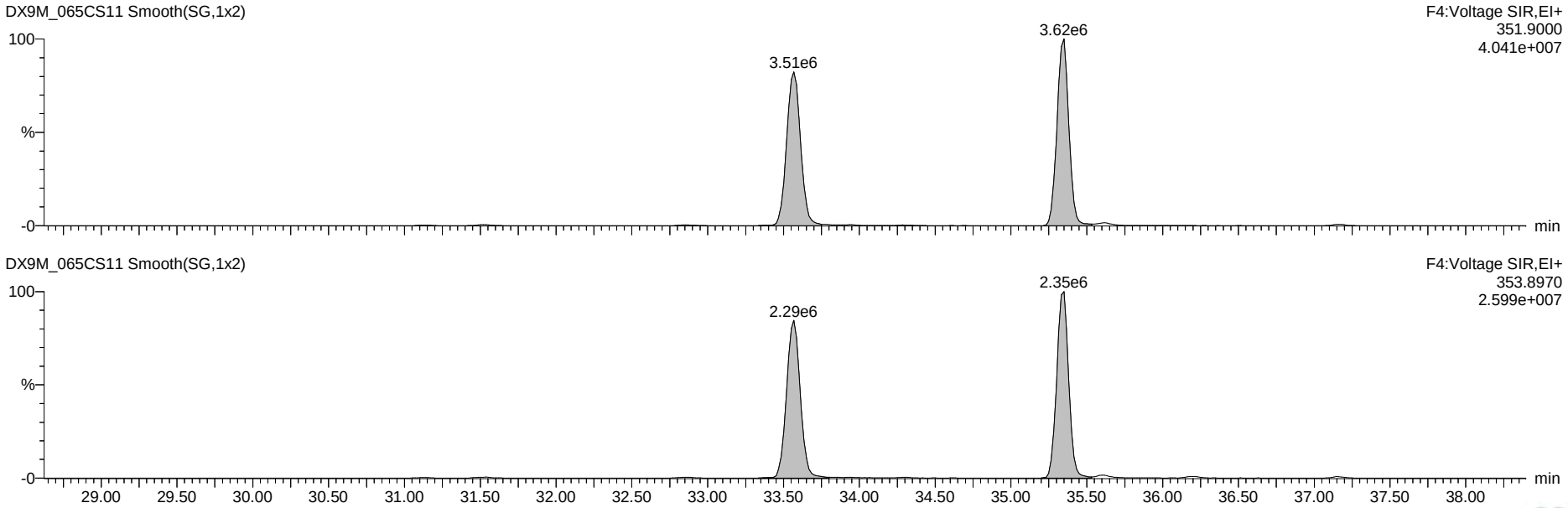
Name: DX9M_065CS11, Date: 25-Jun-2019, Time: 18:57:54, ID: DX042F-CAL,,/01, Description: 1,,1.0uL CS-5

Total Penta-Furans



13C-Penta-Furans



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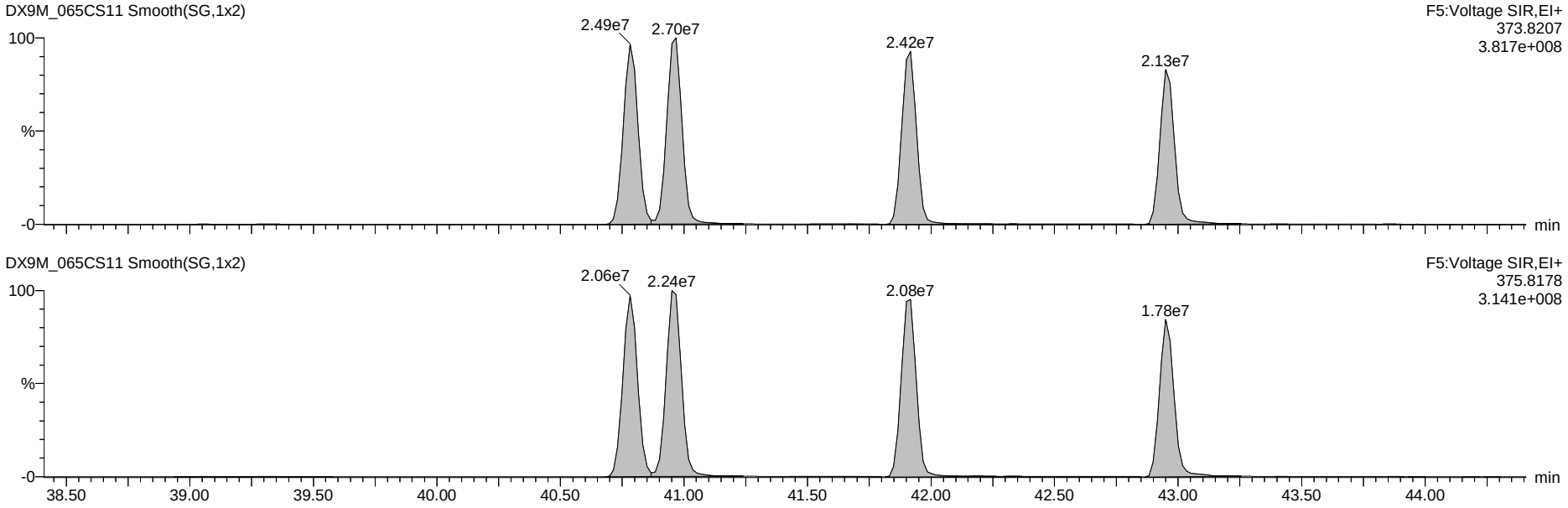
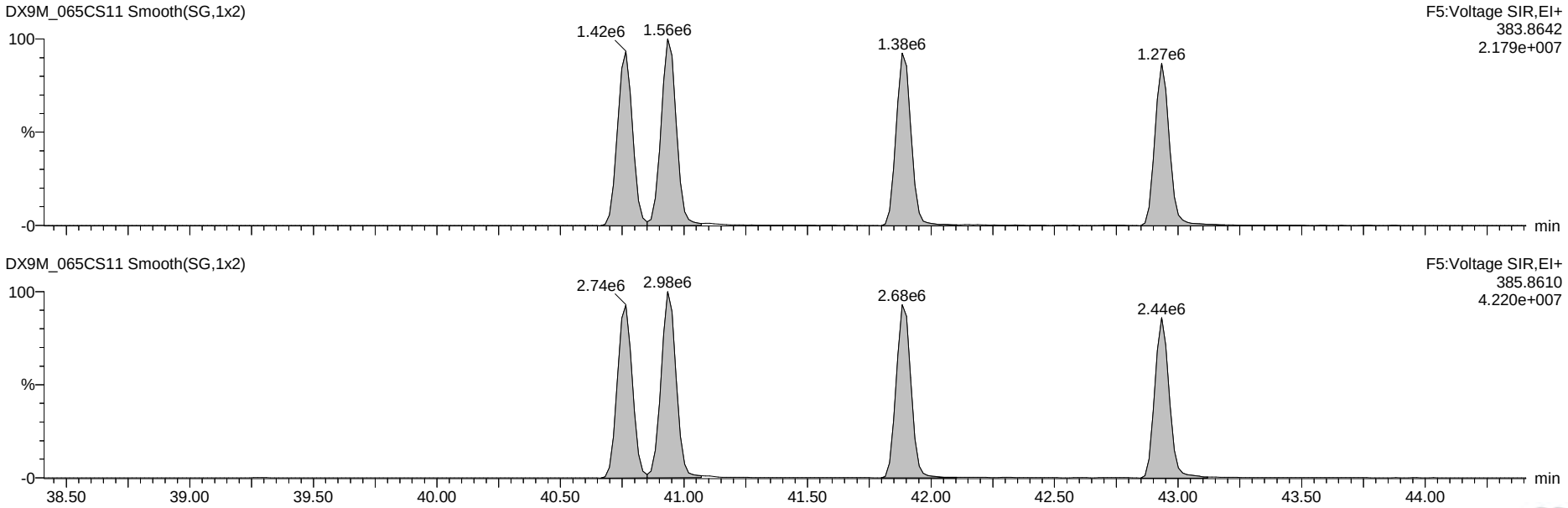
Total Hexa-Furans



13C-Hexa-Furans



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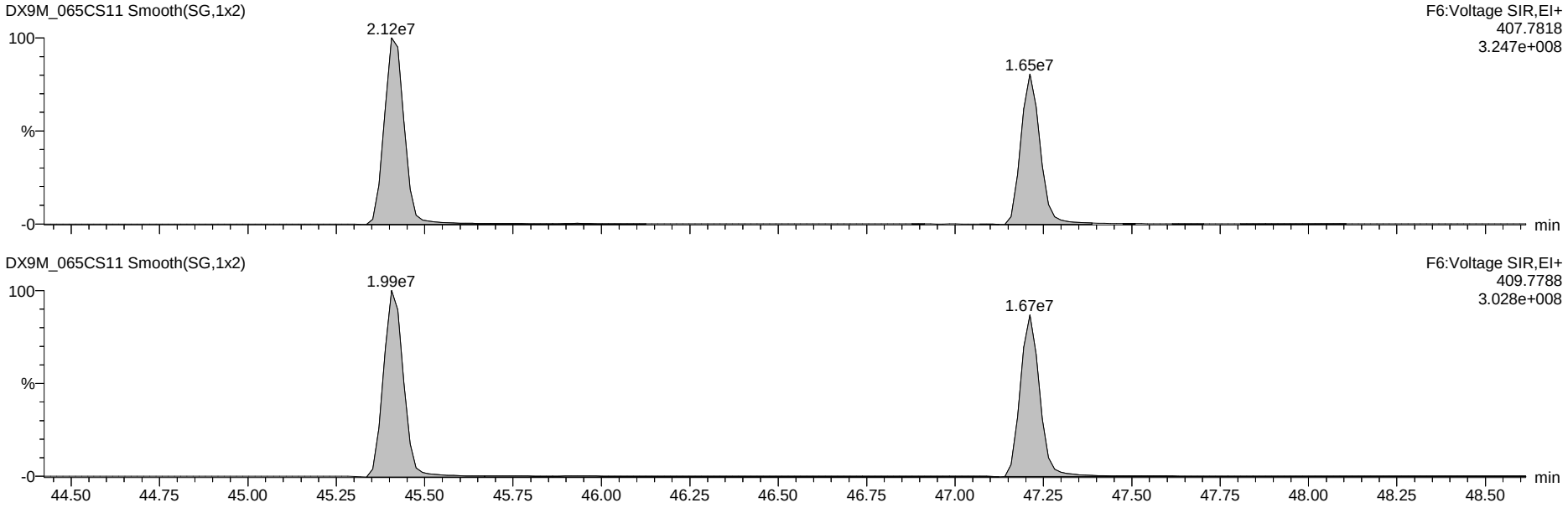
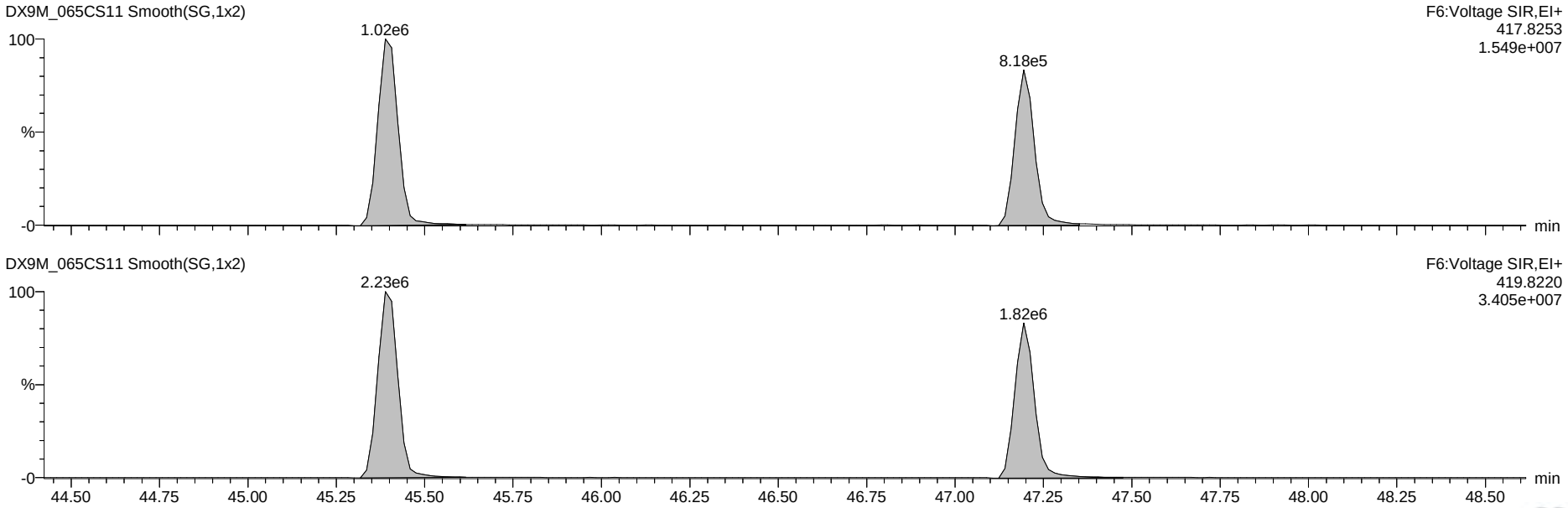
Total Hepta-Furans



13C-Hepta-Furans



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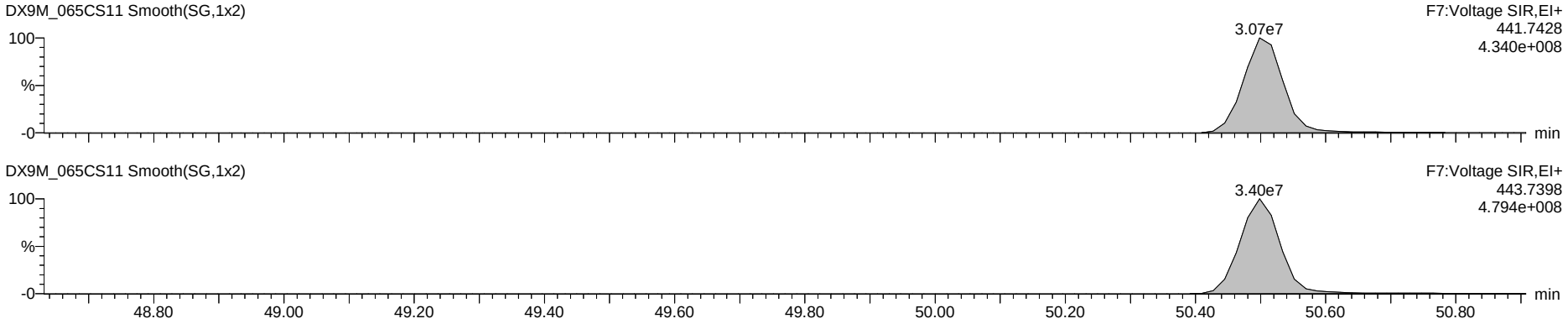
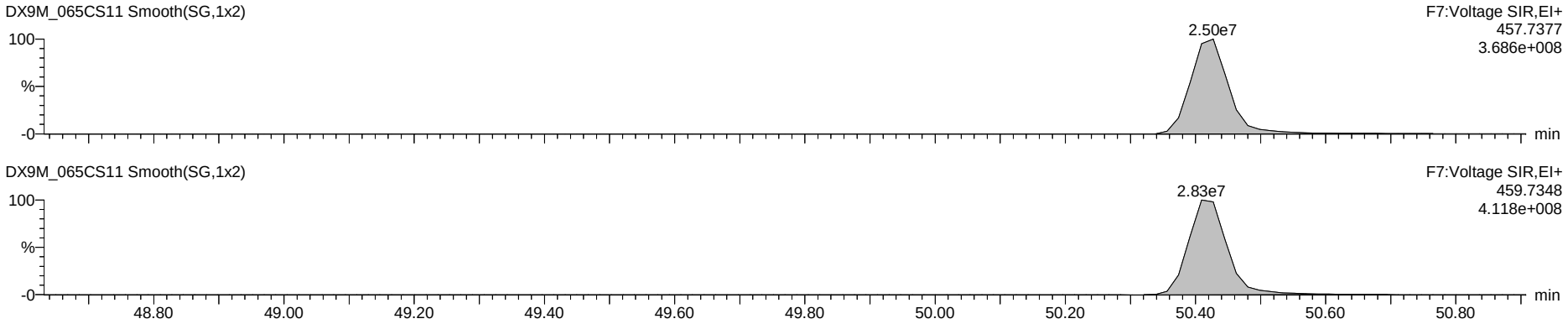
Name: DX9M_065CS11, Date: 25-Jun-2019, Time: 18:57:54, ID: DX042F-CAL,,/01, Description: 1,,1.0uL CS-5

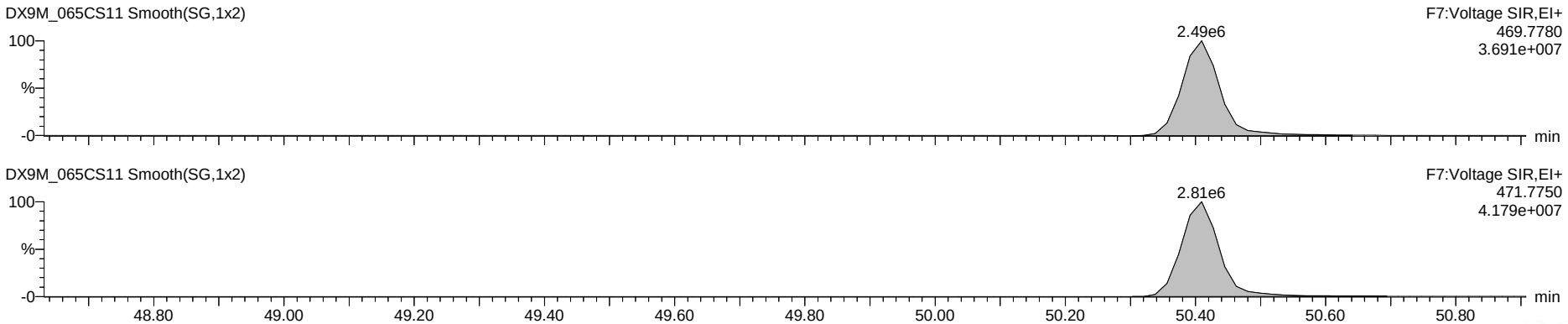
OCDF



OCDD



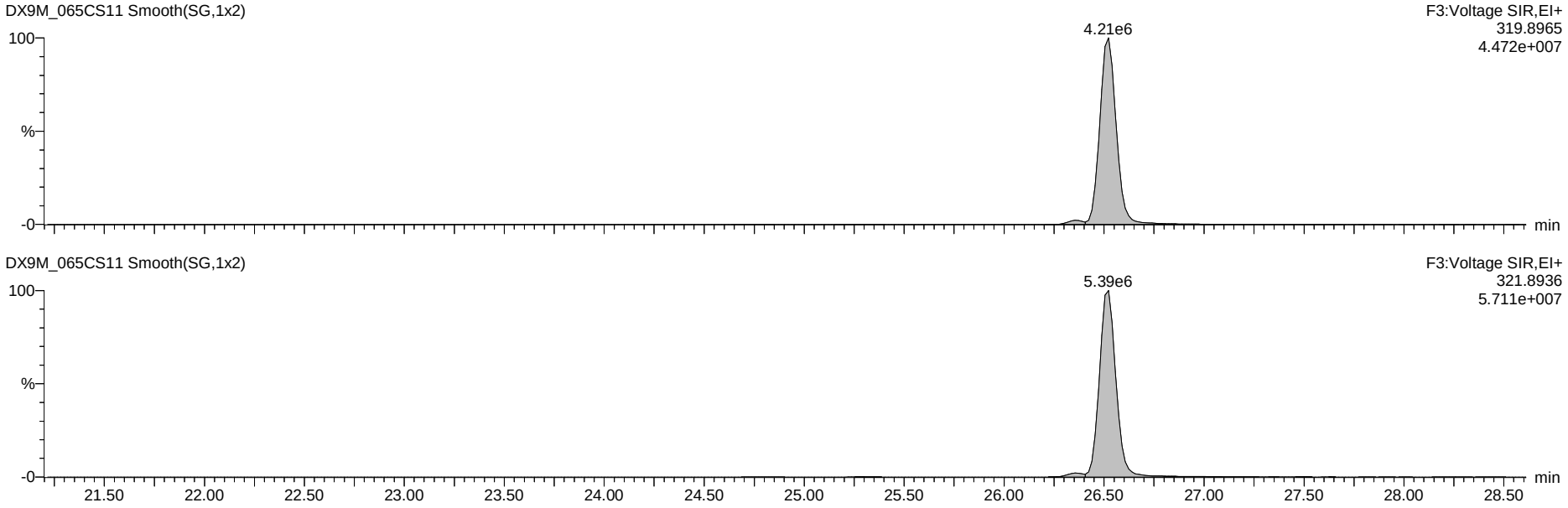
13C-OCDD



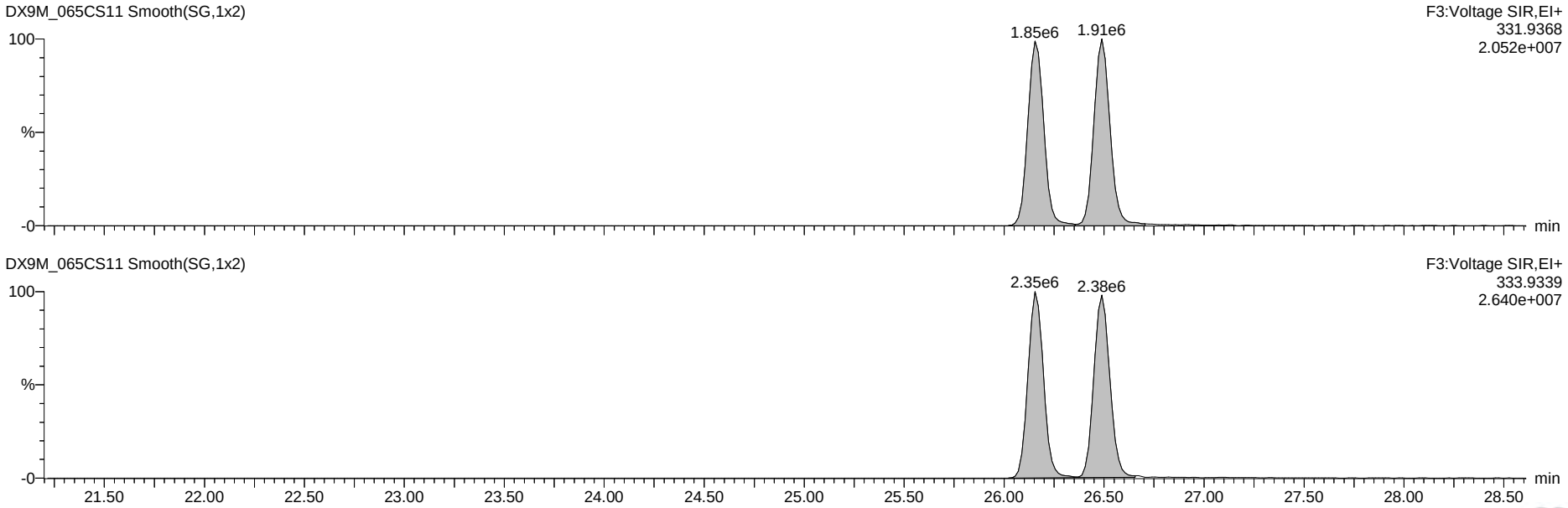
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_065C-7A.qld

Name: DX9M_065CS11, Date: 25-Jun-2019, Time: 18:57:54, ID: DX042F-CAL,,/01, Description: 1,,1.0uL CS-5

Total Tetra-Dioxins



13C-Tetra-Dioxins



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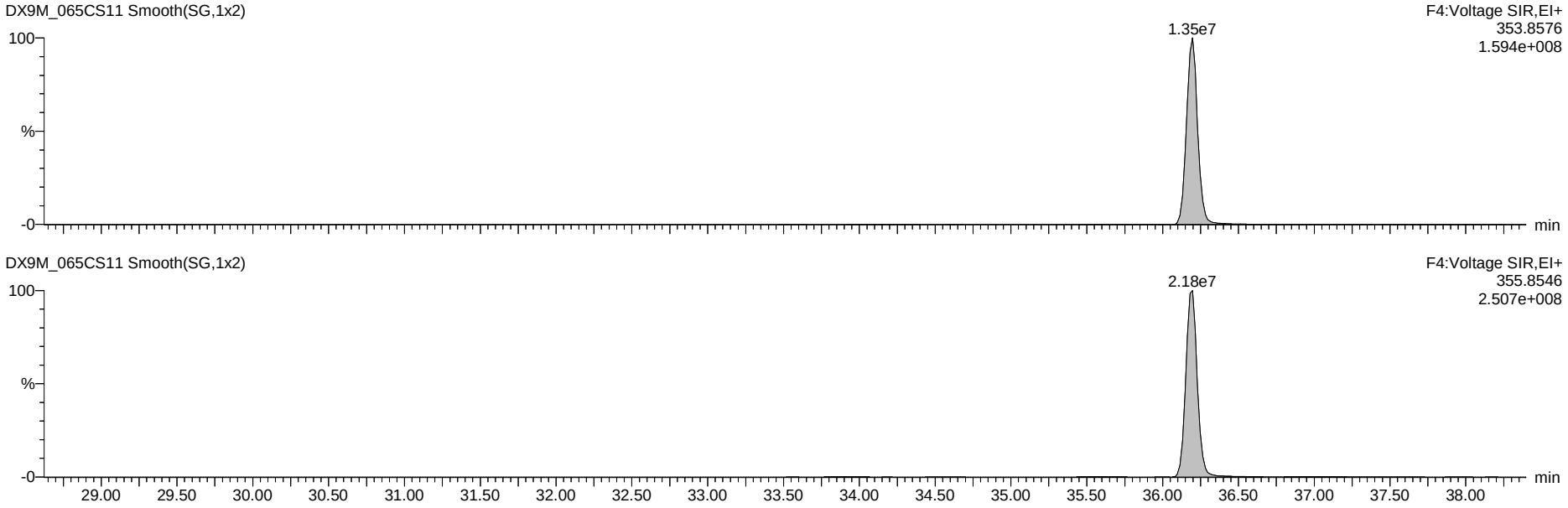
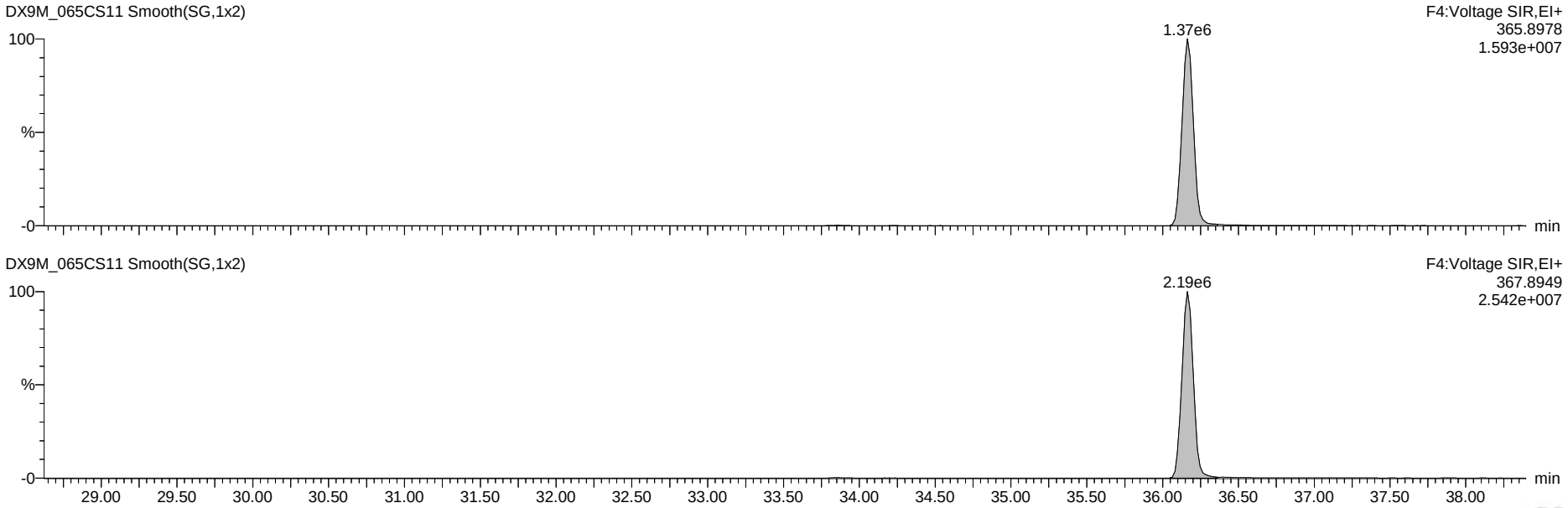
Name: DX9M_065CS11, Date: 25-Jun-2019, Time: 18:57:54, ID: DX042F-CAL,,/01, Description: 1,,1.0uL CS-5

Total Penta-Dioxins



13C-Penta-Dioxins



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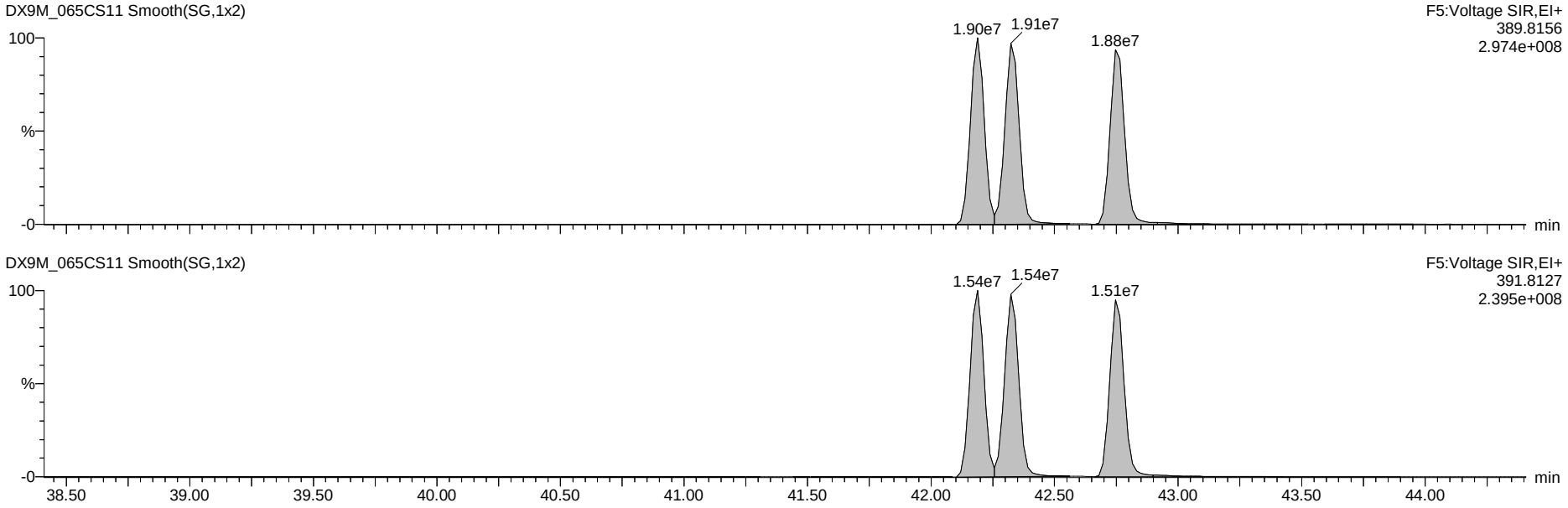
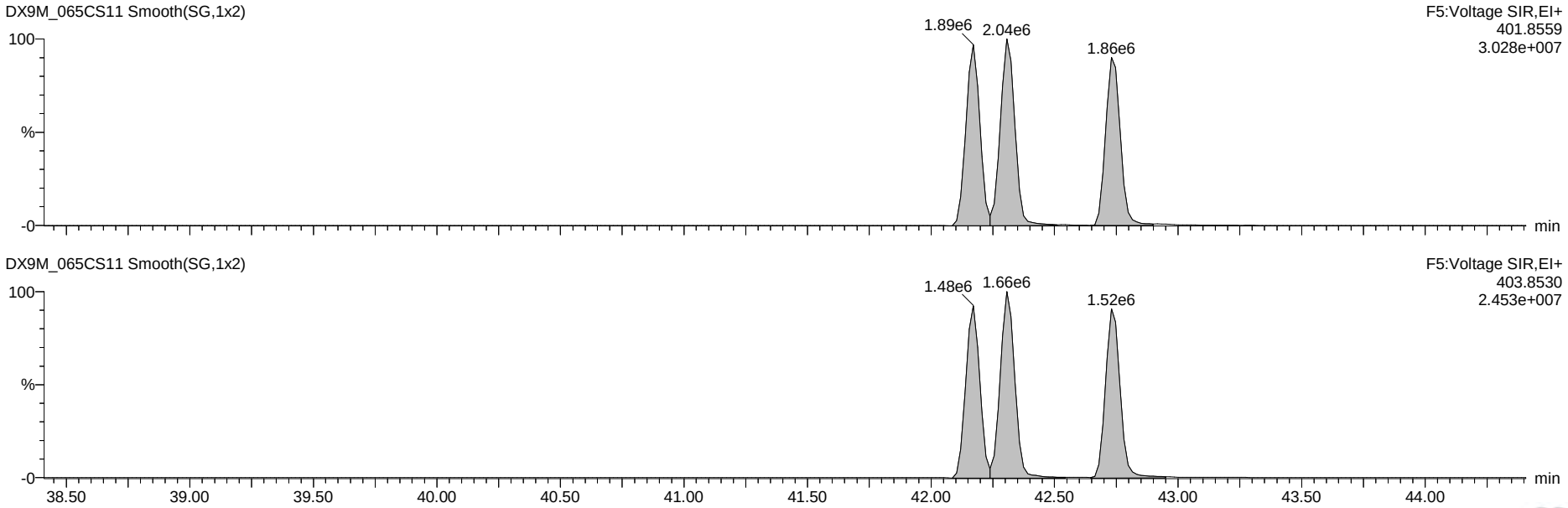
Name: DX9M_065CS11, Date: 25-Jun-2019, Time: 18:57:54, ID: DX042F-CAL,,/01, Description: 1,,1.0uL CS-5

Total Hexa-Dioxins



13C-Hexa-Dioxins



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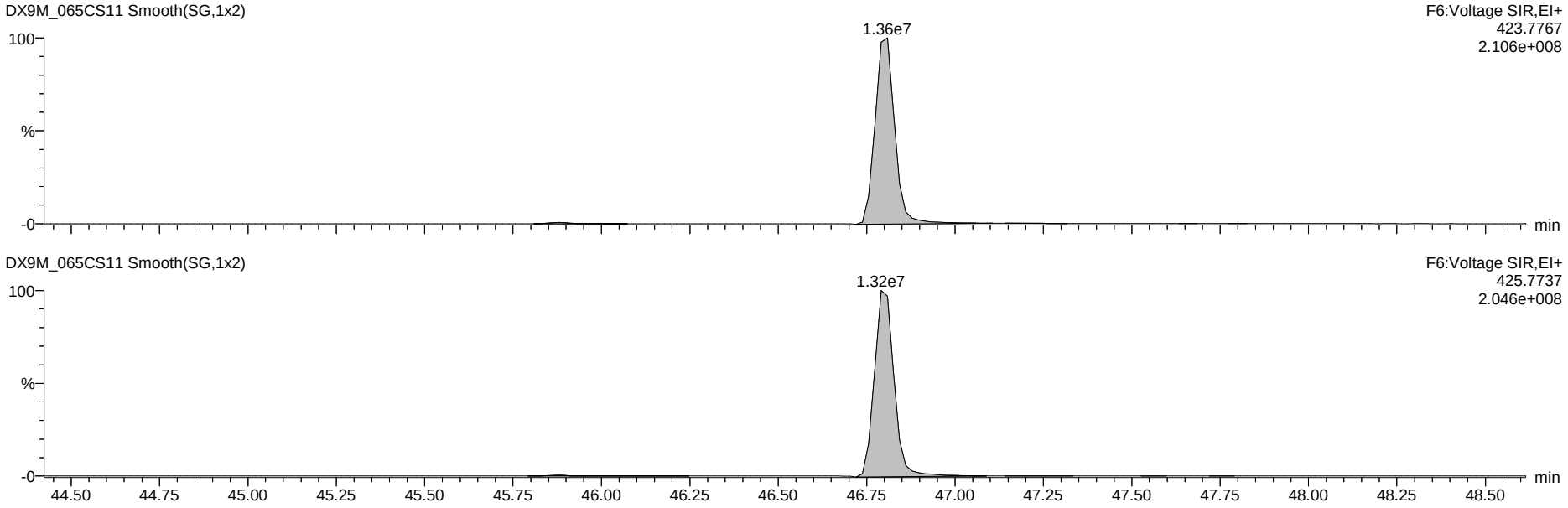
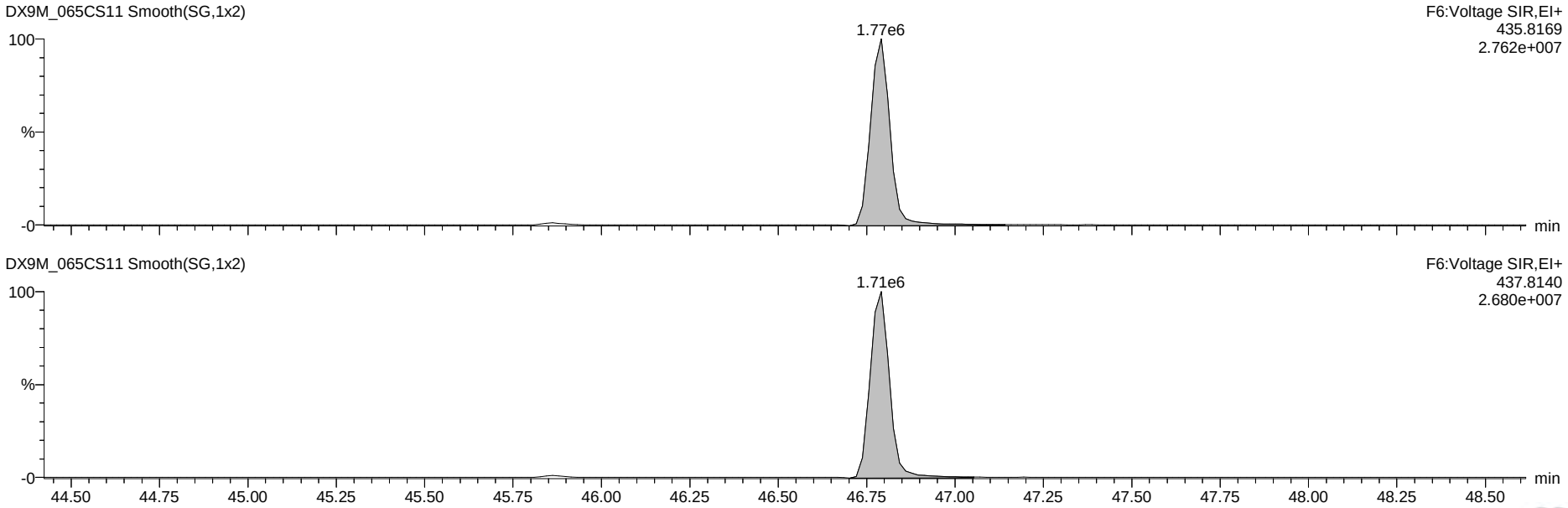
Name: DX9M_065CS11, Date: 25-Jun-2019, Time: 18:57:54, ID: DX042F-CAL,,/01, Description: 1,,1.0uL CS-5

Total Hepta-Dioxins



13C-Hepta-Dioxins



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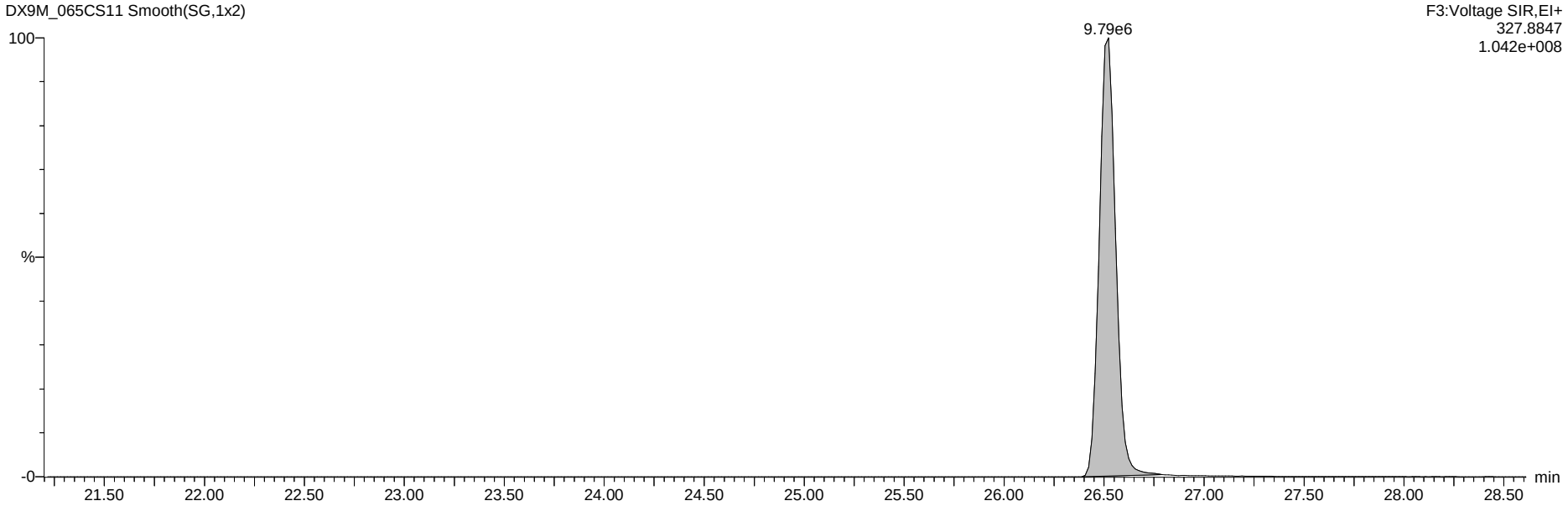
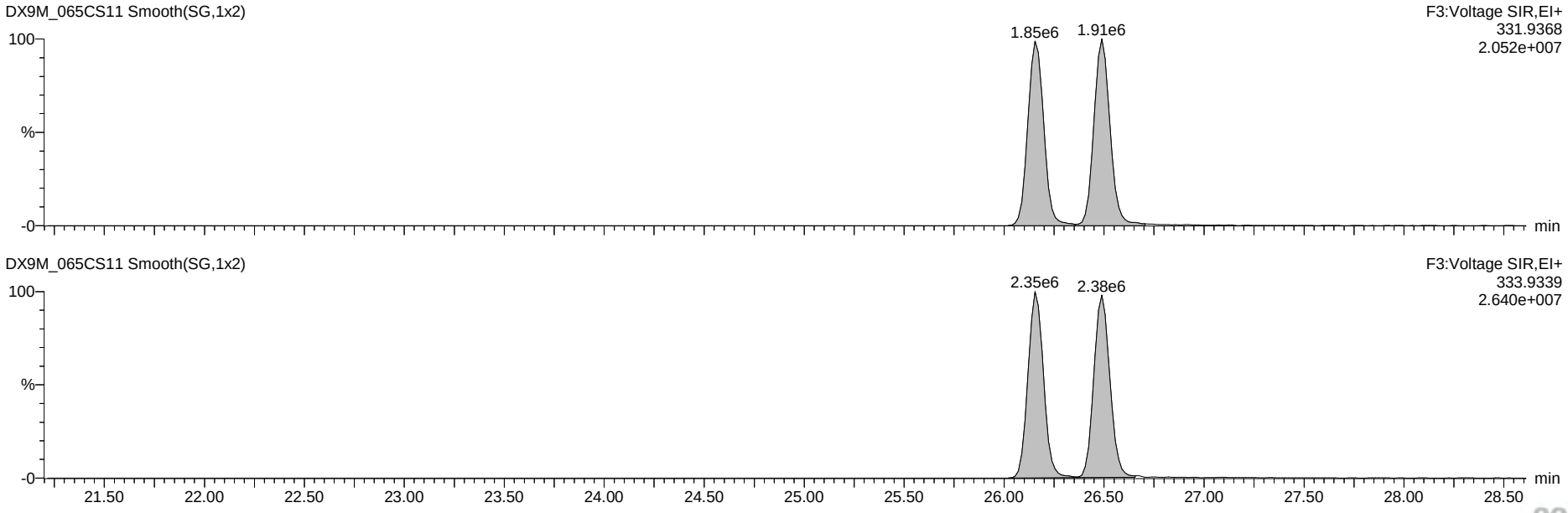
Name: DX9M_065CS11, Date: 25-Jun-2019, Time: 18:57:54, ID: DX042F-CAL,,/01, Description: 1,,1.0uL CS-5

37Cl-2,3,7,8-TCDD



13C-Tetra-Dioxins



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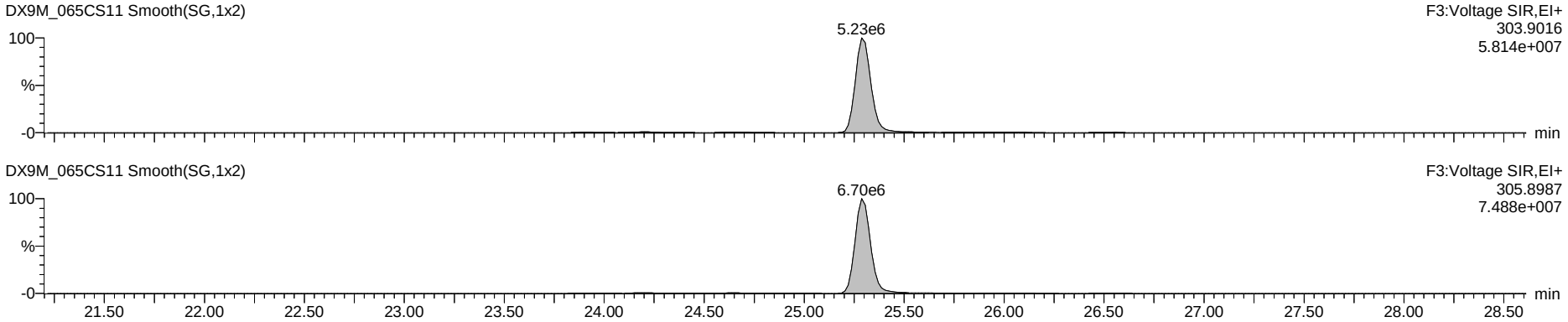
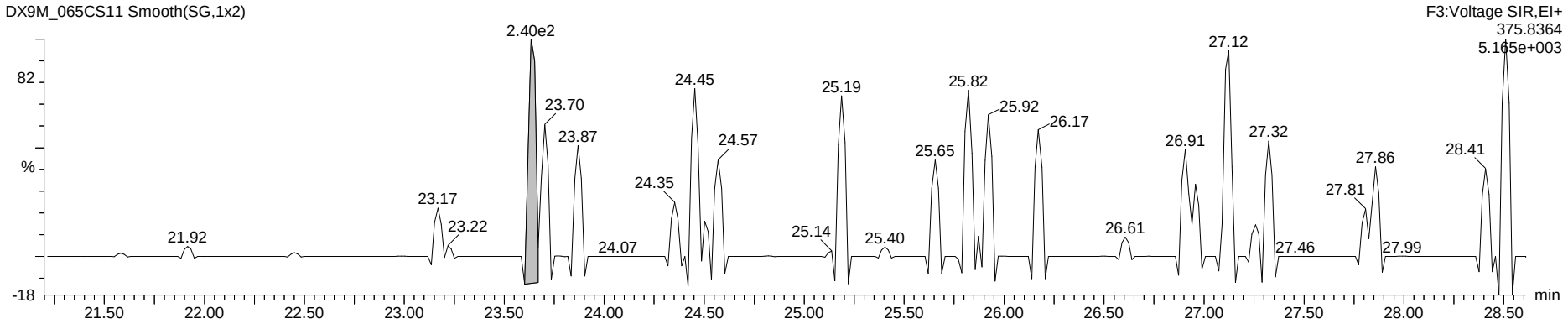
Name: DX9M_065CS11, Date: 25-Jun-2019, Time: 18:57:54, ID: DX042F-CAL,,/01, Description: 1,,1.0uL CS-5

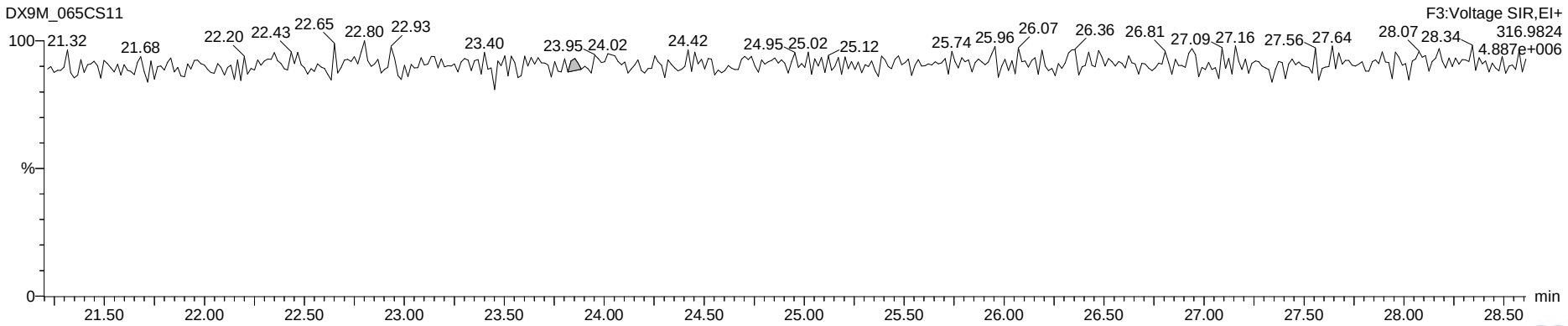
Total Tetra-Furans



Hexa DPE



Tetra Lock



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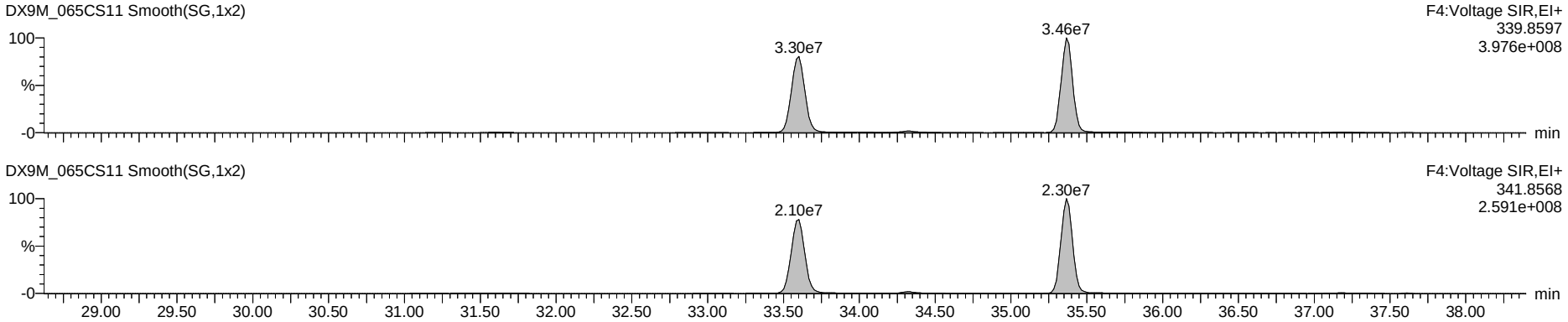
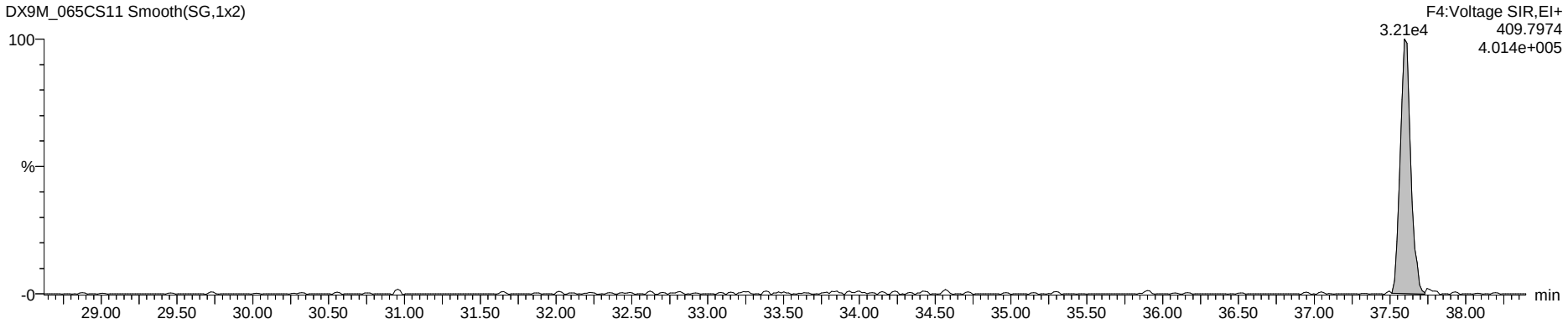
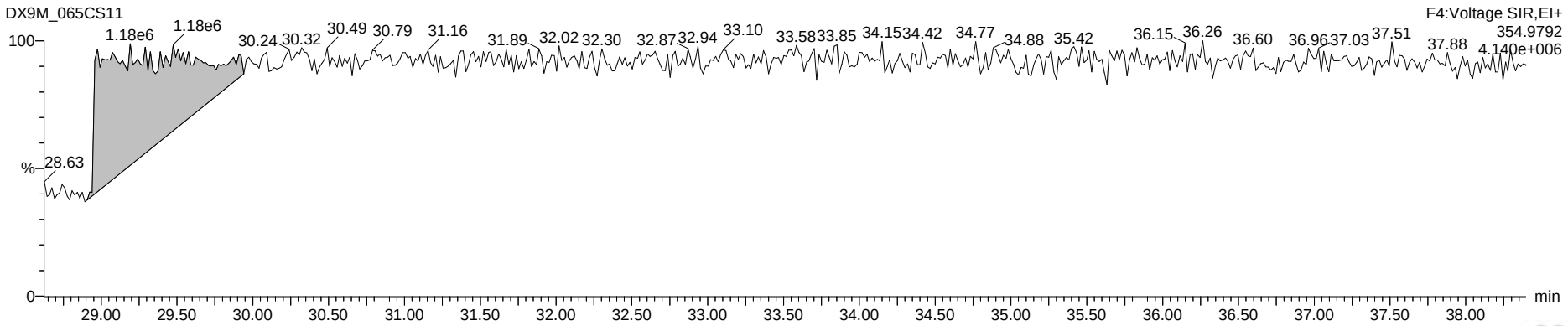
Total Penta-Furans



Hepta DPE



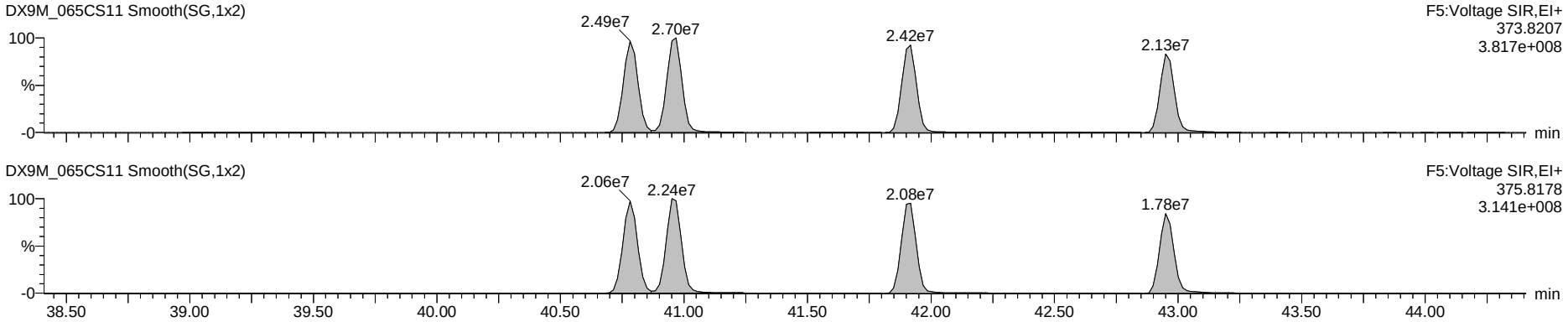
Penta Lock



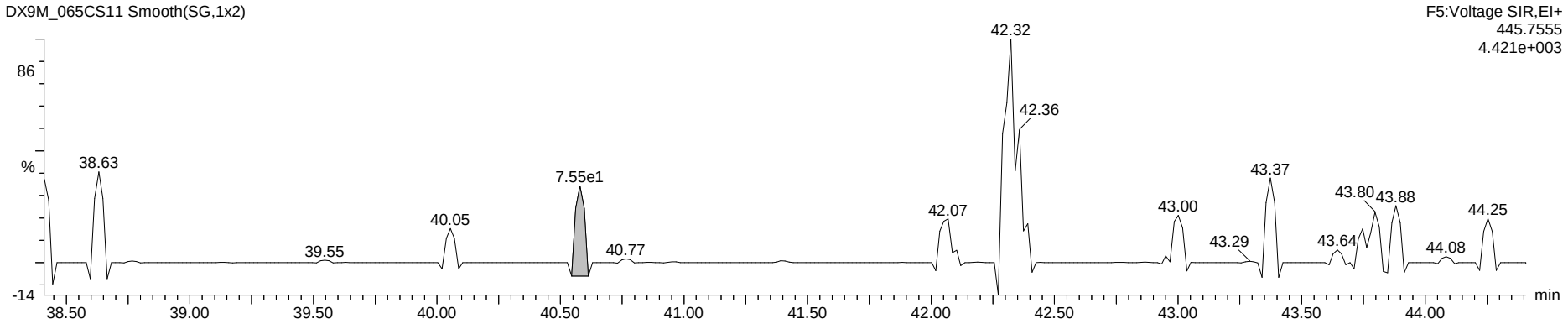
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_065C-7A.qld

Name: DX9M_065CS11, Date: 25-Jun-2019, Time: 18:57:54, ID: DX042F-CAL,,/01, Description: 1,,1.0uL CS-5

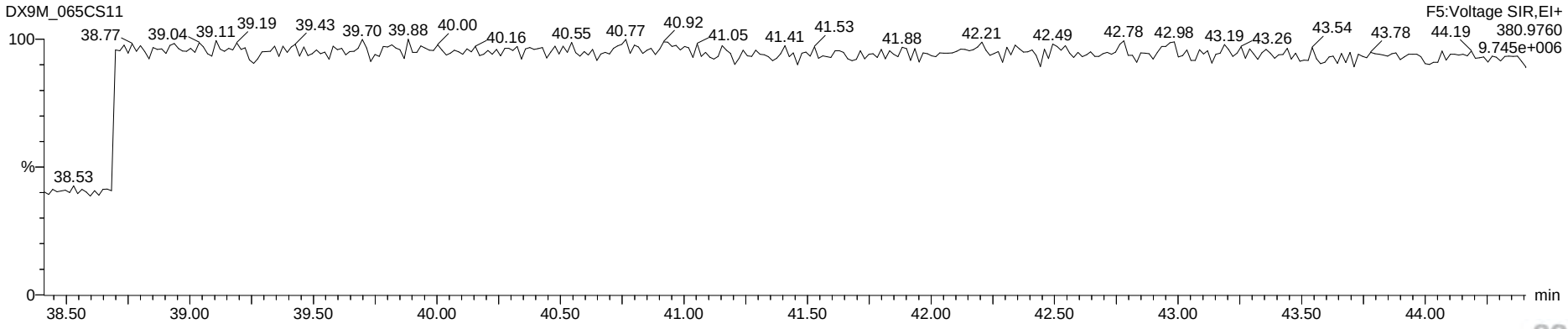
Total Hexa-Furans



Octa DPE



Hexa Lock



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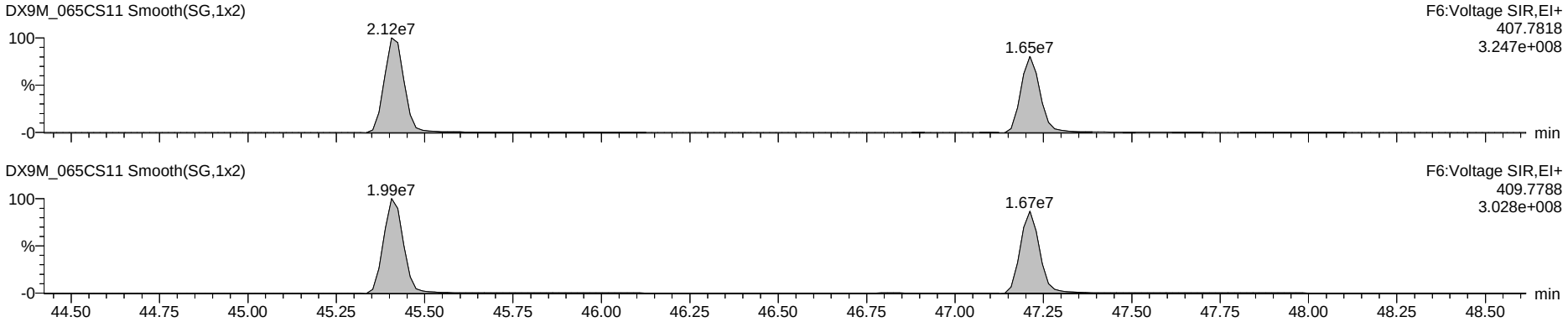
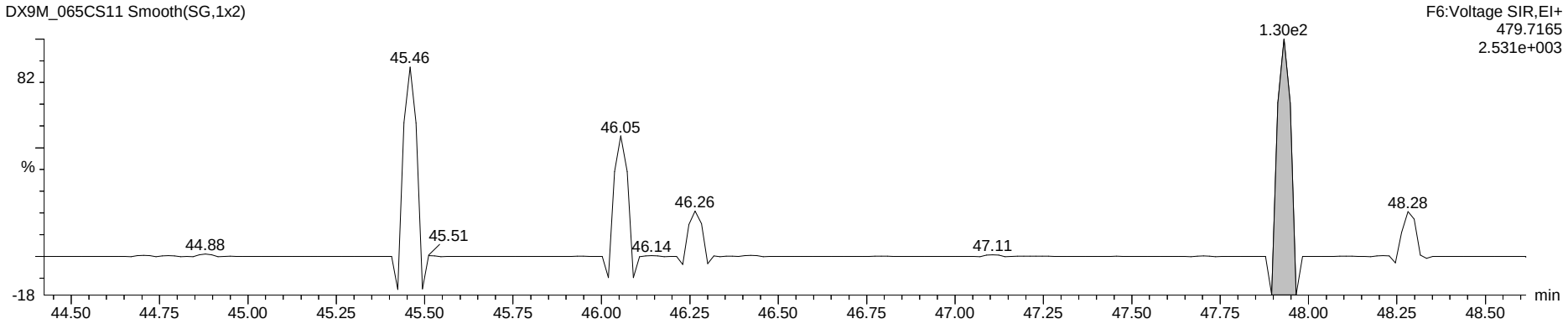
Name: DX9M_065CS11, Date: 25-Jun-2019, Time: 18:57:54, ID: DX042F-CAL,,/01, Description: 1,,1.0uL CS-5

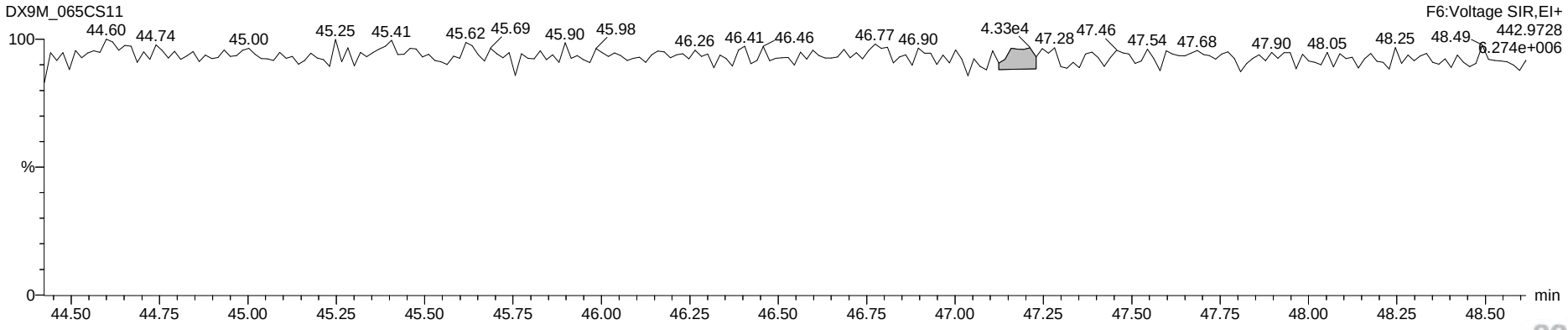
Total Hepta-Furans



Nona DPE



Hepta Lock



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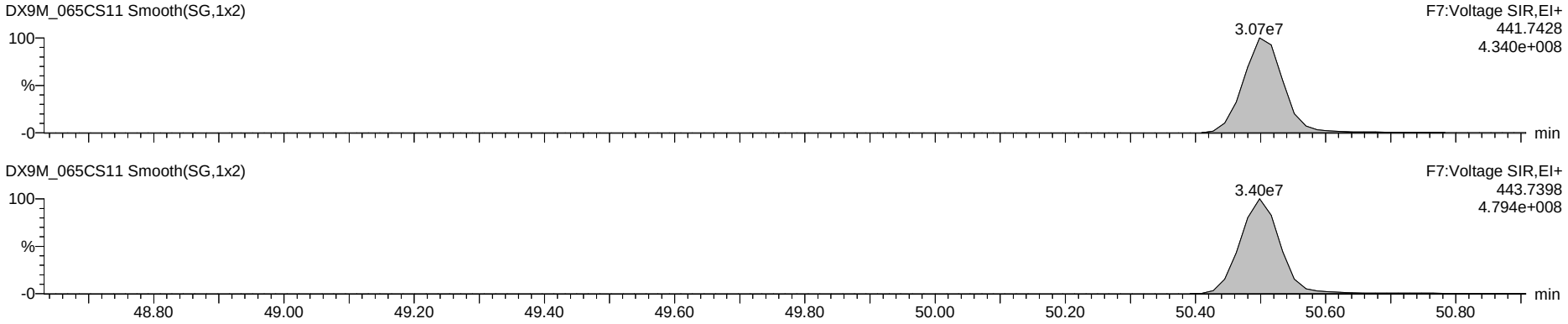
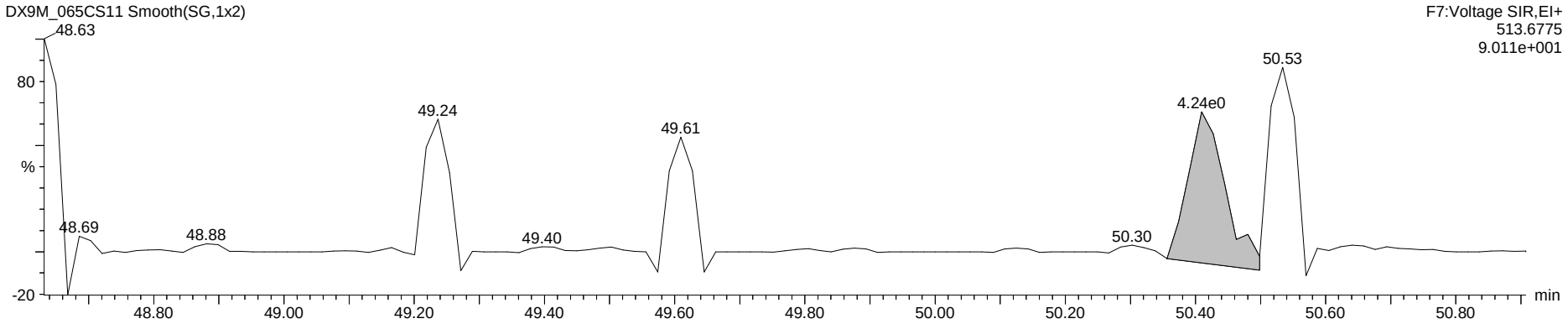
Name: DX9M_065CS11, Date: 25-Jun-2019, Time: 18:57:54, ID: DX042F-CAL,,/01, Description: 1,,1.0uL CS-5

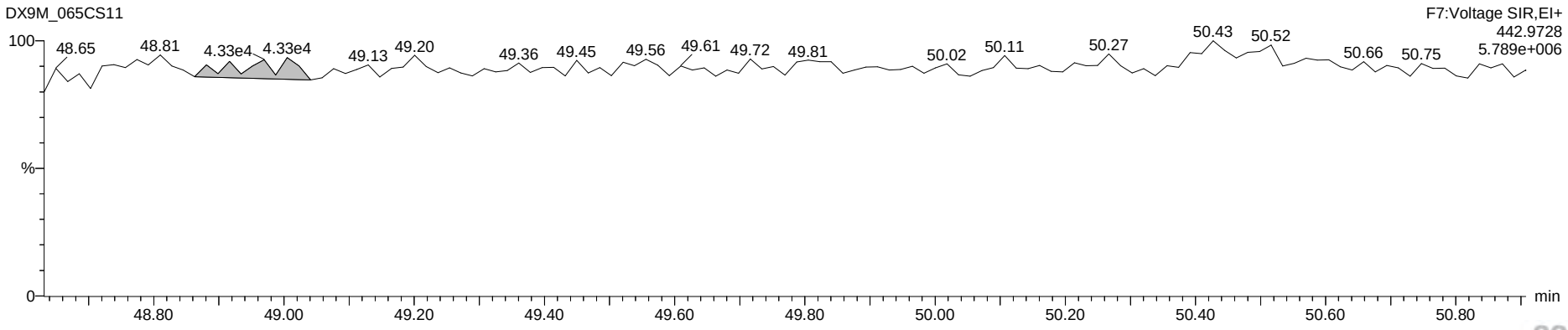
OCDF



Deca DPE



Octa Lock



Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_065C-6A.qld

Name: DX9M_065CS9, Date: 25-Jun-2019, Time: 16:57:12, ID: DX042G-CAL,,/01, Description: 1,,1.0uL CS-6

#	Name	Amount	Resp	Ratio	fails?	RT	RRF	Mean RRF	RRF SD	RRF %R	S/N	1° S/N
1	2,3,7,8-TCDF	0.000			YES			0.9272	0.018	1.96		
2	1,2,3,7,8-PeCDF	3000.000			YES			0.9296	0.023	2.43		
3	2,3,4,7,8-PeCDF	3000.000			YES			0.9500	0.033	3.48		
4	1,2,3,4,7,8-HxCDF	3000.000			YES			1.1051	0.022	1.95		
5	1,2,3,6,7,8-HxCDF	3000.000			YES			1.0740	0.019	1.76		
6	2,3,4,6,7,8-HxCDF	3000.000			YES			1.1366	0.028	2.45		
7	1,2,3,7,8,9-HxCDF	3000.000			YES			1.0544	0.026	2.45		
8	1,2,3,4,6,7,8-HpCDF	3000.000	1.40e8	1.04	NO	45.44	1.185	1.2500	0.038	3.06	65846	69704
9	1,2,3,4,7,8,9-HpCDF	3000.000	1.19e8	1.06	NO	47.25	1.217	1.2532	0.027	2.15	56815	60069
10	OCDF	6000.000	2.13e8	0.97	NO	50.55	1.043	1.1384	0.075	6.56	2477990	1466056
11	2,3,7,8-TCDD	0.000			YES			1.1017	0.047	4.28		
12	1,2,3,7,8-PeCDD	3000.000			YES			0.9887	0.009	0.96		
13	1,2,3,4,7,8-HxCDD	3000.000			YES			1.0282	0.015	1.44		
14	1,2,3,6,7,8-HxCDD	3000.000			YES			0.9421	0.023	2.49		
15	1,2,3,7,8,9-HxCDD	3000.000			YES			0.9731	0.020	2.10		
16	1,2,3,4,6,7,8-HpCDD	3000.000	9.58e7	1.02	NO	46.83	0.749	0.7796	0.021	2.71	155706	109201
17	OCDD	6000.000	1.70e8	0.93	NO	50.48	0.831	0.9813	0.074	7.59	1600069	1619428
18	13C-2,3,7,8-TCDF	100.000	6.63e6	0.76	NO	25.30	1.562	1.5227	0.041	2.68	3297	6219
19	13C-1,2,3,7,8-PeCDF	100.000	5.22e6	1.54	NO	33.60	1.231	1.2375	0.076	6.17	3320	1461
20	13C-2,3,4,7,8-PeCDF	100.000	5.38e6	1.58	NO	35.37	1.268	1.2765	0.081	6.33	3988	1737
21	13C-1,2,3,4,7,8-HxCDF	100.000	3.64e6	0.53	NO	40.78	1.205	1.2136	0.017	1.43	1421	2751
22	13C-1,2,3,6,7,8-HxCDF	100.000	4.08e6	0.50	NO	40.95	1.352	1.3340	0.030	2.28	1488	2935
23	13C-2,3,4,6,7,8-HxCDF	100.000	3.64e6	0.52	NO	41.90	1.207	1.2025	0.016	1.34	1406	2777
24	13C-1,2,3,7,8,9-HxCDF	100.000	3.21e6	0.52	NO	42.95	1.064	1.0693	0.029	2.70	1230	2382
25	13C-1,2,3,4,6,7,8-HpCDF	100.000	3.94e6	0.45	NO	45.42	1.305	0.9996	0.154	15.39	3908	4686
26	13C-1,2,3,4,7,8,9-HpCDF	100.000	3.27e6	0.45	NO	47.23	1.084	0.8111	0.137	16.87	3305	3937
27	13C-2,3,7,8-TCDD	100.000	4.10e6	0.79	NO	26.52	0.966	0.9686	0.032	3.31	1616	1630
28	13C-1,2,3,7,8-PeCDD	100.000	3.18e6	0.63	NO	36.20	0.749	0.7690	0.046	5.95	4464	5523
29	13C-1,2,3,4,7,8-HxCDD	100.000	2.83e6	1.29	NO	42.19	0.938	0.9685	0.020	2.02	3769	2450
30	13C-1,2,3,6,7,8-HxCDD	100.000	3.24e6	1.29	NO	42.32	1.075	1.0706	0.020	1.85	3918	2620
31	13C-1,2,3,4,6,7,8-HpCDD	100.000	4.26e6	1.06	NO	46.81	1.413	1.0837	0.164	15.09	6080	9185
32	13C-OCDD	200.000	6.81e6	0.89	NO	50.46	1.129	0.7969	0.168	21.03	32744	3959
33	13C-1,2,3,4-TCDD	100.000	4.24e6	0.79	NO	26.19	42416.376	40244.29...	2071.896	5.15	1786	1797
34	13C-1,2,3,7,8,9-HxCDD	100.000	3.02e6	1.23	NO	42.75	30164.850	29034.26...	3025.332	10.42	3556	2373
35	37Cl-2,3,7,8-TCDD	0.000						1.0674	0.080	7.49		
36	Total Tetra-Furans	0.000						0.9276	0.016	1.76		
37	Total Tetra-Dioxins	0.000						1.1017	0.047	4.28		
38	Total Penta-Furans	3000.000						0.9296	0.023	2.43		
39	Total Penta-Dioxins	3000.000						0.9887	0.009	0.96		
40	Total Hexa-Furans	3000.000						1.1051	0.022	1.95		
41	Total Hexa-Dioxins	3000.000						1.0282	0.015	1.44		
42	Total Hepta-Furans	3000.000						1.2500	0.038	3.06		
43	Total Hepta-Dioxins	3000.000						0.7796	0.021	2.71		
44	Hexa DPE	0.000	2.05e2			25.57	0.000				0	
45	Hepta DPE	0.000	3.52e2			35.95	0.000				13	
46	Octa DPE	0.000	5.65e1			39.14	0.000				4	
47	Nona DPE	0.000	1.49e2			46.72	0.000				877	
48	Deca DPE	0.000	1.22e2			50.48	0.000				350	
49	Tetra Lock	0.000	1.24e4			24.59	0.000				1	
50	Penta Lock	0.000	9.22e5			29.41	0.000				1	
51	Hexa Lock	0.000	2.04e6			38.94	0.000				1	
52	Hepta Lock	0.000	8.98e4			47.25	0.000				2	
53	Octa Lock	0.000	1.95e4			48.79	0.000				0	
54	13C-Tetra-Furans	100.000						1.5227	0.041	2.68		
55	13C-Tetra-Dioxins	100.000						0.9686	0.032	3.31		

pv'd by KB 22-JUL-2019

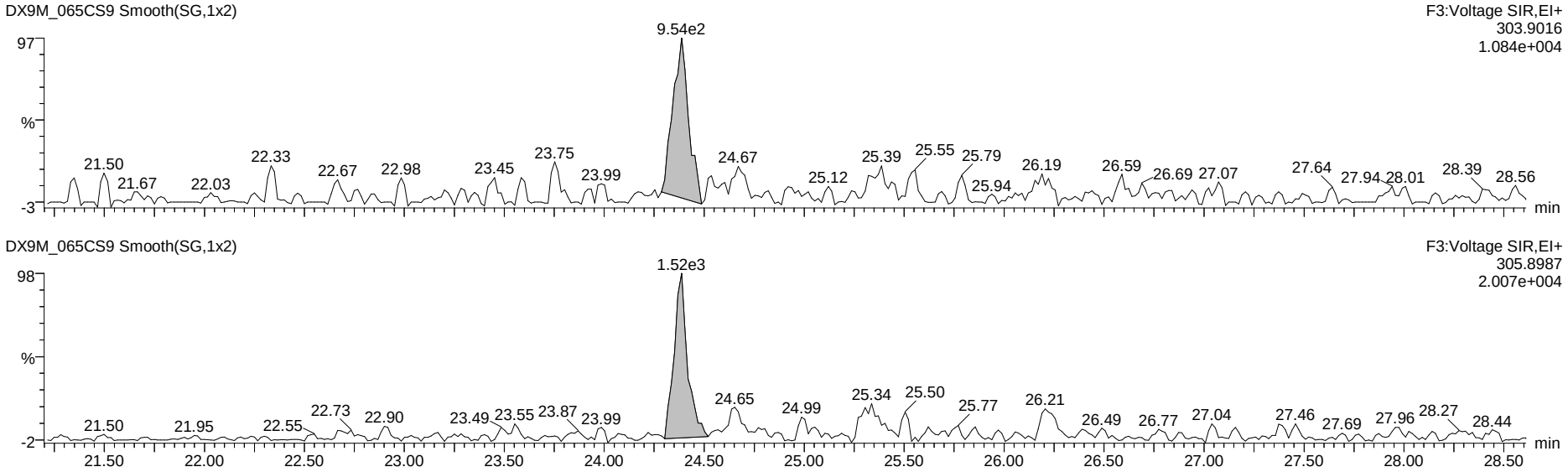
22-JUL-19

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_065C-7A.qld

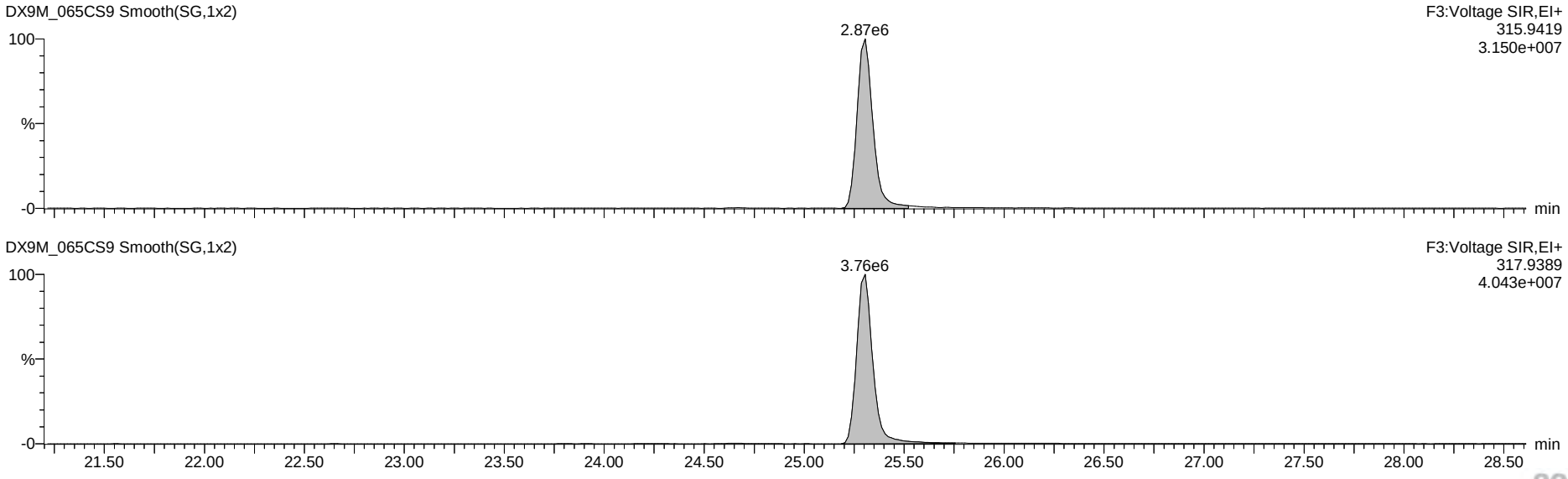
Method: G:\Masslynx\Inst_M\Projects\190510DX.PRO\MethDB\DX_1613B_16.mdb 18 Jul 2019 14:33:32
Calibration: 22 Jul 2019 09:01:47

Name: DX9M_065CS9, Date: 25-Jun-2019, Time: 16:57:12, ID: DX042G-CAL,,/01, Description: 1,,1.0uL CS-6

Total Tetra-Furans



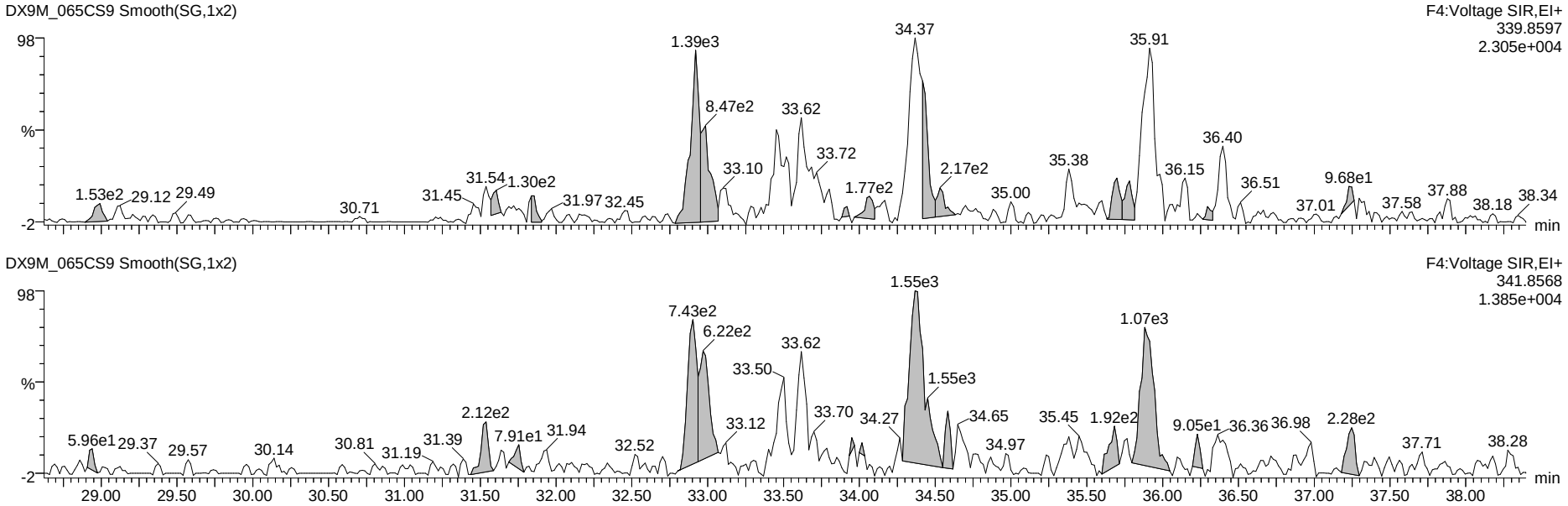
13C-Tetra-Furans



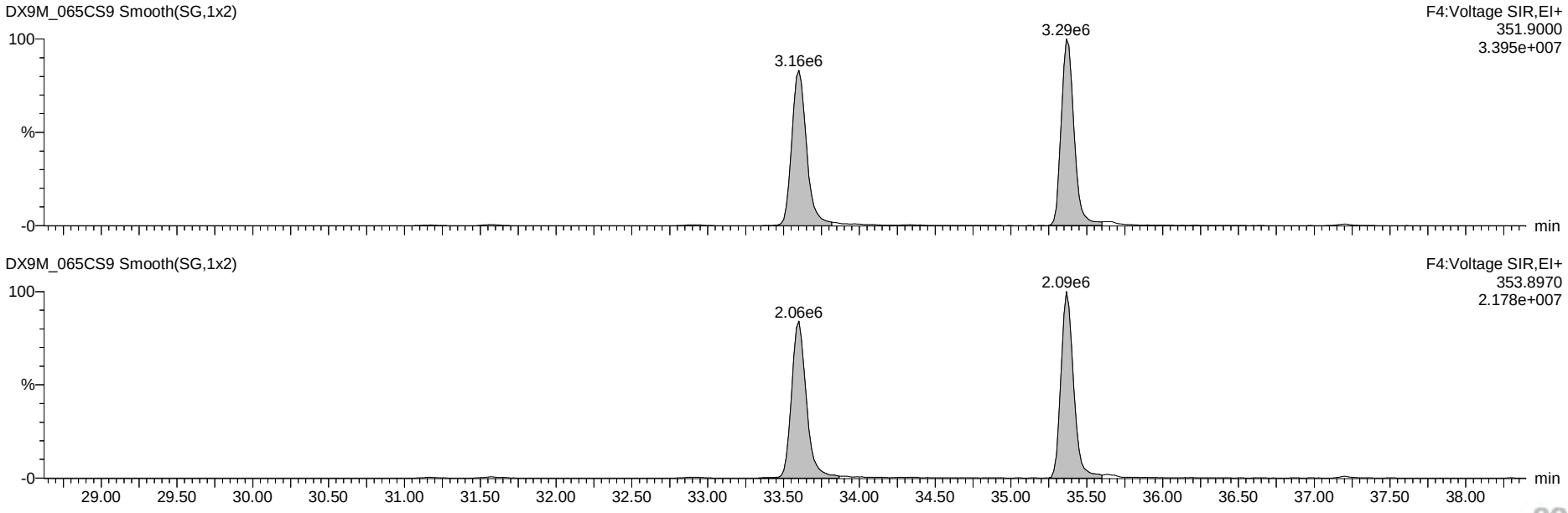
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_065C-7A.qld

Name: DX9M_065CS9, Date: 25-Jun-2019, Time: 16:57:12, ID: DX042G-CAL,,/01, Description: 1,,1.0uL CS-6

Total Penta-Furans



13C-Penta-Furans



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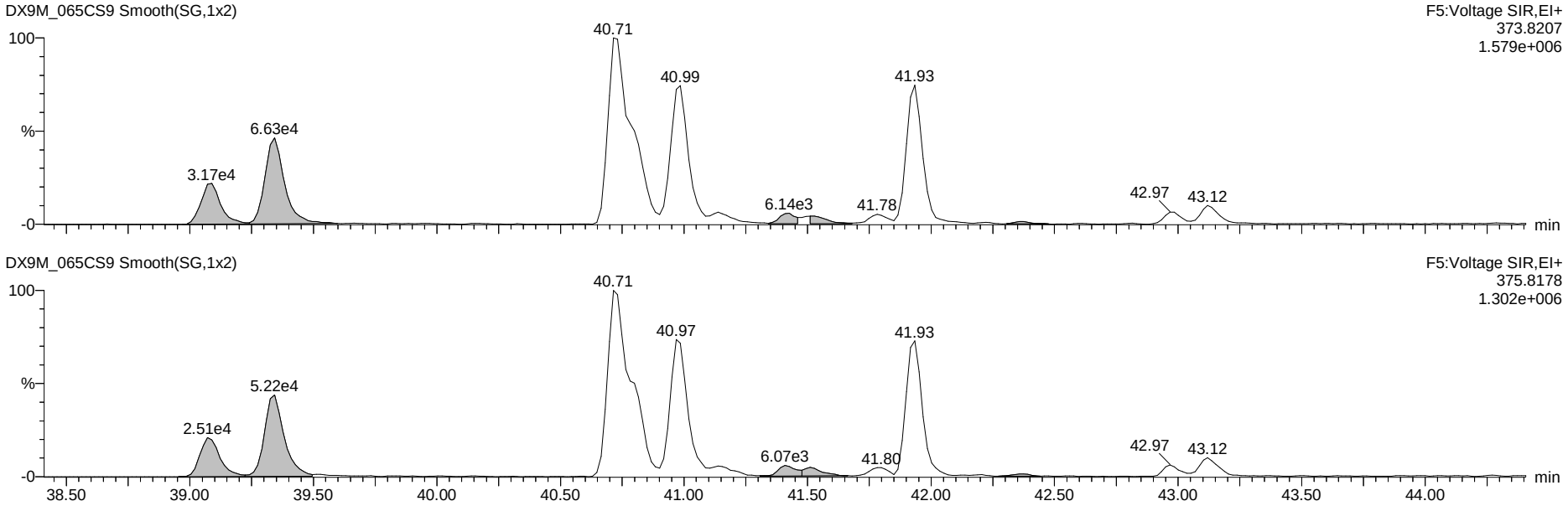
Total Hexa-Furans



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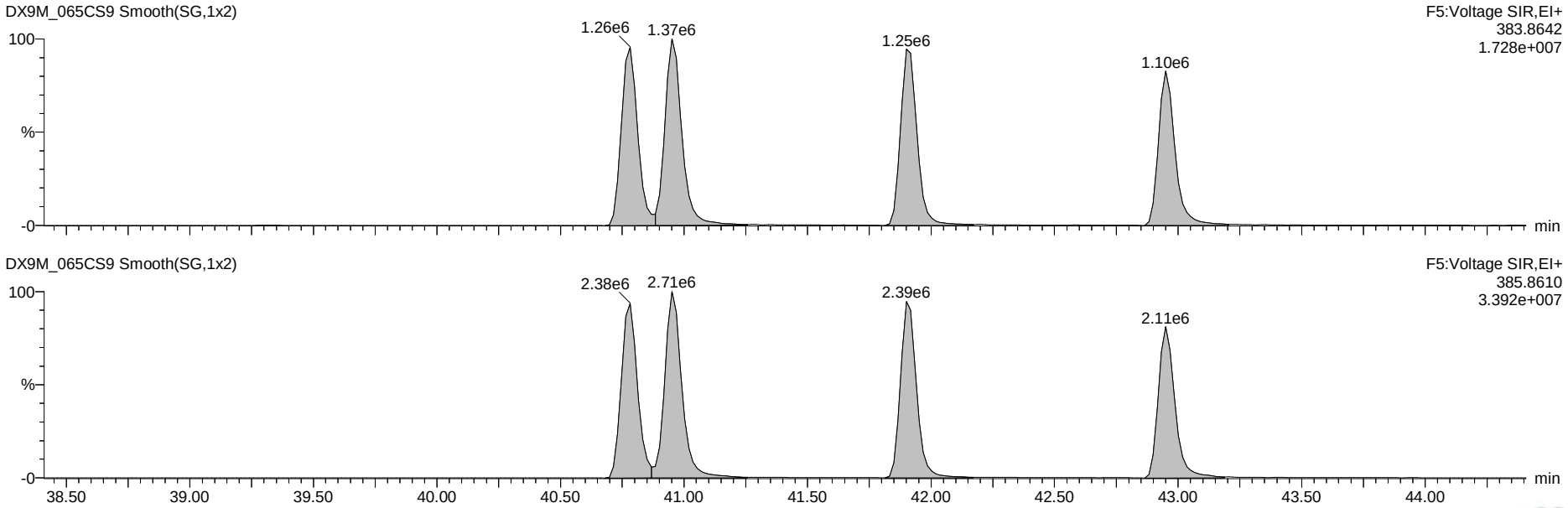

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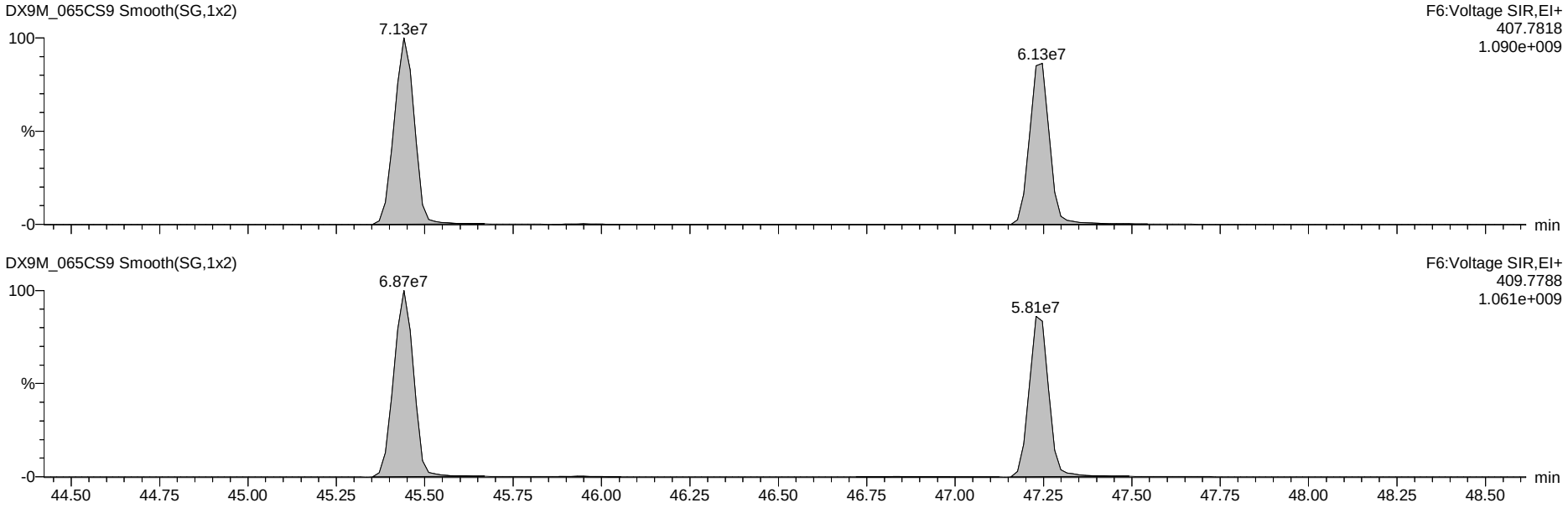
Total Hepta-Furans



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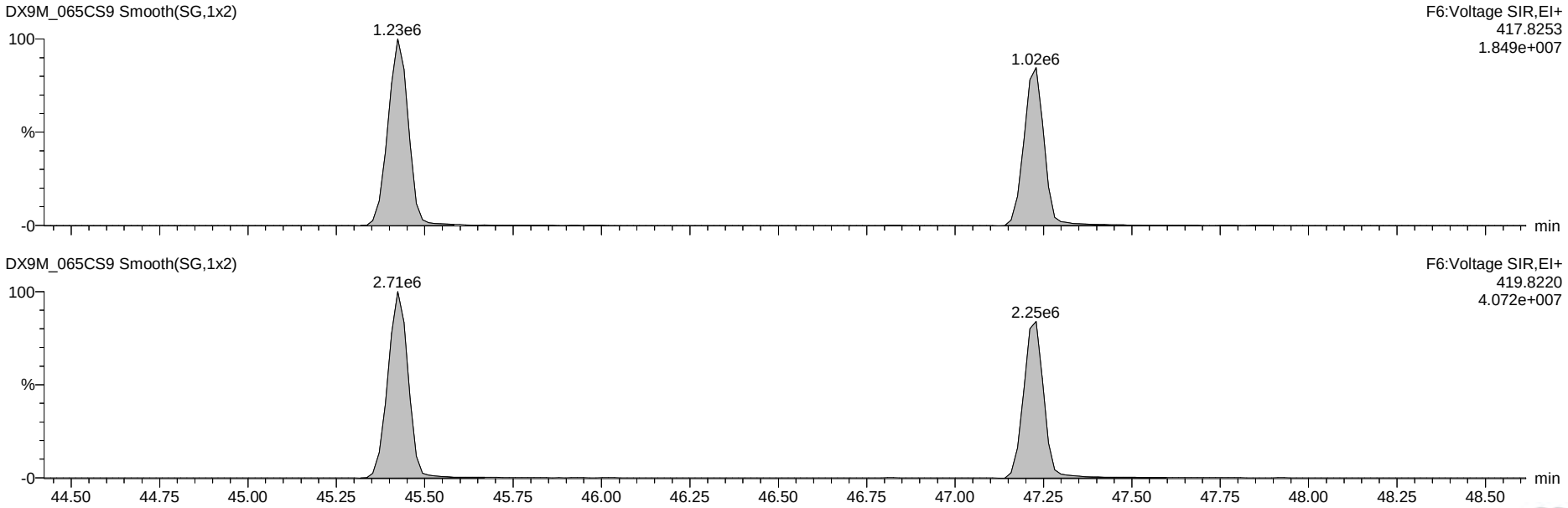
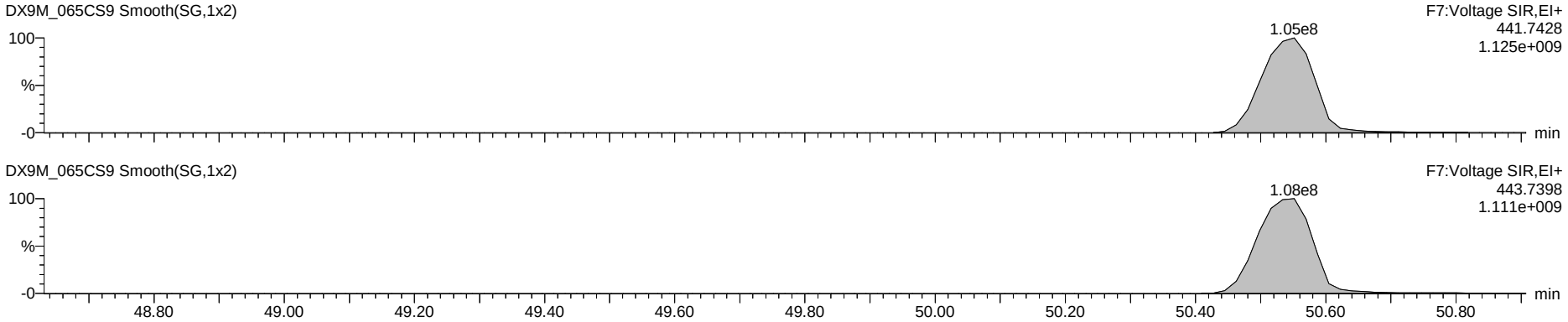


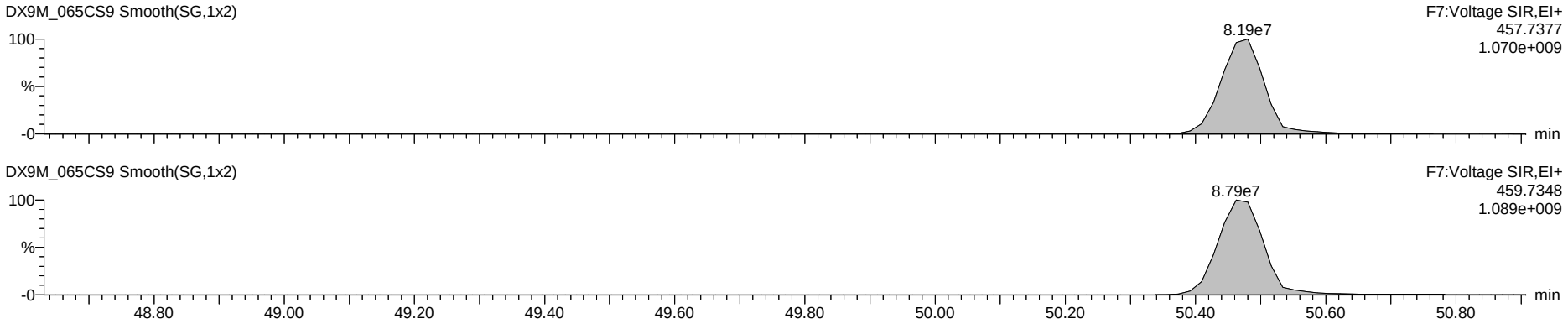
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_065C-7A.qld

Name: DX9M_065CS9, Date: 25-Jun-2019, Time: 16:57:12, ID: DX042G-CAL,,/01, Description: 1,,1.0uL CS-6

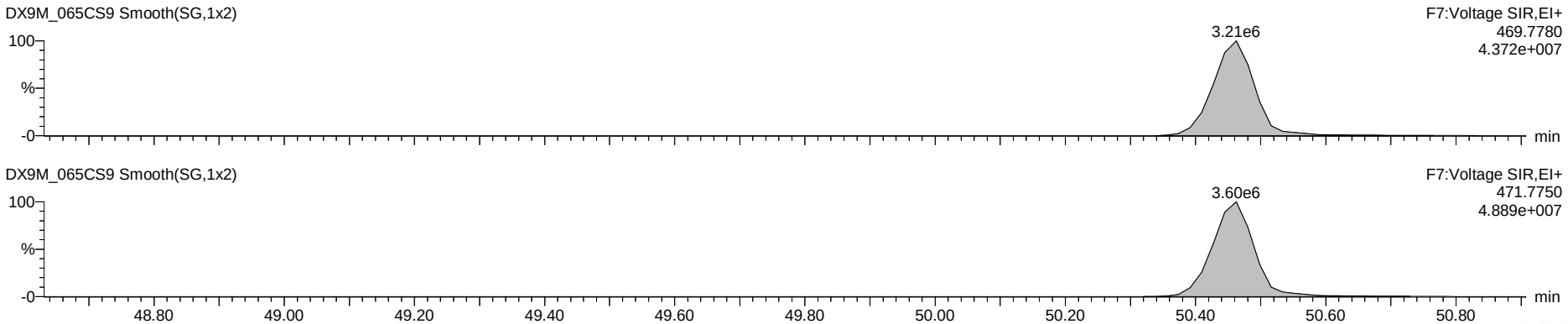
OCDF



OCDD



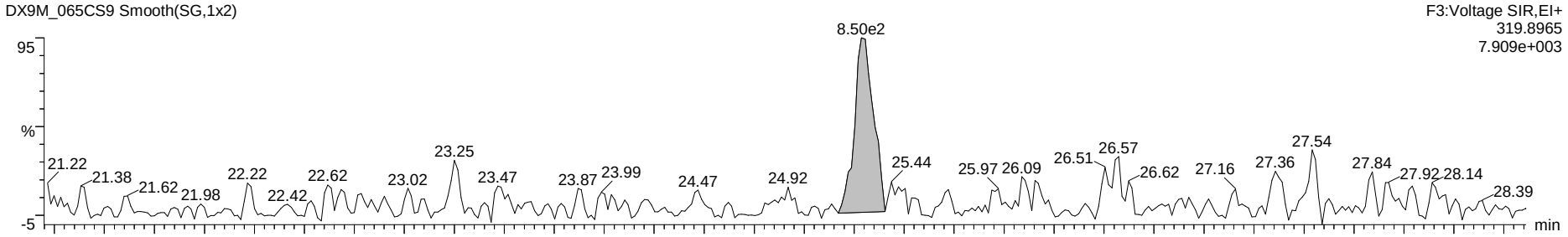
13C-OCDD

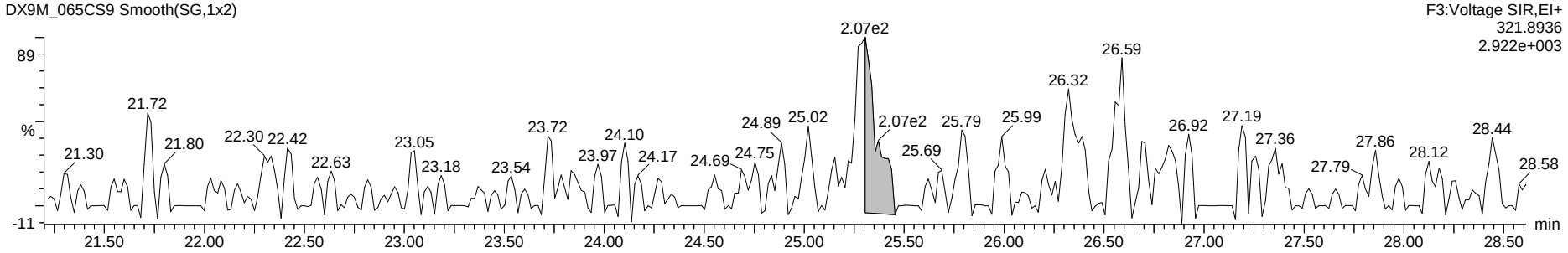


Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_065C-7A.qld

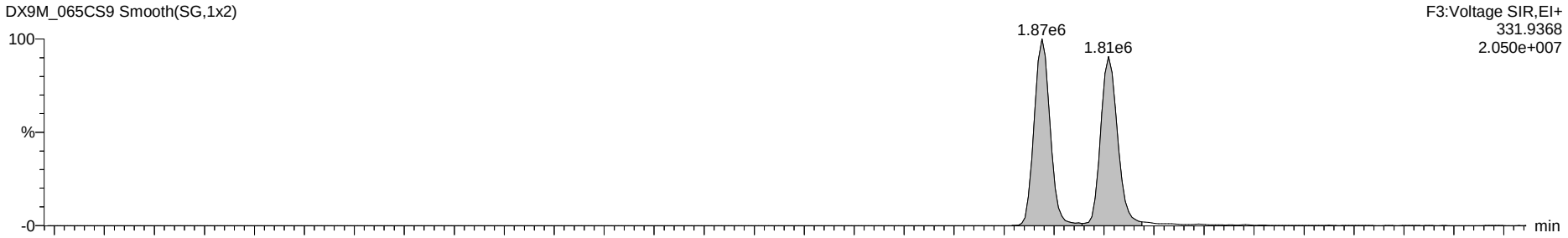
Name: DX9M_065CS9, Date: 25-Jun-2019, Time: 16:57:12, ID: DX042G-CAL,,/01, Description: 1,,1.0uL CS-6

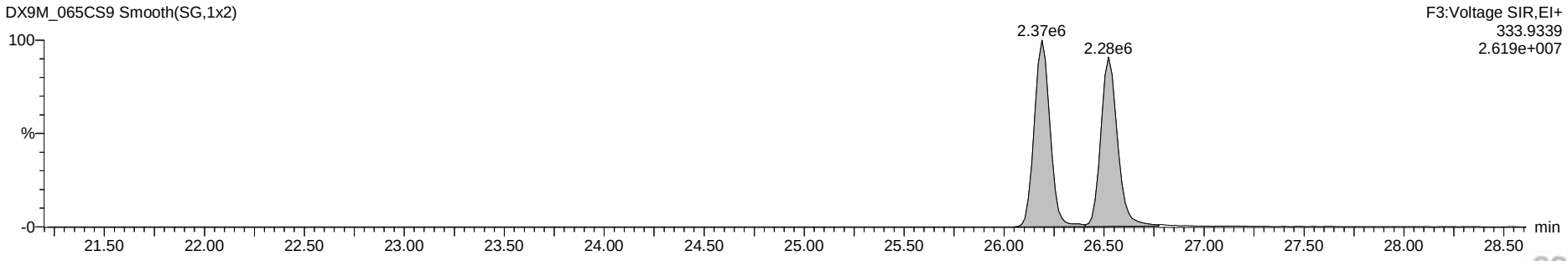
Total Tetra-Dioxins





13C-Tetra-Dioxins

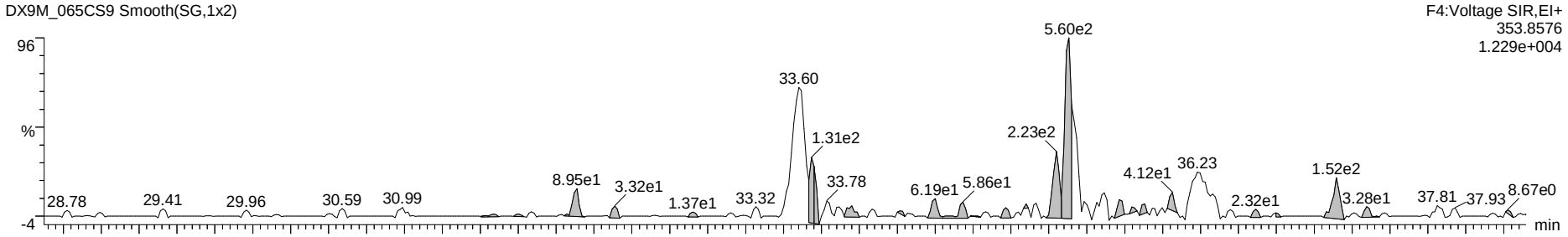


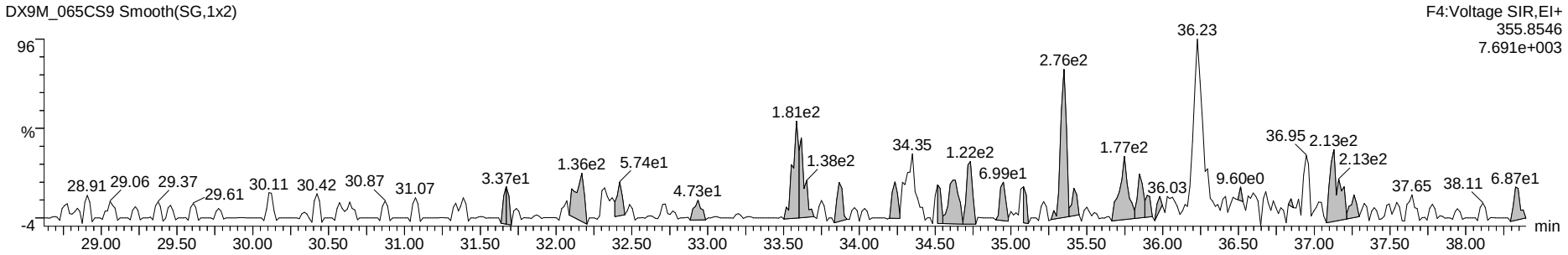


Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_065C-7A.qld

Name: DX9M_065CS9, Date: 25-Jun-2019, Time: 16:57:12, ID: DX042G-CAL,,/01, Description: 1,,1.0uL CS-6

Total Penta-Dioxins





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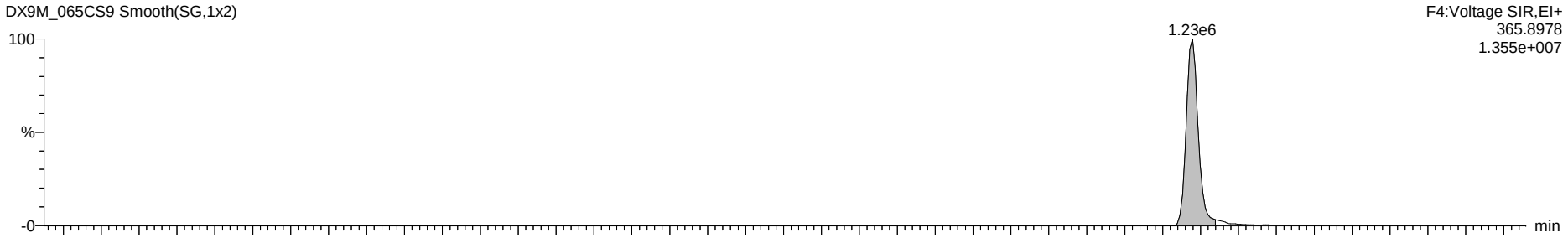

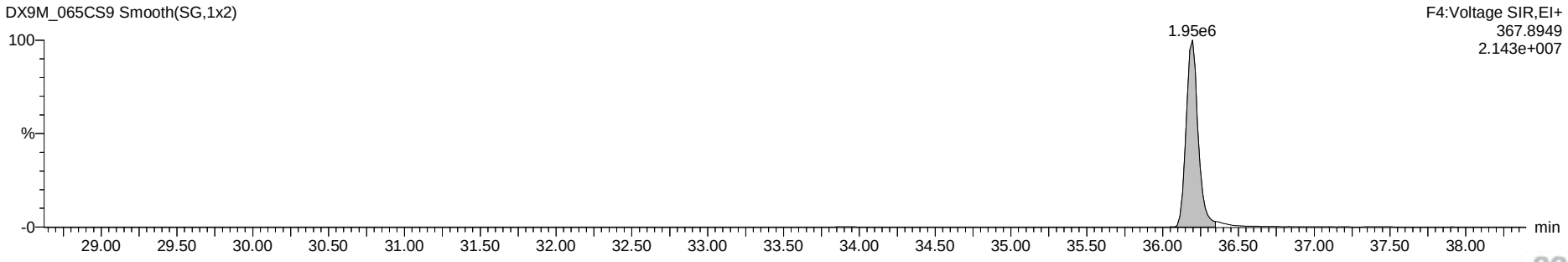

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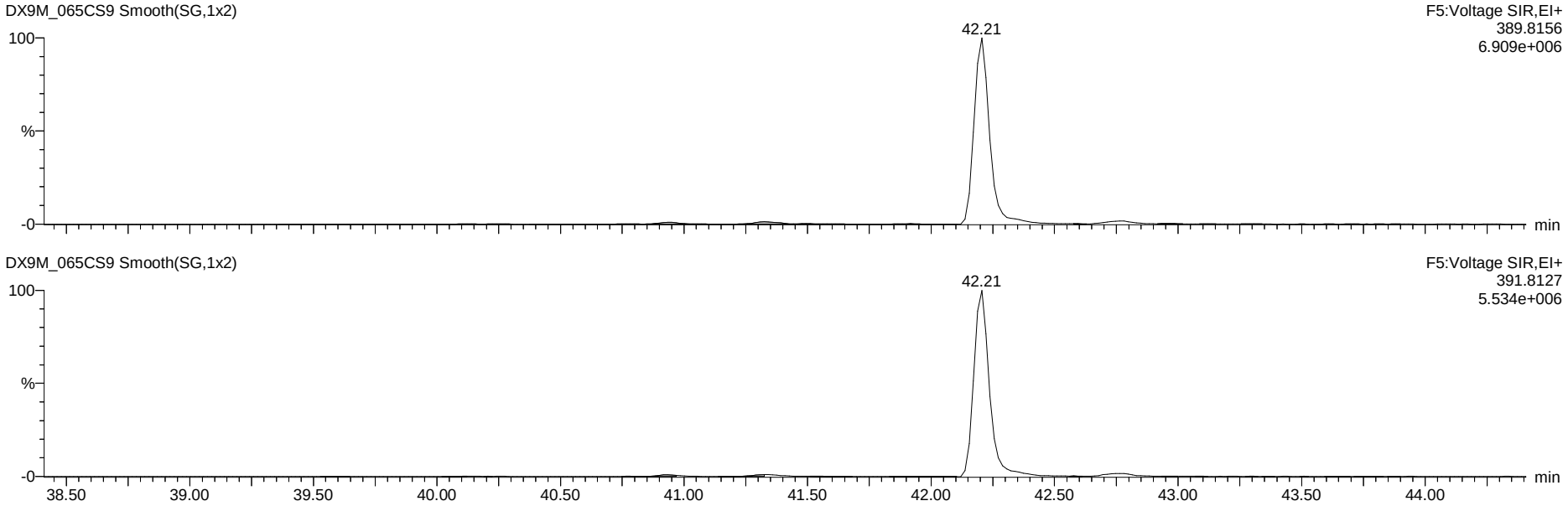
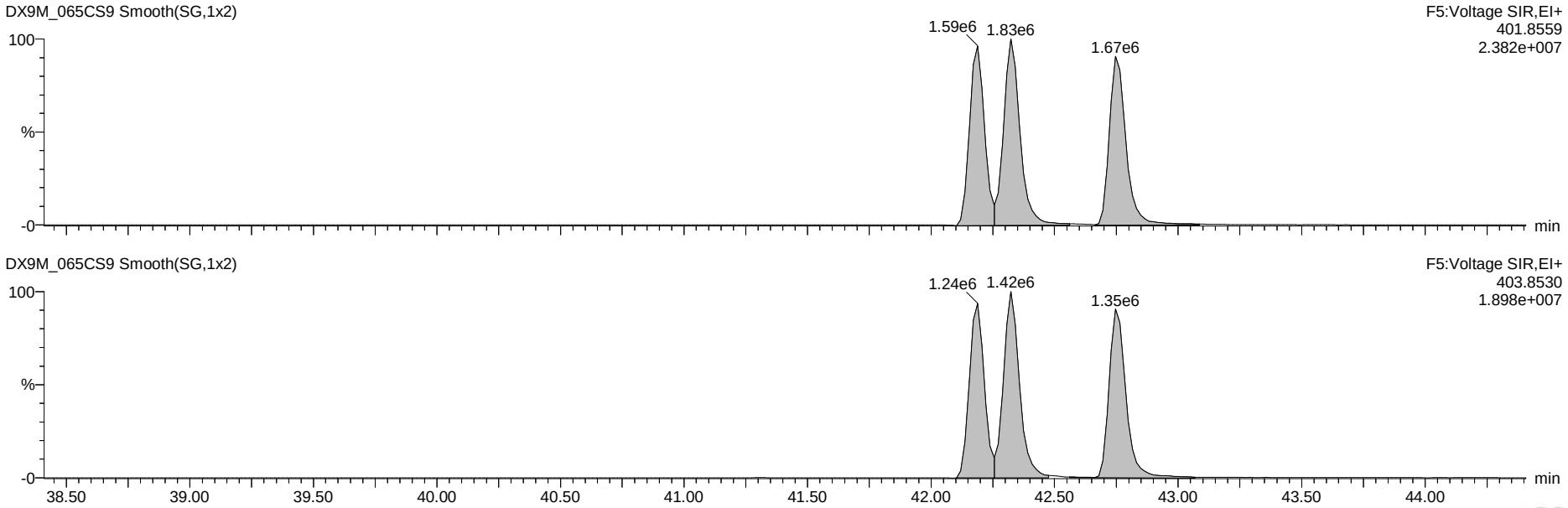
Total Hexa-Dioxins



13C-Hexa-Dioxins



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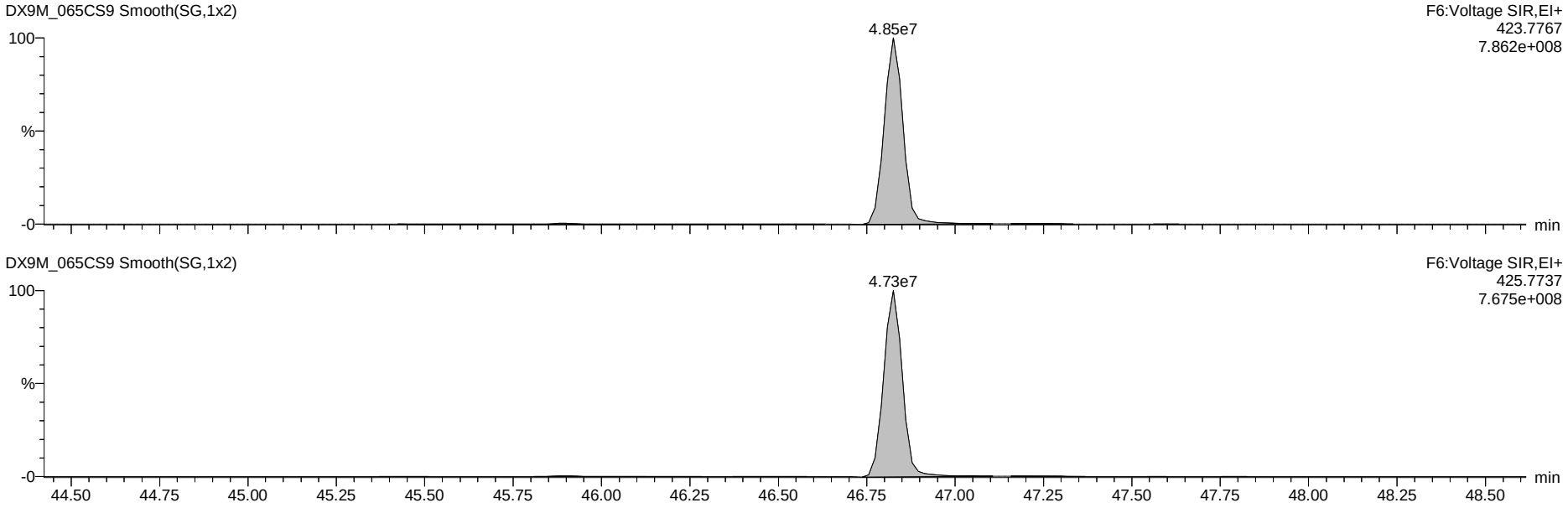
Total Hepta-Dioxins



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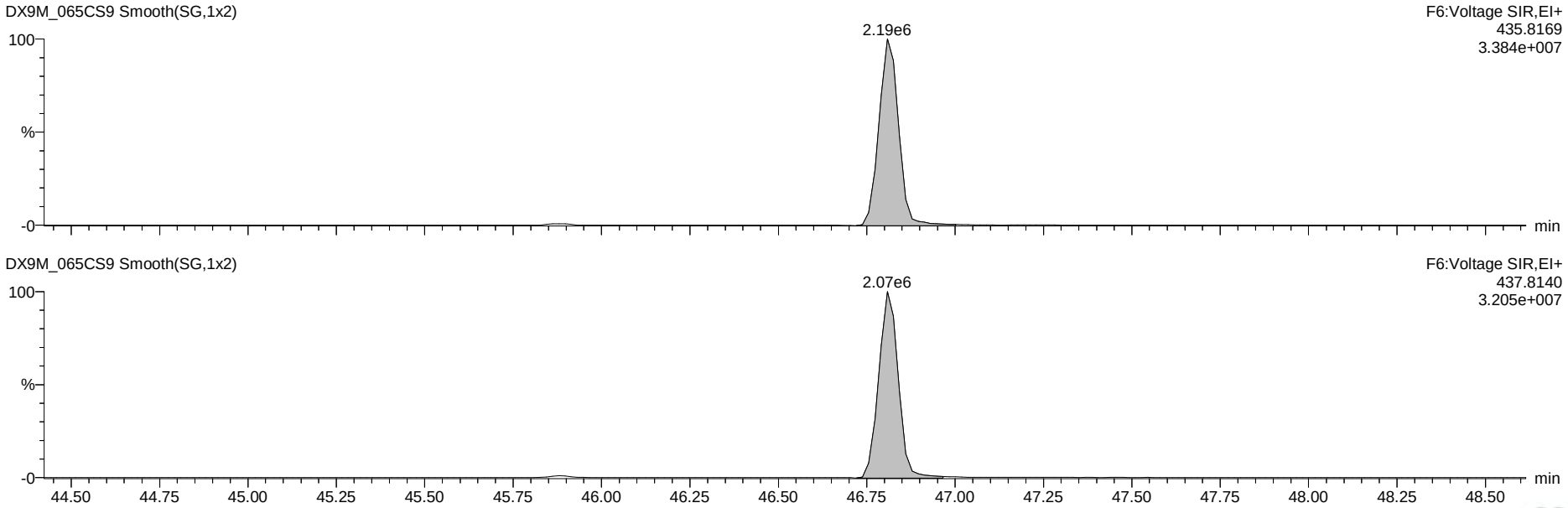

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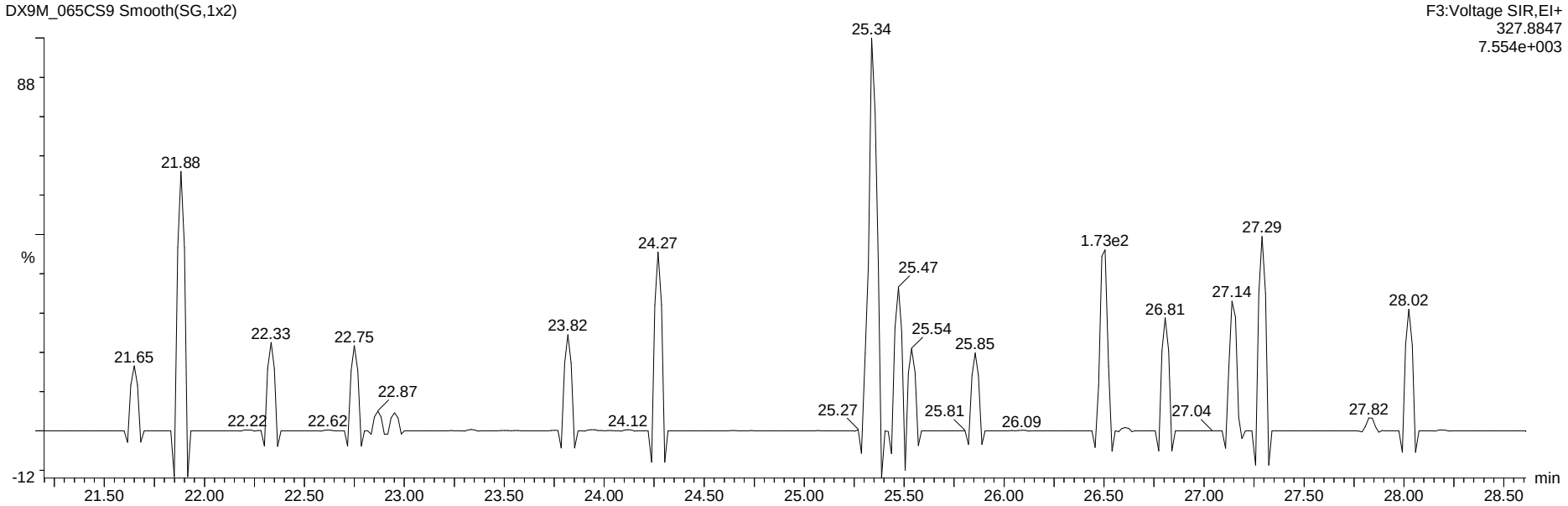
37Cl-2,3,7,8-TCDD



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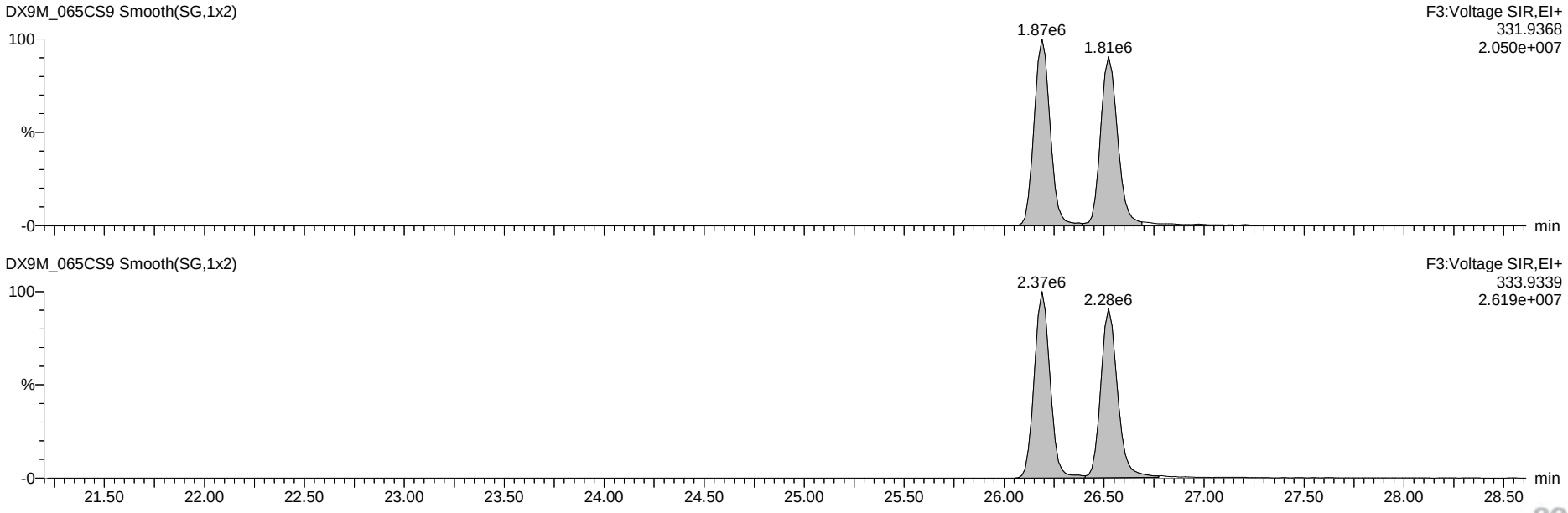

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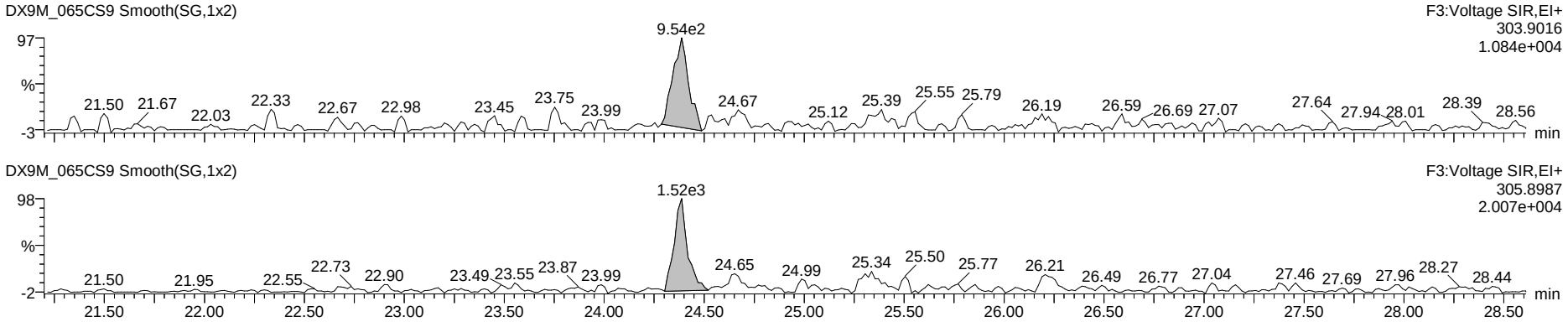
Total Tetra-Furans



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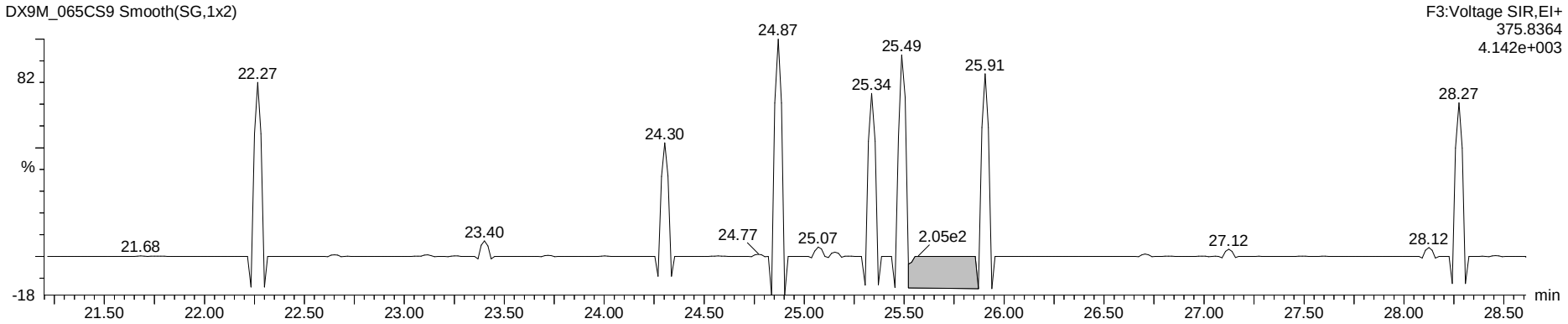
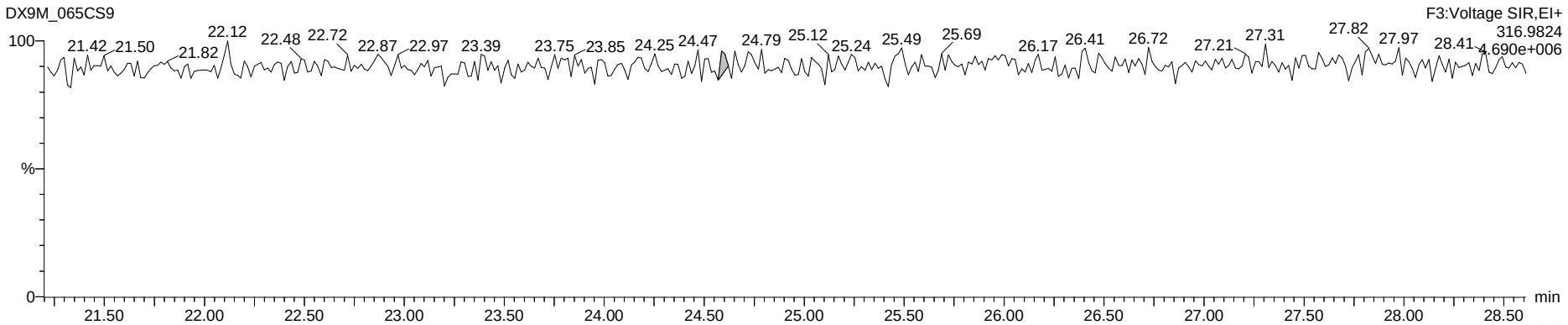


Tetra Lock



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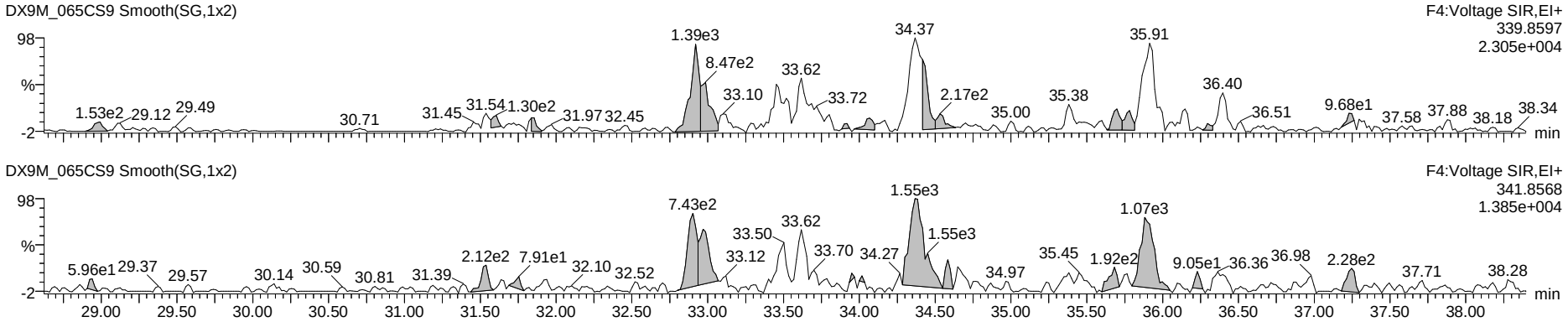
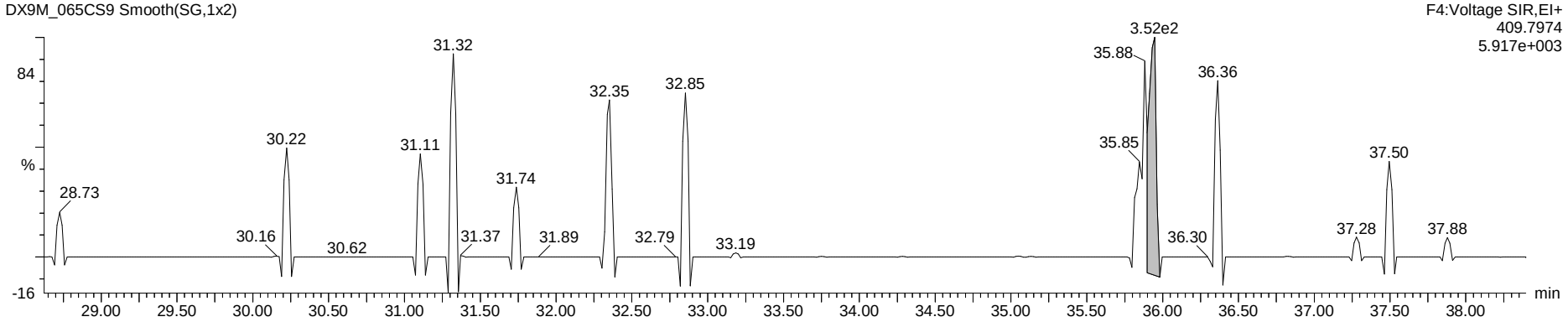
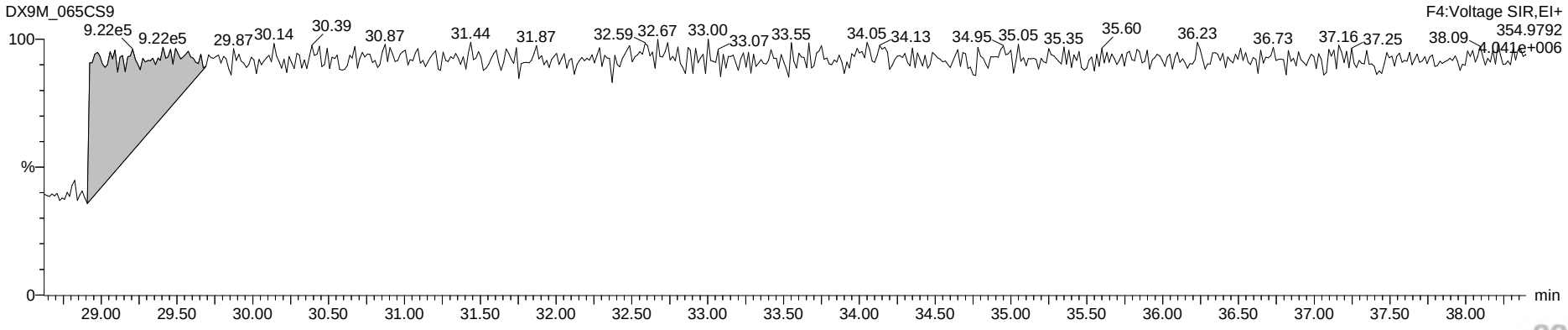
Total Penta-Furans



Hepta DPE



Penta Lock



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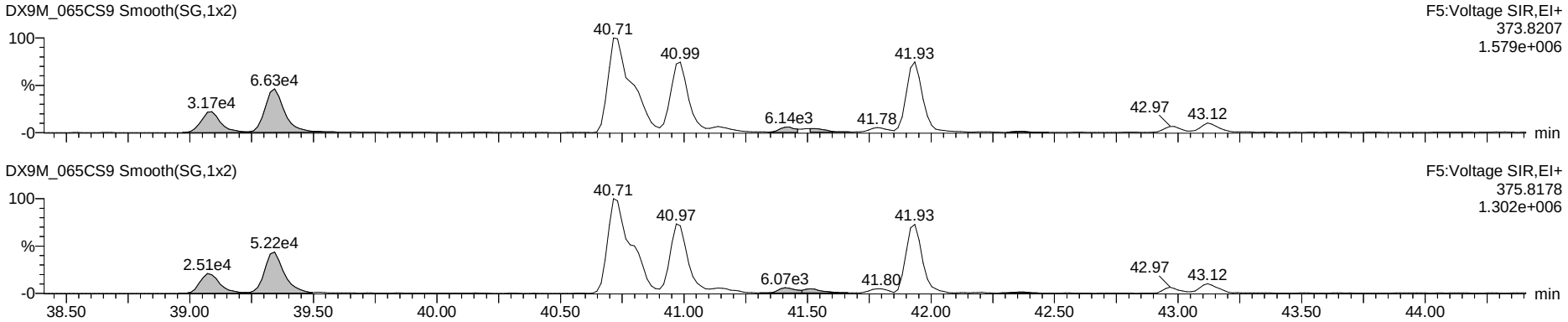
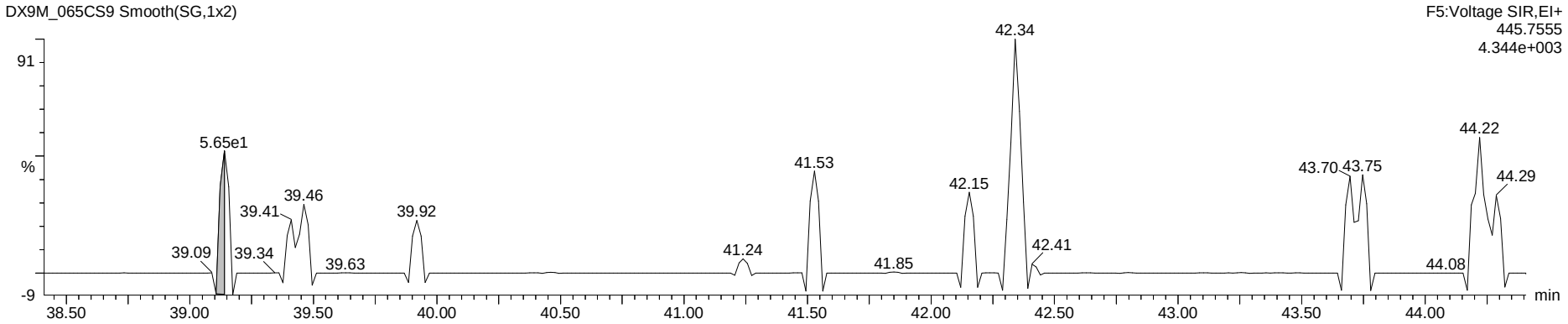
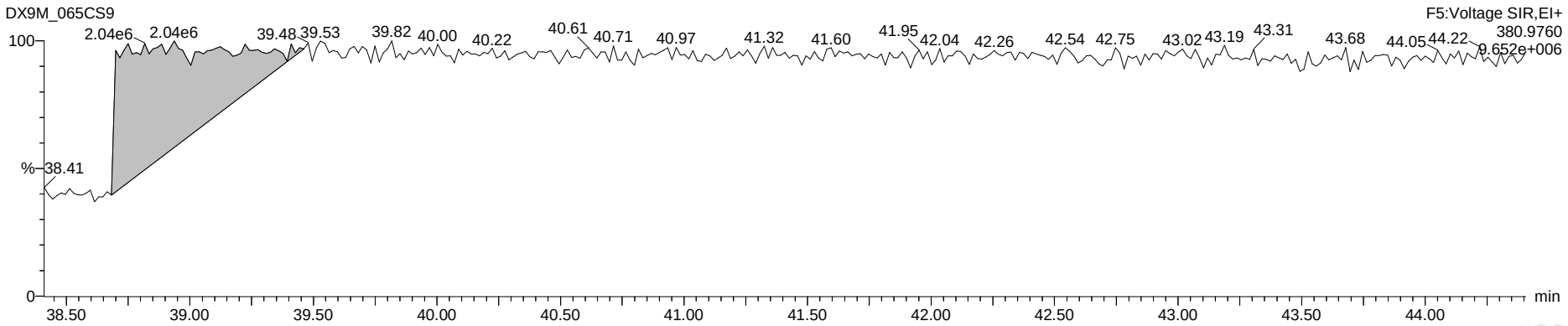
Total Hexa-Furans



Octa DPE



Hexa Lock



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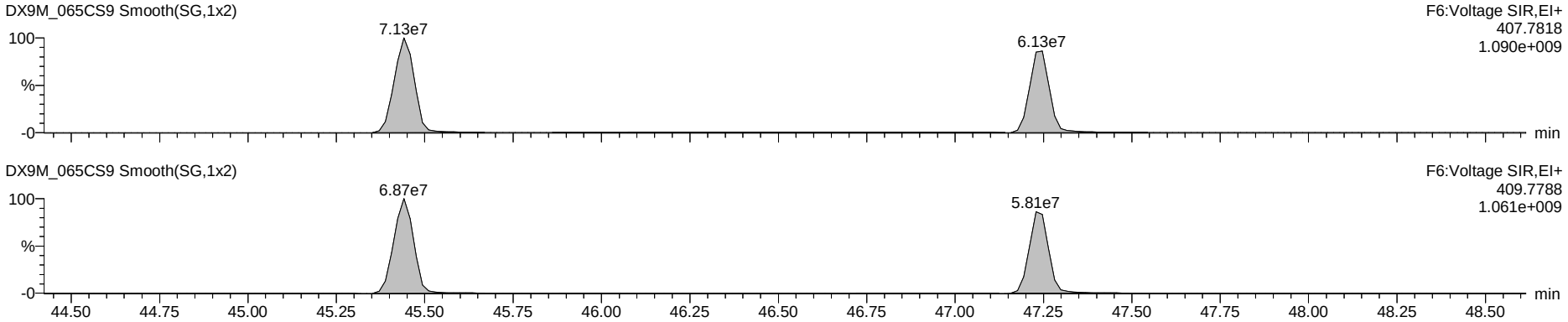
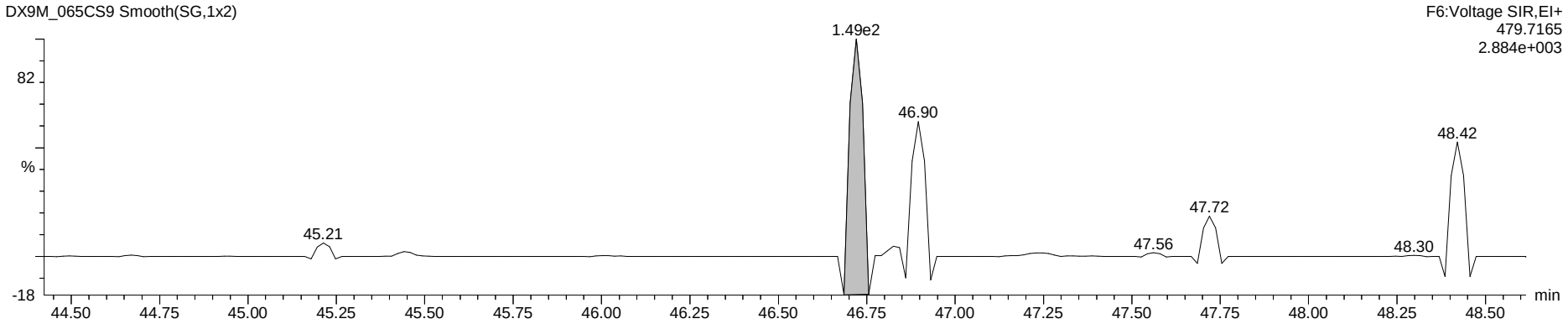
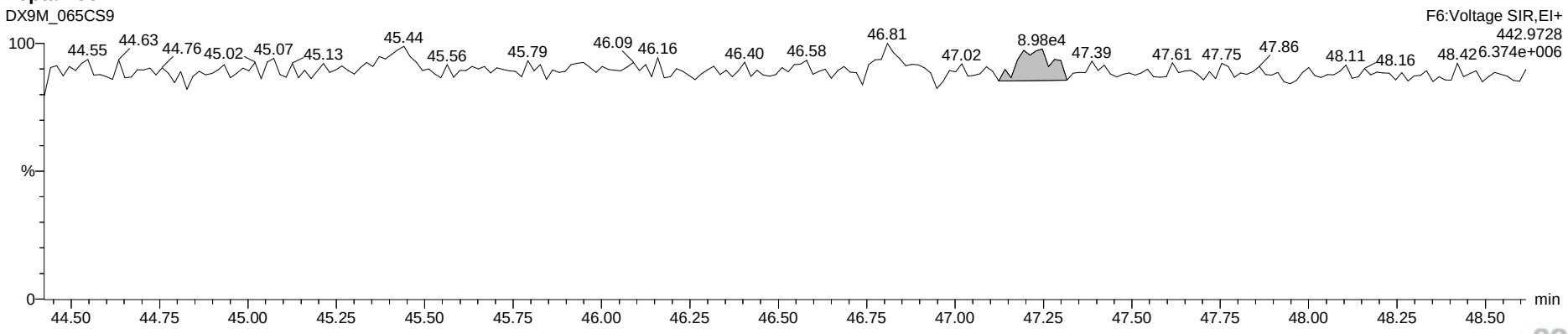
Total Hepta-Furans



Nona DPE



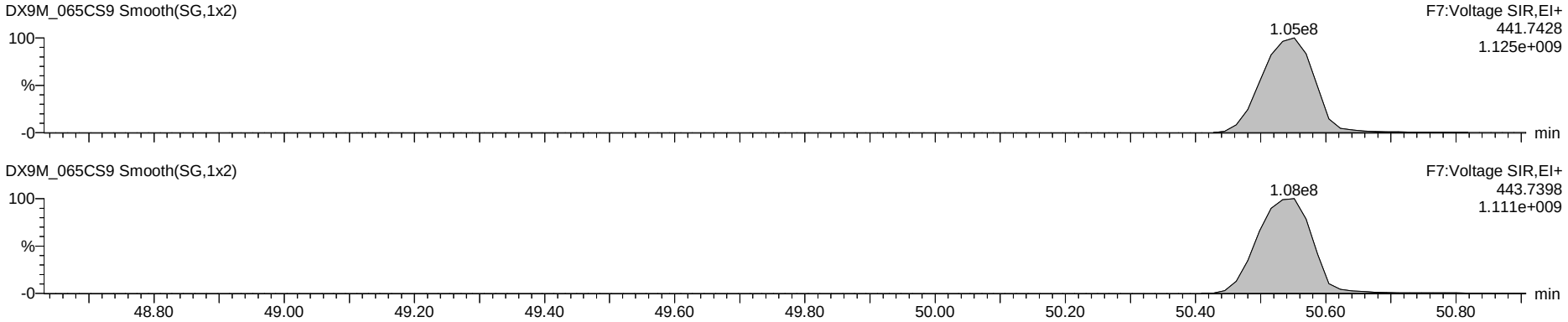
Hepta Lock



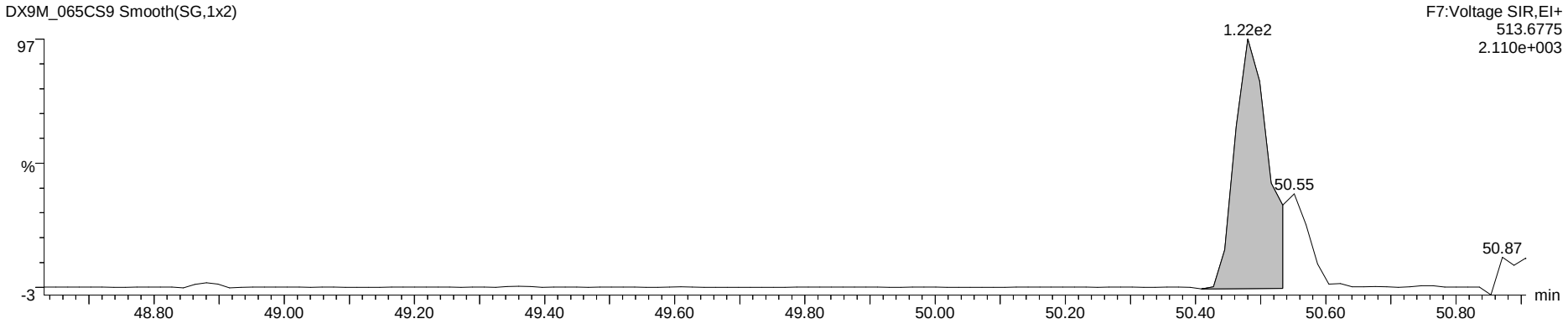
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_065C-7A.qld

Name: DX9M_065CS9, Date: 25-Jun-2019, Time: 16:57:12, ID: DX042G-CAL,,/01, Description: 1,,1.0uL CS-6

OCDF



Deca DPE



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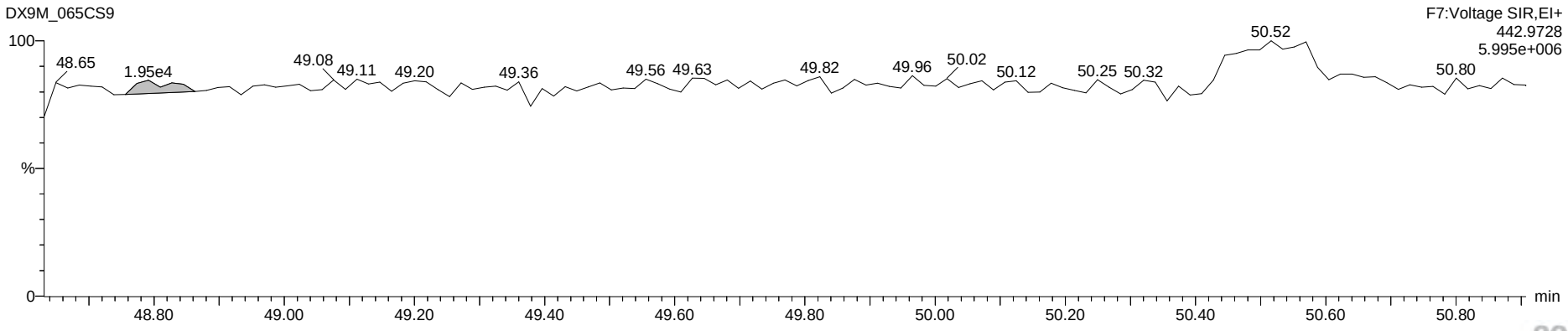


Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_065C-6A SSV.qld

Method: G:\Masslynx\Inst_M\Projects\190510DX.PRO\MethDB\DX_1613B_16.mdb 18 Jul 2019 14:33:32
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

Name: DX9M_065CS13, Date: 25-Jun-2019, Time: 22:05:10, ID: DX005A-SSV,,/01, Description: 1,,1.0uL Cal

	Name	Sample Size	Resp	Ratio	fails?	RT	pg	DL	%Rec	Noise 1	Noise 2
1	2,3,7,8-TCDF	1.000	5.31e5	0.78	NO	25.34	10.373	0.0166	103.7	1.24e3	2.38e3
2	1,2,3,7,8-PeCDF	1.000	1.87e6	1.32	NO	33.63	44.324	0.0255	88.6	2.07e3	1.92e3
3	2,3,4,7,8-PeCDF	1.000	2.02e6	1.39	NO	35.40	45.703	0.0212	91.4	2.07e3	1.92e3
4	1,2,3,4,7,8-HxCDF	1.000	1.76e6	1.17	NO	40.80	50.924	0.0303	101.8	2.22e3	3.78e3
5	1,2,3,6,7,8-HxCDF	1.000	1.89e6	1.16	NO	40.99	50.787	0.0294	101.6	2.22e3	3.78e3
6	2,3,4,6,7,8-HxCDF	1.000	1.79e6	1.21	NO	41.93	51.110	0.0307	102.2	2.22e3	3.78e3
7	1,2,3,7,8,9-HxCDF	1.000	1.52e6	1.22	NO	42.97	53.173	0.0373	106.3	2.22e3	3.78e3
8	1,2,3,4,6,7,8-HpCDF	1.000	1.56e6	0.93	NO	45.42	52.238	0.0351	104.5	3.25e3	3.11e3
9	1,2,3,4,7,8,9-HpCDF	1.000	1.21e6	0.92	NO	47.23	50.373	0.0453	100.7	3.25e3	3.11e3
10	OCDF	1.000	2.11e6	0.86	NO	50.50	111.153	0.0100	111.2	5.97e2	4.14e2
11	2,3,7,8-TCDD	1.000	4.12e5	0.80	NO	26.56	10.468	0.0163	104.7	1.43e3	1.20e3
12	1,2,3,7,8-PeCDD	1.000	1.45e6	0.62	NO	36.23	52.489	0.0231	105.0	1.82e3	1.12e3
13	1,2,3,4,7,8-HxCDD	1.000	1.26e6	1.23	NO	42.20	49.674	0.0355	99.3	2.48e3	2.96e3
14	1,2,3,6,7,8-HxCDD	1.000	1.36e6	1.26	NO	42.34	51.871	0.0364	103.7	2.48e3	2.96e3
15	1,2,3,7,8,9-HxCDD	1.000	1.29e6	1.20	NO	42.76	50.593	0.0363	101.2	2.48e3	2.96e3
16	1,2,3,4,6,7,8-HpCDD	1.000	1.07e6	1.02	NO	46.81	54.353	0.0409	108.7	3.05e3	1.61e3
17	OCDD	1.000	1.78e6	0.87	NO	50.41	109.225	0.0124	109.2	6.77e2	4.01e2
18	13C-2,3,7,8-TCDF	1.000	5.52e6	0.76	NO	25.30	95.281	0.0557	95.3	8.30e3	5.66e3
19	13C-1,2,3,7,8-PeCDF	1.000	4.54e6	1.55	NO	33.60	96.249	0.1006	96.2	9.78e3	1.07e4
20	13C-2,3,4,7,8-PeCDF	1.000	4.65e6	1.56	NO	35.38	95.722	0.0976	95.7	9.78e3	1.07e4
21	13C-1,2,3,4,7,8-HxCDF	1.000	3.13e6	0.51	NO	40.78	100.700	0.0928	100.7	1.09e4	5.55e3
22	13C-1,2,3,6,7,8-HxCDF	1.000	3.47e6	0.52	NO	40.95	101.752	0.0845	101.8	1.09e4	5.55e3
23	13C-2,3,4,6,7,8-HxCDF	1.000	3.08e6	0.51	NO	41.90	100.105	0.0937	100.1	1.09e4	5.55e3
24	13C-1,2,3,7,8,9-HxCDF	1.000	2.72e6	0.51	NO	42.95	99.239	0.1054	99.2	1.09e4	5.55e3
25	13C-1,2,3,4,6,7,8-HpCDF	1.000	2.39e6	0.46	NO	45.41	93.359	0.0754	93.4	6.68e3	4.32e3
26	13C-1,2,3,4,7,8,9-HpCDF	1.000	1.92e6	0.46	NO	47.21	92.377	0.0929	92.4	6.68e3	4.32e3
27	13C-2,3,7,8-TCDD	1.000	3.57e6	0.76	NO	26.54	96.782	0.1218	96.8	6.27e3	1.31e4
28	13C-1,2,3,7,8-PeCDD	1.000	2.80e6	0.62	NO	36.20	95.658	0.0639	95.7	4.63e3	3.45e3
29	13C-1,2,3,4,7,8-HxCDD	1.000	2.48e6	1.26	NO	42.19	99.864	0.0936	99.9	6.31e3	6.93e3
30	13C-1,2,3,6,7,8-HxCDD	1.000	2.78e6	1.27	NO	42.32	101.516	0.0847	101.5	6.31e3	6.93e3
31	13C-1,2,3,4,6,7,8-HpCDD	1.000	2.52e6	1.02	NO	46.79	90.686	0.0651	90.7	3.97e3	6.32e3
32	13C-OCDD	1.000	3.33e6	0.87	NO	50.39	163.210	0.0000	81.6	1.00e0	1.00e0
33	13C-1,2,3,4-TCDD	1.000	3.81e6	0.77	NO	26.21	94.621	0.1117	94.6	6.27e3	1.31e4
34	13C-1,2,3,7,8,9-HxCDD	1.000	2.56e6	1.23	NO	42.75	88.154	0.0799	88.2	6.31e3	6.93e3
35	37Cl-2,3,7,8-TCDD	1.000	4.09e5			26.56	10.059	0.0153	100.6		2.69e3
36	Total Tetra-Furans	1.000					10.726	0.0166			2.38e3
37	Total Tetra-Dioxins	1.000					10.779	0.0163			1.20e3
38	Total Penta-Furans	1.000					92.456	0.0235			1.92e3
39	Total Penta-Dioxins	1.000					53.281	0.0231			1.12e3
40	Total Hexa-Furans	1.000					207.345	0.0313			3.78e3
41	Total Hexa-Dioxins	1.000					153.045	0.0344			2.96e3
42	Total Hepta-Furans	1.000					104.506	0.0397			3.11e3
43	Total Hepta-Dioxins	1.000					57.975	0.0409			1.61e3
44	Hexa DPE	1.000	6.97e2			23.23					1.00e0
45	Hepta DPE	1.000	6.20e2			37.63					2.96e2
46	Octa DPE	1.000	1.08e2			39.80					7.61e2
47	Nona DPE	1.000	3.32e1			46.40					1.00e0
48	Deca DPE	1.000	6.86e1			50.68					1.00e0
49	Tetra Lock	1.000	2.52e4			23.82					3.34e5
50	Penta Lock	1.000	5.91e5			29.47					2.79e5
51	Hexa Lock	1.000	1.97e6			39.02					4.23e5

pv'd by AKB 22-Jul-2019 Cal/Ver and SPM units = ng/mL

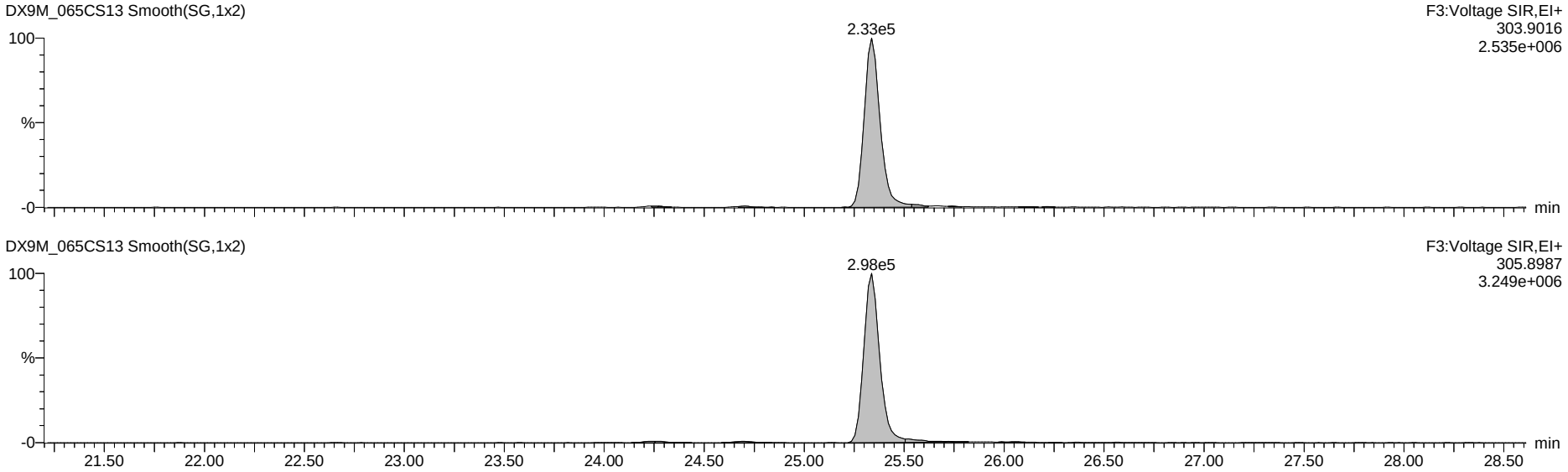
SV: pv 22-Jul-19

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_065C-7A SSV.qld

Method: G:\Masslynx\Inst_M\Projects\190510DX.PRO\MethDB\DX_1613B_16.mdb 18 Jul 2019 14:33:32
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-7a.cdb 22 Jul 2019 09:01:47

Name: DX9M_065CS13, Date: 25-Jun-2019, Time: 22:05:10, ID: DX005A-SSV,,/01, Description: 1,,1.0uL Cal

Total Tetra-Furans



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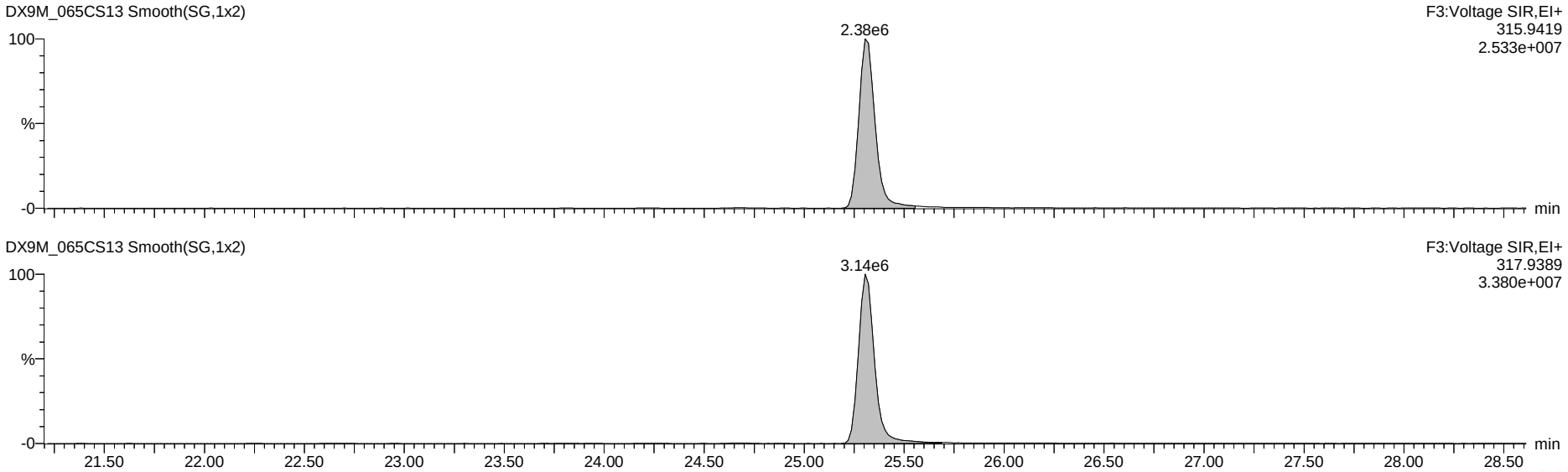

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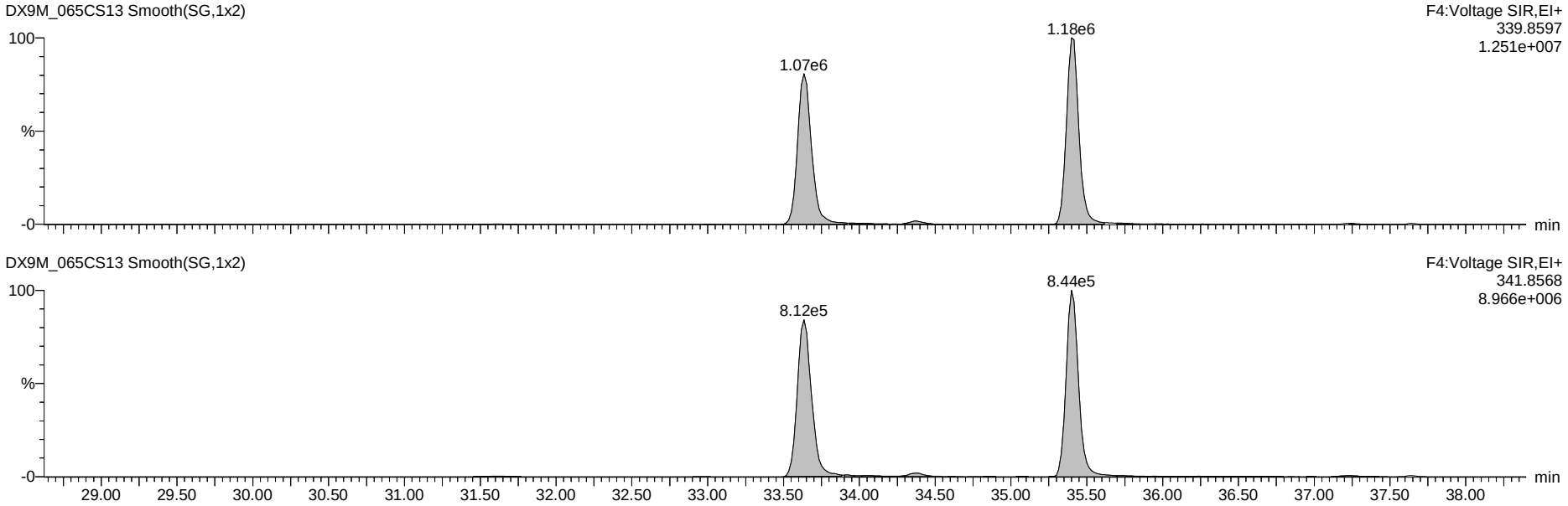
Total Penta-Furans



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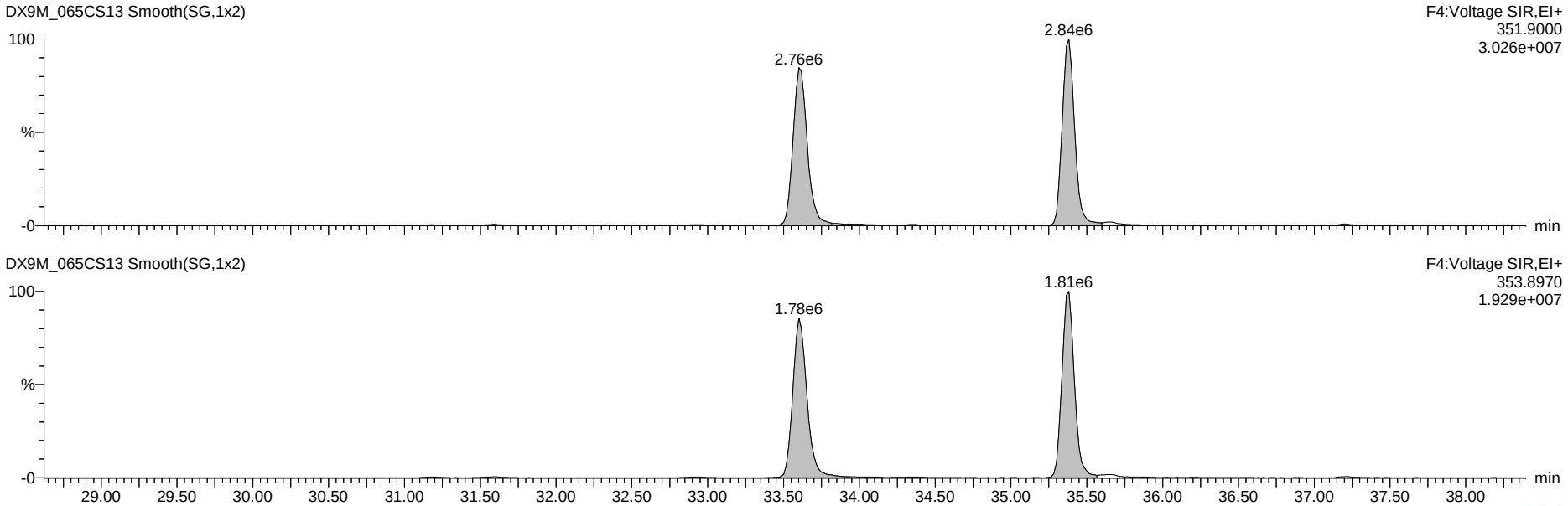

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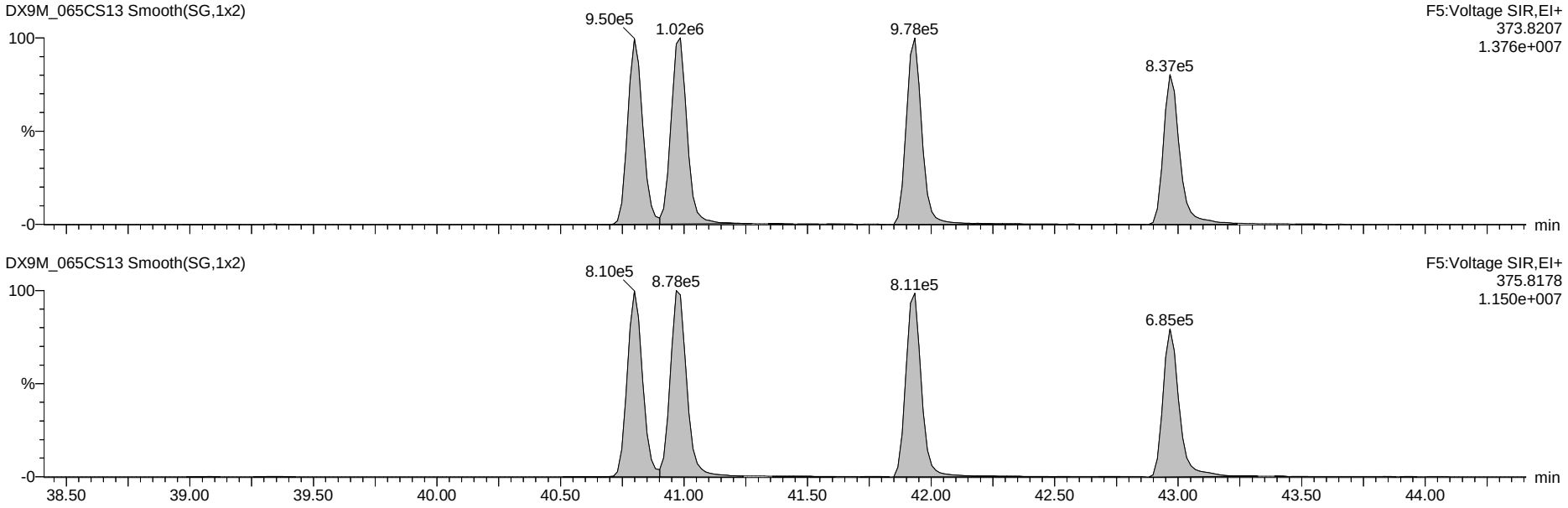
Total Hexa-Furans



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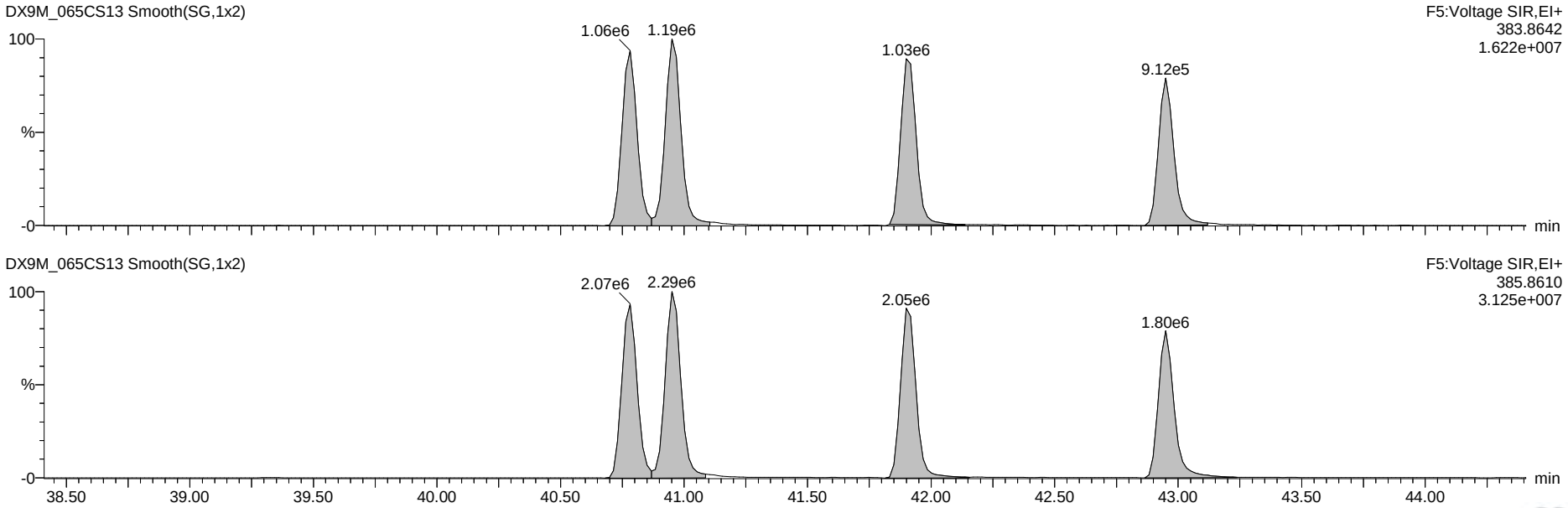

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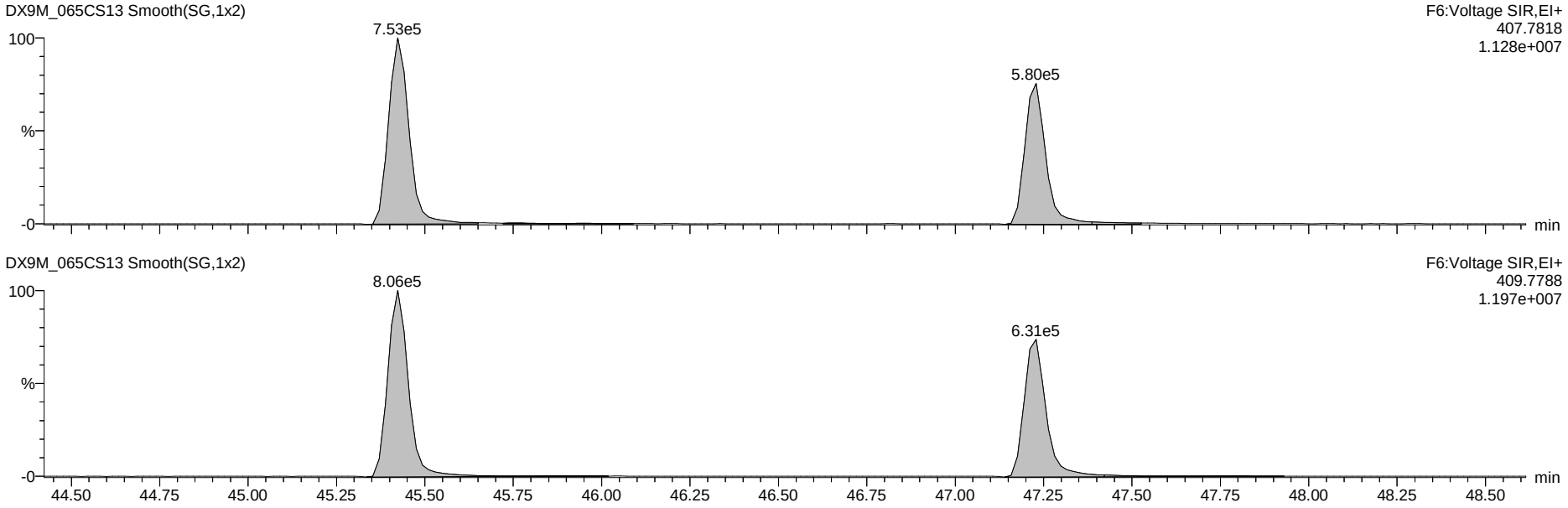
Total Hepta-Furans



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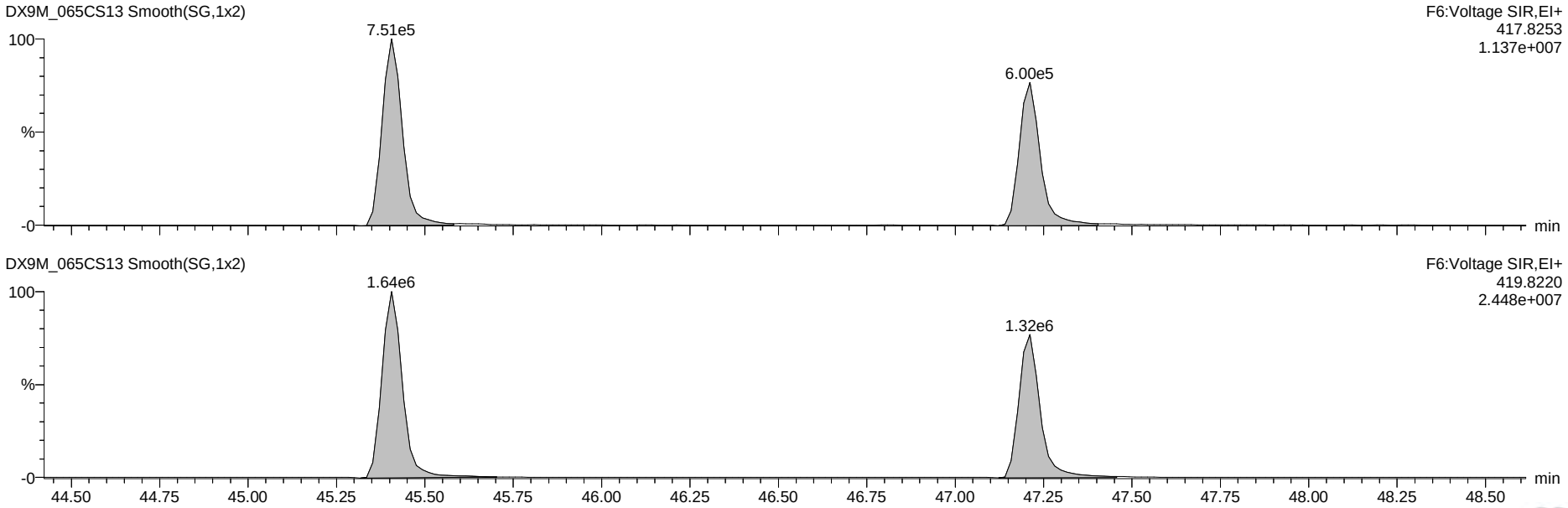

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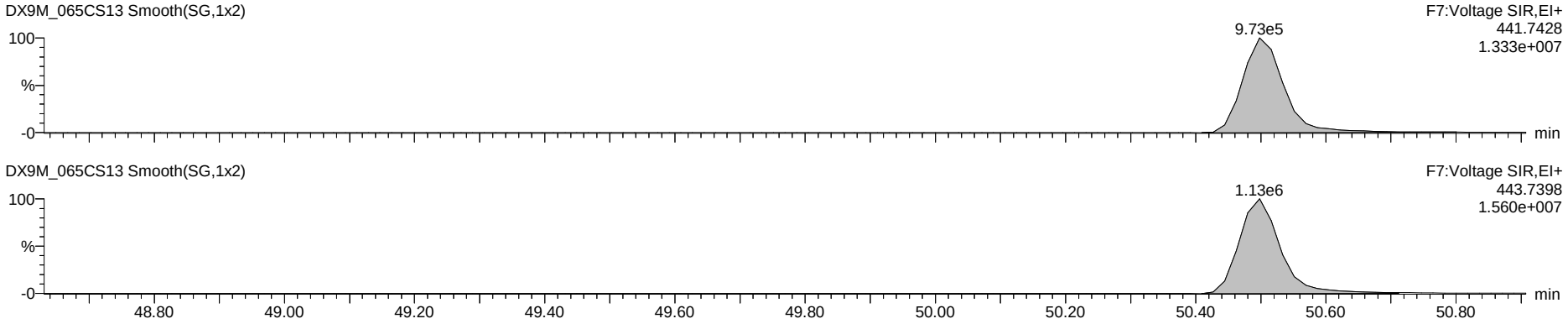
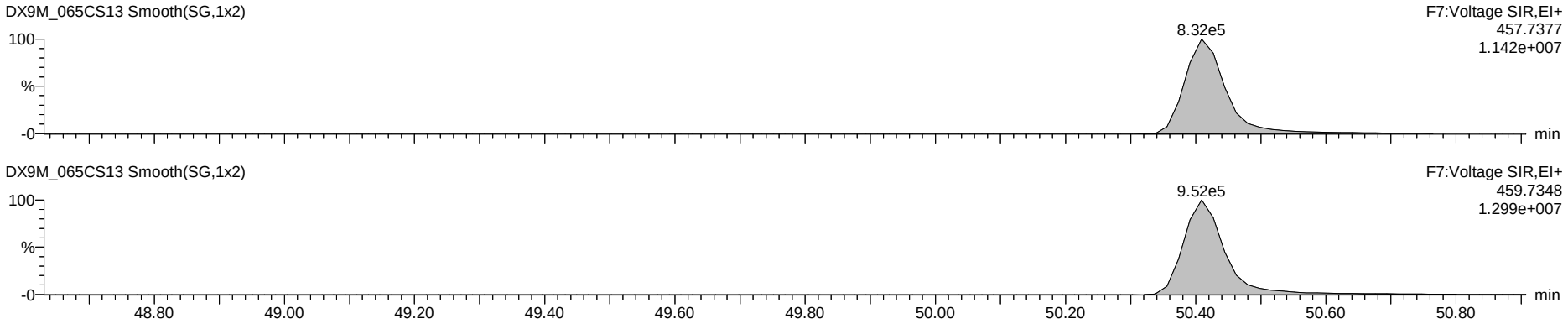
OCDF



OCDD



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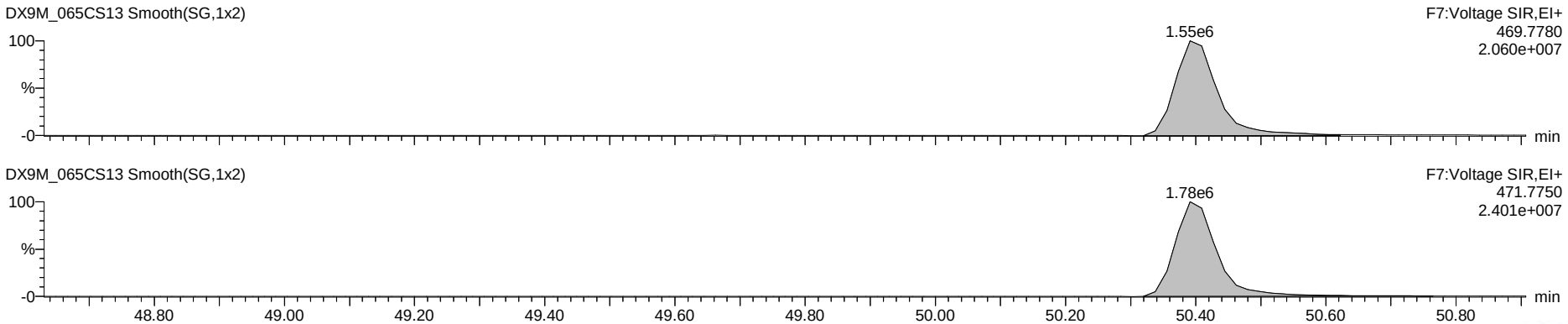

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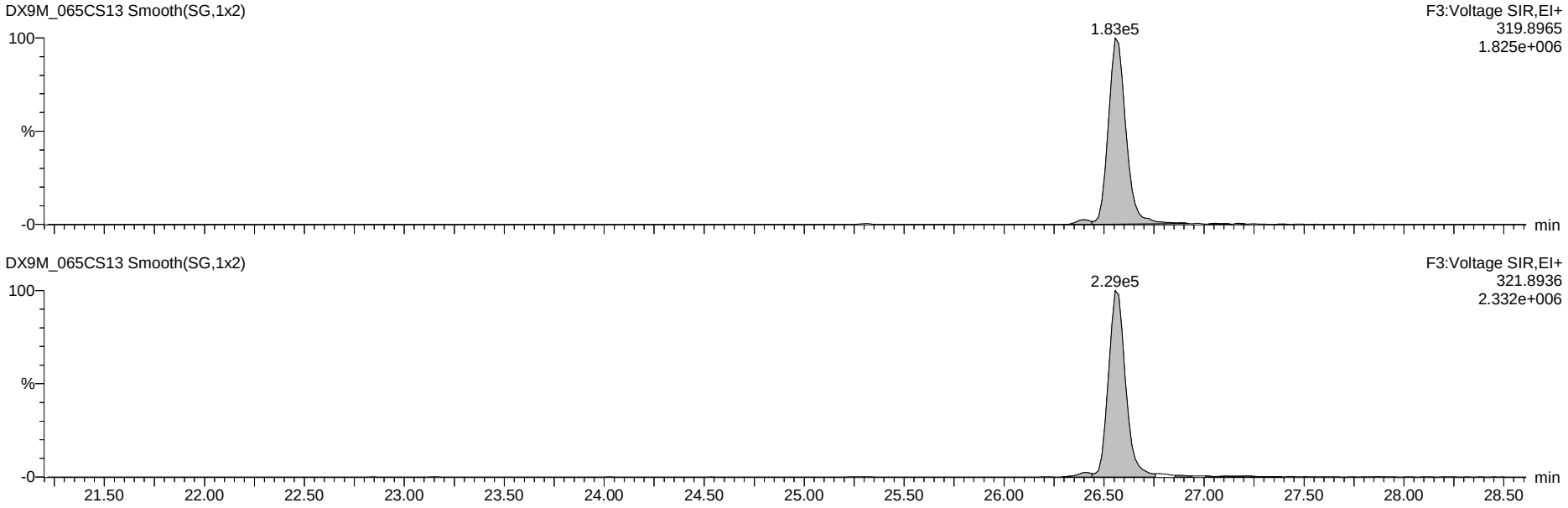
Total Tetra-Dioxins



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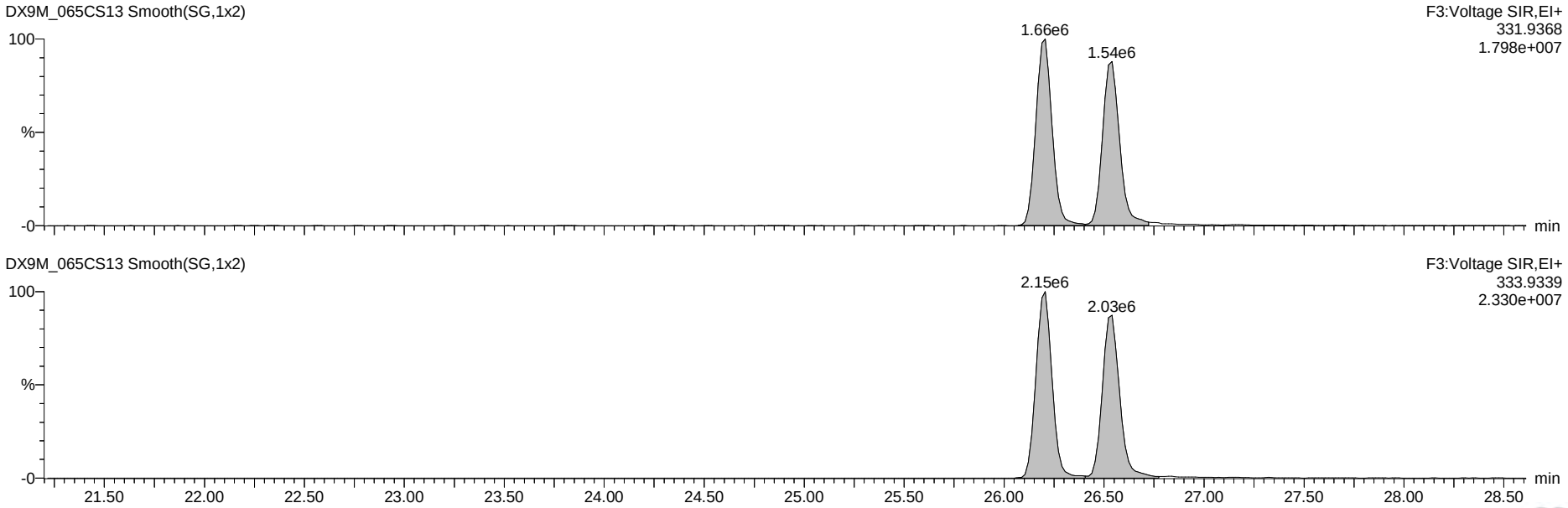

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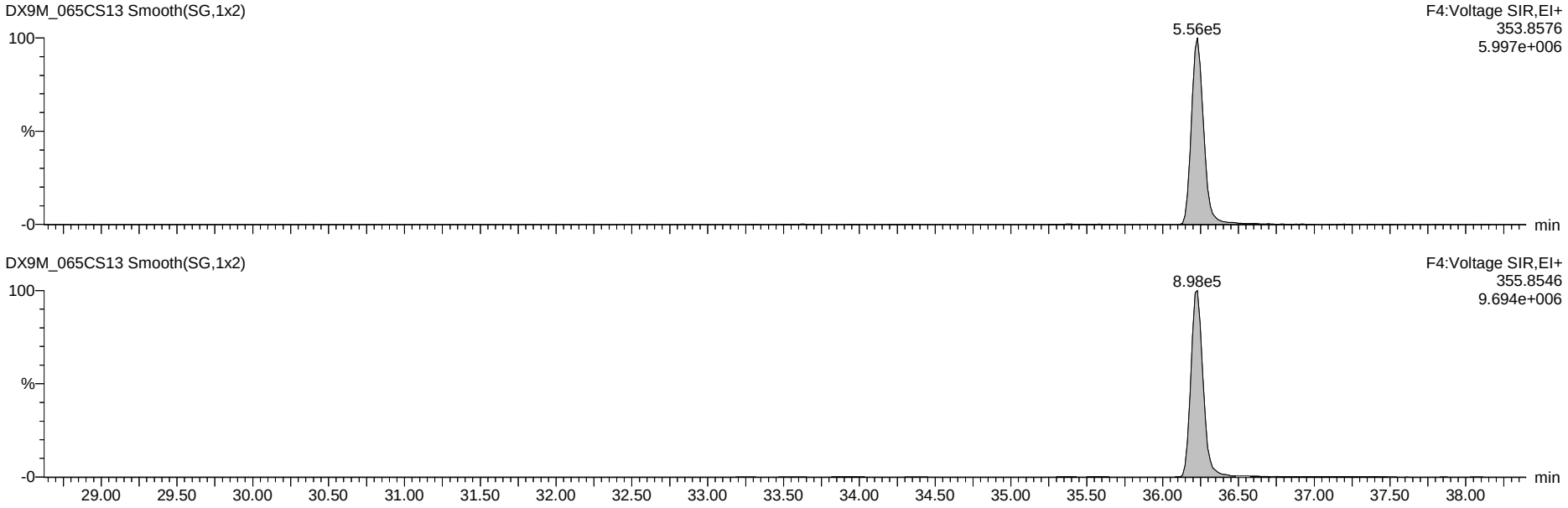
Total Penta-Dioxins



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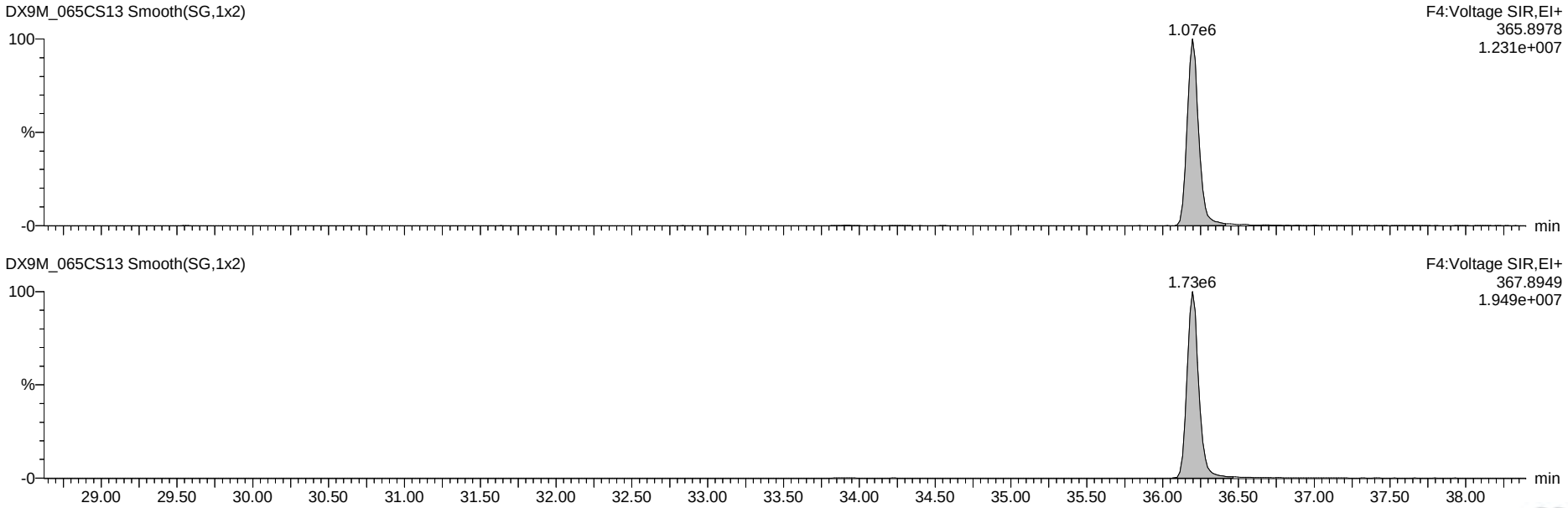

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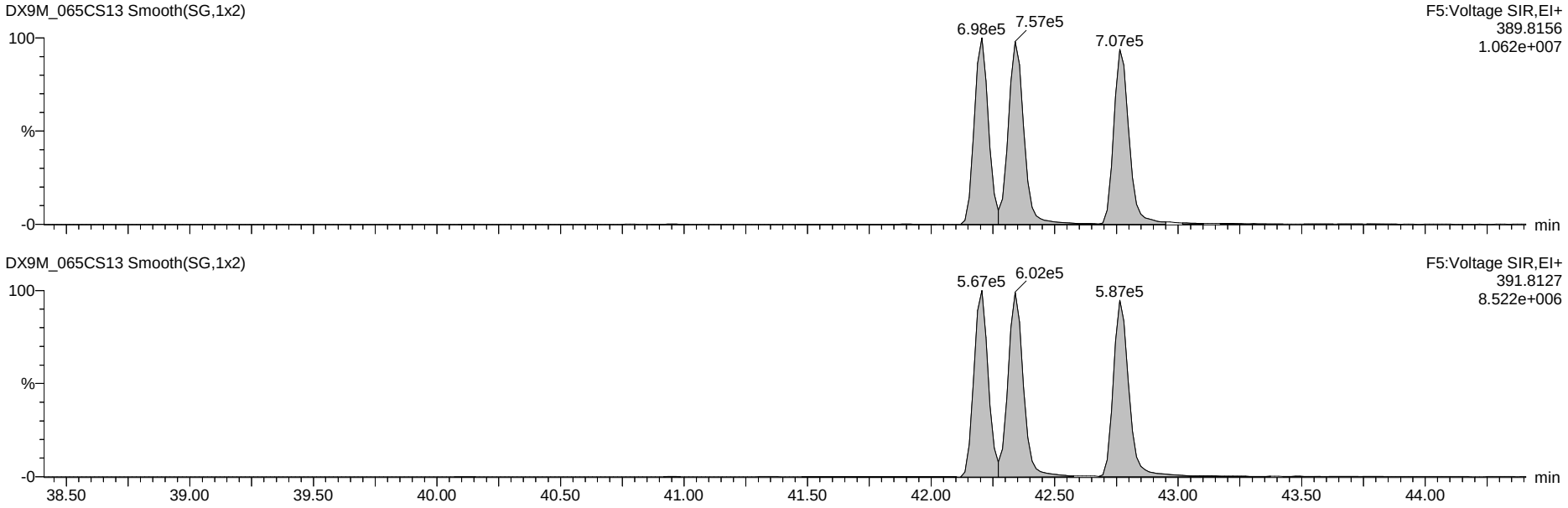
Total Hexa-Dioxins



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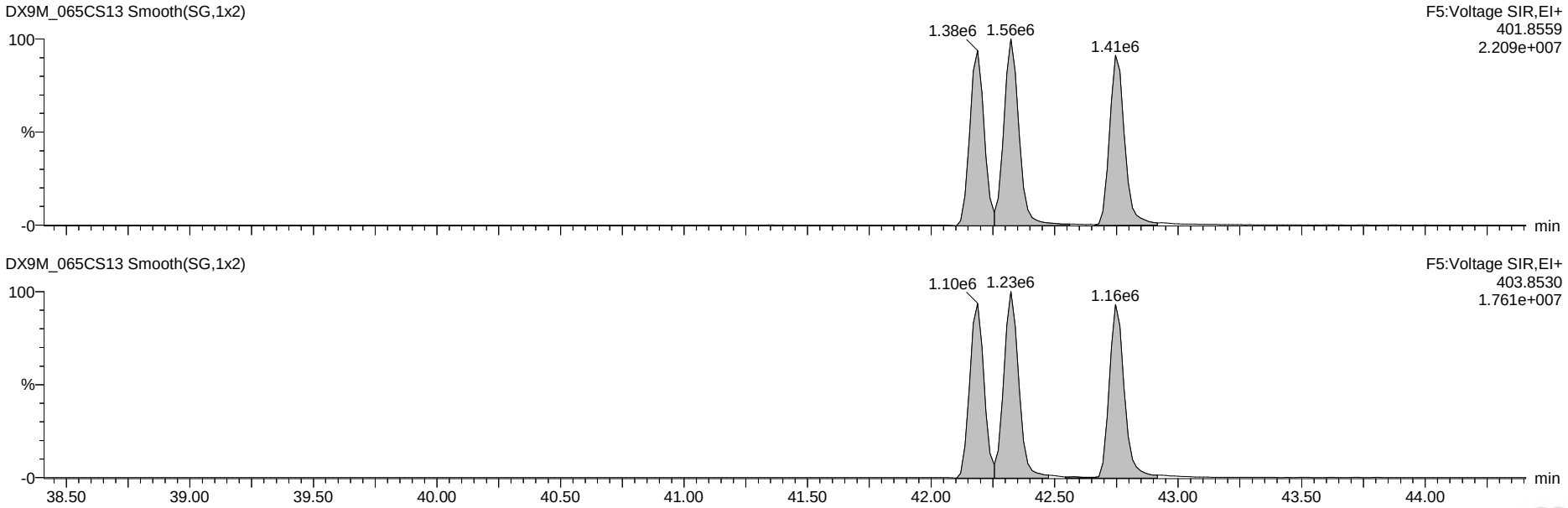

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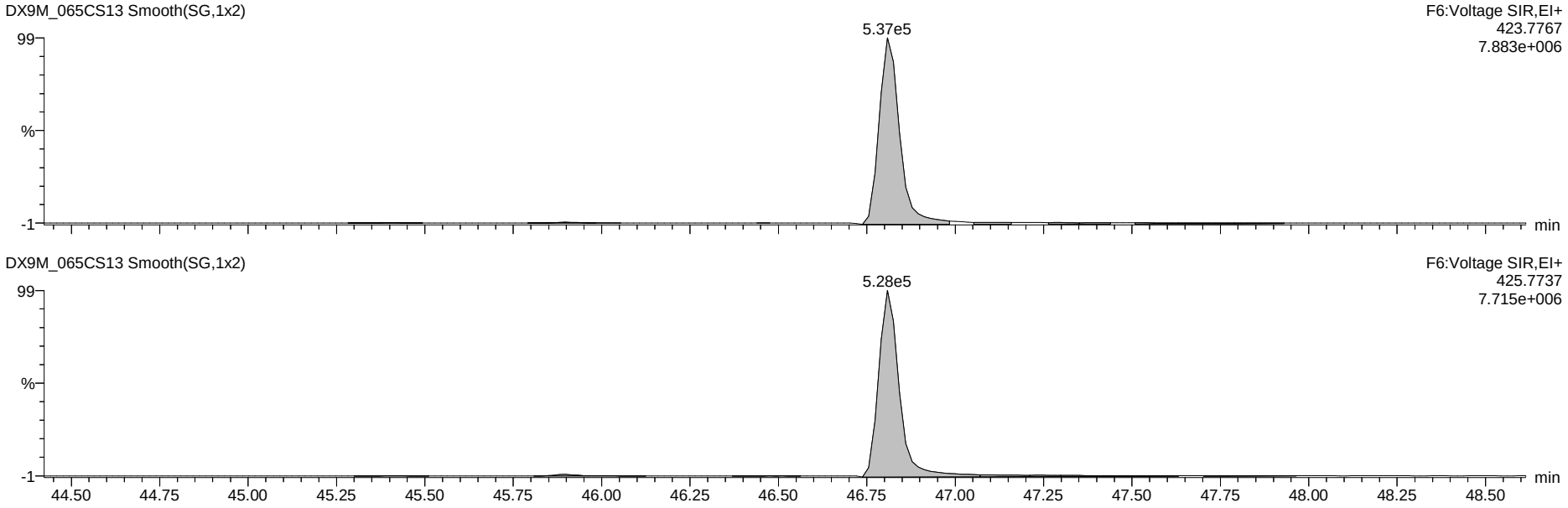
Total Hepta-Dioxins



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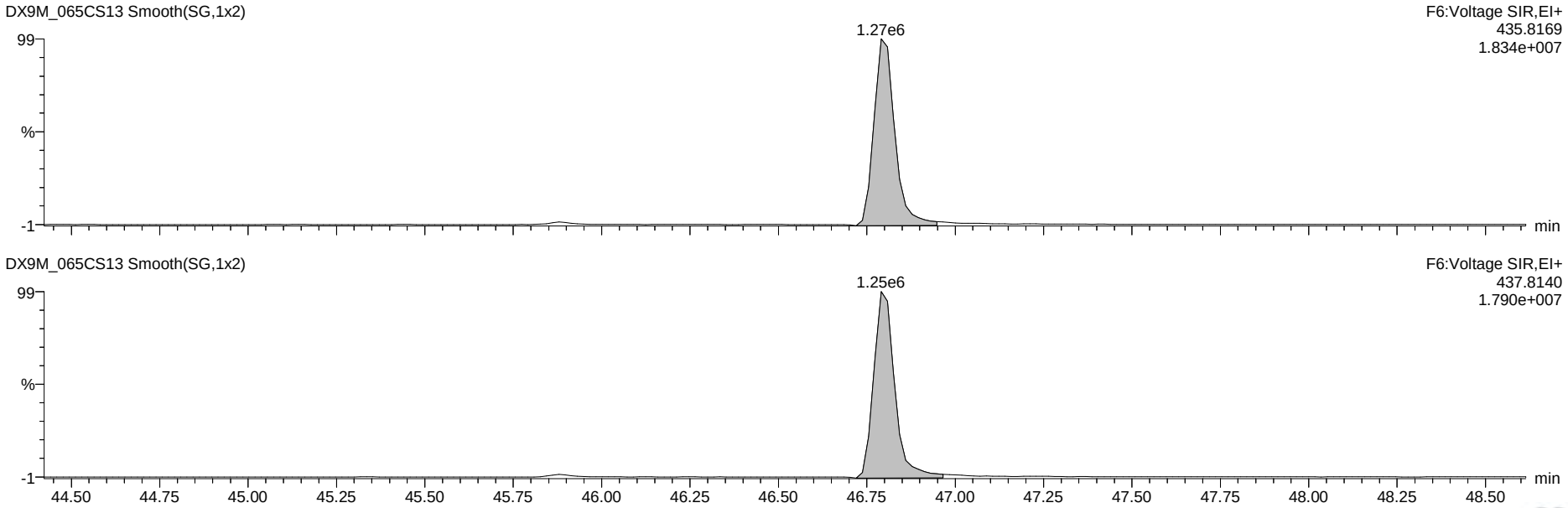

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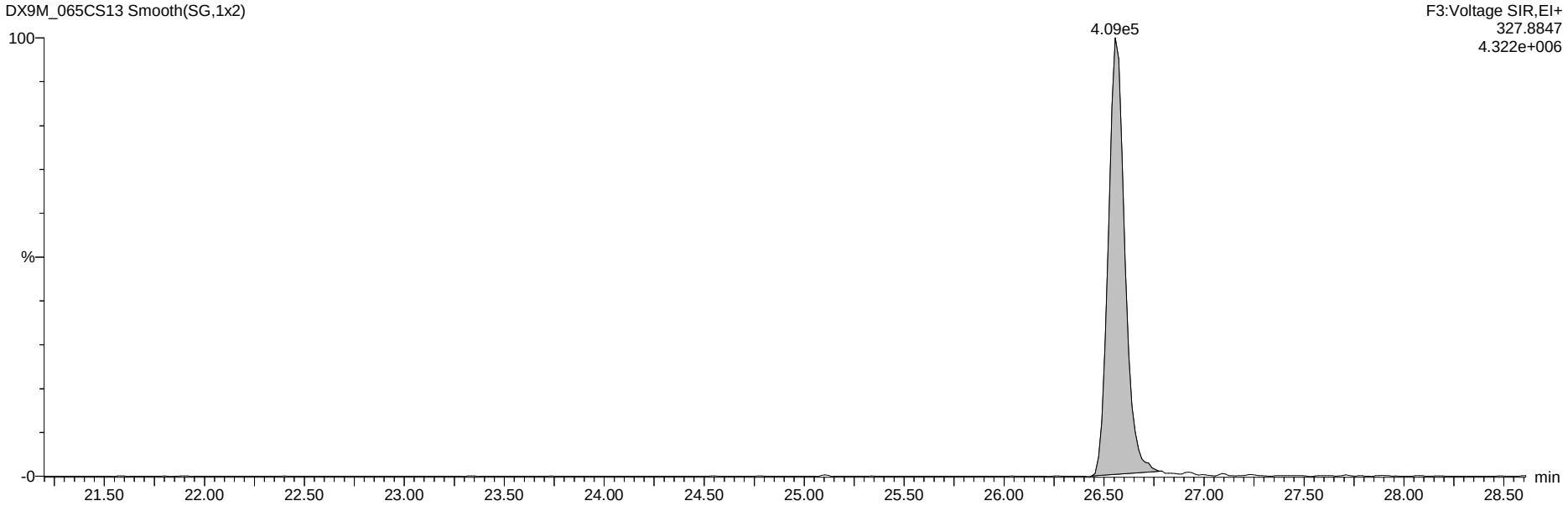
37Cl-2,3,7,8-TCDD



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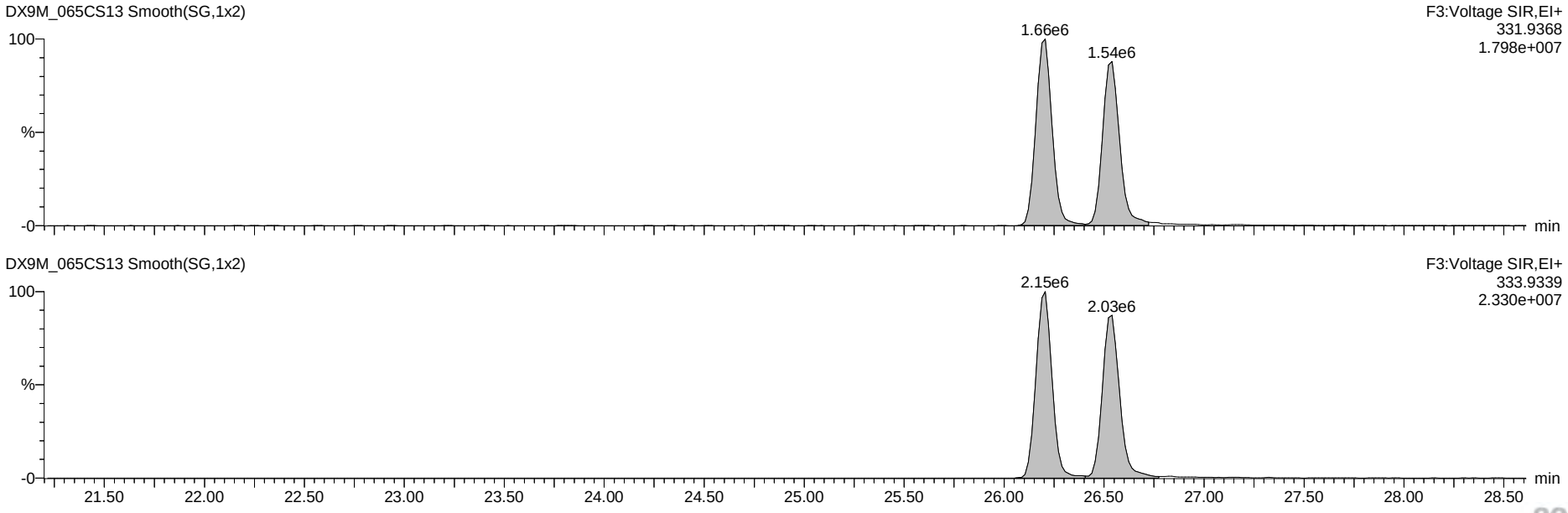

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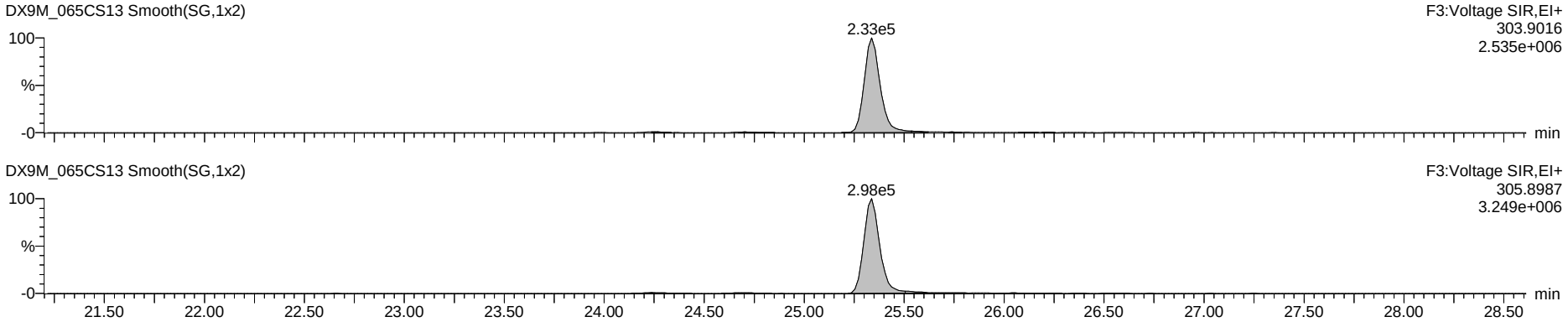
Total Tetra-Furans



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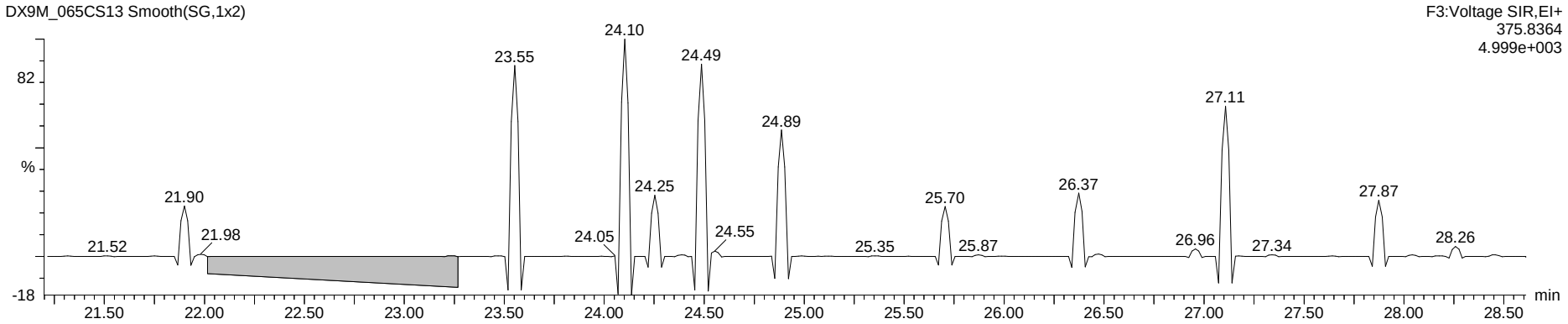
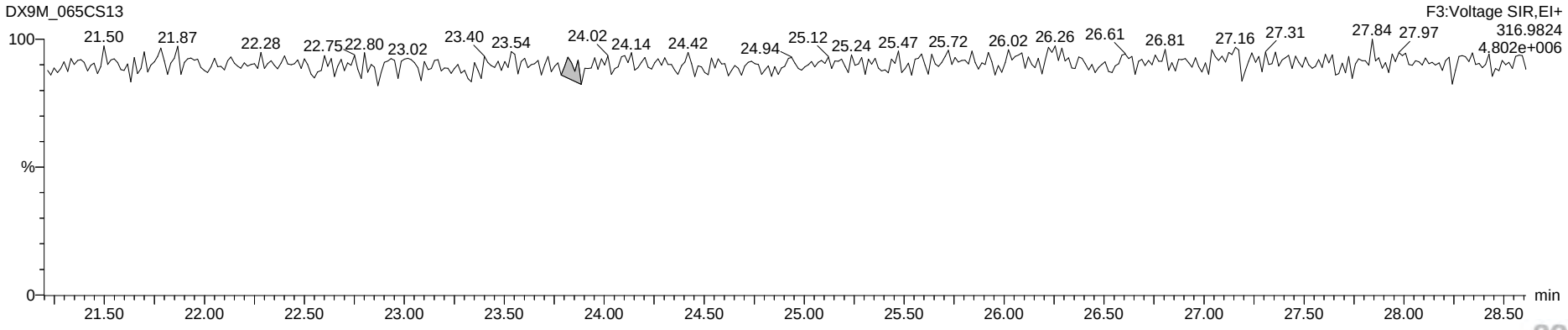


Tetra Lock



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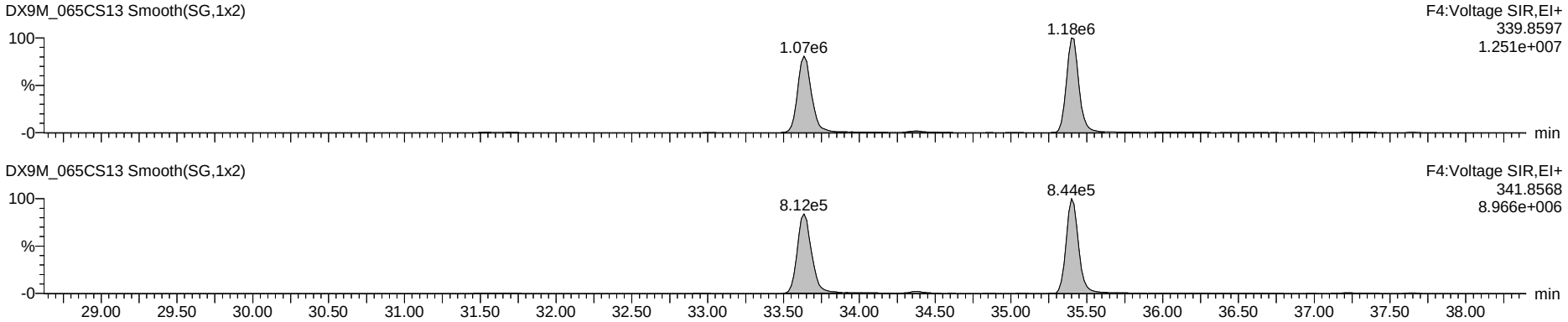
Total Penta-Furans



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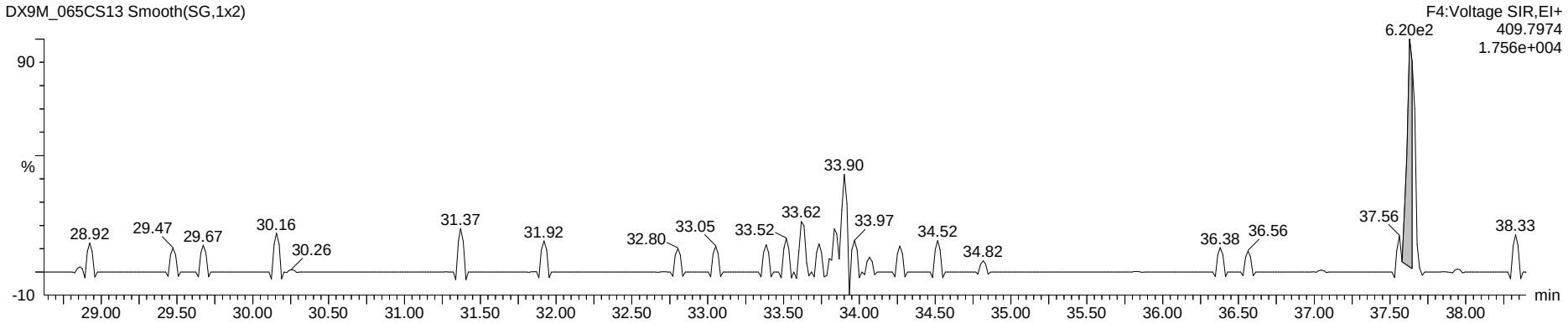
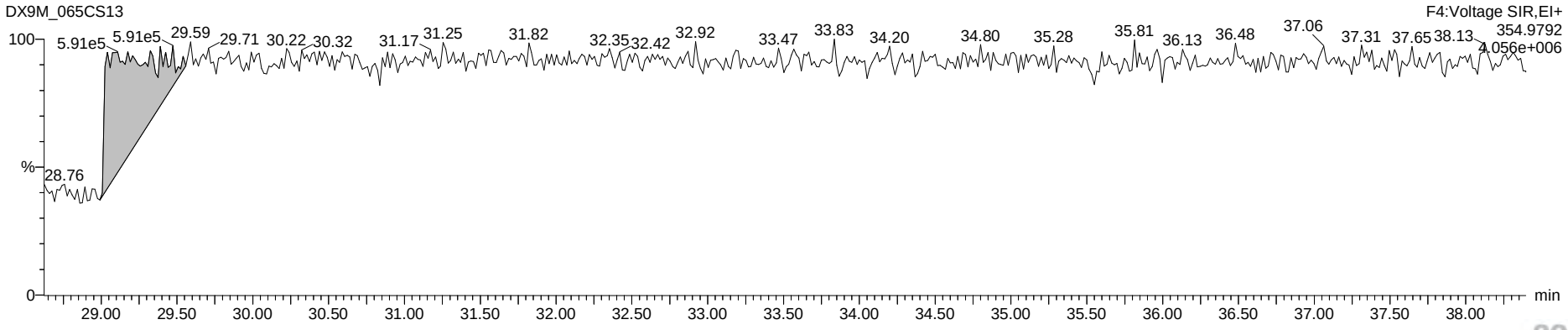


Penta Lock



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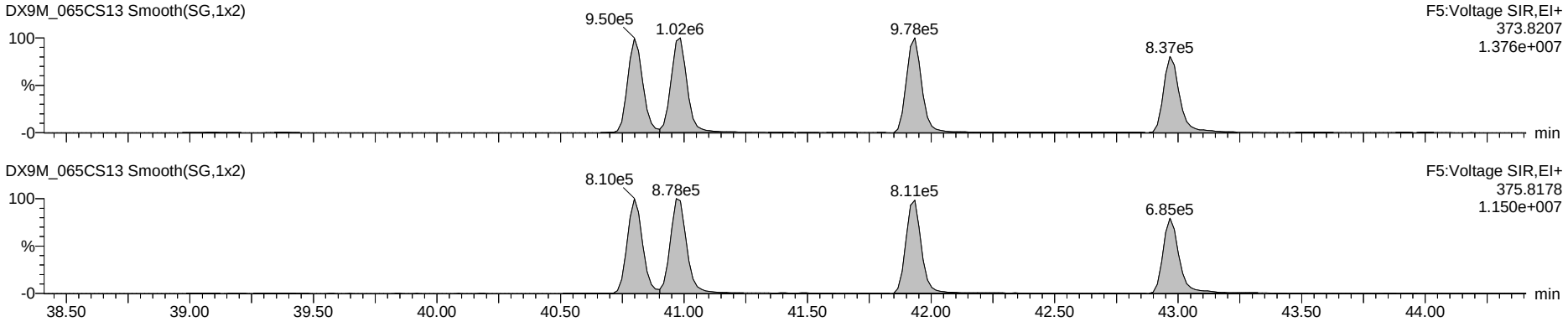
Total Hexa-Furans



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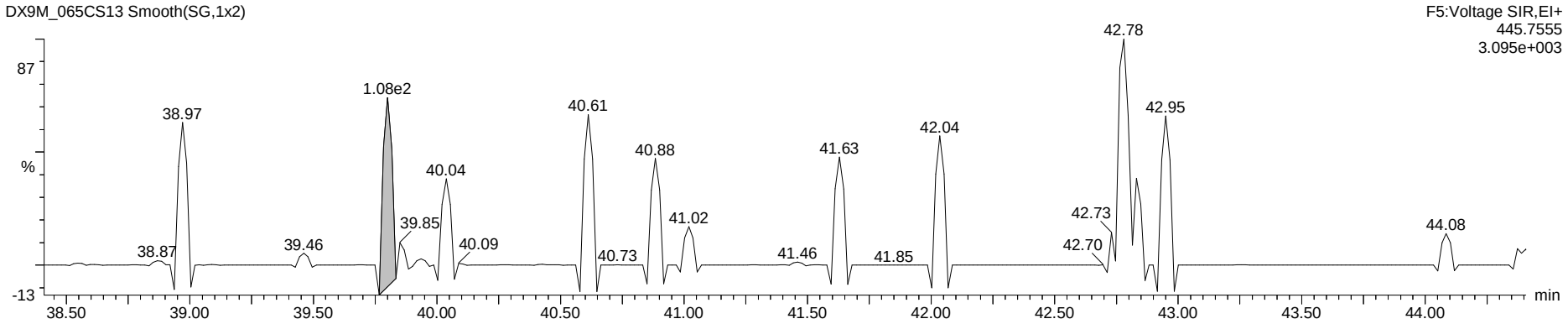

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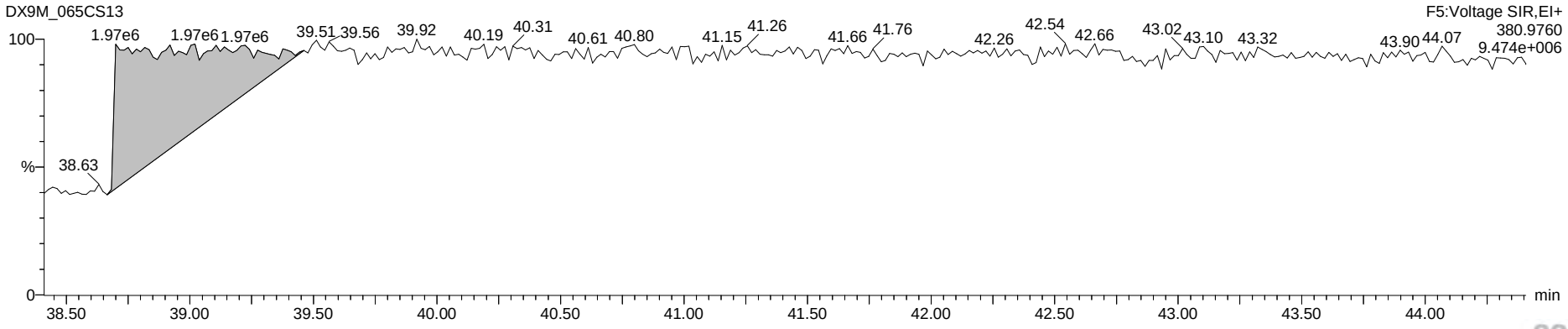

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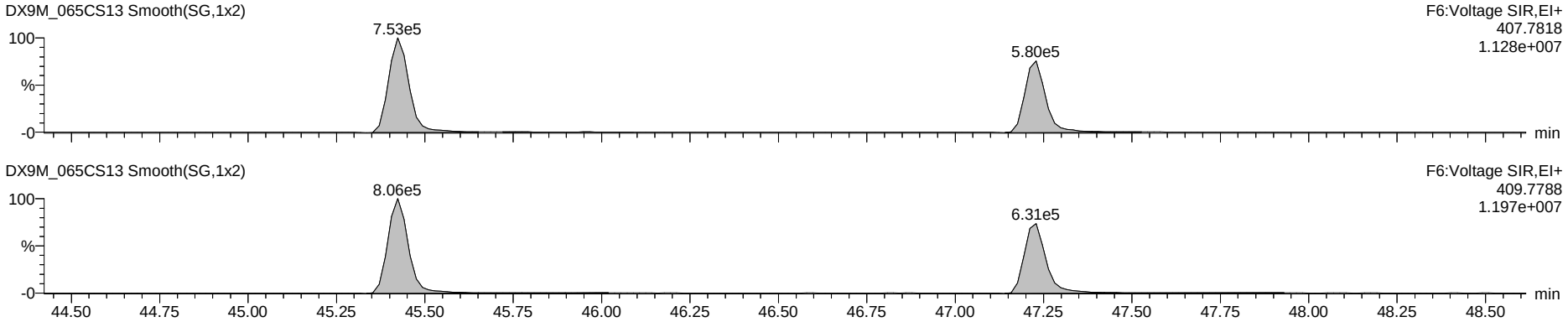
Total Hepta-Furans



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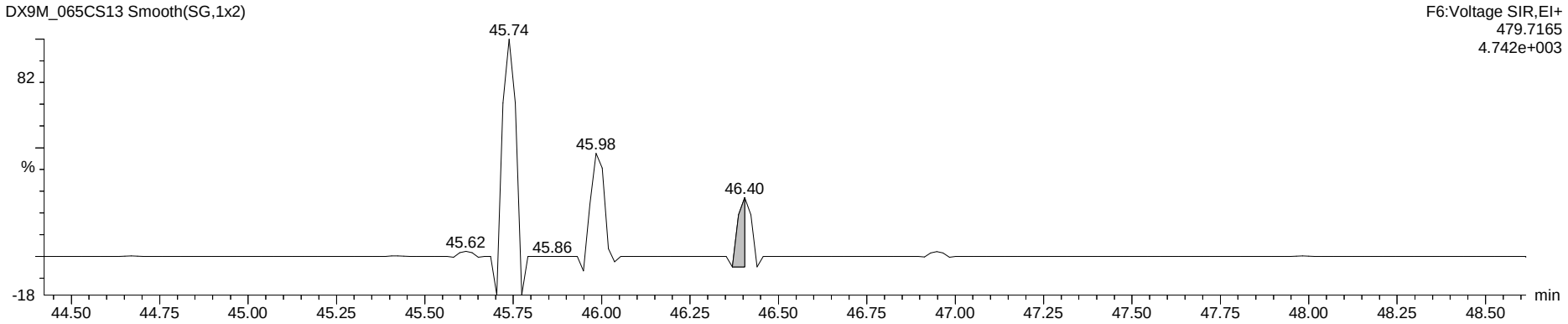

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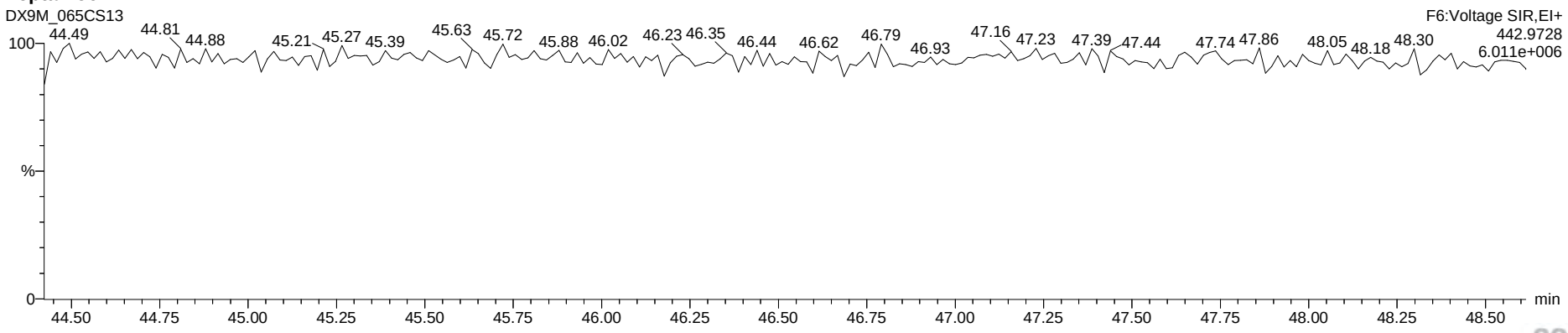

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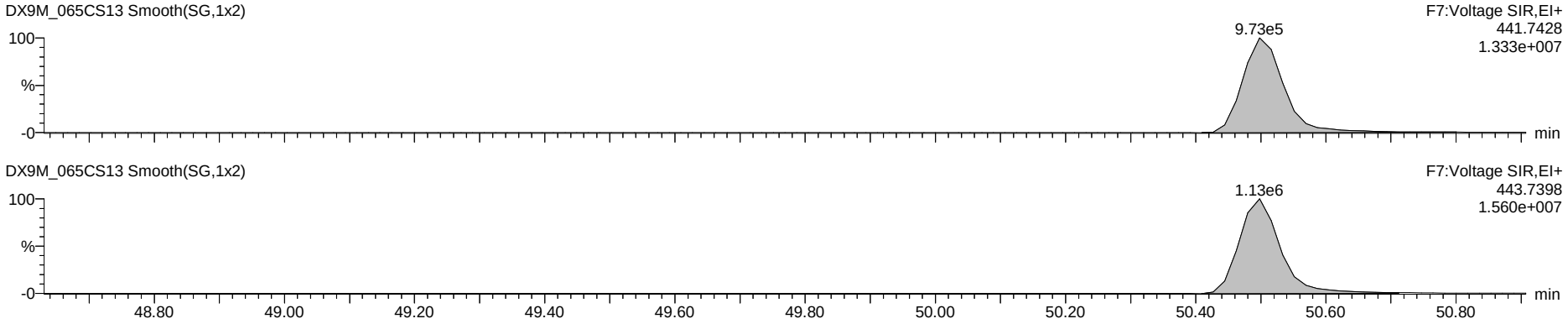
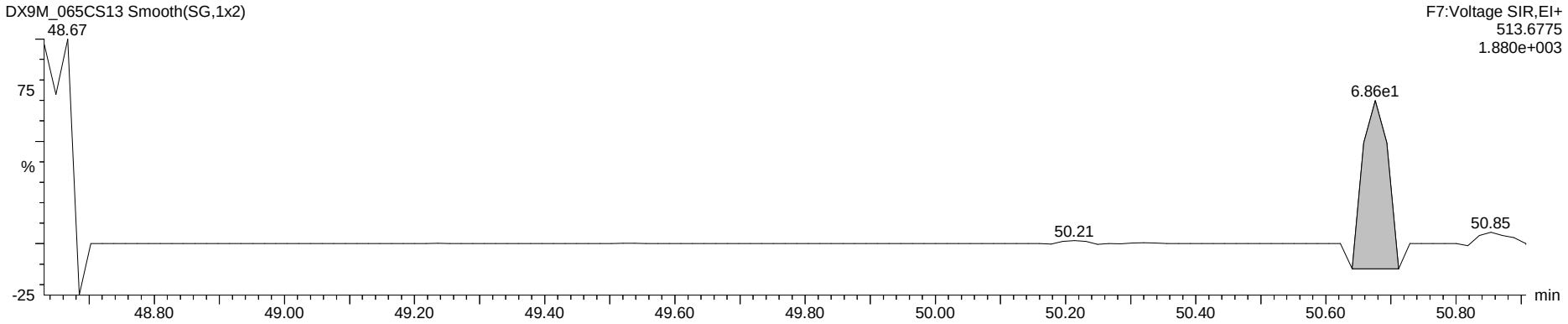
Name: DX9M_065CS13, Date: 25-Jun-2019, Time: 22:05:10, ID: DX005A-SSV,,/01, Description: 1,,1.0uL Cal

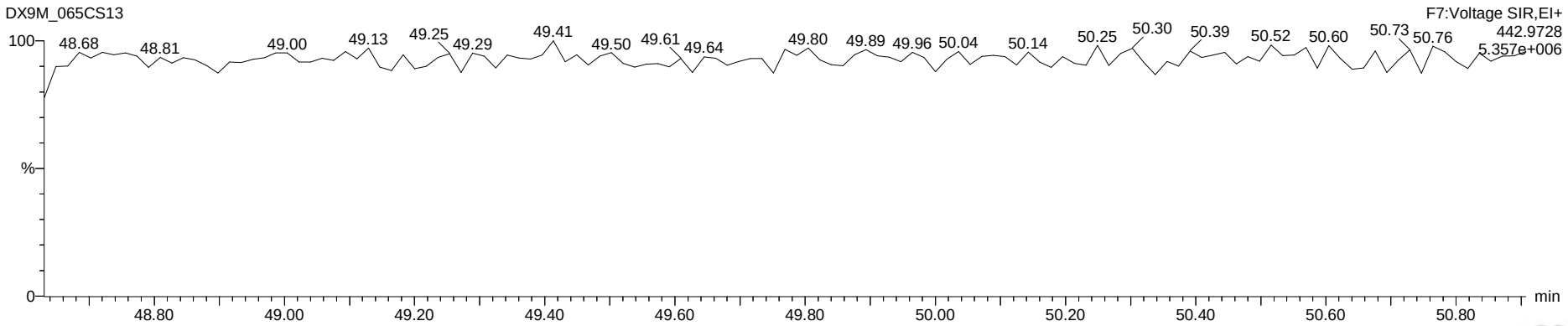
OCDF



Deca DPE

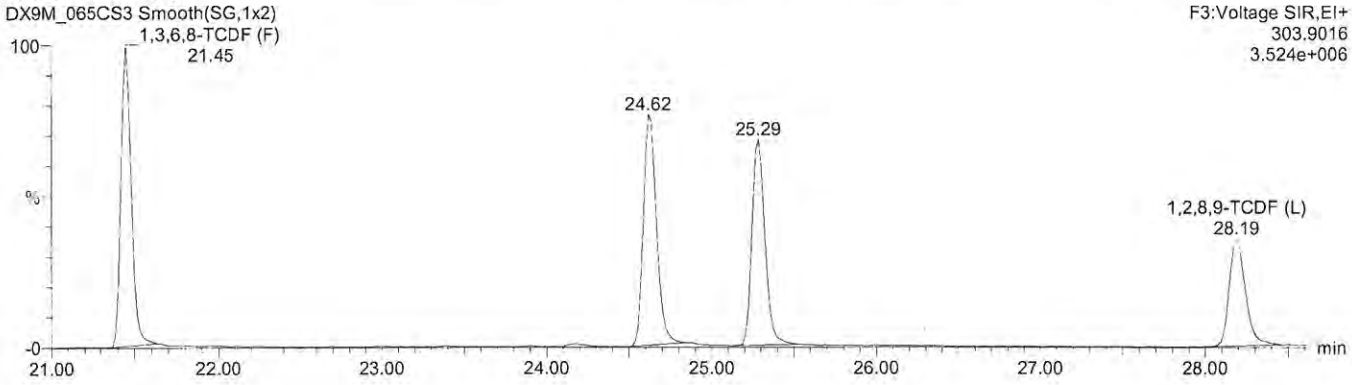


Octa Lock

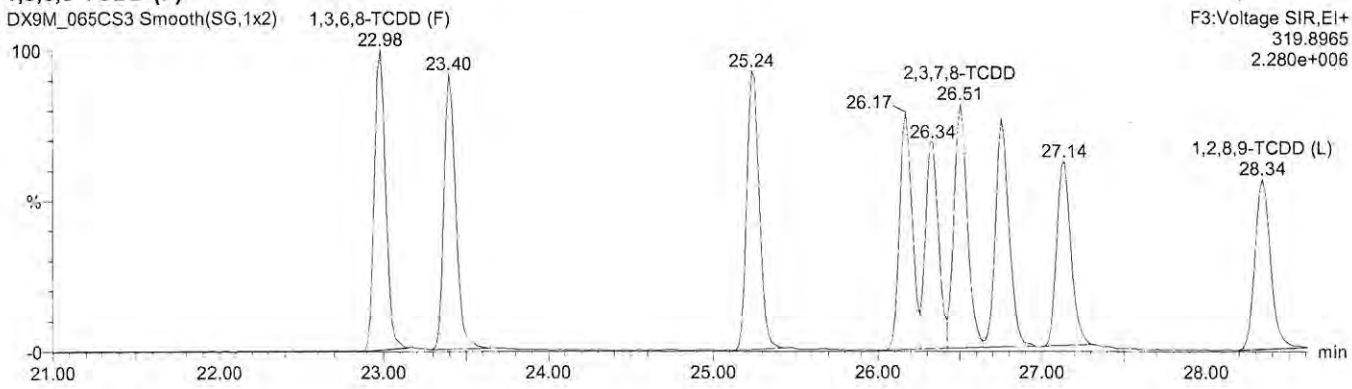


Name: DX9M_065CS3, Date: 25-Jun-2019, Time: 11:05:52, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

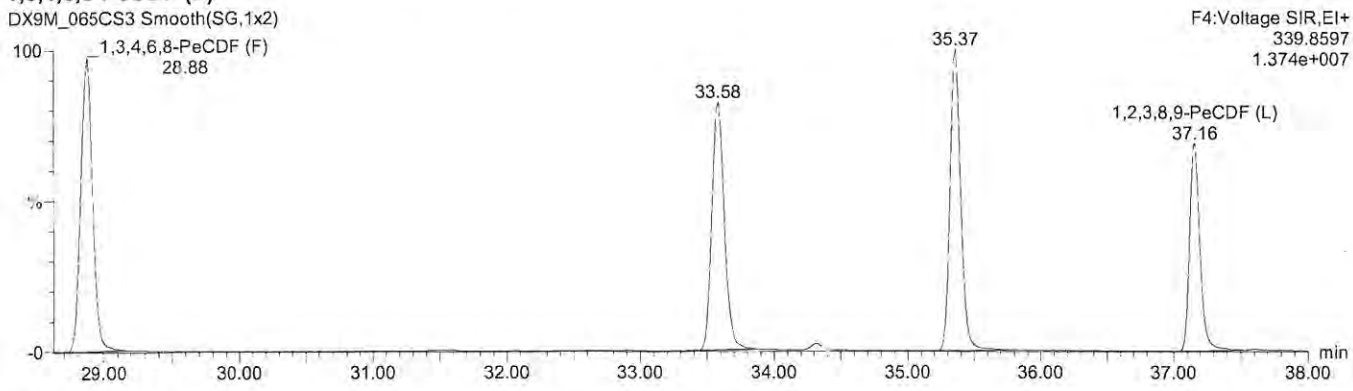
1,3,6,8-TCDF (F)



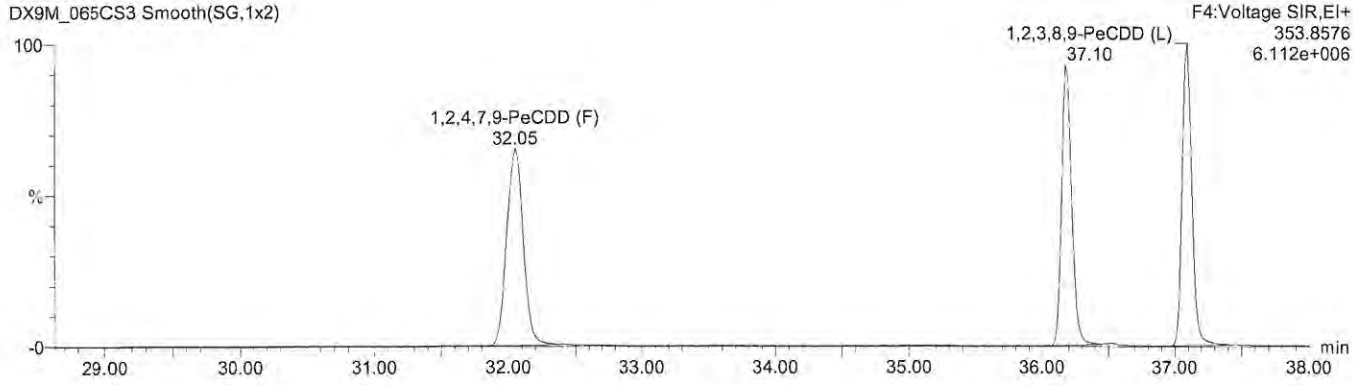
1,3,6,8-TCDD (F)



1,3,4,6,8-PeCDF (F)

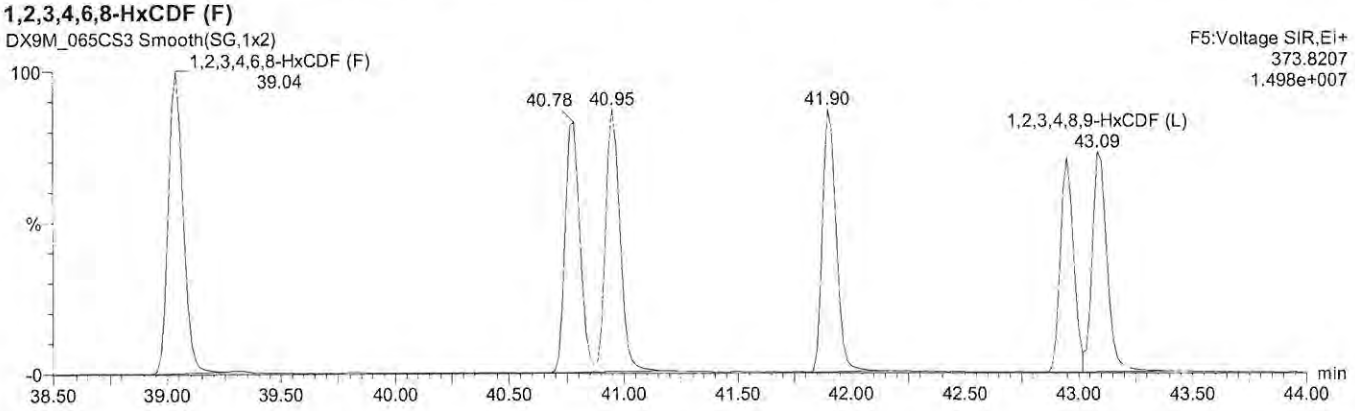


1,2,4,7,9-PeCDD (F)

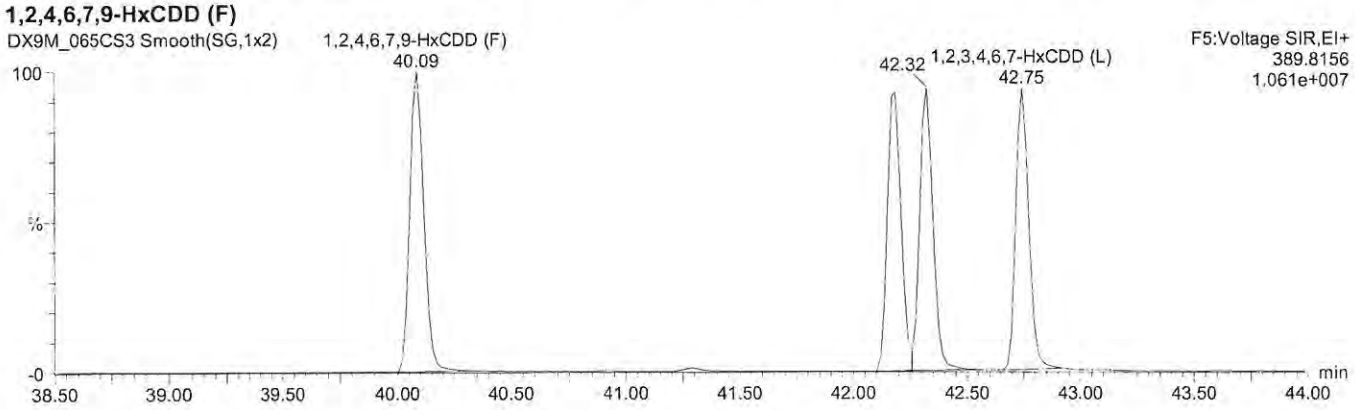


Name: DX9M_065CS3, Date: 25-Jun-2019, Time: 11:05:52, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

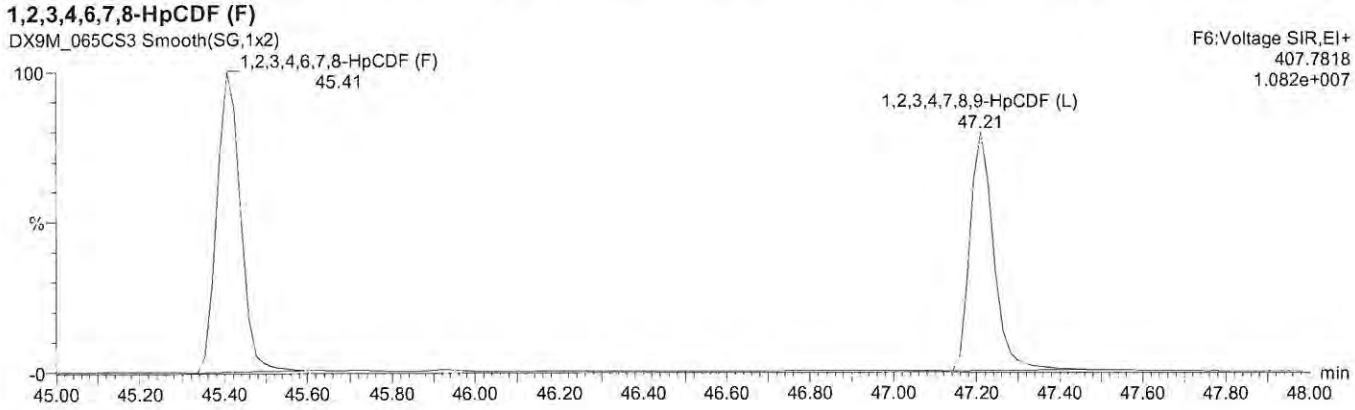
1,2,3,4,6,8-HxCDF (F)



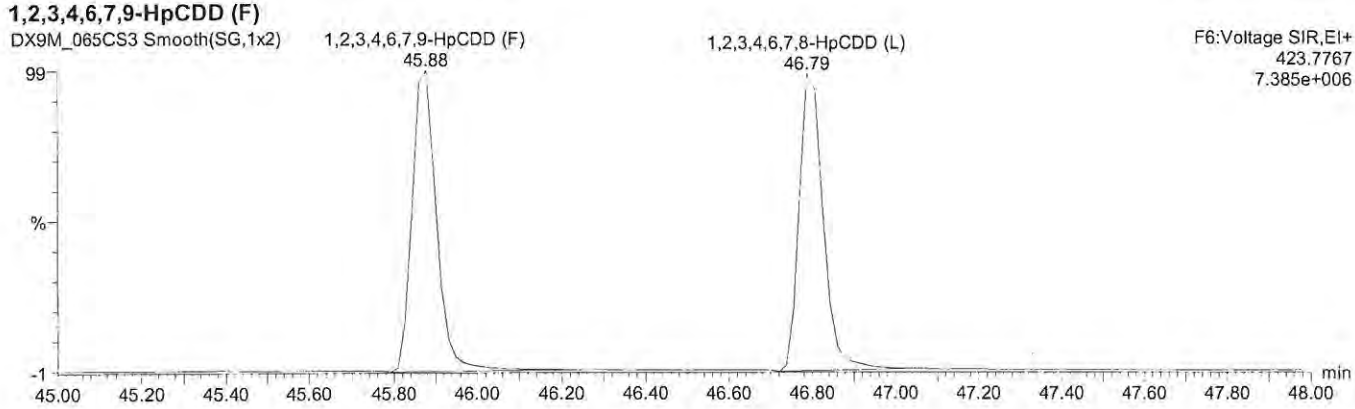
1,2,4,6,7,9-HxCDD (F)



1,2,3,4,6,7,8-HpCDF (F)



1,2,3,4,6,7,9-HpCDD (F)



Experiment : DX-DB225-4_01
GC Program : DX-DB225-4_01
Column type : DB-225
Serial # : USA226732J/USP
kPa : 193
Vol injected: 2.0uL
PMT Voltage : 415

Temps -source: 260
-s resv: 140
-re_ent: 285
-cap_1 : 285
-cap_2 : 305

Tune : EW
List : EW
Check :
LIMS :
Logfile:

Date -list : 25-JUL-2019
-liner : 08-JUL-2019
-septum: 08-JUL-2019
-guard : 60CM 08-JUL-2019
-column: 20CM 23-APR-2019
-t line: 60cm 23-APR-2019

#	Data file	S	V	Sample Text	Comments	Acquisition Date/Time
1	DB9T_055	1	1	DX003A-RSN,,/01-17	1,,2.0uL WIN/RES	25-JUL-19 07:32:19
2	DB9T_055	2	2	DX042D-CAL,,/01-93	1,,2.0uL CS-3/CAL	25-JUL-19 08:17:02
3	DB9T_055	3	3	DX042C-CAL,,/01	1,,2.0uL CS-2	25-JUL-19 09:10:55
4	DB9T_055	4	4	DX042B-CAL,,/01	1,,2.0uL CS-1	25-JUL-19 09:57:31
5	DB9T_055	5	5	DX042A-CAL,,/01	1,,2.0uL CS-0.2	25-JUL-19 10:42:19
6	DB9T_055	6	6	DX042F-CAL,,/01	1,,2.0uL CS-5	25-JUL-19 11:27:03
7	DB9T_055	7	7	DX042E-CAL,,/01	1,,2.0uL CS-4	25-JUL-19 12:12:22
8	DB9T_055	8	8	DX005A-SSV,,/01	1,,2.0uL SSV	25-JUL-19 12:57:23

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Run: db9t_055-» Analyte: db-hxd-c2 Cal: db9t_055-» Results: db9t_055-5a Version: V3.6 6-JAN-2000 17:51:42

Name	Mean RRF	S. D.	%RSD	DB9T_055 RRF#1	S4 SD	DB9T_055 RRF#2	S3 SD	DB9T_055 RRF#3	S2 SD	DB9T_055 RRF#4	S7 SD	DB9T_055 RRF#5	S6 SD
2,3,7,8-TCDF	0.7756	0.010	1.28 %	0.76	-1.6	0.78	0.1	0.78	0.0	0.79	1.2	0.78	0.3
1,2,3,7,8,9-HxCDD	0.8088	0.010	1.26 %	0.80	-1.1	0.81	0.1	0.80	-0.9	0.82	0.8	0.82	1.2
13C-2,3,7,8-TCDF	1.4149	0.047	3.33 %	1.40	-0.4	1.38	-0.8	1.37	-0.9	1.44	0.6	1.48	1.5
13C-1,2,3,4,7,8-HxCDD	1.0276	0.023	2.27 %	1.06	1.4	1.02	-0.2	1.00	-1.4	1.04	0.3	1.03	-0.1
13C-1,2,3,6,7,8-HxCDD	1.0739	0.017	1.59 %	1.10	1.4	1.05	-1.2	1.06	-0.7	1.08	0.3	1.08	0.3
13C-1,2,3,4-TCDD	-	-	- %	-	-	-	-	-	-	-	-	-	-
13C-1,2,3,7,8,9-HxCDD	-	-	- %	-	-	-	-	-	-	-	-	-	-
Hexa DPE	-	-	- %	-	-	-	-	-	-	-	-	-	-
Tetra Lock	-	-	- %	-	-	-	-	-	-	-	-	-	-
Hexa Lock	-	-	- %	-	-	-	-	-	-	-	-	-	-

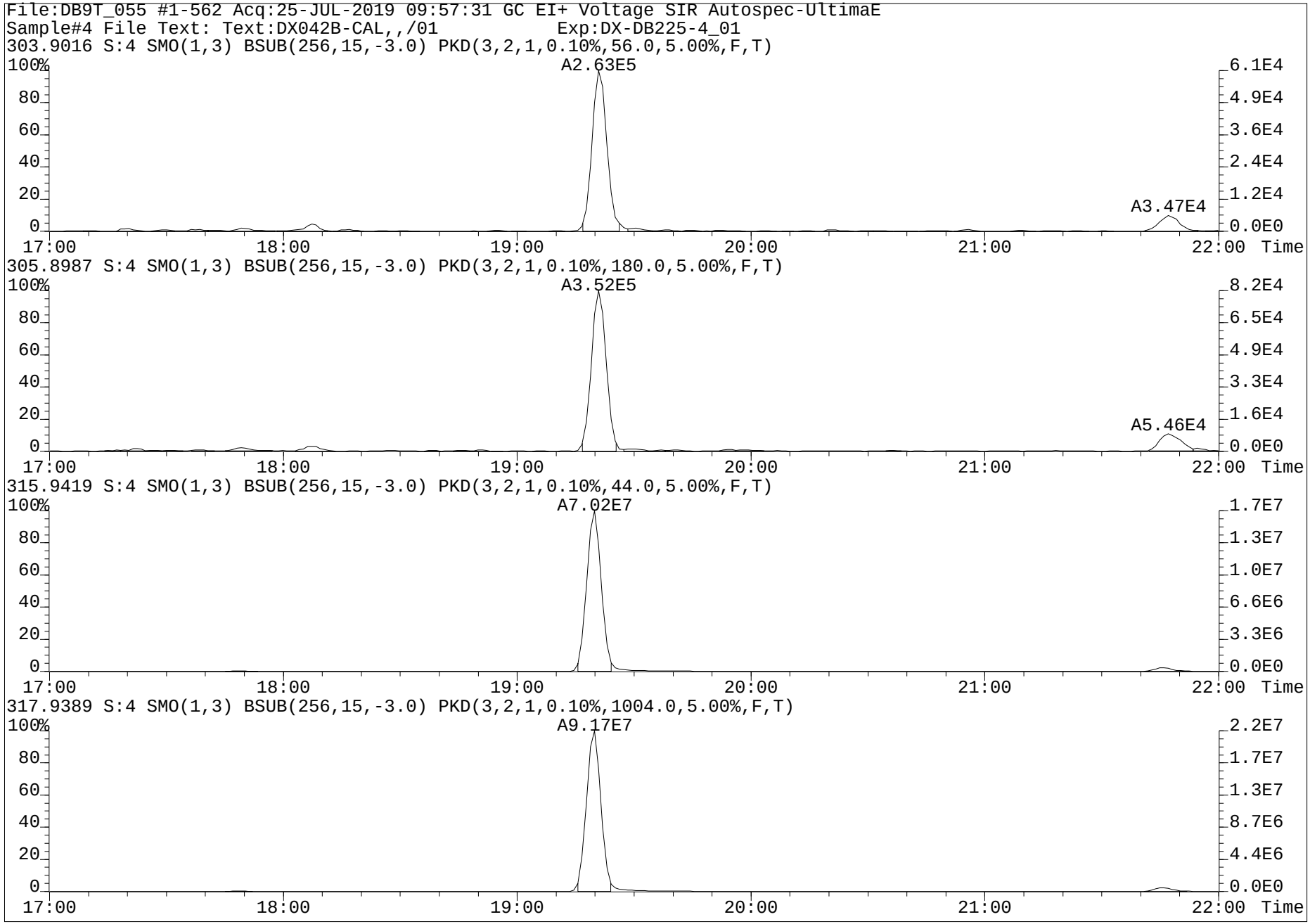
PV by RA 26JUL2019

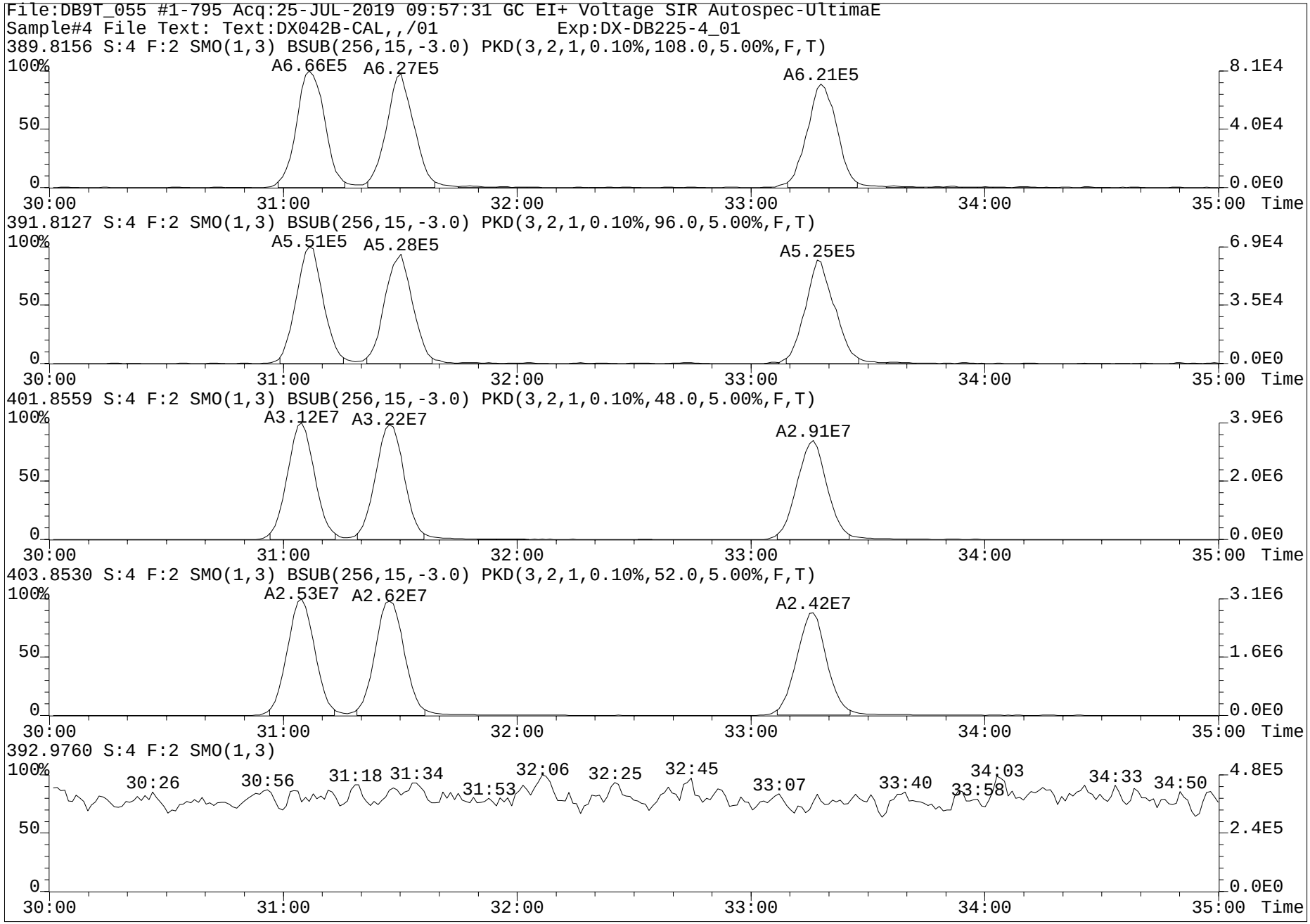
SV by KB 26Jul2019

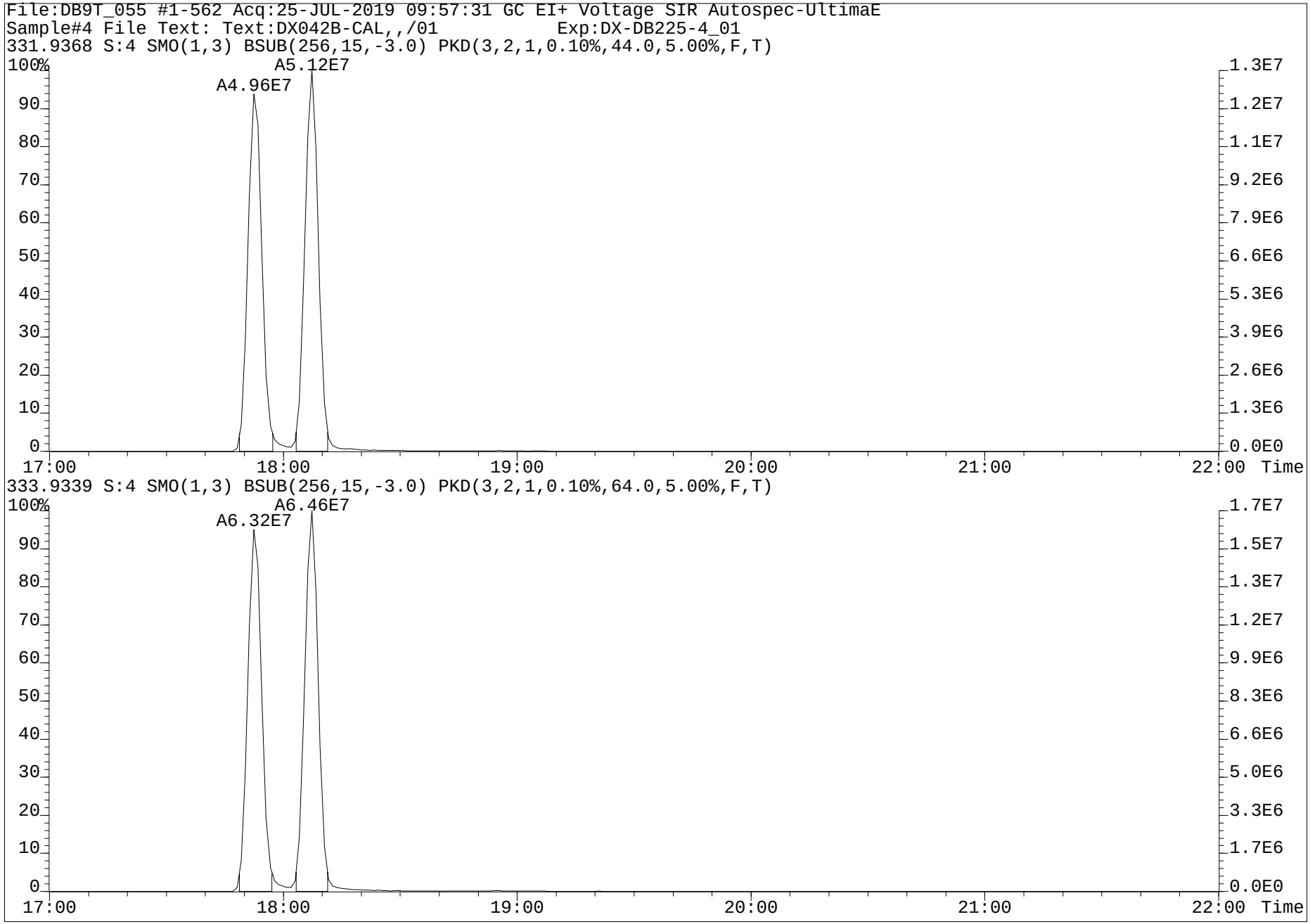
Run #2 Filename DB9T_055 S: 4 I: 1 Acquired: 25-JUL-19 09:57:31 Processed: 26-JUL-19 08:57:55
Run: db9t_055-6a Analyte: db-hxd-c2 Cal: db9t_055-6a Results: db9t_055-6a Version: V3.6 6-JAN-2000 17:51:42
Sample text: DX042B-CAL,,/01 Comments: 1,,2.0uL CS-1 F1: 1.00 F2: 1.00

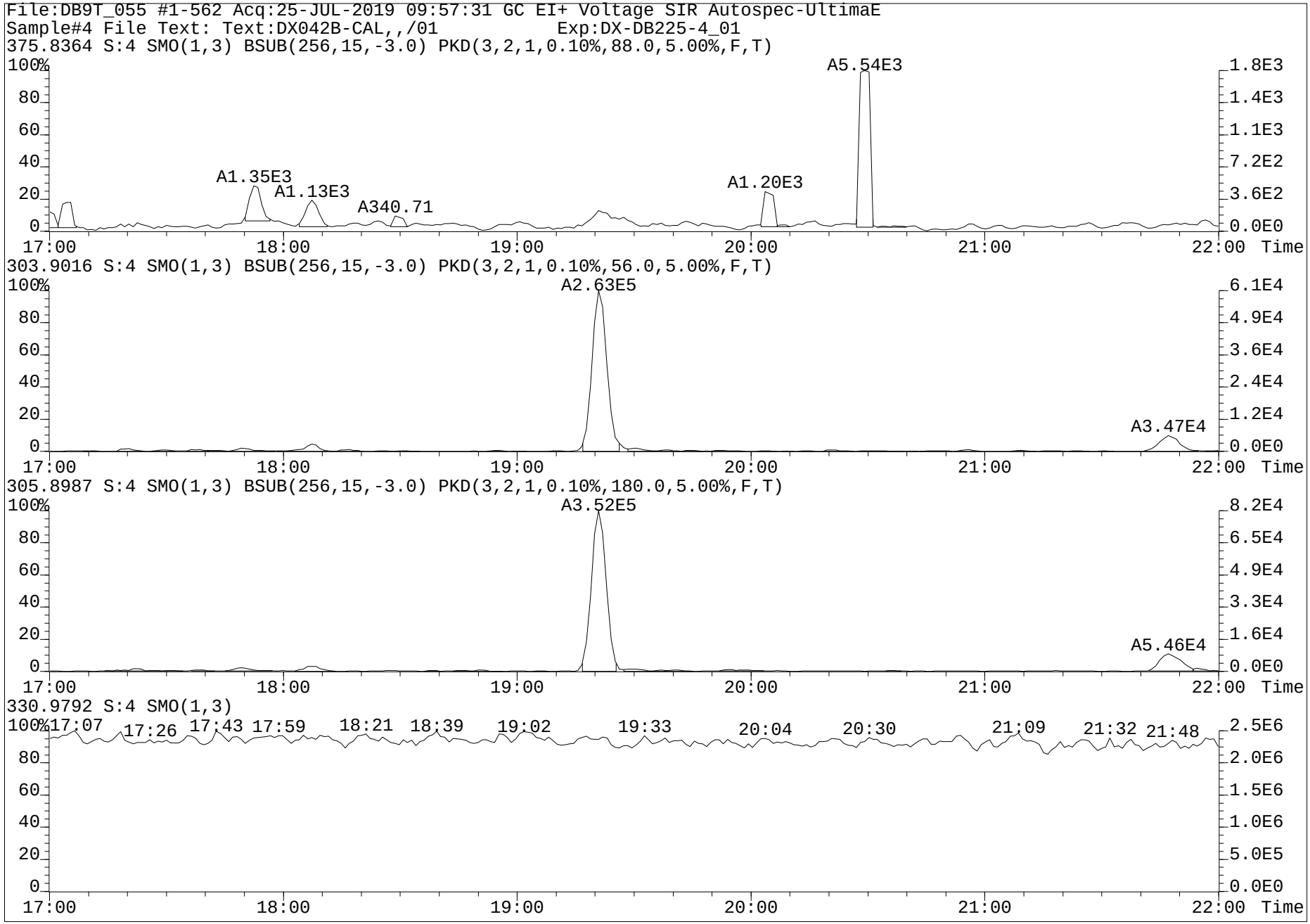
	Typ	Name	Amount	Resp	RA		RT	RF	RRF		Modified?	
1	Unk	2,3,7,8-TCDF	0.50	6.15e+05	0.75	y	19:21	-	0.7600	y	n	
2	Unk	1,2,3,7,8,9-HxCDD	2.50	1.15e+06	1.18	y	33:18	-	0.7976	y	n	
3	IS/RT	13C-2,3,7,8-TCDF	100.00	1.62e+08	0.77	y	19:20	-	1.3975	y	n	
4	IS/RT	13C-1,2,3,4,7,8-HxCDD	100.00	5.65e+07	1.24	y	31:05	-	1.0601	y	n	
5	IS/RT	13C-1,2,3,6,7,8-HxCDD	100.00	5.85e+07	1.23	y	31:27	-	1.0972	y	n	
6	RS	13C-1,2,3,4-TCDD	100.00	1.16e+08	0.79	y	18:07	1.16e+06	-	n	n	
7	RS	13C-1,2,3,7,8,9-HxCDD	100.00	5.33e+07	1.20	y	33:16	5.33e+05	-	n	n	
8	Tot	Hexa DPE	0.00	*			NotF»	Div0	-	n	n	
9	Tot	Tetra Lock	0.00	-			-	-	-	n	n	
10	Tot	Hexa Lock	0.00	-			-	-	-	n	n	

PV by RA 26JUL2019
SVbyKB 26JUL2019


File:DB9T_055 #1-562 Acq:25-JUL-2019 09:57:31 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text: Text:DX042B-CAL,,/01 Exp:DX-DB225-4_01
303.9016 S:4 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,56.0,5.00%,F,T)
A2.63E5
A3.47E4
305.8987 S:4 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,180.0,5.00%,F,T)
A3.52E5
A5.46E4
315.9419 S:4 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,44.0,5.00%,F,T)
A7.02E7
317.9389 S:4 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1004.0,5.00%,F,T)
A9.17E7
100%
80
60
40
20
0
17:00
18:00
19:00
20:00
21:00
22:00
Time
6.1E4
4.9E4
3.6E4
2.4E4
1.2E4
0.0E0
8.2E4
6.5E4
4.9E4
3.3E4
1.6E4
0.0E0
1.7E7
1.3E7
1.0E7
6.6E6
3.3E6
0.0E0
2.2E7
1.7E7
1.3E7
8.7E6
4.4E6
0.0E0


File:DB9T_055 #1-795 Acq:25-JUL-2019 09:57:31 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text: Text:DX042B-CAL,,/01 Exp:DX-DB225-4_01
389.8156 S:4 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,108.0,5.00%,F,T)
A6.66E5
A6.27E5
A6.21E5
391.8127 S:4 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,96.0,5.00%,F,T)
A5.51E5
A5.28E5
A5.25E5
401.8559 S:4 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,48.0,5.00%,F,T)
A3.12E7
A3.22E7
A2.91E7
403.8530 S:4 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,52.0,5.00%,F,T)
A2.53E7
A2.62E7
A2.42E7
392.9760 S:4 F:2 SMO(1,3)
30:26
30:56
31:18
31:34
31:53
32:06
32:25
32:45
33:07
33:40
33:58
34:03
34:33
34:50
100%
50
0
30:00
31:00
32:00
33:00
34:00
35:00
Time
8.1E4
4.0E4
0.0E0
6.9E4
3.5E4
3.9E6
2.0E6
3.1E6
1.6E6
4.8E5
2.4E5


File:DB9T_055 #1-562 Acq:25-JUL-2019 09:57:31 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text: Text:DX042B-CAL,,/01 Exp:DX-DB225-4_01
331.9368 S:4 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,44.0,5.00%,F,T)
A4.96E7
A5.12E7
100%
90
80
70
60
50
40
30
20
10
0
1.3E7
1.2E7
1.1E7
9.2E6
7.9E6
6.6E6
5.3E6
3.9E6
2.6E6
1.3E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time
333.9339 S:4 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,64.0,5.00%,F,T)
A6.32E7
A6.46E7
100%
90
80
70
60
50
40
30
20
10
0
1.7E7
1.5E7
1.3E7
1.2E7
9.9E6
8.3E6
6.6E6
5.0E6
3.3E6
1.7E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time


File:DB9T_055 #1-562 Acq:25-JUL-2019 09:57:31 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text: Text:DX042B-CAL,,/01 Exp:DX-DB225-4_01
375.8364 S:4 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,88.0,5.00%,F,T)
A1.35E3
A1.13E3
A340.71
A1.20E3
A5.54E3
303.9016 S:4 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,56.0,5.00%,F,T)
A2.63E5
A3.47E4
305.8987 S:4 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,180.0,5.00%,F,T)
A3.52E5
A5.46E4
330.9792 S:4 SMO(1,3)
17:07
17:26
17:43
17:59
18:21
18:39
19:02
19:33
20:04
20:30
21:09
21:32
21:48
Time

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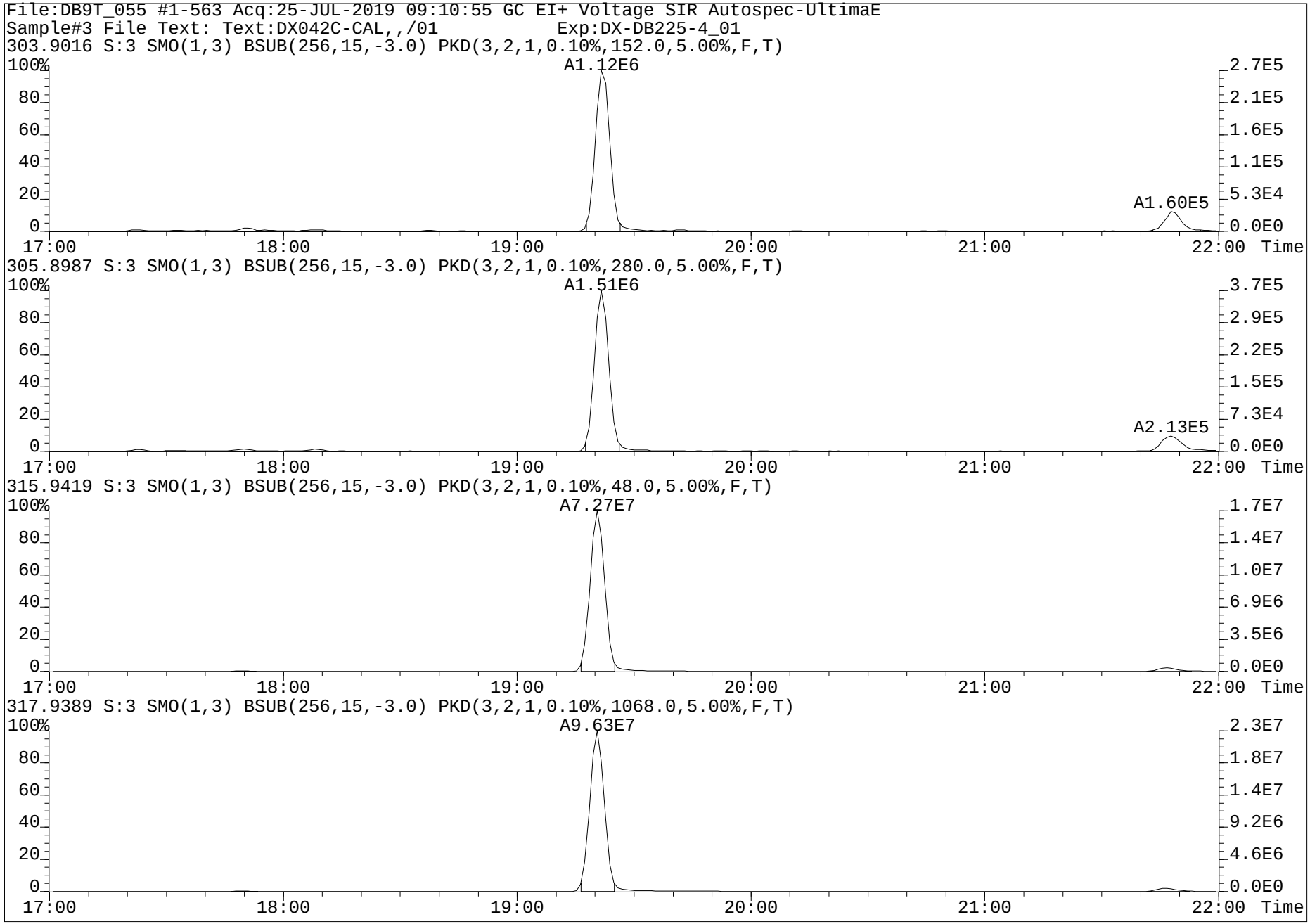
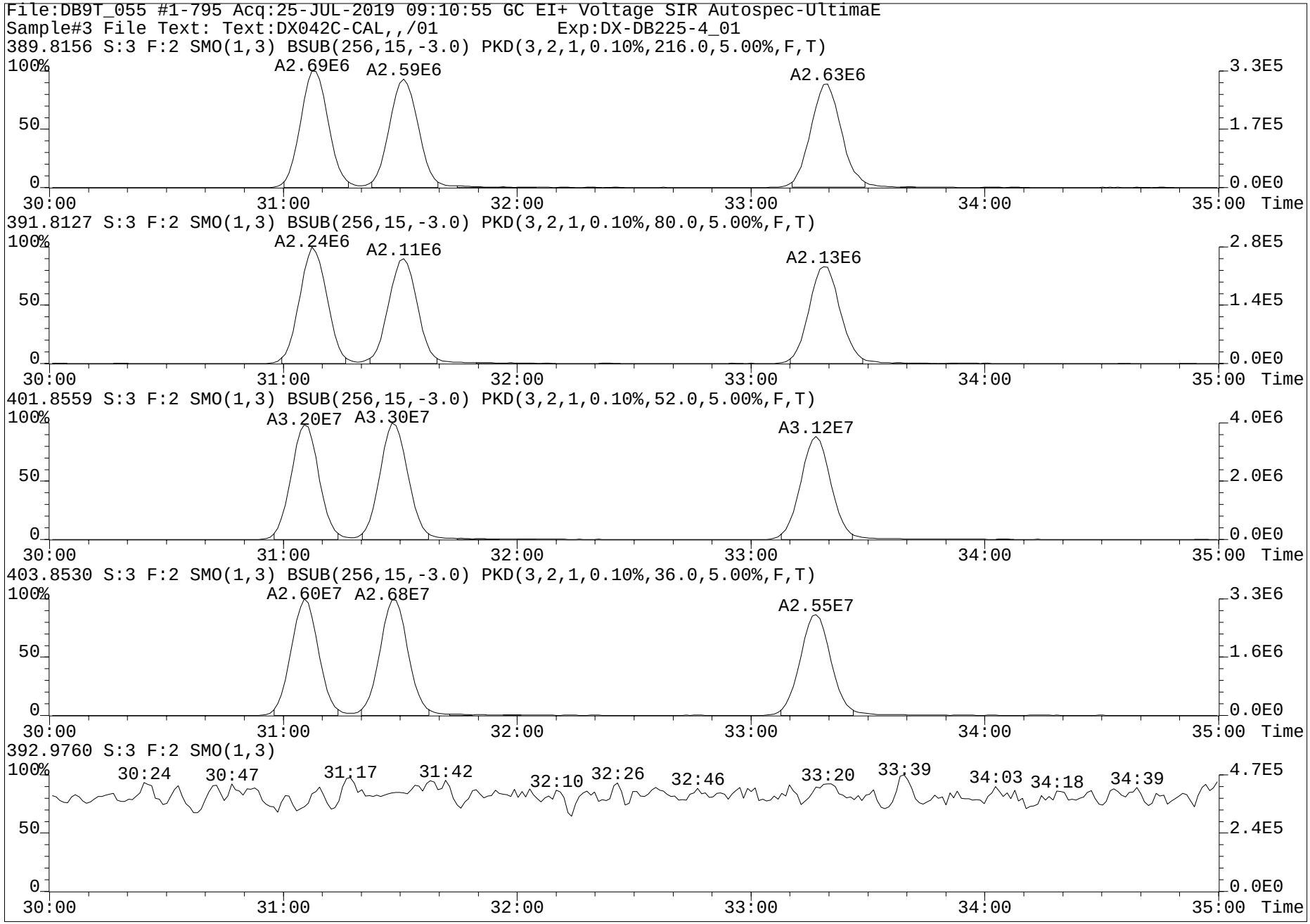
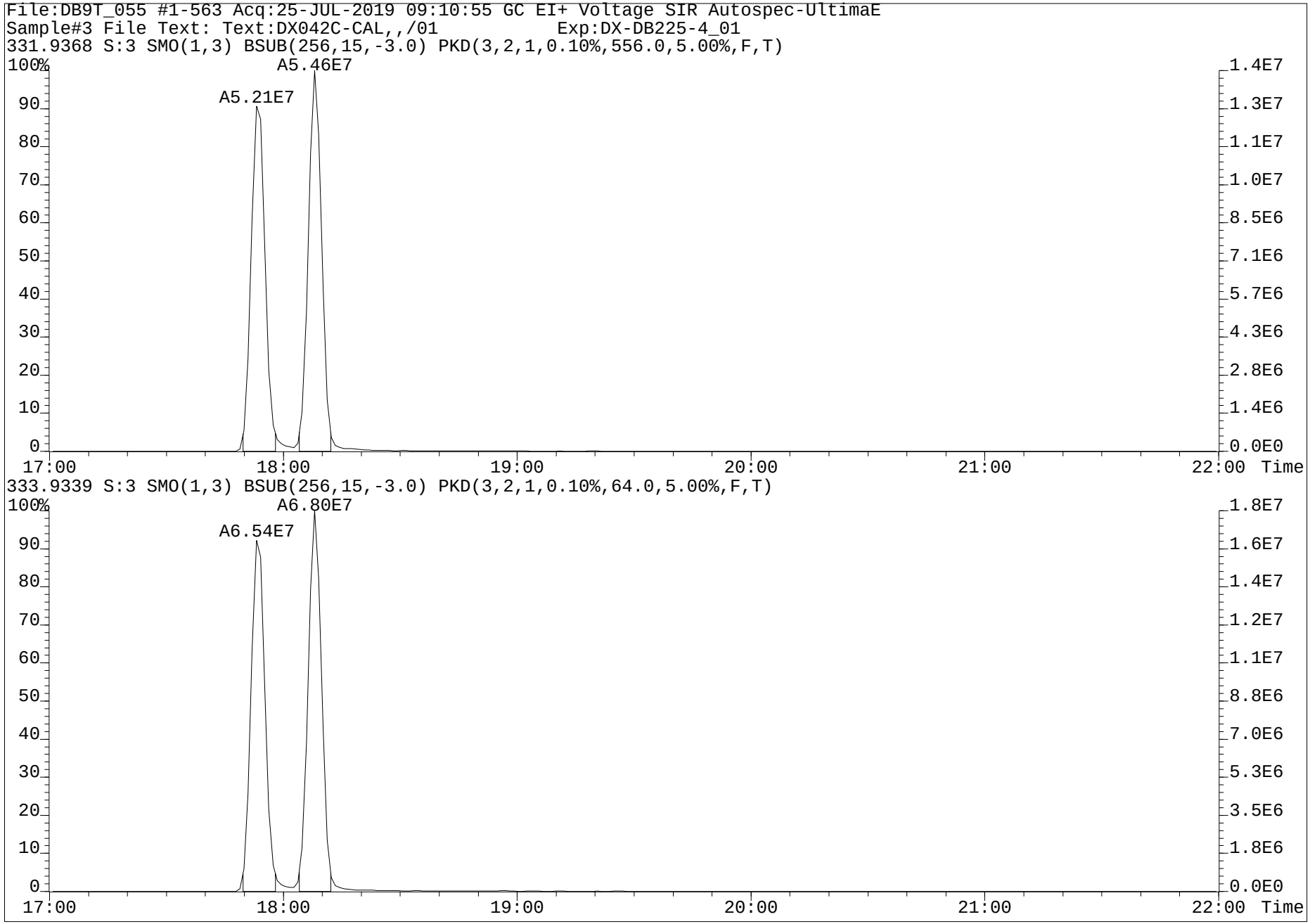
Run #3 Filename DB9T_055 S: 3 I: 1 Acquired: 25-JUL-19 09:10:55 Processed: 26-JUL-19 08:57:55
Run: db9t_055-6a Analyte: db-hxd-c2 Cal: db9t_055-6a Results: db9t_055-6a Version: V3.6 6-JAN-2000 17:51:42
Sample text: DX042C-CAL,,/01 Comments: 1,,2.0uL CS-2 F1: 4.00 F2: 1.00

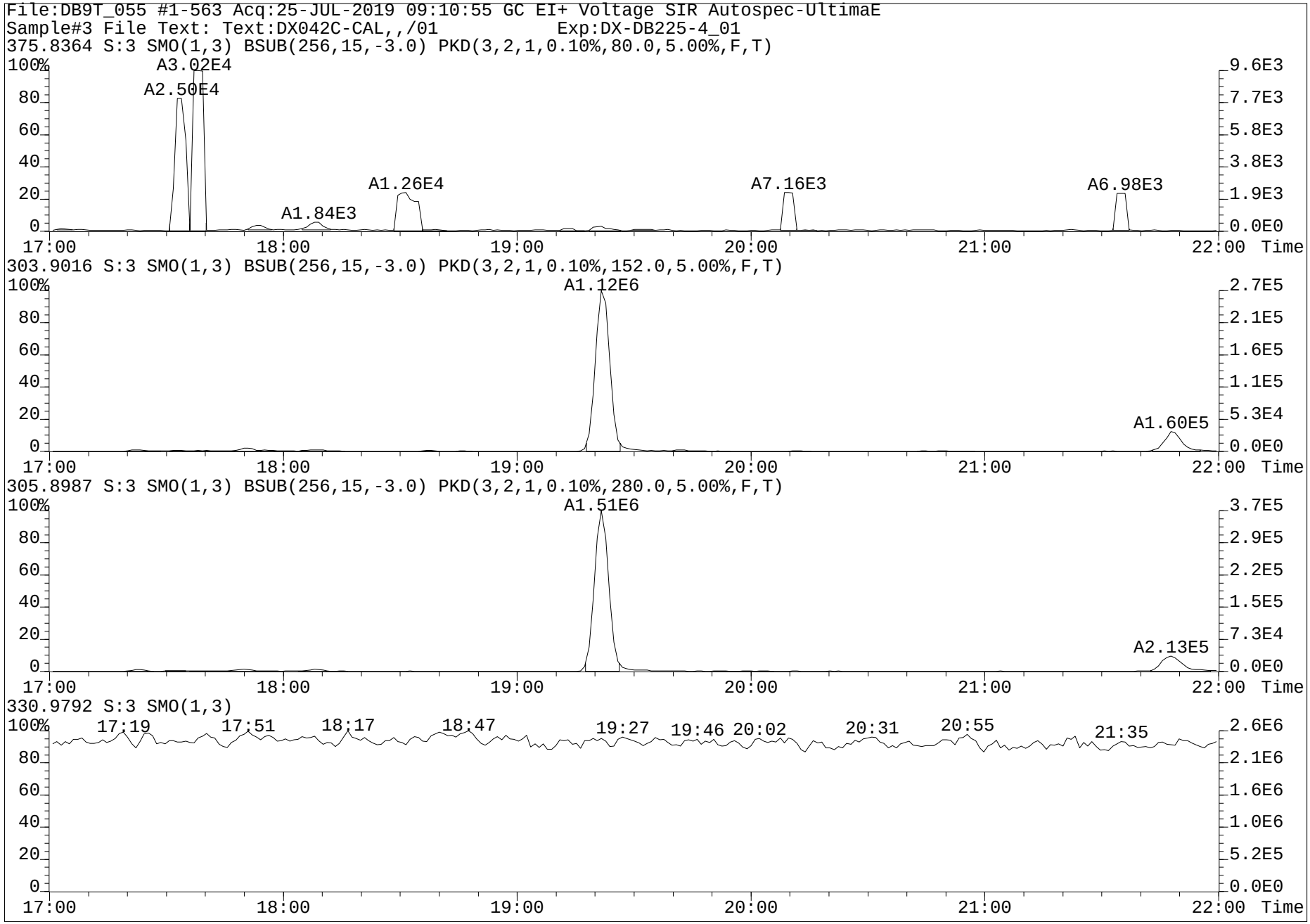
	Typ	Name	Amount	Resp	RA		RT	RF	RRF		Modified?	
1	Unk	2,3,7,8-TCDF	2.00	2.63e+06	0.74	y	19:22	-	0.7769	y	n	
2	Unk	1,2,3,7,8,9-HxCDD	10.00	4.77e+06	1.23	y	33:19	-	0.8094	y	n	
3	IS/RT	13C-2,3,7,8-TCDF	100.00	1.69e+08	0.76	y	19:21	-	1.3791	y	n	
4	IS/RT	13C-1,2,3,4,7,8-HxCDD	100.00	5.80e+07	1.23	y	31:05	-	1.0219	y	n	
5	IS/RT	13C-1,2,3,6,7,8-HxCDD	100.00	5.98e+07	1.23	y	31:28	-	1.0535	y	n	
6	RS	13C-1,2,3,4-TCDD	100.00	1.23e+08	0.80	y	18:08	1.23e+06	-	n	n	
7	RS	13C-1,2,3,7,8,9-HxCDD	100.00	5.67e+07	1.23	y	33:17	5.67e+05	-	n	n	
8	Tot	Hexa DPE	0.00	*			NotF»	Div0	-	n	n	
9	Tot	Tetra Lock	0.00	-			-	-	-	n	n	
10	Tot	Hexa Lock	0.00	-			-	-	-	n	n	

PV by RA 26JUL2019
SV by KB 26JUL2019


File:DB9T_055 #1-563 Acq:25-JUL-2019 09:10:55 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text: Text:DX042C-CAL,,/01 Exp:DX-DB225-4_01
303.9016 S:3 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,152.0,5.00%,F,T)
A1.12E6
A1.60E5
305.8987 S:3 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,280.0,5.00%,F,T)
A1.51E6
A2.13E5
315.9419 S:3 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,48.0,5.00%,F,T)
A7.27E7
317.9389 S:3 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1068.0,5.00%,F,T)
A9.63E7
100%
80
60
40
20
0
17:00
18:00
19:00
20:00
21:00
22:00
Time
2.7E5
2.1E5
1.6E5
1.1E5
5.3E4
0.0E0
3.7E5
2.9E5
2.2E5
1.5E5
7.3E4
0.0E0
1.7E7
1.4E7
1.0E7
6.9E6
3.5E6
0.0E0
2.3E7
1.8E7
1.4E7
9.2E6
4.6E6
0.0E0


File:DB9T_055 #1-795 Acq:25-JUL-2019 09:10:55 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text: Text:DX042C-CAL,,/01 Exp:DX-DB225-4_01
389.8156 S:3 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,216.0,5.00%,F,T)
A2.69E6
A2.59E6
A2.63E6
391.8127 S:3 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,80.0,5.00%,F,T)
A2.24E6
A2.11E6
A2.13E6
401.8559 S:3 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,52.0,5.00%,F,T)
A3.20E7
A3.30E7
A3.12E7
403.8530 S:3 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,36.0,5.00%,F,T)
A2.60E7
A2.68E7
A2.55E7
392.9760 S:3 F:2 SMO(1,3)
30:24
30:47
31:17
31:42
32:10
32:26
32:46
33:20
33:39
34:03
34:18
34:39
100%
50
0
30:00
31:00
32:00
33:00
34:00
35:00
Time
3.3E5
1.7E5
0.0E0
2.8E5
1.4E5
4.0E6
2.0E6
3.3E6
1.6E6
4.7E5
2.4E5

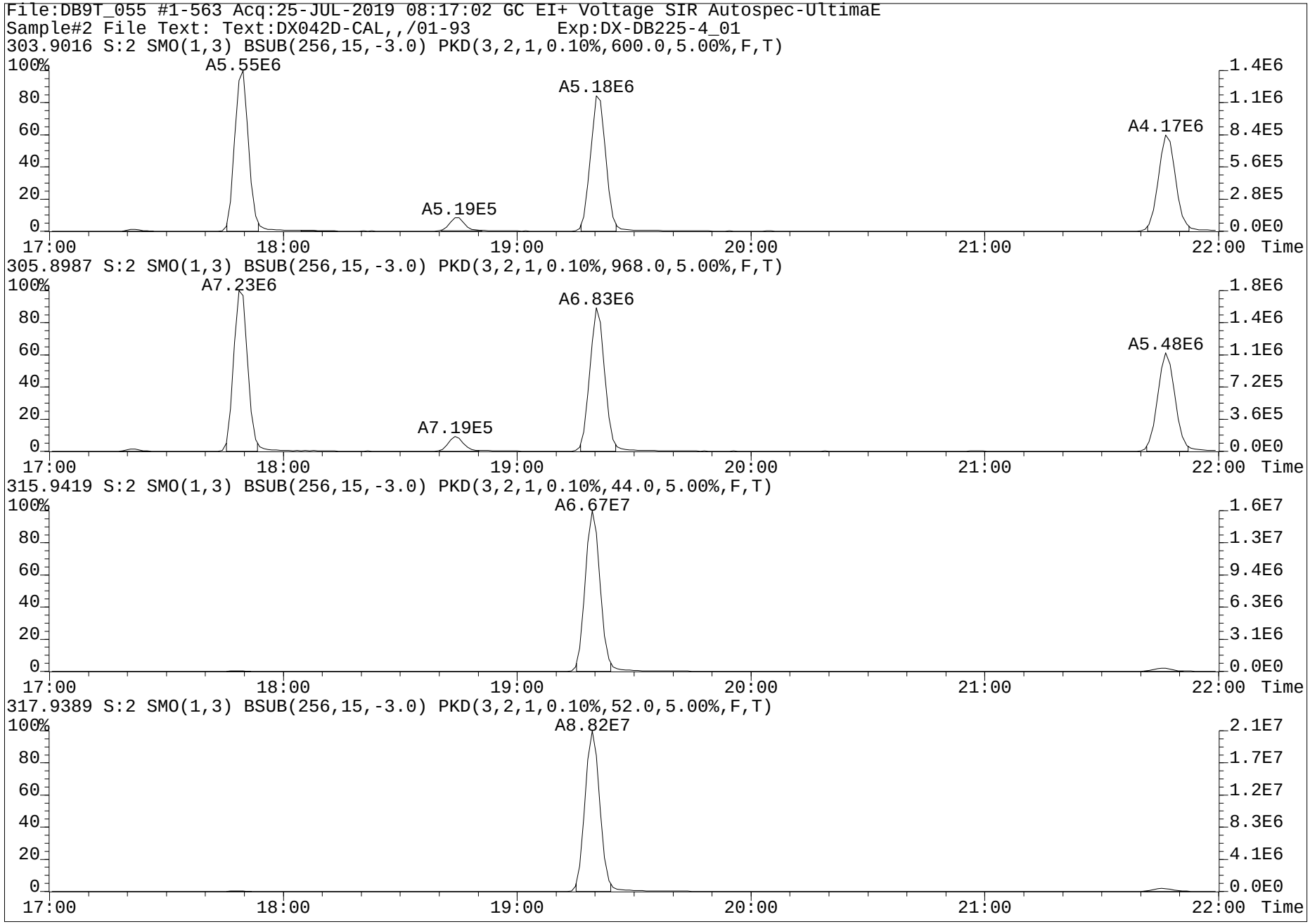

File:DB9T_055 #1-563 Acq:25-JUL-2019 09:10:55 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text: Text:DX042C-CAL,,/01 Exp:DX-DB225-4_01
331.9368 S:3 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,556.0,5.00%,F,T)
A5.46E7
A5.21E7
100%
90
80
70
60
50
40
30
20
10
0
1.4E7
1.3E7
1.1E7
1.0E7
8.5E6
7.1E6
5.7E6
4.3E6
2.8E6
1.4E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time
333.9339 S:3 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,64.0,5.00%,F,T)
A6.80E7
A6.54E7
100%
90
80
70
60
50
40
30
20
10
0
1.8E7
1.6E7
1.4E7
1.2E7
1.1E7
8.8E6
7.0E6
5.3E6
3.5E6
1.8E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time

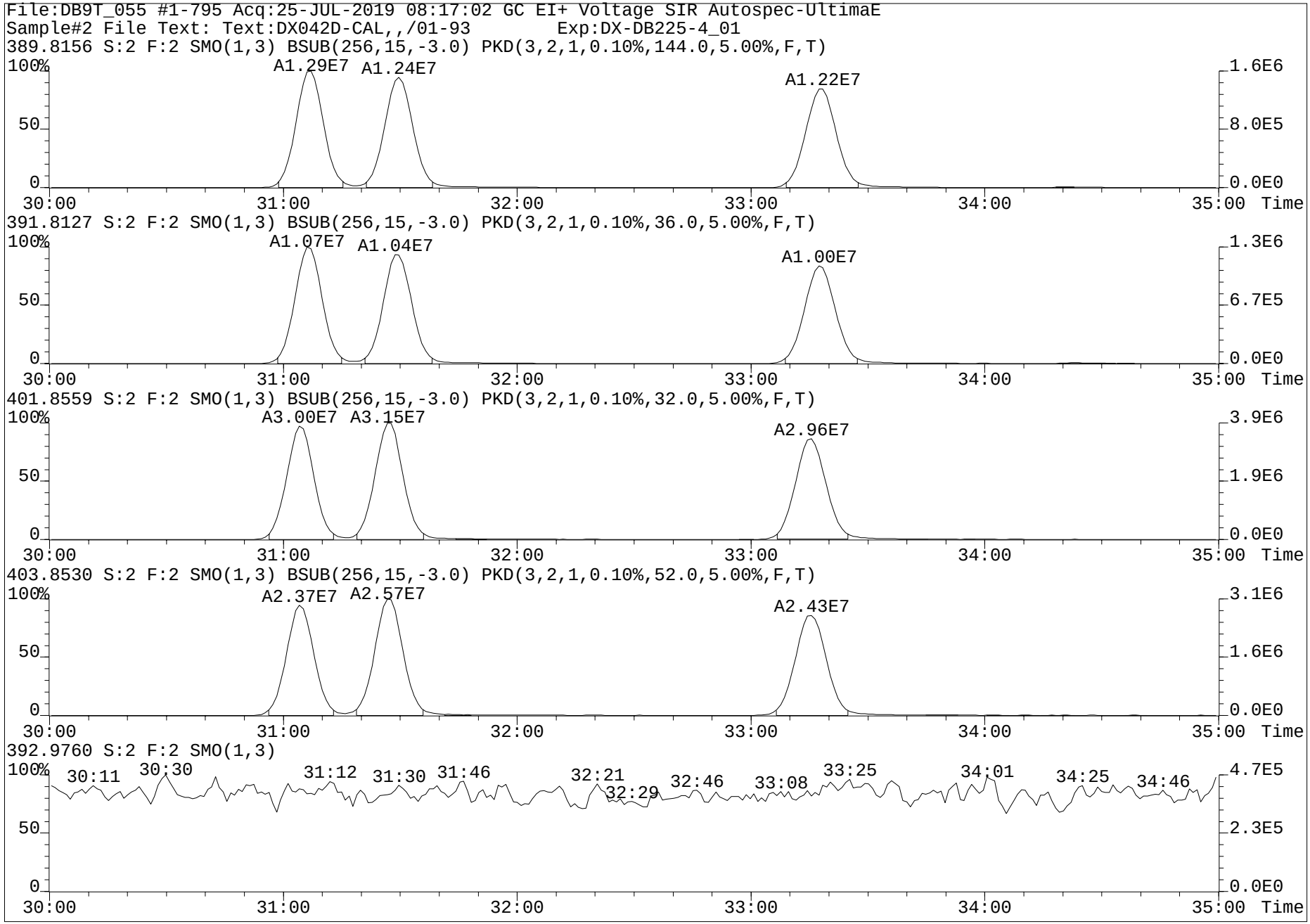

File:DB9T_055 #1-563 Acq:25-JUL-2019 09:10:55 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text: Text:DX042C-CAL,,/01 Exp:DX-DB225-4_01
375.8364 S:3 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,80.0,5.00%,F,T)
A3.02E4
A2.50E4
A1.84E3
A1.26E4
A7.16E3
A6.98E3
303.9016 S:3 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,152.0,5.00%,F,T)
A1.12E6
A1.60E5
305.8987 S:3 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,280.0,5.00%,F,T)
A1.51E6
A2.13E5
330.9792 S:3 SMO(1,3)
17:19
17:51
18:17
18:47
19:27
19:46
20:02
20:31
20:55
21:35
17:00
18:00
19:00
20:00
21:00
22:00
Time

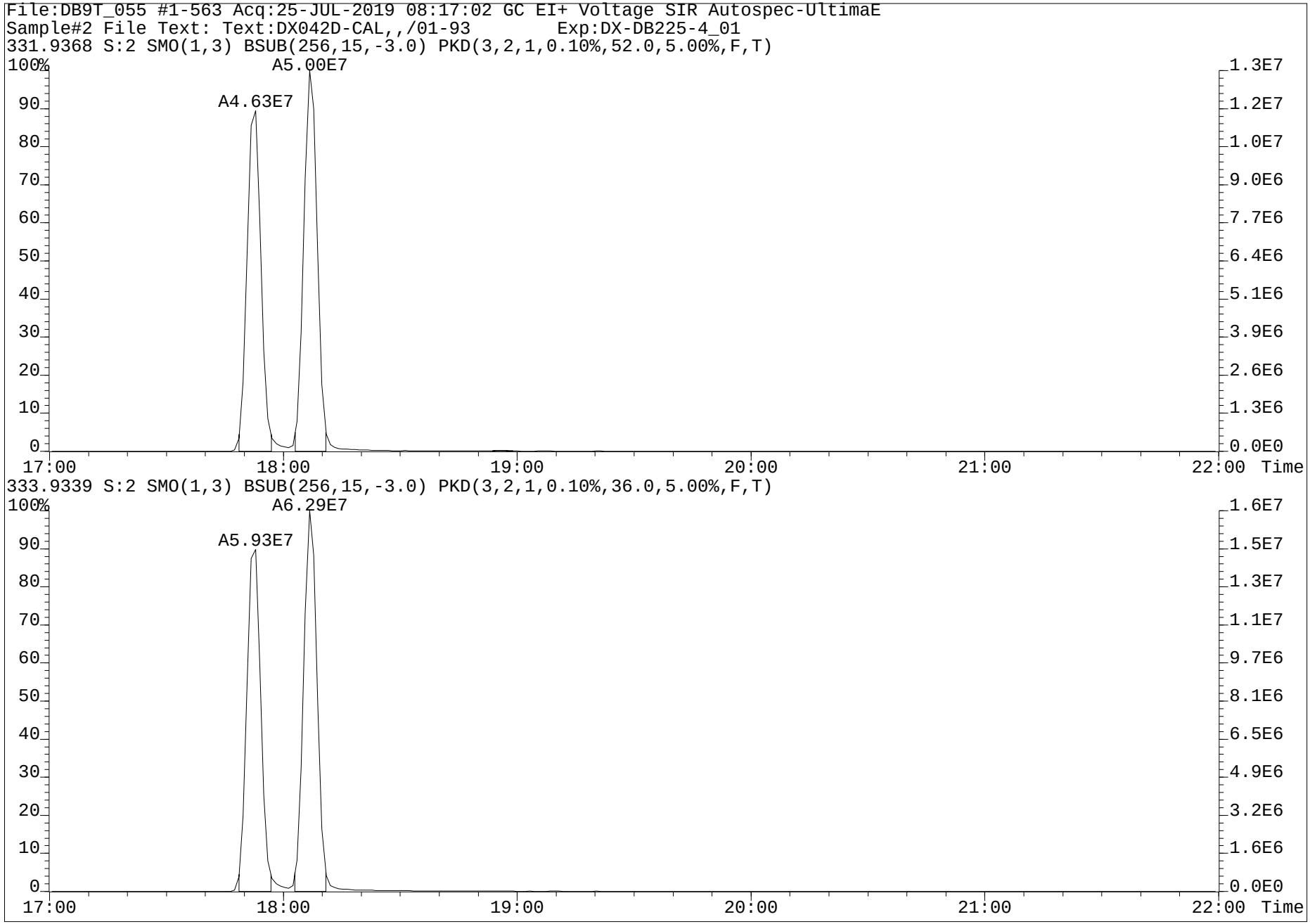
Run #4 Filename DB9T_055 S: 2 I: 1 Acquired: 25-JUL-19 08:17:02 Processed: 26-JUL-19 08:57:55
Run: db9t_055-6a Analyte: db-hxd-c2 Cal: db9t_055-6a Results: db9t_055-6a Version: V3.6 6-JAN-2000 17:51:42
Sample text: DX042D-CAL,,/01-93 Comments: 1,,2.0uL CS-3/CAL F1: 20.00 F2: 1.00

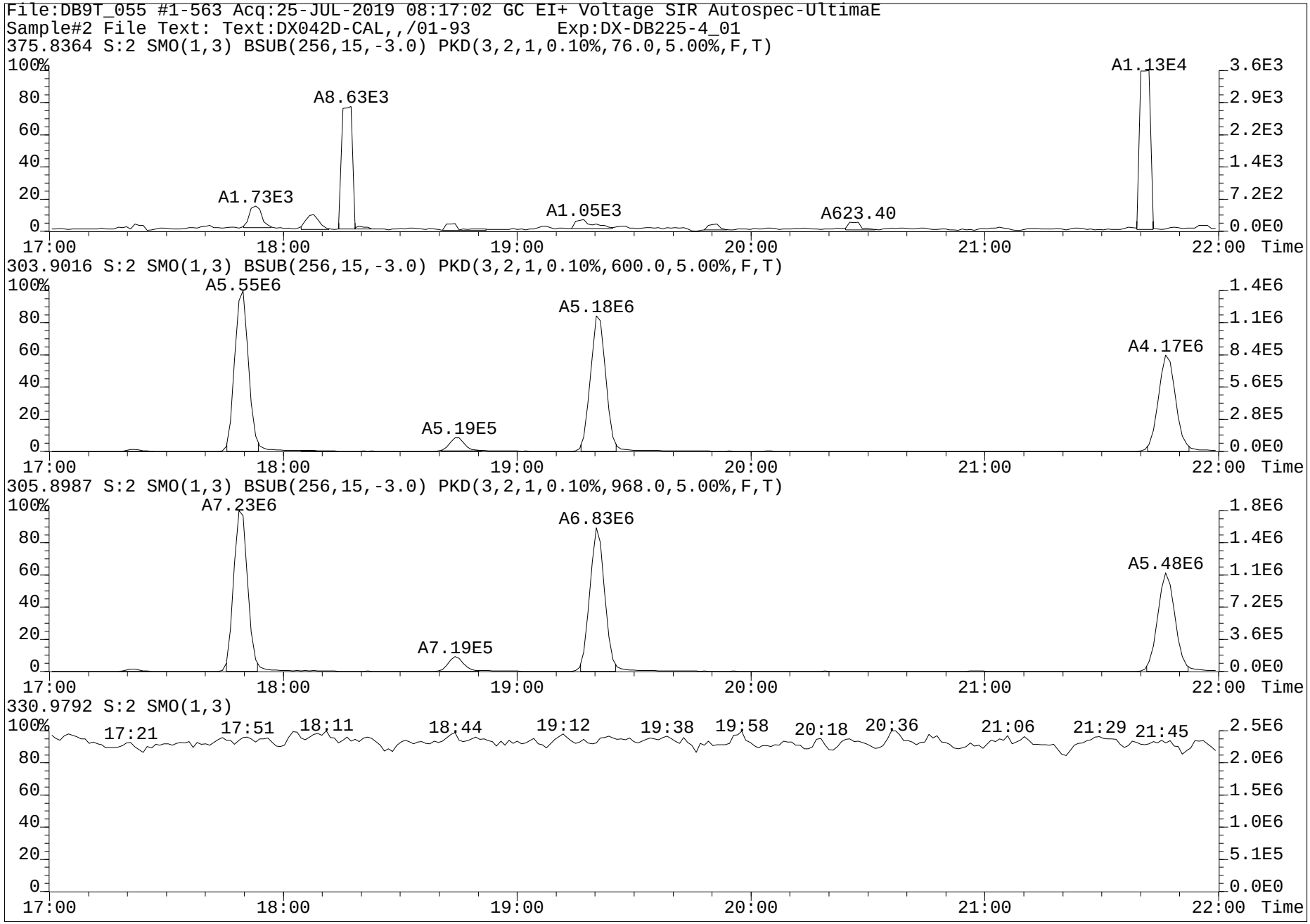
	Typ	Name	Amount	Resp	RA	RT	RF	RRF		Modified?	
1	Unk	2,3,7,8-TCDF	10.00	1.20e+07	0.76 y	19:20	-	0.7753	y	n	
2	Unk	1,2,3,7,8,9-HxCDD	50.00	2.22e+07	1.21 y	33:18	-	0.7997	y	n	
3	IS/RT	13C-2,3,7,8-TCDF	100.00	1.55e+08	0.76 y	19:19	-	1.3722	y	n	
4	IS/RT	13C-1,2,3,4,7,8-HxCDD	100.00	5.37e+07	1.26 y	31:04	-	0.9956	y	n	
5	IS/RT	13C-1,2,3,6,7,8-HxCDD	100.00	5.73e+07	1.22 y	31:27	-	1.0612	y	n	
6	RS	13C-1,2,3,4-TCDD	100.00	1.13e+08	0.79 y	18:07	1.13e+06	-	n	n	
7	RS	13C-1,2,3,7,8,9-HxCDD	100.00	5.40e+07	1.22 y	33:15	5.40e+05	-	n	n	
8	Tot	Hexa DPE	0.00	*		NotF»	Div0	-	n	n	
9	Tot	Tetra Lock	0.00	-		-	-	-	n	n	
10	Tot	Hexa Lock	0.00	-		-	-	-	n	n	

PVby RA 26JUL2019
SVbyKB26JUL2019


File:DB9T_055 #1-563 Acq:25-JUL-2019 08:17:02 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text: Text:DX042D-CAL,,/01-93 Exp:DX-DB225-4_01
303.9016 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,600.0,5.00%,F,T)
A5.55E6
A5.18E6
A4.17E6
A5.19E5
305.8987 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,968.0,5.00%,F,T)
A7.23E6
A6.83E6
A5.48E6
A7.19E5
315.9419 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,44.0,5.00%,F,T)
A6.67E7
317.9389 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,52.0,5.00%,F,T)
A8.82E7
100%
80
60
40
20
0
17:00
18:00
19:00
20:00
21:00
22:00
Time
1.4E6
1.1E6
8.4E5
5.6E5
2.8E5
0.0E0
1.8E6
1.4E6
1.1E6
7.2E5
3.6E5
0.0E0
1.6E7
1.3E7
9.4E6
6.3E6
3.1E6
0.0E0
2.1E7
1.7E7
1.2E7
8.3E6
4.1E6
0.0E0


File:DB9T_055 #1-795 Acq:25-JUL-2019 08:17:02 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text: Text:DX042D-CAL,,/01-93 Exp:DX-DB225-4_01
389.8156 S:2 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,144.0,5.00%,F,T)
A1.29E7
A1.24E7
A1.22E7
391.8127 S:2 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,36.0,5.00%,F,T)
A1.07E7
A1.04E7
A1.00E7
401.8559 S:2 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,32.0,5.00%,F,T)
A3.00E7
A3.15E7
A2.96E7
403.8530 S:2 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,52.0,5.00%,F,T)
A2.37E7
A2.57E7
A2.43E7
392.9760 S:2 F:2 SMO(1,3)
30:11
30:30
31:12
31:30
31:46
32:21
32:29
32:46
33:08
33:25
34:01
34:25
34:46
100%
50
0
30:00
31:00
32:00
33:00
34:00
35:00
Time
1.6E6
8.0E5
0.0E0
1.3E6
6.7E5
3.9E6
1.9E6
3.1E6
1.6E6
4.7E5
2.3E5

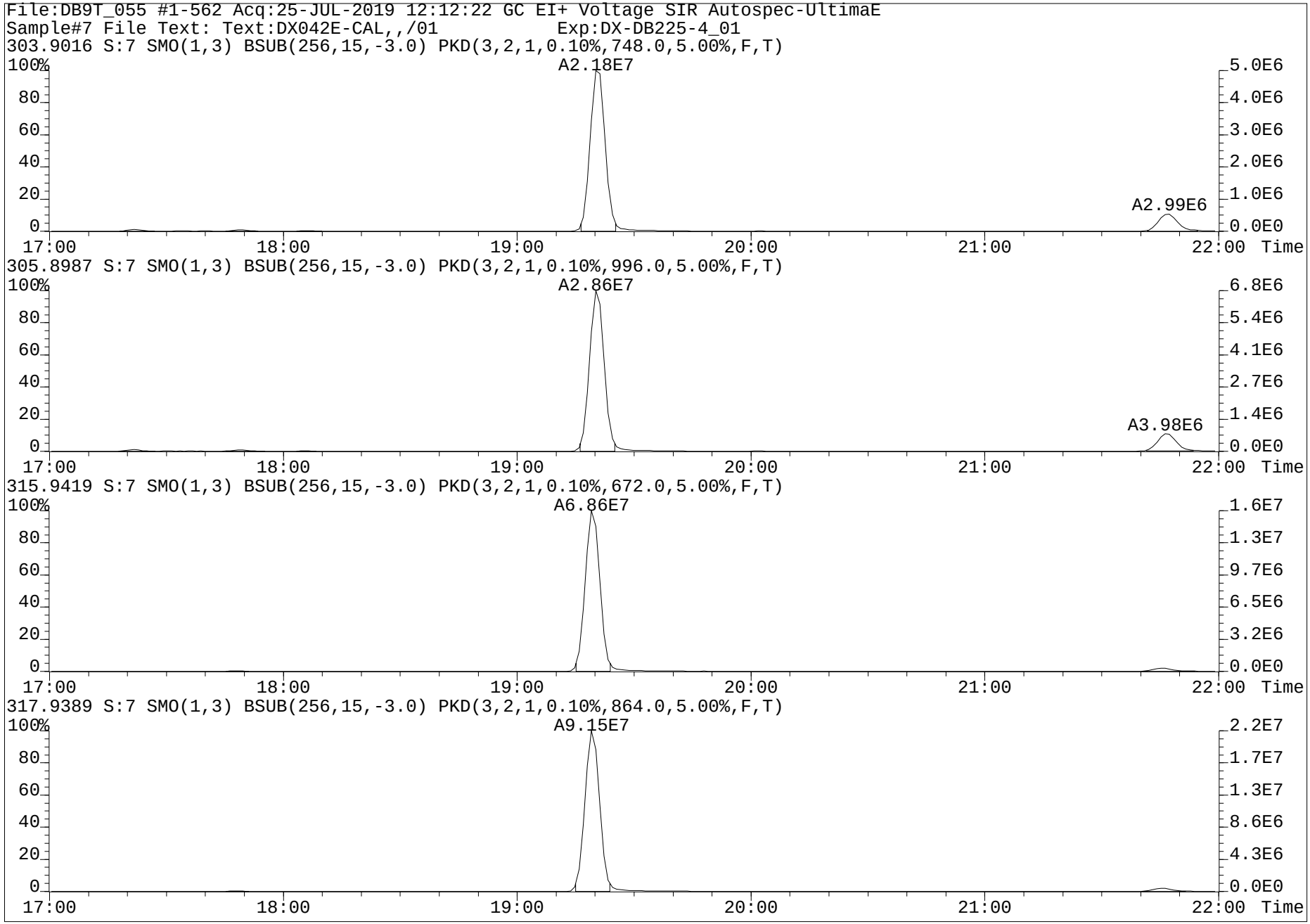

File:DB9T_055 #1-563 Acq:25-JUL-2019 08:17:02 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text: Text:DX042D-CAL,,/01-93 Exp:DX-DB225-4_01
331.9368 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,52.0,5.00%,F,T)
A5.00E7
A4.63E7
100%
90
80
70
60
50
40
30
20
10
0
1.3E7
1.2E7
1.0E7
9.0E6
7.7E6
6.4E6
5.1E6
3.9E6
2.6E6
1.3E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time
333.9339 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,36.0,5.00%,F,T)
A6.29E7
A5.93E7
100%
90
80
70
60
50
40
30
20
10
0
1.6E7
1.5E7
1.3E7
1.1E7
9.7E6
8.1E6
6.5E6
4.9E6
3.2E6
1.6E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time

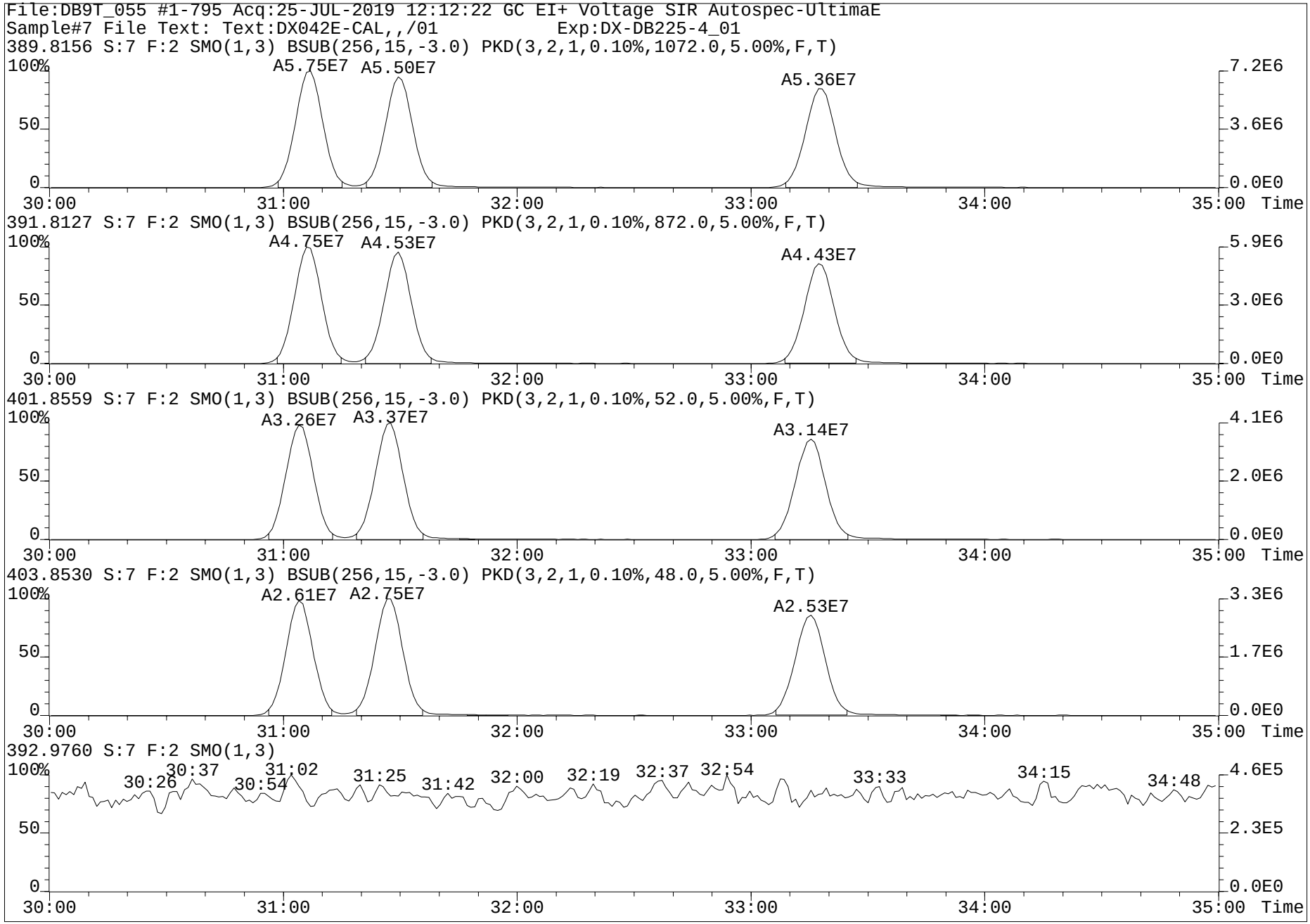

File:DB9T_055 #1-563 Acq:25-JUL-2019 08:17:02 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text: Text:DX042D-CAL,,/01-93 Exp:DX-DB225-4_01
375.8364 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,76.0,5.00%,F,T)
A1.13E4
A8.63E3
A1.73E3
A1.05E3
A623.40
303.9016 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,600.0,5.00%,F,T)
A5.55E6
A5.18E6
A4.17E6
A5.19E5
305.8987 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,968.0,5.00%,F,T)
A7.23E6
A6.83E6
A5.48E6
A7.19E5
330.9792 S:2 SMO(1,3)
17:21
17:51
18:11
18:44
19:12
19:38
19:58
20:18
20:36
21:06
21:29
21:45
Time

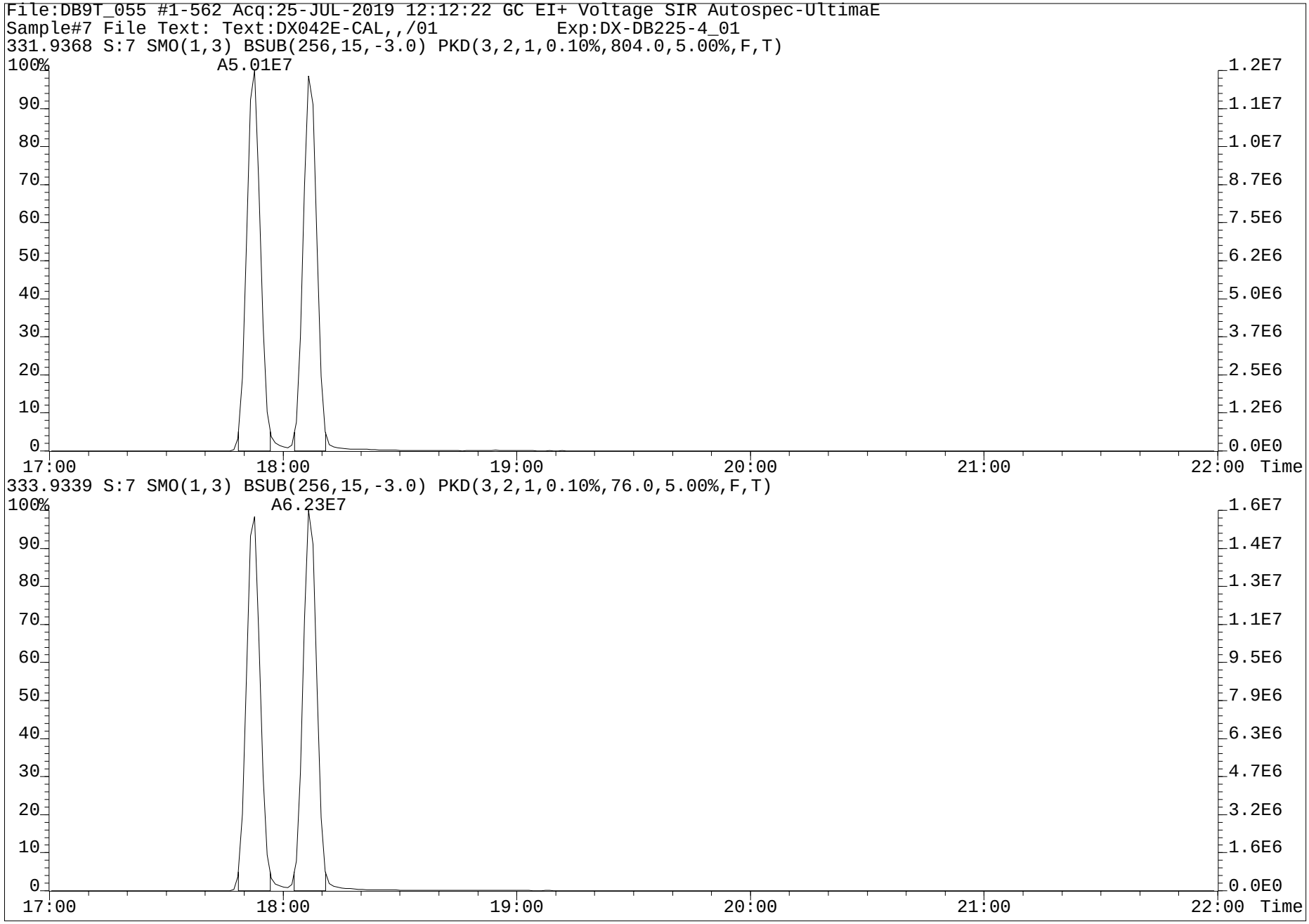
Run #5 Filename DB9T_055 S: 7 I: 1 Acquired: 25-JUL-19 12:12:22 Processed: 26-JUL-19 08:57:55
Run: db9t_055-6a Analyte: db-hxd-c2 Cal: db9t_055-6a Results: db9t_055-6a Version: V3.6 6-JAN-2000 17:51:42
Sample text: DX042E-CAL,,/01 Comments: 1,,2.0uL CS-4 F1: 80.00 F2: 1.00

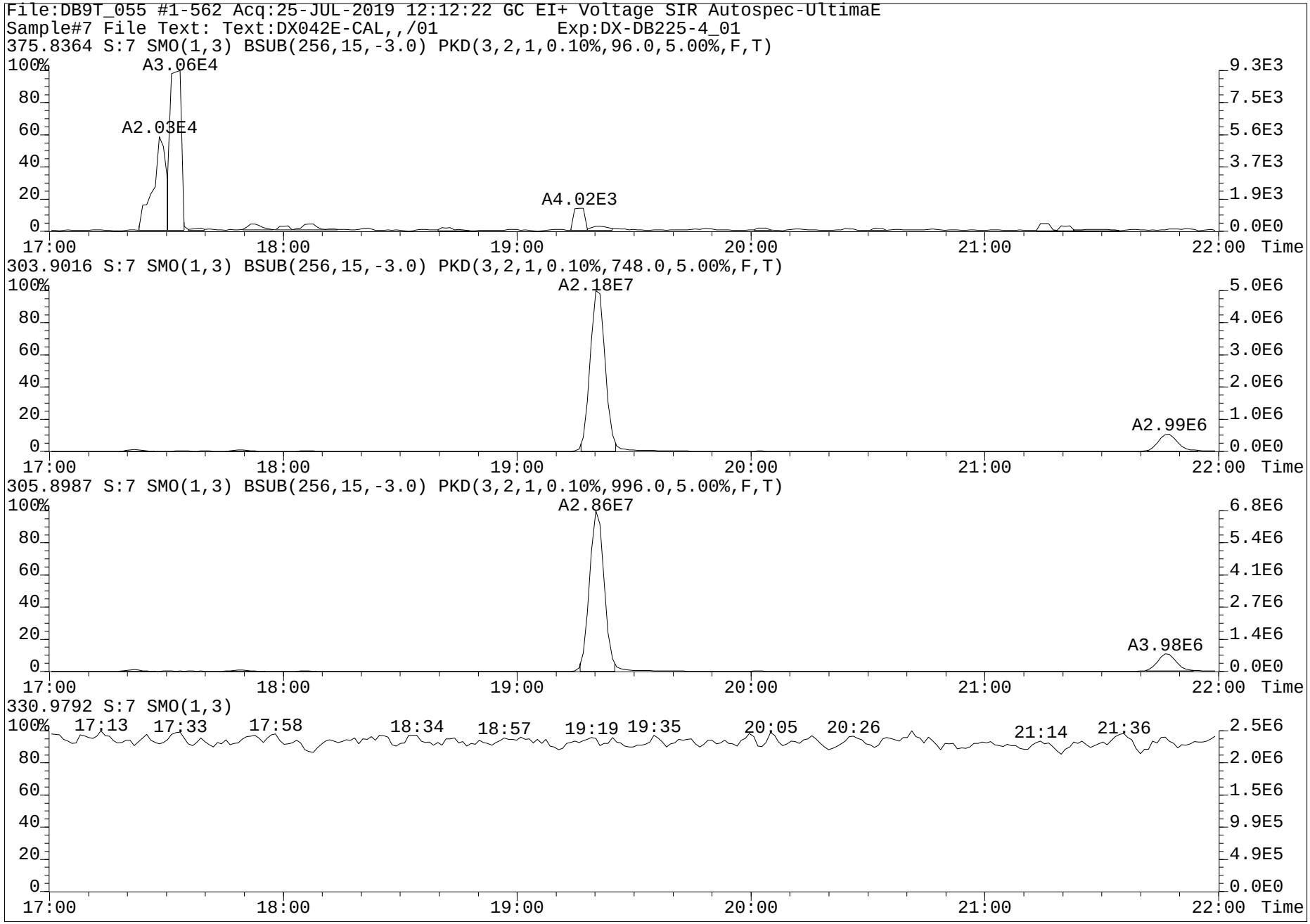
	Typ	Name	Amount	Resp	RA		RT	RF	RRF		Modified?	
1	Unk	2,3,7,8-TCDF	40.00	5.04e+07	0.76	y	19:21	-	0.7873	y	n	
2	Unk	1,2,3,7,8,9-HxCDD	200.00	9.80e+07	1.21	y	33:18	-	0.8167	y	n	
3	IS/RT	13C-2,3,7,8-TCDF	100.00	1.60e+08	0.75	y	19:19	-	1.4419	y	n	
4	IS/RT	13C-1,2,3,4,7,8-HxCDD	100.00	5.87e+07	1.25	y	31:04	-	1.0352	y	n	
5	IS/RT	13C-1,2,3,6,7,8-HxCDD	100.00	6.12e+07	1.23	y	31:27	-	1.0792	y	n	
6	RS	13C-1,2,3,4-TCDD	100.00	1.11e+08	0.78	y	18:07	1.11e+06	-	n	n	
7	RS	13C-1,2,3,7,8,9-HxCDD	100.00	5.67e+07	1.24	y	33:15	5.67e+05	-	n	n	
8	Tot	Hexa DPE	0.00	*			NotF»	Div0	-	n	n	
9	Tot	Tetra Lock	0.00	-			-	-	-	n	n	
10	Tot	Hexa Lock	0.00	-			-	-	-	n	n	

PV by RA 26JUL2019
SVbyKB26JUL2019


File:DB9T_055 #1-562 Acq:25-JUL-2019 12:12:22 GC EI+ Voltage SIR Autospec-UltimaE
Sample#7 File Text: Text:DX042E-CAL,,/01 Exp:DX-DB225-4_01
303.9016 S:7 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,748.0,5.00%,F,T)
A2.18E7
A2.99E6
305.8987 S:7 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,996.0,5.00%,F,T)
A2.86E7
A3.98E6
315.9419 S:7 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,672.0,5.00%,F,T)
A6.86E7
317.9389 S:7 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,864.0,5.00%,F,T)
A9.15E7
100%
80
60
40
20
0
17:00
18:00
19:00
20:00
21:00
22:00
Time
5.0E6
4.0E6
3.0E6
2.0E6
1.0E6
0.0E0
6.8E6
5.4E6
4.1E6
2.7E6
1.4E6
1.6E7
1.3E7
9.7E6
6.5E6
3.2E6
2.2E7
1.7E7
1.3E7
8.6E6
4.3E6


File:DB9T_055 #1-795 Acq:25-JUL-2019 12:12:22 GC EI+ Voltage SIR Autospec-UltimaE
Sample#7 File Text: Text:DX042E-CAL,,/01 Exp:DX-DB225-4_01
389.8156 S:7 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1072.0,5.00%,F,T)
A5.75E7
A5.50E7
A5.36E7
391.8127 S:7 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,872.0,5.00%,F,T)
A4.75E7
A4.53E7
A4.43E7
401.8559 S:7 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,52.0,5.00%,F,T)
A3.26E7
A3.37E7
A3.14E7
403.8530 S:7 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,48.0,5.00%,F,T)
A2.61E7
A2.75E7
A2.53E7
392.9760 S:7 F:2 SMO(1,3)
30:26
30:37
30:54
31:02
31:25
31:42
32:00
32:19
32:37
32:54
33:33
34:15
34:48
100%
50
0
30:00
31:00
32:00
33:00
34:00
35:00
Time
7.2E6
3.6E6
0.0E0
5.9E6
3.0E6
4.1E6
2.0E6
3.3E6
1.7E6
4.6E5
2.3E5

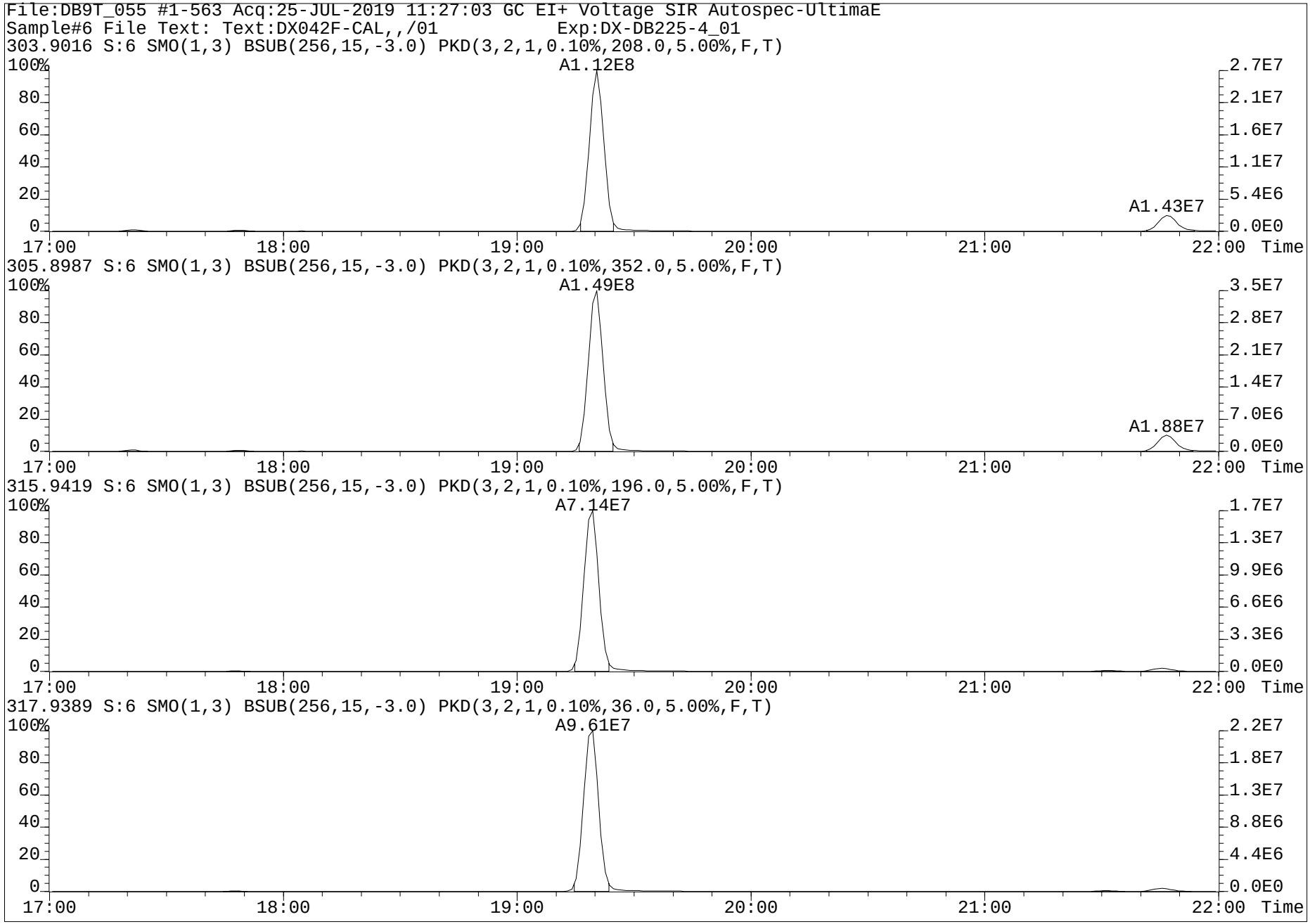

File:DB9T_055 #1-562 Acq:25-JUL-2019 12:12:22 GC EI+ Voltage SIR Autospec-UltimaE
Sample#7 File Text: Text:DX042E-CAL,,/01 Exp:DX-DB225-4_01
331.9368 S:7 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,804.0,5.00%,F,T)
100%
A5.01E7
1.2E7
1.1E7
1.0E7
8.7E6
7.5E6
6.2E6
5.0E6
3.7E6
2.5E6
1.2E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time
333.9339 S:7 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,76.0,5.00%,F,T)
100%
A6.23E7
1.6E7
1.4E7
1.3E7
1.1E7
9.5E6
7.9E6
6.3E6
4.7E6
3.2E6
1.6E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time

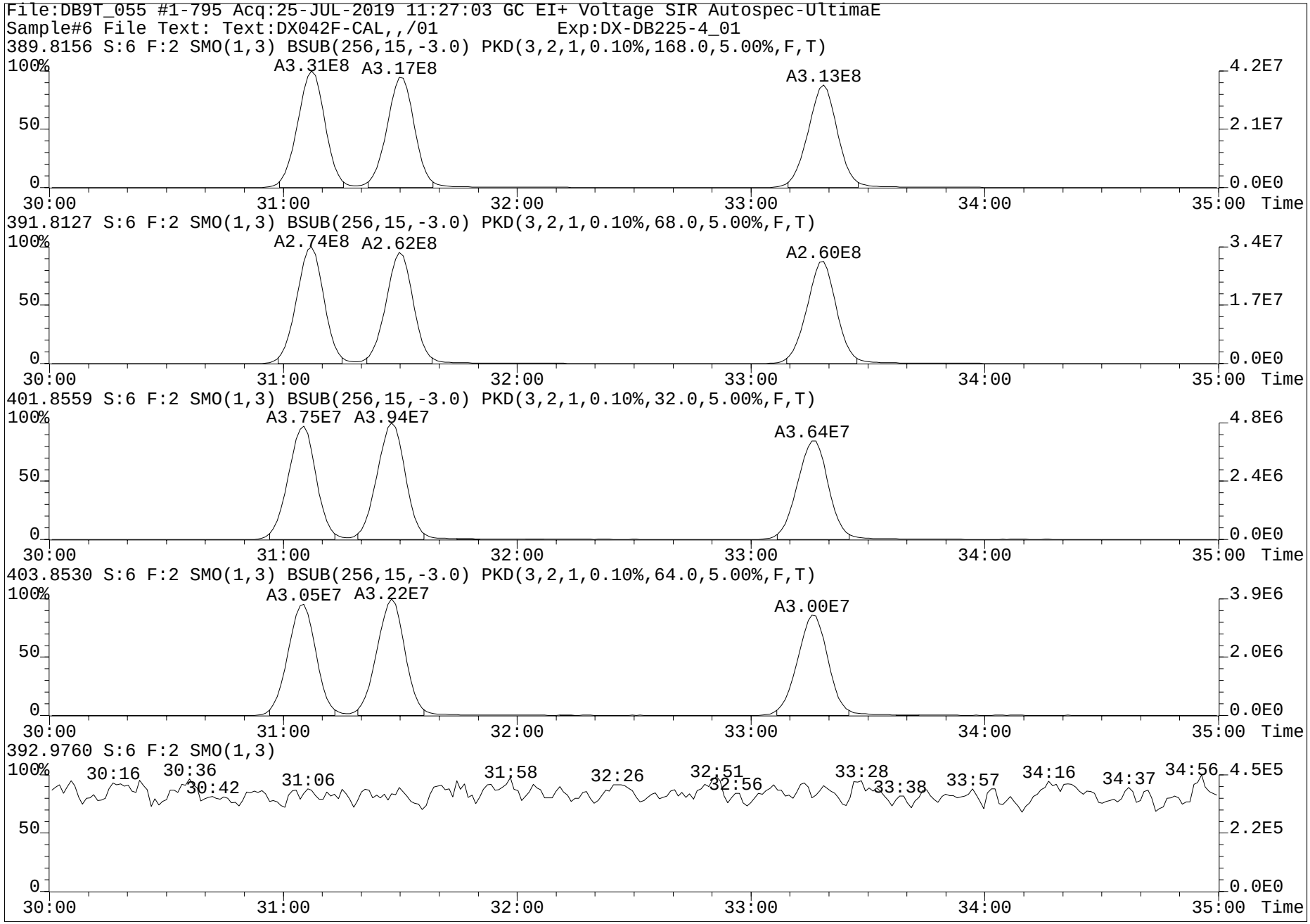

File:DB9T_055 #1-562 Acq:25-JUL-2019 12:12:22 GC EI+ Voltage SIR Autospec-UltimaE
Sample#7 File Text: Text:DX042E-CAL,,/01 Exp:DX-DB225-4_01
375.8364 S:7 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,96.0,5.00%,F,T)
A3.06E4
A2.03E4
A4.02E3
303.9016 S:7 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,748.0,5.00%,F,T)
A2.18E7
A2.99E6
305.8987 S:7 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,996.0,5.00%,F,T)
A2.86E7
A3.98E6
330.9792 S:7 SMO(1,3)
17:13
17:33
17:58
18:34
18:57
19:19
19:35
20:05
20:26
21:14
21:36
17:00
18:00
19:00
20:00
21:00
22:00
Time

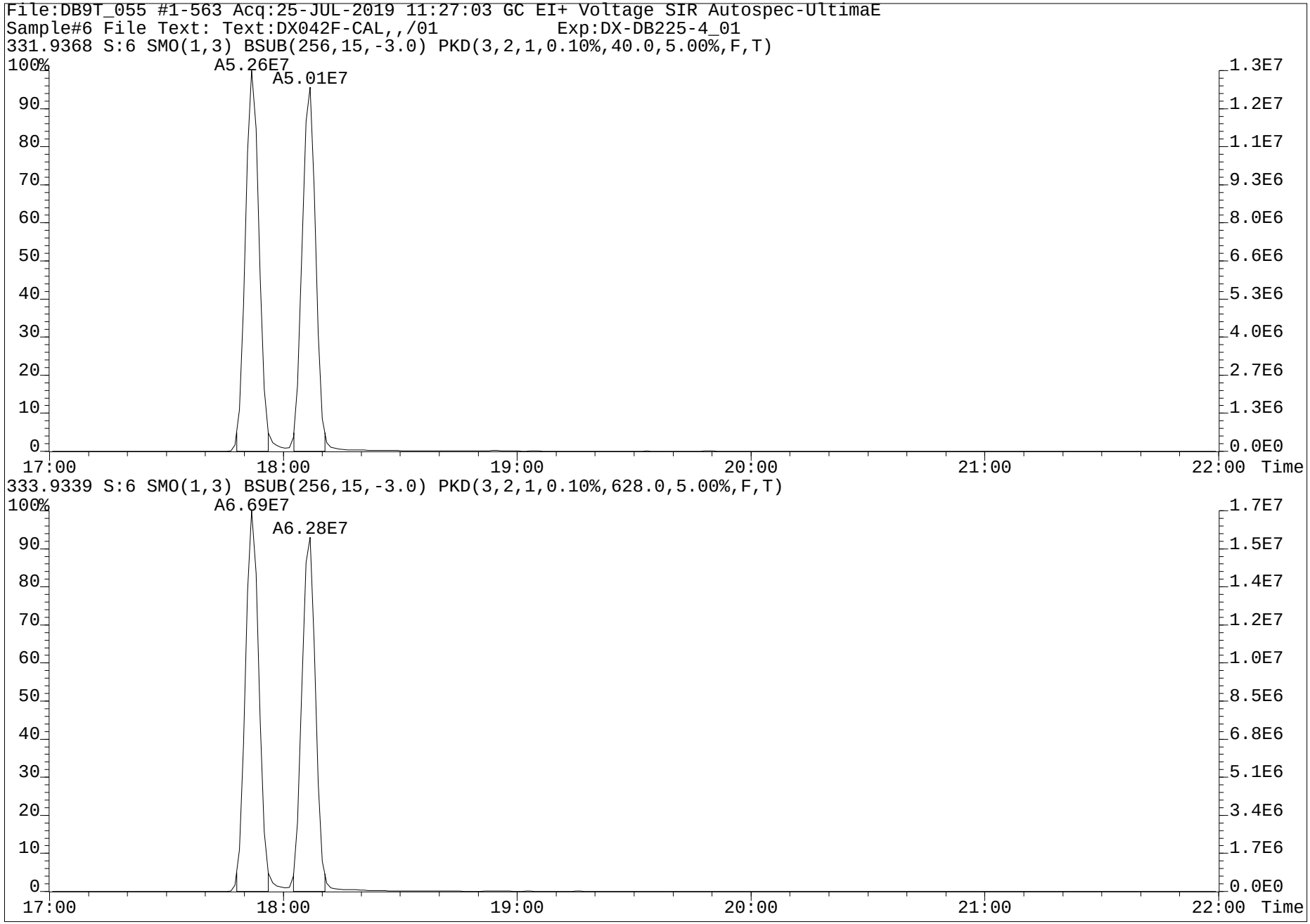
Run #6 Filename DB9T_055 S: 6 I: 1 Acquired: 25-JUL-19 11:27:03 Processed: 26-JUL-19 08:57:55
Run: db9t_055-6a Analyte: db-hxd-c2 Cal: db9t_055-6a Results: db9t_055-6a Version: V3.6 6-JAN-2000 17:51:42
Sample text: DX042F-CAL,,/01 Comments: 1,,2.0uL CS-5 F1: 400.00 F2: 1.00

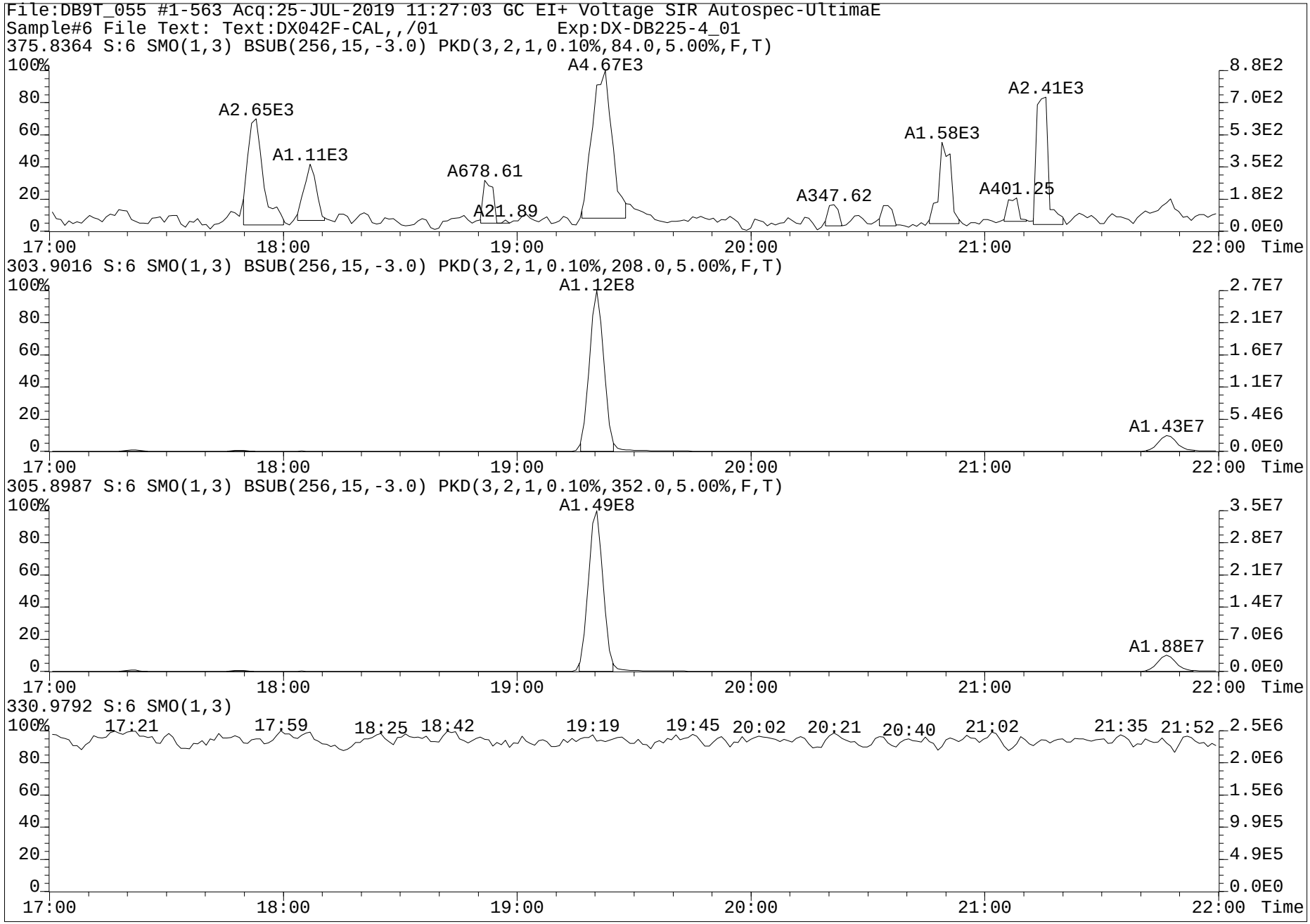
	Typ	Name	Amount	Resp	RA	RT	RF	RRF		Modified?
1	Unk	2,3,7,8-TCDF	200.00	2.61e+08	0.75 y	19:20	-	0.7788	y	n
2	Unk	1,2,3,7,8,9-HxCDD	1000.00	5.73e+08	1.20 y	33:18	-	0.8207	y	n
3	IS/RT	13C-2,3,7,8-TCDF	100.00	1.68e+08	0.74 y	19:19	-	1.4838	y	n
4	IS/RT	13C-1,2,3,4,7,8-HxCDD	100.00	6.81e+07	1.23 y	31:05	-	1.0252	y	n
5	IS/RT	13C-1,2,3,6,7,8-HxCDD	100.00	7.16e+07	1.22 y	31:28	-	1.0783	y	n
6	RS	13C-1,2,3,4-TCDD	100.00	1.13e+08	0.80 y	18:07	1.13e+06	-	n	n
7	RS	13C-1,2,3,7,8,9-HxCDD	100.00	6.64e+07	1.22 y	33:16	6.64e+05	-	n	n
8	Tot	Hexa DPE	0.00	*		NotF»	Div0	-	n	n
9	Tot	Tetra Lock	0.00	-		-	-	-	n	n
10	Tot	Hexa Lock	0.00	-		-	-	-	n	n

PV by RA 26JUL2019
SVbyKB26JUL2019


File:DB9T_055 #1-563 Acq:25-JUL-2019 11:27:03 GC EI+ Voltage SIR Autospec-UltimaE
Sample#6 File Text: Text:DX042F-CAL,,/01 Exp:DX-DB225-4_01
303.9016 S:6 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,208.0,5.00%,F,T)
A1.12E8
A1.43E7
305.8987 S:6 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,352.0,5.00%,F,T)
A1.49E8
A1.88E7
315.9419 S:6 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,196.0,5.00%,F,T)
A7.14E7
317.9389 S:6 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,36.0,5.00%,F,T)
A9.61E7
17:00
18:00
19:00
20:00
21:00
22:00
Time


File:DB9T_055 #1-795 Acq:25-JUL-2019 11:27:03 GC EI+ Voltage SIR Autospec-UltimaE
Sample#6 File Text: Text:DX042F-CAL,,/01 Exp:DX-DB225-4_01
389.8156 S:6 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,168.0,5.00%,F,T)
A3.31E8
A3.17E8
A3.13E8
391.8127 S:6 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,68.0,5.00%,F,T)
A2.74E8
A2.62E8
A2.60E8
401.8559 S:6 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,32.0,5.00%,F,T)
A3.75E7
A3.94E7
A3.64E7
403.8530 S:6 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,64.0,5.00%,F,T)
A3.05E7
A3.22E7
A3.00E7
392.9760 S:6 F:2 SMO(1,3)
30:16
30:36
30:42
31:06
31:58
32:26
32:51
32:56
33:28
33:38
33:57
34:16
34:37
34:56
100%
50
0
30:00
31:00
32:00
33:00
34:00
35:00
Time
4.2E7
2.1E7
0.0E0
3.4E7
1.7E7
4.8E6
2.4E6
3.9E6
2.0E6
4.5E5
2.2E5


File:DB9T_055 #1-563 Acq:25-JUL-2019 11:27:03 GC EI+ Voltage SIR Autospec-UltimaE
Sample#6 File Text: Text:DX042F-CAL,,/01 Exp:DX-DB225-4_01
331.9368 S:6 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,40.0,5.00%,F,T)
A5.26E7
A5.01E7
100%
90
80
70
60
50
40
30
20
10
0
1.3E7
1.2E7
1.1E7
9.3E6
8.0E6
6.6E6
5.3E6
4.0E6
2.7E6
1.3E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time
333.9339 S:6 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,628.0,5.00%,F,T)
A6.69E7
A6.28E7
100%
90
80
70
60
50
40
30
20
10
0
1.7E7
1.5E7
1.4E7
1.2E7
1.0E7
8.5E6
6.8E6
5.1E6
3.4E6
1.7E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time


File:DB9T_055 #1-563 Acq:25-JUL-2019 11:27:03 GC EI+ Voltage SIR Autospec-UltimaE
Sample#6 File Text: Text:DX042F-CAL,,/01 Exp:DX-DB225-4_01
375.8364 S:6 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,84.0,5.00%,F,T)
A2.65E3
A1.11E3
A678.61
A21.89
A4.67E3
A347.62
A1.58E3
A401.25
A2.41E3
303.9016 S:6 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,208.0,5.00%,F,T)
A1.12E8
A1.43E7
305.8987 S:6 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,352.0,5.00%,F,T)
A1.49E8
A1.88E7
330.9792 S:6 SMO(1,3)
17:21
17:59
18:25
18:42
19:19
19:45
20:02
20:21
20:40
21:02
21:35
21:52
Time

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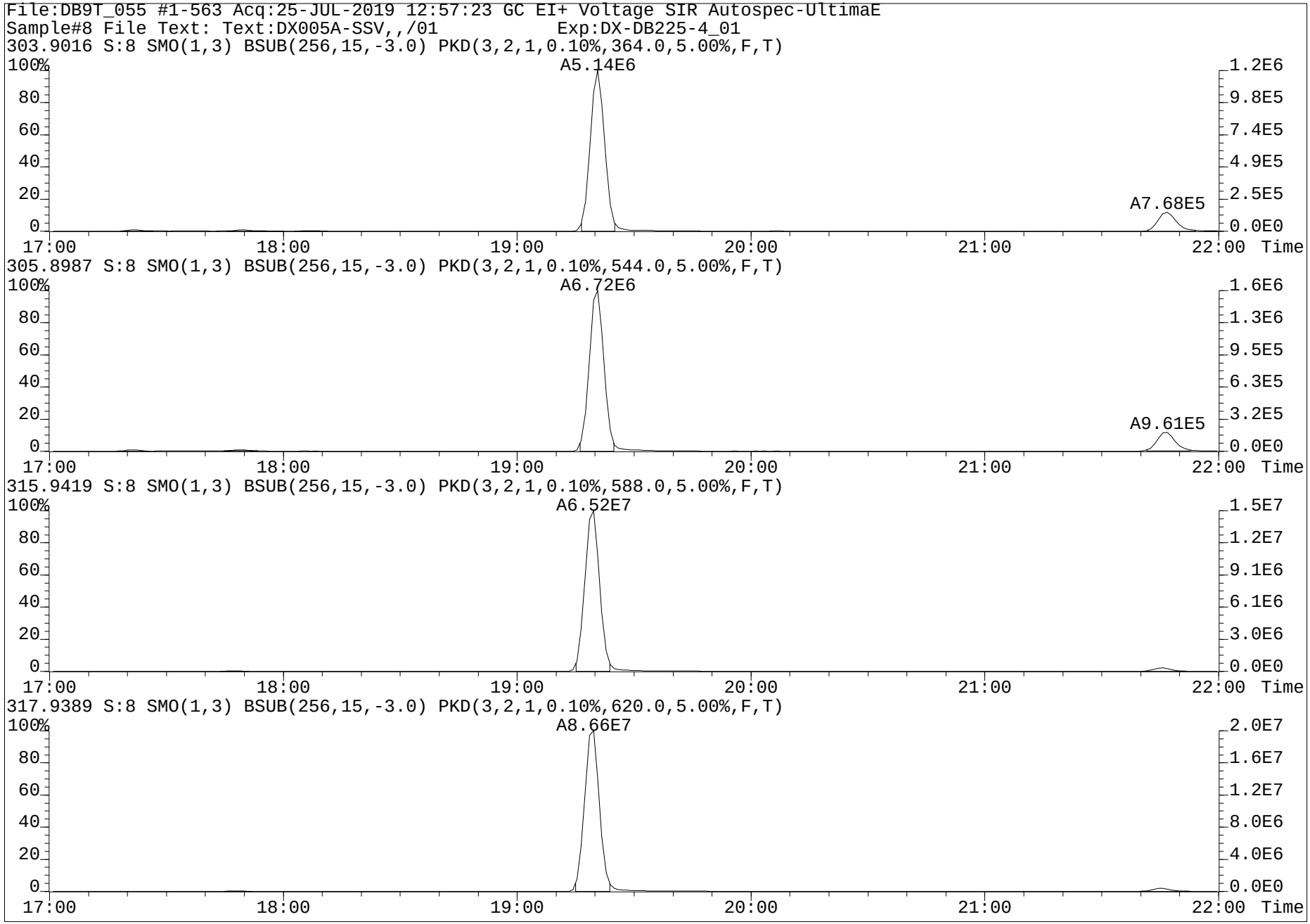
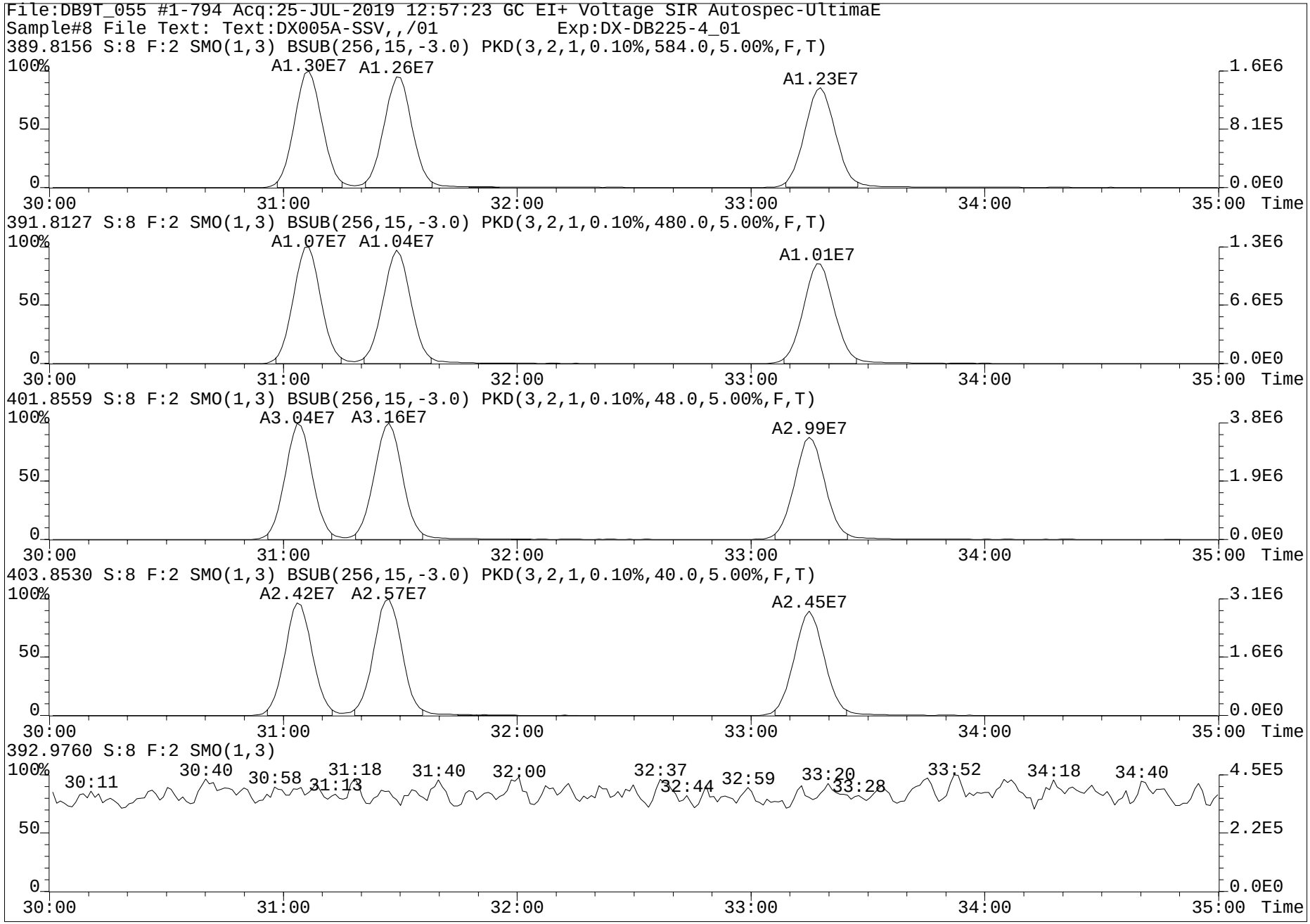
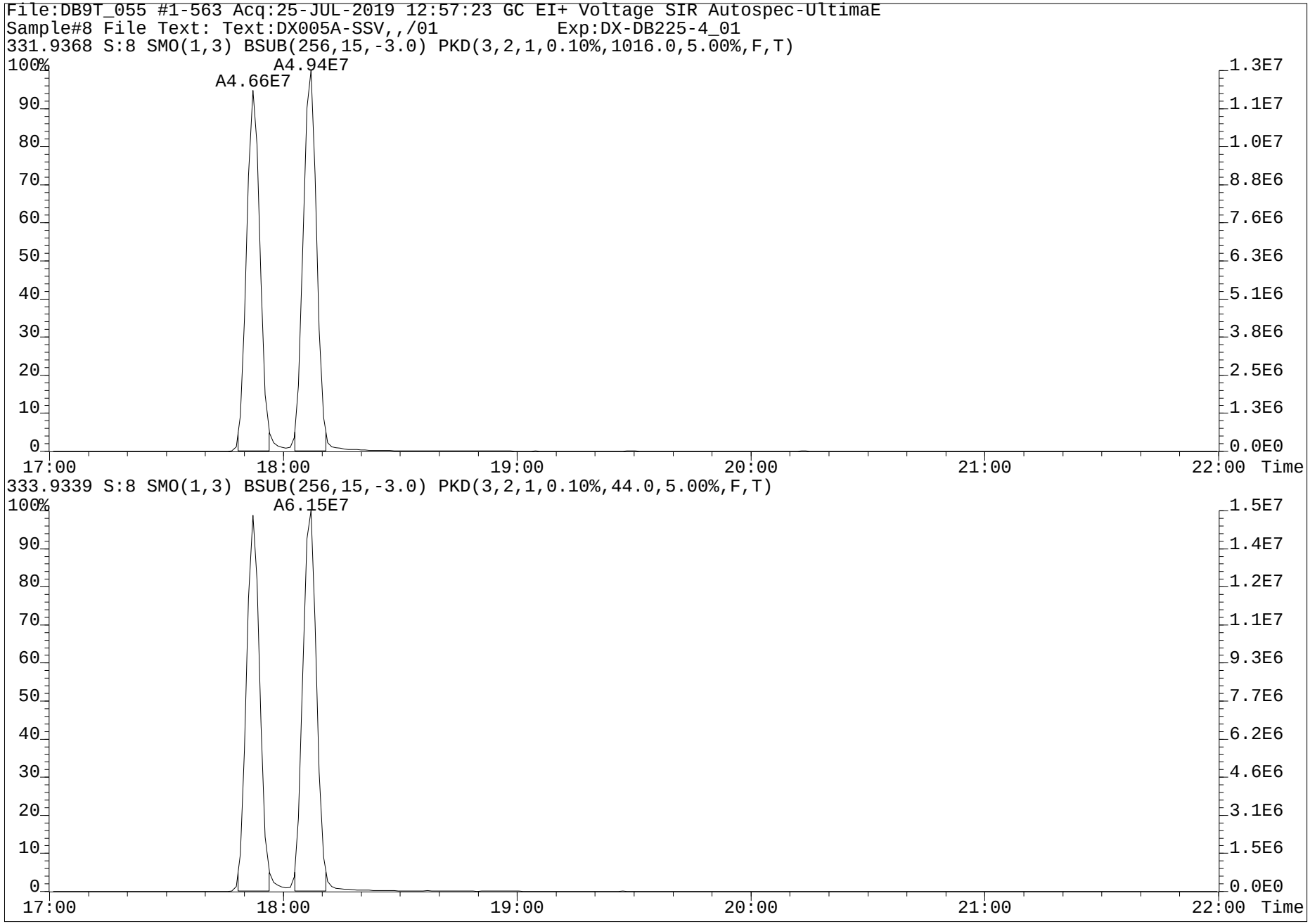
Run #8 Filename DB9T_055 S: 8 I: 1 Acquired: 25-JUL-19 12:57:23 Processed: 26-JUL-19 08:57:55
Run: db9t_055-6a Analyte: db-hxd-c2 Cal: db9t_055-5a Results: db9t_055-5a Version: V3.6 6-JAN-2000 17:51:42
Sample text: DX005A-SSV,,/01 Comments: 1,,2.0uL SSV
sample size: 1.000000 conc units: ng/mL total toxicity: 5.96 F1: 20.0000 F2: 1.0000

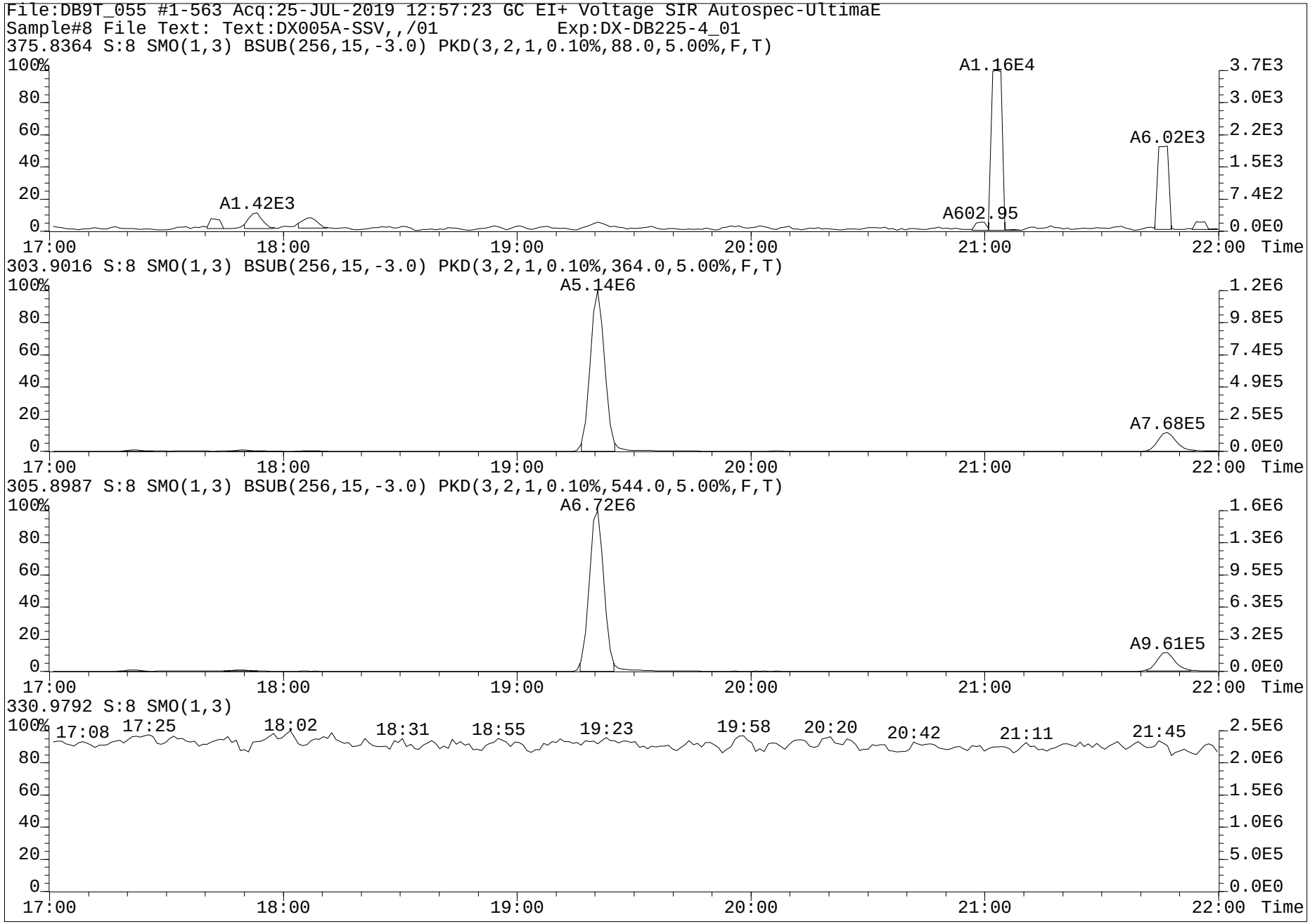
	Typ	Name	#Hom	Resp	RA		RT	Conc	Tox #1	DL	Rec	M?
1	Unk	2,3,7,8-TCDF	1	1.19e+07	0.76	y	19:21	10.068	1	0.0083	-	n
2	Unk	1,2,3,7,8,9-HxCDD	1	2.24e+07	1.22	y	33:18	49.554	5	0.0478	-	n
3	IS/RT	13C-2,3,7,8-TCDF	1	1.52e+08	0.75	y	19:19	96.750	-	0.0076	96.8	n
4	IS/RT	13C-1,2,3,4,7,8-HxCDD	1	5.45e+07	1.26	y	31:04	97.538	-	0.0035	97.5	n
5	IS/RT	13C-1,2,3,6,7,8-HxCDD	1	5.73e+07	1.23	y	31:27	98.052	-	0.0033	98.1	n
6	RS	13C-1,2,3,4-TCDD	1	1.11e+08	0.80	y	18:07	96.418	-	-	-	n
7	RS	13C-1,2,3,7,8,9-HxCDD	1	5.44e+07	1.22	y	33:15	94.744	-	-	-	n
8	Tot	Hexa DPE	0	*			NotFnd	*	-	-	-	n
9	Tot	Tetra Lock	-	-			-	-	-	-	-	n
10	Tot	Hexa Lock	-	-			-	-	-	-	-	n

PVby RA 26JUL2019
SVbyKB26JUL2019


File:DB9T_055 #1-563 Acq:25-JUL-2019 12:57:23 GC EI+ Voltage SIR Autospec-UltimaE
Sample#8 File Text: Text:DX005A-SSV,,/01 Exp:DX-DB225-4_01
303.9016 S:8 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,364.0,5.00%,F,T)
A5.14E6
A7.68E5
305.8987 S:8 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,544.0,5.00%,F,T)
A6.72E6
A9.61E5
315.9419 S:8 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,588.0,5.00%,F,T)
A6.52E7
317.9389 S:8 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,620.0,5.00%,F,T)
A8.66E7
100%
80
60
40
20
0
17:00
18:00
19:00
20:00
21:00
22:00
Time
1.2E6
9.8E5
7.4E5
4.9E5
2.5E5
0.0E0
1.6E6
1.3E6
9.5E5
6.3E5
3.2E5
0.0E0
1.5E7
1.2E7
9.1E6
6.1E6
3.0E6
0.0E0
2.0E7
1.6E7
1.2E7
8.0E6
4.0E6
0.0E0


File:DB9T_055 #1-794 Acq:25-JUL-2019 12:57:23 GC EI+ Voltage SIR Autospec-UltimaE
Sample#8 File Text: Text:DX005A-SSV,,/01 Exp:DX-DB225-4_01
389.8156 S:8 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,584.0,5.00%,F,T)
A1.30E7
A1.26E7
A1.23E7
391.8127 S:8 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,480.0,5.00%,F,T)
A1.07E7
A1.04E7
A1.01E7
401.8559 S:8 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,48.0,5.00%,F,T)
A3.04E7
A3.16E7
A2.99E7
403.8530 S:8 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,40.0,5.00%,F,T)
A2.42E7
A2.57E7
A2.45E7
392.9760 S:8 F:2 SMO(1,3)
30:11
30:40
30:58
31:13
31:18
31:40
32:00
32:37
32:44
32:59
33:20
33:28
33:52
34:18
34:40
100%
50
0
30:00
31:00
32:00
33:00
34:00
35:00
Time
1.6E6
8.1E5
0.0E0
1.3E6
6.6E5
3.8E6
1.9E6
3.1E6
1.6E6
4.5E5
2.2E5


File:DB9T_055 #1-563 Acq:25-JUL-2019 12:57:23 GC EI+ Voltage SIR Autospec-UltimaE
Sample#8 File Text: Text:DX005A-SSV,,/01 Exp:DX-DB225-4_01
331.9368 S:8 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1016.0,5.00%,F,T)
A4.66E7
A4.94E7
100%
90
80
70
60
50
40
30
20
10
0
1.3E7
1.1E7
1.0E7
8.8E6
7.6E6
6.3E6
5.1E6
3.8E6
2.5E6
1.3E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time
333.9339 S:8 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,44.0,5.00%,F,T)
A6.15E7
100%
90
80
70
60
50
40
30
20
10
0
1.5E7
1.4E7
1.2E7
1.1E7
9.3E6
7.7E6
6.2E6
4.6E6
3.1E6
1.5E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time


File:DB9T_055 #1-563 Acq:25-JUL-2019 12:57:23 GC EI+ Voltage SIR Autospec-UltimaE
Sample#8 File Text: Text:DX005A-SSV,,/01 Exp:DX-DB225-4_01
375.8364 S:8 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,88.0,5.00%,F,T)
A1.16E4
A6.02E3
A1.42E3
A602.95
303.9016 S:8 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,364.0,5.00%,F,T)
A5.14E6
A7.68E5
305.8987 S:8 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,544.0,5.00%,F,T)
A6.72E6
A9.61E5
330.9792 S:8 SMO(1,3)
17:08
17:25
18:02
18:31
18:55
19:23
19:58
20:20
20:42
21:11
21:45
17:00
18:00
19:00
20:00
21:00
22:00
Time

Experiment : DX-DB225-4_01
GC Program : DX-DB225-4_01
Column type : DB-225
Serial # : USA226732J/USP╖
kPa : 191
Vol injected: 2.0uL
PMT Voltage : 415

Temps -source: 260
-s resv: 140
-re_ent: 220
-cap_1 : 235
-cap_2 : 220

Tune :
List : XX/FS
Check :
LIMS :
Logfile:

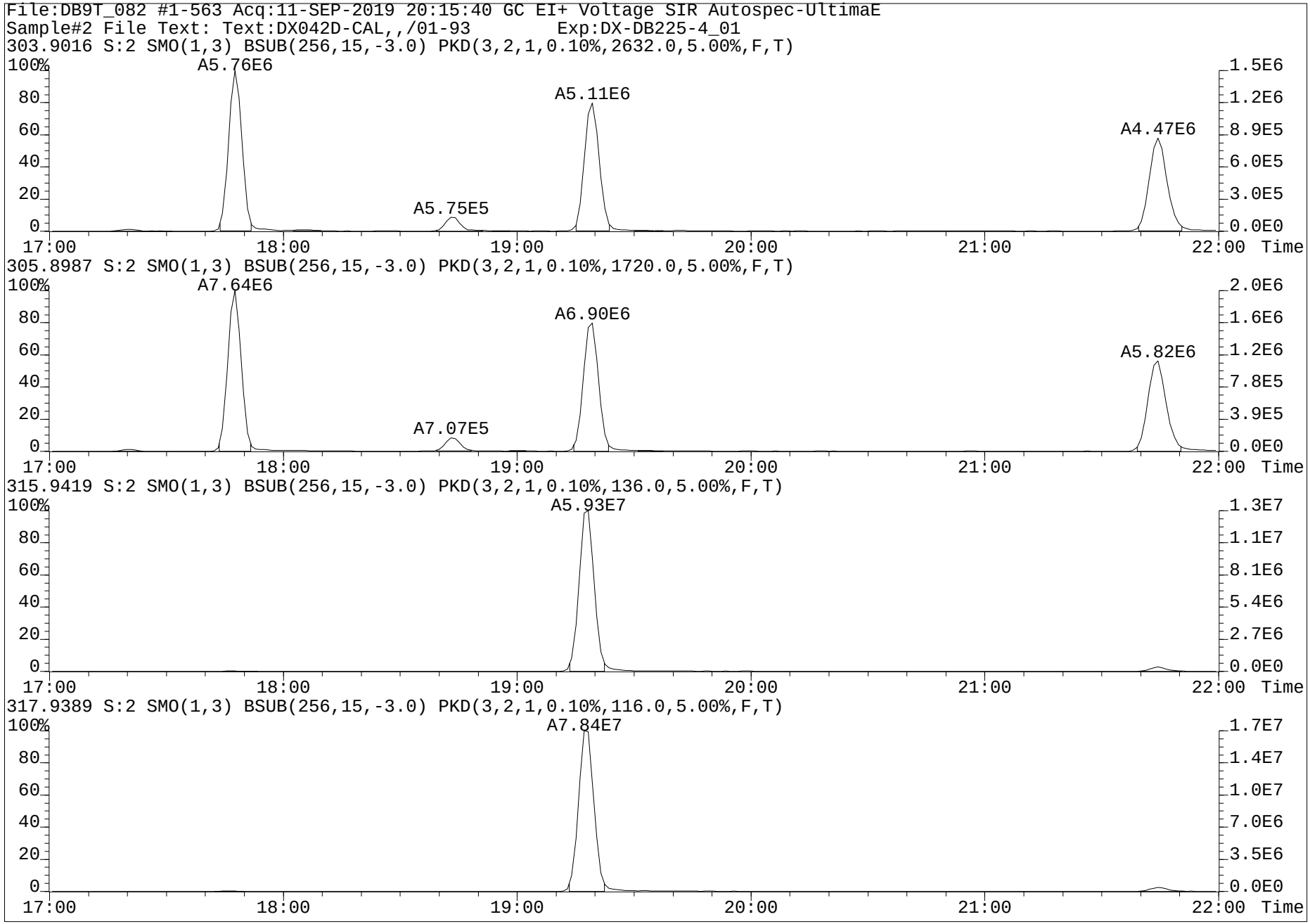
Date -list : 11-SEP-2019
-liner : 07-SEP-2019
-septum: 06-SEP-2019
-guard : 60CM 02-AUG-2019
-column: 20CM 23-APR-2019
-t line: 60cm 23-APR-2019

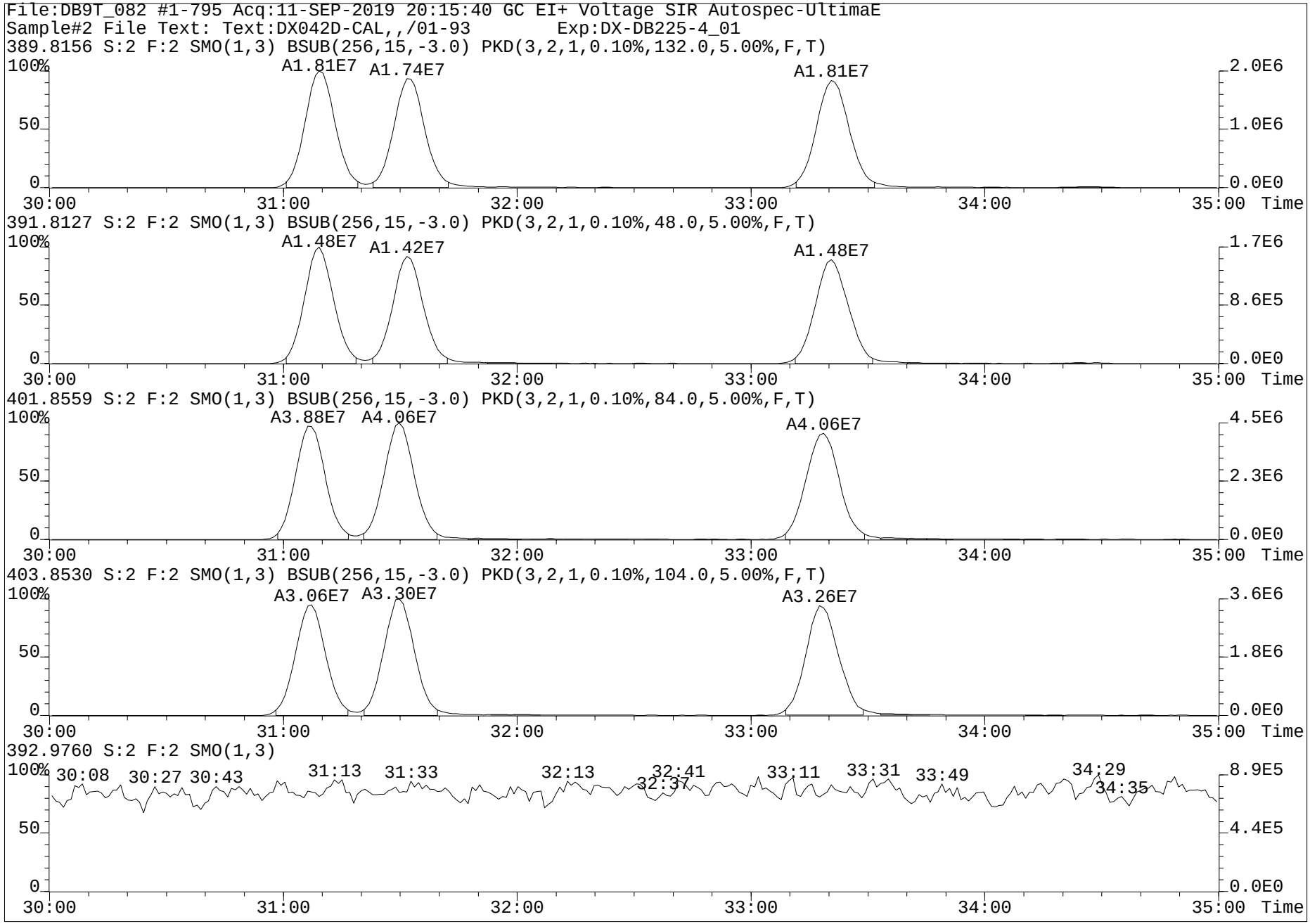
#	Data file	S	V	Sample Text	Comments	Acquisition Date/Time
1	DB9T_082	1	1	DX003A-RSN,,/01-17	1,,2.0uL WIN/RES	11-SEP-19 19:30:57
2	DB9T_082	2	2	DX042D-CAL,,/01-93	1,,2.0uL CS-3/CAL	11-SEP-19 20:15:40
3	DB9T_082	3	3	Toluene,,	1,,2.0uL	11-SEP-19 21:00:25
4	DB9T_082	4	4	Toluene,,	1,,2.0uL	11-SEP-19 21:45:08
5	DB9T_082	5	5	WG69303-101,,BLK	1,WG69303,2.0/20uL	11-SEP-19 22:29:52
6	DB9T_082	6	6	WG69347-101,,BLK	1,WG69347,2.0/20uL	11-SEP-19 23:14:36
7	DB9T_082	7	7	L31831-1,,	1,WG69347,2.0/20uL	11-SEP-19 23:59:19
8	DB9T_082	8	8	L31764-1,,	1,WG69347,2.0/20uL	12-SEP-19 00:44:02
9	DB9T_082	9	9	L31764-2,,	1,WG69347,2.0/20uL	12-SEP-19 01:28:46
10	DB9T_082	10	10	L31764-3,,	1,WG69347,2.0/20uL	12-SEP-19 02:13:28
11	DB9T_082	11	11	L31683-1,,	1,WG69303,2.0/20uL	12-SEP-19 02:58:12
12	DB9T_082	12	12	WG69303-103,,CRM	1,WG69303,2.0/20uL	12-SEP-19 03:42:55
13	DB9T_082	13	13	WG69303-104,,CRM	1,WG69303,2.0/20uL	12-SEP-19 04:27:39
14	DB9T_082	14	14	WG69303-105,,CRM	1,WG69303,2.0/20uL	12-SEP-19 05:12:22
15	DB9T_082	15	15	DX042D-CAL,,/01-93	1,,2.0uL CS-3/CAL	12-SEP-19 05:57:06

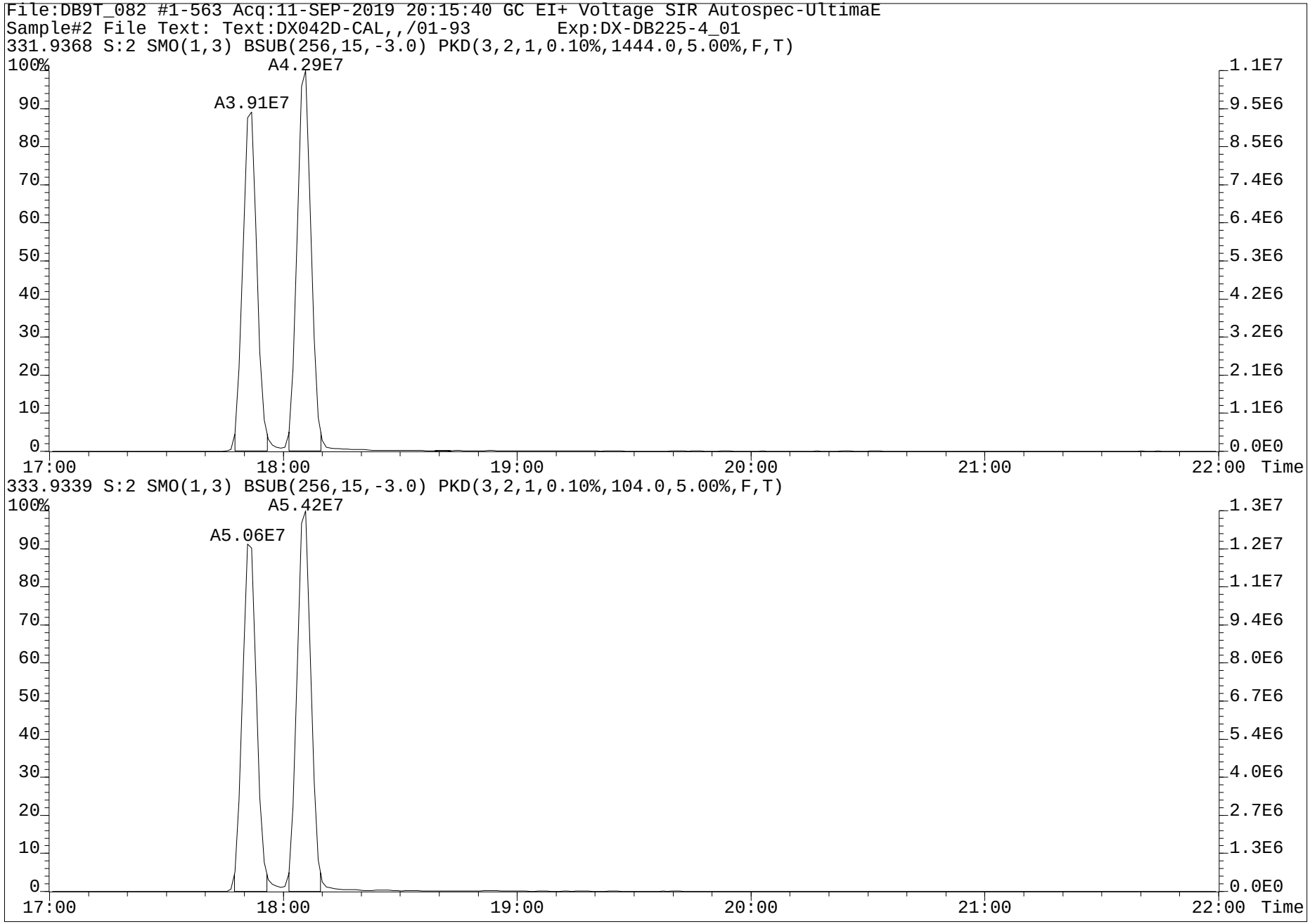
Run #7 Filename DB9T_082 S: 2 I: 1 Acquired: 11-SEP-19 20:15:40 Processed: 17-SEP-19 10:40:42
Run: db9t_082-a Analyte: db-hxd-c2 Cal: db9t_055-5a Results: db9t_082-a Version: V3.6 6-JAN-2000 17:51:42
Sample text: DX042D-CAL,,,01-93 Comments: 1,,2.0uL CS-3/CAL
sample size: 1.000000 conc units: ng/mL total toxicity: 6.82 F1: 20.0000 F2: 1.0000

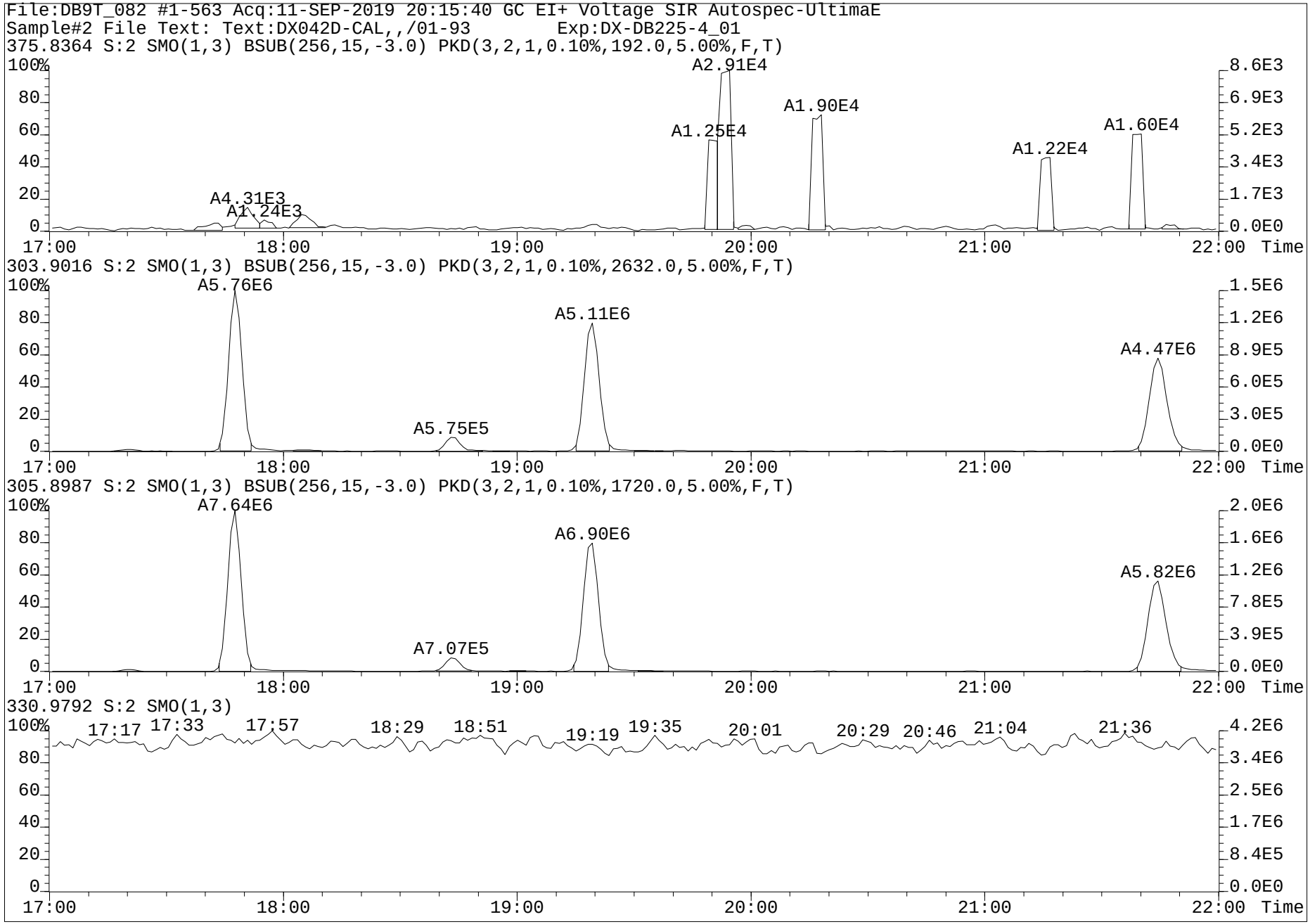
	Typ	Name	#Hom	Resp	RA		RT	Conc	Tox #1	DL	Rec	M?
1	Unk	2,3,7,8-TCDF	1	1.20e+07	0.74	y	19:19	11.247	1	0.0453	-	n
2	Unk	1,2,3,7,8,9-HxCDD	1	3.29e+07	1.22	y	33:21	56.913	6	0.0069	-	n
3	IS/RT	13C-2,3,7,8-TCDF	1	1.38e+08	0.76	y	19:18	100.281	-	0.0019	100.3	n
4	IS/RT	13C-1,2,3,4,7,8-HxCDD	1	6.95e+07	1.27	y	31:07	92.391	-	0.0061	92.4	n
5	IS/RT	13C-1,2,3,6,7,8-HxCDD	1	7.36e+07	1.23	y	31:30	93.634	-	0.0058	93.6	n
6	RS	13C-1,2,3,4-TCDD	1	9.71e+07	0.79	y	18:05	84.373	-	-	-	n
7	RS	13C-1,2,3,7,8,9-HxCDD	1	7.32e+07	1.24	y	33:18	127.465	-	-	-	n
8	Tot	Hexa DPE	0	*			NotFnd	*	-	-	-	n
9	Tot	Tetra Lock	-	-			-	-	-	-	-	n
10	Tot	Hexa Lock	-	-			-	-	-	-	-	n

PV by RA 20SEP2019


File:DB9T_082 #1-563 Acq:11-SEP-2019 20:15:40 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text: Text:DX042D-CAL,,/01-93 Exp:DX-DB225-4_01
303.9016 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,2632.0,5.00%,F,T)
A5.76E6
A5.11E6
A4.47E6
A5.75E5
305.8987 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1720.0,5.00%,F,T)
A7.64E6
A6.90E6
A5.82E6
A7.07E5
315.9419 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,136.0,5.00%,F,T)
A5.93E7
317.9389 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,116.0,5.00%,F,T)
A7.84E7
Time


File:DB9T_082 #1-795 Acq:11-SEP-2019 20:15:40 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text: Text:DX042D-CAL,,/01-93 Exp:DX-DB225-4_01
389.8156 S:2 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,132.0,5.00%,F,T)
A1.81E7
A1.74E7
A1.81E7
391.8127 S:2 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,48.0,5.00%,F,T)
A1.48E7
A1.42E7
A1.48E7
401.8559 S:2 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,84.0,5.00%,F,T)
A3.88E7
A4.06E7
A4.06E7
403.8530 S:2 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,104.0,5.00%,F,T)
A3.06E7
A3.30E7
A3.26E7
392.9760 S:2 F:2 SMO(1,3)
30:08
30:27
30:43
31:13
31:33
32:13
32:37
32:41
33:11
33:31
33:49
34:29
34:35
100%
50
0
30:00
31:00
32:00
33:00
34:00
35:00
Time
2.0E6
1.0E6
0.0E0
1.7E6
8.6E5
4.5E6
2.3E6
3.6E6
1.8E6
8.9E5
4.4E5


File:DB9T_082 #1-563 Acq:11-SEP-2019 20:15:40 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text: Text:DX042D-CAL,,/01-93 Exp:DX-DB225-4_01
331.9368 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1444.0,5.00%,F,T)
A4.29E7
A3.91E7
100%
90
80
70
60
50
40
30
20
10
0
1.1E7
9.5E6
8.5E6
7.4E6
6.4E6
5.3E6
4.2E6
3.2E6
2.1E6
1.1E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time
333.9339 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,104.0,5.00%,F,T)
A5.42E7
A5.06E7
100%
90
80
70
60
50
40
30
20
10
0
1.3E7
1.2E7
1.1E7
9.4E6
8.0E6
6.7E6
5.4E6
4.0E6
2.7E6
1.3E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time


File:DB9T_082 #1-563 Acq:11-SEP-2019 20:15:40 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text: Text:DX042D-CAL,,/01-93 Exp:DX-DB225-4_01
375.8364 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,192.0,5.00%,F,T)
A2.91E4
A1.90E4
A1.25E4
A1.60E4
A1.22E4
A4.31E3
A1.24E3
303.9016 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,2632.0,5.00%,F,T)
A5.76E6
A5.11E6
A4.47E6
A5.75E5
305.8987 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1720.0,5.00%,F,T)
A7.64E6
A6.90E6
A5.82E6
A7.07E5
330.9792 S:2 SMO(1,3)
17:17
17:33
17:57
18:29
18:51
19:19
19:35
20:01
20:29
20:46
21:04
21:36
17:00
18:00
19:00
20:00
21:00
22:00
Time

Experiment : DX-DB225-4_01
GC Program : DX-DB225-4_01
Column type : DB-225
Serial # : USA226732J/USP╕
kPa : 191
Vol injected: 2.0uL
PMT Voltage : 415

Temps -source: 260
-s resv: 140
-re_ent: 220
-cap_1 : 235
-cap_2 : 220

Tune : XX
List : XX/FS
Check :
LIMS :
Logfile:

Date -list : 12-SEP-2019
-liner : 07-SEP-2019
-septum: 06-SEP-2019
-guard : 60CM 02-AUG-2019
-column: 20CM 23-APR-2019
-t line: 60cm 23-APR-2019

#	Data file	S	V	Sample Text	Comments	Acquisition Date/Time
1	DB9T_083	1	1	DX003A-RSN,,/01-17	1,,2.0uL WIN/RES	12-SEP-19 07:27:16
2	DB9T_083	2	2	DX042D-CAL,,/01-93	1,,2.0uL CS-3/CAL	12-SEP-19 08:11:59
3	DB9T_083	3	3	Toluene,,	1,,2.0uL	12-SEP-19 08:56:43
4	DB9T_083	4	4	Toluene,,	1,,2.0uL	12-SEP-19 09:41:27
5	DB9T_083	5	5	WG69237-101,,BLK	1,WG69237,2.0/20uL	12-SEP-19 10:26:10
6	DB9T_083	6	6	WG69237-102,,MDL	1,WG69237,2.0/20uL	12-SEP-19 11:10:53
7	DB9T_083	7	7	L31654-7,,	1,WG69303,2.0/20uL	12-SEP-19 11:55:36
8	DB9T_083	8	8	L31654-8,,	1,WG69303,2.0/20uL	12-SEP-19 12:40:20
9	DB9T_083	9	9	L31654-9,,	1,WG69303,2.0/20uL	12-SEP-19 13:25:03
10	DB9T_083	10	10	L31654-10,,	1,WG69303,2.0/20uL	12-SEP-19 14:09:46
11	DB9T_083	11	11	L31654-11,,	1,WG69303,2.0/20uL	12-SEP-19 14:54:30
12	DB9T_083	12	12	L31654-12,,	1,WG69303,2.0/20uL	12-SEP-19 15:39:12
13	DB9T_083	13	13	DX042D-CAL,,/01-93	1,,2.0uL CS-3/CAL	12-SEP-19 16:23:56

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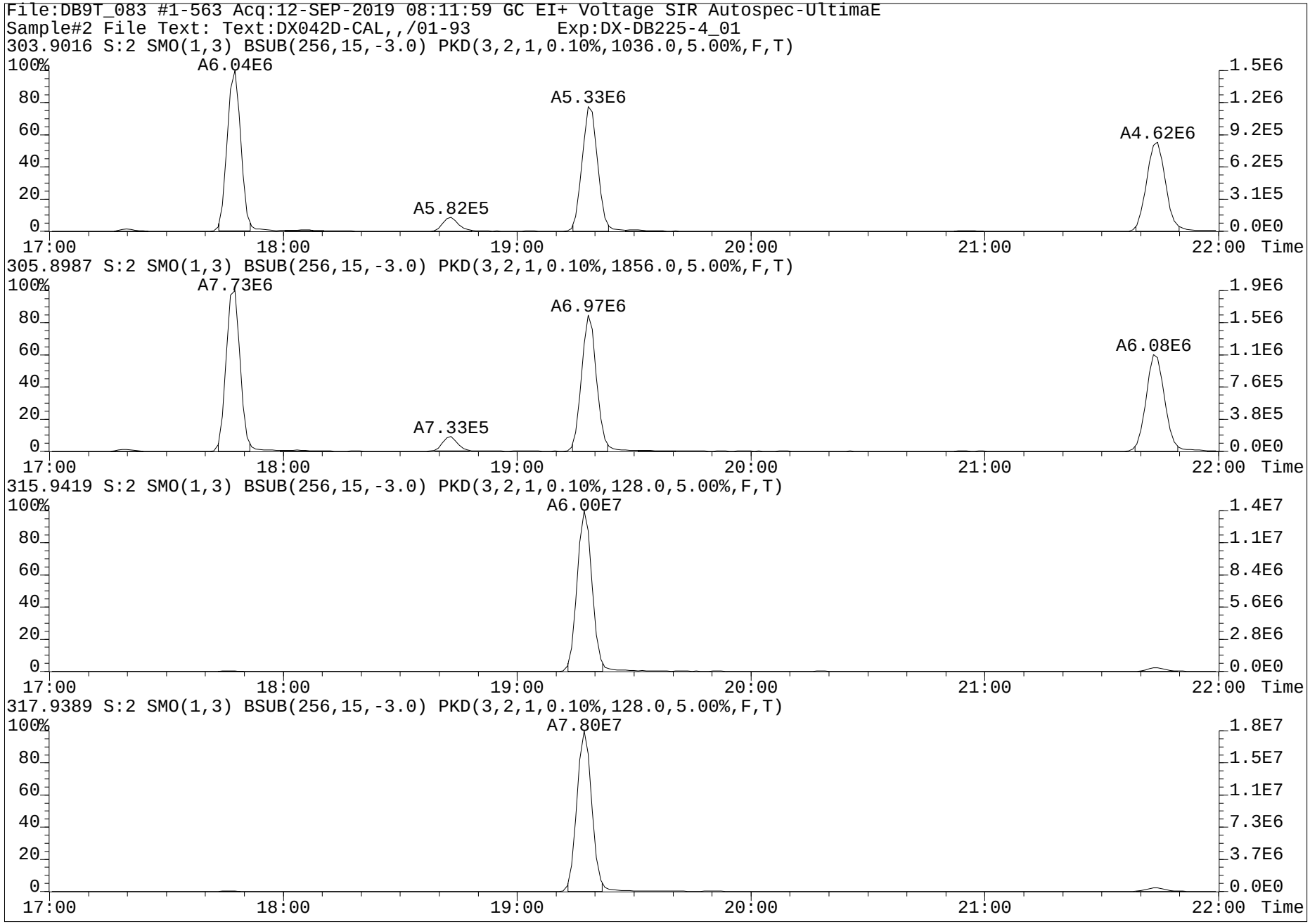
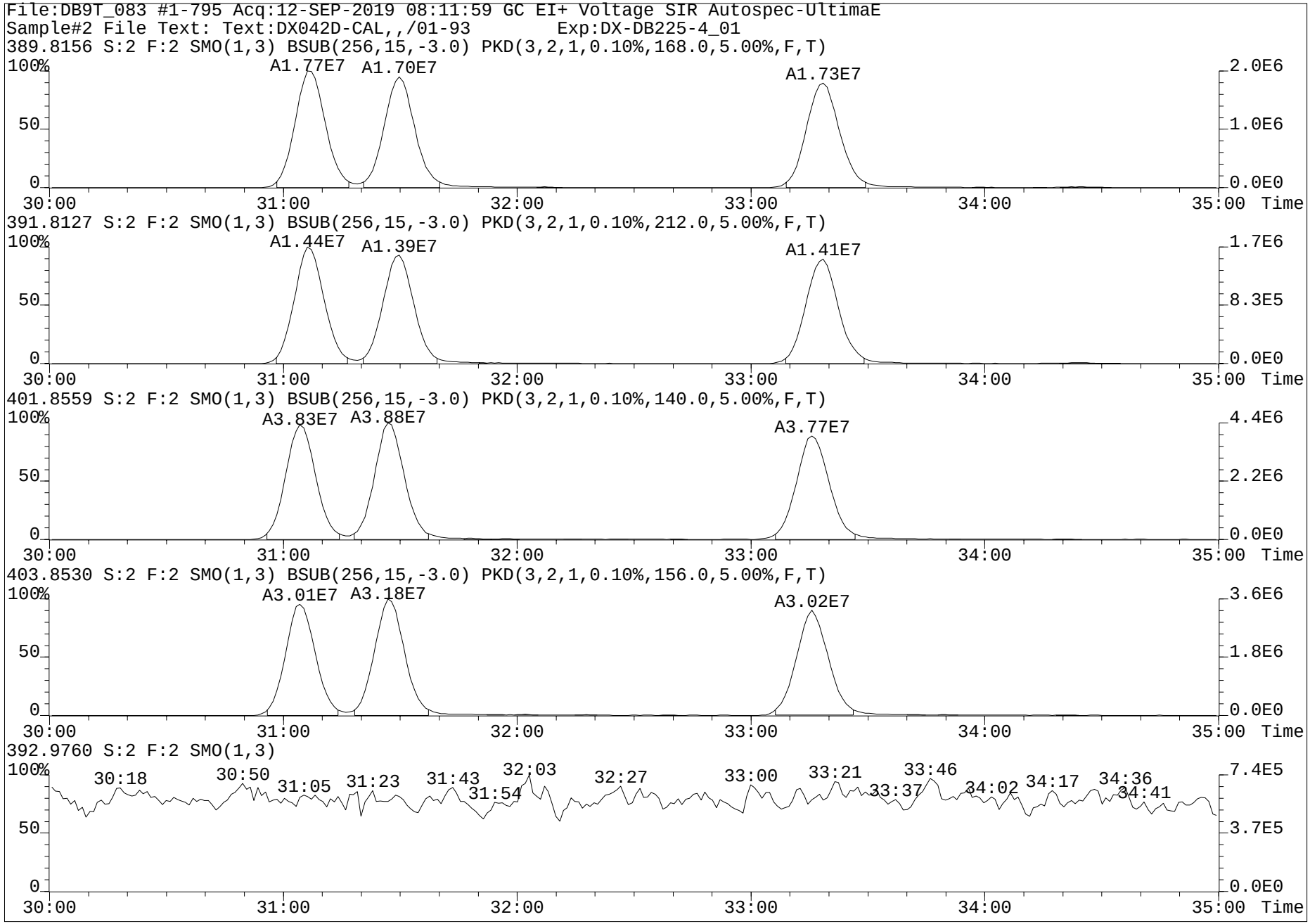
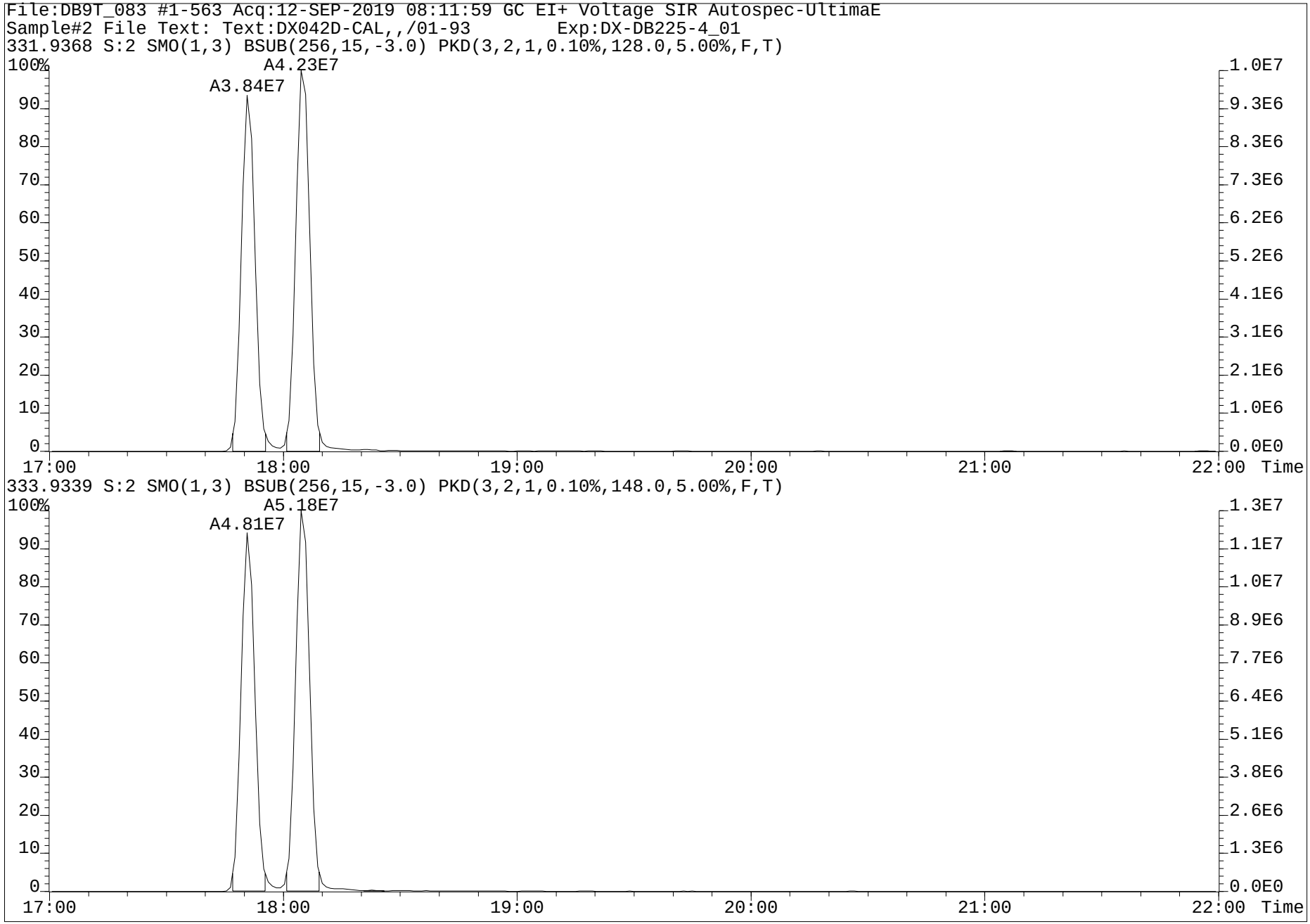
Run #7 Filename DB9T_083 S: 2 I: 1 Acquired: 12-SEP-19 08:11:59 Processed: 17-SEP-19 10:20:03
Run: db9t_083-b Analyte: db-hxd-c2 Cal: db9t_055-5a Results: db9t_083-b Version: V3.6 6-JAN-2000 17:51:42
Sample text: DX042D-CAL,,/01-93 Comments: 1,,2.0uL CS-3/CAL
sample size: 1.000000 conc units: ng/mL total toxicity: 6.73 F1: 20.0000 F2: 1.0000

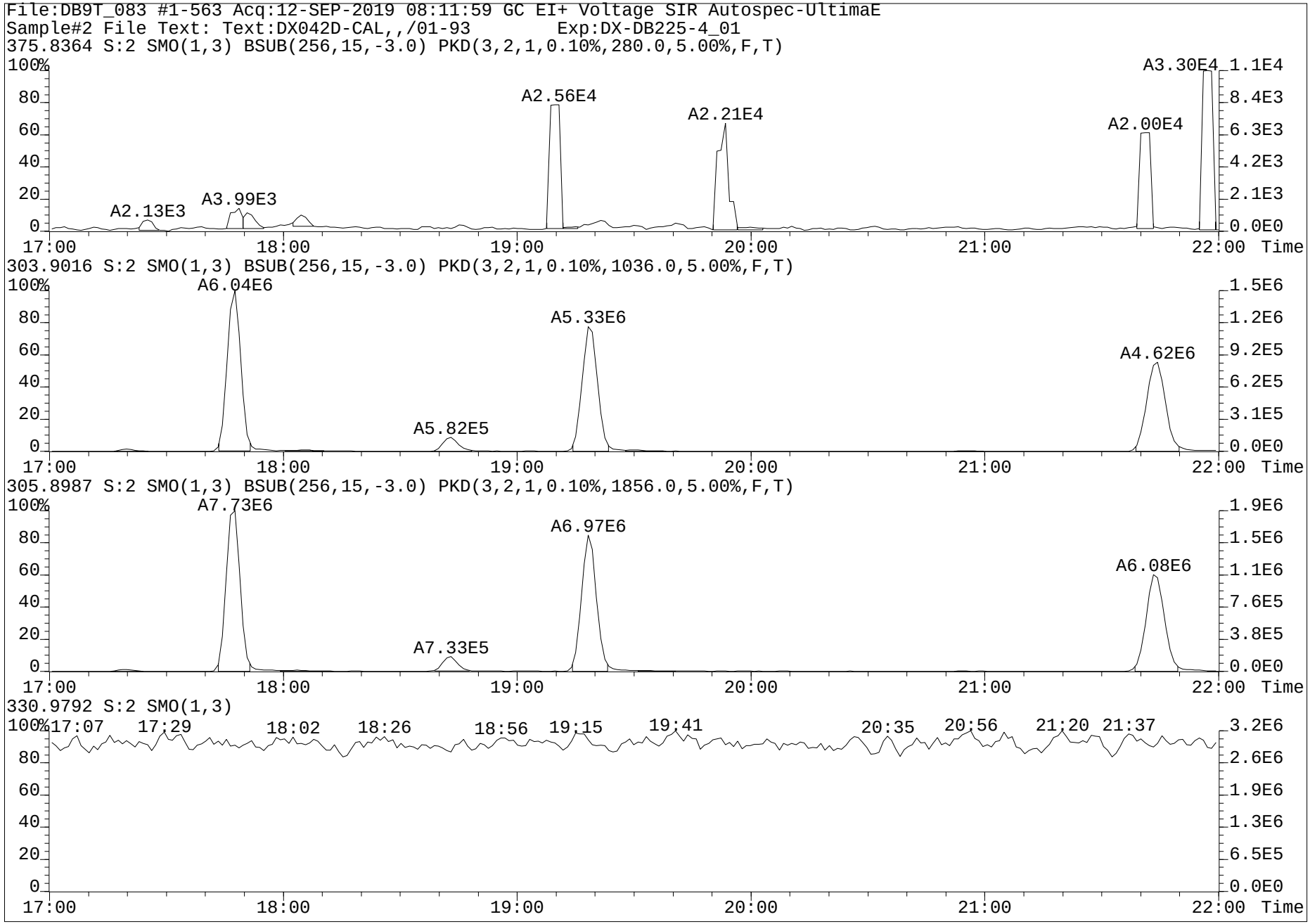
	Typ	Name	#Hom	Resp	RA		RT	Conc	Tox #1	DL	Rec	M?
1	Unk	2,3,7,8-TCDF	1	1.23e+07	0.76	y	19:18	11.488	1	0.0289	-	n
2	Unk	1,2,3,7,8,9-HxCDD	1	3.14e+07	1.22	y	33:19	55.820	6	0.0148	-	n
3	IS/RT	13C-2,3,7,8-TCDF	1	1.38e+08	0.77	y	19:17	103.694	-	0.0020	103.7	n
4	IS/RT	13C-1,2,3,4,7,8-HxCDD	1	6.84e+07	1.27	y	31:04	98.027	-	0.0100	98.0	n
5	IS/RT	13C-1,2,3,6,7,8-HxCDD	1	7.06e+07	1.22	y	31:27	96.803	-	0.0096	96.8	n
6	RS	13C-1,2,3,4-TCDD	1	9.40e+07	0.82	y	18:05	81.730	-	-	-	n
7	RS	13C-1,2,3,7,8,9-HxCDD	1	6.79e+07	1.25	y	33:16	118.251	-	-	-	n
8	Tot	Hexa DPE	0	*			NotFnd	*	-	-	-	n
9	Tot	Tetra Lock	-	-			-	-	-	-	-	n
10	Tot	Hexa Lock	-	-			-	-	-	-	-	n

PV by RA 20SEP2019


File:DB9T_083 #1-563 Acq:12-SEP-2019 08:11:59 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text: Text:DX042D-CAL,,/01-93 Exp:DX-DB225-4_01
303.9016 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1036.0,5.00%,F,T)
A6.04E6
A5.33E6
A4.62E6
A5.82E5
305.8987 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1856.0,5.00%,F,T)
A7.73E6
A6.97E6
A6.08E6
A7.33E5
315.9419 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,128.0,5.00%,F,T)
A6.00E7
317.9389 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,128.0,5.00%,F,T)
A7.80E7
Time


File:DB9T_083 #1-795 Acq:12-SEP-2019 08:11:59 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text: Text:DX042D-CAL,,/01-93 Exp:DX-DB225-4_01
389.8156 S:2 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,168.0,5.00%,F,T)
A1.77E7
A1.70E7
A1.73E7
391.8127 S:2 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,212.0,5.00%,F,T)
A1.44E7
A1.39E7
A1.41E7
401.8559 S:2 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,140.0,5.00%,F,T)
A3.83E7
A3.88E7
A3.77E7
403.8530 S:2 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,156.0,5.00%,F,T)
A3.01E7
A3.18E7
A3.02E7
392.9760 S:2 F:2 SMO(1,3)
30:18
30:50
31:05
31:23
31:43
31:54
32:03
32:27
33:00
33:21
33:37
33:46
34:02
34:17
34:36
34:41
100%
50
0
30:00
31:00
32:00
33:00
34:00
35:00
Time
2.0E6
1.0E6
0.0E0
1.7E6
8.3E5
4.4E6
2.2E6
3.6E6
1.8E6
7.4E5
3.7E5


File:DB9T_083 #1-563 Acq:12-SEP-2019 08:11:59 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text: Text:DX042D-CAL,,/01-93 Exp:DX-DB225-4_01
331.9368 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,128.0,5.00%,F,T)
A3.84E7
A4.23E7
333.9339 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,148.0,5.00%,F,T)
A4.81E7
A5.18E7
17:00
18:00
19:00
20:00
21:00
22:00
Time


File:DB9T_083 #1-563 Acq:12-SEP-2019 08:11:59 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text: Text:DX042D-CAL,,/01-93 Exp:DX-DB225-4_01
375.8364 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,280.0,5.00%,F,T)
A2.13E3
A3.99E3
A2.56E4
A2.21E4
A2.00E4
A3.30E4
303.9016 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1036.0,5.00%,F,T)
A6.04E6
A5.82E5
A5.33E6
A4.62E6
305.8987 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1856.0,5.00%,F,T)
A7.73E6
A7.33E5
A6.97E6
A6.08E6
330.9792 S:2 SMO(1,3)
17:07
17:29
18:02
18:26
18:56
19:15
19:41
20:35
20:56
21:20
21:37
17:00
18:00
19:00
20:00
21:00
22:00
Time

Method: G:\Masslynx\Inst_M\Master methods and layouts\Current Methods\DX_Log.mdb 30 Oct 2014 14:48:05
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

Compound name: -

#	Name	ID	Sample Text	Acq.Date	Acq.Time
1	DX9M_093S1	DX042D-CAL,,/01	1,,1.0uL Cal Win/Res	12-Sep-19	09:06:33
2	DX9M_093S2	WG69303-102,I,SPM	1,WG69303,1.0/20uL	12-Sep-19	10:01:18
3	DX9M_093S3	DX051A-SUR,,/02	1,,1.0uL Inst Blank	12-Sep-19	10:54:43
4	DX9M_093S4	DX051A-SUR,,/02	1,,1.0uL Inst Blank	12-Sep-19	11:49:46
5	DX9M_093S5	WG69303-101,I,BLK	1,WG69303,1.0/20uL	12-Sep-19	12:44:54
6	DX9M_093S6	L31654-1,I,	1,WG69303,1.0/20uL	12-Sep-19	13:40:01
7	DX9M_093S7	L31654-2,I,	1,WG69303,1.0/20uL	12-Sep-19	14:35:04
8	DX9M_093S8	L31654-3,I,	1,WG69303,1.0/20uL	12-Sep-19	15:30:12
9	DX9M_093S9	L31654-4,I,	1,WG69303,1.0/20uL	12-Sep-19	16:25:13
10	DX9M_093S10	L31654-5,I,	1,WG69303,1.0/20uL	12-Sep-19	17:20:16
11	DX9M_093S11	L31654-6,I,	1,WG69303,1.0/20uL	12-Sep-19	18:15:23
12	DX9M_093S12	DX042D-CAL,,/01	1,,1.0uL Cal Win/Res	12-Sep-19	19:10:26
13	DX9M_093S13	DX042D-CAL,,/01	1,,1.0uL Cal Win/Res	12-Sep-19	20:24:00
14	DX9M_093S14	DX051A-SUR,,/02	1,,1.0uL Inst Blank	12-Sep-19	21:18:38
15	DX9M_093S15	DX051A-SUR,,/02	1,,1.0uL Inst Blank	12-Sep-19	22:11:32
16	DX9M_093S16	L31654-7,I,	1,WG69303,1.0/20uL	12-Sep-19	23:06:41
17	DX9M_093S17	L31654-8,,	1,WG69303,1.0/20uL	13-Sep-19	00:01:49
18	DX9M_093S18	L31654-9,,	1,WG69303,1.0/20uL	13-Sep-19	00:56:57
19	DX9M_093S19	L31654-10,,	1,WG69303,1.0/20uL	13-Sep-19	01:52:05
20	DX9M_093S20	L31654-11,,	1,WG69303,1.0/20uL	13-Sep-19	02:47:12
21	DX9M_093S21	L31654-12,,	1,WG69303,1.0/20uL	13-Sep-19	03:42:14
22	DX9M_093S22	L31683-1,,	1,WG69303,1.0/20uL	13-Sep-19	04:37:23
23	DX9M_093S23	WG69303-103,,CRM	1,WG69303,1.0/20uL	13-Sep-19	05:32:31
24	DX9M_093S24	DX042D-CAL,,/01	1,,1.0uL Cal Win/Res	13-Sep-19	06:27:39
25	DX9M_093S25	WG69347-102,,SPM	1,WG69347,1.0/20uL	13-Sep-19	07:36:30
26	DX9M_093S26	WG69347-103,,SPMDUP	1,WG69347,1.0/20uL	13-Sep-19	08:29:01
27	DX9M_093S27	DX051A-SUR,,/02	1,,1.0uL Inst Blank	13-Sep-19	09:24:09
28	DX9M_093S28	DX051A-SUR,,/02	1,,1.0uL Inst Blank	13-Sep-19	10:19:17
29	DX9M_093S29	WG69347-101,,BLK	1,WG69347,1.0/20uL	13-Sep-19	11:14:24
30	DX9M_093S30	L31831-1,,	1,WG69347,1.0/20uL	13-Sep-19	12:09:32
31	DX9M_093S31	L31704-2,,	1,WG69347,1.0/20uL	13-Sep-19	13:13:59
32	DX9M_093S32	L31704-5,,	1,WG69347,1.0/20uL	13-Sep-19	14:06:32
33	DX9M_093S33	L31704-9,,	1,WG69347,1.0/20uL	13-Sep-19	15:01:34
34	DX9M_093S34	WG69303-104,,CRM	1,WG69303,1.0/20uL	13-Sep-19	15:56:38
35	DX9M_093S35	WG69303-105,,CRM	1,WG69303,1.0/20uL	13-Sep-19	16:51:40
36	DX9M_093S36	DX042D-CAL,,/01	1,,1.0uL Cal Win/Res	13-Sep-19	17:46:48
37	DX9M_093S37	DX051A-SUR,,/02	1,,1.0uL Inst Blank	13-Sep-19	18:51:52

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Method: G:\Masslynx\Inst_M\Exported_methods\DX_1613B_16.mdb 07 Sep 2017 16:45:23
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

Name: DX9M_093S1, Date: 12-Sep-2019, Time: 09:06:33, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

	Name	Sample Size	Resp	Ratio	fails?	RT	pg	DL	%Rec	Noise 1	Noise 2
1	2,3,7,8-TCDF	1.000	4.01e5	0.79	NO	25.27	10.604	0.0297	106.0	2.59e3	2.62e3
2	1,2,3,7,8-PeCDF	1.000	1.56e6	1.57	NO	33.55	51.200	0.0440	102.4	2.09e3	3.15e3
3	2,3,4,7,8-PeCDF	1.000	1.72e6	1.52	NO	35.33	51.995	0.0370	104.0	2.09e3	3.15e3
4	1,2,3,4,7,8-HxCDF	1.000	1.75e6	1.27	NO	40.75	52.812	0.0348	105.6	2.35e3	4.24e3
5	1,2,3,6,7,8-HxCDF	1.000	1.77e6	1.26	NO	40.92	52.117	0.0339	104.2	2.35e3	4.24e3
6	2,3,4,6,7,8-HxCDF	1.000	1.74e6	1.25	NO	41.88	50.777	0.0320	101.6	2.35e3	4.24e3
7	1,2,3,7,8,9-HxCDF	1.000	1.48e6	1.30	NO	42.92	50.889	0.0398	101.8	2.35e3	4.24e3
8	1,2,3,4,6,7,8-HpCDF	1.000	1.84e6	1.03	NO	45.37	53.160	0.0214	106.3	2.37e3	2.15e3
9	1,2,3,4,7,8,9-HpCDF	1.000	1.59e6	1.03	NO	47.18	53.440	0.0248	106.9	2.37e3	2.15e3
10	OCDF	1.000	2.64e6	0.93	NO	50.45	103.653	0.0280	103.7	2.52e3	1.85e3
11	2,3,7,8-TCDD	1.000	2.95e5	0.79	NO	26.49	10.996	0.0313	110.0	1.97e3	1.77e3
12	1,2,3,7,8-PeCDD	1.000	1.10e6	0.62	NO	36.15	50.359	0.0322	100.7	1.88e3	1.29e3
13	1,2,3,4,7,8-HxCDD	1.000	1.27e6	1.23	NO	42.14	50.227	0.0363	100.5	2.05e3	3.46e3
14	1,2,3,6,7,8-HxCDD	1.000	1.23e6	1.22	NO	42.29	48.879	0.0362	97.8	2.05e3	3.46e3
15	1,2,3,7,8,9-HxCDD	1.000	1.33e6	1.22	NO	42.71	53.170	0.0366	106.3	2.05e3	3.46e3
16	1,2,3,4,6,7,8-HpCDD	1.000	1.24e6	1.04	NO	46.76	48.982	0.0361	98.0	3.40e3	2.31e3
17	OCDD	1.000	2.29e6	0.89	NO	50.36	104.095	0.0282	104.1	1.27e3	2.52e3
18	13C-2,3,7,8-TCDF	1.000	4.08e6	0.78	NO	25.24	102.126	0.0609	102.1	4.14e3	6.72e3
19	13C-1,2,3,7,8-PeCDF	1.000	3.27e6	1.50	NO	33.54	100.744	0.0987	100.7	6.70e3	7.59e3
20	13C-2,3,4,7,8-PeCDF	1.000	3.47e6	1.53	NO	35.30	103.838	0.0957	103.8	6.70e3	7.59e3
21	13C-1,2,3,4,7,8-HxCDF	1.000	3.00e6	0.52	NO	40.73	92.119	0.0523	92.1	5.11e3	5.23e3
22	13C-1,2,3,6,7,8-HxCDF	1.000	3.16e6	0.52	NO	40.90	88.172	0.0475	88.2	5.11e3	5.23e3
23	13C-2,3,4,6,7,8-HxCDF	1.000	3.01e6	0.53	NO	41.85	93.341	0.0527	93.3	5.11e3	5.23e3
24	13C-1,2,3,7,8,9-HxCDF	1.000	2.75e6	0.52	NO	42.90	95.900	0.0593	95.9	5.11e3	5.23e3
25	13C-1,2,3,4,6,7,8-HpCDF	1.000	2.77e6	0.47	NO	45.35	103.057	0.0741	103.1	6.78e3	5.29e3
26	13C-1,2,3,4,7,8,9-HpCDF	1.000	2.37e6	0.46	NO	47.16	108.749	0.0913	108.7	6.78e3	5.29e3
27	13C-2,3,7,8-TCDD	1.000	2.44e6	0.79	NO	26.46	96.036	0.1154	96.0	6.73e3	6.36e3
28	13C-1,2,3,7,8-PeCDD	1.000	2.22e6	0.64	NO	36.11	110.060	0.0576	110.1	2.58e3	2.60e3
29	13C-1,2,3,4,7,8-HxCDD	1.000	2.46e6	1.28	NO	42.12	94.725	0.0773	94.7	5.81e3	6.40e3
30	13C-1,2,3,6,7,8-HxCDD	1.000	2.68e6	1.21	NO	42.27	93.128	0.0699	93.1	5.81e3	6.40e3
31	13C-1,2,3,4,6,7,8-HpCDD	1.000	3.24e6	1.03	NO	46.74	111.252	0.0372	111.3	3.22e3	3.36e3
32	13C-OCDD	1.000	4.48e6	0.90	NO	50.34	209.361	0.0720	104.7	4.77e3	4.59e3
33	13C-1,2,3,4-TCDD	1.000	2.62e6	0.81	NO	26.12	65.119	0.0728	65.1	6.73e3	6.36e3
34	13C-1,2,3,7,8,9-HxCDD	1.000	2.68e6	1.25	NO	42.70	92.468	0.0692	92.5	5.81e3	6.40e3
35	37Cl-2,3,7,8-TCDD	1.000	2.83e5			26.49	10.106	0.0348	101.1		4.35e3
36	Total Tetra-Furans	1.000					40.952	0.0297			2.62e3
37	Total Tetra-Dioxins	1.000					94.424	0.0313			1.77e3
38	Total Penta-Furans	1.000					201.570	0.0408			3.15e3
39	Total Penta-Dioxins	1.000					155.768	0.0322			1.29e3
40	Total Hexa-Furans	1.000					311.690	0.0345			4.24e3
41	Total Hexa-Dioxins	1.000					203.492	0.0346			3.46e3
42	Total Hepta-Furans	1.000					107.345	0.0230			2.15e3
43	Total Hepta-Dioxins	1.000					101.011	0.0361			2.31e3
44	Hexa DPE	1.000	2.99e2			24.50					3.11e0
45	Hepta DPE	1.000	4.99e2			37.53					2.41e3
46	Octa DPE	1.000	2.54e2			42.05					1.50e2
47	Nona DPE	1.000	1.60e2			47.14					2.25e0
48	Deca DPE	1.000	1.08e2			49.56					2.19e0
49	Tetra Lock	1.000	9.15e3			21.65					3.66e5
50	Penta Lock	1.000	3.39e4			32.80					2.94e5
51	Hexa Lock	1.000									8.14e5

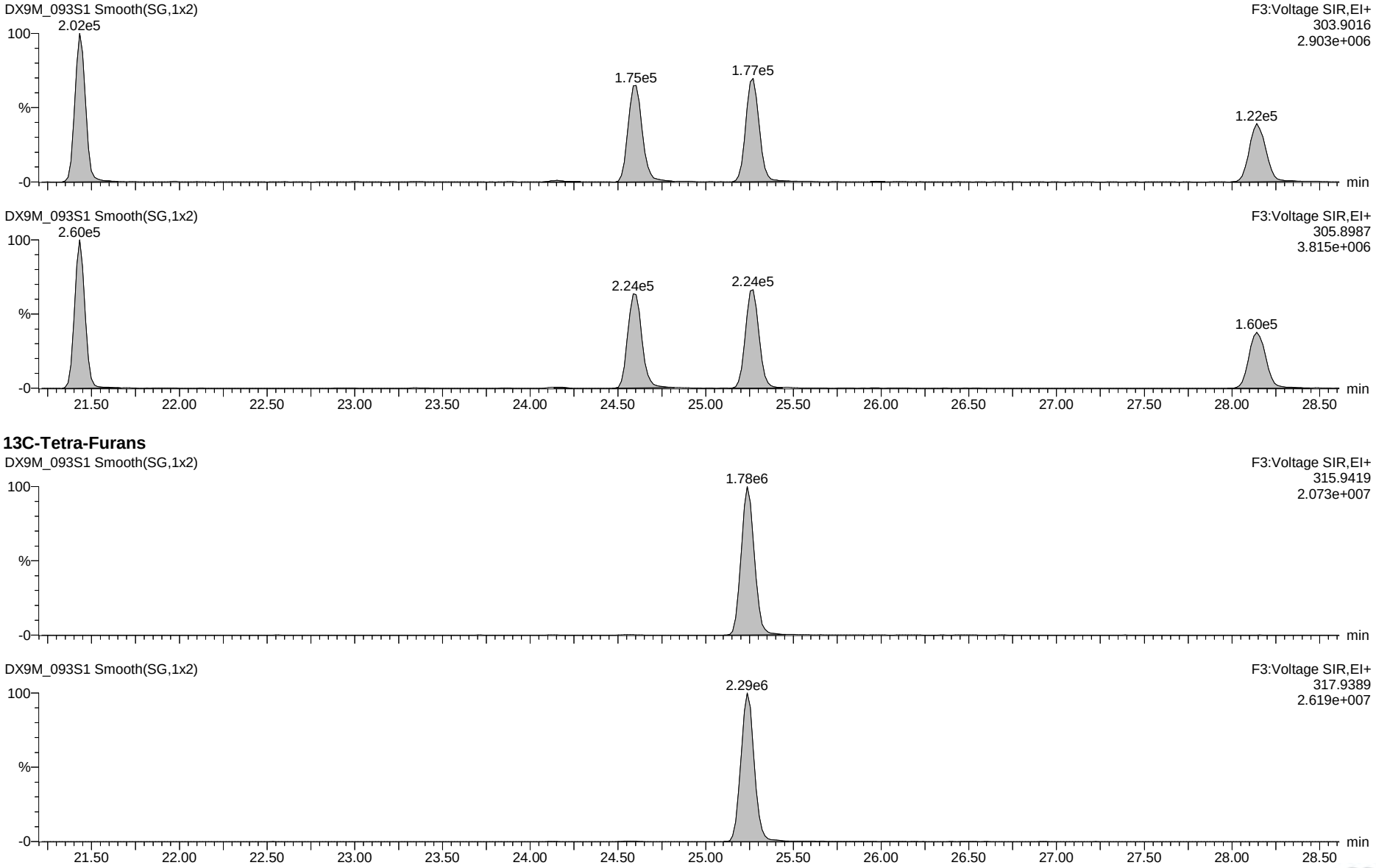
PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Method: G:\Masslynx\Inst_M\Exported_methods\DX_1613B_16.mdb 07 Sep 2017 16:45:23
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

Name: DX9M_093S1, Date: 12-Sep-2019, Time: 09:06:33, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

Total Tetra-Furans



13C-Tetra-Furans

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

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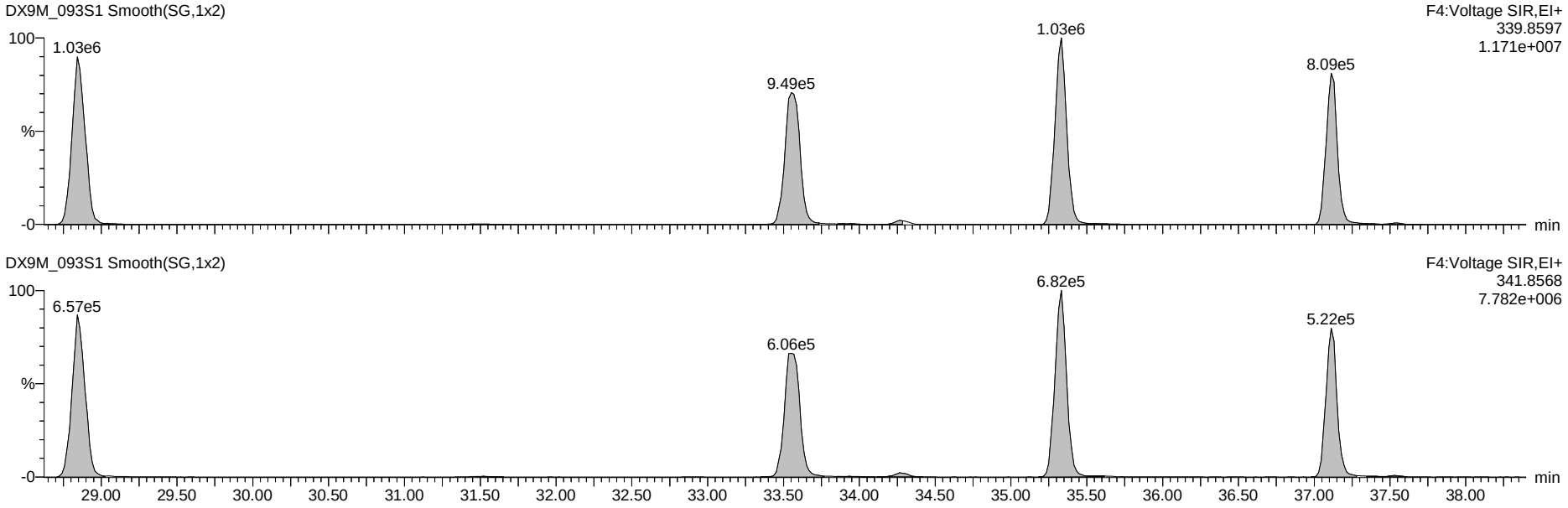
Total Penta-Furans



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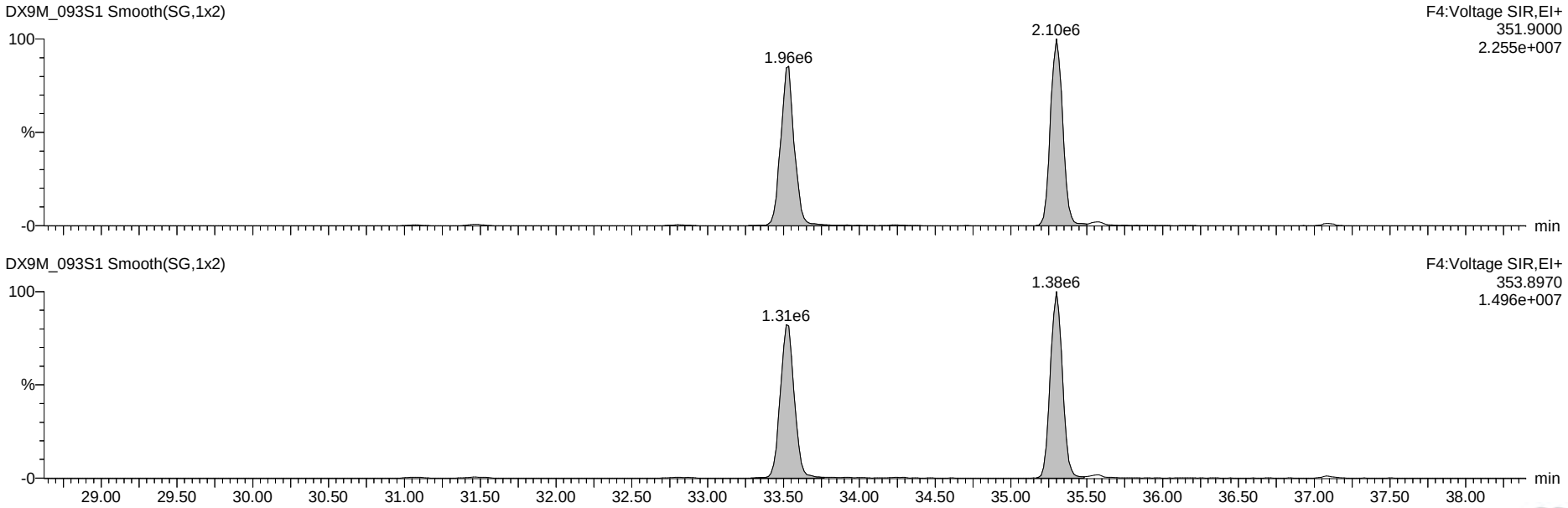

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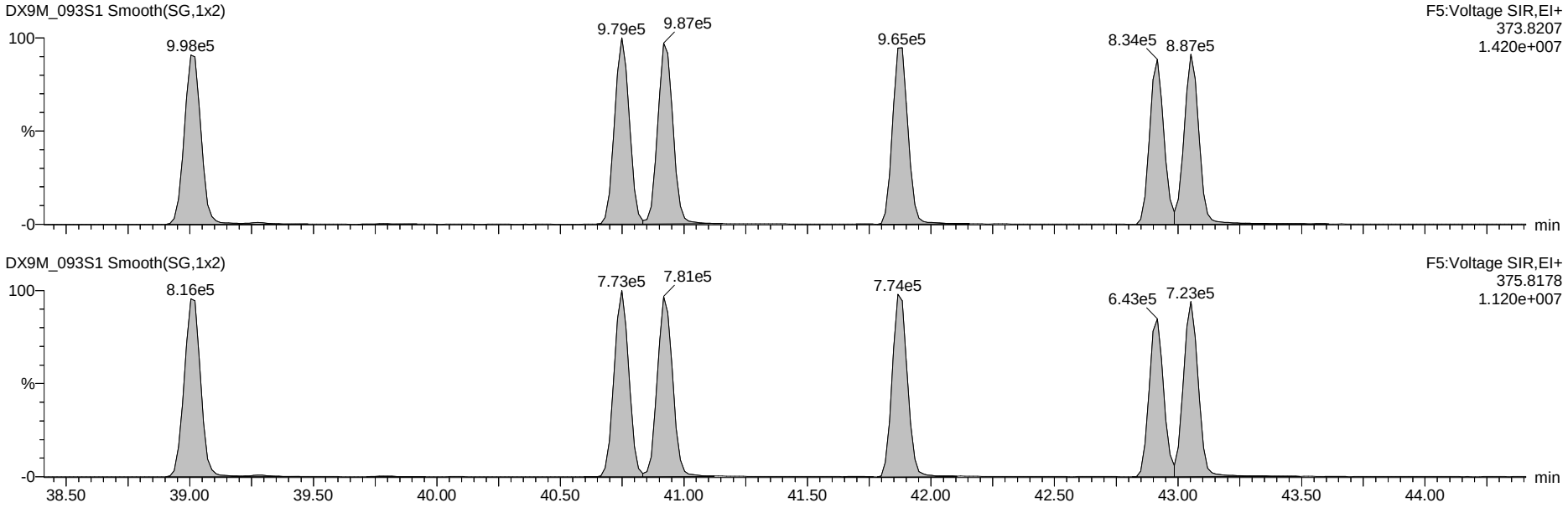
Total Hexa-Furans



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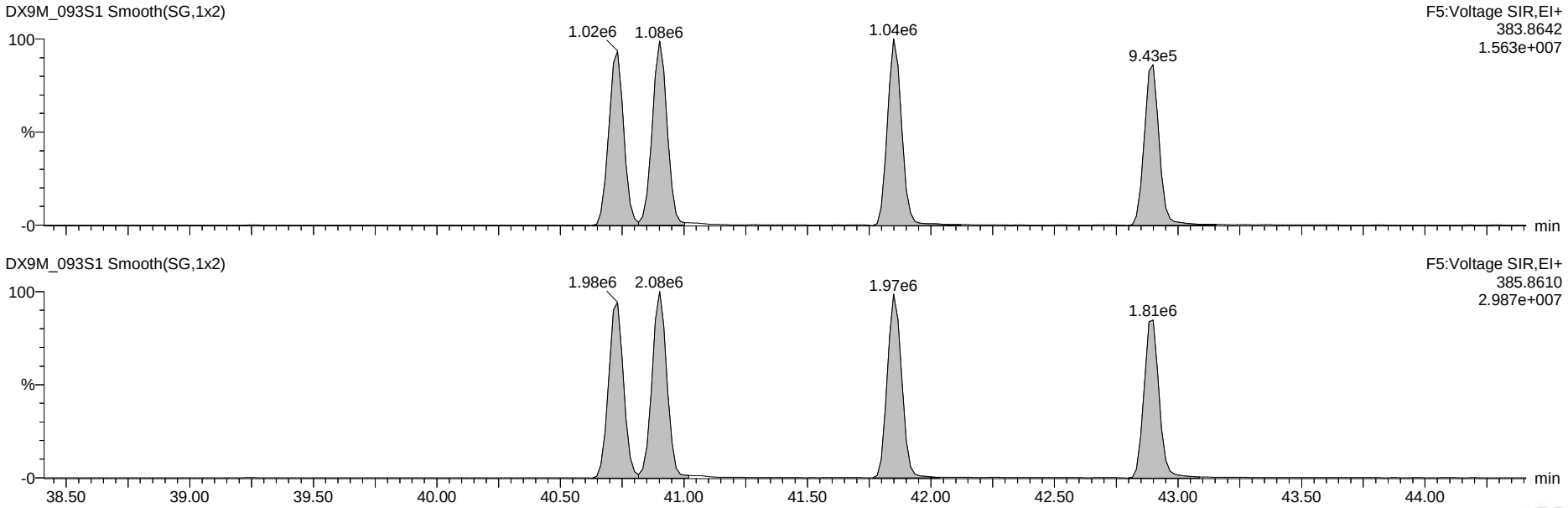

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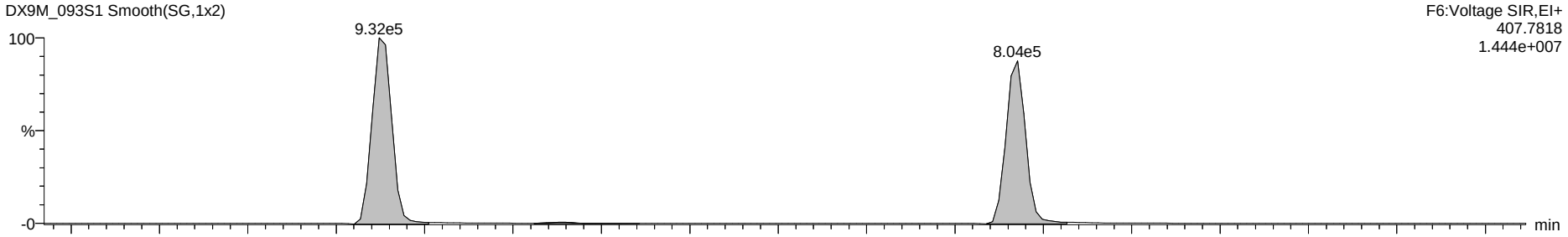
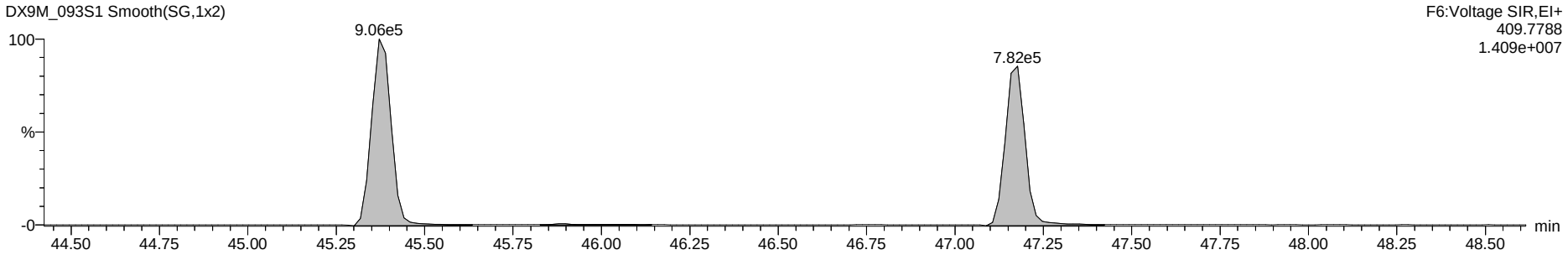
Total Hepta-Furans





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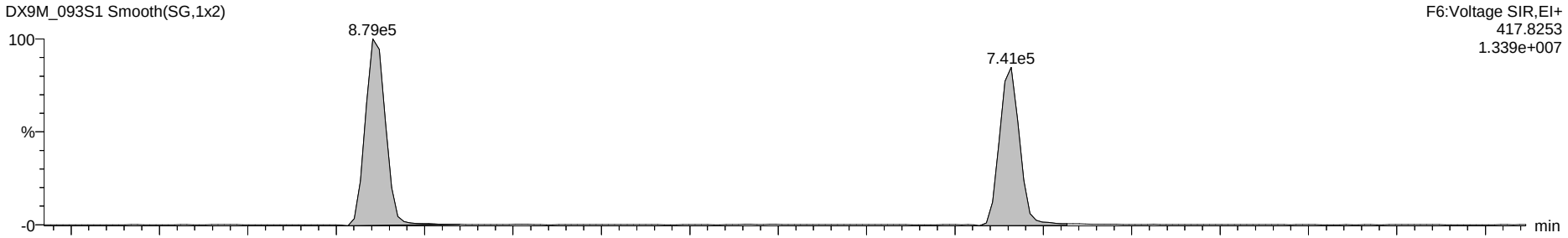

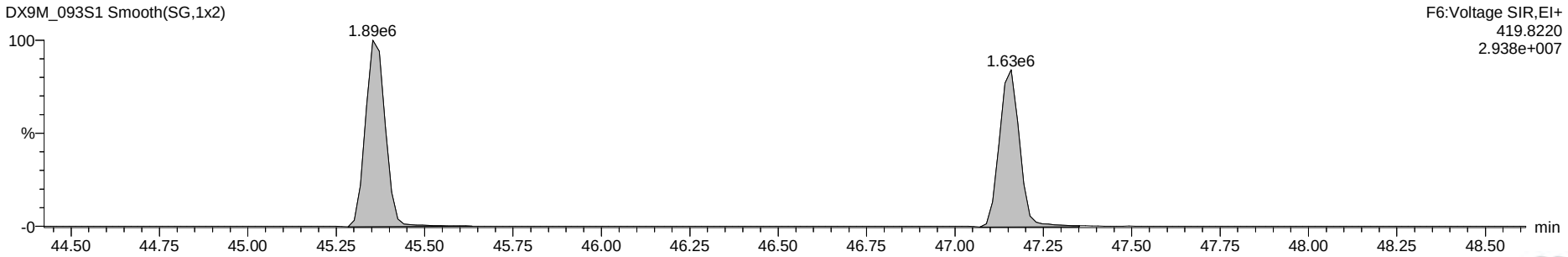

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

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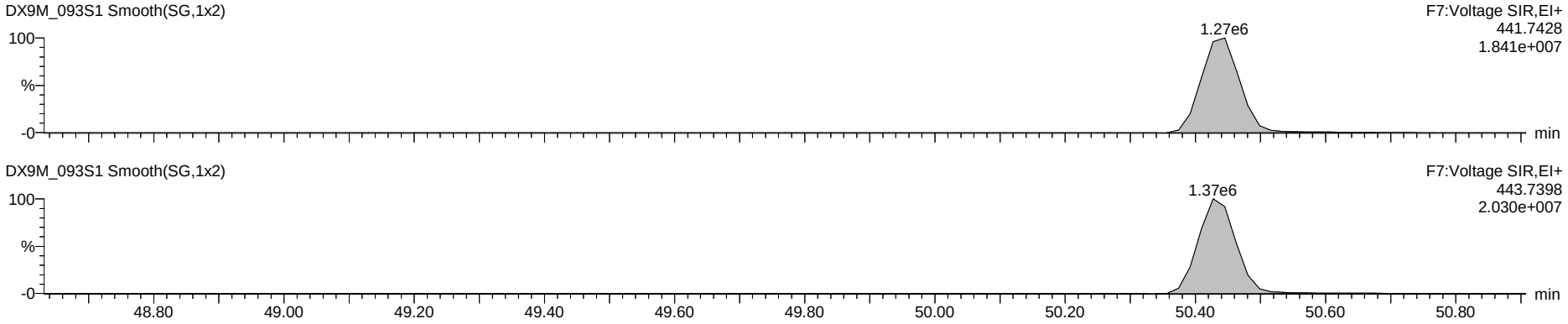
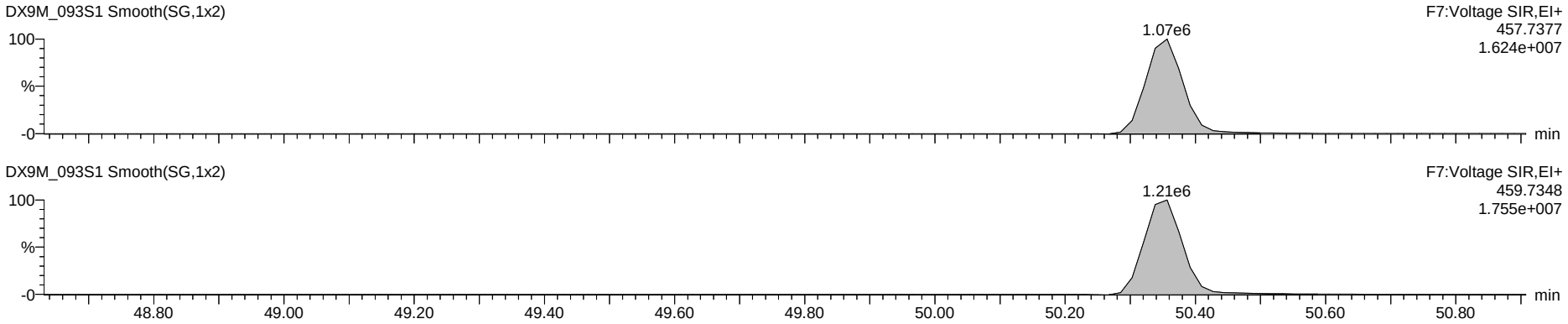
OCDF



OCDD



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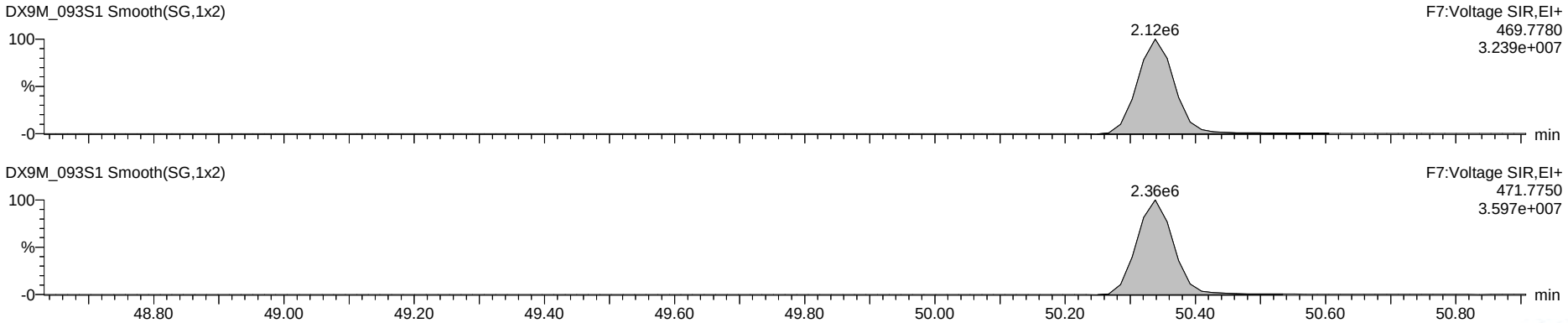

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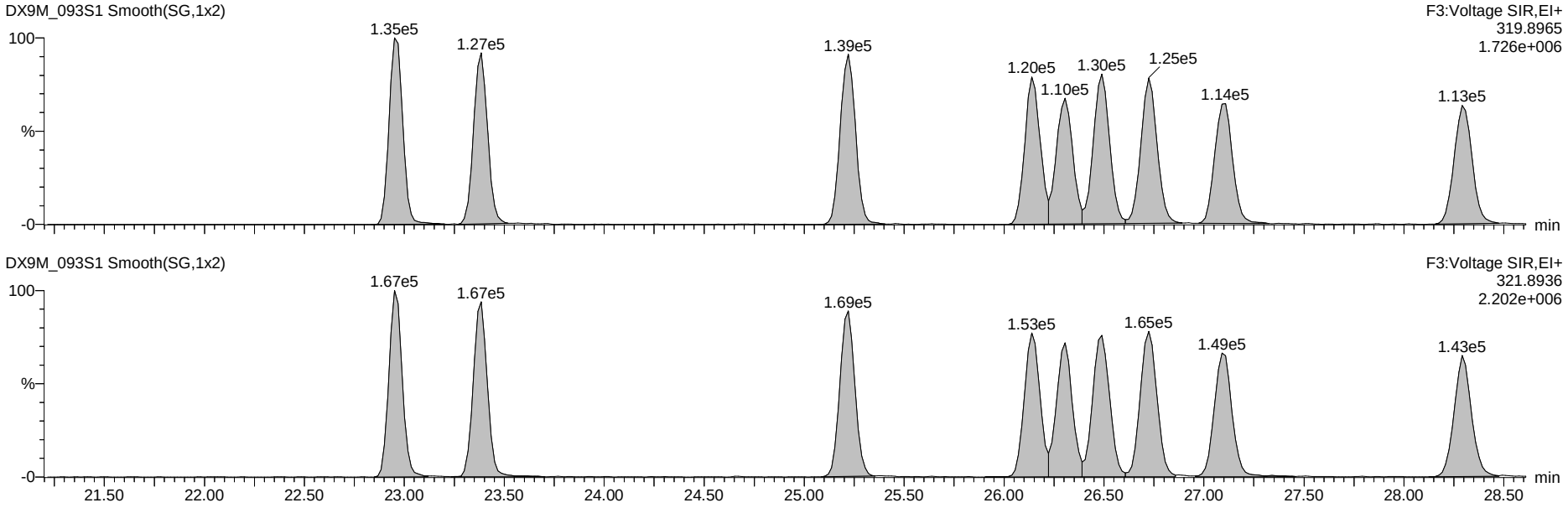
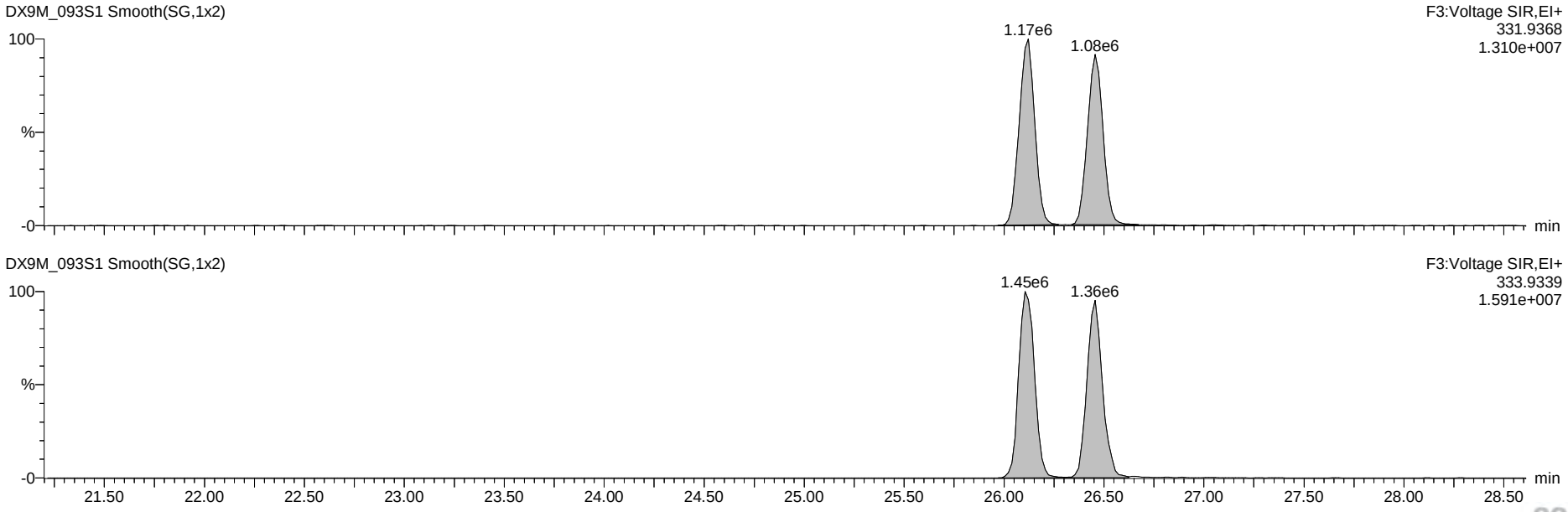
Total Tetra-Dioxins



13C-Tetra-Dioxins



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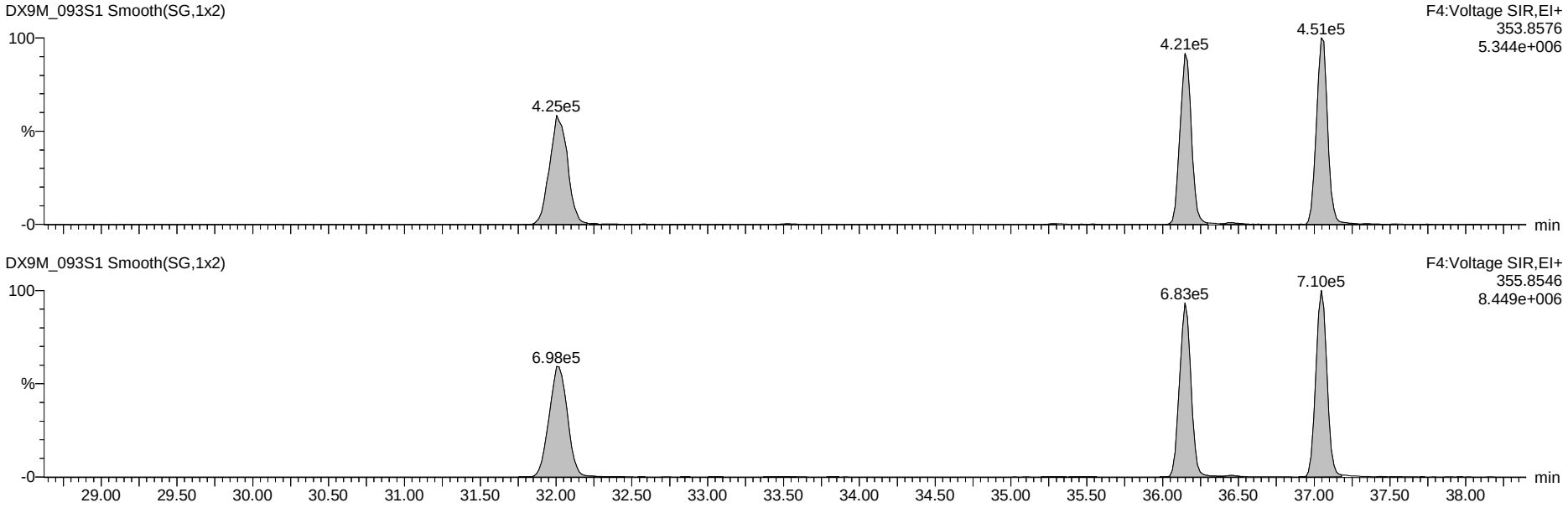
Total Penta-Dioxins



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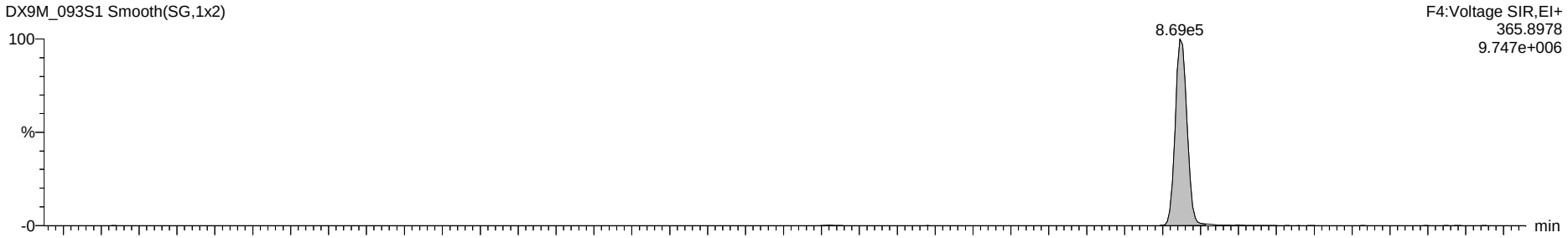

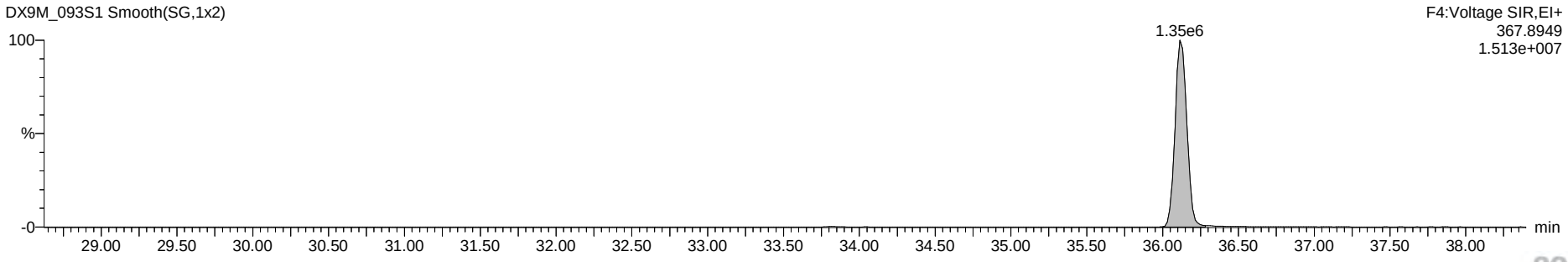

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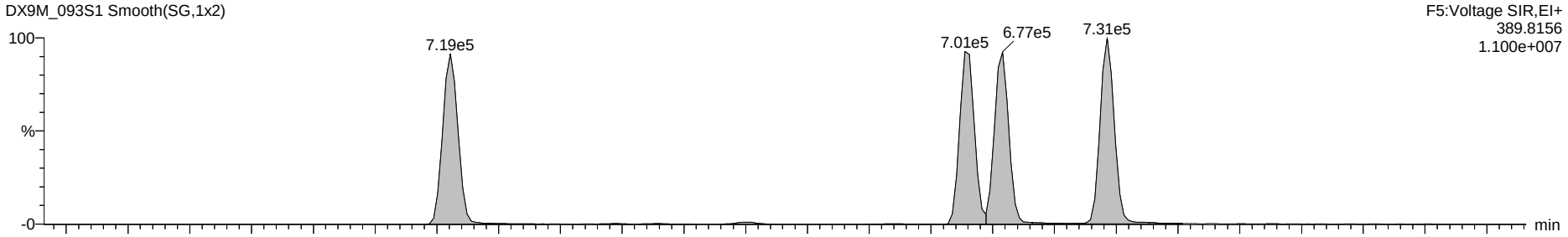
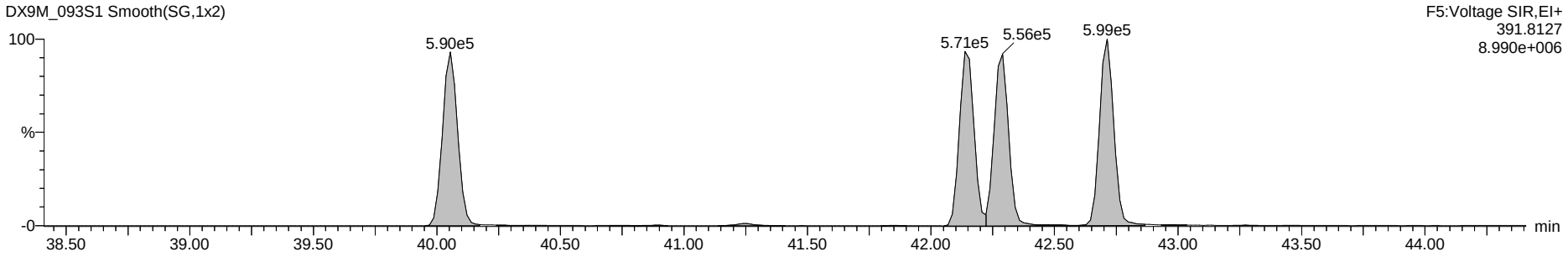
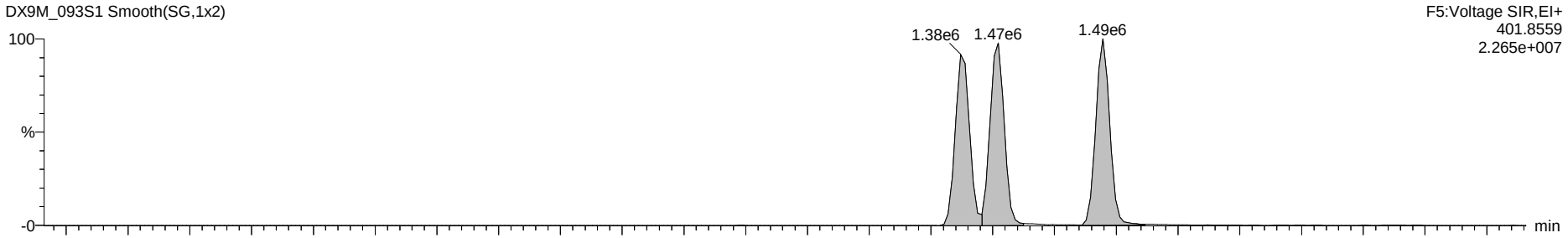
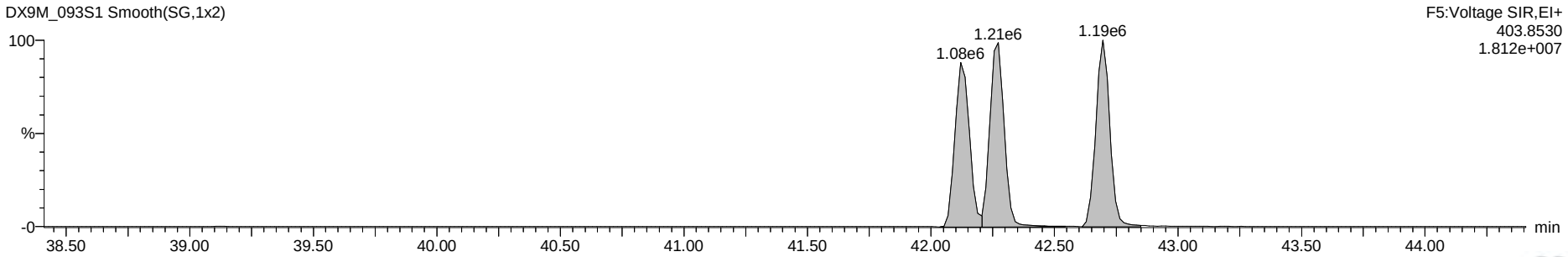
Total Hexa-Dioxins





13C-Hexa-Dioxins





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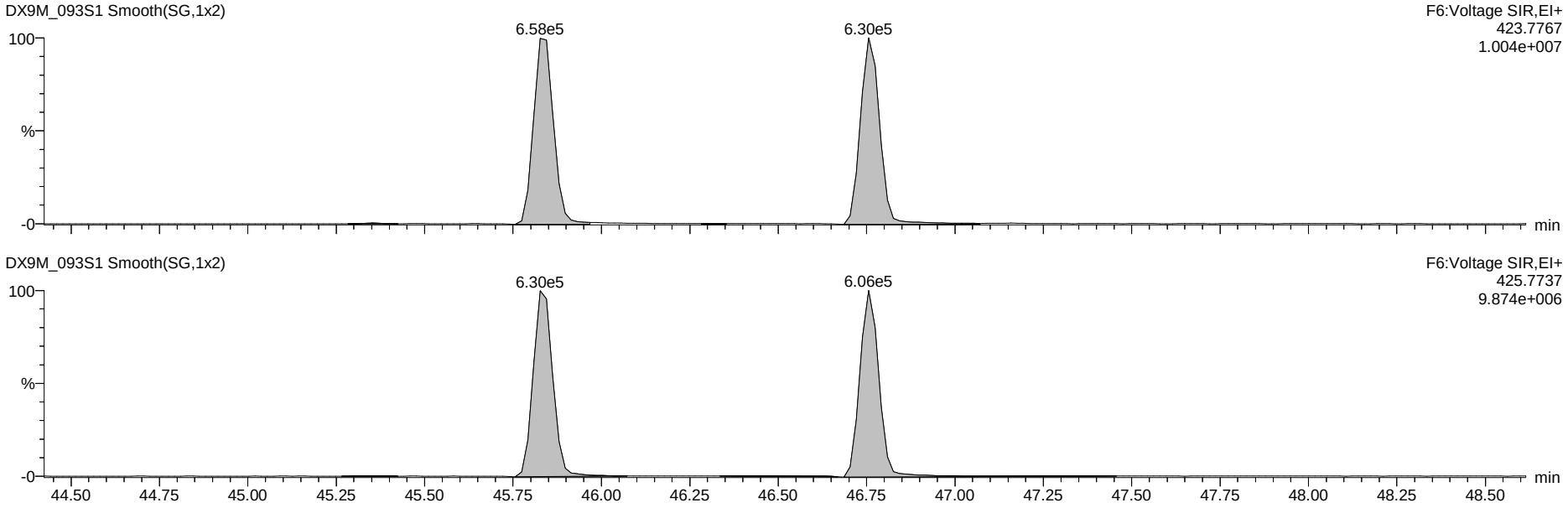
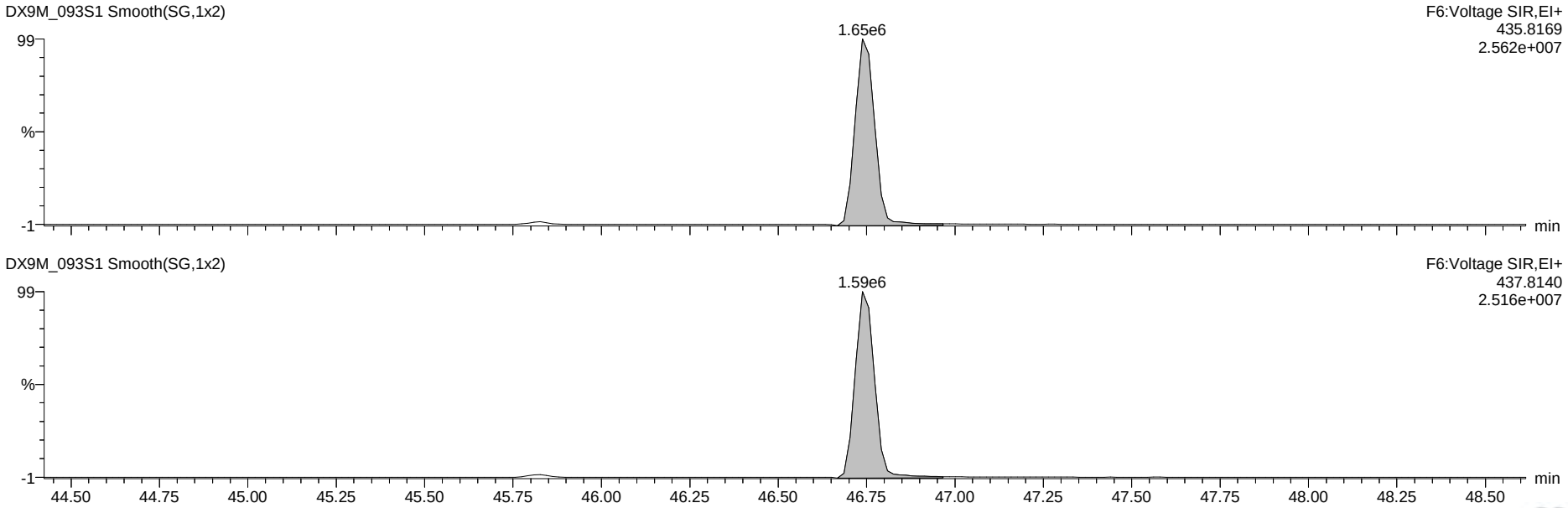
Total Hepta-Dioxins



13C-Hepta-Dioxins



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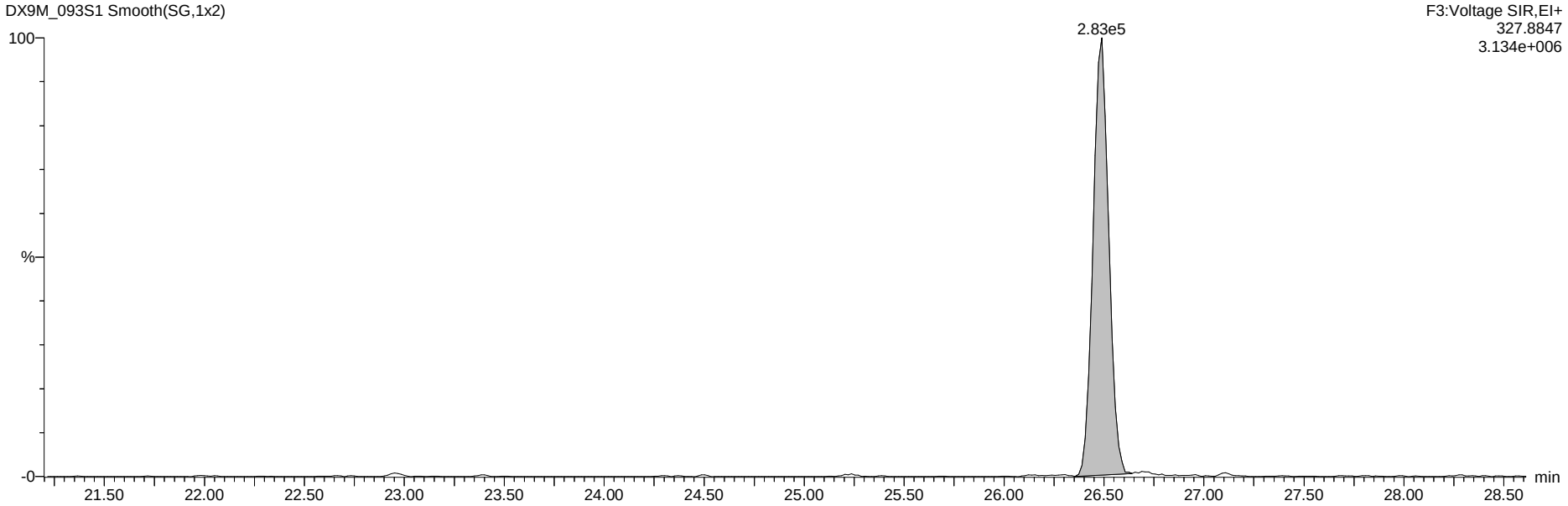
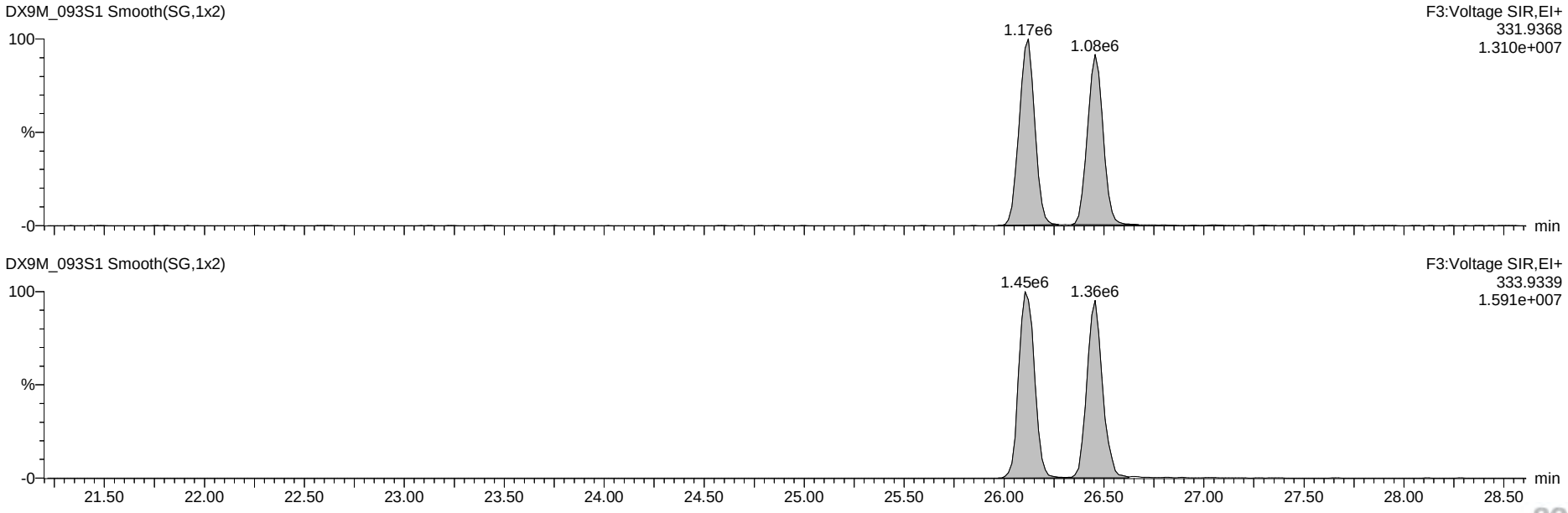
37Cl-2,3,7,8-TCDD



13C-Tetra-Dioxins



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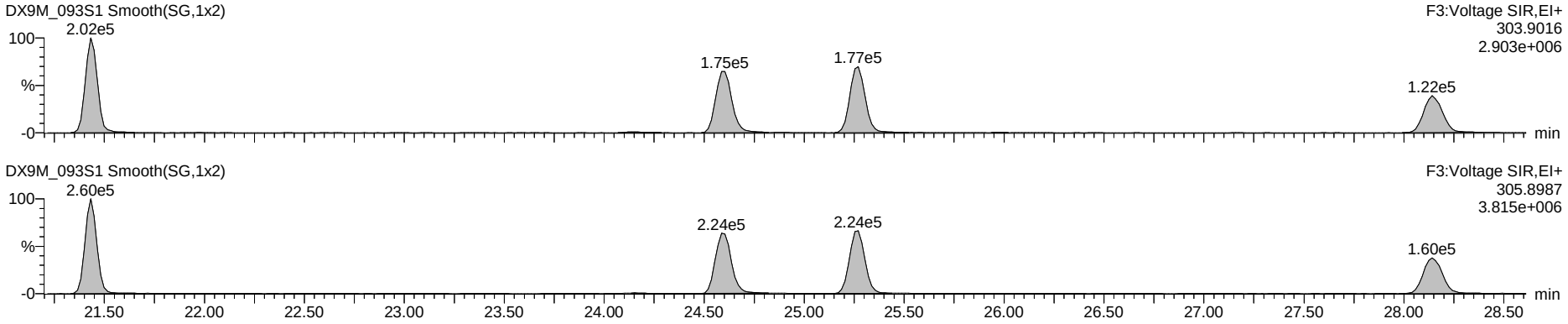
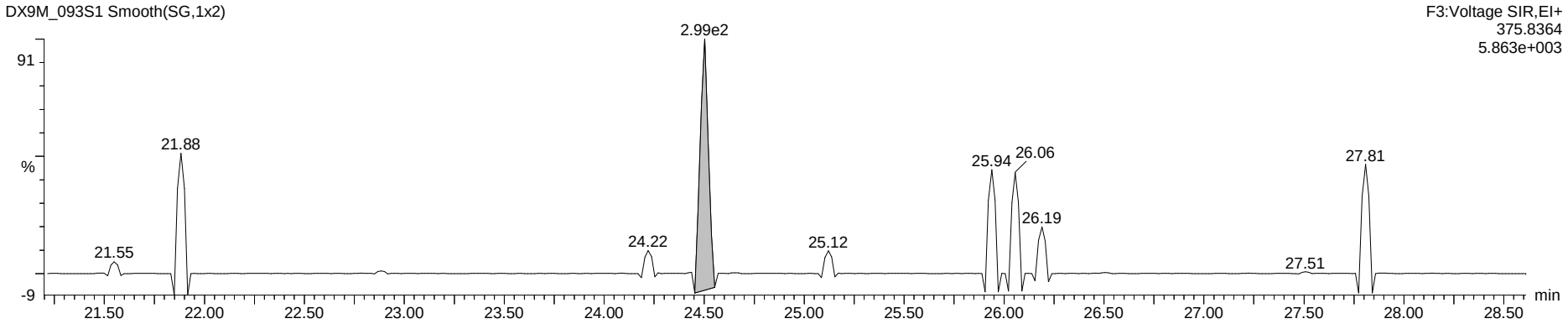
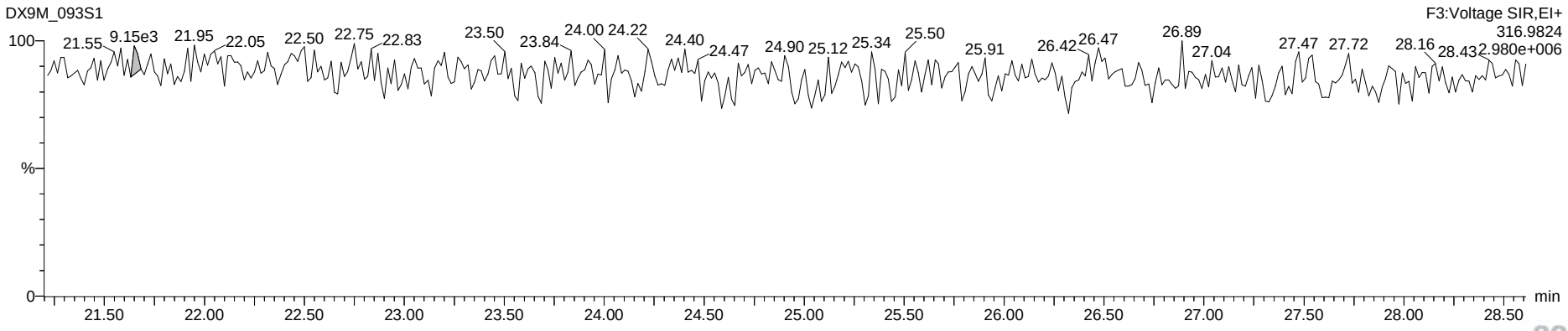
Total Tetra-Furans



Hexa DPE



Tetra Lock



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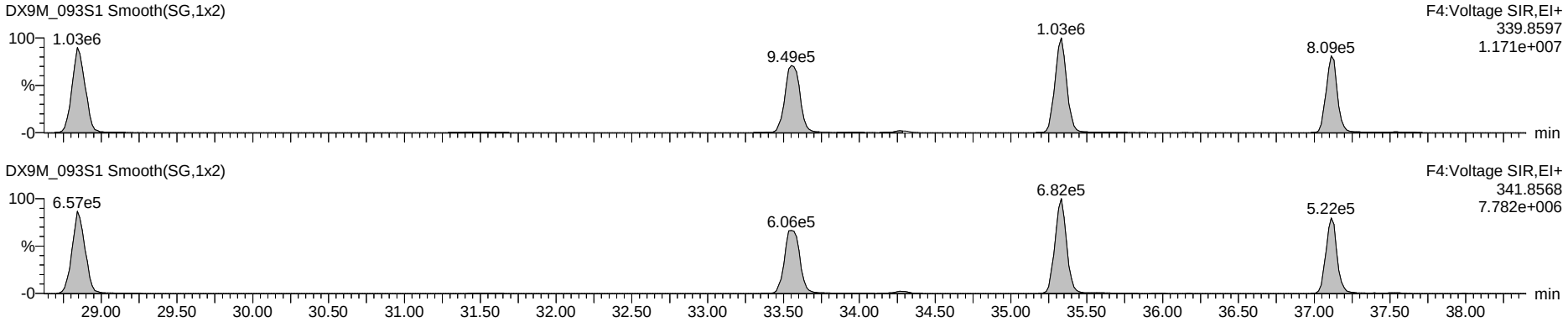
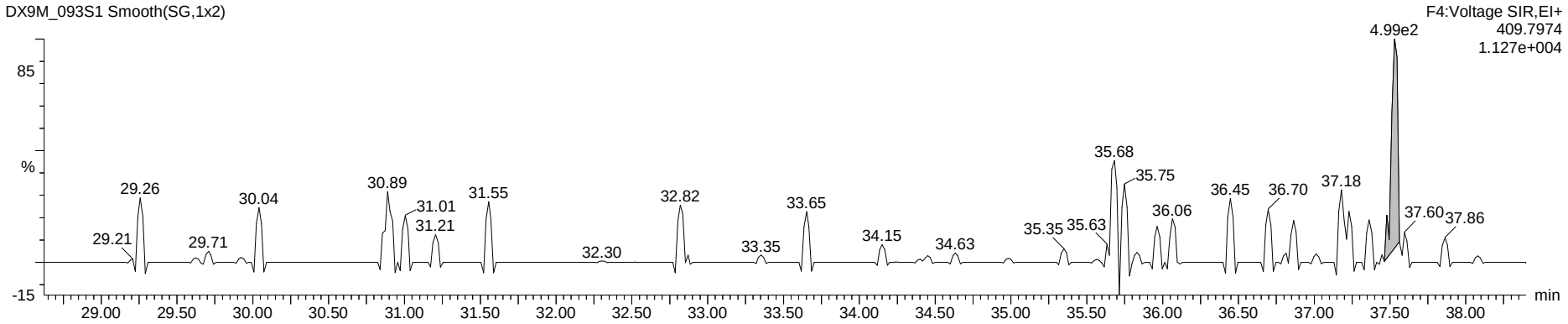
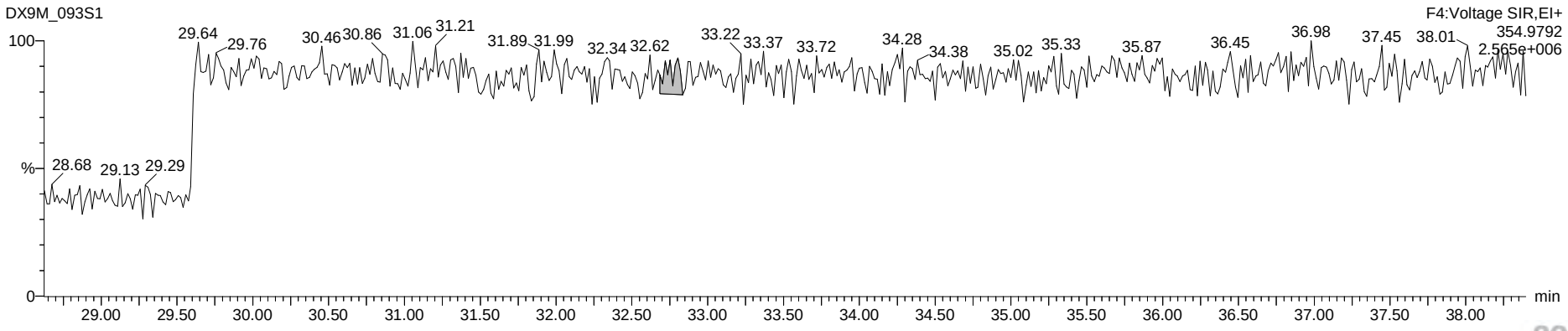
Total Penta-Furans



Hepta DPE



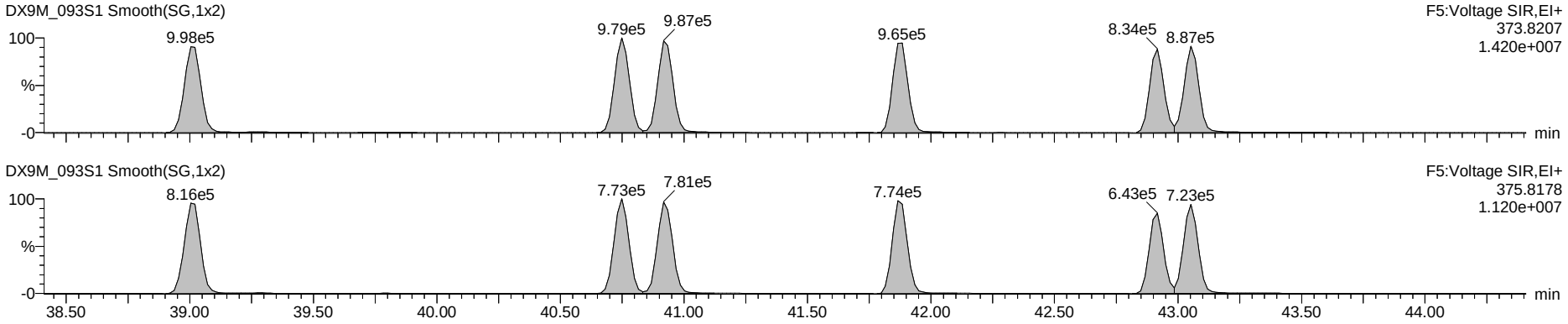
Penta Lock



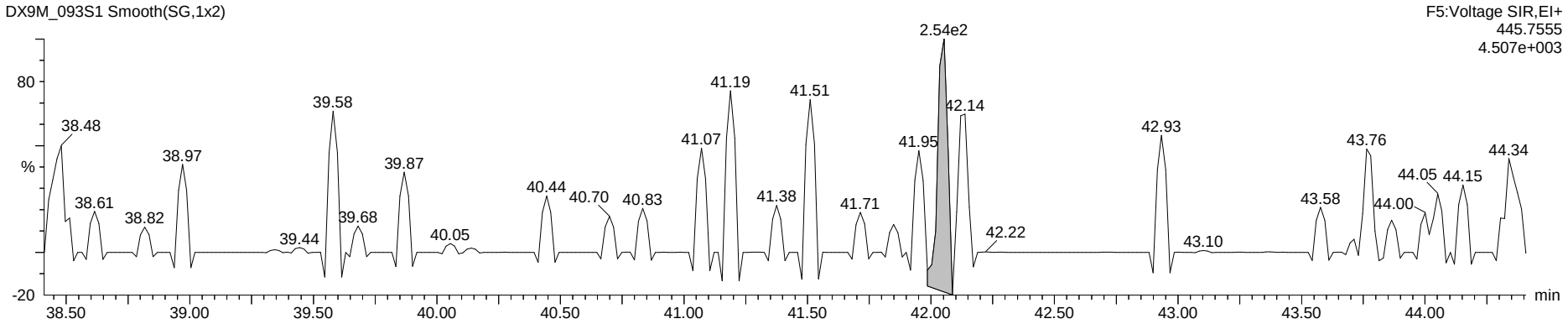
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S1, Date: 12-Sep-2019, Time: 09:06:33, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

Total Hexa-Furans



Octa DPE



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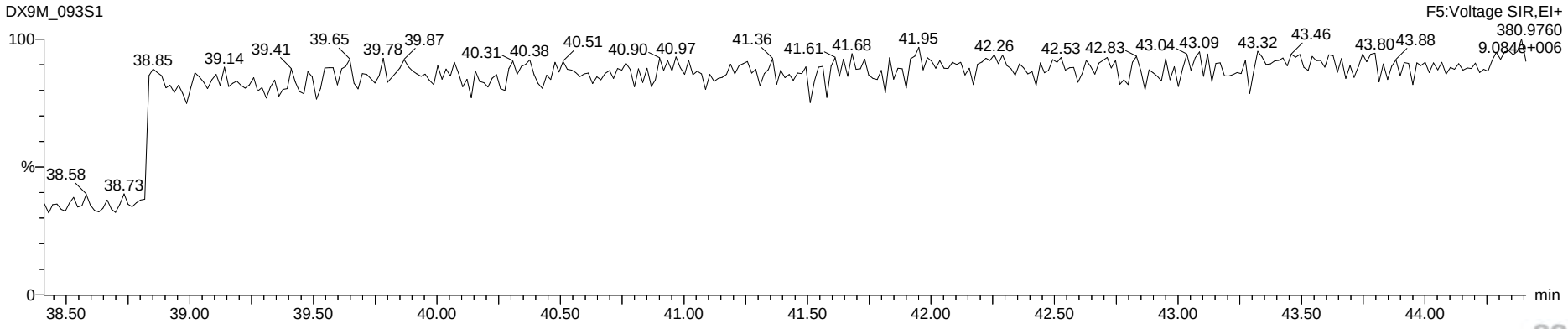

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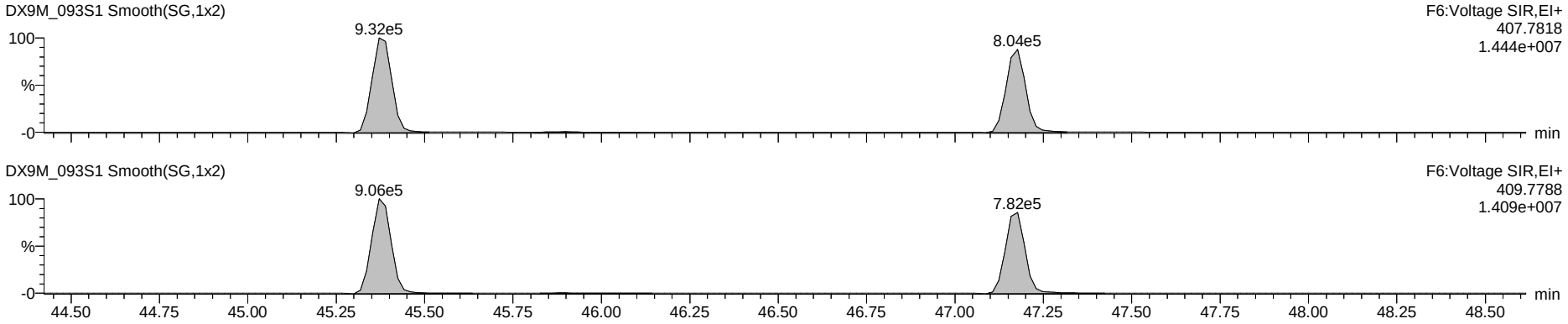
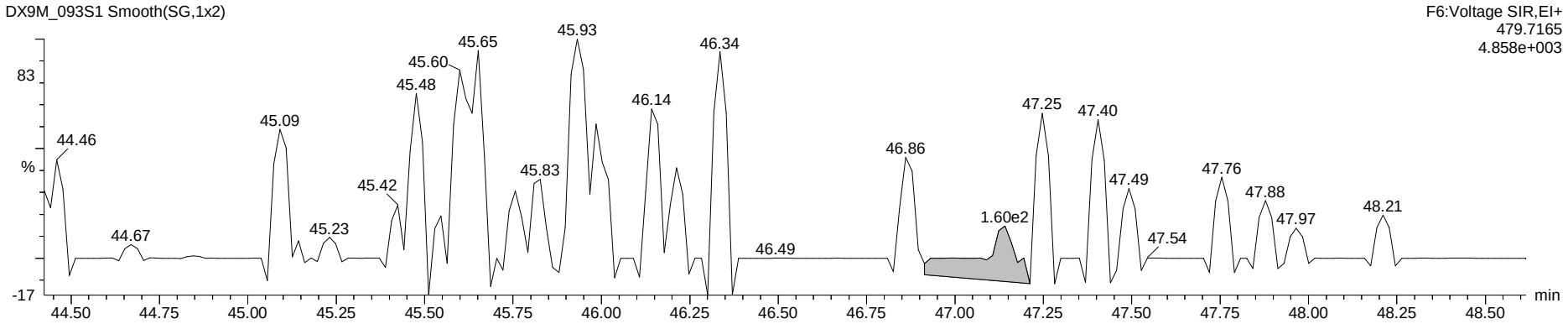
Name: DX9M_093S1, Date: 12-Sep-2019, Time: 09:06:33, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

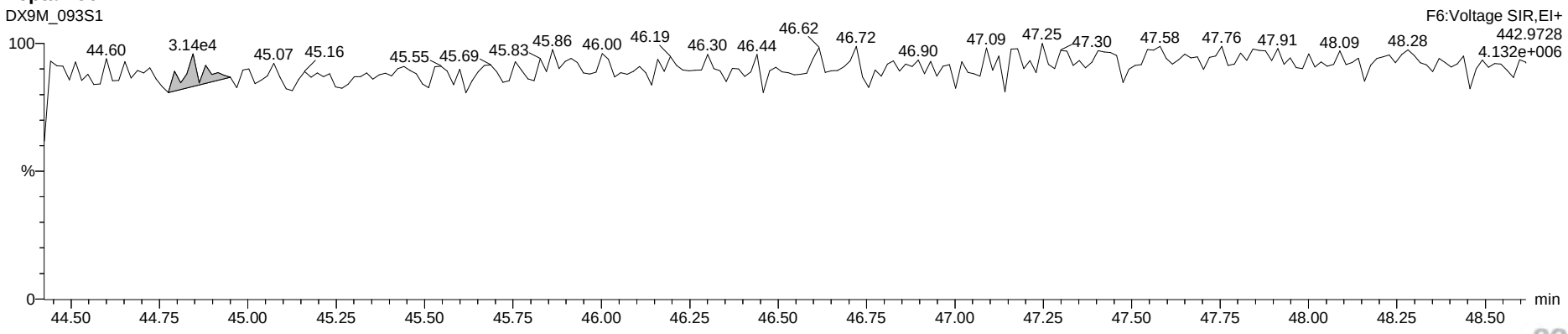
Total Hepta-Furans



Nona DPE



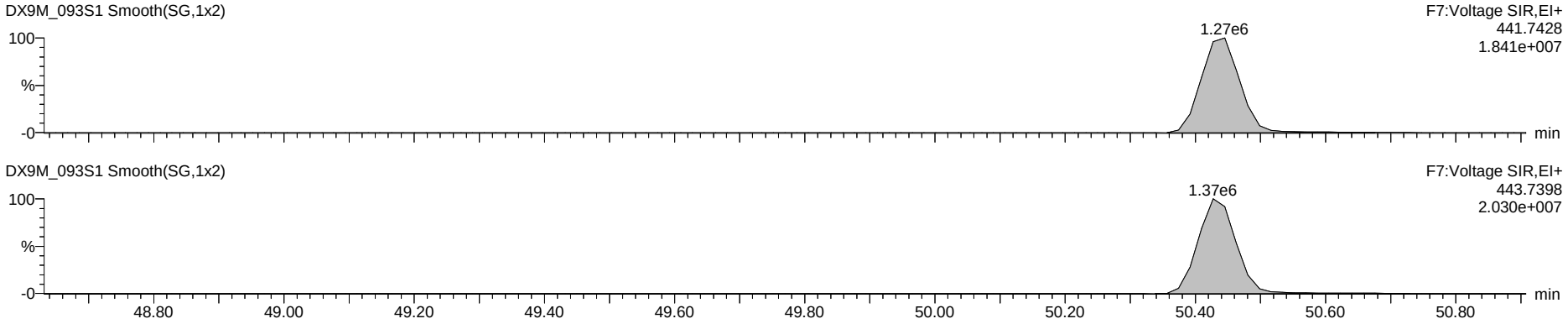
Hepta Lock



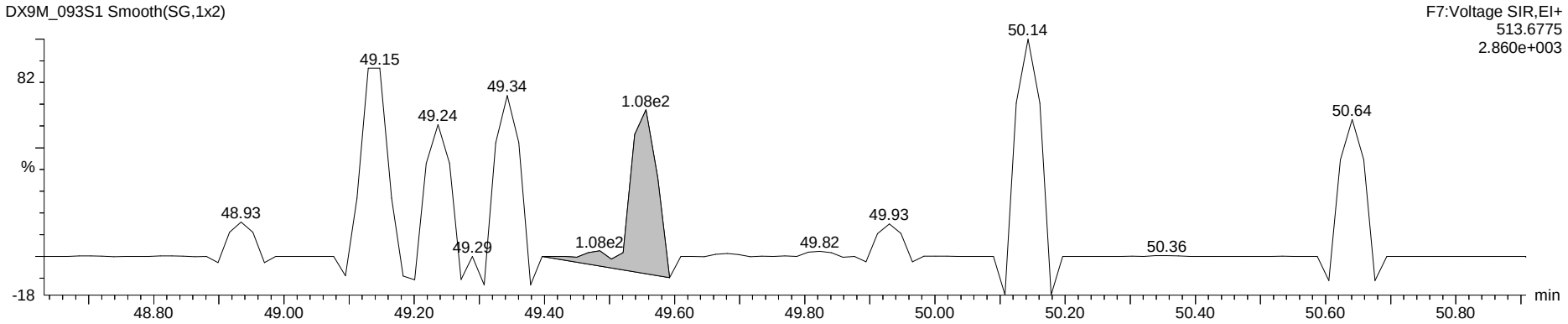
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-A.qld

Name: DX9M_093S1, Date: 12-Sep-2019, Time: 09:06:33, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

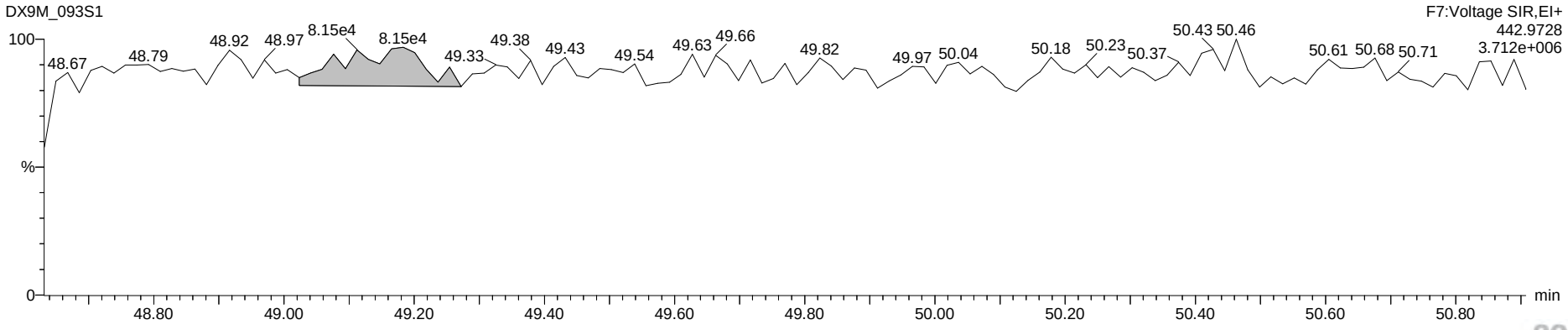
OCDF



Deca DPE



Octa Lock



Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Method: G:\Masslynx\Inst_M\Exported_methods\DX_1613B_16.mdb 07 Sep 2017 16:45:23
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

Name: DX9M_093S13, Date: 12-Sep-2019, Time: 20:24:00, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

	Name	Sample Size	Resp	Ratio	fails?	RT	pg	DL	%Rec	Noise 1	Noise 2
1	2,3,7,8-TCDF	1.000	2.56e5	0.78	NO	25.24	10.347	0.0408	103.5	2.18e3	2.35e3
2	1,2,3,7,8-PeCDF	1.000	1.18e6	1.55	NO	33.53	50.570	0.0570	101.1	2.55e3	2.49e3
3	2,3,4,7,8-PeCDF	1.000	1.27e6	1.55	NO	35.30	51.351	0.0468	102.7	2.55e3	2.49e3
4	1,2,3,4,7,8-HxCDF	1.000	1.03e6	1.25	NO	40.73	53.290	0.0678	106.6	2.89e3	4.34e3
5	1,2,3,6,7,8-HxCDF	1.000	1.07e6	1.30	NO	40.90	53.291	0.0644	106.6	2.89e3	4.34e3
6	2,3,4,6,7,8-HxCDF	1.000	1.08e6	1.26	NO	41.85	52.648	0.0602	105.3	2.89e3	4.34e3
7	1,2,3,7,8,9-HxCDF	1.000	9.20e5	1.25	NO	42.90	52.221	0.0729	104.4	2.89e3	4.34e3
8	1,2,3,4,6,7,8-HpCDF	1.000	1.09e6	1.05	NO	45.35	51.825	0.0607	103.7	2.13e3	5.92e3
9	1,2,3,4,7,8,9-HpCDF	1.000	1.01e6	1.04	NO	47.16	51.613	0.0668	103.2	2.13e3	5.92e3
10	OCDF	1.000	1.88e6	0.93	NO	50.41	97.118	0.0085	97.1	3.98e2	5.90e2
11	2,3,7,8-TCDD	1.000	2.14e5	0.80	NO	26.46	10.489	0.0591	104.9	2.54e3	2.42e3
12	1,2,3,7,8-PeCDD	1.000	7.38e5	0.63	NO	36.13	48.258	0.0618	96.5	2.57e3	1.79e3
13	1,2,3,4,7,8-HxCDD	1.000	7.51e5	1.26	NO	42.12	50.580	0.0687	101.2	3.60e3	2.62e3
14	1,2,3,6,7,8-HxCDD	1.000	7.52e5	1.19	NO	42.26	48.991	0.0708	98.0	3.60e3	2.62e3
15	1,2,3,7,8,9-HxCDD	1.000	7.68e5	1.22	NO	42.70	51.389	0.0705	102.8	3.60e3	2.62e3
16	1,2,3,4,6,7,8-HpCDD	1.000	7.79e5	1.05	NO	46.74	48.845	0.0413	97.7	2.10e3	2.11e3
17	OCDD	1.000	1.64e6	0.88	NO	50.32	98.491	0.0609	98.5	5.15e2	5.57e3
18	13C-2,3,7,8-TCDF	1.000	2.67e6	0.81	NO	25.22	89.060	0.0828	89.1	5.68e3	5.21e3
19	13C-1,2,3,7,8-PeCDF	1.000	2.51e6	1.56	NO	33.50	103.162	0.1002	103.2	4.53e3	6.19e3
20	13C-2,3,4,7,8-PeCDF	1.000	2.61e6	1.64	NO	35.28	104.018	0.0972	104.0	4.53e3	6.19e3
21	13C-1,2,3,4,7,8-HxCDF	1.000	1.74e6	0.53	NO	40.70	87.506	0.1407	87.5	1.02e4	6.29e3
22	13C-1,2,3,6,7,8-HxCDF	1.000	1.86e6	0.53	NO	40.88	84.977	0.1280	85.0	1.02e4	6.29e3
23	13C-2,3,4,6,7,8-HxCDF	1.000	1.80e6	0.53	NO	41.83	90.990	0.1420	91.0	1.02e4	6.29e3
24	13C-1,2,3,7,8,9-HxCDF	1.000	1.67e6	0.52	NO	42.88	95.158	0.1597	95.2	1.02e4	6.29e3
25	13C-1,2,3,4,6,7,8-HpCDF	1.000	1.68e6	0.45	NO	45.34	102.219	0.1118	102.2	5.58e3	5.20e3
26	13C-1,2,3,4,7,8,9-HpCDF	1.000	1.56e6	0.44	NO	47.14	117.154	0.1377	117.2	5.58e3	5.20e3
27	13C-2,3,7,8-TCDD	1.000	1.86e6	0.79	NO	26.44	97.478	0.2094	97.5	7.13e3	1.04e4
28	13C-1,2,3,7,8-PeCDD	1.000	1.55e6	0.65	NO	36.10	102.411	0.0776	102.4	2.94e3	2.21e3
29	13C-1,2,3,4,7,8-HxCDD	1.000	1.44e6	1.31	NO	42.10	90.760	0.0833	90.8	5.14e3	2.65e3
30	13C-1,2,3,6,7,8-HxCDD	1.000	1.63e6	1.28	NO	42.24	92.594	0.0754	92.6	5.14e3	2.65e3
31	13C-1,2,3,4,6,7,8-HpCDD	1.000	2.05e6	1.01	NO	46.72	114.978	0.0726	115.0	2.87e3	4.73e3
32	13C-OCDD	1.000	3.40e6	0.91	NO	50.32	259.446	0.1424	129.7	1.05e4	4.83e2
33	13C-1,2,3,4-TCDD	1.000	1.97e6	0.80	NO	26.09	48.831	0.0991	48.8	7.13e3	1.04e4
34	13C-1,2,3,7,8,9-HxCDD	1.000	1.64e6	1.26	NO	42.68	56.573	0.0457	56.6	5.14e3	2.65e3
35	37Cl-2,3,7,8-TCDD	1.000	2.31e5			26.46	11.007	0.0417	110.1		3.85e3
36	Total Tetra-Furans	1.000					42.467	0.0408			2.35e3
37	Total Tetra-Dioxins	1.000					88.404	0.0591			2.42e3
38	Total Penta-Furans	1.000					194.835	0.0523			2.49e3
39	Total Penta-Dioxins	1.000					154.335	0.0618			1.79e3
40	Total Hexa-Furans	1.000					321.460	0.0654			4.34e3
41	Total Hexa-Dioxins	1.000					200.826	0.0667			2.62e3
42	Total Hepta-Furans	1.000					106.092	0.0637			5.92e3
43	Total Hepta-Dioxins	1.000					100.490	0.0413			2.11e3
44	Hexa DPE	1.000	2.08e2			23.45					1.81e0
45	Hepta DPE	1.000	5.28e2			37.51					1.83e0
46	Octa DPE	1.000	6.86e2			40.21					6.64e1
47	Nona DPE	1.000	1.97e2			48.26					1.66e0
48	Deca DPE	1.000	1.04e2			50.69					1.00e0
49	Tetra Lock	1.000	2.39e4			21.01					1.15e5
50	Penta Lock	1.000	5.03e3			33.19					5.93e4
51	Hexa Lock	1.000	1.92e5			39.04					1.65e5

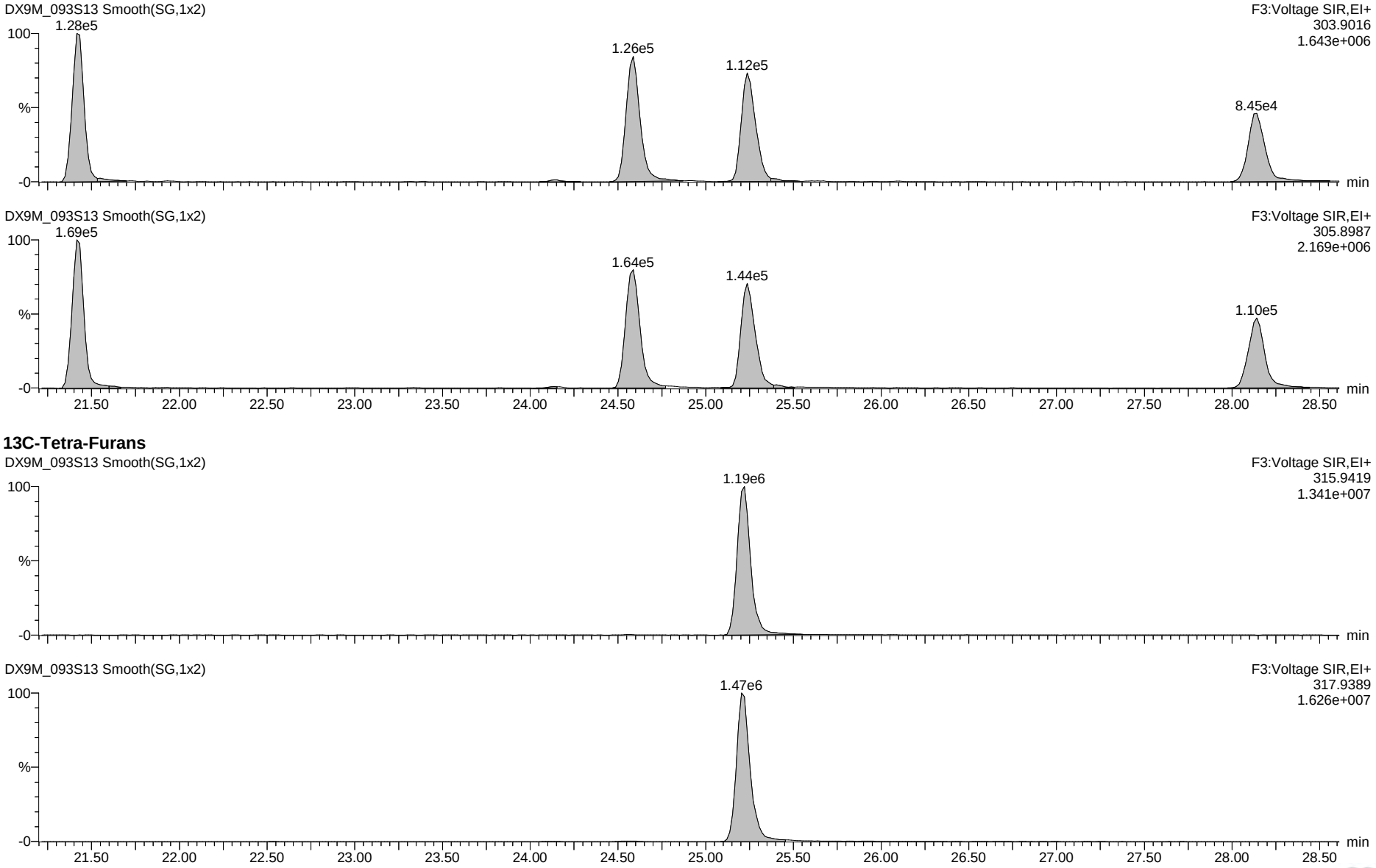
PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Method: G:\Masslynx\Inst_M\Exported_methods\DX_1613B_16.mdb 07 Sep 2017 16:45:23
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

Name: DX9M_093S13, Date: 12-Sep-2019, Time: 20:24:00, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

Total Tetra-Furans



13C-Tetra-Furans

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

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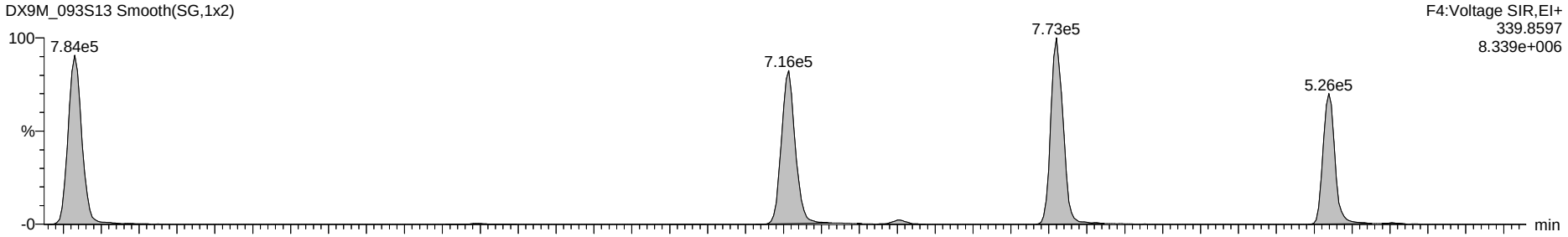
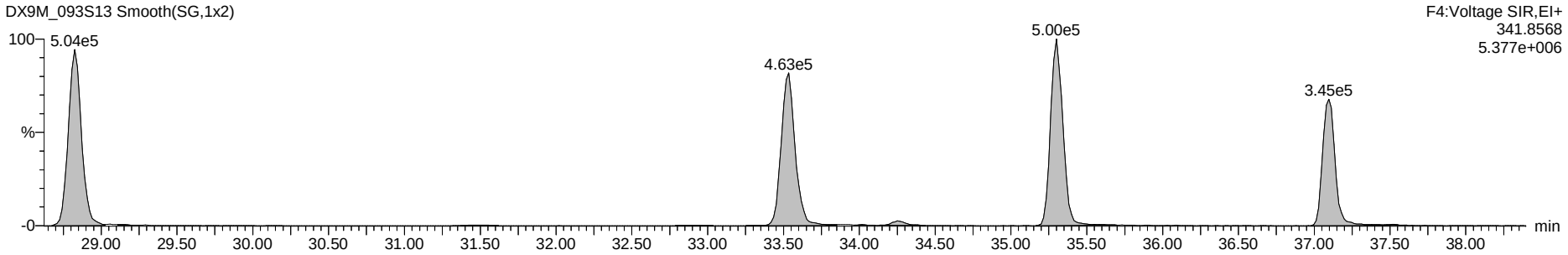
Total Penta-Furans





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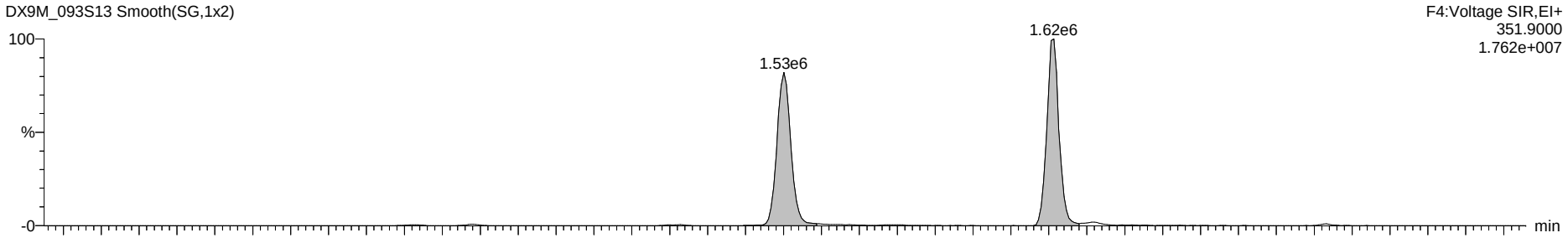

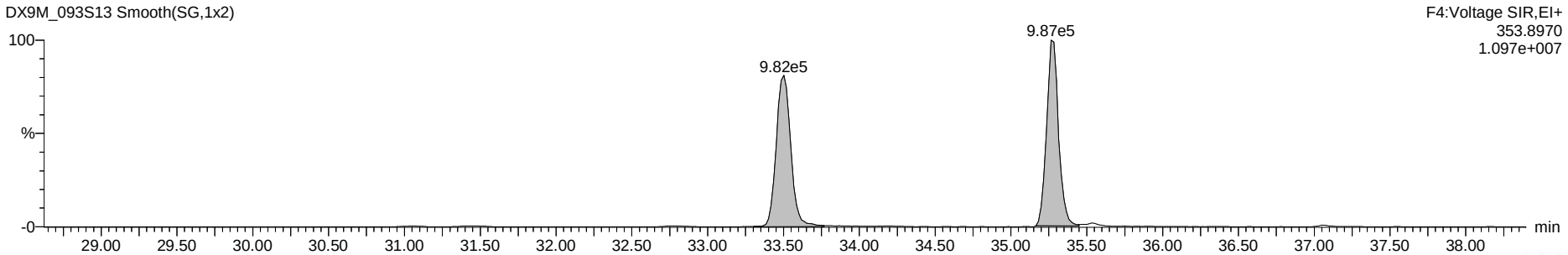

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

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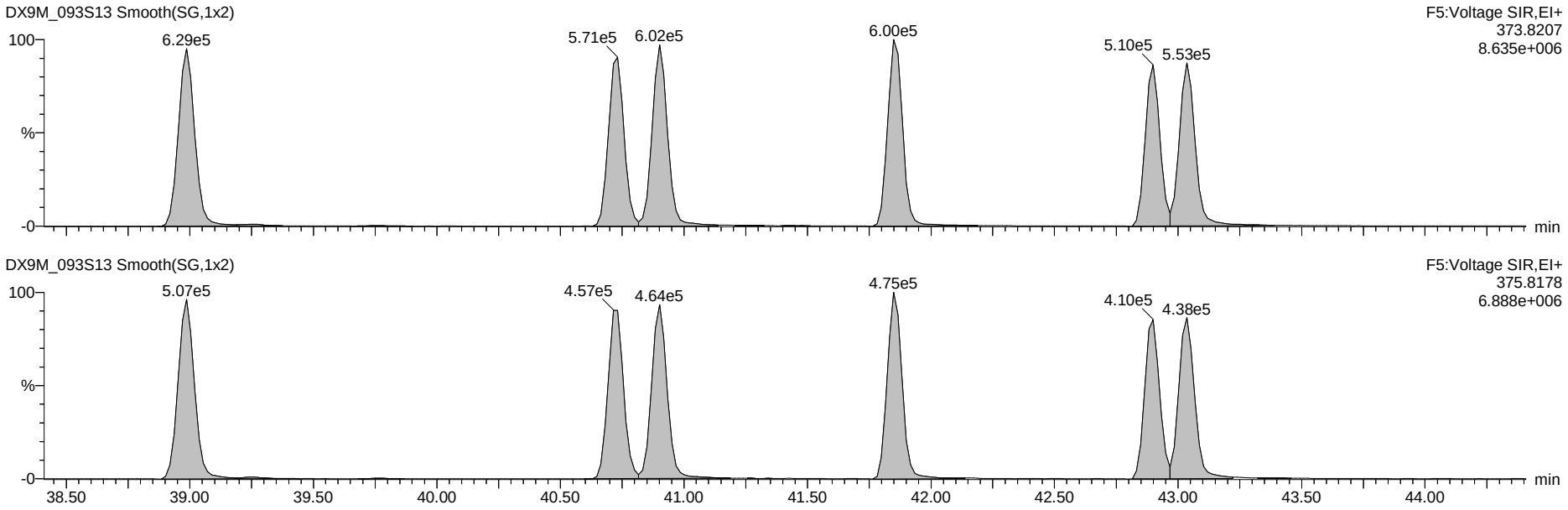
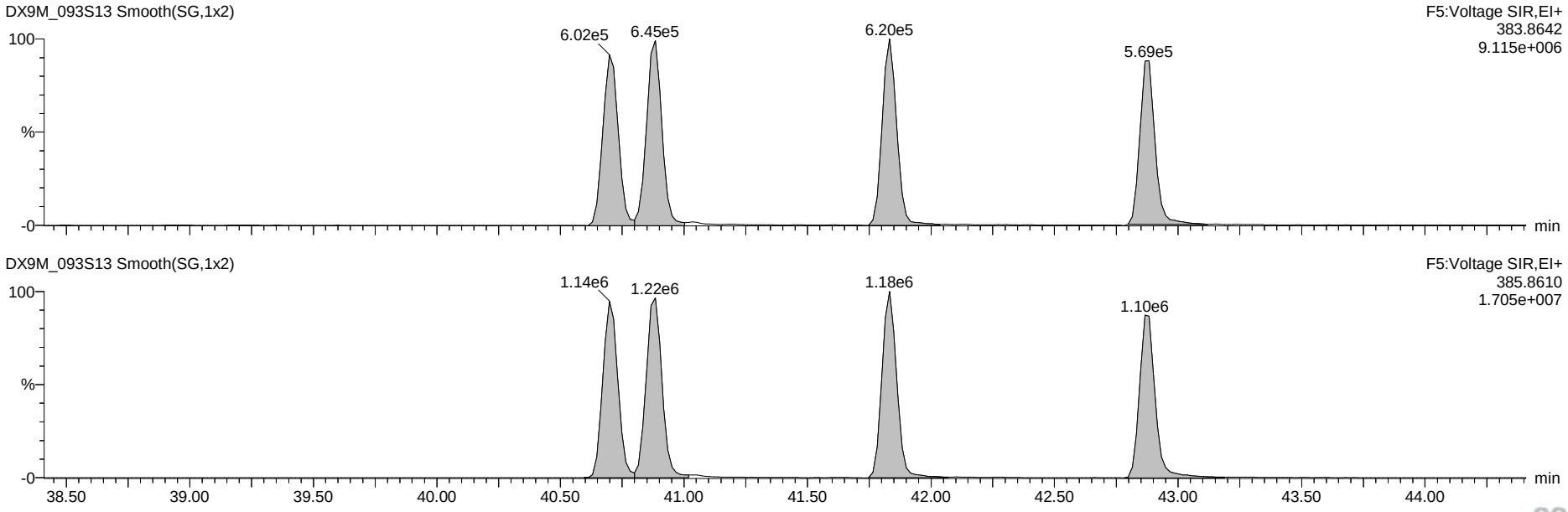
Total Hexa-Furans



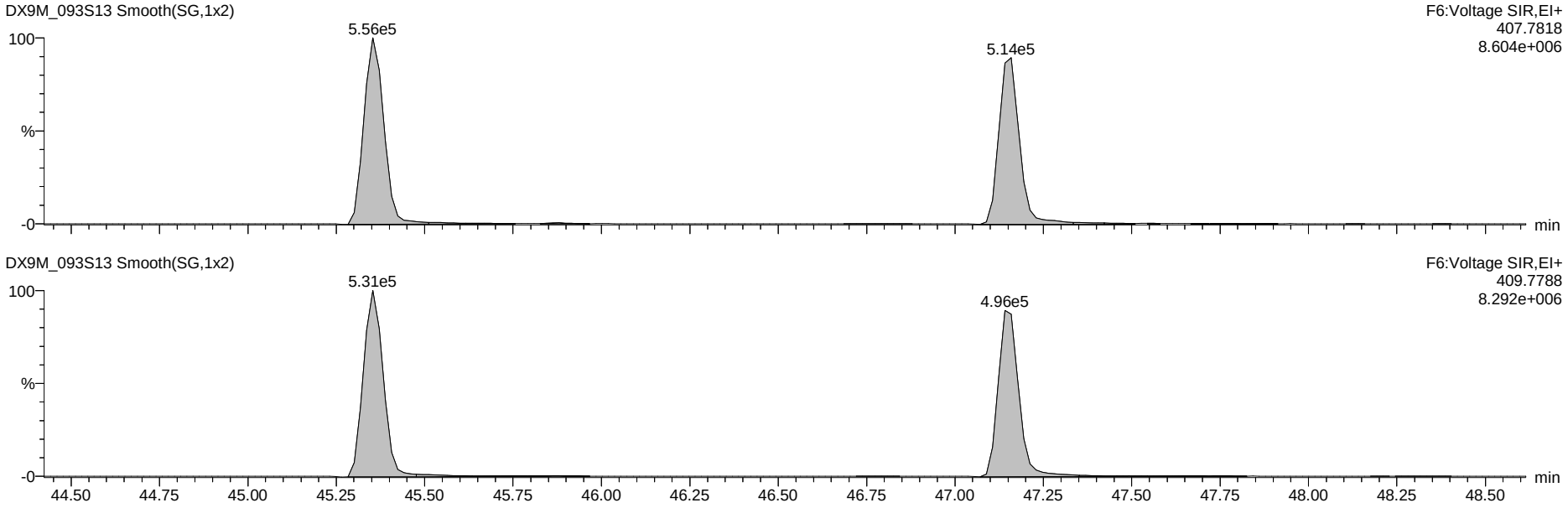
13C-Hexa-Furans



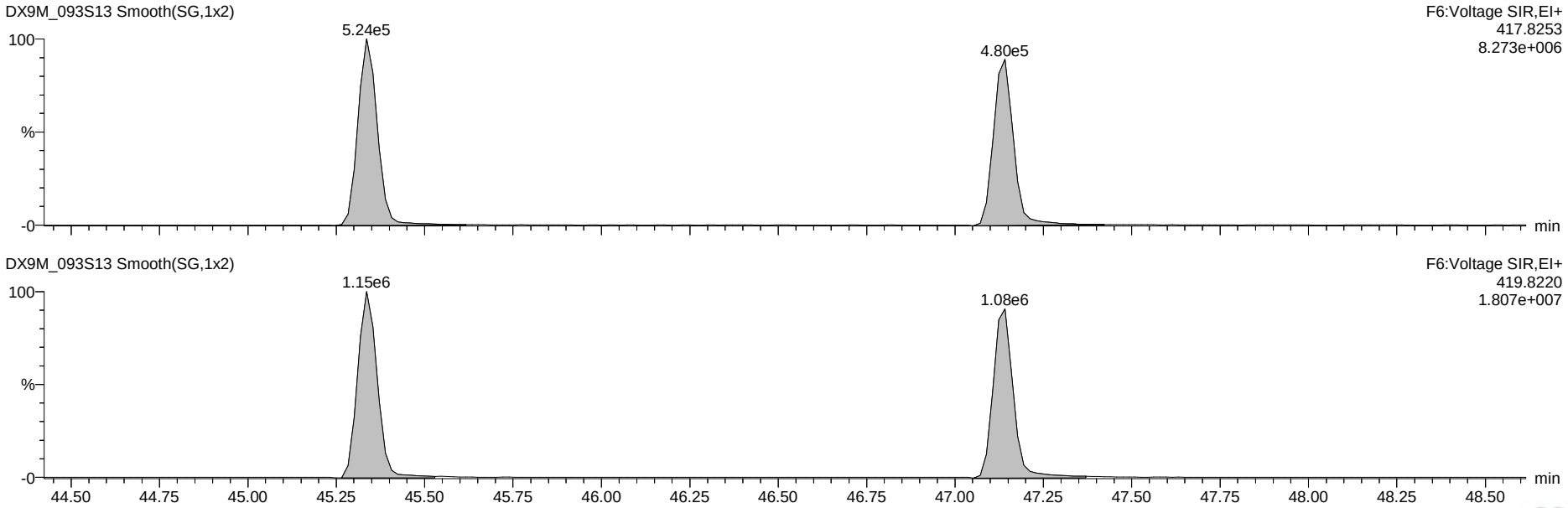
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S13, Date: 12-Sep-2019, Time: 20:24:00, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

Total Hepta-Furans



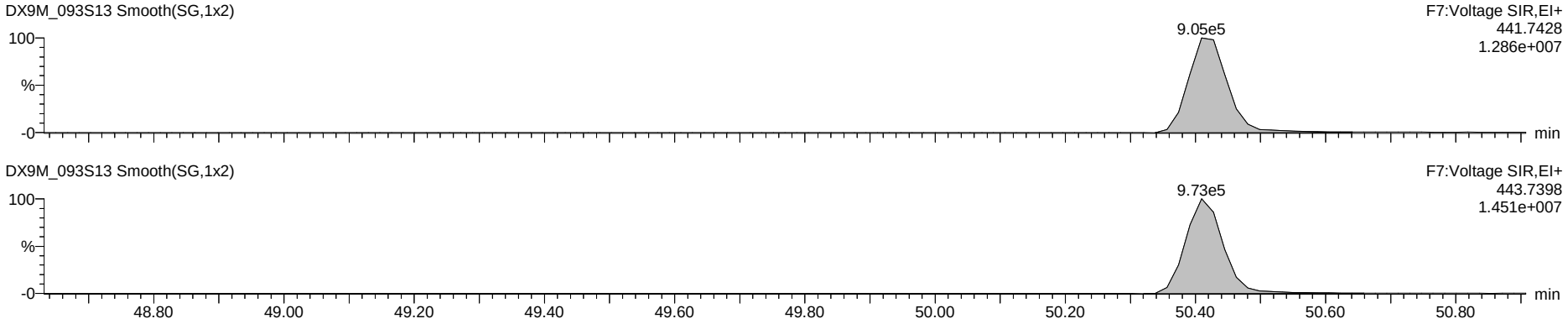
13C-Hepta-Furans



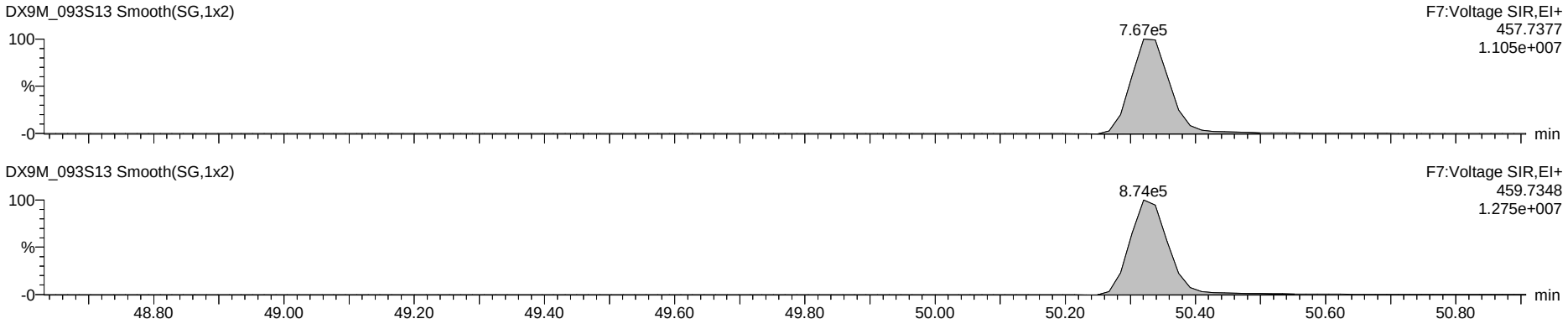
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S13, Date: 12-Sep-2019, Time: 20:24:00, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

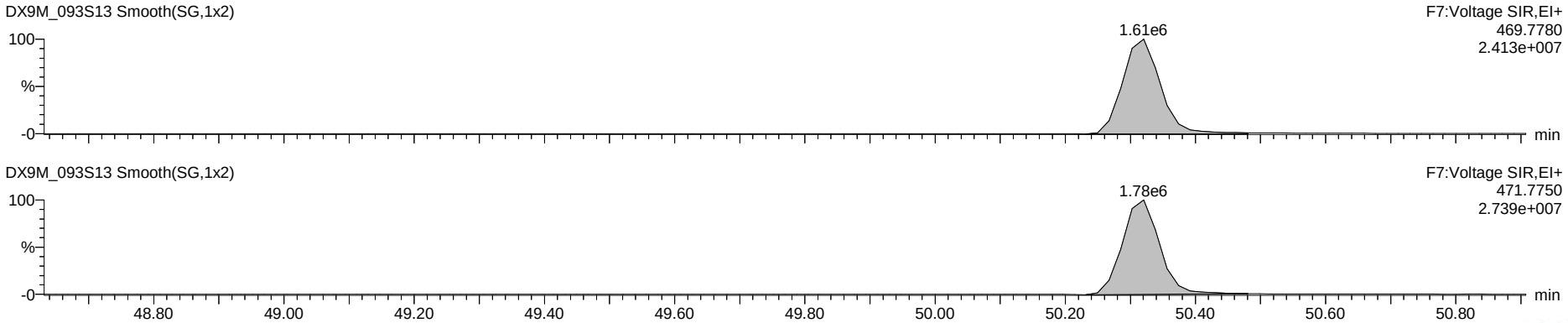
OCDF



OCDD



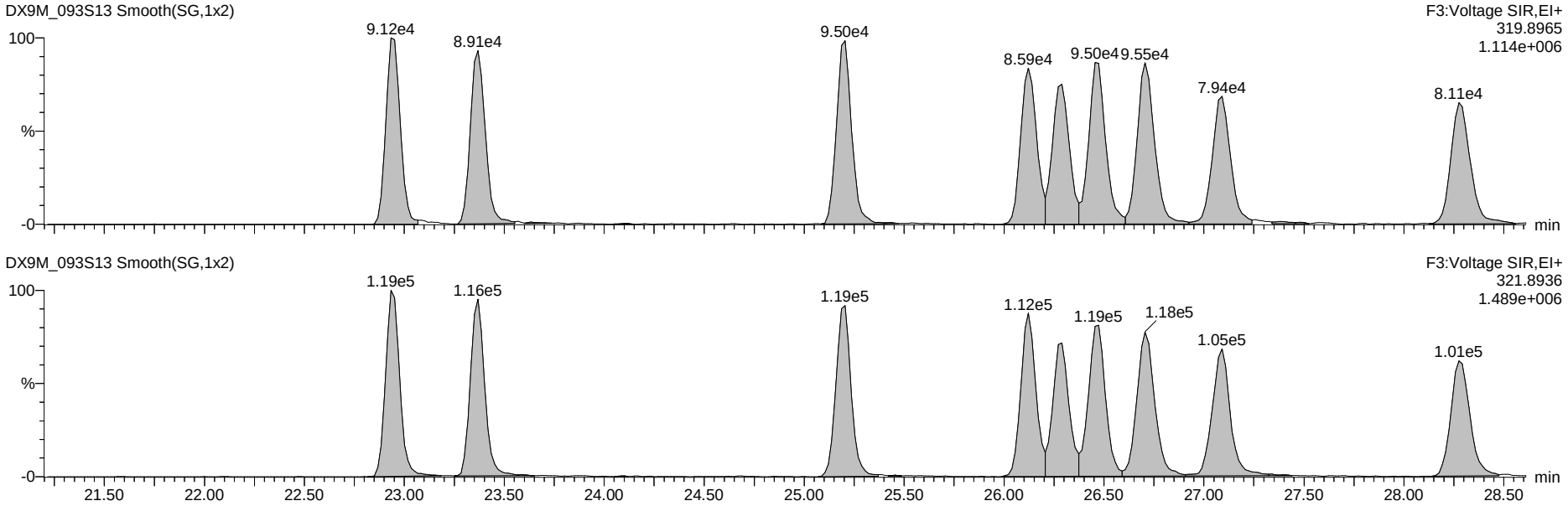
13C-OCDD



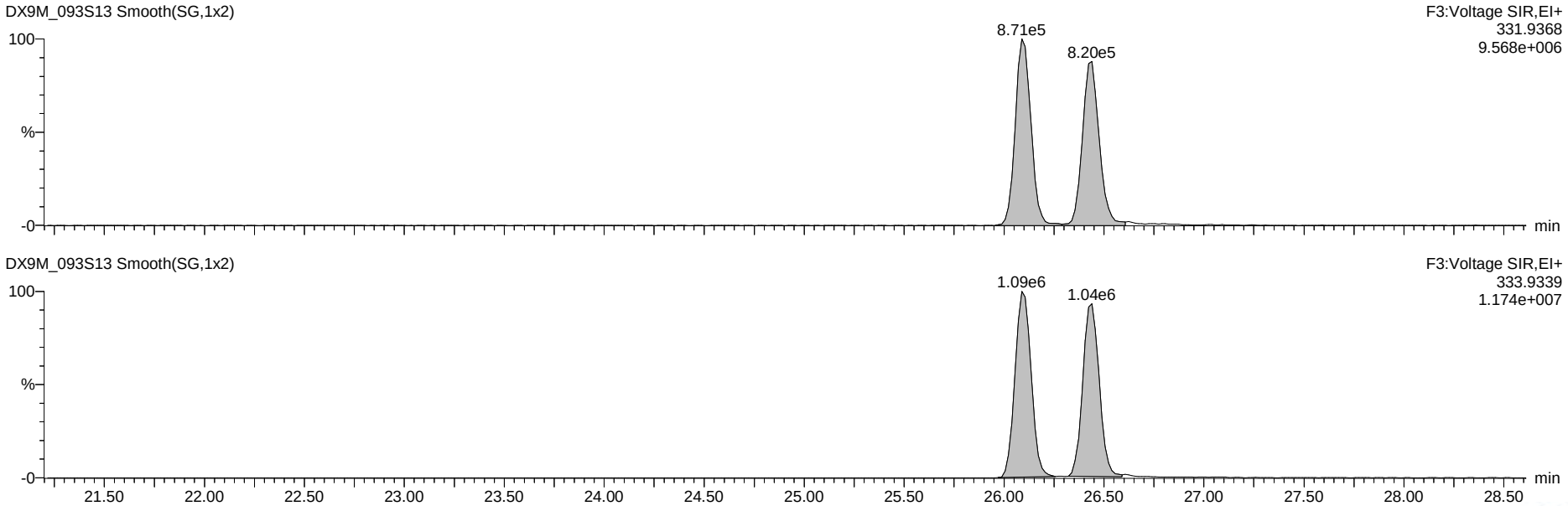
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S13, Date: 12-Sep-2019, Time: 20:24:00, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

Total Tetra-Dioxins



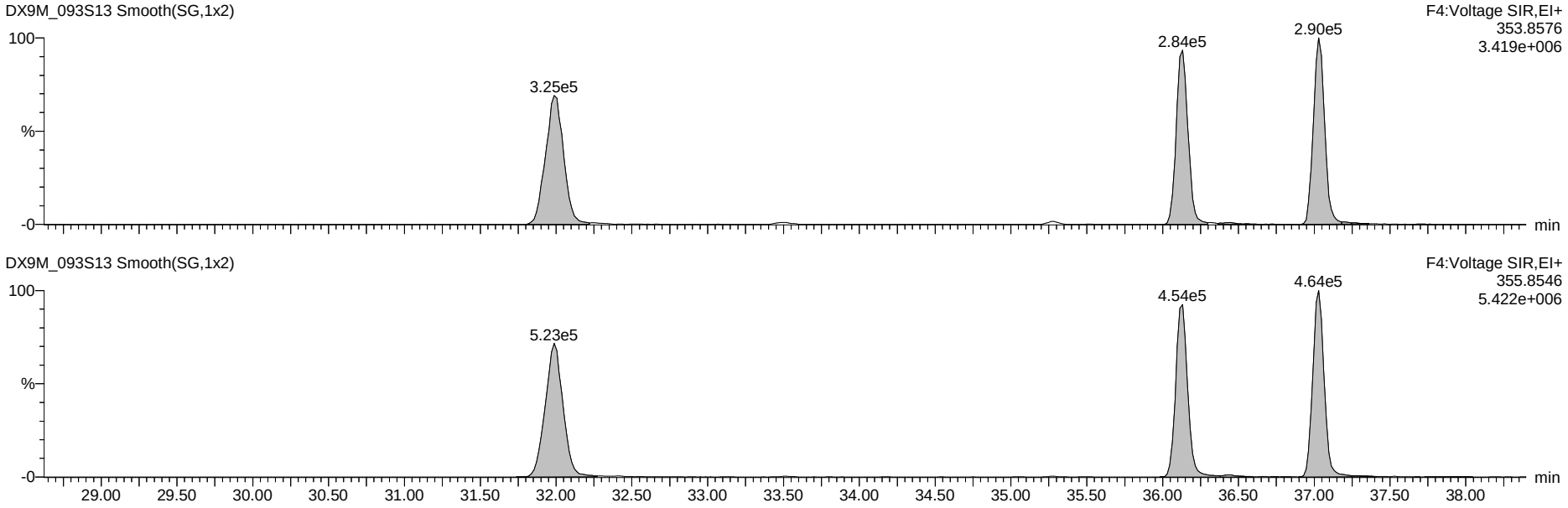
13C-Tetra-Dioxins



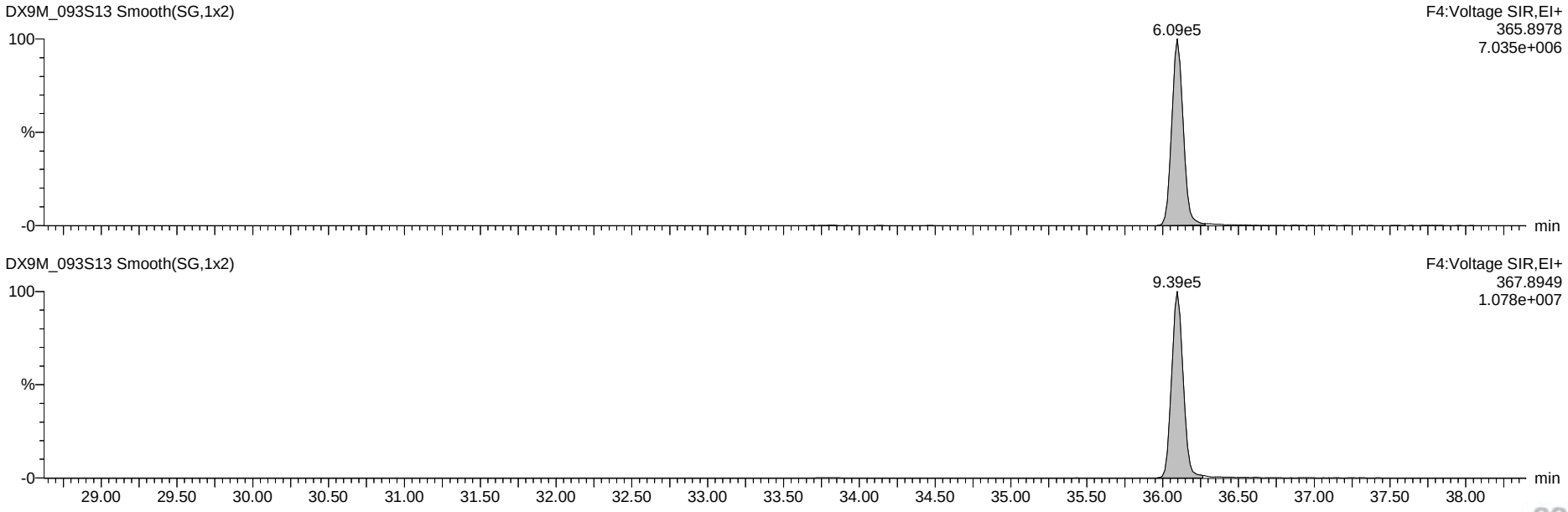
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S13, Date: 12-Sep-2019, Time: 20:24:00, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

Total Penta-Dioxins



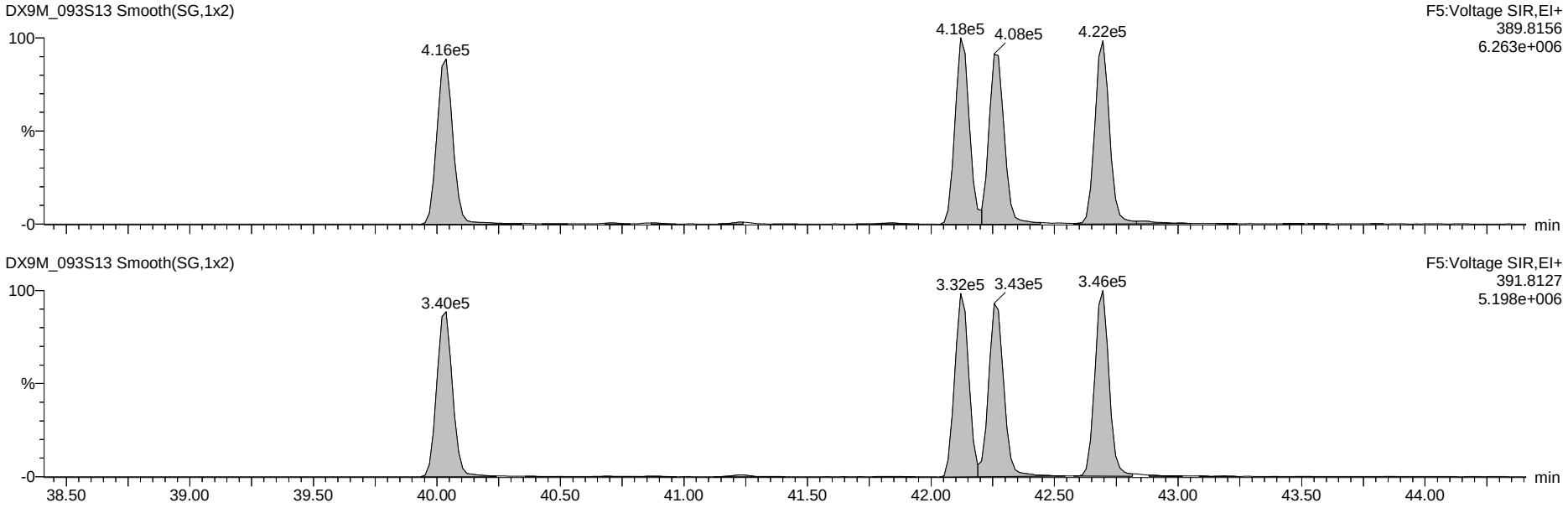
13C-Penta-Dioxins



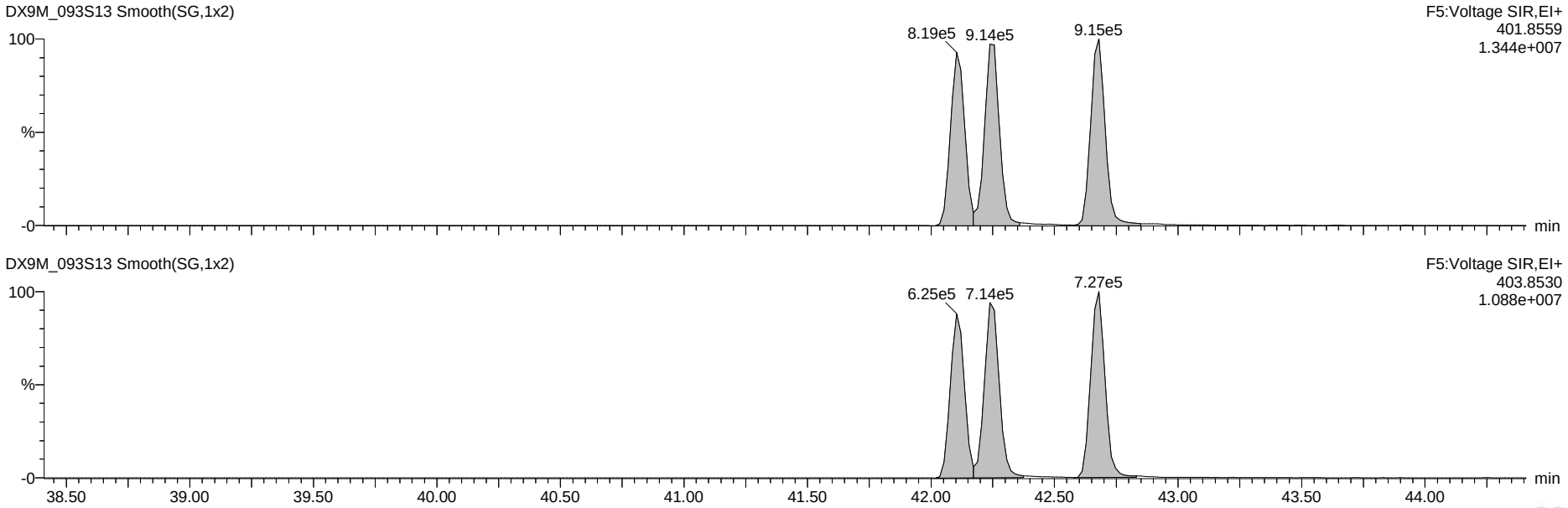
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S13, Date: 12-Sep-2019, Time: 20:24:00, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

Total Hexa-Dioxins



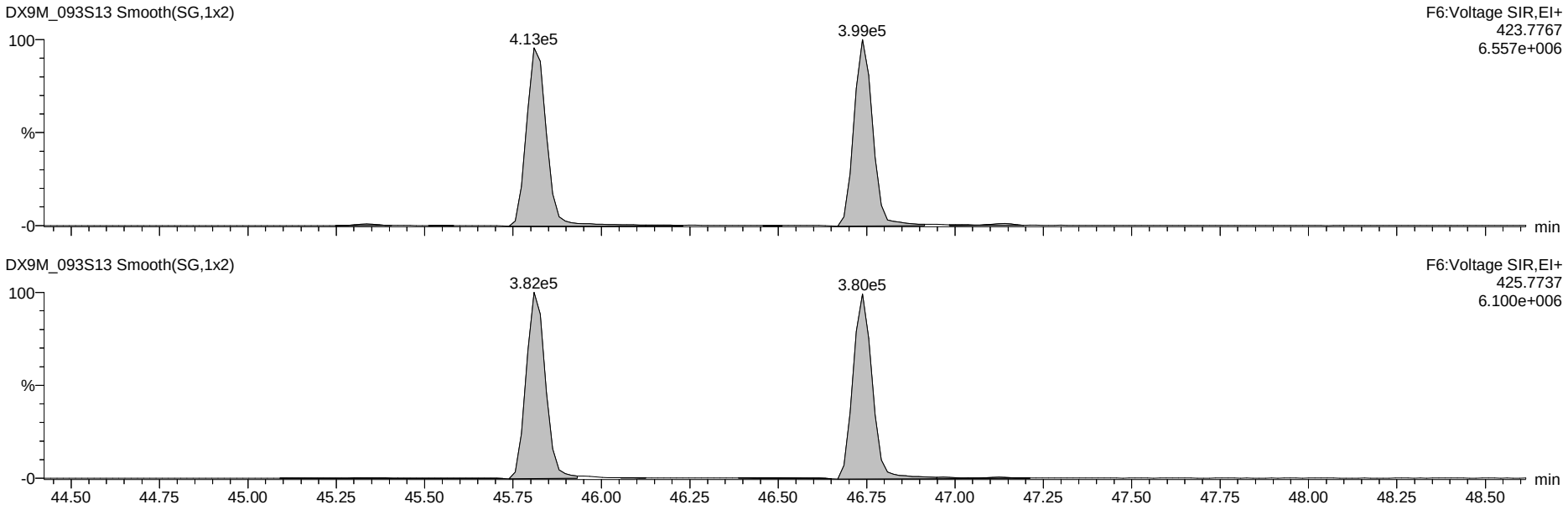
13C-Hexa-Dioxins



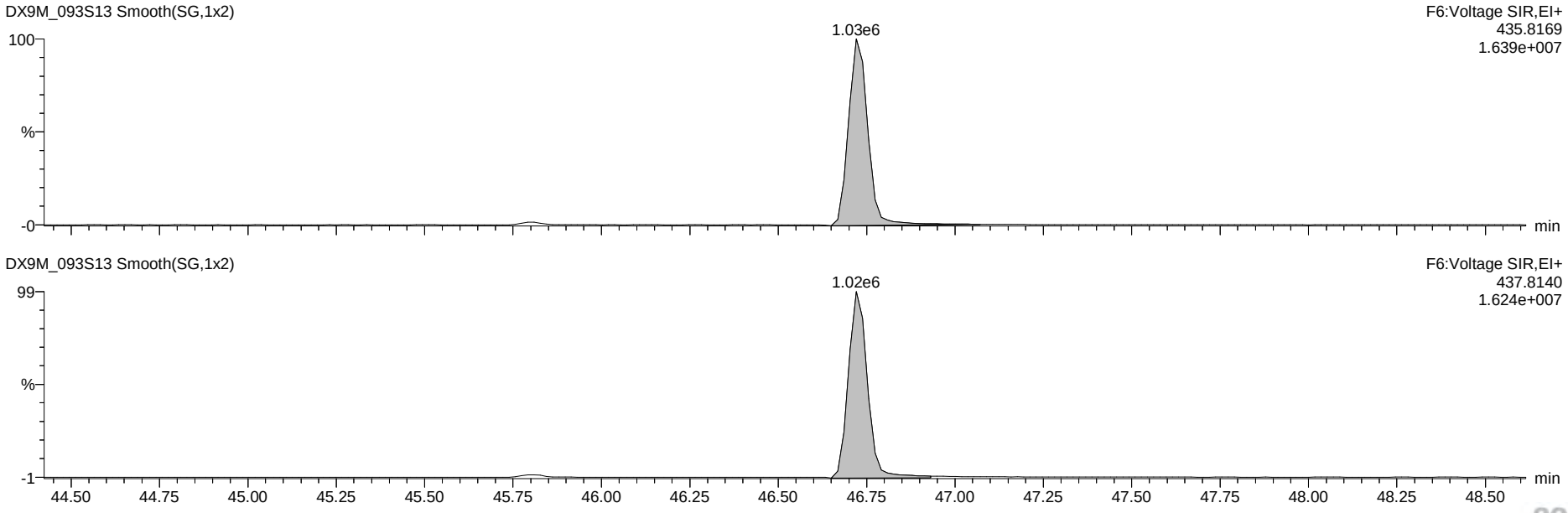
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S13, Date: 12-Sep-2019, Time: 20:24:00, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

Total Hepta-Dioxins



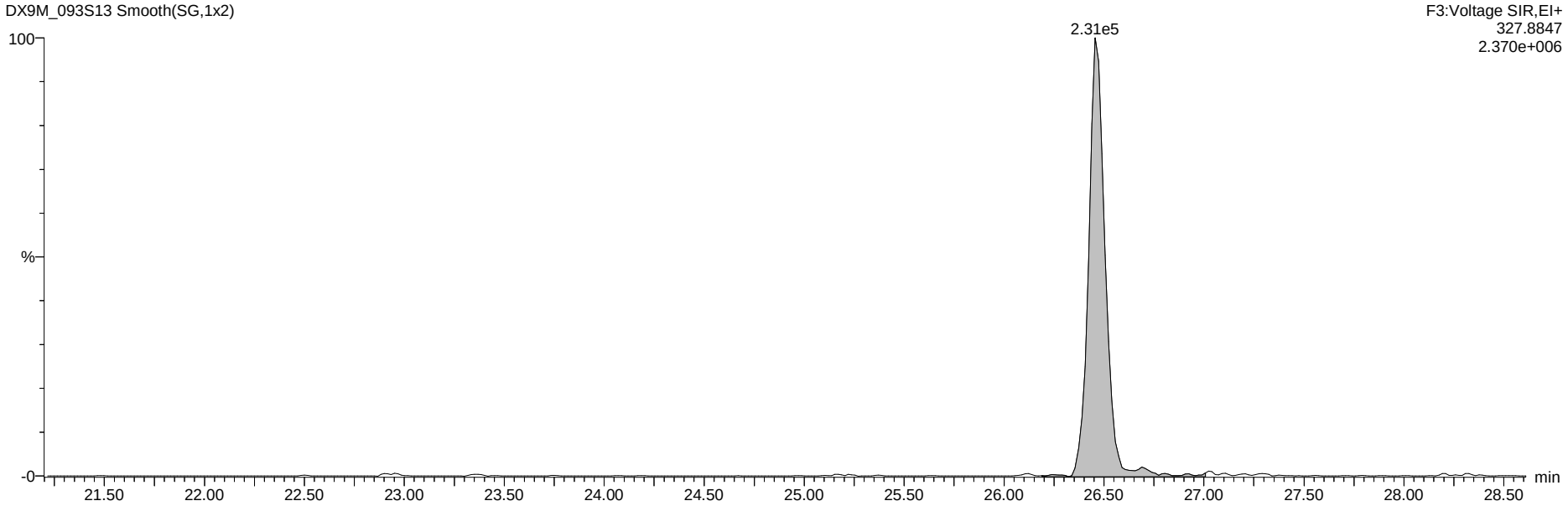
13C-Hepta-Dioxins



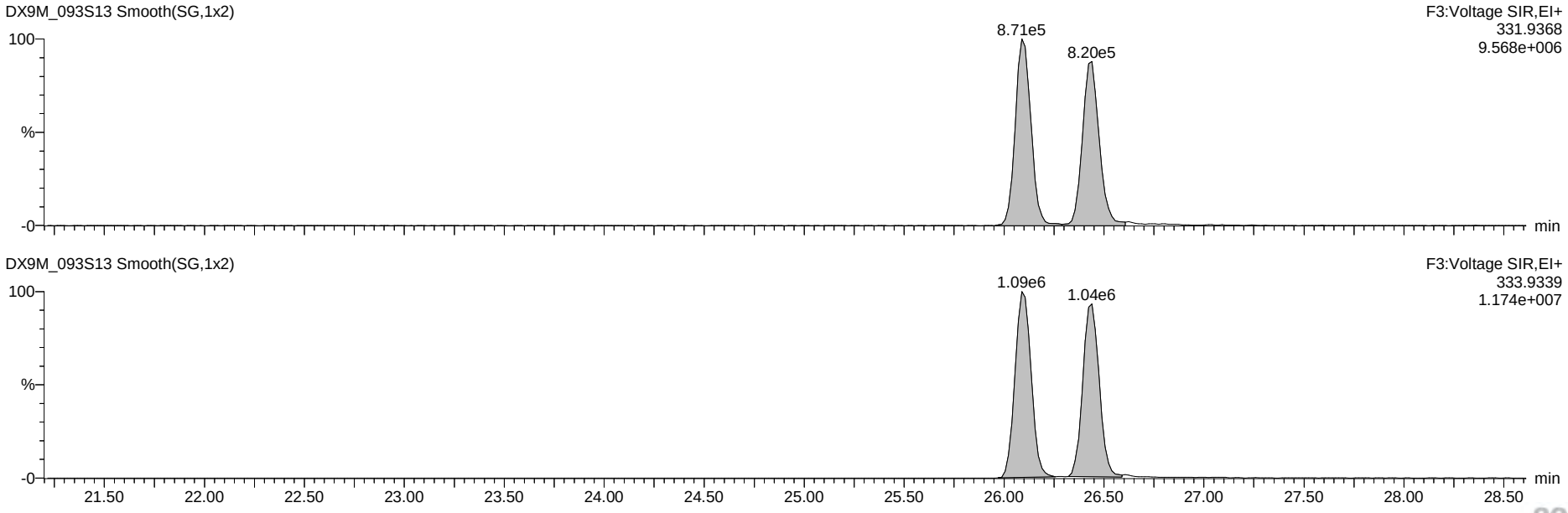
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S13, Date: 12-Sep-2019, Time: 20:24:00, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

37Cl-2,3,7,8-TCDD



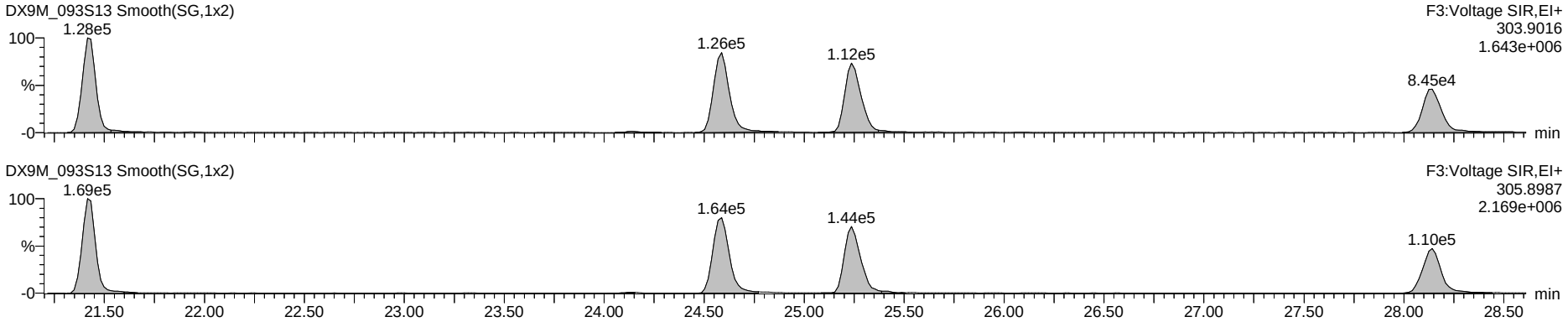
13C-Tetra-Dioxins



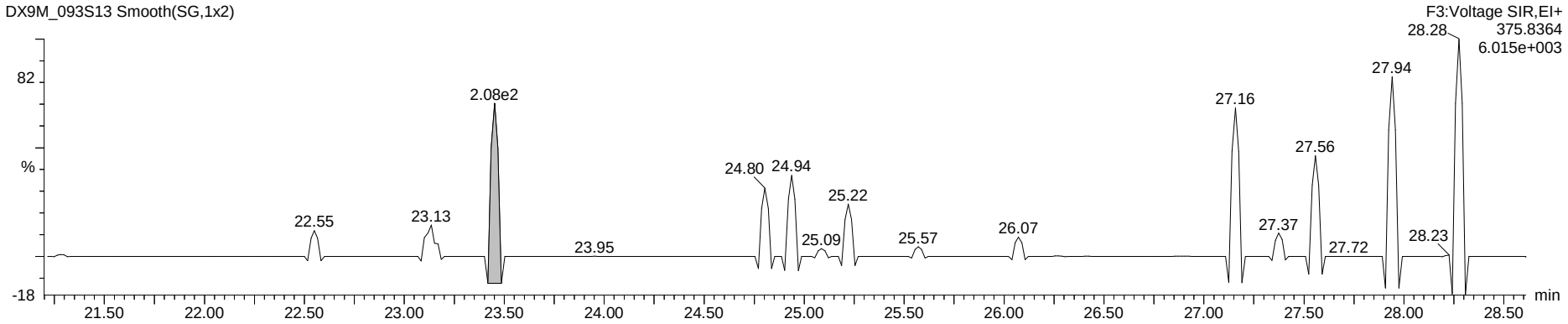
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S13, Date: 12-Sep-2019, Time: 20:24:00, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

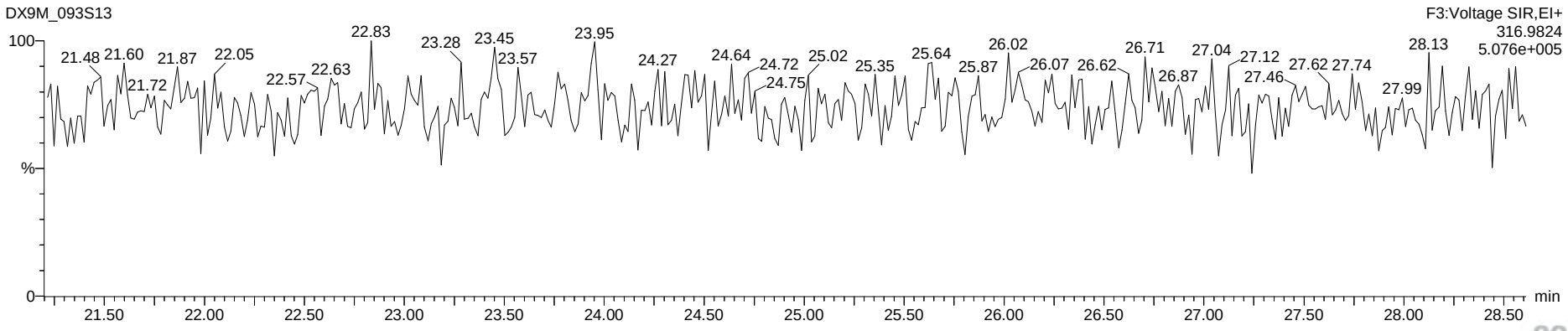
Total Tetra-Furans



Hexa DPE



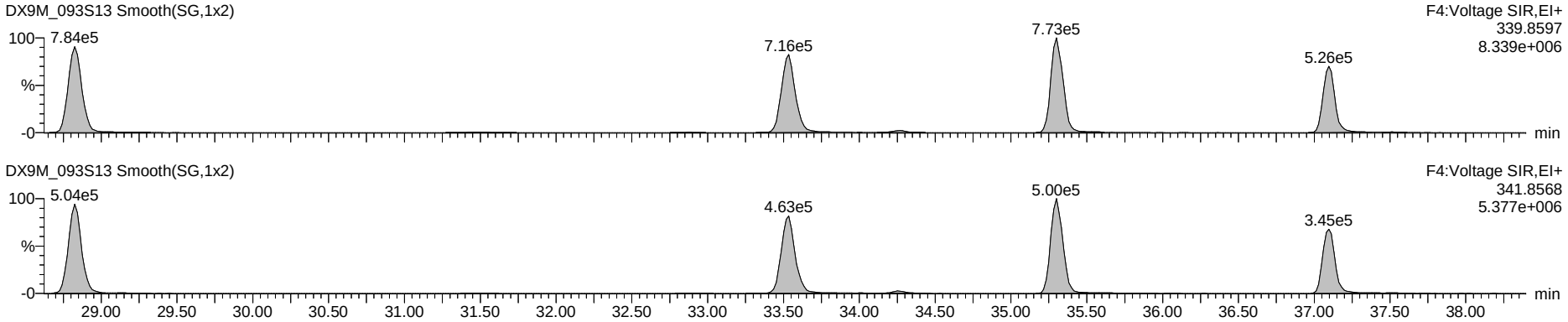
Tetra Lock



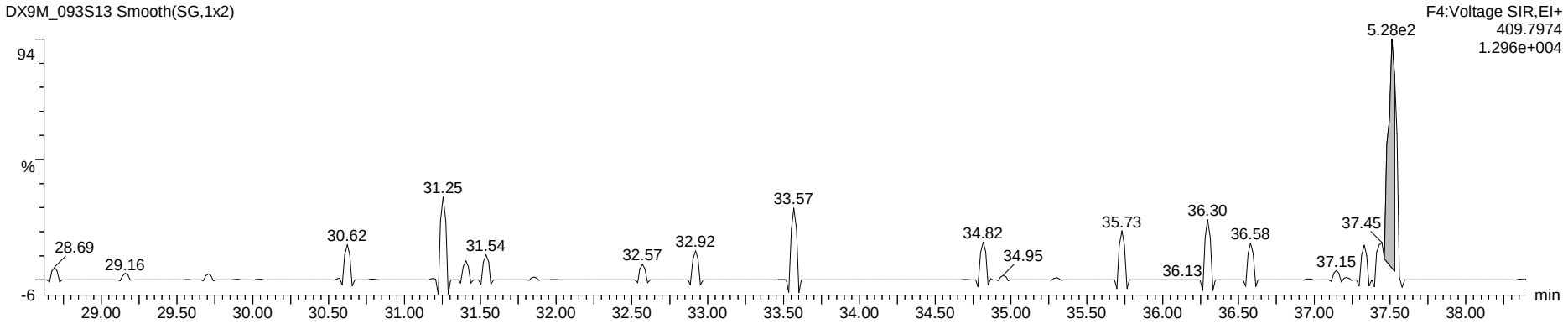
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S13, Date: 12-Sep-2019, Time: 20:24:00, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

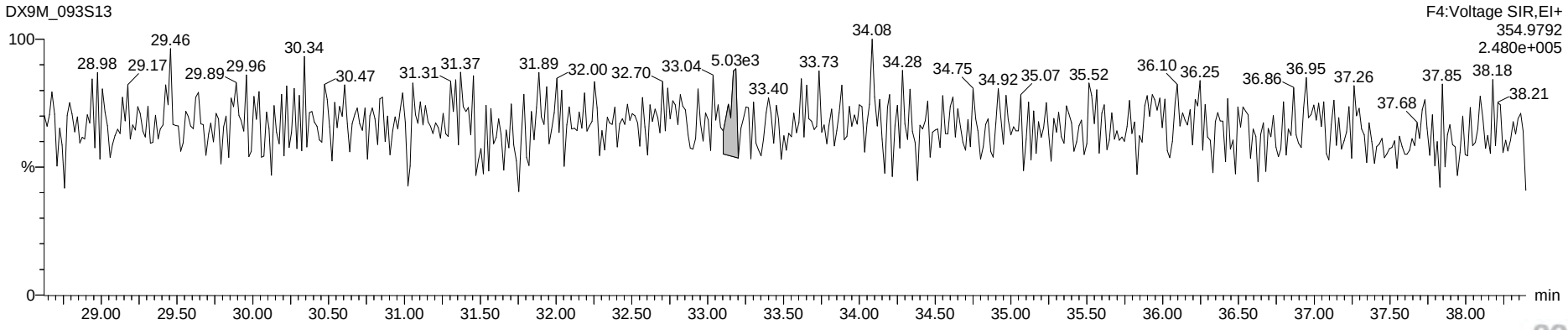
Total Penta-Furans



Hepta DPE



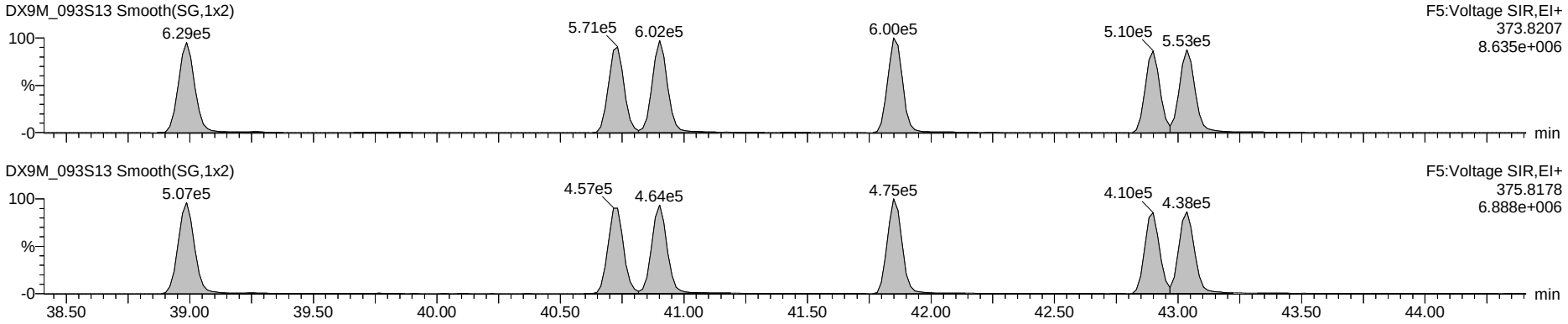
Penta Lock



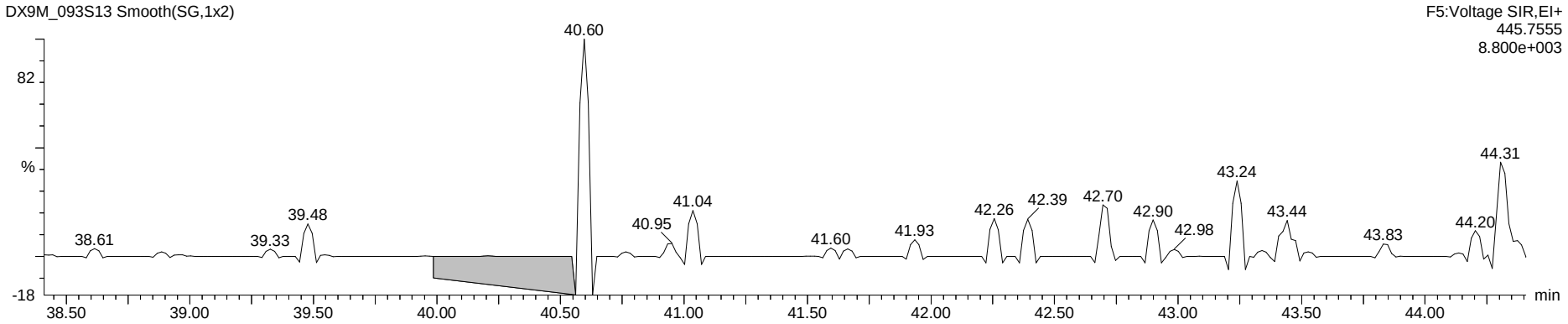
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S13, Date: 12-Sep-2019, Time: 20:24:00, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

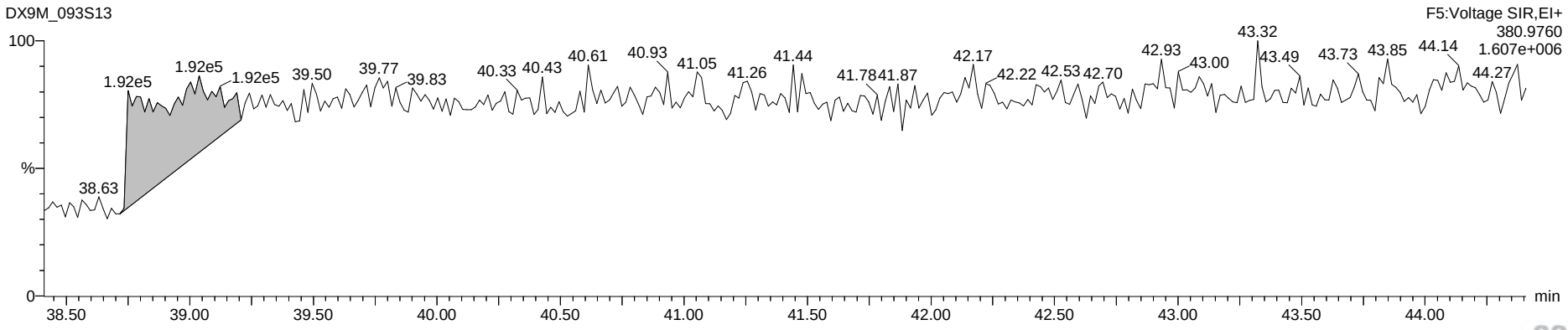
Total Hexa-Furans



Octa DPE



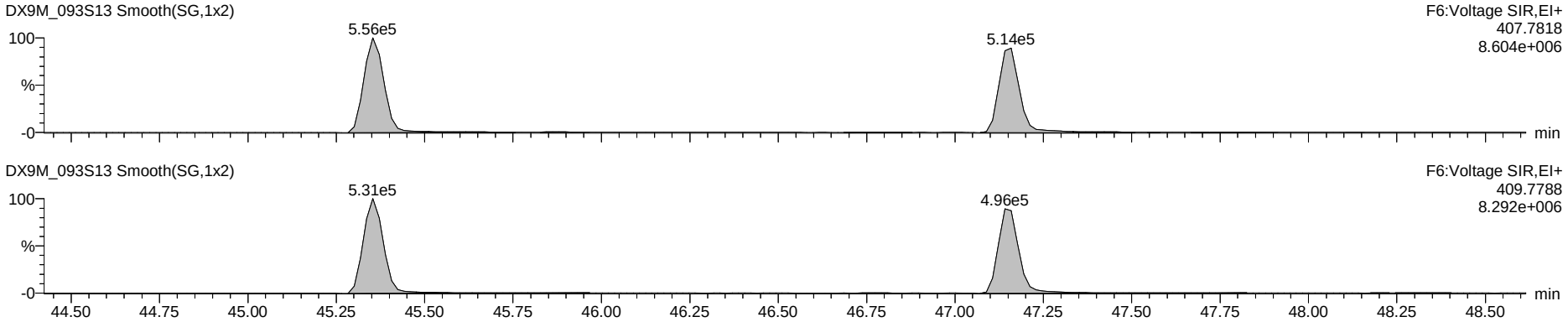
Hexa Lock



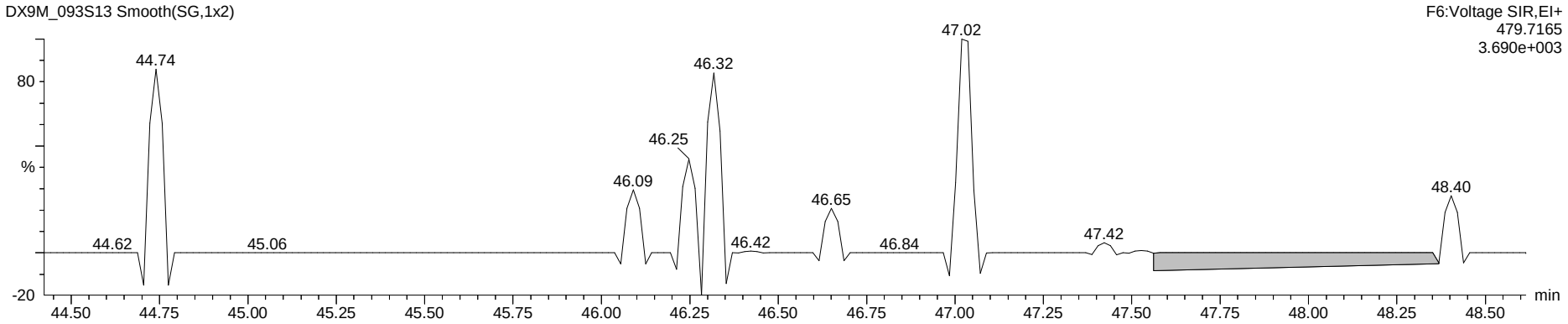
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S13, Date: 12-Sep-2019, Time: 20:24:00, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

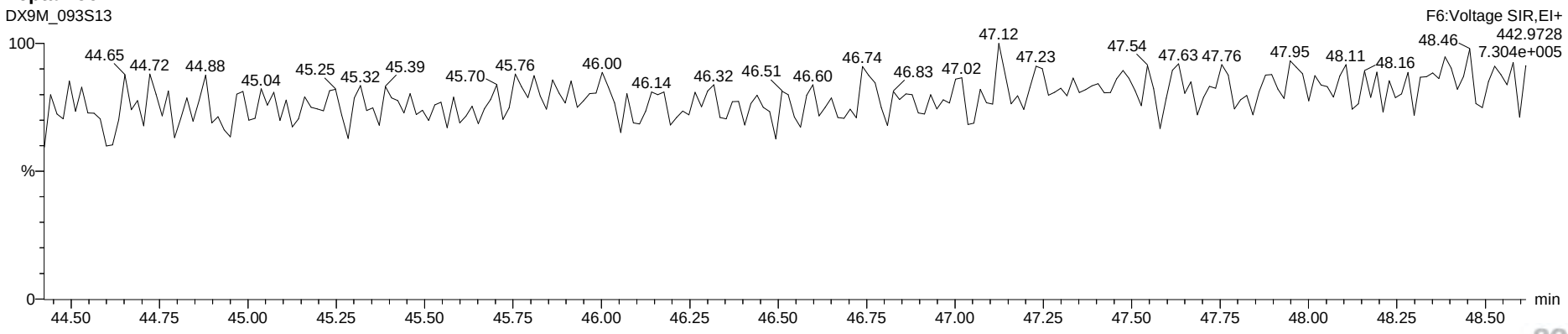
Total Hepta-Furans



Nona DPE



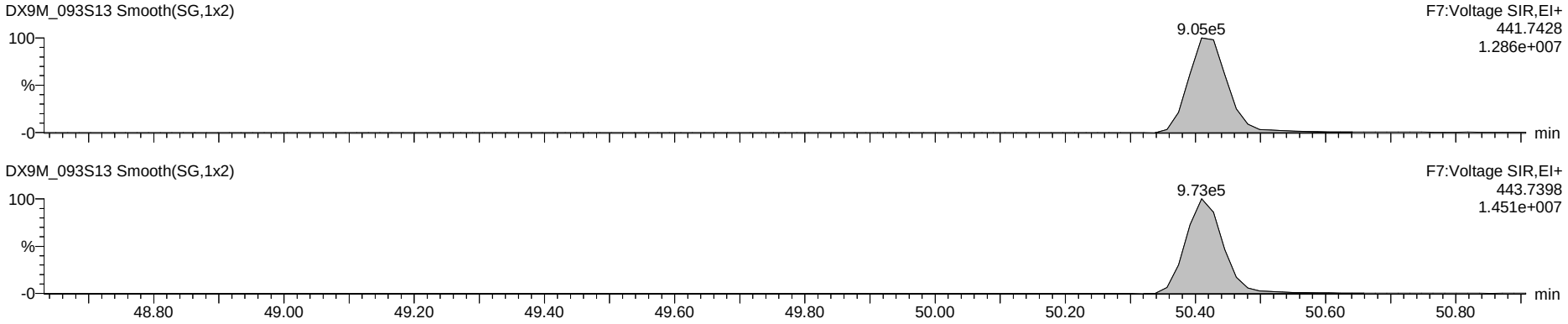
Hepta Lock



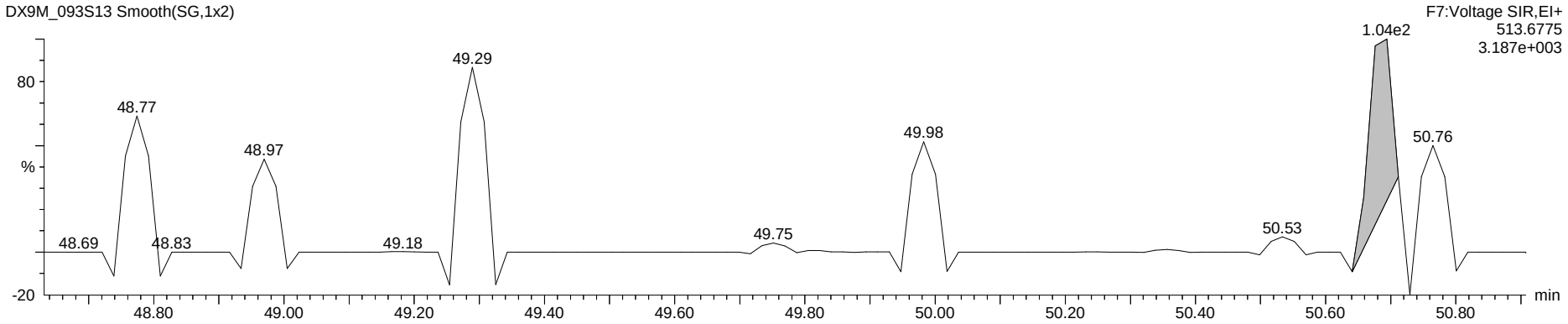
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-B.qld

Name: DX9M_093S13, Date: 12-Sep-2019, Time: 20:24:00, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

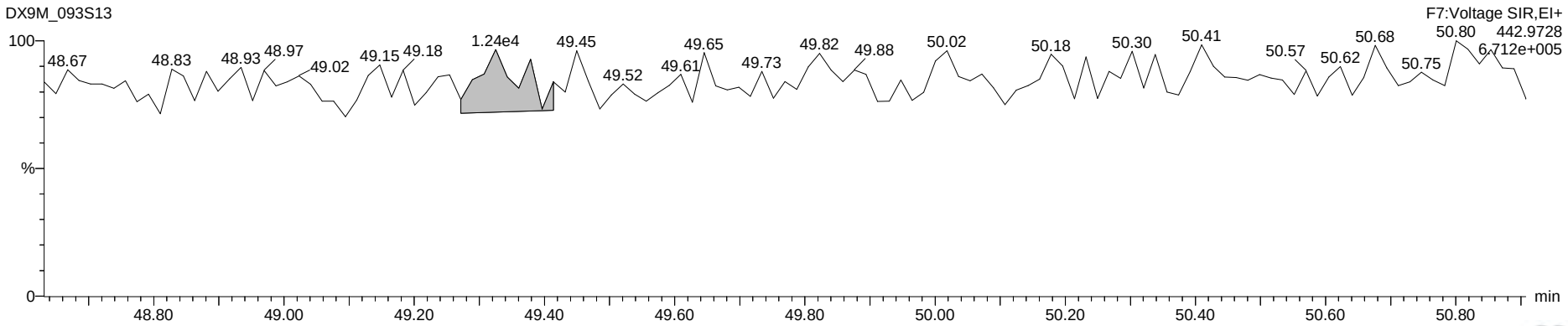
OCDF



Deca DPE



Octa Lock



Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-D.qld

Method: G:\Masslynx\Inst_M\Master methods and layouts\Current Methods\DX_1613B_16.mdb 07 Sep 2017 16:45:23
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

Name: DX9M_093S24, Date: 13-Sep-2019, Time: 06:27:39, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

	Name	Sample Size	Resp	Ratio	fails?	RT	pg	DL	%Rec	Noise 1	Noise 2
1	2,3,7,8-TCDF	1.000	3.18e5	0.80	NO	25.24	10.246	0.0304	102.5	1.91e3	2.37e3
2	1,2,3,7,8-PeCDF	1.000	1.39e6	1.58	NO	33.53	49.377	0.0620	98.8	3.26e3	2.98e3
3	2,3,4,7,8-PeCDF	1.000	1.54e6	1.55	NO	35.32	51.392	0.0493	102.8	3.26e3	2.98e3
4	1,2,3,4,7,8-HxCDF	1.000	1.32e6	1.23	NO	40.73	53.017	0.0662	106.0	5.42e3	3.77e3
5	1,2,3,6,7,8-HxCDF	1.000	1.35e6	1.26	NO	40.92	51.983	0.0685	104.0	5.42e3	3.77e3
6	2,3,4,6,7,8-HxCDF	1.000	1.45e6	1.23	NO	41.87	52.123	0.0597	104.2	5.42e3	3.77e3
7	1,2,3,7,8,9-HxCDF	1.000	1.20e6	1.22	NO	42.92	51.562	0.0704	103.1	5.42e3	3.77e3
8	1,2,3,4,6,7,8-HpCDF	1.000	1.41e6	1.02	NO	45.37	52.061	0.0316	104.1	2.58e3	2.79e3
9	1,2,3,4,7,8,9-HpCDF	1.000	1.36e6	1.04	NO	47.16	55.747	0.0374	111.5	2.58e3	2.79e3
10	OCDF	1.000	2.26e6	0.92	NO	50.43	94.495	0.0179	94.5	1.17e3	1.28e3
11	2,3,7,8-TCDD	1.000	2.60e5	0.79	NO	26.47	10.589	0.0418	105.9	2.61e3	1.72e3
12	1,2,3,7,8-PeCDD	1.000	9.42e5	0.63	NO	36.13	50.187	0.0755	100.4	3.27e3	2.80e3
13	1,2,3,4,7,8-HxCDD	1.000	9.79e5	1.22	NO	42.14	49.569	0.0480	99.1	2.80e3	2.85e3
14	1,2,3,6,7,8-HxCDD	1.000	1.02e6	1.20	NO	42.27	50.534	0.0509	101.1	2.80e3	2.85e3
15	1,2,3,7,8,9-HxCDD	1.000	1.04e6	1.22	NO	42.70	52.578	0.0500	105.2	2.80e3	2.85e3
16	1,2,3,4,6,7,8-HpCDD	1.000	9.85e5	1.06	NO	46.76	49.895	0.0527	99.8	2.80e3	3.68e3
17	OCDD	1.000	2.08e6	0.89	NO	50.36	100.708	0.0525	100.7	1.77e3	4.47e3
18	13C-2,3,7,8-TCDF	1.000	3.35e6	0.81	NO	25.22	91.386	0.0870	91.4	8.15e3	5.72e3
19	13C-1,2,3,7,8-PeCDF	1.000	3.02e6	1.55	NO	33.50	101.478	0.1139	101.5	8.67e3	6.08e3
20	13C-2,3,4,7,8-PeCDF	1.000	3.15e6	1.56	NO	35.28	102.610	0.1104	102.6	8.67e3	6.08e3
21	13C-1,2,3,4,7,8-HxCDF	1.000	2.25e6	0.52	NO	40.71	88.463	0.1086	88.5	1.01e4	5.95e3
22	13C-1,2,3,6,7,8-HxCDF	1.000	2.41e6	0.51	NO	40.88	86.240	0.0988	86.2	1.01e4	5.95e3
23	13C-2,3,4,6,7,8-HxCDF	1.000	2.44e6	0.50	NO	41.85	96.680	0.1096	96.7	1.01e4	5.95e3
24	13C-1,2,3,7,8,9-HxCDF	1.000	2.21e6	0.51	NO	42.88	98.522	0.1233	98.5	1.01e4	5.95e3
25	13C-1,2,3,4,6,7,8-HpCDF	1.000	2.17e6	0.44	NO	45.35	103.419	0.1913	103.4	1.59e4	7.38e3
26	13C-1,2,3,4,7,8,9-HpCDF	1.000	1.94e6	0.46	NO	47.16	114.018	0.2358	114.0	1.59e4	7.38e3
27	13C-2,3,7,8-TCDD	1.000	2.23e6	0.75	NO	26.44	95.601	0.1583	95.6	5.79e3	1.03e4
28	13C-1,2,3,7,8-PeCDD	1.000	1.90e6	0.61	NO	36.11	102.635	0.0673	102.6	3.71e3	1.71e3
29	13C-1,2,3,4,7,8-HxCDD	1.000	1.92e6	1.23	NO	42.12	94.541	0.1112	94.5	6.61e3	6.47e3
30	13C-1,2,3,6,7,8-HxCDD	1.000	2.15e6	1.25	NO	42.26	95.513	0.1006	95.5	6.61e3	6.47e3
31	13C-1,2,3,4,6,7,8-HpCDD	1.000	2.53e6	1.08	NO	46.74	111.397	0.1109	111.4	6.58e3	8.02e3
32	13C-OCDD	1.000	4.21e6	0.90	NO	50.34	251.651	0.1216	125.8	6.50e3	5.27e3
33	13C-1,2,3,4-TCDD	1.000	2.41e6	0.80	NO	26.09	59.768	0.0916	59.8	5.79e3	1.03e4
34	13C-1,2,3,7,8,9-HxCDD	1.000	2.10e6	1.26	NO	42.68	72.268	0.0778	72.3	6.61e3	6.47e3
35	37Cl-2,3,7,8-TCDD	1.000	2.44e5			26.47	9.503	0.0477	95.0		5.33e3
36	Total Tetra-Furans	1.000					41.076	0.0304			2.37e3
37	Total Tetra-Dioxins	1.000					90.312	0.0418			1.72e3
38	Total Penta-Furans	1.000					194.509	0.0560			2.98e3
39	Total Penta-Dioxins	1.000					157.813	0.0755			2.80e3
40	Total Hexa-Furans	1.000					317.745	0.0653			3.77e3
41	Total Hexa-Dioxins	1.000					202.248	0.0473			2.85e3
42	Total Hepta-Furans	1.000					110.600	0.0344			2.79e3
43	Total Hepta-Dioxins	1.000					103.358	0.0527			3.68e3
44	Hexa DPE	1.000	1.99e2			22.32					1.88e0
45	Hepta DPE	1.000	7.88e2			37.51					9.07e2
46	Octa DPE	1.000	2.42e2			44.07					4.67e2
47	Nona DPE	1.000	2.27e2			48.12					7.86e2
48	Deca DPE	1.000	1.66e2			49.72					4.14e0
49	Tetra Lock	1.000	7.80e3			21.50					1.07e5
50	Penta Lock	1.000	6.47e3			33.15					5.86e4
51	Hexa Lock	1.000									1.84e5

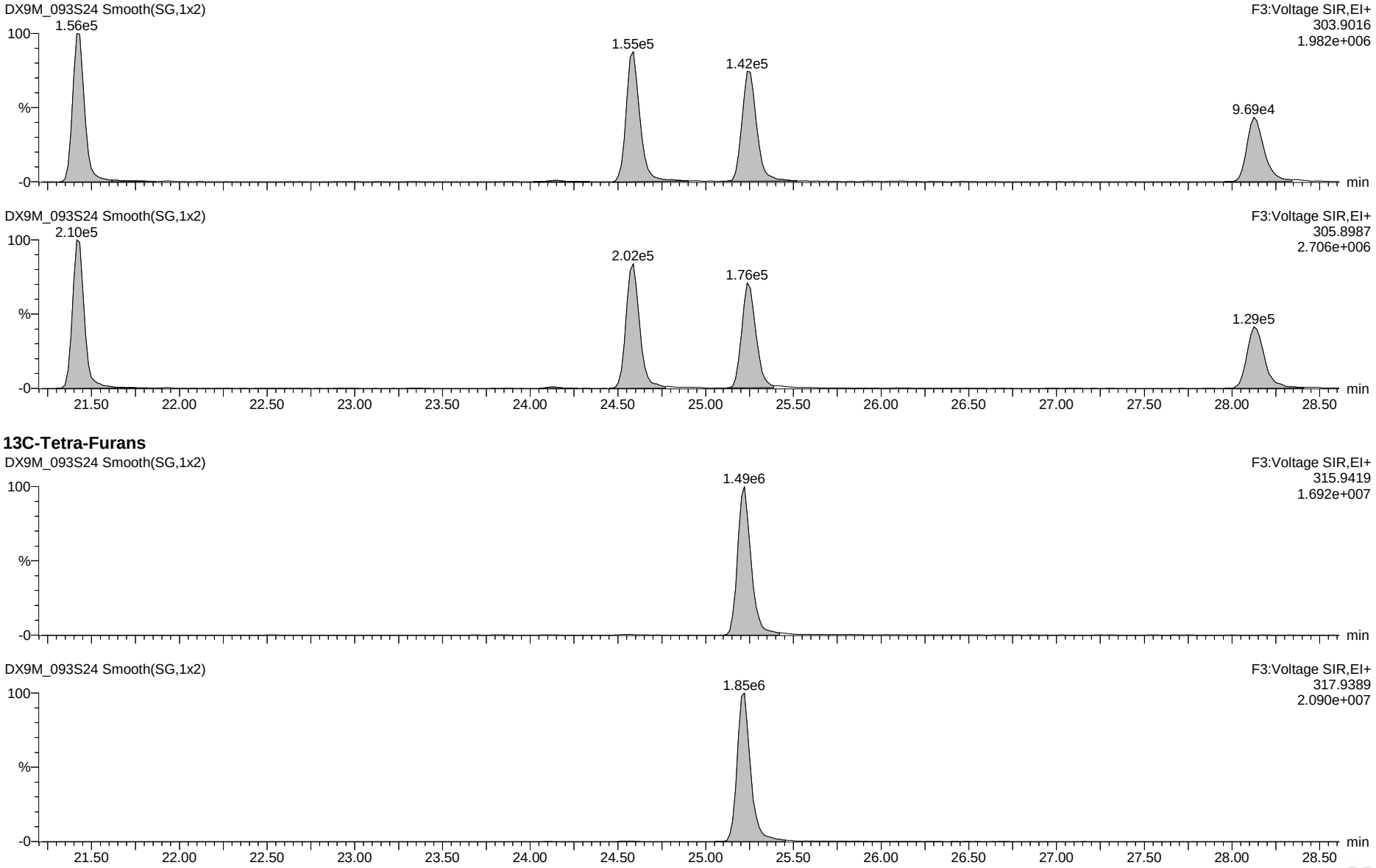
PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-D.qld

Method: G:\Masslynx\Inst_M\Master methods and layouts\Current Methods\DX_1613B_16.mdb 07 Sep 2017 16:45:23
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

Name: DX9M_093S24, Date: 13-Sep-2019, Time: 06:27:39, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

Total Tetra-Furans

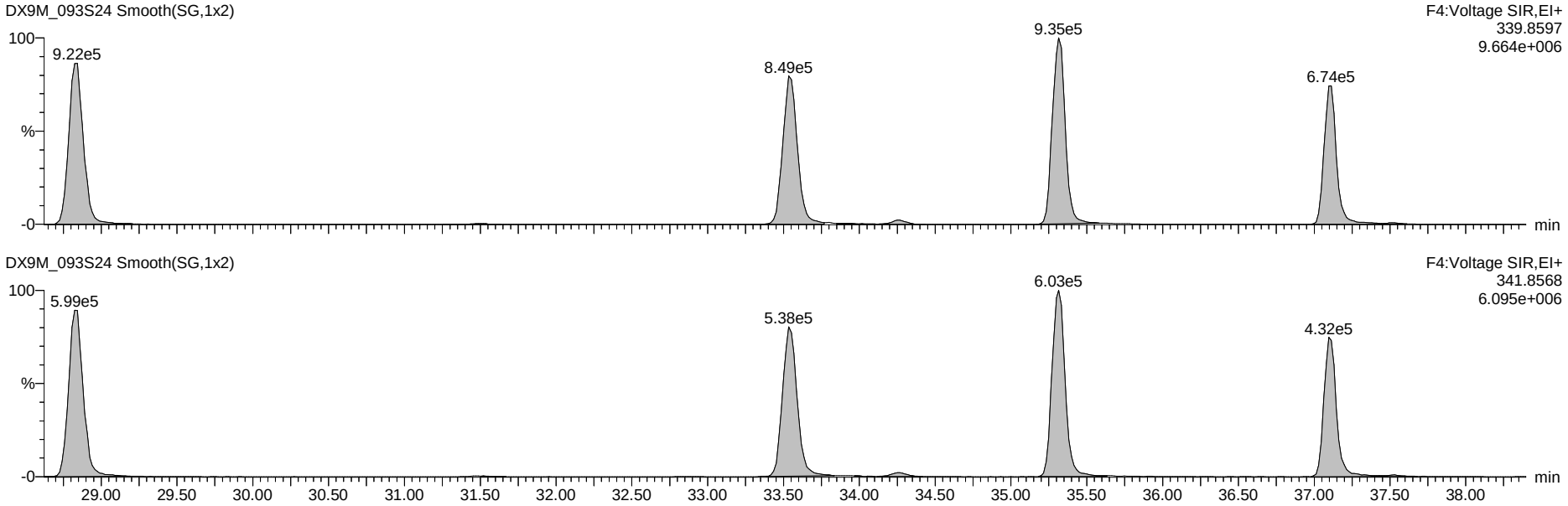


13C-Tetra-Furans

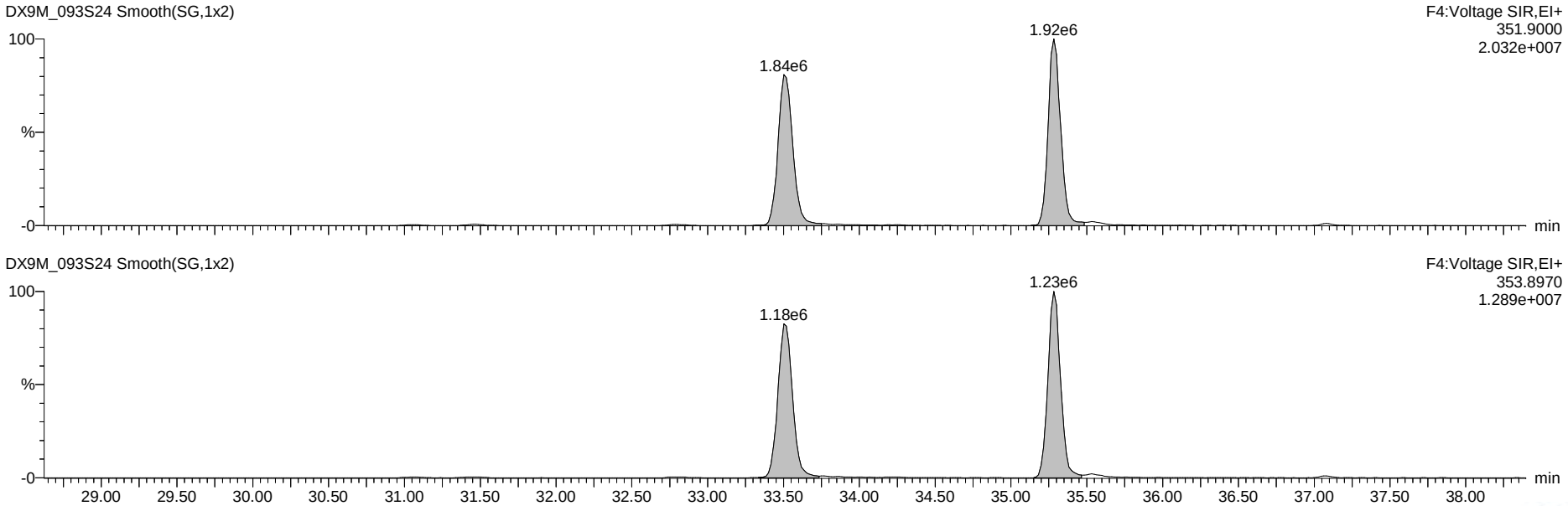
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-D.qld

Name: DX9M_093S24, Date: 13-Sep-2019, Time: 06:27:39, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

Total Penta-Furans



13C-Penta-Furans



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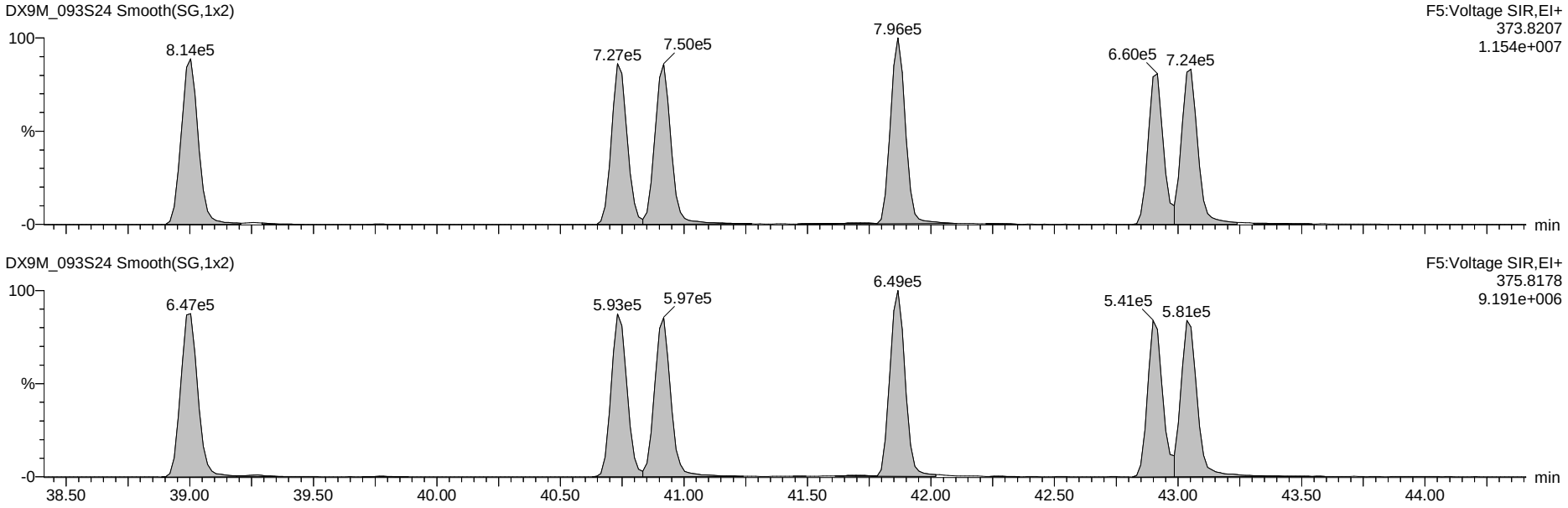
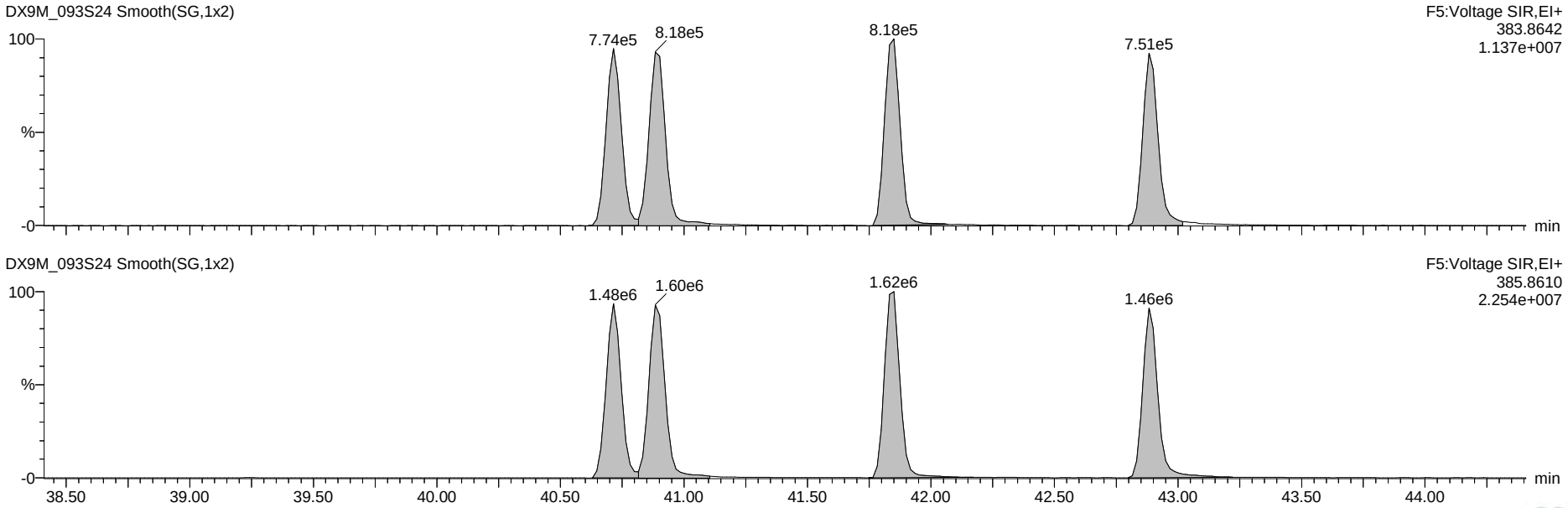
Total Hexa-Furans



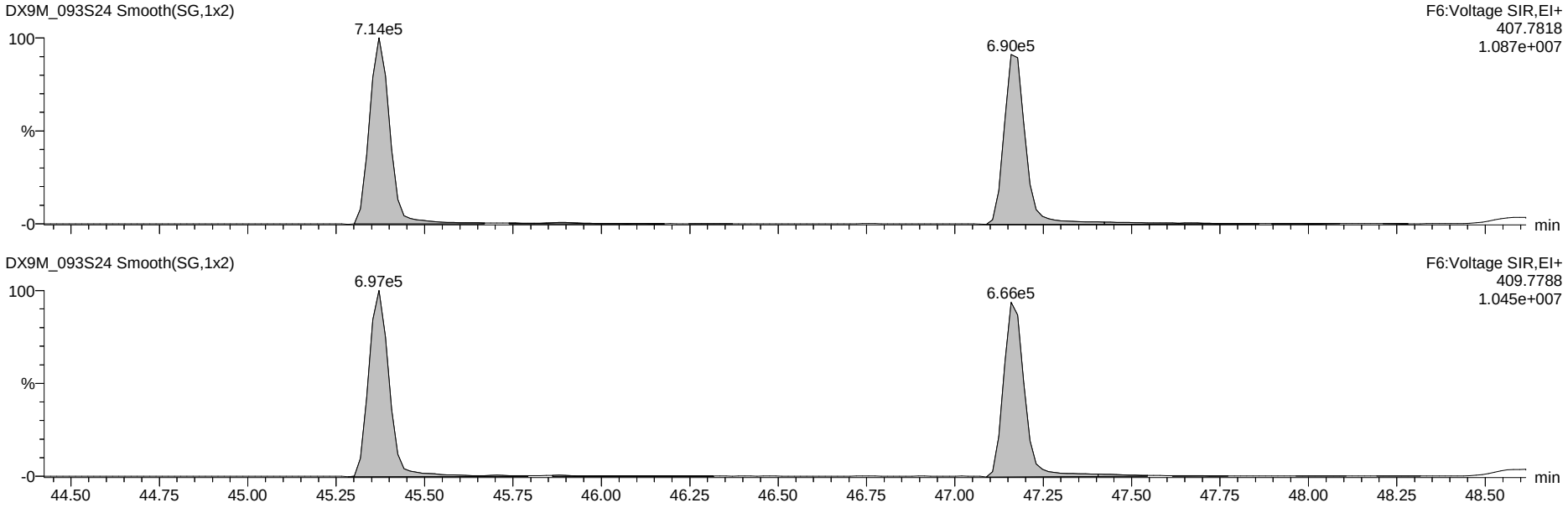
13C-Hexa-Furans



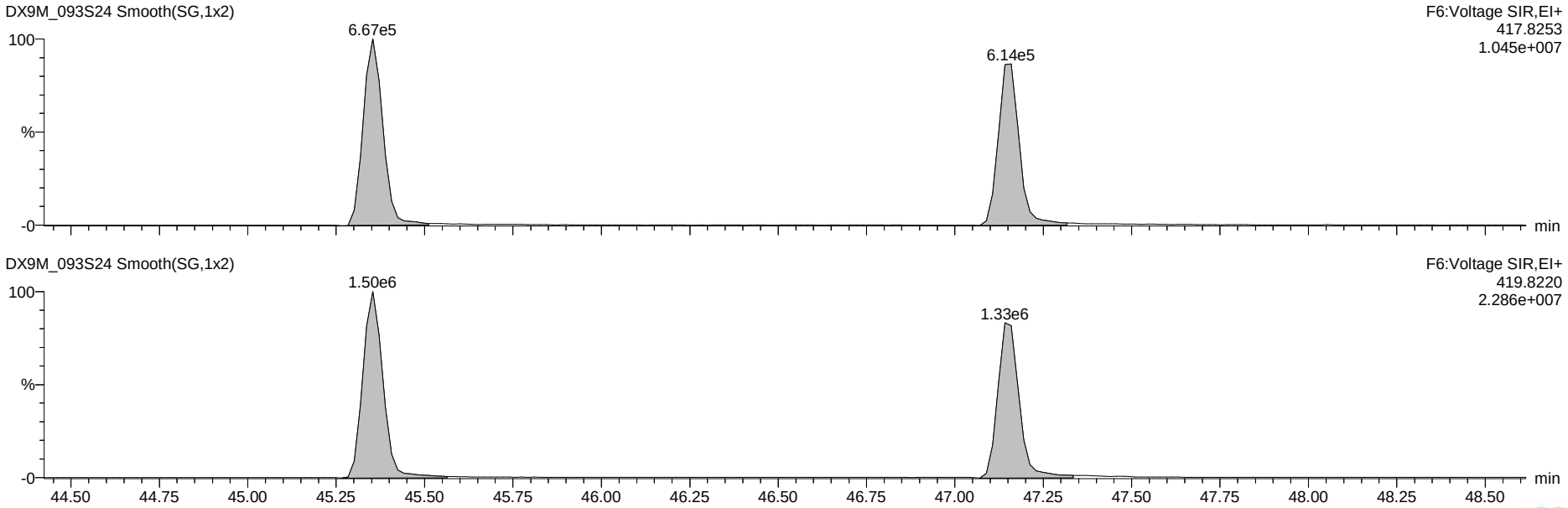
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-D.qld

Name: DX9M_093S24, Date: 13-Sep-2019, Time: 06:27:39, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

Total Hepta-Furans



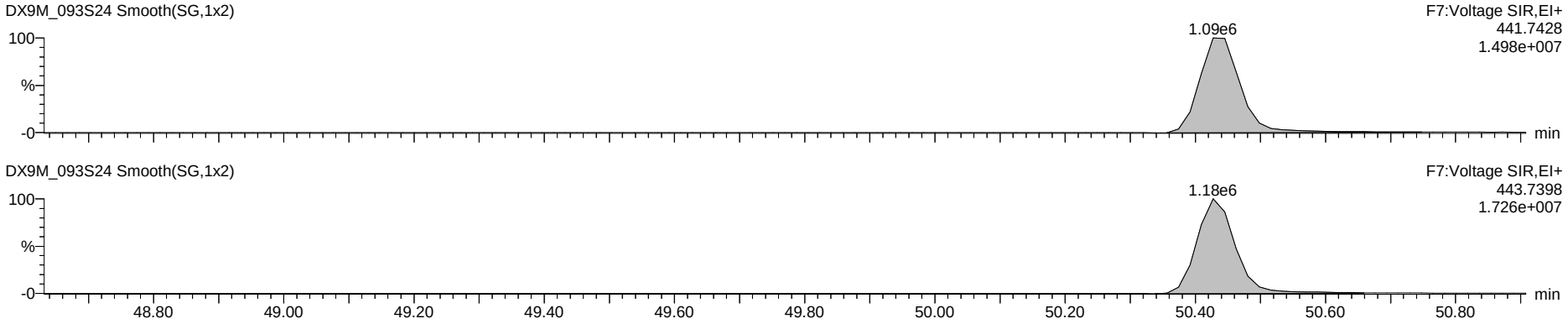
13C-Hepta-Furans



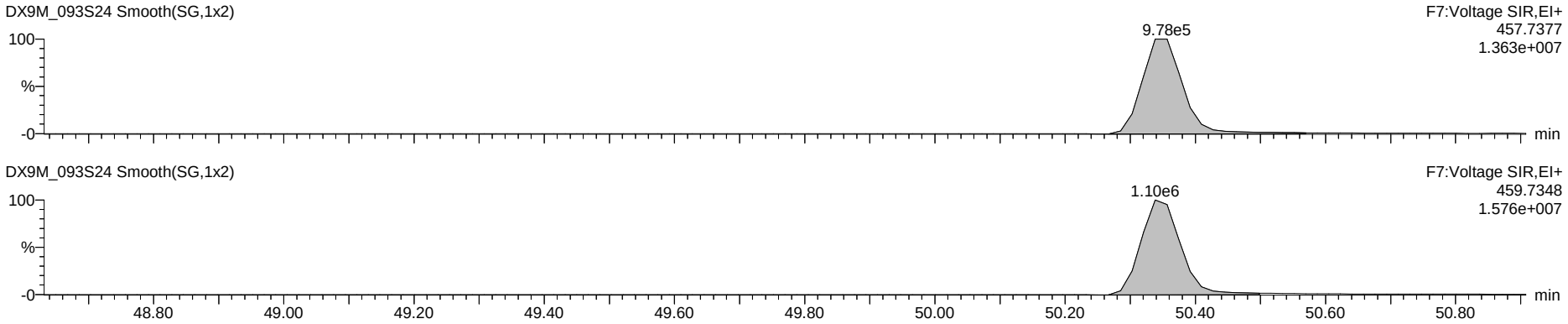
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-D.qld

Name: DX9M_093S24, Date: 13-Sep-2019, Time: 06:27:39, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

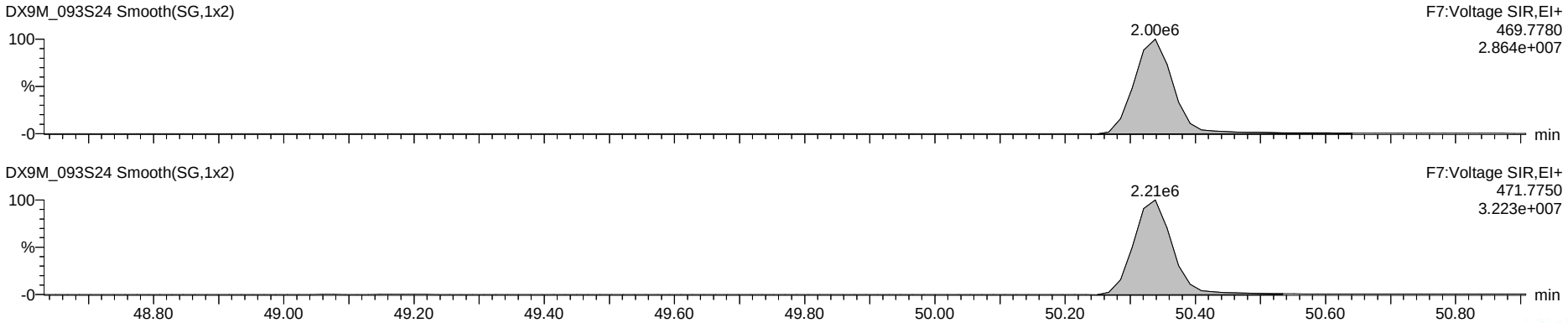
OCDF



OCDD



13C-OCDD



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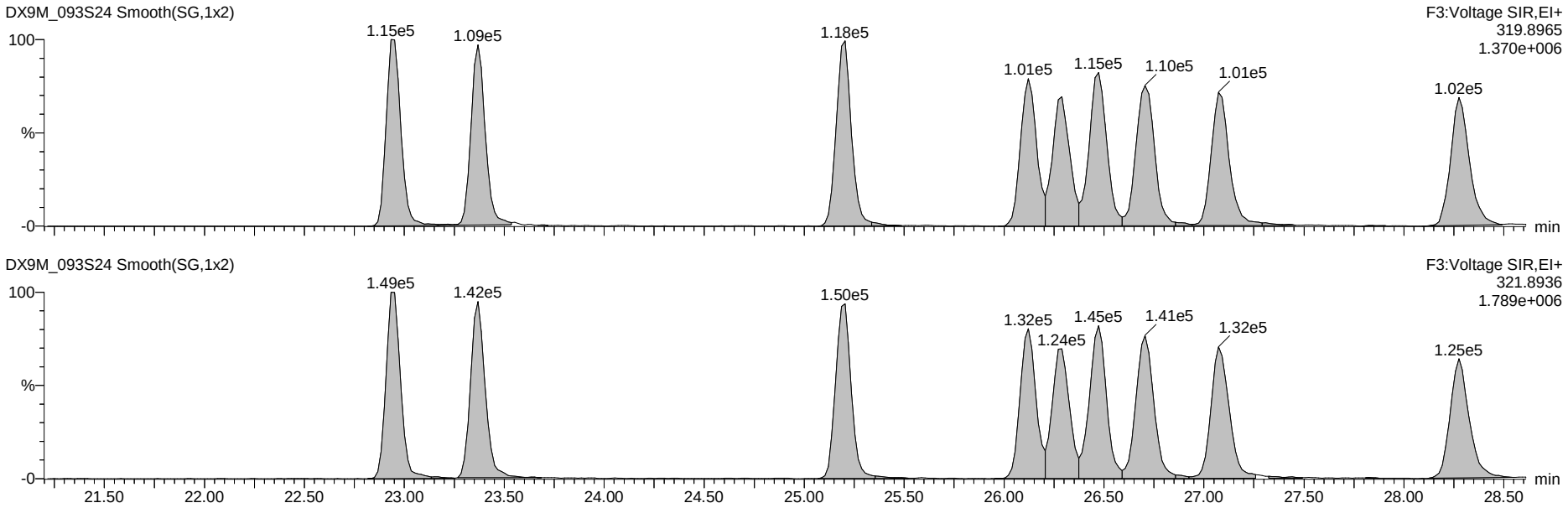
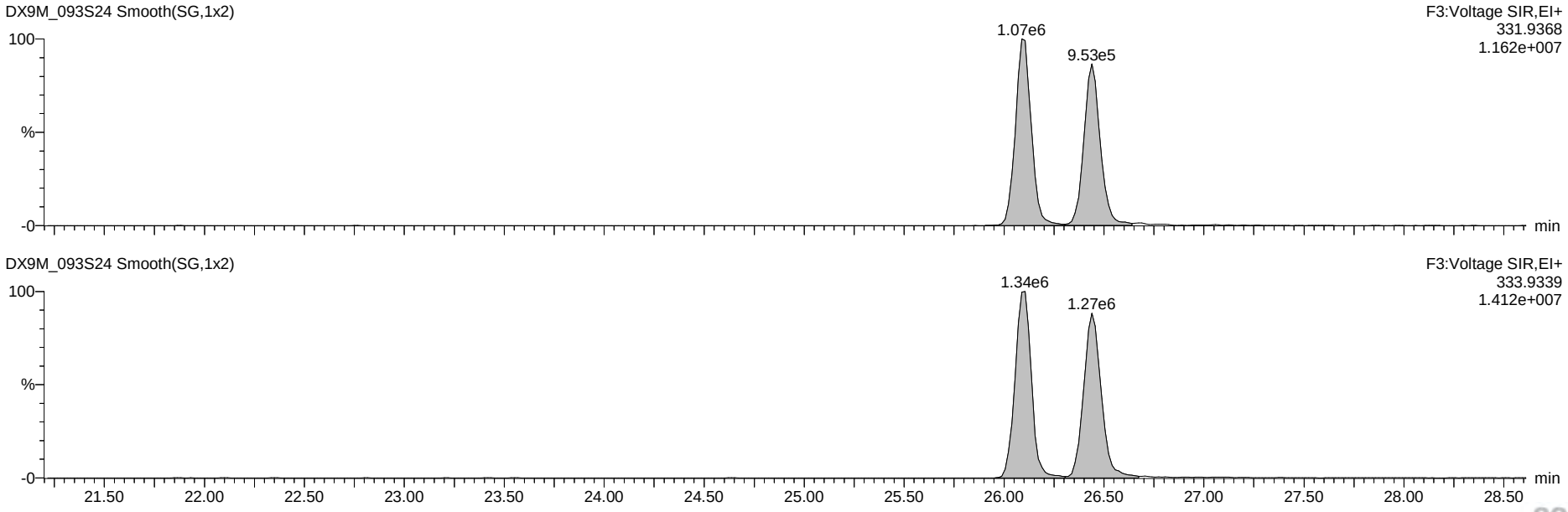
Name: DX9M_093S24, Date: 13-Sep-2019, Time: 06:27:39, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

Total Tetra-Dioxins



13C-Tetra-Dioxins



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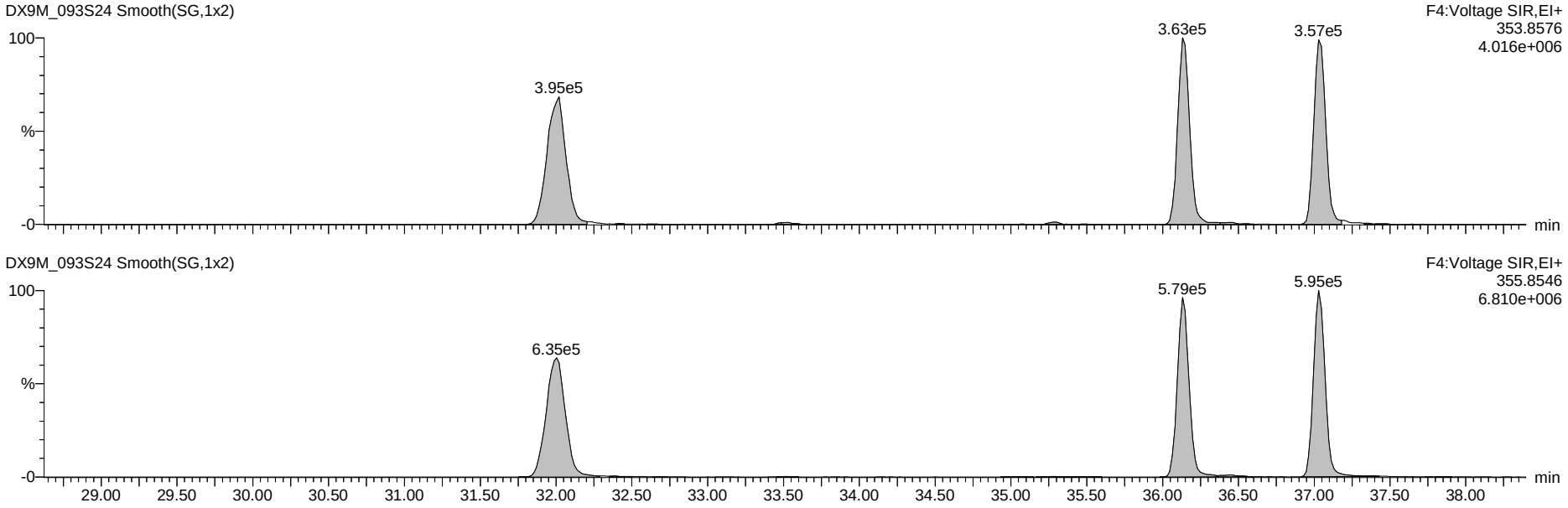
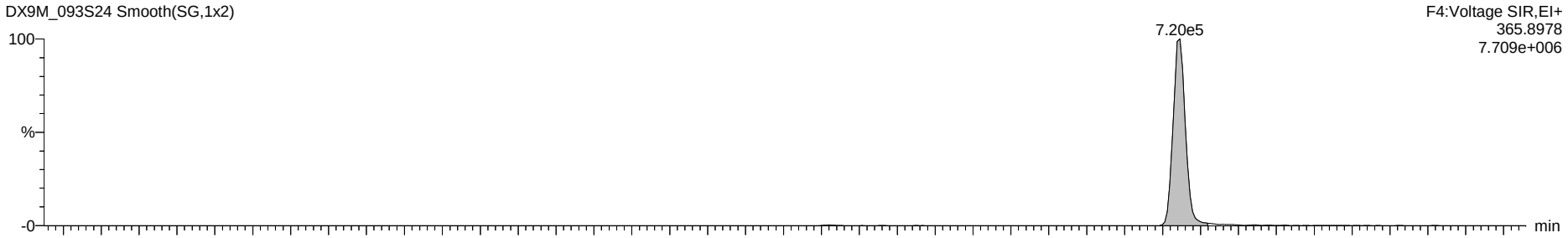
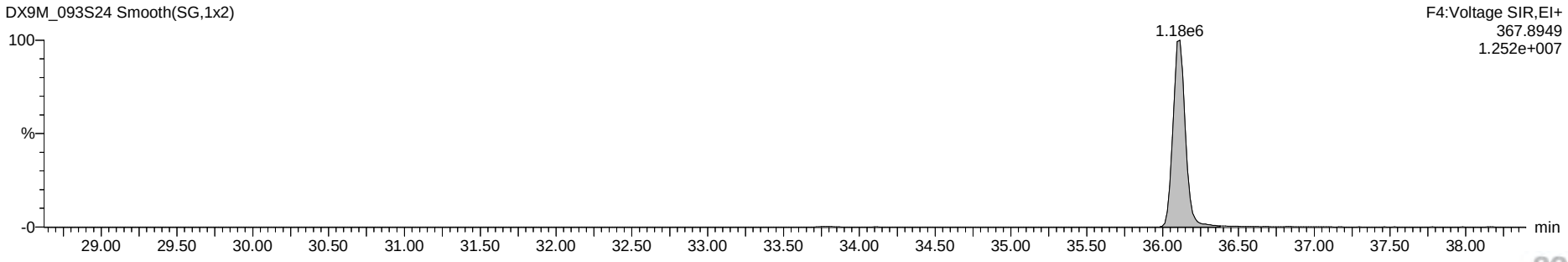
Total Penta-Dioxins



13C-Penta-Dioxins

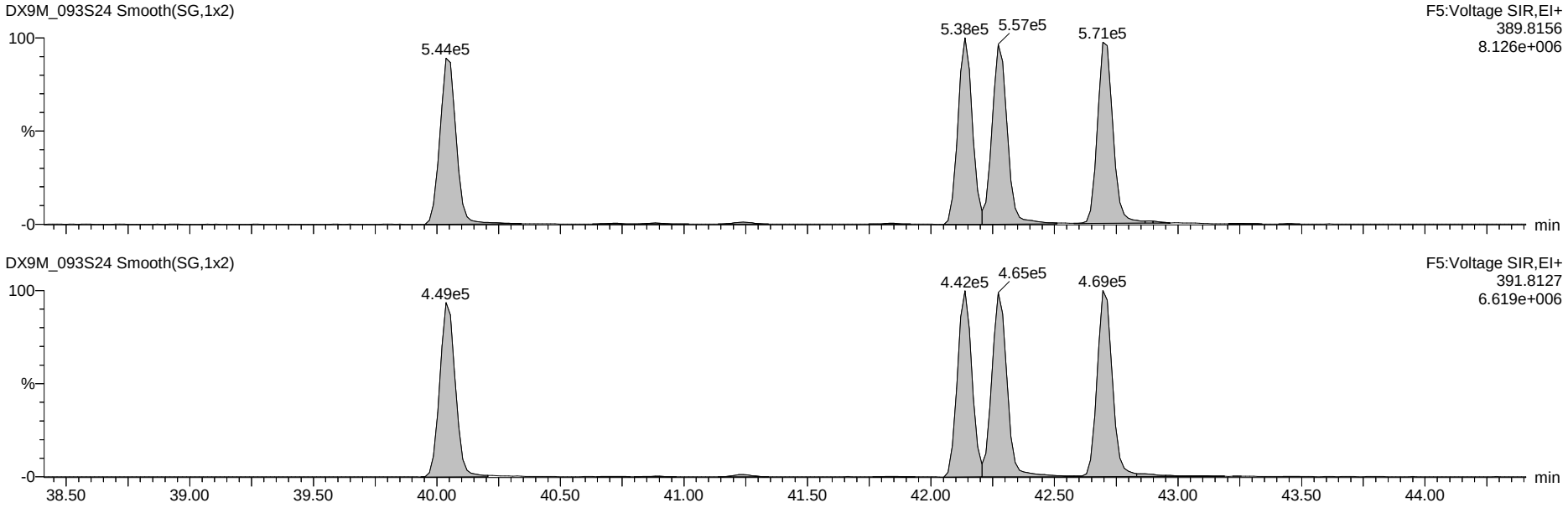




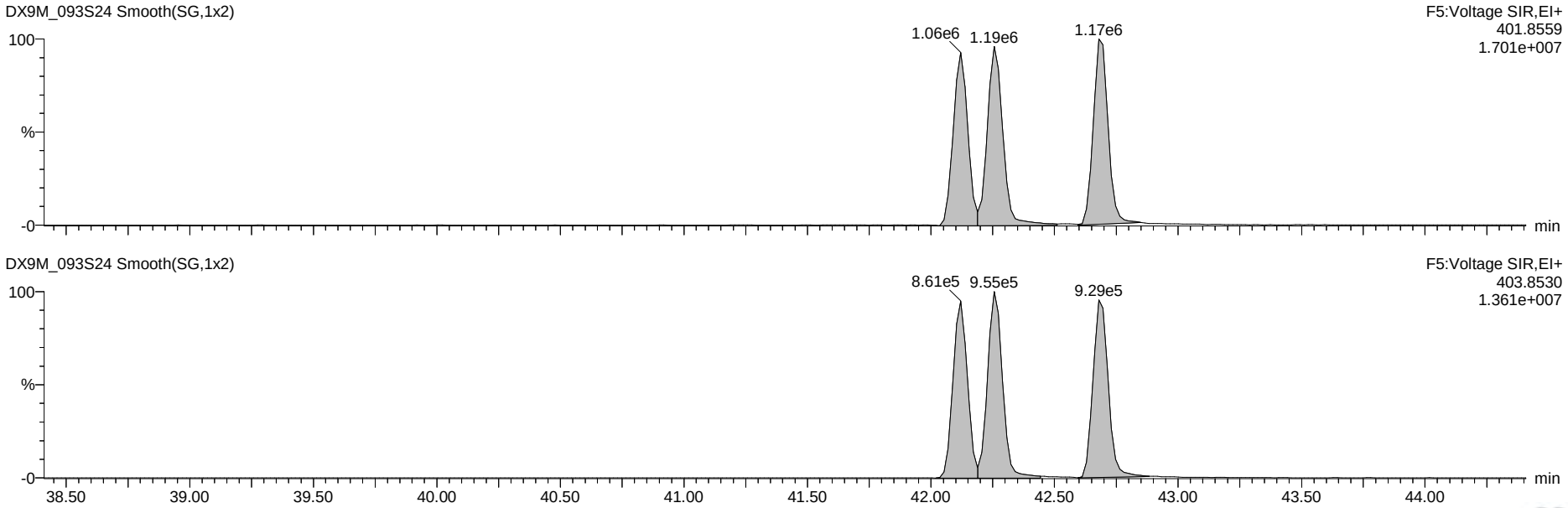
Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-D.qld

Name: DX9M_093S24, Date: 13-Sep-2019, Time: 06:27:39, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

Total Hexa-Dioxins



13C-Hexa-Dioxins



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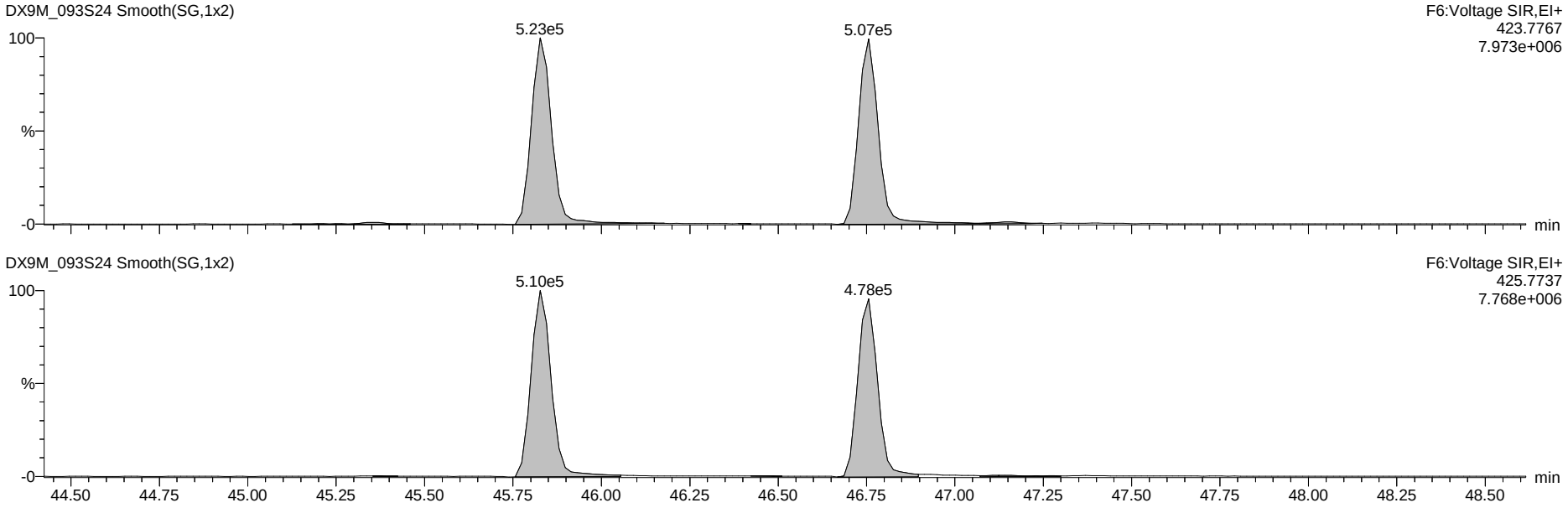
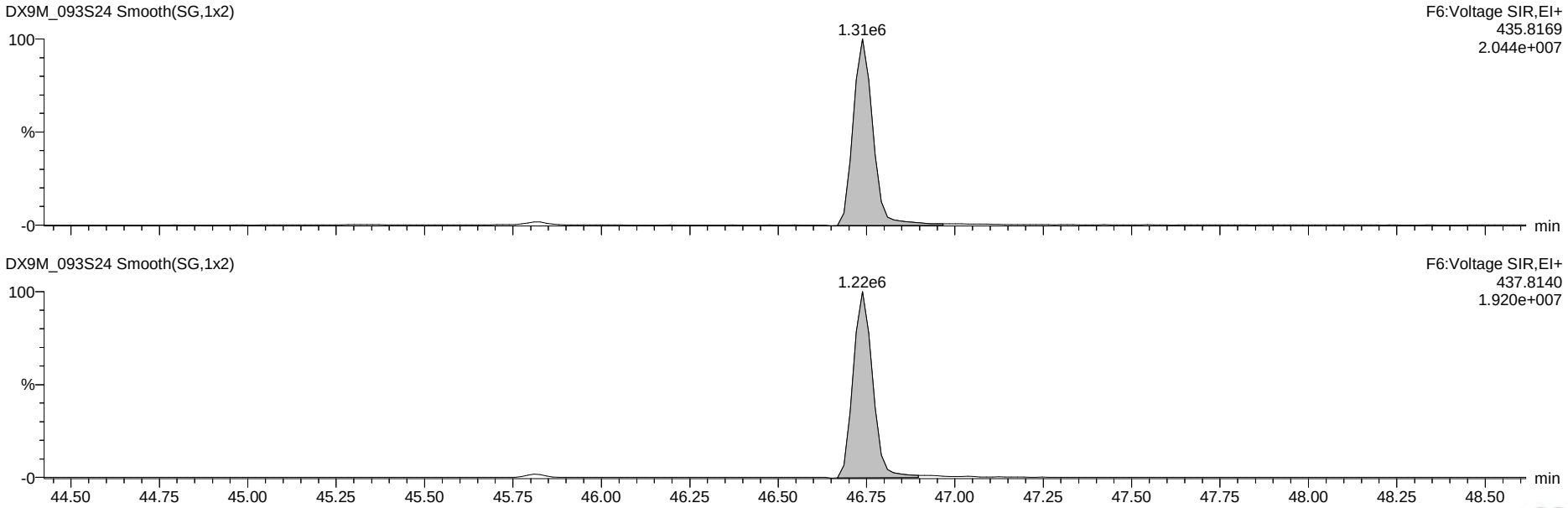
Total Hepta-Dioxins



13C-Hepta-Dioxins



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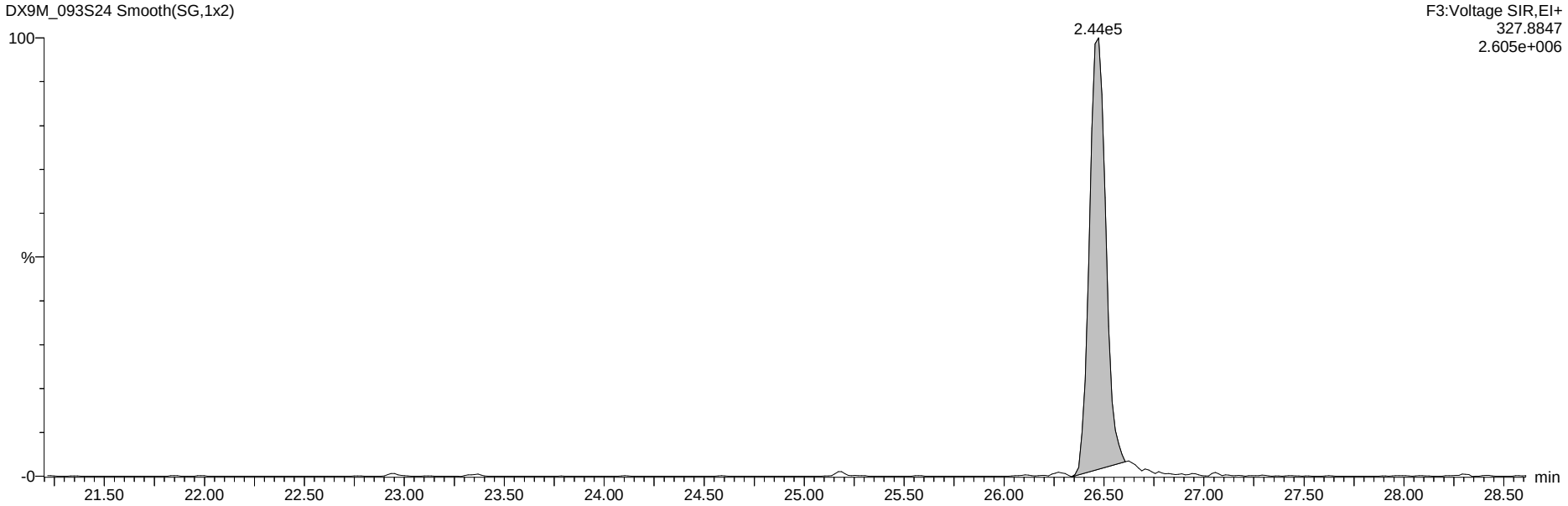
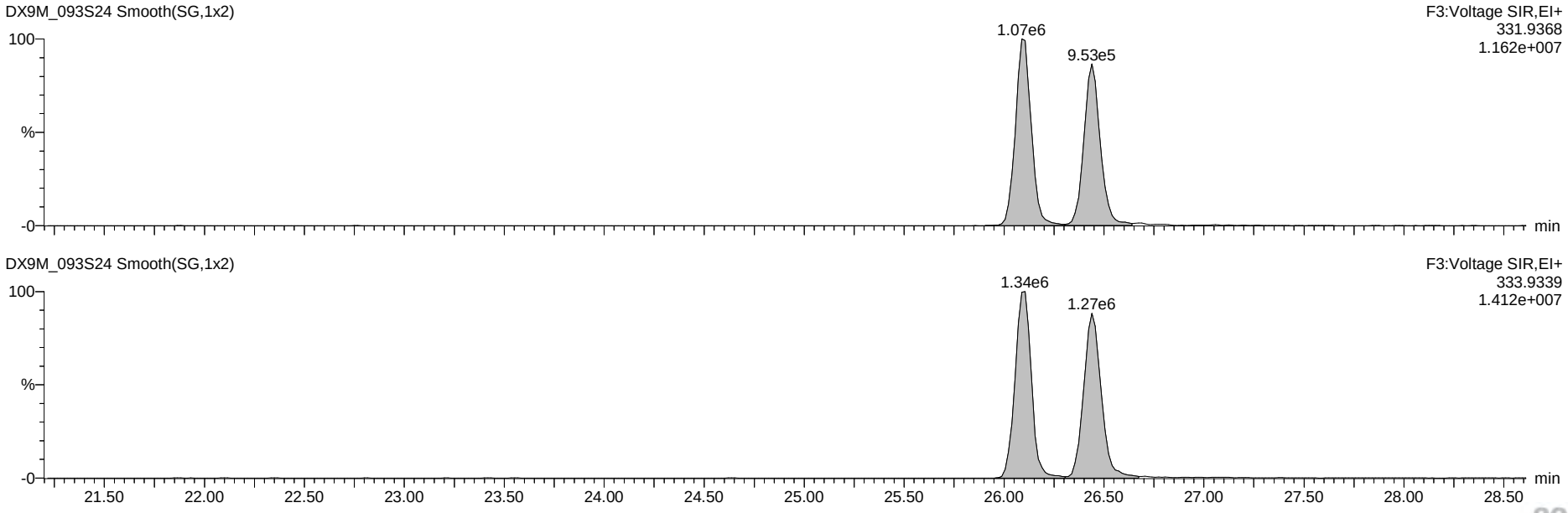
Name: DX9M_093S24, Date: 13-Sep-2019, Time: 06:27:39, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

37Cl-2,3,7,8-TCDD



13C-Tetra-Dioxins



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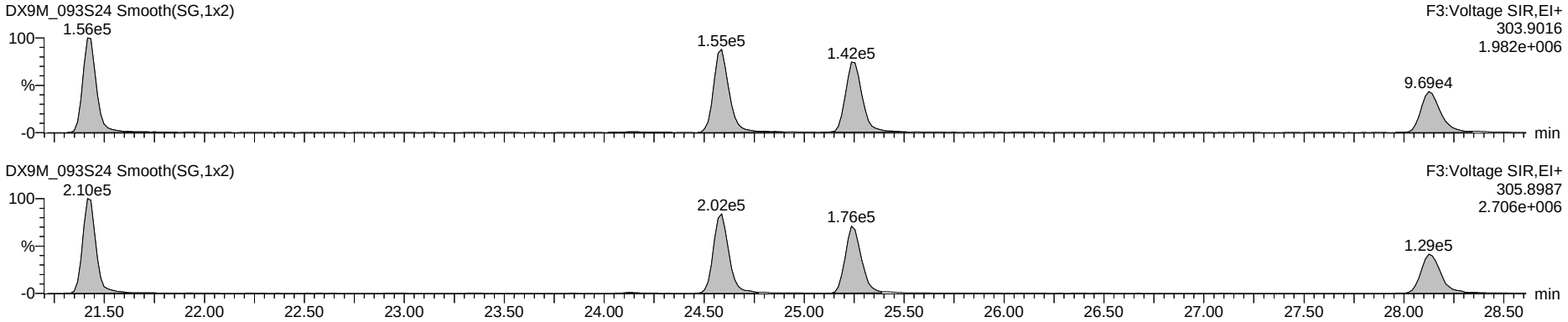
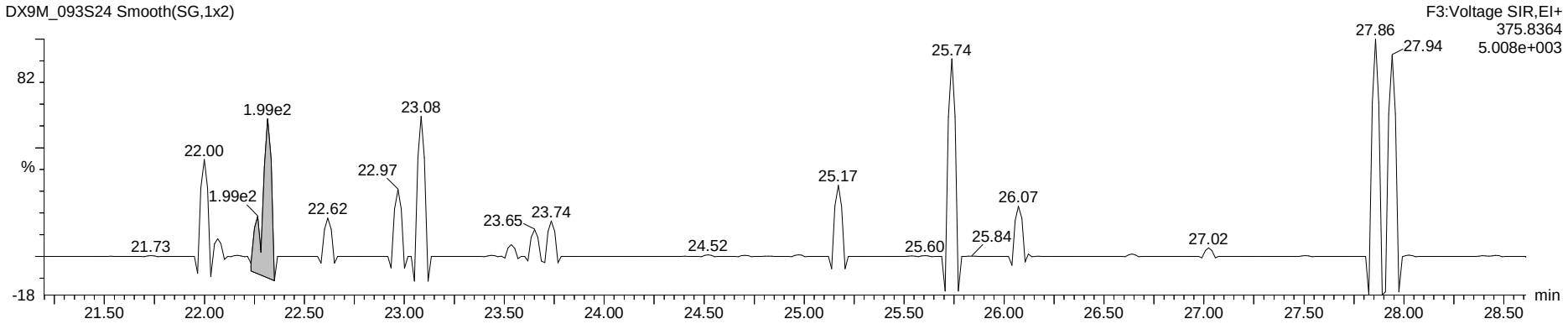
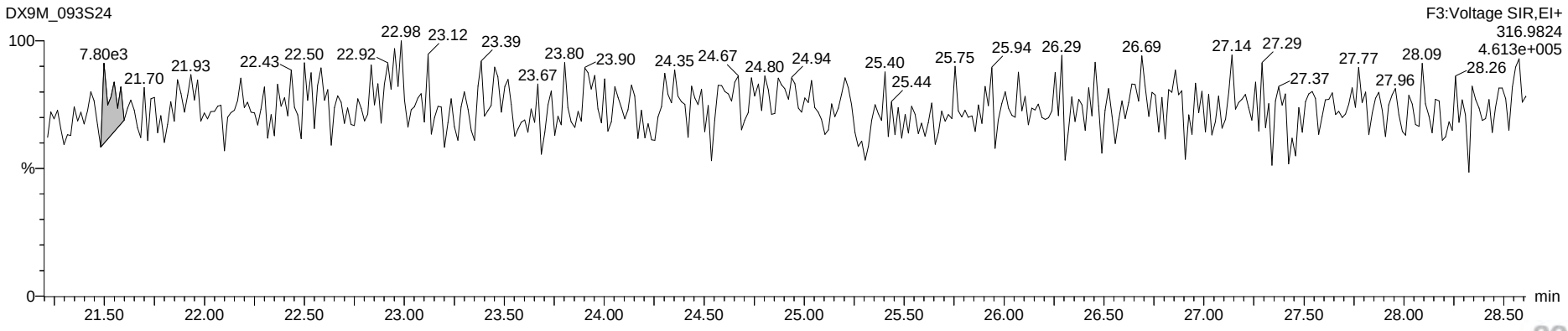
Total Tetra-Furans



Hexa DPE



Tetra Lock



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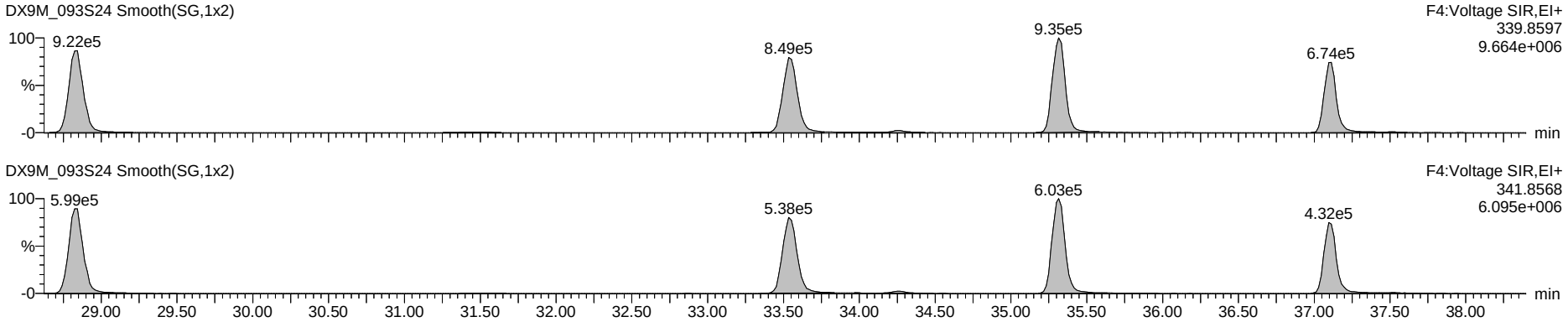
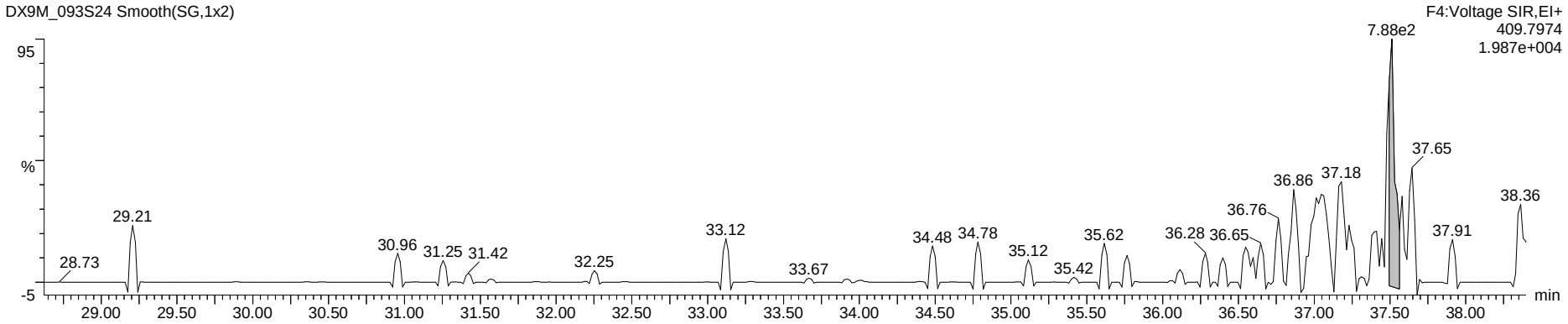
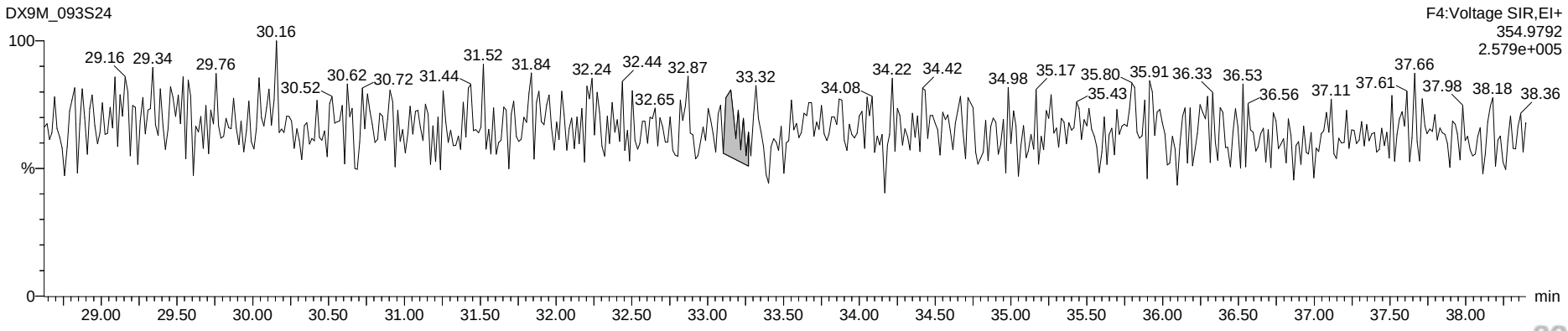
Total Penta-Furans



Hepta DPE



Penta Lock



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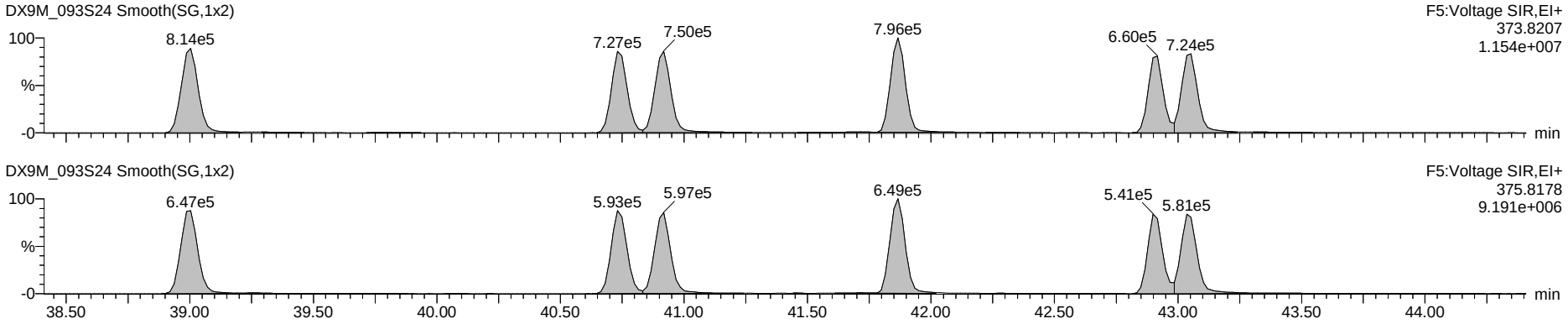
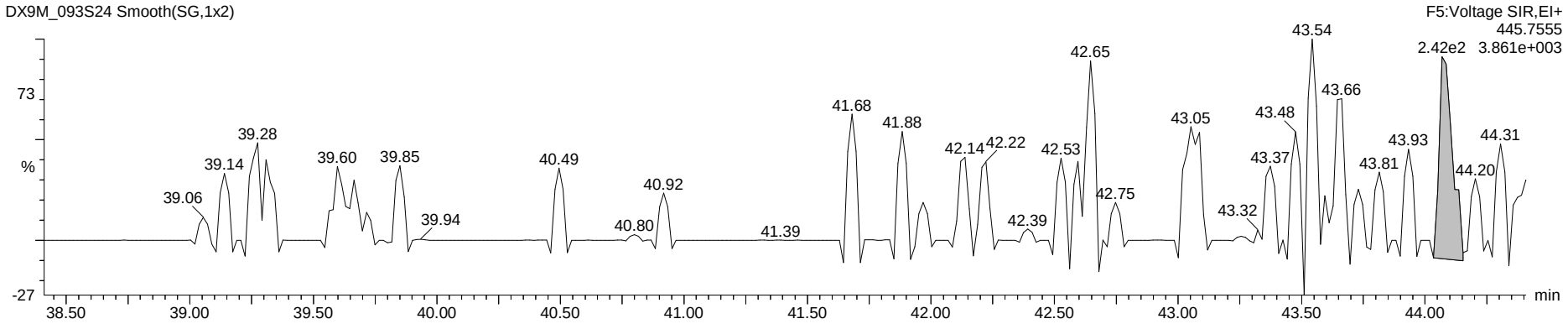
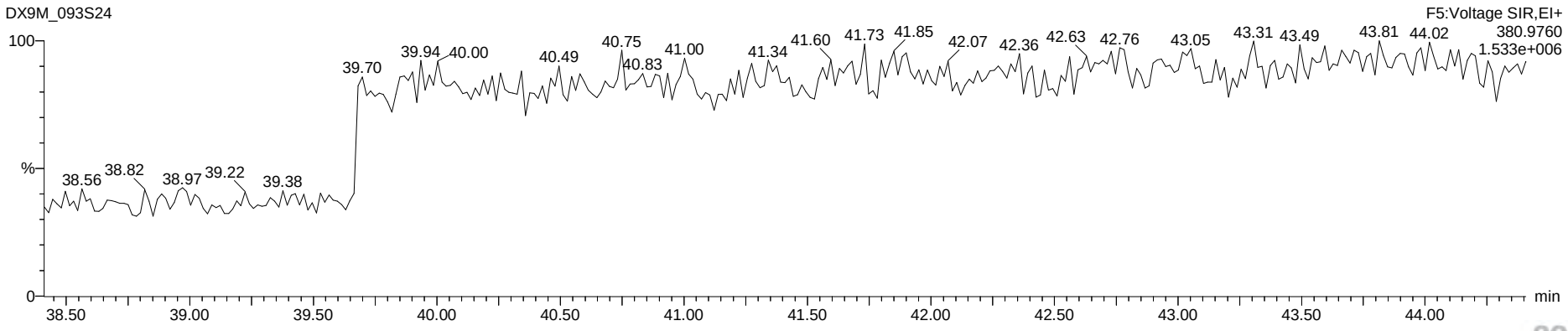
Total Hexa-Furans



Octa DPE



Hexa Lock



Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_093-D.qld

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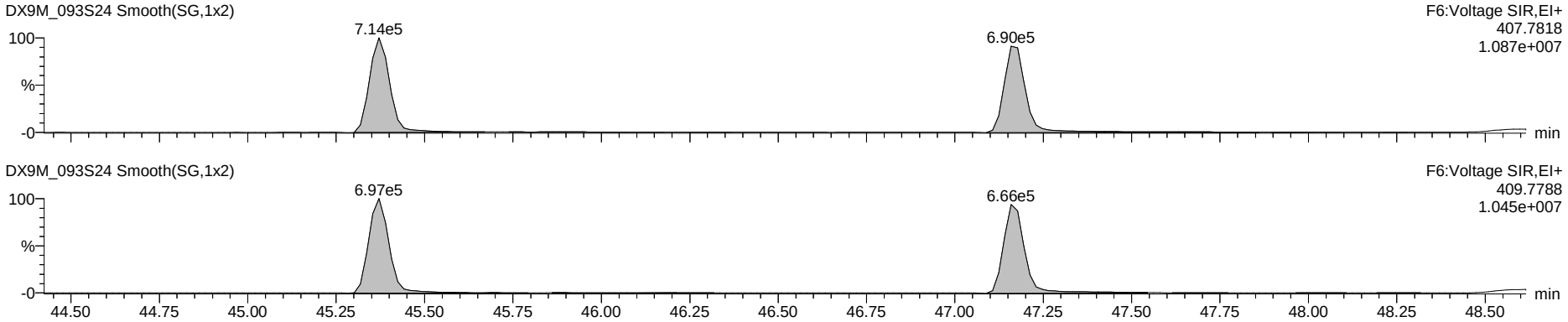
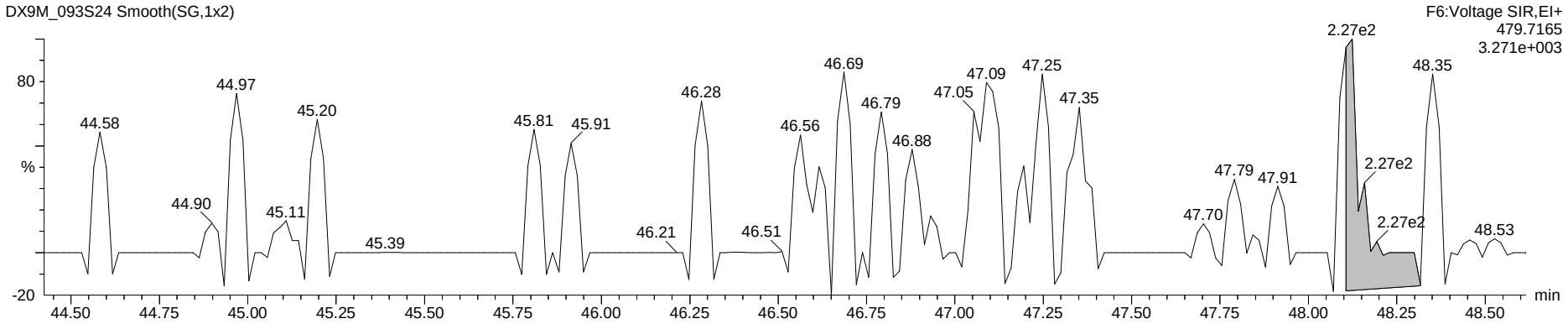
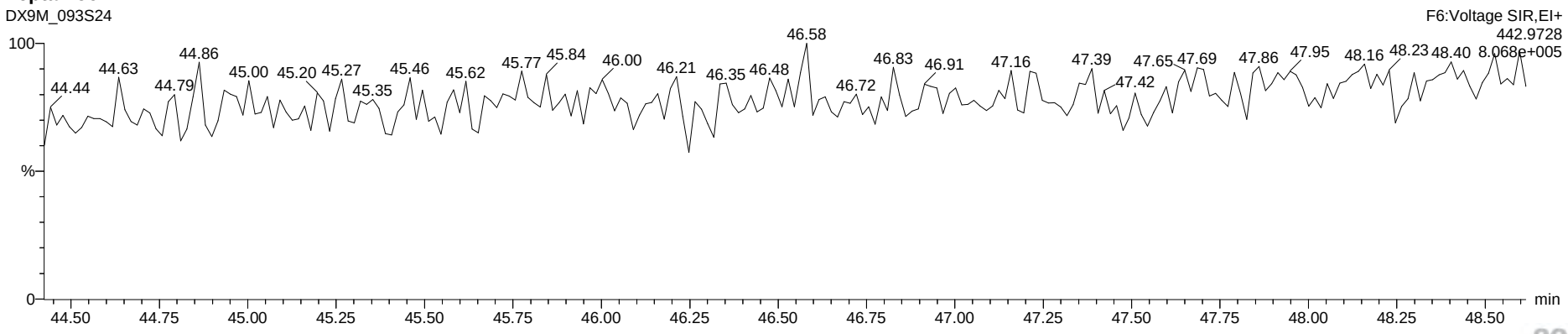
Total Hepta-Furans



Nona DPE



Hepta Lock



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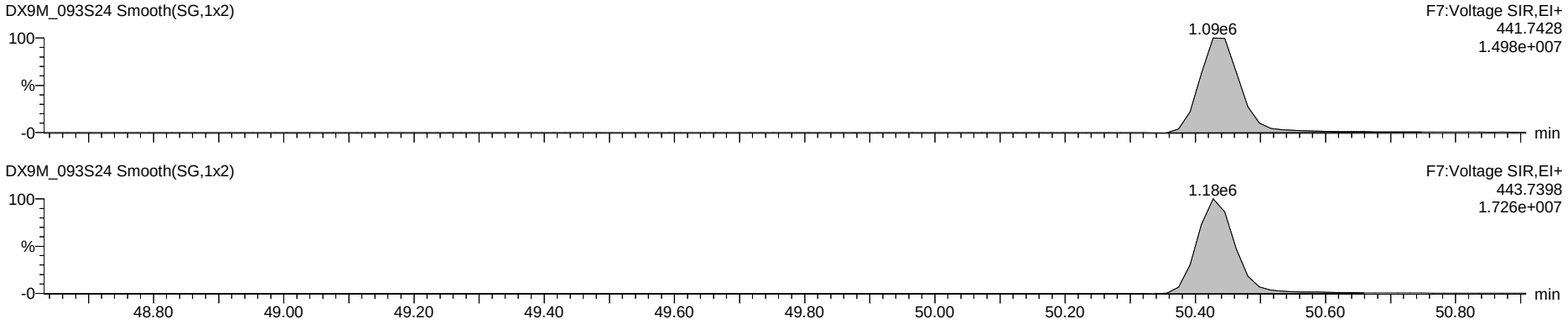
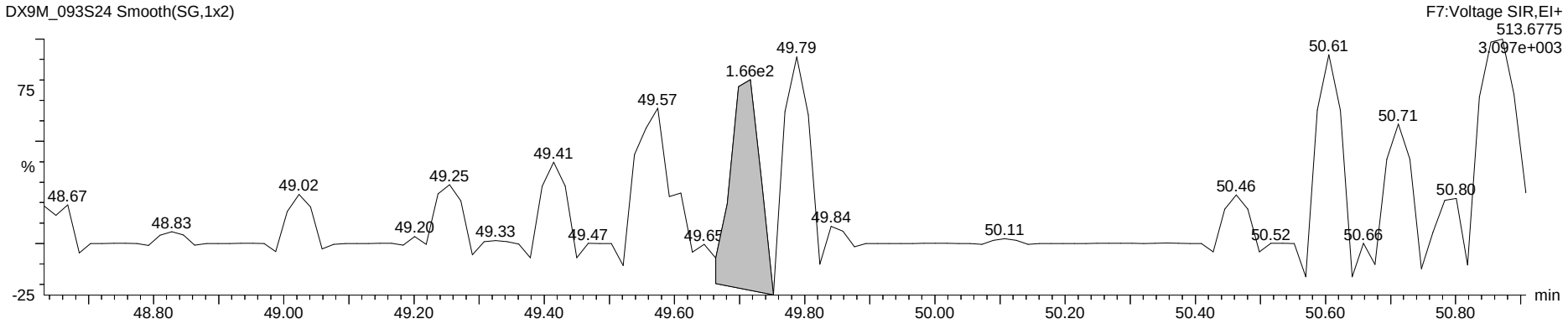
OCDF



Deca DPE



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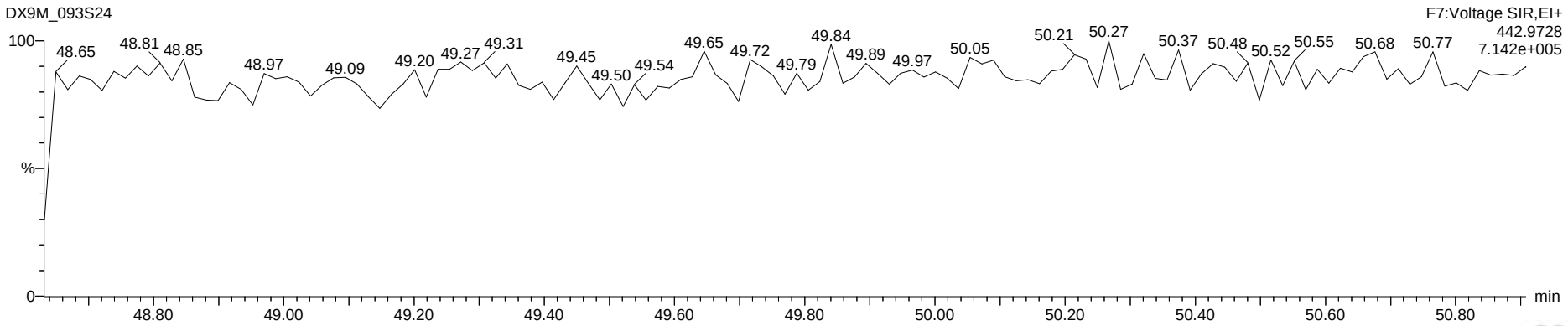

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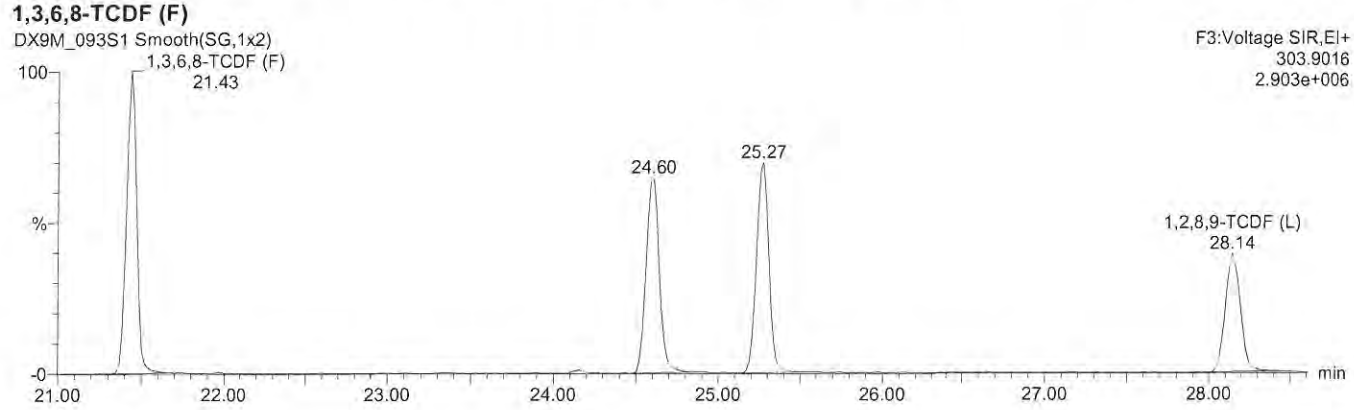
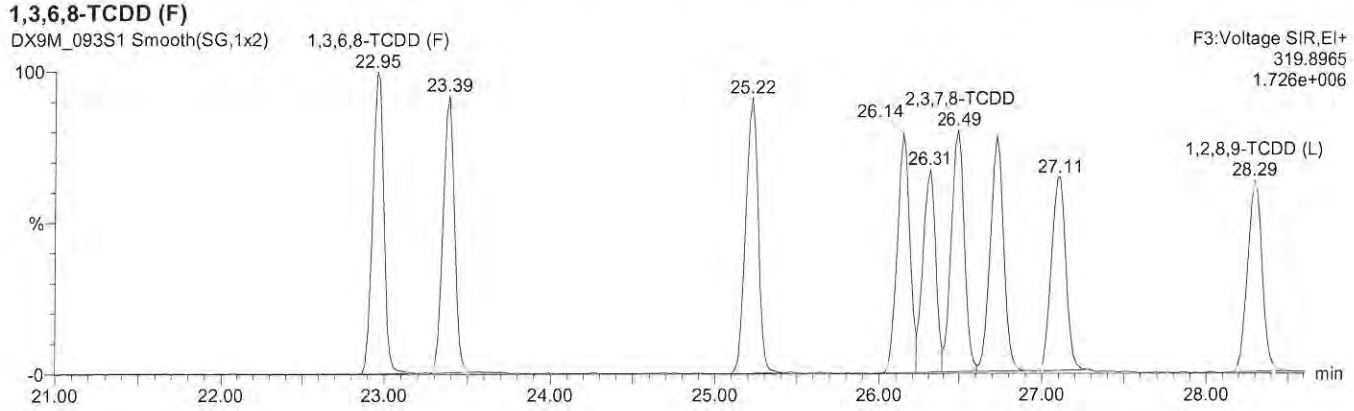
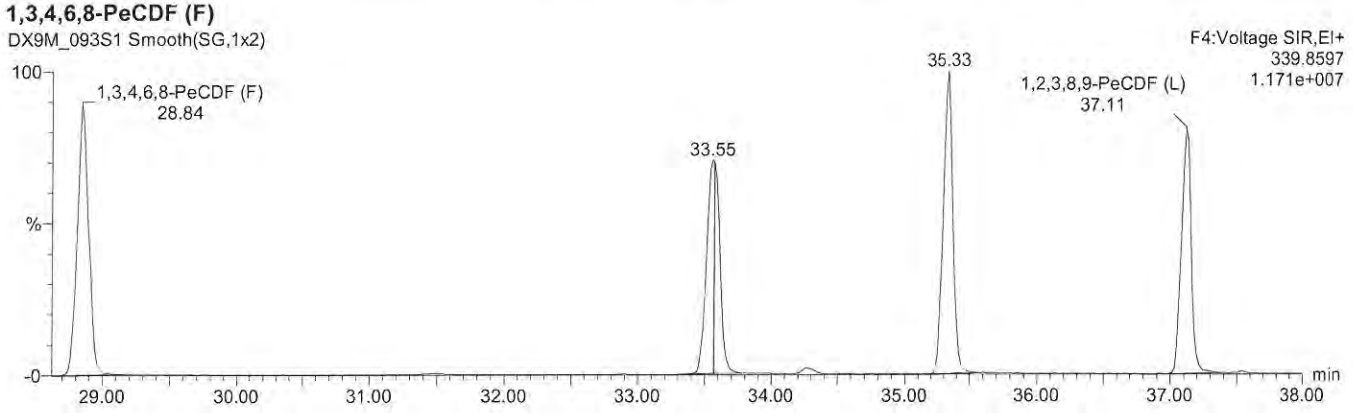
1,3,6,8-TCDF (F)



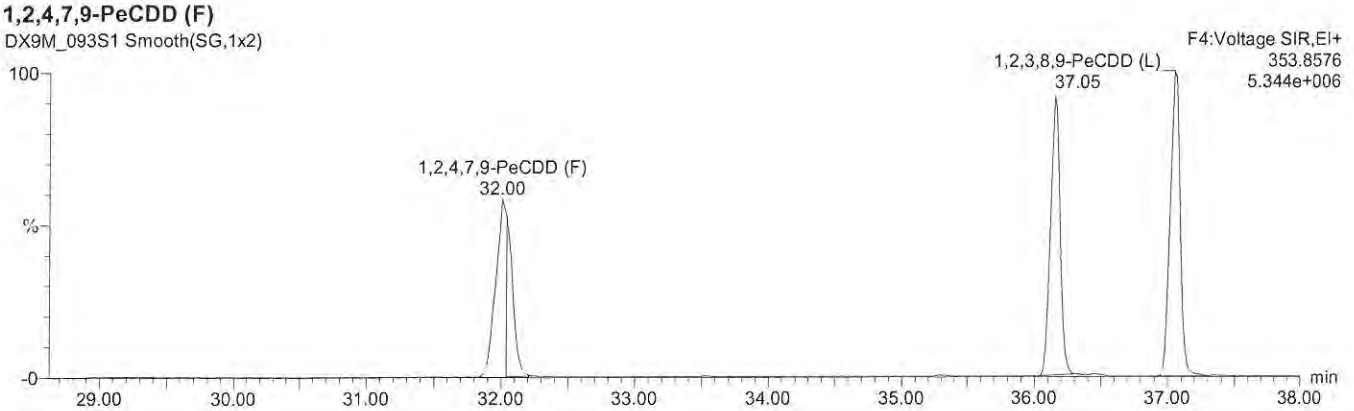
1,3,6,8-TCDD (F)



1,3,4,6,8-PeCDF (F)

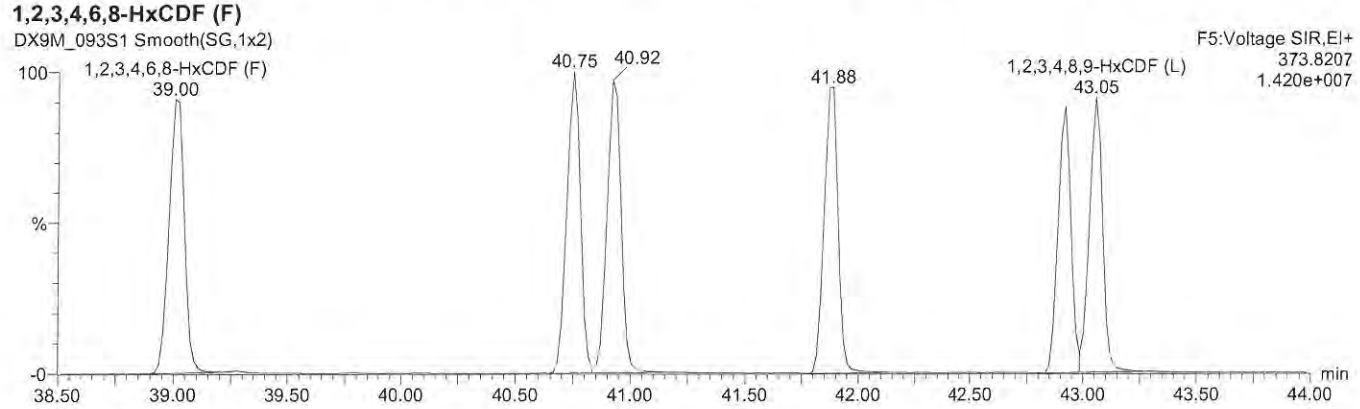


1,2,4,7,9-PeCDD (F)

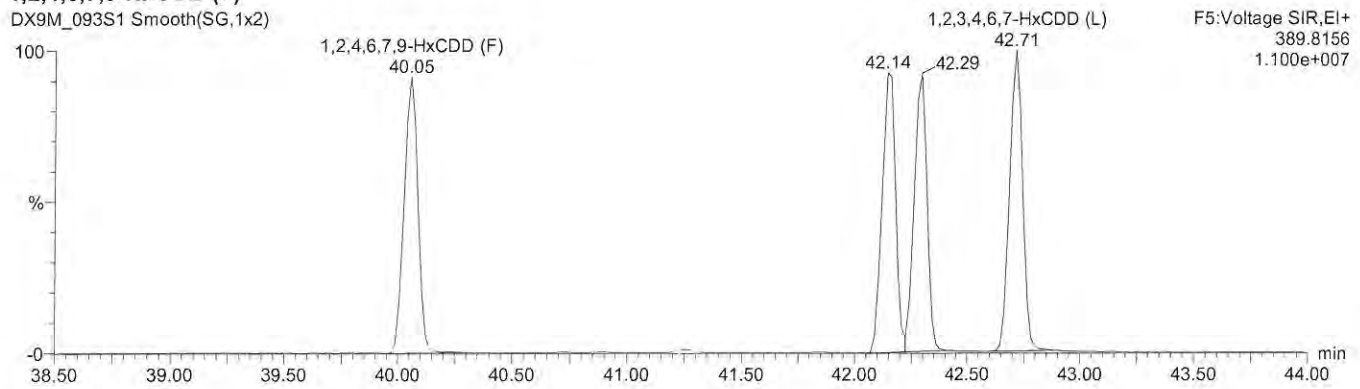


Name: DX9M_093S1, Date: 12-Sep-2019, Time: 09:06:33, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

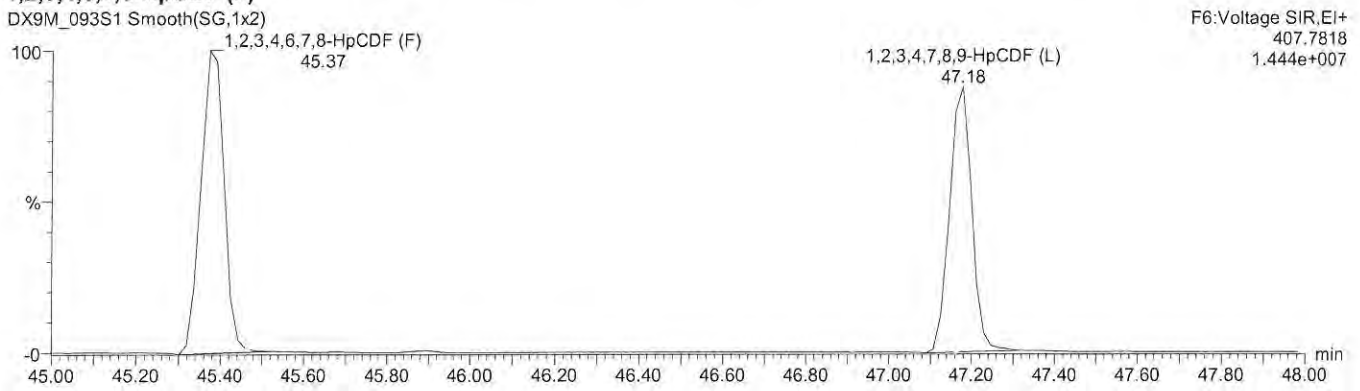
1,2,3,4,6,8-HxCDF (F)



1,2,4,6,7,9-HxCDD (F)



1,2,3,4,6,7,8-HpCDF (F)



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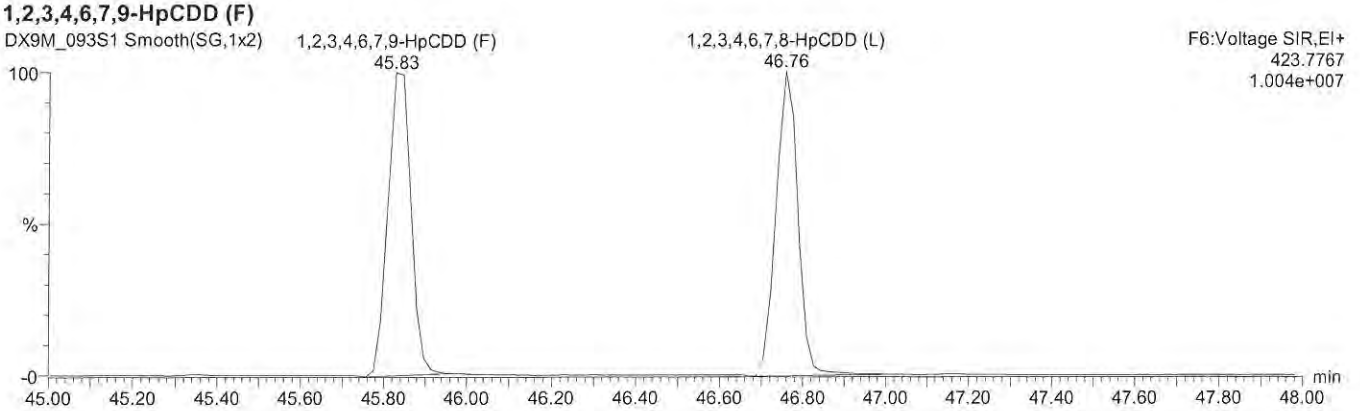

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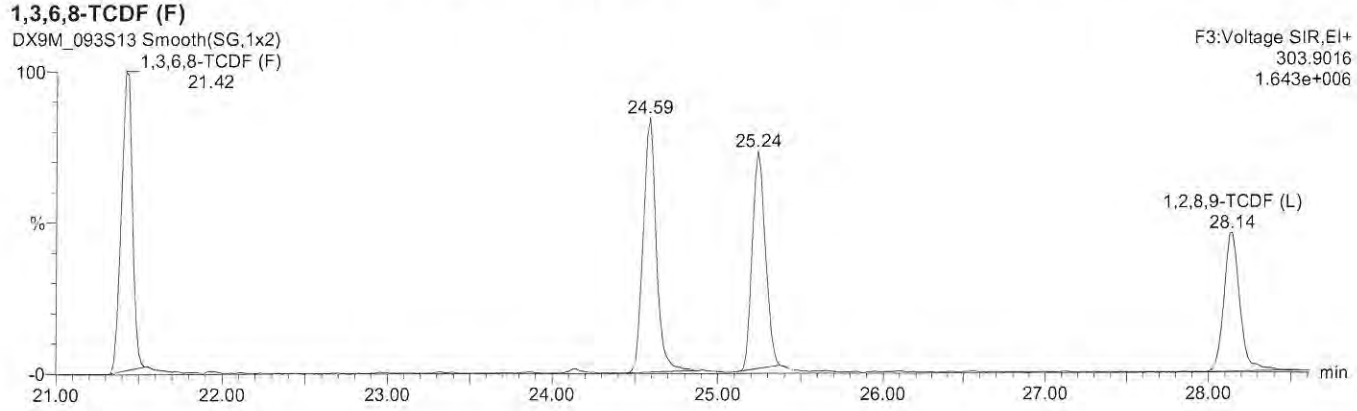
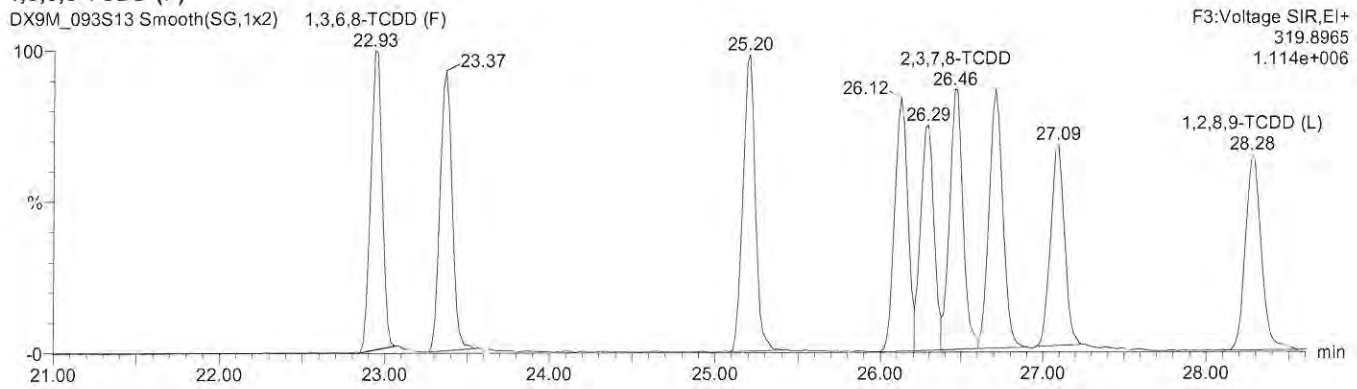
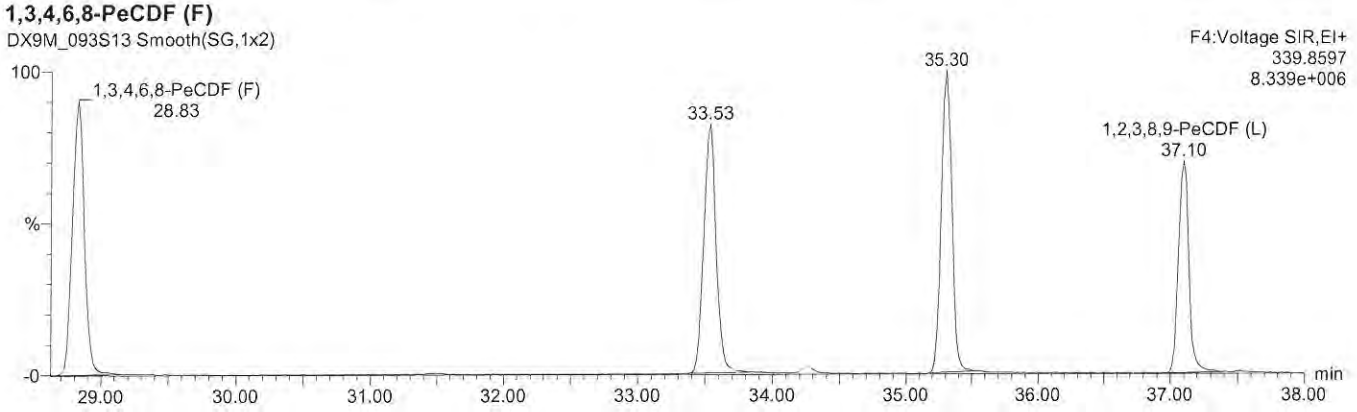
1,3,6,8-TCDF (F)



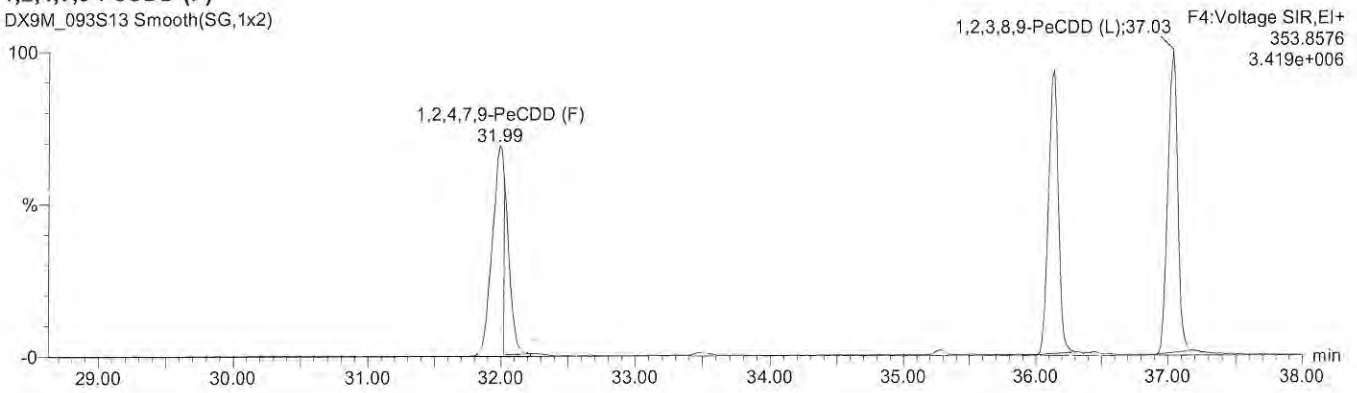
1,3,6,8-TCDD (F)



1,3,4,6,8-PeCDF (F)



1,2,4,7,9-PeCDD (F)



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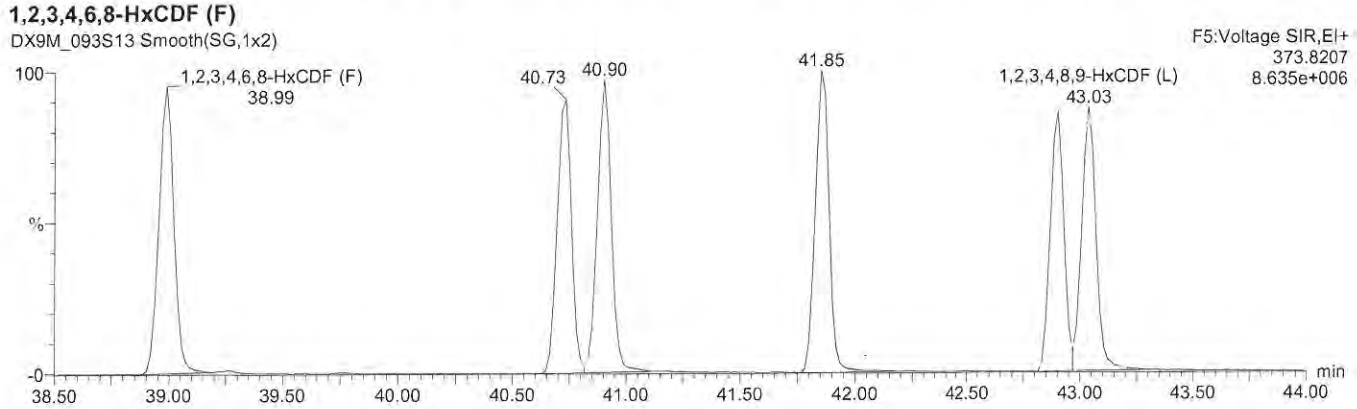
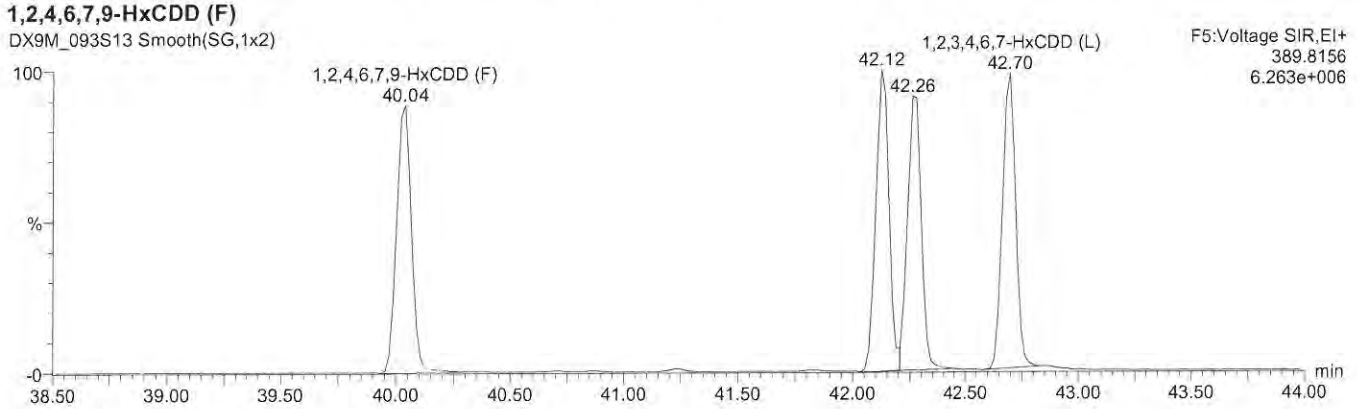
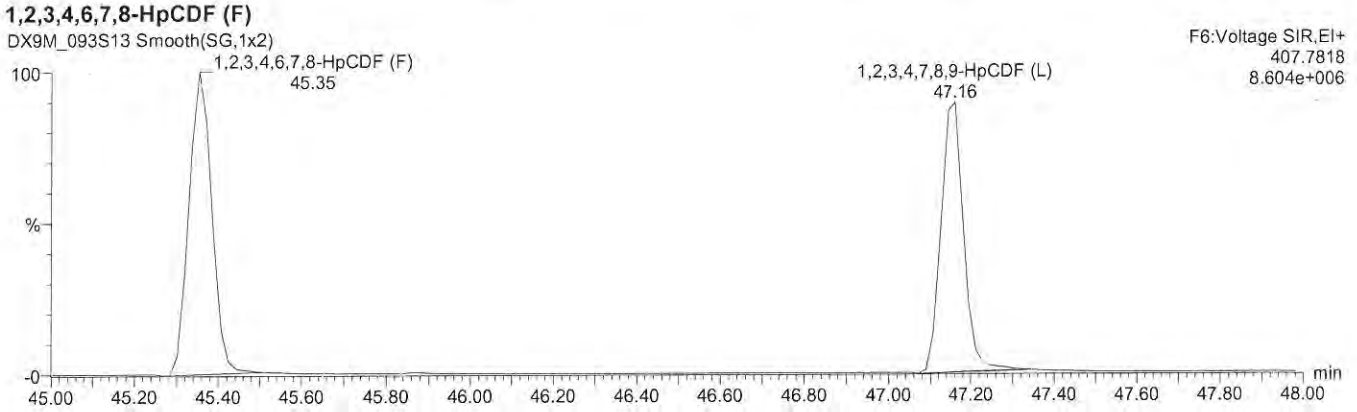
1,2,3,4,6,8-HxCDF (F)



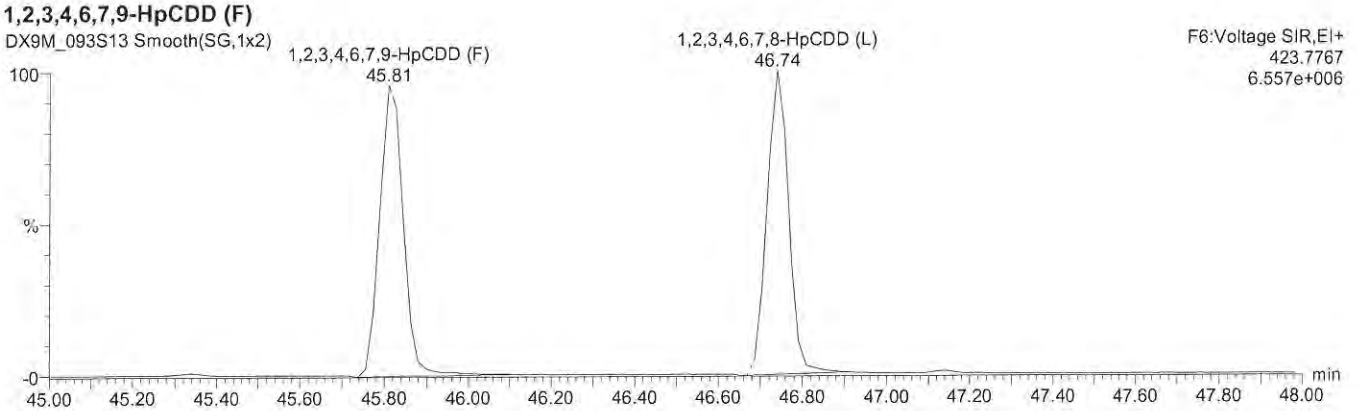
1,2,4,6,7,9-HxCDD (F)



1,2,3,4,6,7,8-HpCDF (F)

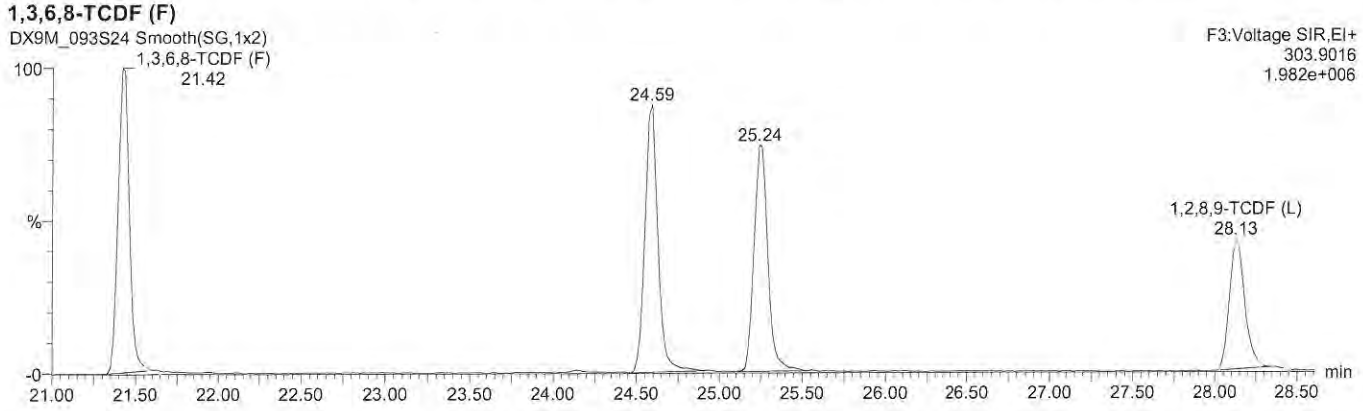


1,2,3,4,6,7,9-HpCDD (F)

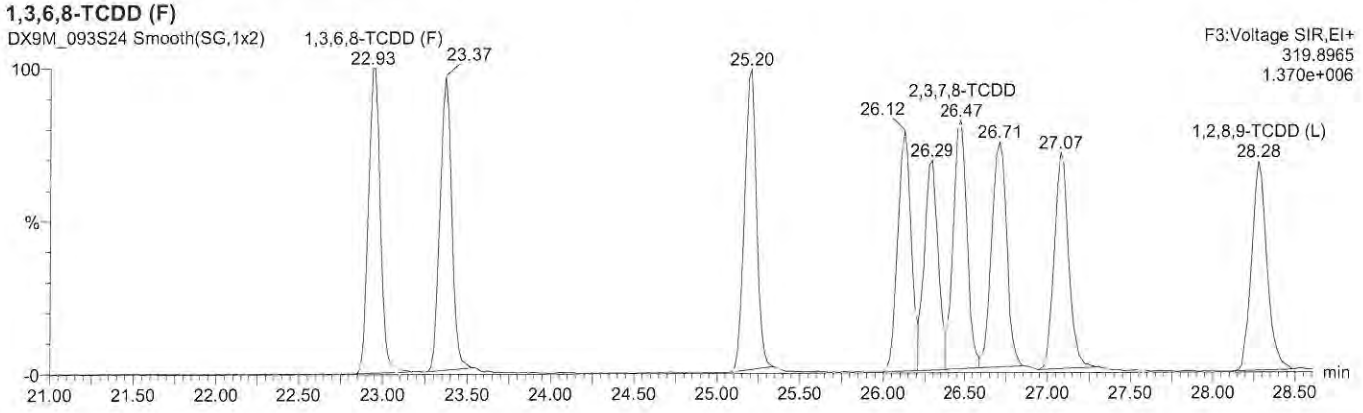


Name: DX9M_093S24, Date: 13-Sep-2019, Time: 06:27:39, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

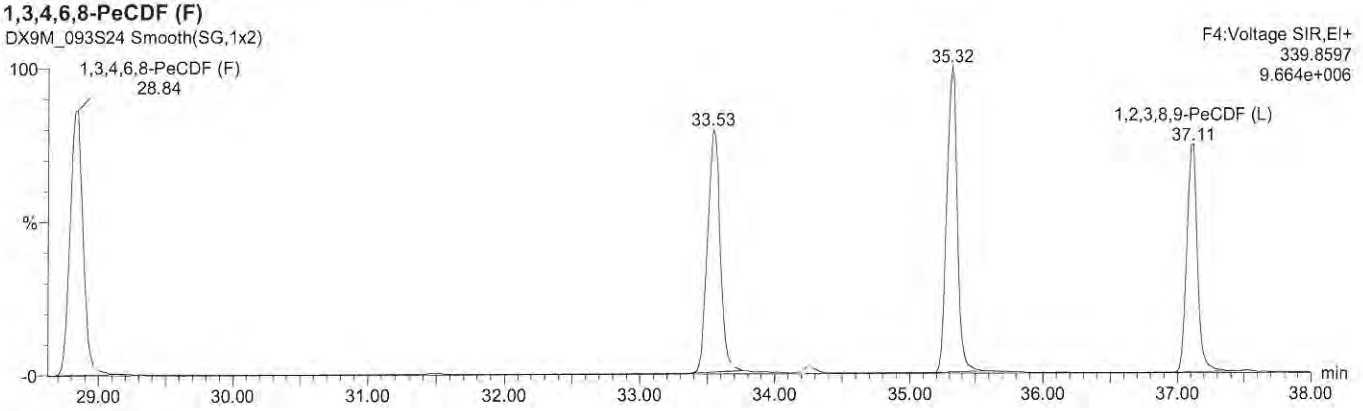
1,3,6,8-TCDF (F)



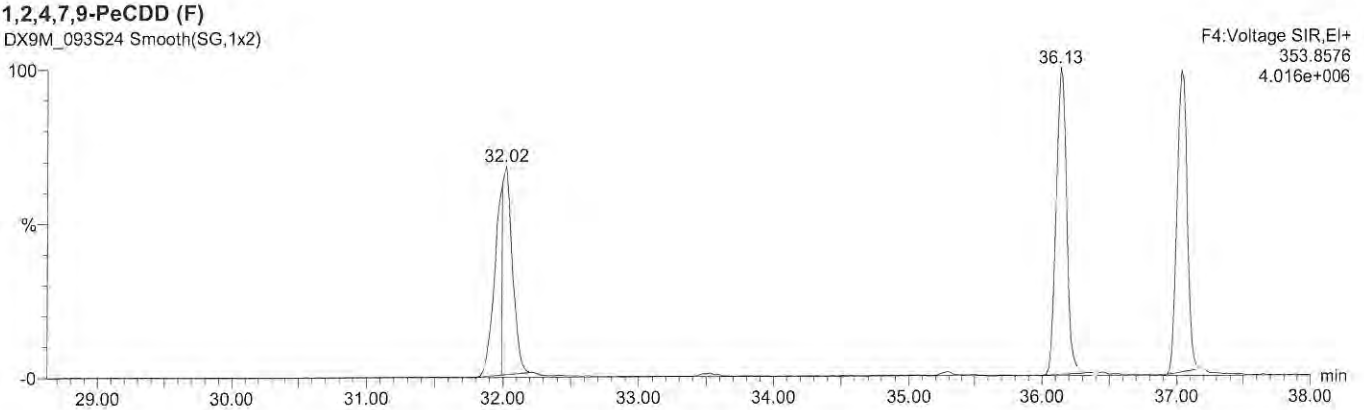
1,3,6,8-TCDD (F)



1,3,4,6,8-PeCDF (F)

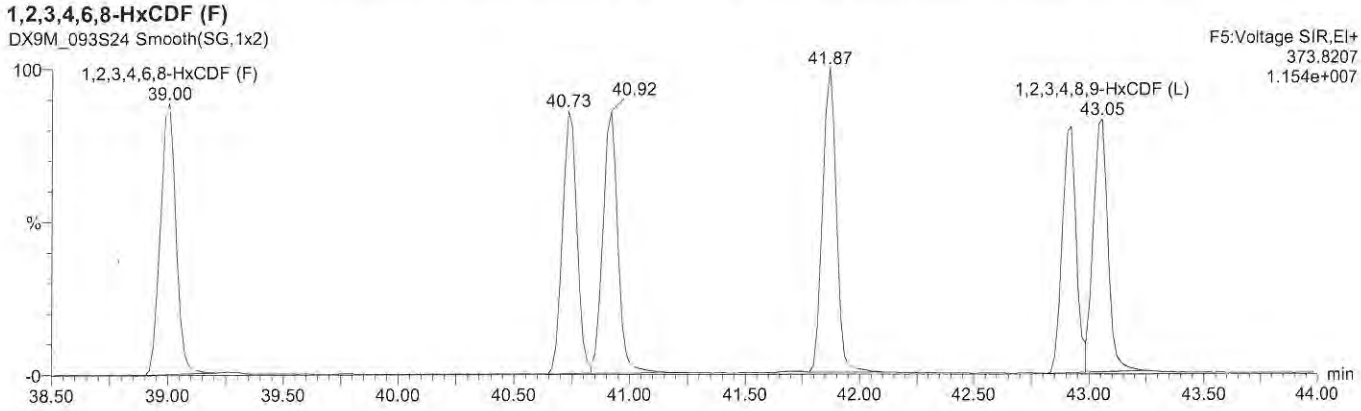


1,2,4,7,9-PeCDD (F)

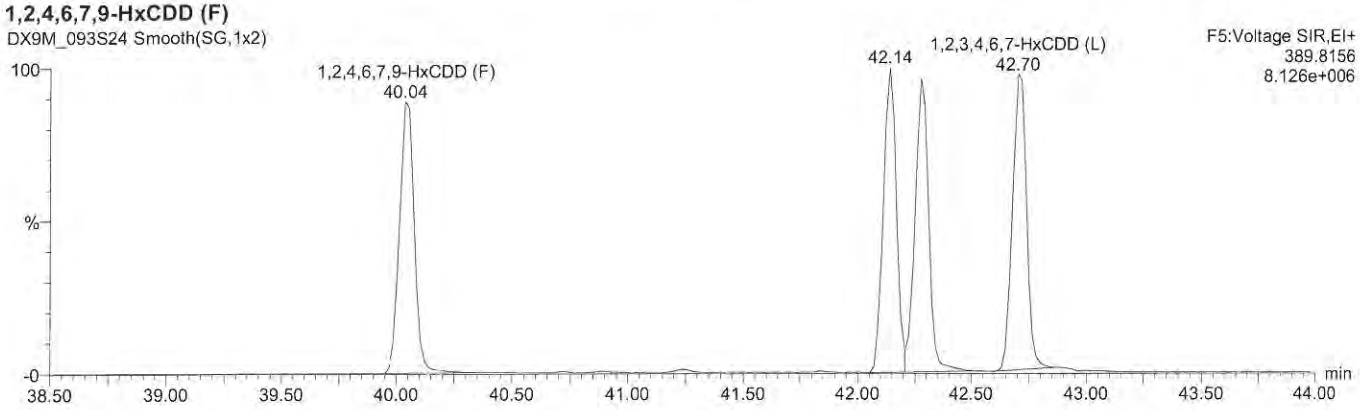


Name: DX9M_093S24, Date: 13-Sep-2019, Time: 06:27:39, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

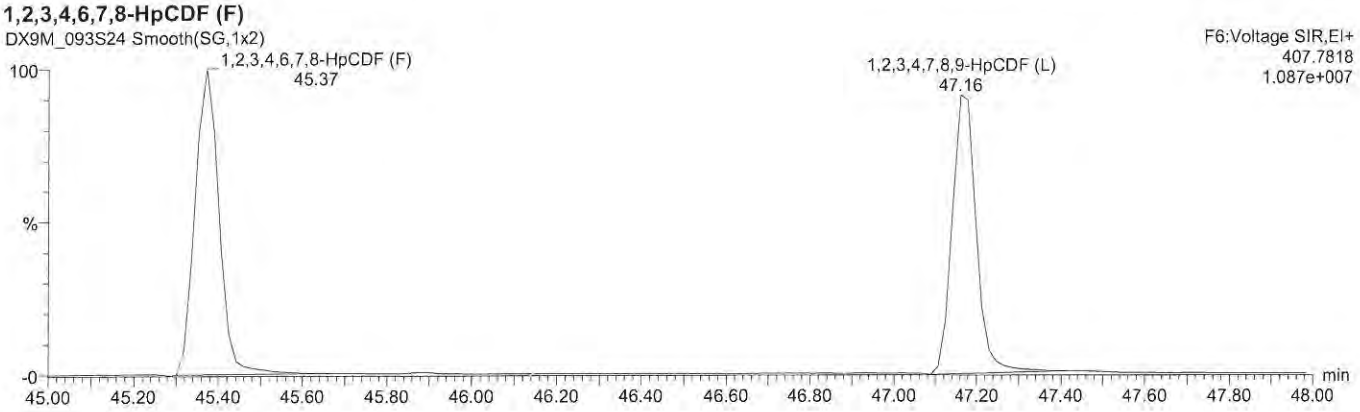
1,2,3,4,6,8-HxCDF (F)



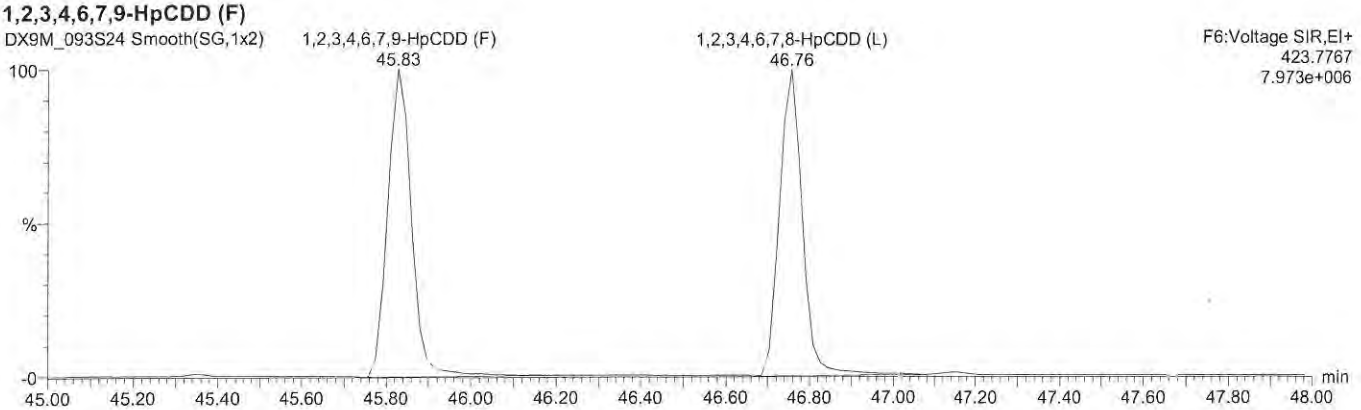
1,2,4,6,7,9-HxCDD (F)



1,2,3,4,6,7,8-HpCDF (F)



1,2,3,4,6,7,9-HpCDD (F)



Experiment : DX-DB225-4_01
GC Program : DX-DB225-4_01
Column type : DB-225
Serial # : USA226732J/USP┐
kPa : 191
Vol injected: 2.0uL
PMT Voltage : 415

Temps -source: 260
-s resv: 140
-re_ent: 220
-cap_1 : 235
-cap_2 : 220

Tune : FS
List : XX/FS
Check :
LIMS :
Logfile:

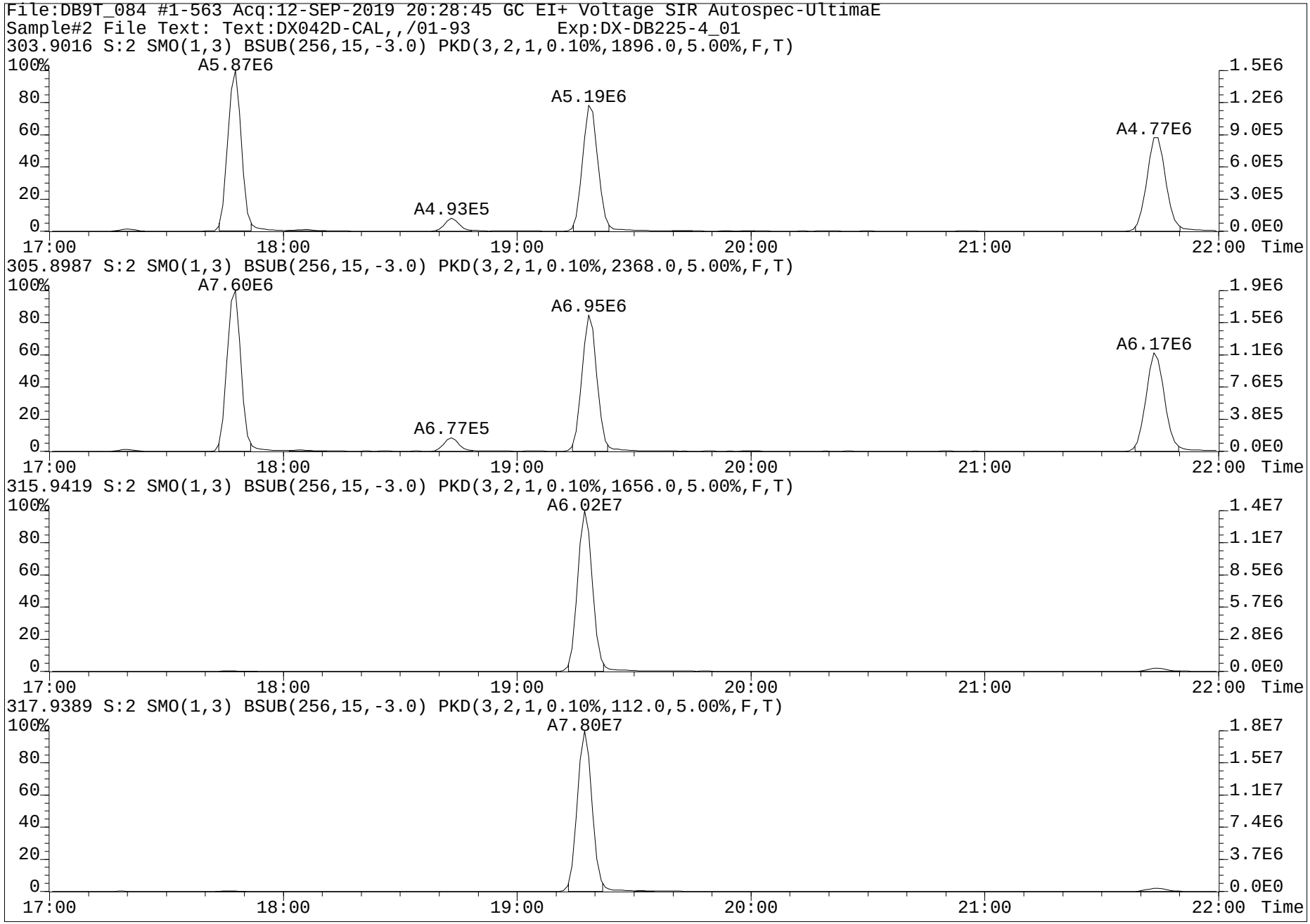
Date -list : 12-SEP-2019
-liner : 07-SEP-2019
-septum: 06-SEP-2019
-guard : 60CM 02-AUG-2019
-column: 20CM 23-APR-2019
-t line: 60cm 23-APR-2019

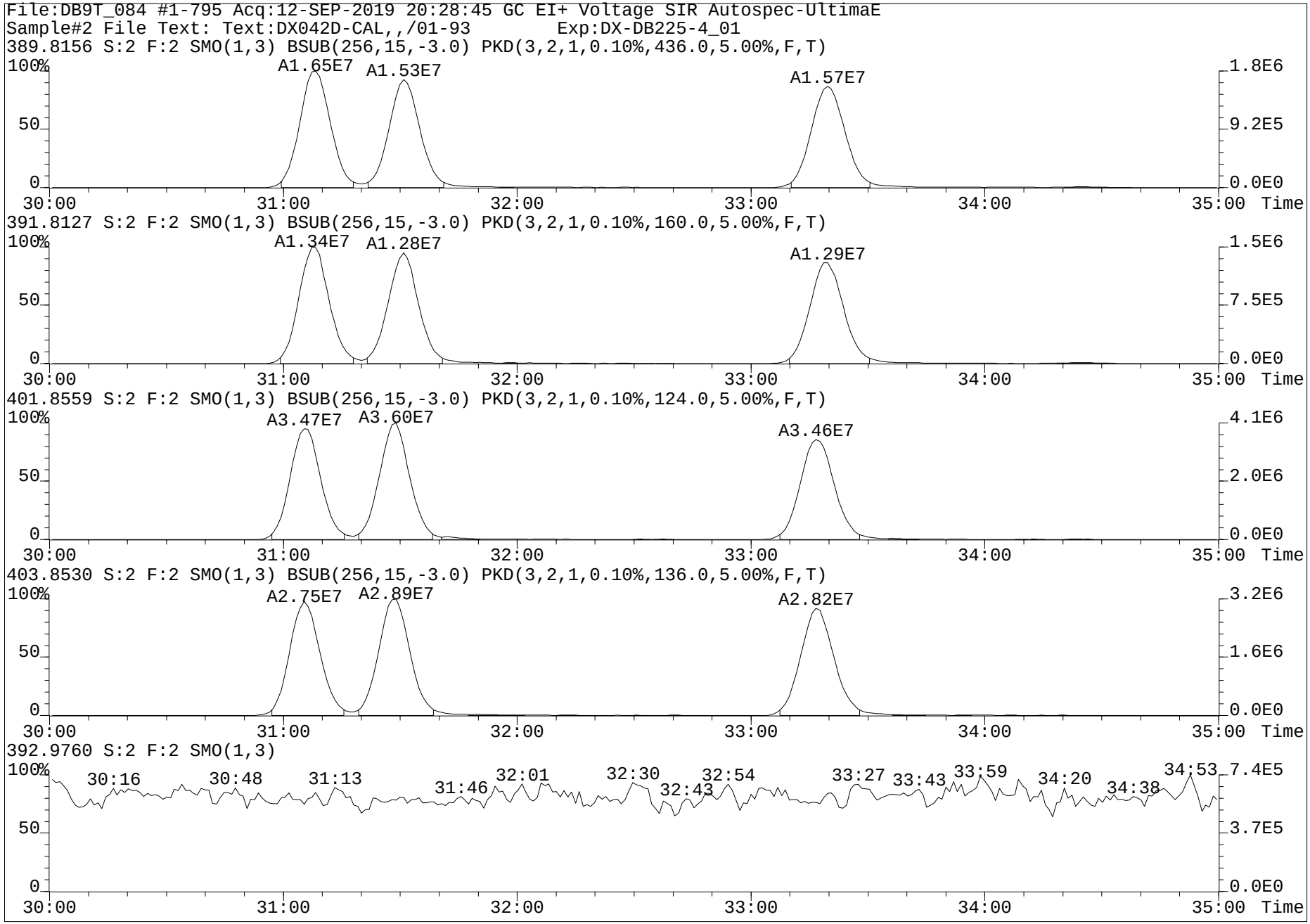
#	Data file	S	V	Sample Text	Comments	Acquisition Date/Time
1	DB9T_084	1	1	DX003A-RSN,,/01-17	1,,2.0uL WIN/RES	12-SEP-19 19:44:02
2	DB9T_084	2	2	DX042D-CAL,,/01-93	1,,2.0uL CS-3/CAL	12-SEP-19 20:28:45
3	DB9T_084	3	3	Toluene,,	1,,2.0uL	12-SEP-19 21:13:29
4	DB9T_084	4	4	Toluene,,	1,,2.0uL	12-SEP-19 21:58:13
5	DB9T_084	5	5	L31654-1,,	1,WG69303,2.0/20uL	12-SEP-19 22:42:57
6	DB9T_084	6	6	L31654-2,,	1,WG69303,2.0/20uL	12-SEP-19 23:27:43
7	DB9T_084	7	7	L31654-3,,	1,WG69303,2.0/20uL	13-SEP-19 00:12:26
8	DB9T_084	8	8	L31654-4,,	1,WG69303,2.0/20uL	13-SEP-19 00:57:10
9	DB9T_084	9	9	L31654-5,,	1,WG69303,2.0/20uL	13-SEP-19 01:41:53
10	DB9T_084	10	10	L31654-6,,	1,WG69303,2.0/20uL	13-SEP-19 02:26:36
11	DB9T_084	11	11	DX042D-CAL,,/01-93	1,,2.0uL CS-3/CAL	13-SEP-19 03:11:19

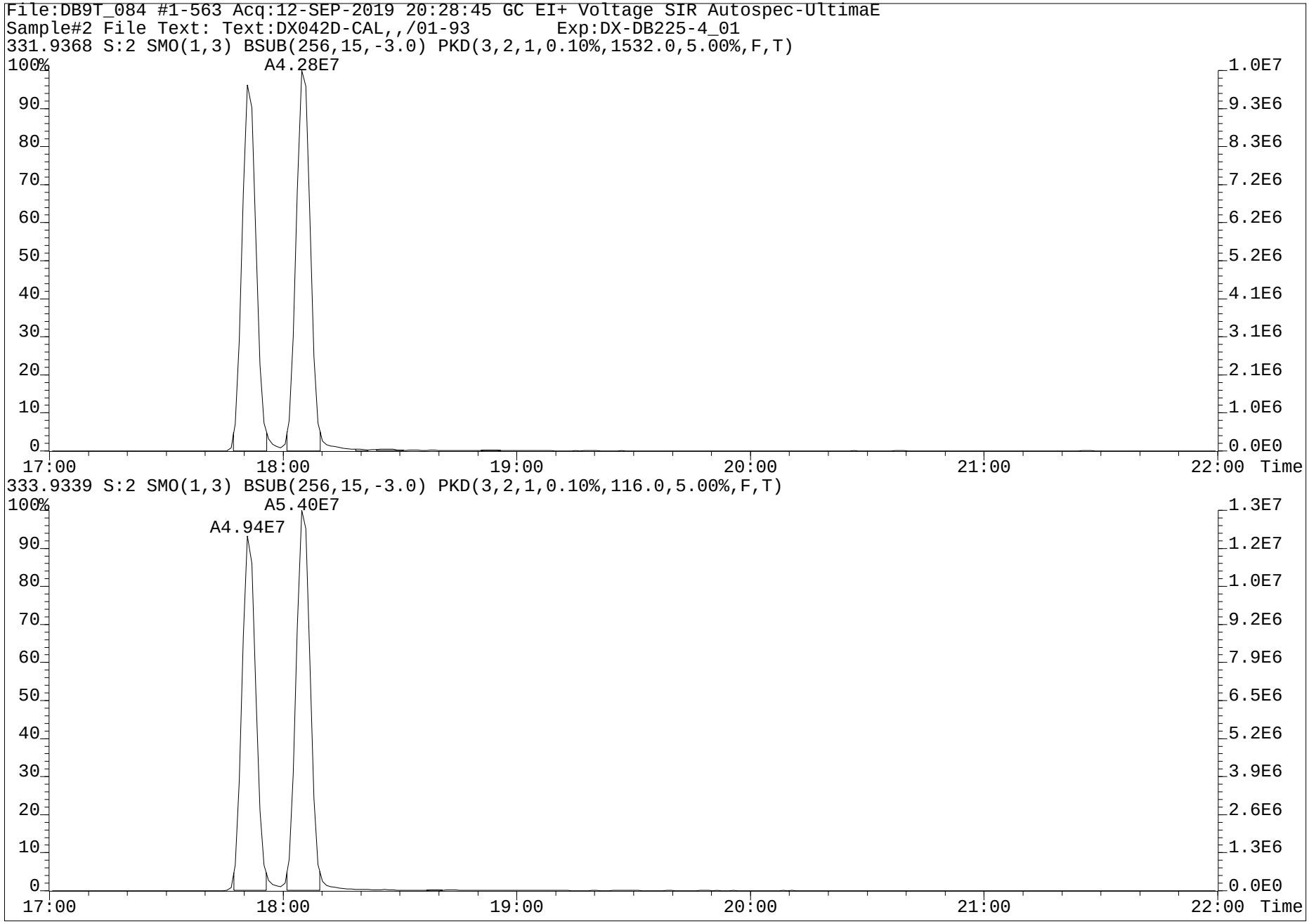
Run #7 Filename DB9T_084 S: 2 I: 1 Acquired: 12-SEP-19 20:28:45 Processed: 17-SEP-19 09:55:57
Run: db9t_084-a Analyte: db-hxd-c2 Cal: db9t_055-5a Results: db9t_084-a Version: V3.6 6-JAN-2000 17:51:42
Sample text: DX042D-CAL,,/01-93 Comments: 1,,2.0uL CS-3/CAL
sample size: 1.000000 conc units: ng/mL total toxicity: 6.70 F1: 20.0000 F2: 1.0000

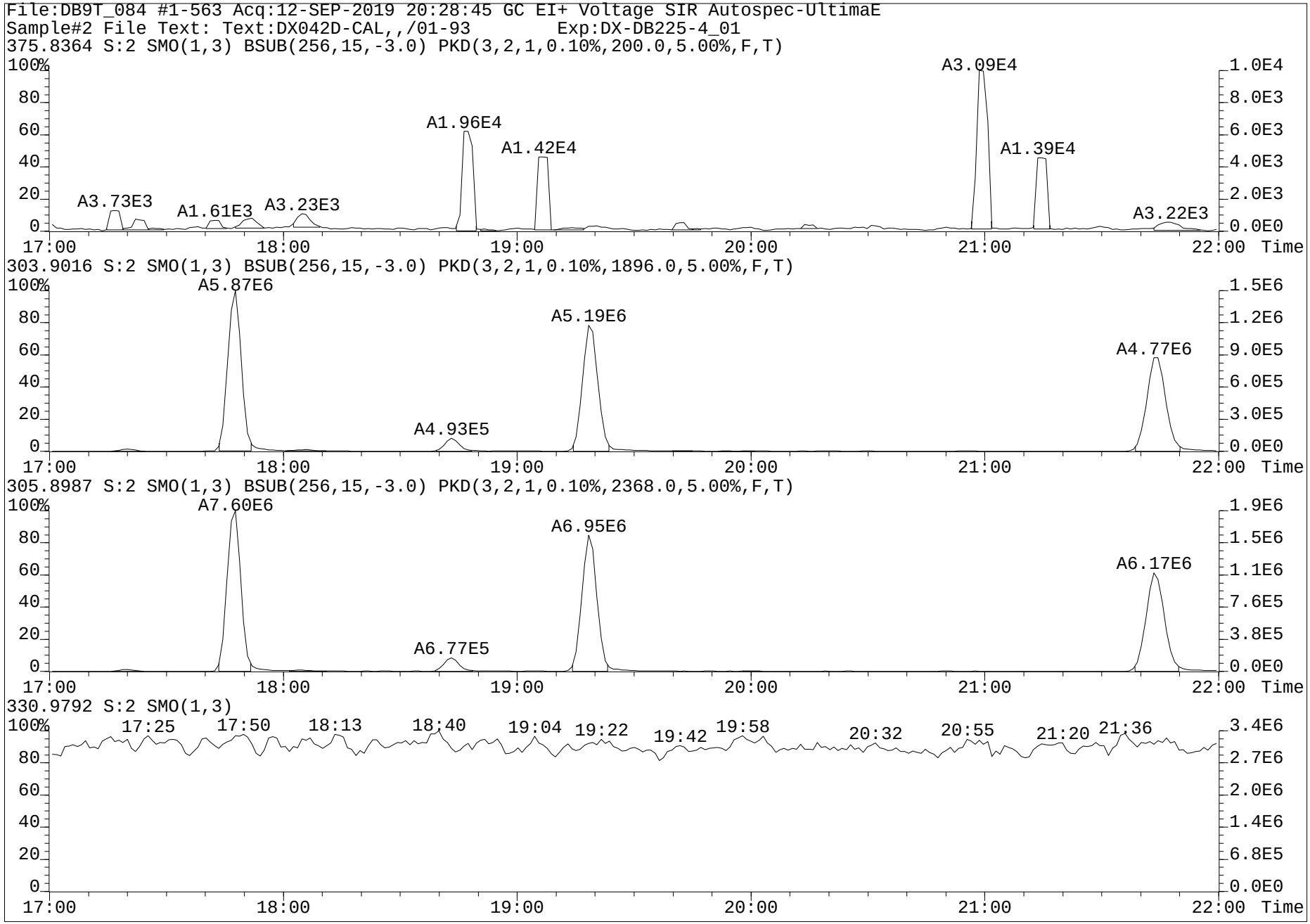
	Typ	Name	#Hom	Resp	RA		RT	Conc	Tox #1	DL	Rec	M?
1	Unk	2,3,7,8-TCDF	1	1.21e+07	0.75	y	19:18	11.336	1	0.0423	-	n
2	Unk	1,2,3,7,8,9-HxCDD	1	2.86e+07	1.22	y	33:20	55.626	6	0.0260	-	n
3	IS/RT	13C-2,3,7,8-TCDF	1	1.38e+08	0.77	y	19:17	100.818	-	0.0133	100.8	n
4	IS/RT	13C-1,2,3,4,7,8-HxCDD	1	6.22e+07	1.26	y	31:05	96.296	-	0.0099	96.3	n
5	IS/RT	13C-1,2,3,6,7,8-HxCDD	1	6.49e+07	1.25	y	31:29	96.192	-	0.0095	96.2	n
6	RS	13C-1,2,3,4-TCDD	1	9.68e+07	0.79	y	18:05	84.169	-	-	-	n
7	RS	13C-1,2,3,7,8,9-HxCDD	1	6.28e+07	1.23	y	33:17	109.414	-	-	-	n
8	Tot	Hexa DPE	0	*			NotFnd	*	-	-	-	n
9	Tot	Tetra Lock	-	-			-	-	-	-	-	n
10	Tot	Hexa Lock	-	-			-	-	-	-	-	n

PV by RA 20SEP2019


File:DB9T_084 #1-563 Acq:12-SEP-2019 20:28:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text: Text:DX042D-CAL,,/01-93 Exp:DX-DB225-4_01
303.9016 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1896.0,5.00%,F,T)
A5.87E6
A5.19E6
A4.77E6
A4.93E5
305.8987 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,2368.0,5.00%,F,T)
A7.60E6
A6.95E6
A6.17E6
A6.77E5
315.9419 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1656.0,5.00%,F,T)
A6.02E7
317.9389 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,112.0,5.00%,F,T)
A7.80E7
100%
80
60
40
20
0
17:00
18:00
19:00
20:00
21:00
22:00
Time
1.5E6
1.2E6
9.0E5
6.0E5
3.0E5
0.0E0
1.9E6
1.5E6
1.1E6
7.6E5
3.8E5
0.0E0
1.4E7
1.1E7
8.5E6
5.7E6
2.8E6
0.0E0
1.8E7
1.5E7
1.1E7
7.4E6
3.7E6
0.0E0


File:DB9T_084 #1-795 Acq:12-SEP-2019 20:28:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text: Text:DX042D-CAL,,/01-93 Exp:DX-DB225-4_01
389.8156 S:2 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,436.0,5.00%,F,T)
A1.65E7
A1.53E7
A1.57E7
391.8127 S:2 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,160.0,5.00%,F,T)
A1.34E7
A1.28E7
A1.29E7
401.8559 S:2 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,124.0,5.00%,F,T)
A3.47E7
A3.60E7
A3.46E7
403.8530 S:2 F:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,136.0,5.00%,F,T)
A2.75E7
A2.89E7
A2.82E7
392.9760 S:2 F:2 SMO(1,3)
30:16
30:48
31:13
31:46
32:01
32:30
32:43
32:54
33:27
33:43
33:59
34:20
34:38
34:53
100%
50
0
30:00
31:00
32:00
33:00
34:00
35:00
Time
1.8E6
9.2E5
0.0E0
1.5E6
7.5E5
4.1E6
2.0E6
3.2E6
1.6E6
7.4E5
3.7E5


File:DB9T_084 #1-563 Acq:12-SEP-2019 20:28:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text: Text:DX042D-CAL,,/01-93 Exp:DX-DB225-4_01
331.9368 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1532.0,5.00%,F,T)
A4.28E7
333.9339 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,116.0,5.00%,F,T)
A5.40E7
A4.94E7
Time


File:DB9T_084 #1-563 Acq:12-SEP-2019 20:28:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text: Text:DX042D-CAL,,/01-93 Exp:DX-DB225-4_01
375.8364 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,200.0,5.00%,F,T)
A3.73E3
A1.61E3
A3.23E3
A1.96E4
A1.42E4
A3.09E4
A1.39E4
A3.22E3
303.9016 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1896.0,5.00%,F,T)
A5.87E6
A4.93E5
A5.19E6
A4.77E6
305.8987 S:2 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,2368.0,5.00%,F,T)
A7.60E6
A6.77E5
A6.95E6
A6.17E6
330.9792 S:2 SMO(1,3)
17:25
17:50
18:13
18:40
19:04
19:22
19:42
19:58
20:32
20:55
21:20
21:36
Time

Method: C:\MassLynx\190510DX.PRO\MethDB\DX_Log.mdb 21 Nov 2008 11:39:44
Calibration: C:\MassLynx\190510DX.PRO\CurveDB\DX9M_065C-CAL6.cdb 25 Jun 2019 21:52:33

Compound name: -

#	Name	ID	Sample Text	Acq.Date	Acq.Time
1	DX9M_095AS1	DX042D-CAL,,/01	1,,1.0uL Cal Win/Res	17-Sep-19	09:42:38
2	DX9M_095AS2	DX051A-SUR,,/02	1,,1.0uL Inst Blank	17-Sep-19	10:36:03
3	DX9M_095AS3	DX051A-SUR,,/02	1,,1.0uL Inst Blank	17-Sep-19	11:30:12
4	DX9M_095AS4	WG69652-101,,CUTPT	1,WG69652,1.0/20uL	17-Sep-19	12:27:40
5	DX9M_095AS5	WG69652-102,,CUTPT	1,WG69652,1.0/20uL	17-Sep-19	13:20:30
6	DX9M_095AS6	WG69652-103,,CUTPT	1,WG69652,1.0/20uL	17-Sep-19	14:15:34
7	DX9M_095AS7	WG69652-104,,SAR	1,WG69652,1.0/50uL	17-Sep-19	15:10:41
8	DX9M_095AS8	DX042D-CAL,,/01	1,,1.0uL Cal Win/Res	17-Sep-19	16:05:42
9	DX9M_095AS9	DX051A-SUR,,/02	1,,1.0uL Inst Blank	17-Sep-19	17:10:42
10	DX9M_095AS10	DX051A-SUR,,/02	1,,1.0uL Inst Blank	17-Sep-19	18:03:14
11	DX9M_095AS11	L31683-1,I,	1,WG69303,1.0/20uL	17-Sep-19	18:58:20
12	DX9M_095AS12	L31654-1,I2,	1,WG69303,1.0/20uL	17-Sep-19	19:53:29
13	DX9M_095AS13	L31654-9,W,	5,WG69303,1.0/100uL	17-Sep-19	20:48:37
14	DX9M_095AS14	L31654-10,W,	5,WG69303,1.0/100uL	17-Sep-19	21:43:45
15	DX9M_095AS15	L31654-11,W,	5,WG69303,1.0/100uL	17-Sep-19	22:38:52
16	DX9M_095AS16	L31654-12,W,	5,WG69303,1.0/100uL	17-Sep-19	23:34:00
17	DX9M_095AS17	WG69303-104,I,CRM	1,WG69303,1.0/20uL	18-Sep-19	00:29:08
18	DX9M_095AS18	WG69303-105,I,CRM	1,WG69303,1.0/20uL	18-Sep-19	01:24:15
19	DX9M_095AS19	DX042D-CAL,,/01	1,,1.0uL Cal Win/Res	18-Sep-19	02:19:24

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

Method: G:\Masslynx\Inst_M\Master methods and layouts\Current Methods\DX_1613B_16.mdb 07 Sep 2017 16:45:23
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

Name: DX9M_095AS8, Date: 17-Sep-2019, Time: 16:05:42, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

	Name	Sample Size	Resp	Ratio	fails?	RT	pg	DL	%Rec	Noise 1	Noise 2
1	2,3,7,8-TCDF	1.000	5.45e5	0.81	NO	25.20	10.278	0.0346	102.8	4.35e3	3.68e3
2	1,2,3,7,8-PeCDF	1.000	2.31e6	1.58	NO	33.47	51.945	0.1029	103.9	6.71e3	9.59e3
3	2,3,4,7,8-PeCDF	1.000	2.45e6	1.57	NO	35.25	51.322	0.0829	102.6	6.71e3	9.59e3
4	1,2,3,4,7,8-HxCDF	1.000	2.01e6	1.25	NO	40.68	52.733	0.0723	105.5	4.63e3	1.03e4
5	1,2,3,6,7,8-HxCDF	1.000	2.17e6	1.21	NO	40.87	52.515	0.0731	105.0	4.63e3	1.03e4
6	2,3,4,6,7,8-HxCDF	1.000	2.04e6	1.25	NO	41.82	51.247	0.0706	102.5	4.63e3	1.03e4
7	1,2,3,7,8,9-HxCDF	1.000	1.48e6	1.25	NO	42.87	47.380	0.0950	94.8	4.63e3	1.03e4
8	1,2,3,4,6,7,8-HpCDF	1.000	1.88e6	1.00	NO	45.34	53.198	0.0638	106.4	6.73e3	5.68e3
9	1,2,3,4,7,8,9-HpCDF	1.000	1.49e6	1.03	NO	47.14	52.997	0.0882	106.0	6.73e3	5.68e3
10	OCDF	1.000	2.57e6	0.94	NO	50.41	100.248	0.0164	100.2	1.73e3	4.38e2
11	2,3,7,8-TCDD	1.000	4.28e5	0.76	NO	26.41	10.190	0.0578	101.9	5.79e3	3.80e3
12	1,2,3,7,8-PeCDD	1.000	1.47e6	0.61	NO	36.08	48.611	0.0876	97.2	6.35e3	4.81e3
13	1,2,3,4,7,8-HxCDD	1.000	1.37e6	1.20	NO	42.09	48.057	0.0787	96.1	6.93e3	6.46e3
14	1,2,3,6,7,8-HxCDD	1.000	1.51e6	1.27	NO	42.22	49.179	0.0857	98.4	6.93e3	6.46e3
15	1,2,3,7,8,9-HxCDD	1.000	1.49e6	1.24	NO	42.66	50.704	0.0831	101.4	6.93e3	6.46e3
16	1,2,3,4,6,7,8-HpCDD	1.000	1.20e6	1.04	NO	46.72	50.353	0.0602	100.7	2.70e3	5.44e3
17	OCDD	1.000	2.22e6	0.89	NO	50.32	100.448	0.0053	100.4	3.63e2	2.49e2
18	13C-2,3,7,8-TCDF	1.000	5.72e6	0.75	NO	25.17	91.582	0.0779	91.6	9.92e3	1.11e4
19	13C-1,2,3,7,8-PeCDF	1.000	4.77e6	1.60	NO	33.44	94.010	0.1126	94.0	1.07e4	1.39e4
20	13C-2,3,4,7,8-PeCDF	1.000	5.03e6	1.55	NO	35.22	96.074	0.1091	96.1	1.07e4	1.39e4
21	13C-1,2,3,4,7,8-HxCDF	1.000	3.45e6	0.51	NO	40.66	90.560	0.1604	90.6	2.16e4	1.04e4
22	13C-1,2,3,6,7,8-HxCDF	1.000	3.85e6	0.53	NO	40.83	92.050	0.1459	92.1	2.16e4	1.04e4
23	13C-2,3,4,6,7,8-HxCDF	1.000	3.50e6	0.53	NO	41.80	92.829	0.1619	92.8	2.16e4	1.04e4
24	13C-1,2,3,7,8,9-HxCDF	1.000	2.97e6	0.51	NO	42.85	88.592	0.1820	88.6	2.16e4	1.04e4
25	13C-1,2,3,4,6,7,8-HpCDF	1.000	2.83e6	0.44	NO	45.32	90.174	0.1332	90.2	1.38e4	8.00e3
26	13C-1,2,3,4,7,8,9-HpCDF	1.000	2.24e6	0.46	NO	47.12	88.052	0.1642	88.1	1.38e4	8.00e3
27	13C-2,3,7,8-TCDD	1.000	3.81e6	0.80	NO	26.37	95.858	0.2252	95.9	2.12e4	1.73e4
28	13C-1,2,3,7,8-PeCDD	1.000	3.06e6	0.62	NO	36.05	96.867	0.1034	96.9	9.08e3	4.98e3
29	13C-1,2,3,4,7,8-HxCDD	1.000	2.77e6	1.23	NO	42.07	91.236	0.1591	91.2	8.13e3	1.72e4
30	13C-1,2,3,6,7,8-HxCDD	1.000	3.26e6	1.23	NO	42.20	97.072	0.1439	97.1	8.13e3	1.72e4
31	13C-1,2,3,4,6,7,8-HpCDD	1.000	3.04e6	1.06	NO	46.70	89.533	0.0976	89.5	8.14e3	9.21e3
32	13C-OCDD	1.000	4.50e6	0.90	NO	50.30	180.013	0.0787	90.0	1.09e3	9.20e3
33	13C-1,2,3,4-TCDD	1.000	4.10e6	0.79	NO	26.04	101.965	0.2224	102.0	2.12e4	1.73e4
34	13C-1,2,3,7,8,9-HxCDD	1.000	3.14e6	1.21	NO	42.65	108.065	0.1665	108.1	8.13e3	1.72e4
35	37Cl-2,3,7,8-TCDD	1.000	4.34e5			26.41	9.904	0.0488	99.0		9.21e3
36	Total Tetra-Furans	1.000					40.664	0.0346			3.68e3
37	Total Tetra-Dioxins	1.000					89.788	0.0578			3.80e3
38	Total Penta-Furans	1.000					198.061	0.0936			9.59e3
39	Total Penta-Dioxins	1.000					161.254	0.0876			4.81e3
40	Total Hexa-Furans	1.000					318.420	0.0760			1.03e4
41	Total Hexa-Dioxins	1.000					202.224	0.0786			6.46e3
42	Total Hepta-Furans	1.000					110.307	0.0747			5.68e3
43	Total Hepta-Dioxins	1.000					106.791	0.0602			5.44e3
44	Hexa DPE	1.000	7.48e2			23.33					6.76e0
45	Hepta DPE	1.000	1.35e3			37.45					5.07e2
46	Octa DPE	1.000	1.32e2			43.64					2.71e2
47	Nona DPE	1.000	3.91e1			46.90					4.59e0
48	Deca DPE	1.000	1.05e2			48.86					3.16e0
49	Tetra Lock	1.000	2.24e5			21.01					3.97e5
50	Penta Lock	1.000	4.19e4			33.29					5.10e5
51	Hexa Lock	1.000	4.42e6			39.16					1.12e6

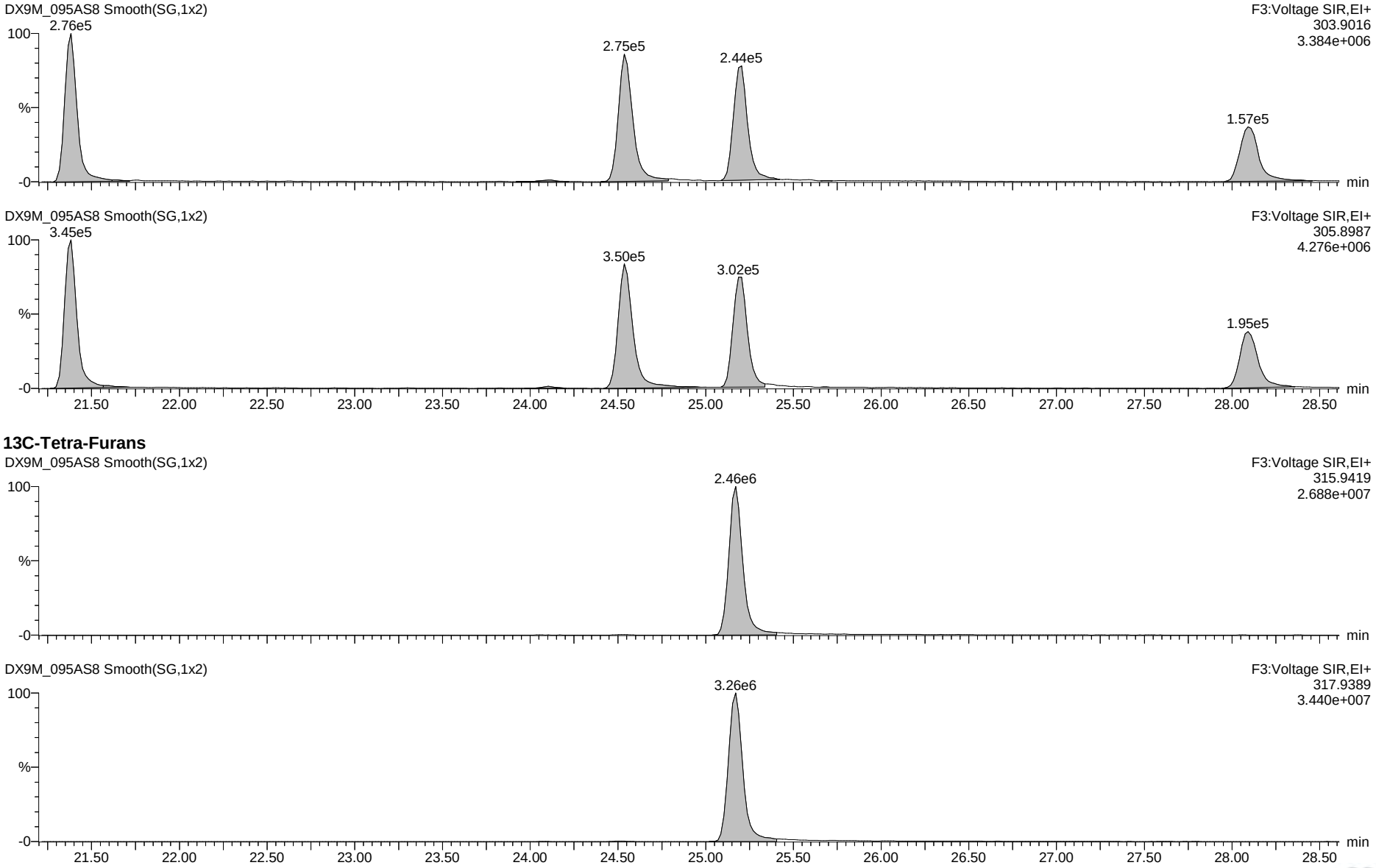
PV'd by RA 19-Sep-2019 Cal/Ver and SPM units = ng/mL Samples and Lab Blank units = pg/g

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

Method: G:\Masslynx\Inst_M\Master methods and layouts\Current Methods\DX_1613B_16.mdb 07 Sep 2017 16:45:23
Calibration: G:\Masslynx\Inst_M\Projects\190510DX.PRO\CurveDB\DX9M_065c-6a.cdb 22 Jul 2019 09:19:16

Name: DX9M_095AS8, Date: 17-Sep-2019, Time: 16:05:42, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

Total Tetra-Furans

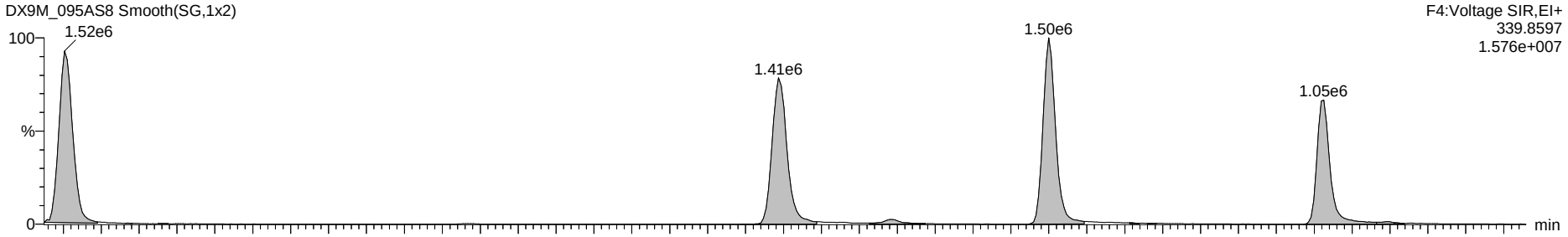


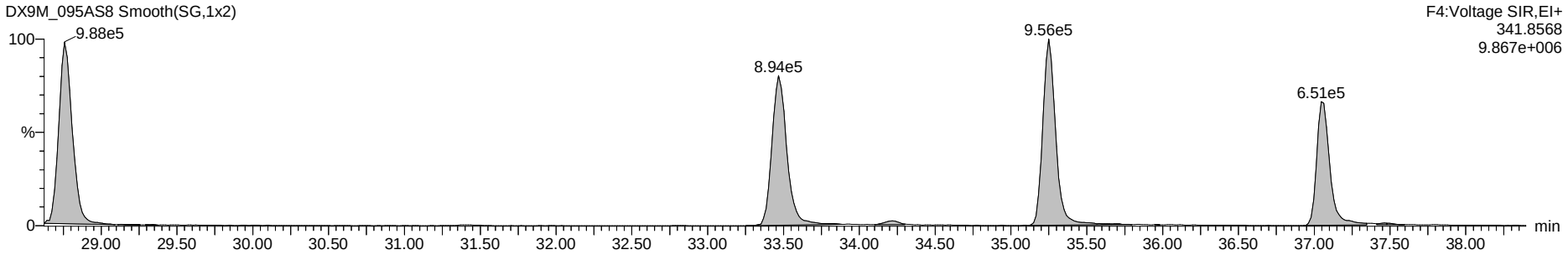
13C-Tetra-Furans

Dataset: G:\Masslynx\Inst_M\Projects\190510DX.PRO\DX9M_095A-B.qld

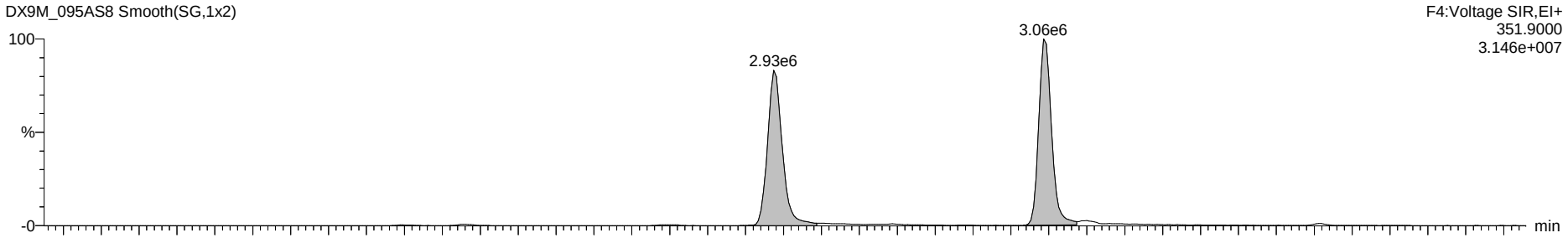
Name: DX9M_095AS8, Date: 17-Sep-2019, Time: 16:05:42, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

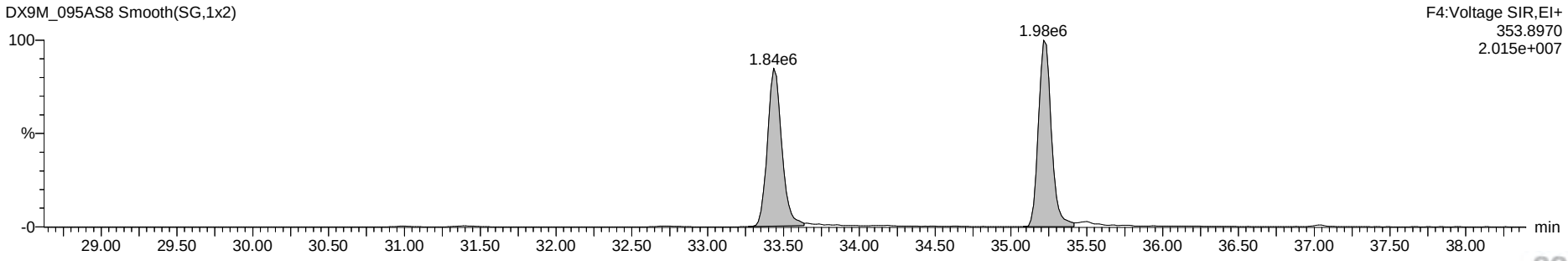
Total Penta-Furans





13C-Penta-Furans





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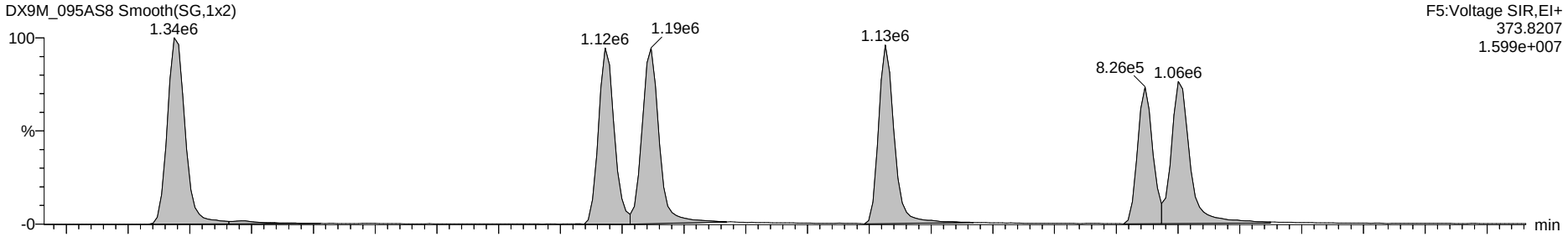
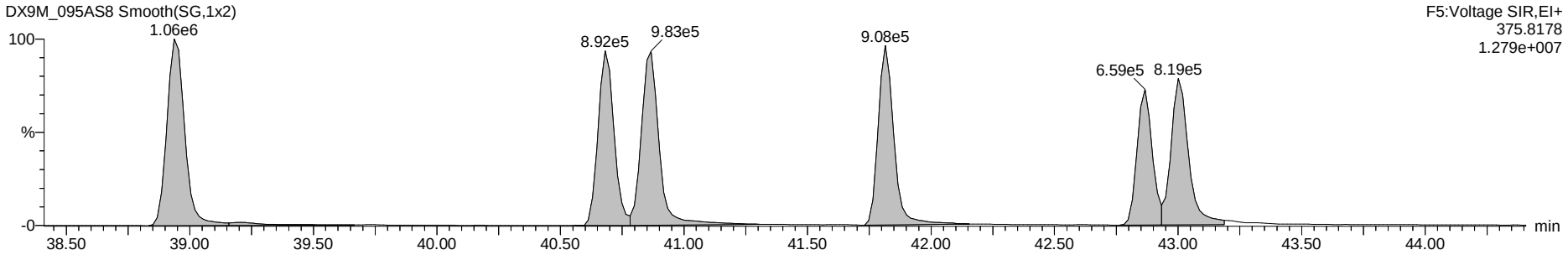
Name: DX9M_095AS8, Date: 17-Sep-2019, Time: 16:05:42, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

Total Hexa-Furans





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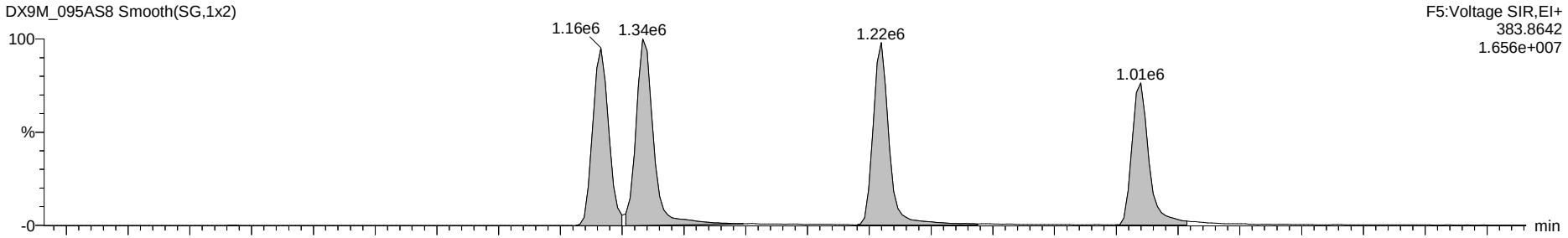

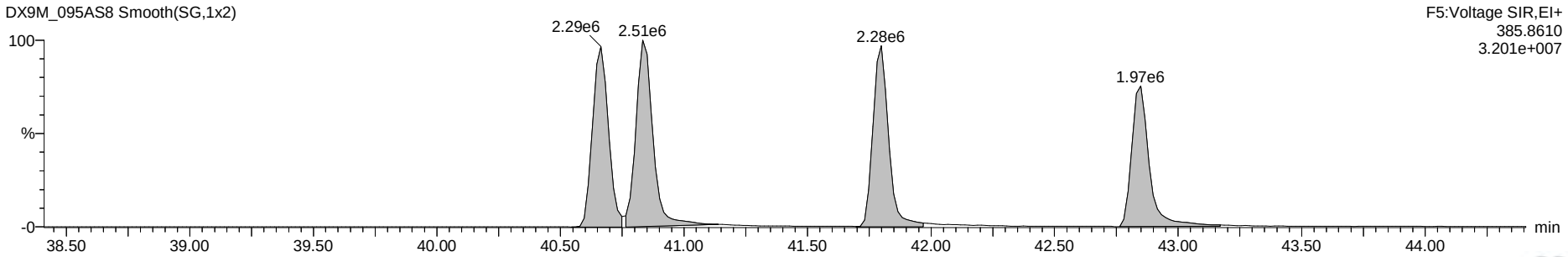

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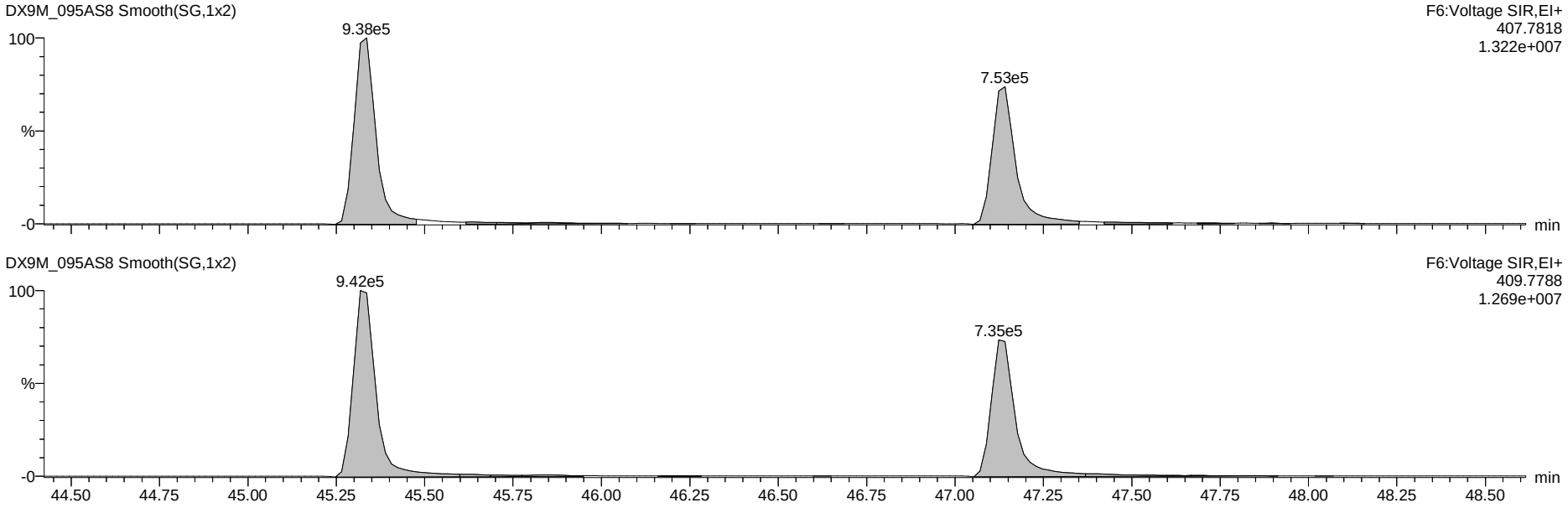
Total Hepta-Furans



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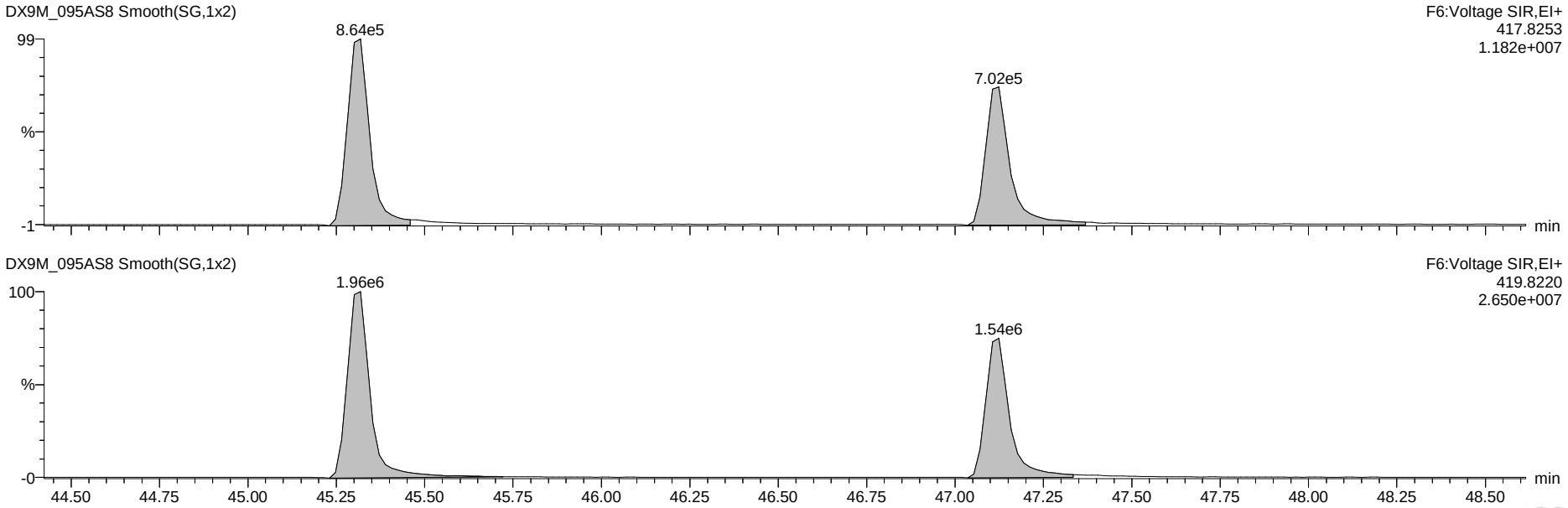

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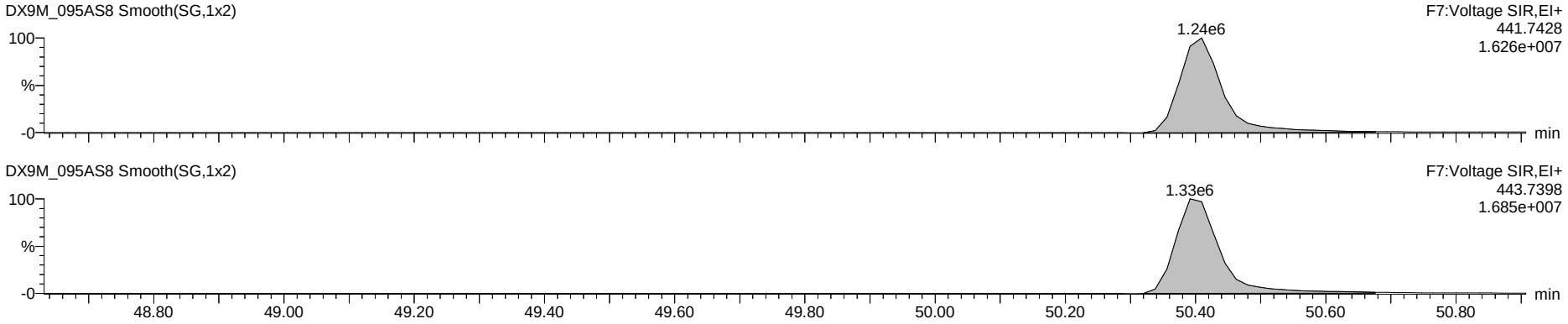
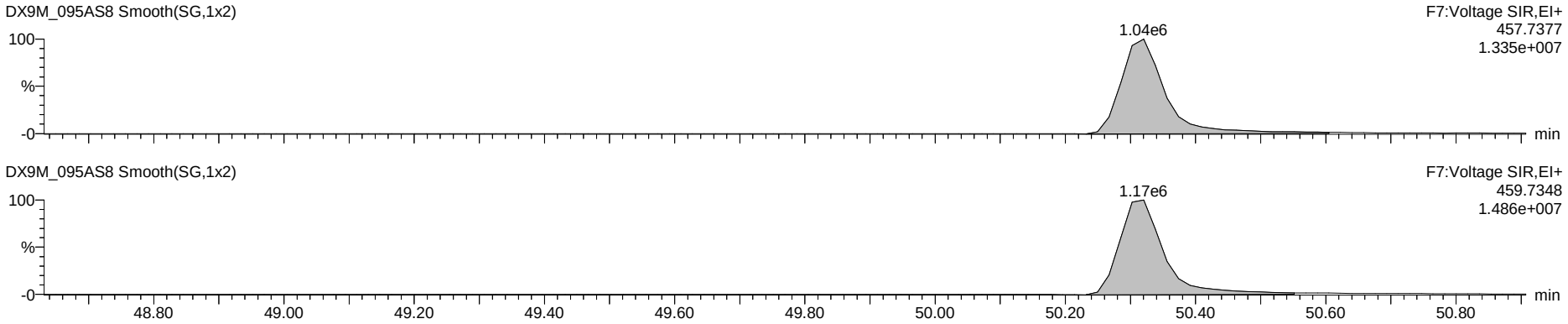
OCDF



OCDD



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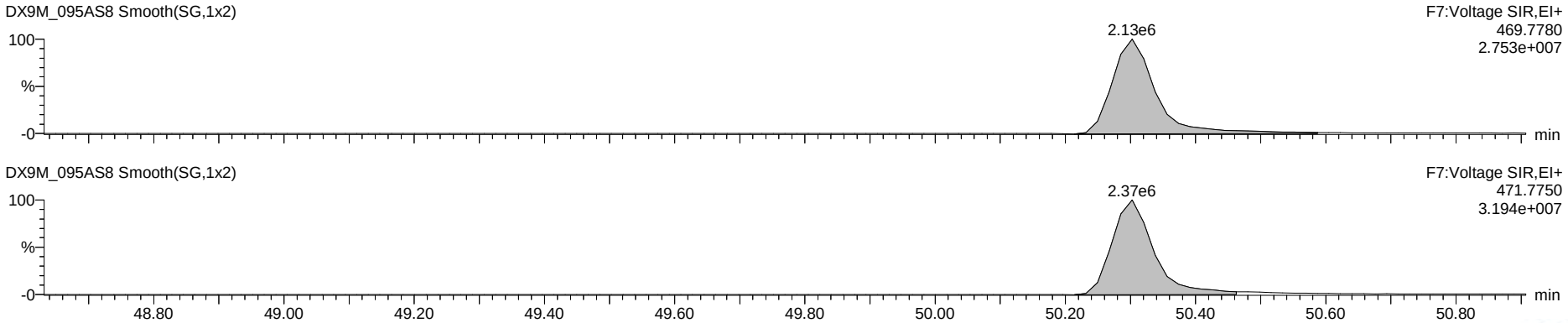

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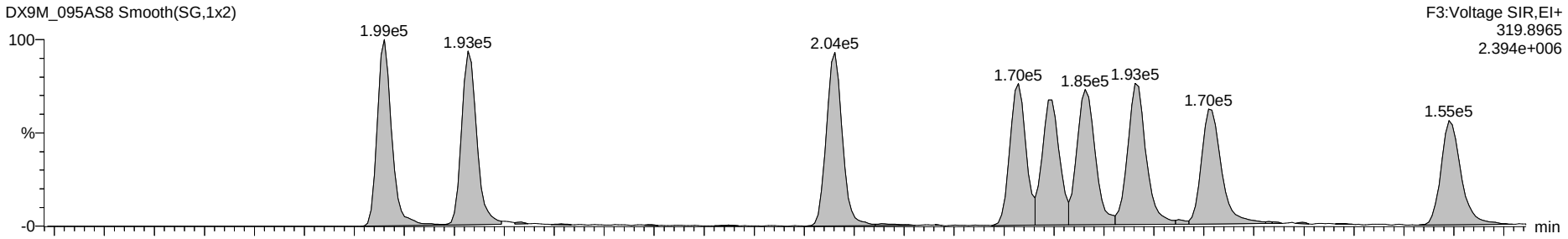
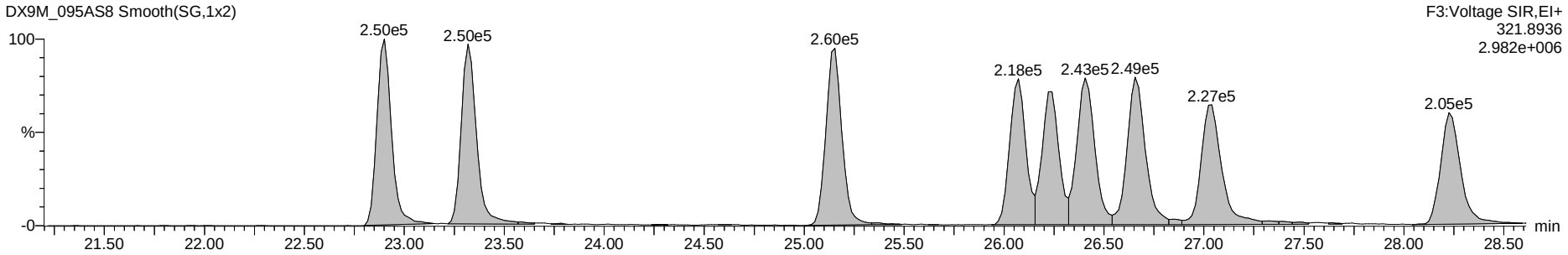
Name: DX9M_095AS8, Date: 17-Sep-2019, Time: 16:05:42, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

Total Tetra-Dioxins





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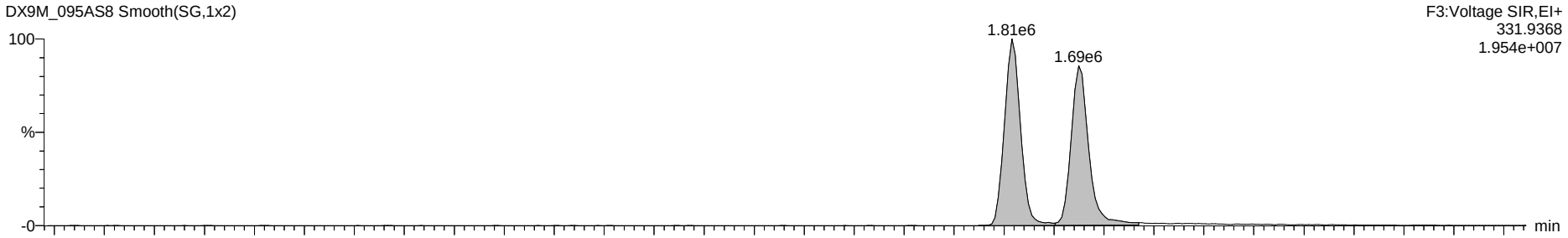

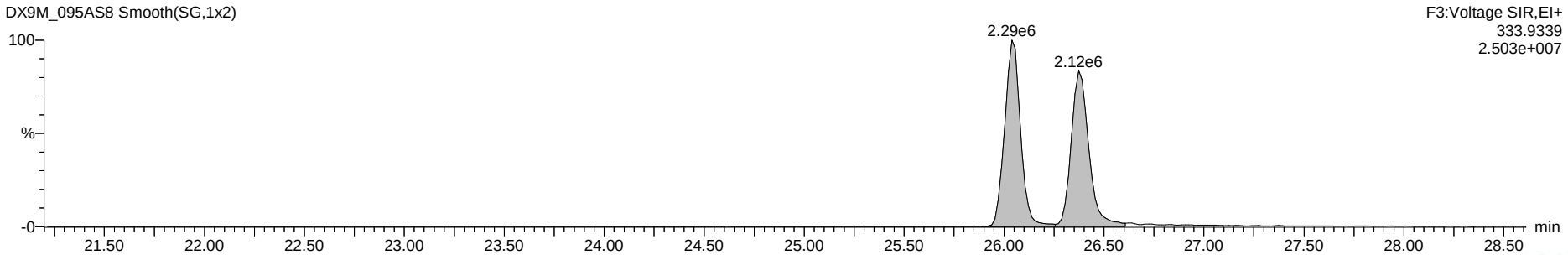

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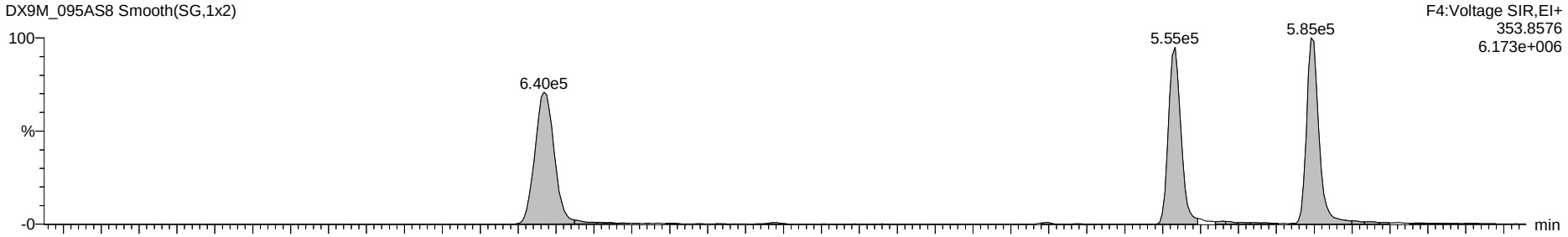
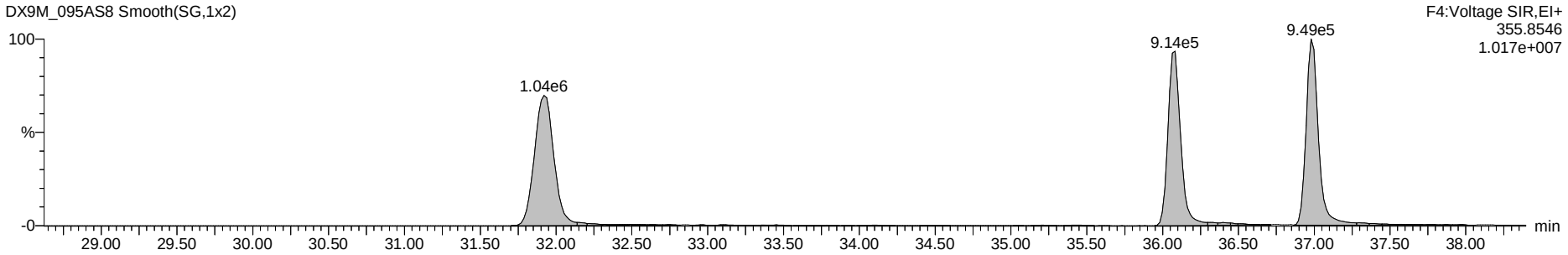
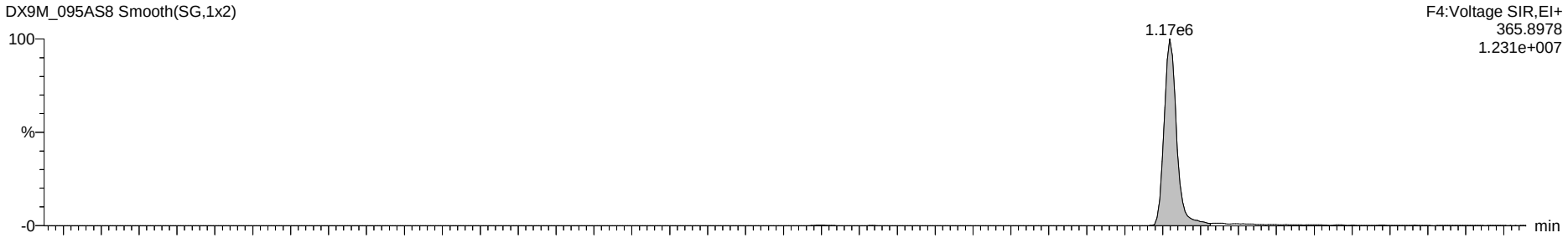
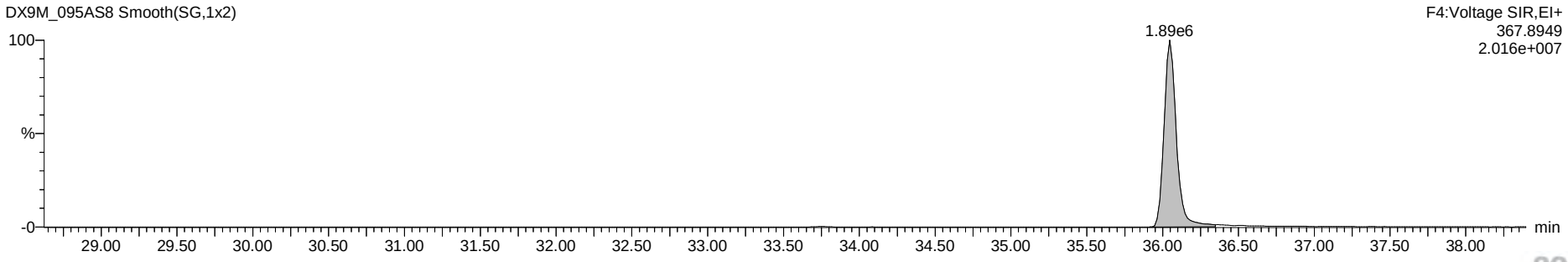
Total Penta-Dioxins





13C-Penta-Dioxins





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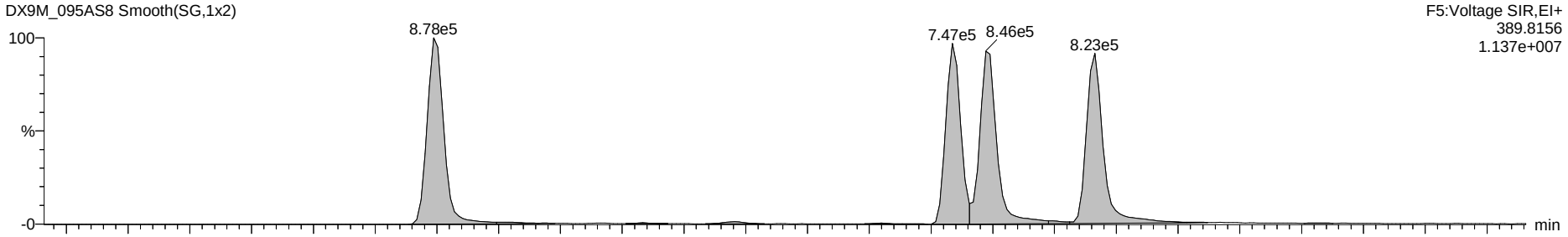
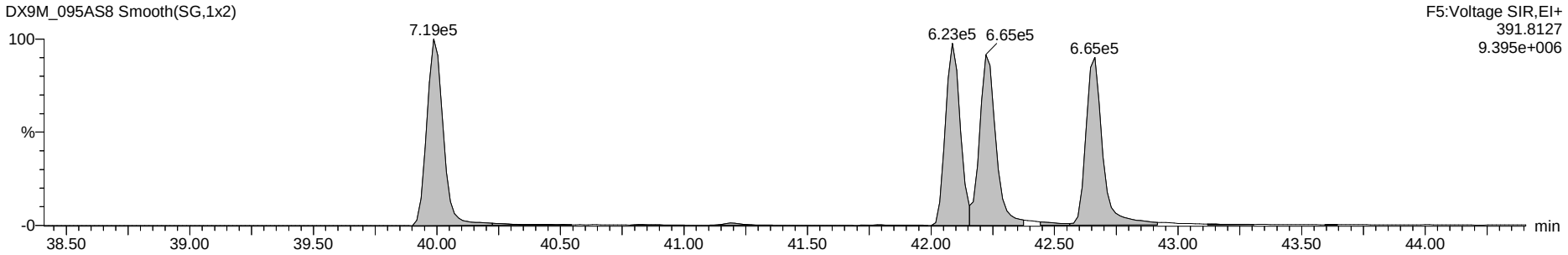
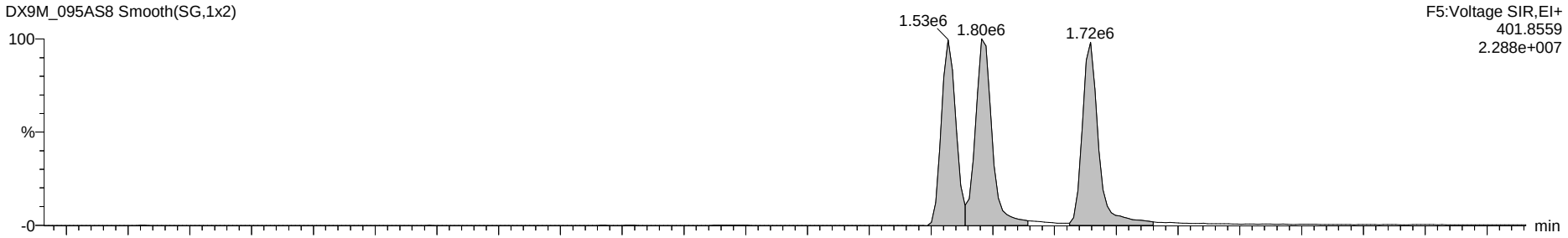
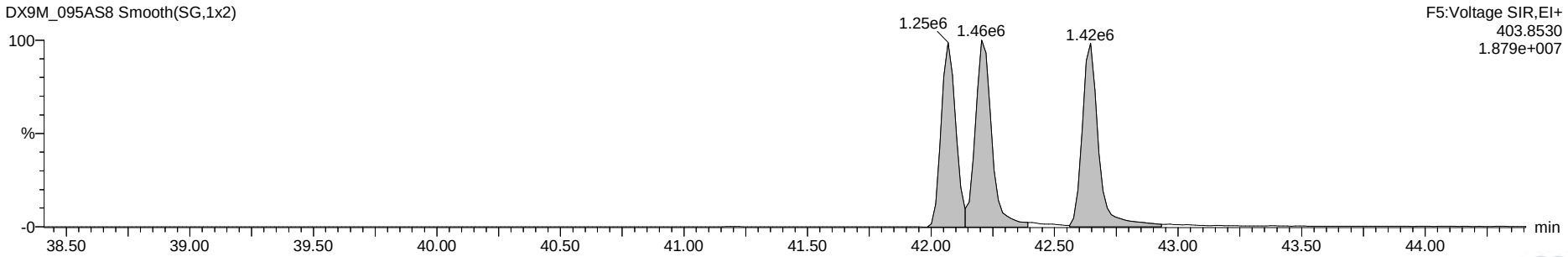
Total Hexa-Dioxins





13C-Hexa-Dioxins





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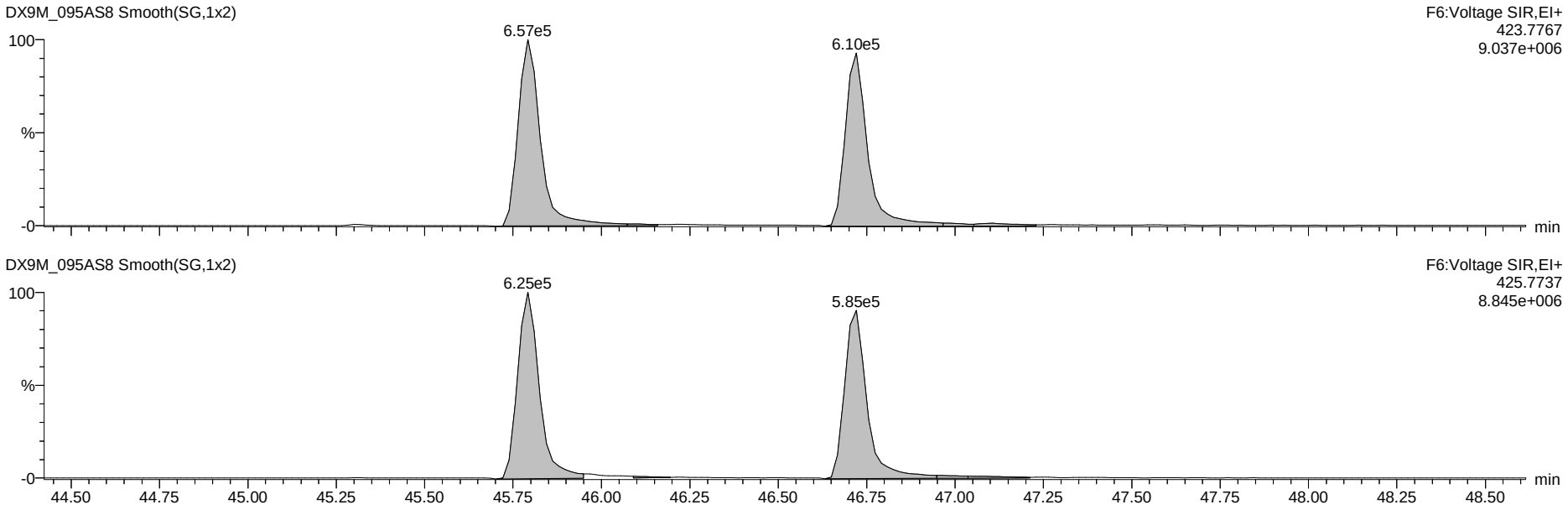
Total Hepta-Dioxins



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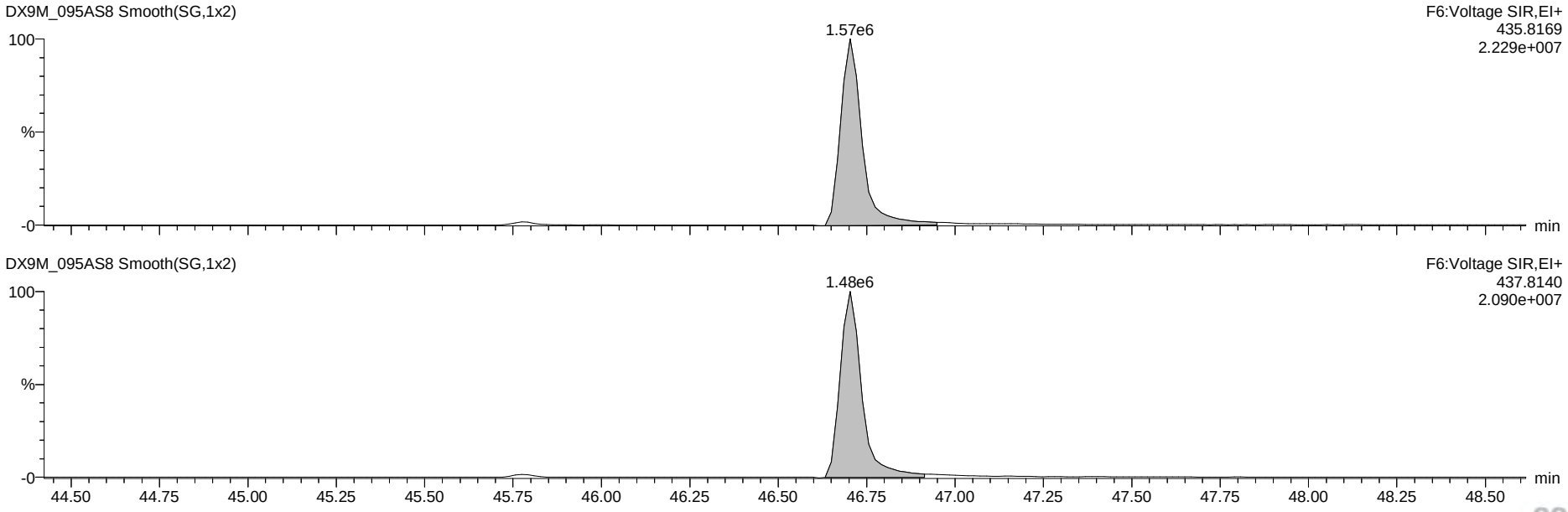

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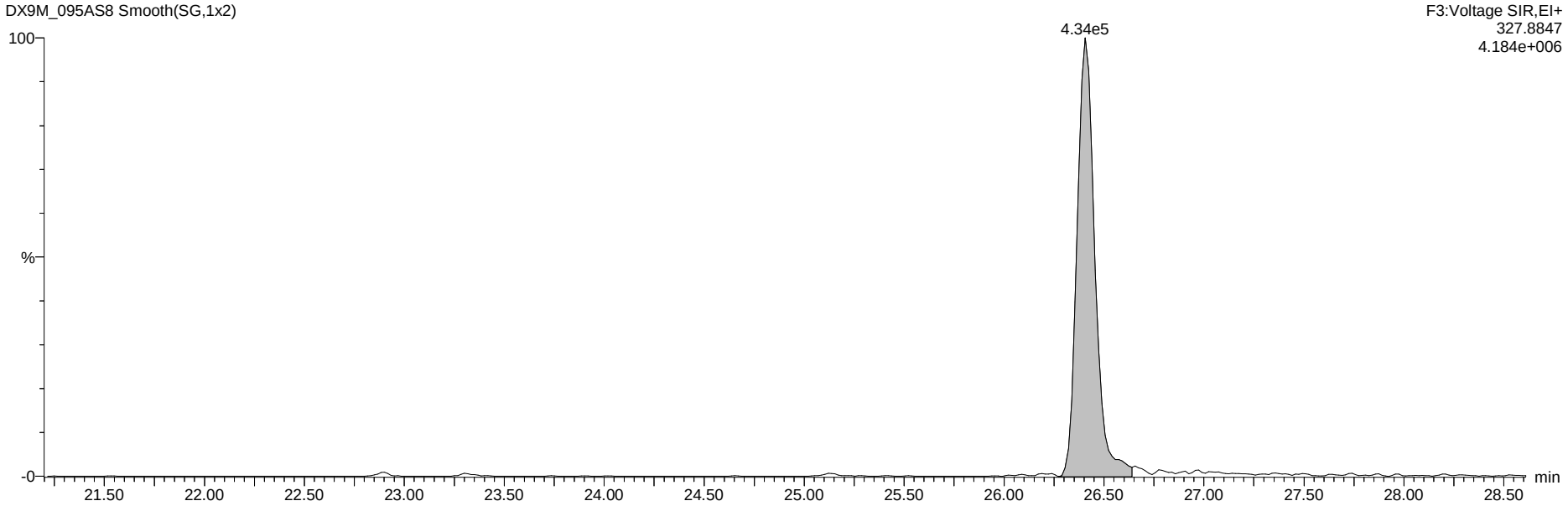
Name: DX9M_095AS8, Date: 17-Sep-2019, Time: 16:05:42, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

37Cl-2,3,7,8-TCDD



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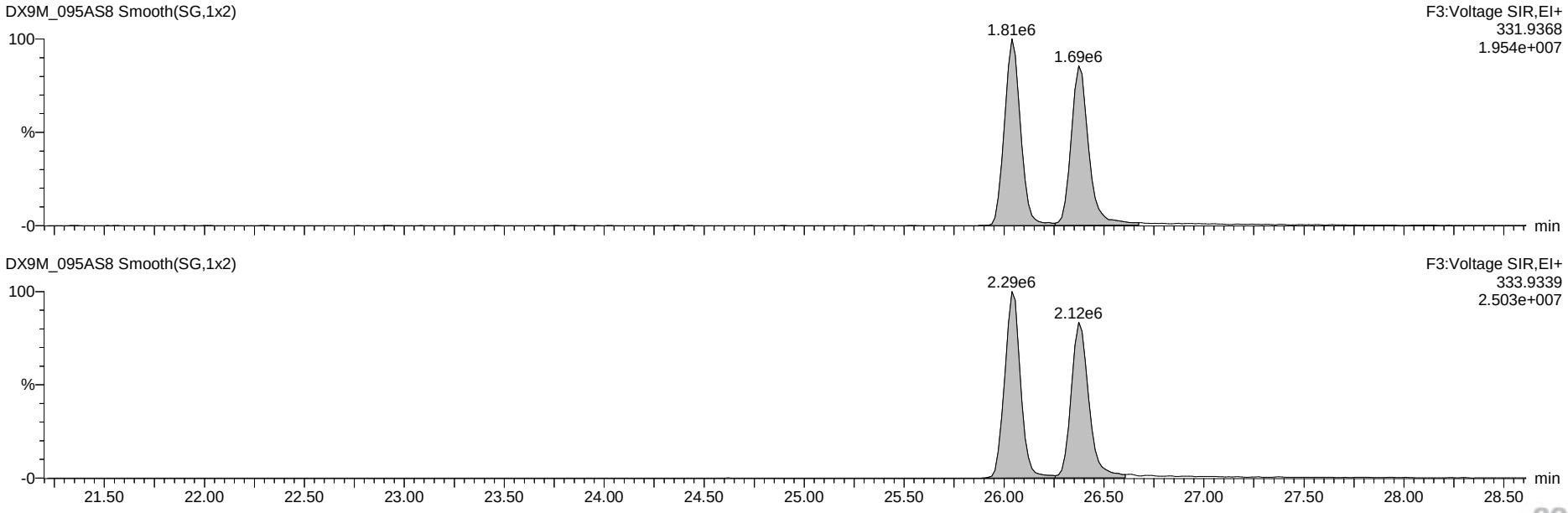

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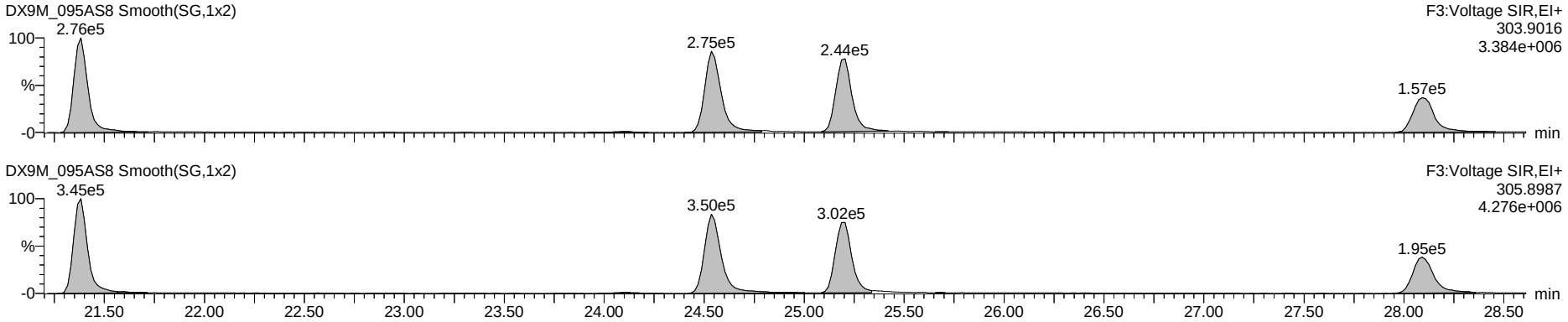
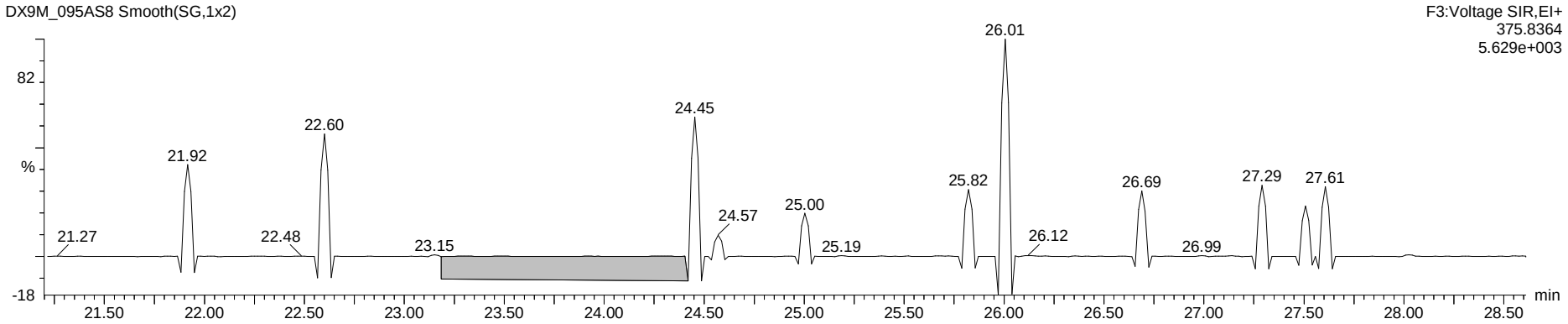
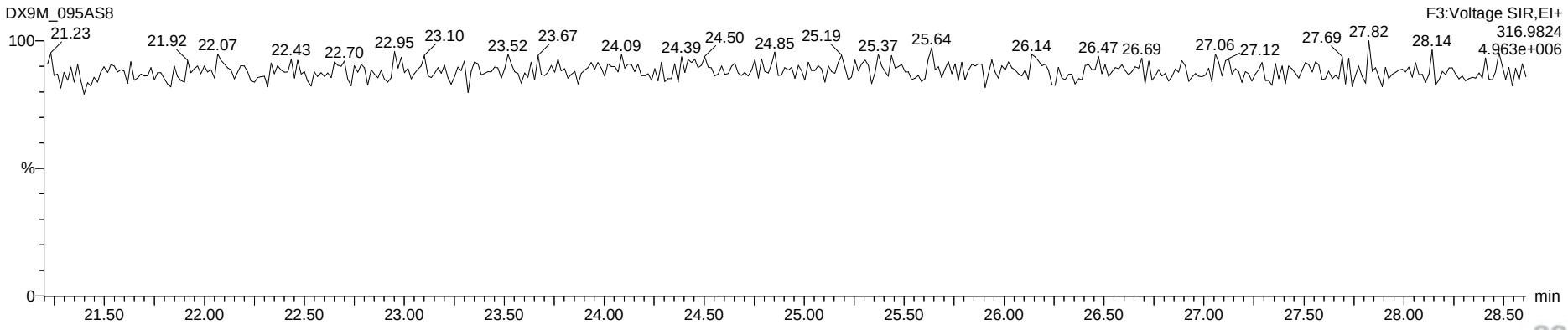
Total Tetra-Furans



Hexa DPE



Tetra Lock



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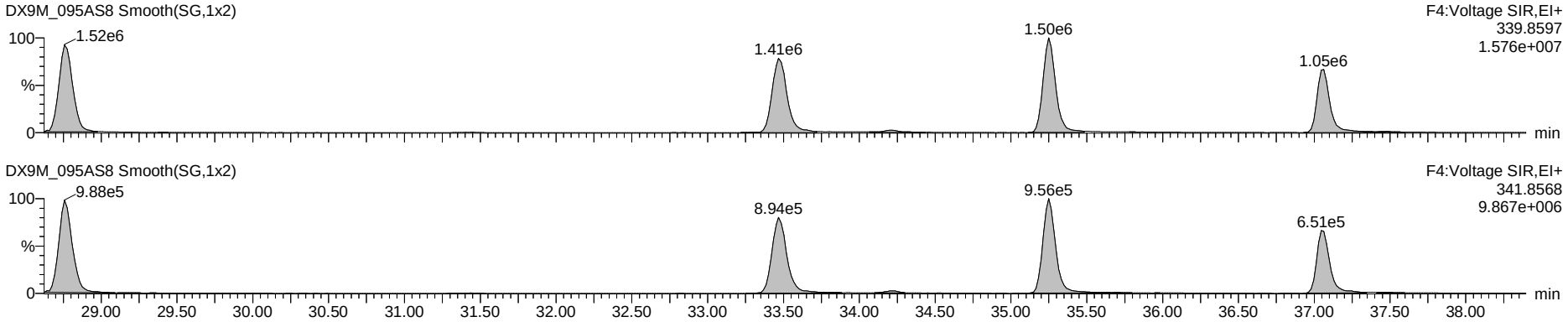
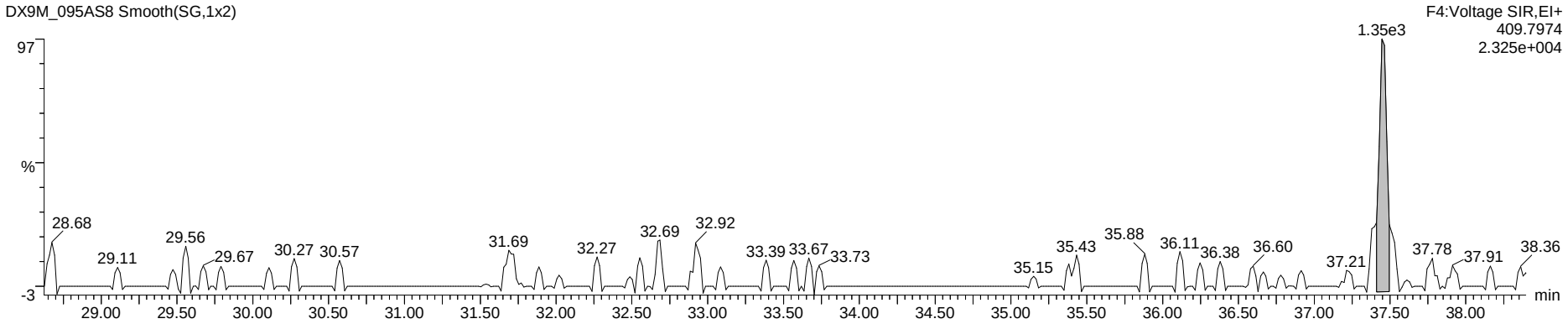
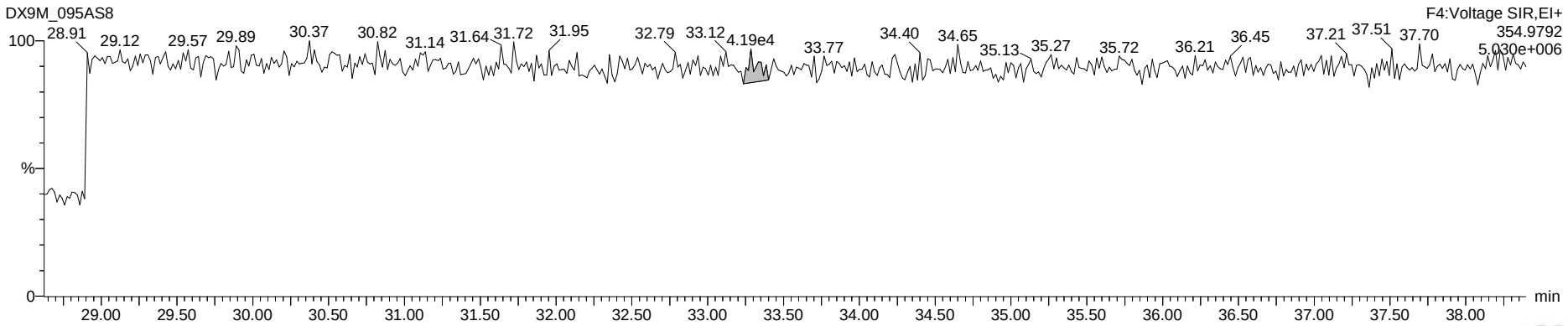
Total Penta-Furans



Hepta DPE



Penta Lock



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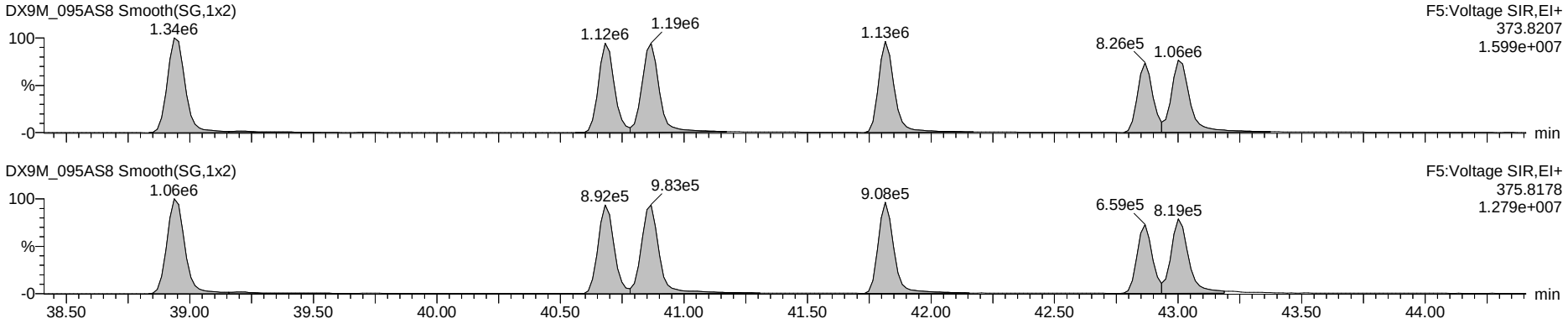
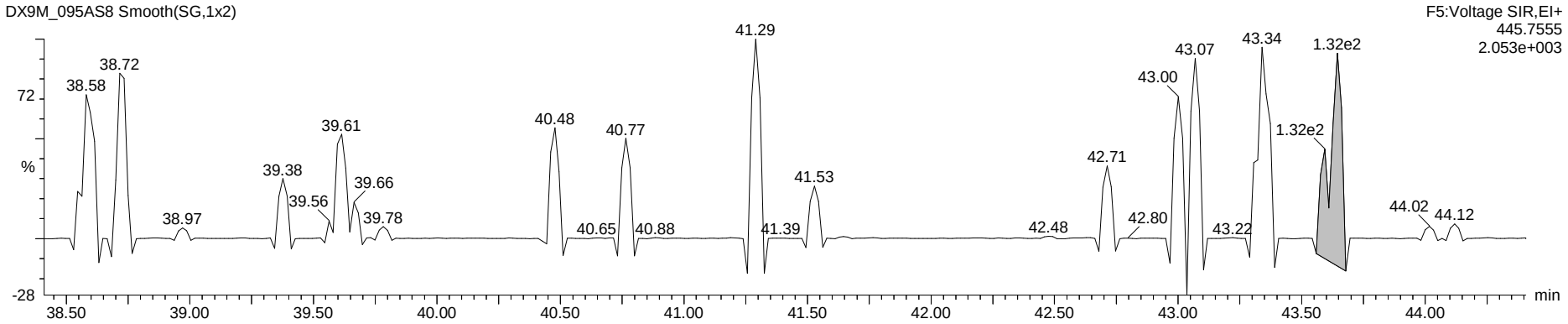
Total Hexa-Furans



Octa DPE



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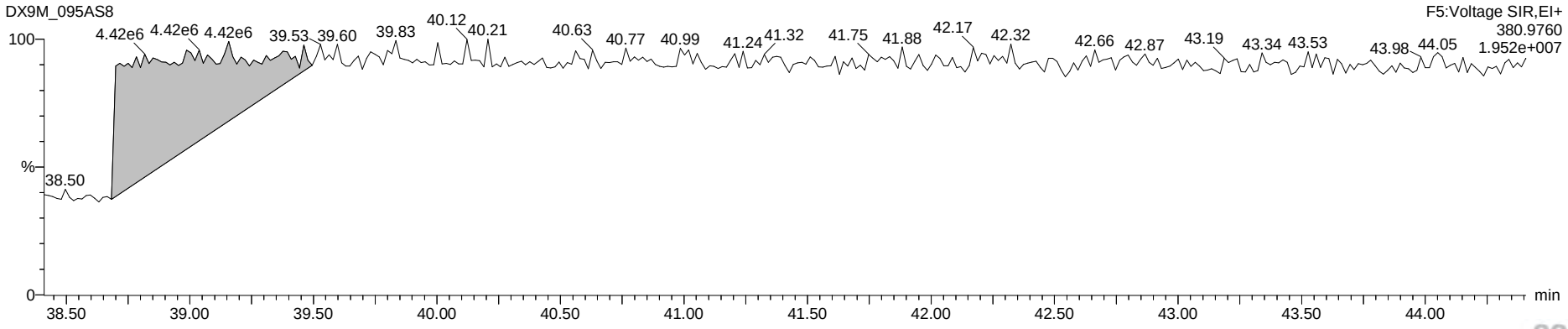

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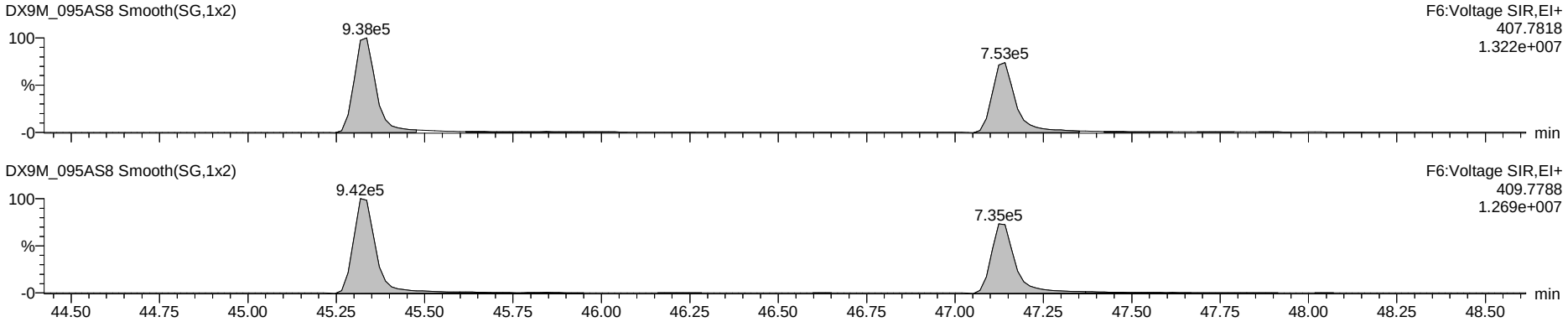
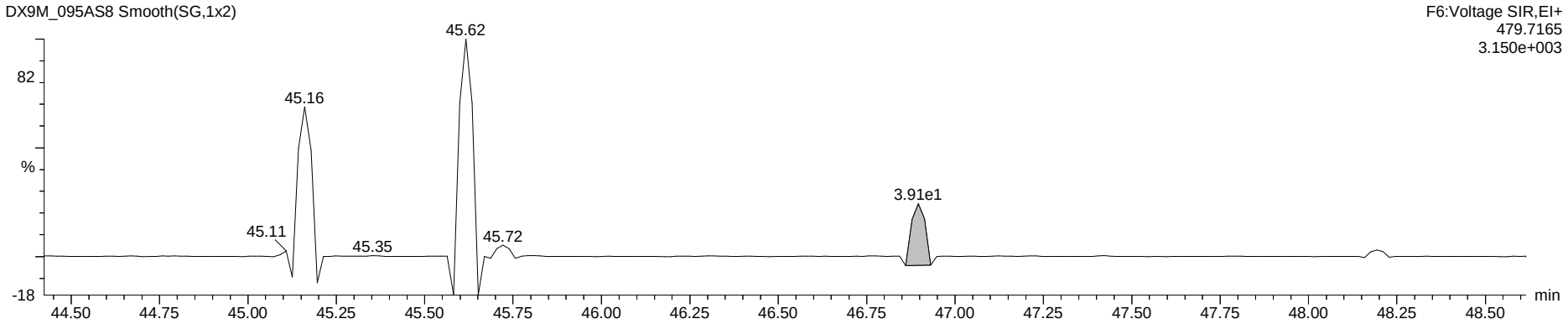
Name: DX9M_095AS8, Date: 17-Sep-2019, Time: 16:05:42, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

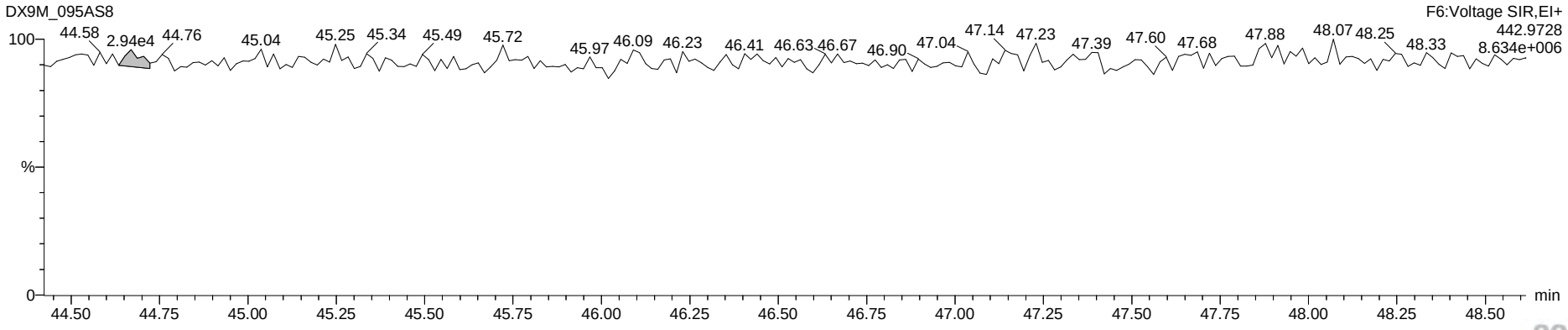
Total Hepta-Furans



Nona DPE



Hepta Lock



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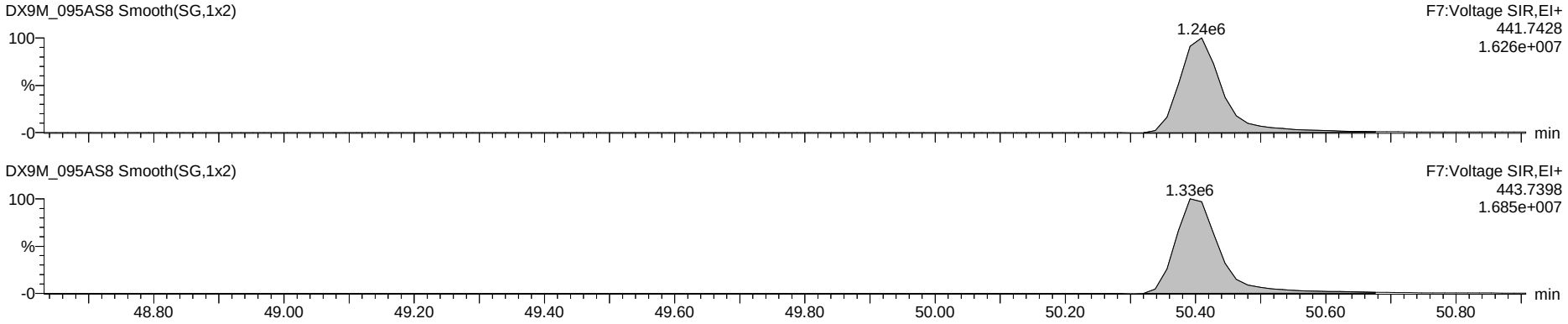
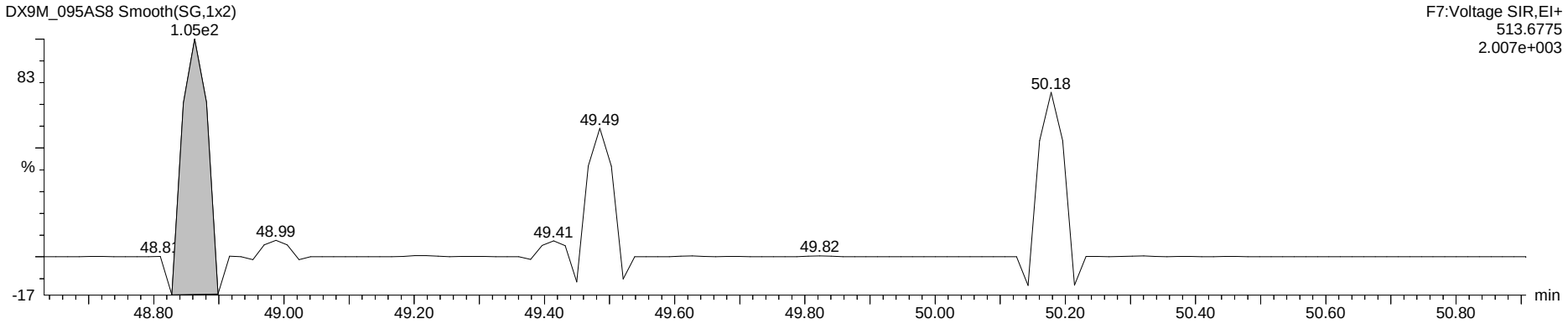
Name: DX9M_095AS8, Date: 17-Sep-2019, Time: 16:05:42, ID: DX042D-CAL,,/01, Description: 1,,1.0uL Cal Win/Res

OCDF



Deca DPE



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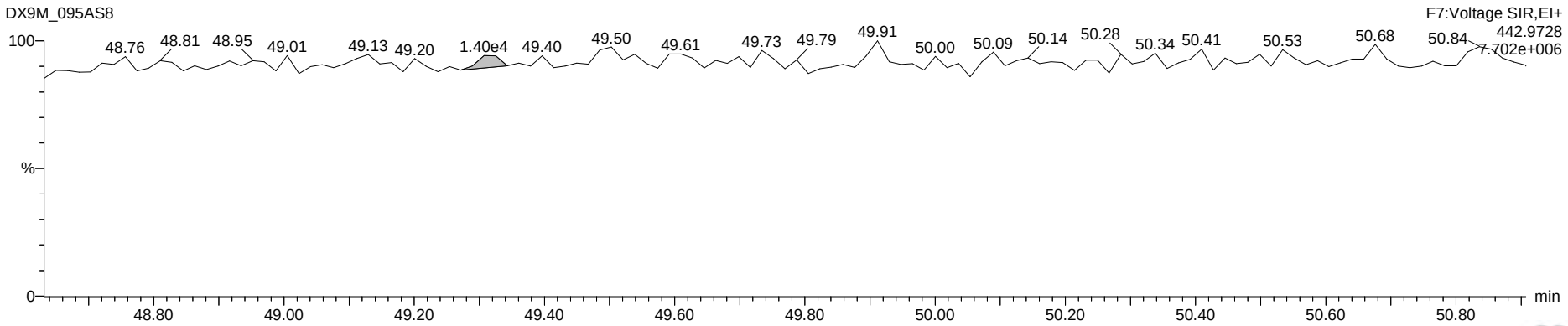

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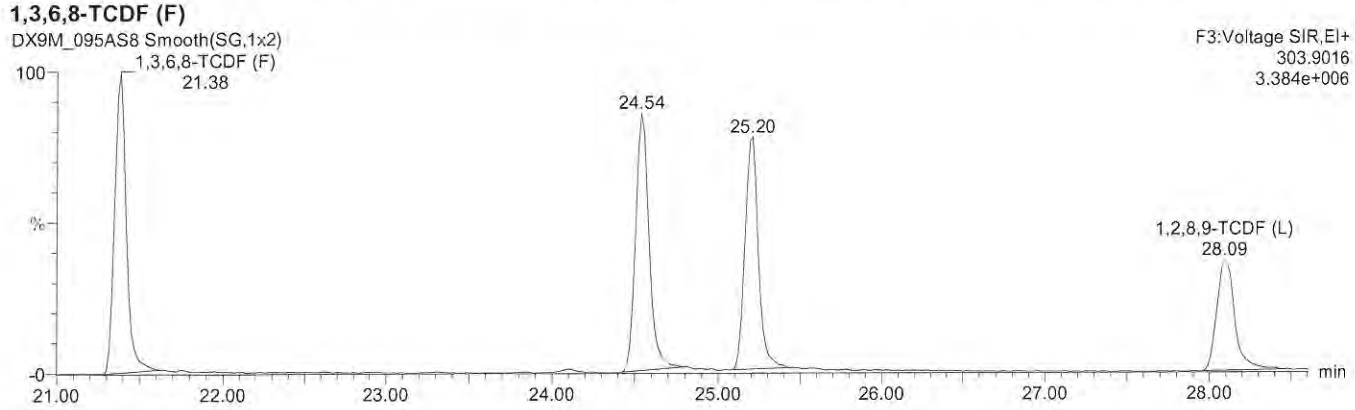
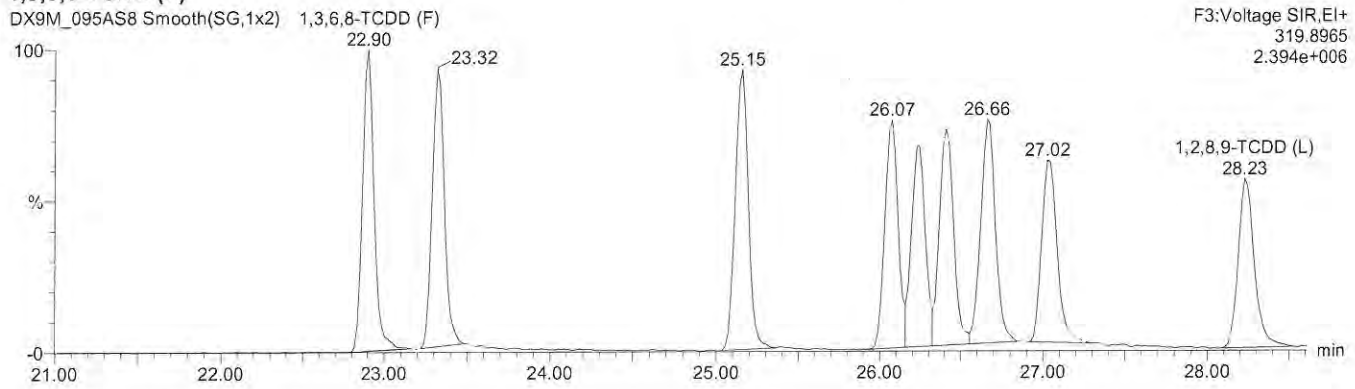
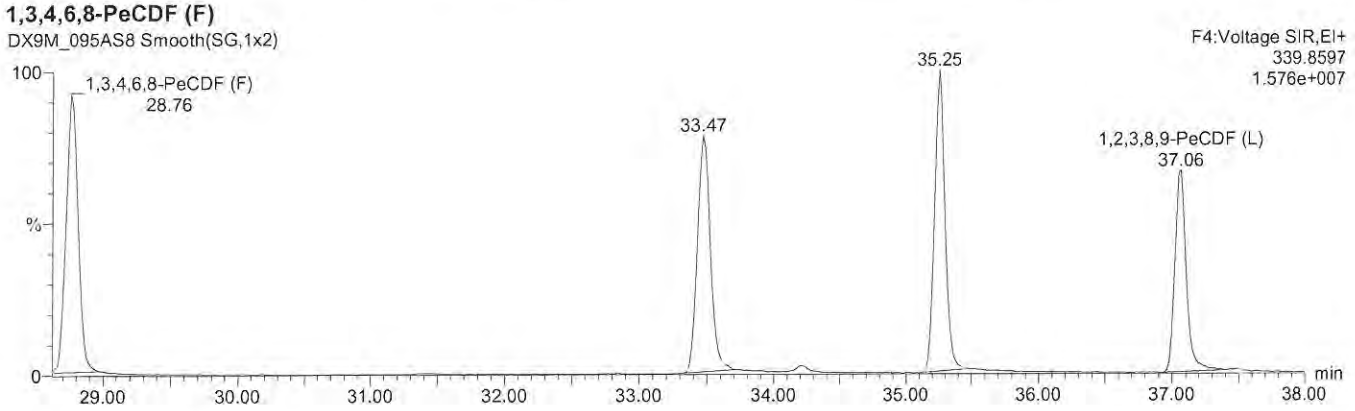
1,3,6,8-TCDF (F)



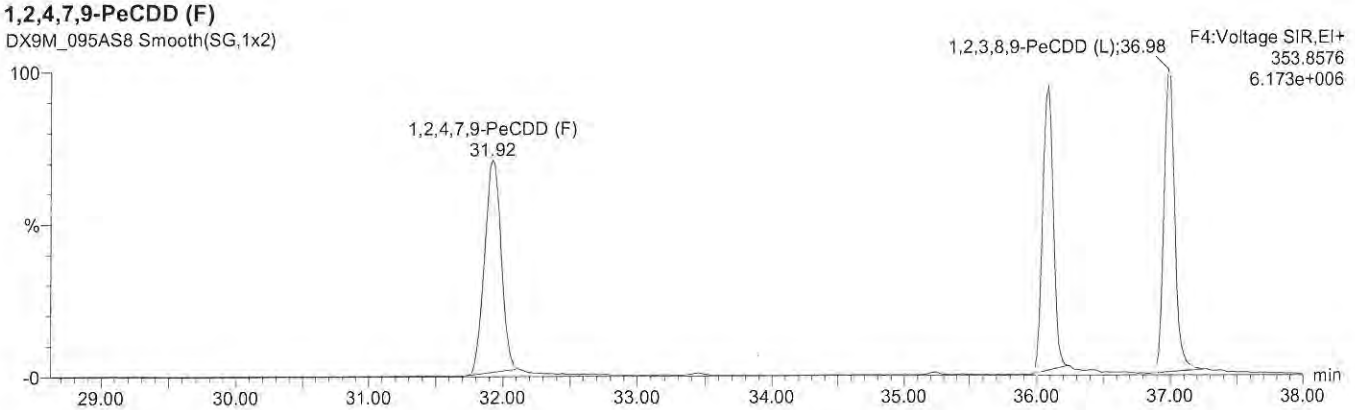
1,3,6,8-TCDD (F)



1,3,4,6,8-PeCDF (F)



1,2,4,7,9-PeCDD (F)



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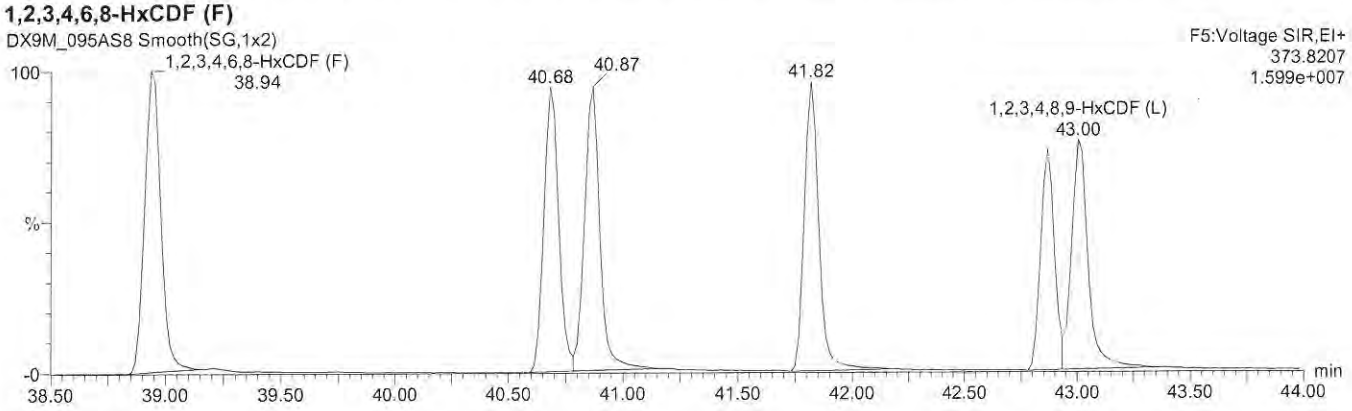
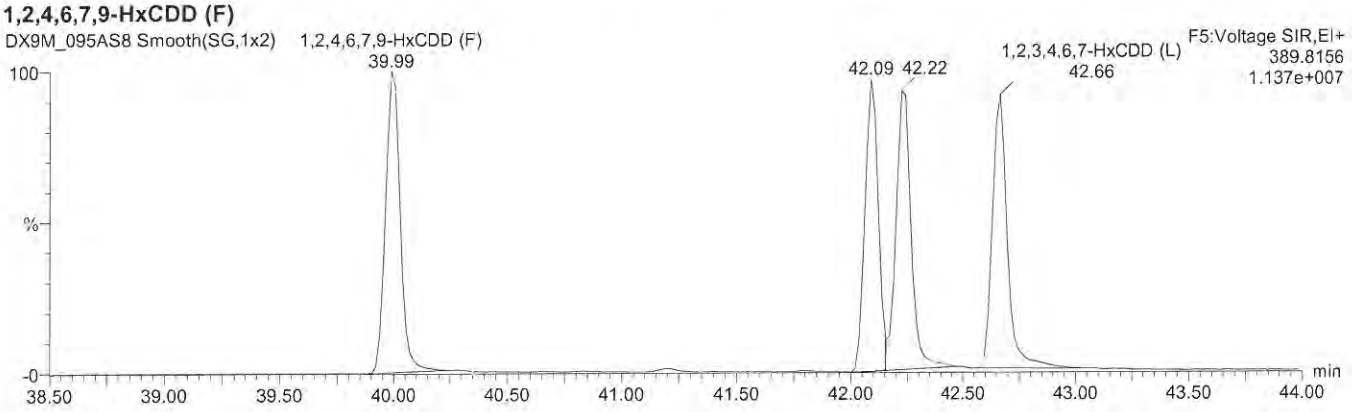
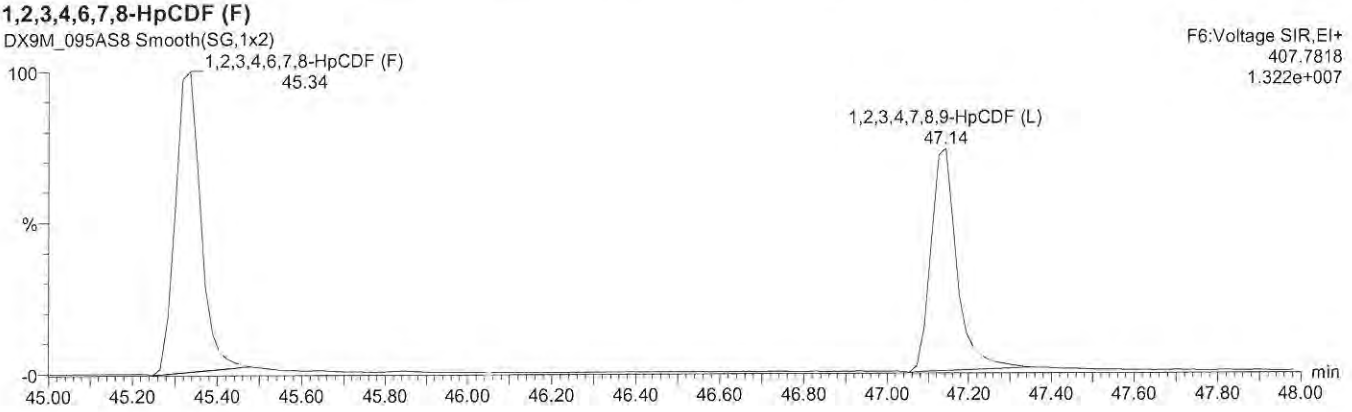
1,2,3,4,6,8-HxCDF (F)



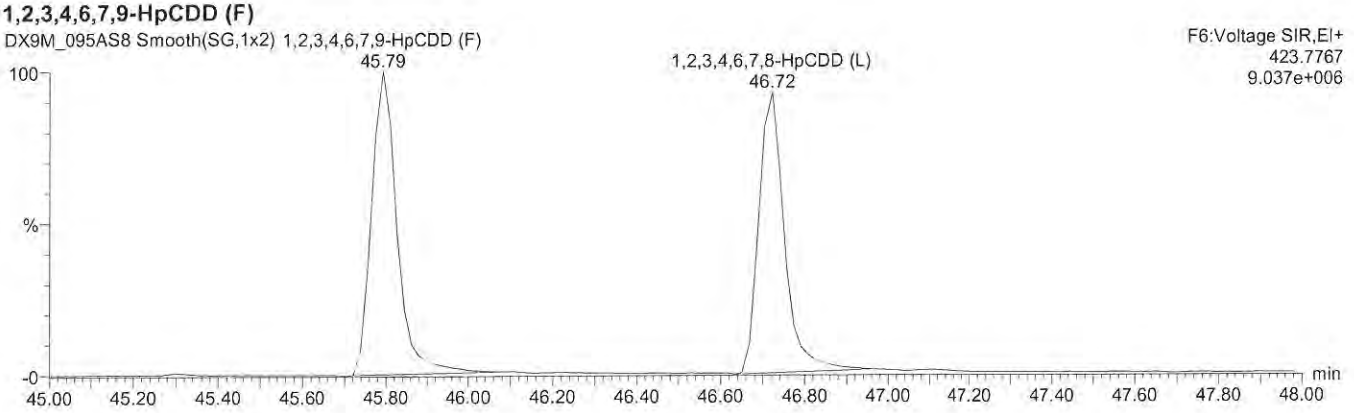
1,2,4,6,7,9-HxCDD (F)



1,2,3,4,6,7,8-HpCDF (F)



1,2,3,4,6,7,9-HpCDD (F)



Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-101 Rev. 45

				Serum	Solids											Tissue					Urine	Water	Water, Non-Potable											
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
BFR	BTBPE	SGS AXYS MLA-033	MLA-033		Y											Y						Y											
	DBDPE	SGS AXYS MLA-033	MLA-033		Y											Y						Y											
	HBB	SGS AXYS MLA-033	MLA-033		Y											Y						Y											
	PBEB	SGS AXYS MLA-033	MLA-033		Y											Y						Y											
Bisphenols	Bisphenol A	SGS AXYS MLA-113	MLA-113		Y																	Y											
	Bisphenol AF	SGS AXYS MLA-113	MLA-113		Y																	Y											
	Bisphenol B	SGS AXYS MLA-113	MLA-113		Y																	Y											
	Bisphenol E	SGS AXYS MLA-113	MLA-113		Y																	Y											
	Bisphenol F	SGS AXYS MLA-113	MLA-113		Y																	Y											
	Bisphenol S	SGS AXYS MLA-113	MLA-113		Y																	Y											
BPA and MPE	4,4'-dihydroxy-2,2-diphenylpropane (Bisphenol A) (BPA)	SGS AXYS MLA-059	MLA-059																		Y												
	Mono-(2-ethyl-5-hydroxyhexyl) phthalate (MEHHP)	SGS AXYS MLA-059	MLA-059																		Y												
	Mono-(2-ethyl-5-oxohexyl) phthalate (MEOHP)	SGS AXYS MLA-059	MLA-059																		Y												
	Mono-(3-carboxypropyl) phthalate (MCPP)	SGS AXYS MLA-059	MLA-059																		Y												
	Mono-2-ethylhexyl phthalate (MEHP)	SGS AXYS MLA-059	MLA-059																		Y												
	Mono-benzyl phthalate (MBzP)	SGS AXYS MLA-059	MLA-059																		Y												
	Mono-butyl phthalate (MBP) (n + iso)	SGS AXYS MLA-059	MLA-059																		Y												
	Mono-cyclohexyl phthalate (MCHP)	SGS AXYS MLA-059	MLA-059																		Y												
	Mono-ethyl phthalate (MEP)	SGS AXYS MLA-059	MLA-059																		Y												
	Mono-iso-nonyl phthalate (MiNP)	SGS AXYS MLA-059	MLA-059																		Y												
	Mono-methyl phthalate (MMP)	SGS AXYS MLA-059	MLA-059																		Y												
HBCDD	alpha-hexabromocyclododecane (a-HBCDD)	SGS AXYS MLA-070	MLA-070	Y																													
	beta-hexabromocyclododecane (b-HBCDD)	SGS AXYS MLA-070	MLA-070	Y																													
	gamma-hexabromocyclododecane (g-HBCDD)	SGS AXYS MLA-070	MLA-070	Y																													
OC Pesticides	"Organochlorine Pesticides" category (CA only)	EPA 608	MLA-007																				Y										
		EPA 625	MLA-007																				Y										
		EPA 8081	MLA-007			Y																											
	"Pesticides" category (CA only)	EPA 8270	MLA-007			Y																											
	2,4'-DDD	EPA 625	MLA-007																					Y									
		EPA 8270	MLA-007				Y					Y																					
		EPA 1699	MLA-028				Y																	Y									
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y				Y						Y		Y						Y			
		SGS AXYS MLA-007	MLA-007	Y	Y		Y									Y						Y		Y									
	2,4'-DDE	EPA 625	MLA-007																					Y									
		EPA 8270	MLA-007				Y					Y																					
		EPA 1699	MLA-028				Y																	Y									
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y				Y						Y		Y						Y			
		SGS AXYS MLA-007	MLA-007	Y	Y		Y									Y						Y		Y									
	2,4'-DDT	EPA 625	MLA-007																					Y									
		EPA 8270	MLA-007				Y					Y																					
		EPA 1699	MLA-028				Y																	Y									
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y				Y						Y		Y						Y			
		SGS AXYS MLA-007	MLA-007	Y	Y		Y									Y						Y		Y									
	4,4'-DDD	EPA 625	MLA-007																					Y			Y	Y		Y			
		EPA 8270	MLA-007				Y			Y	Y	Y	Y																					
		EPA 1699	MLA-028				Y																	Y									
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y												Y						Y			
		SGS AXYS MLA-007	MLA-007	Y	Y		Y																	Y									
	4,4'-DDE	EPA 625	MLA-007																					Y			Y	Y		Y			
		EPA 8270	MLA-007				Y			Y	Y	Y	Y																					

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-101 Rev. 45

				Serum	Solids											Tissue						Urine	Water	Water, Non-Potable										
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
		EPA 1699	MLA-028				Y																	Y										
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y				Y						Y		Y						Y				
		SGS AXYS MLA-007	MLA-007	Y	Y		Y									Y						Y		Y										
	4,4'-DDT	EPA 625	MLA-007																					Y				Y	Y		Y			
		EPA 8270	MLA-007				Y			Y	Y	Y	Y																					
		EPA 1699	MLA-028				Y																	Y										
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y				Y						Y		Y						Y				
		SGS AXYS MLA-007	MLA-007	Y	Y		Y									Y						Y		Y										
	Aldrin	EPA 625	MLA-007																					Y				Y	Y		Y			
		EPA 8270	MLA-007				Y			Y	Y	Y	Y																					
		EPA 1699	MLA-028				Y																	Y										
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y				Y						Y		Y						Y				
		SGS AXYS MLA-007	MLA-007	Y	Y		Y									Y						Y		Y										
	Alpha-HCH	EPA 625	MLA-007																					Y				Y	Y		Y			
		EPA 8270	MLA-007				Y			Y	Y	Y	Y																					
		EPA 1699	MLA-028				Y																	Y										
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y				Y						Y		Y						Y				
		SGS AXYS MLA-007	MLA-007	Y	Y		Y									Y						Y		Y										
	Beta-HCH	EPA 625	MLA-007																					Y				Y	Y		Y			
		EPA 8270	MLA-007				Y			Y	Y	Y	Y																					
		EPA 1699	MLA-028				Y																	Y										
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y				Y						Y		Y						Y				
		SGS AXYS MLA-007	MLA-007	Y	Y		Y									Y						Y		Y										
	Chlordane, technical	EPA 8270	MLA-007				Y			Y	Y		Y											Y				Y	Y		Y			
		SGS AXYS MLA-007	MLA-007				Y																	Y										
	cis-Chlordane (alpha-Chlordane)	EPA 8270	MLA-007				Y			Y		Y	Y											Y				Y			Y			
		EPA 1699	MLA-028				Y																	Y										
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y				Y						Y		Y						Y				
		SGS AXYS MLA-007	MLA-007	Y	Y		Y									Y						Y		Y										
	cis-Nonachlor	EPA 8270	MLA-007				Y					Y												Y										
		EPA 1699	MLA-028				Y																	Y										
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y				Y						Y		Y						Y				
		SGS AXYS MLA-007	MLA-007	Y	Y		Y									Y						Y		Y										
	Delta-HCH	EPA 608	MLA-007																					Y				Y	Y		Y			
		EPA 8081	MLA-007				Y			Y	Y	Y	Y																					
		EPA 1699	MLA-028				Y																	Y										
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y				Y						Y		Y						Y				
		SGS AXYS MLA-007	MLA-007	Y	Y		Y									Y						Y		Y										
	Dieldrin	EPA 608	MLA-007																					Y				Y	Y		Y			
		EPA 8081	MLA-007				Y			Y	Y	Y	Y																					
		EPA 1699	MLA-028				Y																	Y										
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y				Y						Y		Y						Y				
		SGS AXYS MLA-007	MLA-007	Y	Y		Y									Y						Y		Y										
	Endosulphan I	EPA 608	MLA-007																					Y				Y	Y		Y			
		EPA 8081	MLA-007				Y			Y	Y	Y	Y																					
		EPA 1699	MLA-028				Y																	Y										
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y				Y						Y		Y						Y				
		SGS AXYS MLA-007	MLA-007	Y	Y		Y									Y						Y		Y										
	Endosulphan II	EPA 608	MLA-007																					Y				Y	Y		Y			
		EPA 8081	MLA-007				Y			Y	Y	Y	Y																					

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-101 Rev. 45

				Serum	Solids											Tissue						Urine	Water	Water, Non-Potable										
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
		EPA 1699	MLA-028				Y																	Y										
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y				Y						Y		Y						Y				
		SGS AXYS MLA-007	MLA-007	Y	Y		Y									Y						Y		Y										
	Endosulphan sulphate	EPA 608	MLA-007																					Y				Y	Y		Y			
		EPA 8081	MLA-007				Y			Y	Y	Y	Y																					
		EPA 1699	MLA-028				Y																	Y										
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y				Y						Y		Y						Y				
		SGS AXYS MLA-007	MLA-007	Y	Y		Y									Y						Y		Y										
	Endrin	EPA 608	MLA-007																					Y				Y	Y		Y			
		EPA 8081	MLA-007				Y			Y	Y	Y	Y																					
		EPA 1699	MLA-028				Y																	Y										
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y				Y						Y		Y						Y				
		SGS AXYS MLA-007	MLA-007	Y	Y		Y									Y						Y		Y										
	Endrin aldehyde	EPA 608	MLA-007																					Y				Y	Y		Y			
		EPA 8081	MLA-007				Y			Y	Y	Y	Y																					
		EPA 1699	MLA-028				Y																	Y										
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y				Y						Y		Y						Y				
		SGS AXYS MLA-007	MLA-007		Y		Y															Y		Y										
	Endrin ketone	EPA 8081	MLA-007				Y			Y		Y																						
		EPA 1699	MLA-028				Y																	Y										
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y				Y						Y		Y						Y				
		SGS AXYS MLA-007	MLA-007	Y	Y		Y									Y						Y		Y										
	Gamma-HCH (Lindane)	EPA 625	MLA-007																					Y				Y	Y		Y			
		EPA 8270	MLA-007				Y			Y	Y	Y	Y																					
		EPA 1699	MLA-028				Y																	Y										
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y				Y						Y		Y						Y				
		SGS AXYS MLA-007	MLA-007	Y	Y		Y									Y						Y		Y										
	Heptachlor	EPA 625	MLA-007																					Y				Y	Y		Y			
		EPA 8270	MLA-007				Y			Y	Y	Y	Y																					
		EPA 1699	MLA-028				Y																	Y										
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y				Y						Y		Y						Y				
		SGS AXYS MLA-007	MLA-007	Y	Y		Y									Y						Y		Y										
	Heptachlor epoxide	EPA 608	MLA-007																					Y				Y	Y		Y			
		EPA 8081	MLA-007				Y			Y	Y	Y	Y																					
		EPA 1699	MLA-028				Y																	Y										
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y				Y						Y		Y						Y				
		SGS AXYS MLA-007	MLA-007	Y	Y		Y									Y						Y		Y										
	Hexachlorobenzene	EPA 1625	MLA-007																					Y				Y						
		EPA 8270	MLA-007				Y			Y	Y	Y	Y																					
		EPA 1699	MLA-028				Y																	Y										
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y				Y						Y		Y						Y				
		SGS AXYS MLA-007	MLA-007	Y	Y		Y									Y						Y		Y										
	Methoxychlor	EPA 608	MLA-007																					Y				Y	Y					
		EPA 8081	MLA-007				Y			Y	Y	Y	Y																					
		EPA 1699	MLA-028				Y																	Y										
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y				Y						Y		Y						Y				
		SGS AXYS MLA-007	MLA-007	Y	Y		Y									Y						Y		Y										
	Mirex	EPA 8270	MLA-007				Y			Y		Y												Y				Y	Y		Y			
		EPA 1699	MLA-028				Y																	Y										
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y				Y						Y		Y						Y				

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-101 Rev. 45

				Serum	Solids											Tissue						Urine	Water	Water, Non-Potable										
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS		CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
		SGS AXYS MLA-007	MLA-007	Y	Y		Y									Y							Y		Y									
	Oxychlordane	EPA 8270	MLA-007				Y					Y													Y									
		EPA 1699	MLA-028				Y																		Y									
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y				Y							Y		Y					Y				
		SGS AXYS MLA-007	MLA-007	Y	Y		Y									Y							Y		Y									
	Toxaphene	EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-007	MLA-007		Y											Y							Y											
	trans-Chlordane (gamma-Chlordane)	EPA 8270	MLA-007				Y			Y		Y	Y												Y				Y			Y		
		EPA 1699	MLA-028				Y																		Y									
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y				Y							Y		Y					Y				
		SGS AXYS MLA-007	MLA-007	Y	Y		Y									Y							Y		Y									
	trans-Nonachlor	EPA 8270	MLA-007				Y					Y													Y									
		EPA 1699	MLA-028				Y																		Y									
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y				Y							Y		Y					Y				
		SGS AXYS MLA-007	MLA-007	Y	Y		Y									Y									Y									
PAH	1,2,6-Trimethylphenanthrene	SGS AXYS MLA-021	MLA-021		Y																		Y											
	1,2-Dimethylnaphthalene	SGS AXYS MLA-021	MLA-021		Y																		Y											
	1,4,6,7-Tetramethylnaphthalene	SGS AXYS MLA-021	MLA-021		Y																		Y											
	1,7-Dimethylfluorene	SGS AXYS MLA-021	MLA-021		Y																		Y											
	1,7-Dimethylphenanthrene	SGS AXYS MLA-021	MLA-021		Y																		Y											
	1,8-Dimethylphenanthrene	SGS AXYS MLA-021	MLA-021		Y																		Y											
	1-Methylchrysene	SGS AXYS MLA-021	MLA-021		Y																		Y											
	1-Methylnaphthalene	SGS AXYS MLA-021	MLA-021		Y																		Y											
	1-Methylphenanthrene	SGS AXYS MLA-021	MLA-021		Y																		Y											
	2,3,5-Trimethylnaphthalene	SGS AXYS MLA-021	MLA-021		Y																		Y											
	2,3,6-Trimethylnaphthalene	SGS AXYS MLA-021	MLA-021		Y																		Y											
	2,4-Dimethyldibenzothiophene	SGS AXYS MLA-021	MLA-021		Y																		Y											
	2,6-Dimethylnaphthalene	SGS AXYS MLA-021	MLA-021		Y																		Y											
	2,6-Dimethylphenanthrene	SGS AXYS MLA-021	MLA-021		Y																		Y											
	2-Methylanthracene	SGS AXYS MLA-021	MLA-021		Y																		Y											
	2-Methyldibenzothiophene	SGS AXYS MLA-021	MLA-021		Y																		Y											
	2-Methylfluorene	SGS AXYS MLA-021	MLA-021		Y																		Y											
	2-Methylnaphthalene	EPA 8270	MLA-021				Y			Y															Y										
		SGS AXYS MLA-021	MLA-021		Y		Y																		Y										
	2-Methylphenanthrene	SGS AXYS MLA-021	MLA-021		Y																		Y											
	3,6-Dimethylphenanthrene	SGS AXYS MLA-021	MLA-021		Y																		Y											
	3-Methyldibenzothiophene	SGS AXYS MLA-021	MLA-021		Y																		Y											
	3-Methylfluoranthene/ Benzo(a)fluorene	SGS AXYS MLA-021	MLA-021		Y																		Y											
	3-Methylphenanthrene	SGS AXYS MLA-021	MLA-021		Y																		Y											
	5,9-Dimethylchrysene	SGS AXYS MLA-021	MLA-021		Y																		Y											
	5/6-Methylchrysenes	SGS AXYS MLA-021	MLA-021		Y																		Y											
	7-Methylbenzo(a)pyrene	SGS AXYS MLA-021	MLA-021		Y																		Y											
	9/4-Methylphenanthrenes	SGS AXYS MLA-021	MLA-021		Y																		Y											
	Acenaphthene	EPA 1625	MLA-021																						Y				Y	Y				
		EPA 8270	MLA-021				Y			Y	Y		Y																						
		SGS AXYS MLA-021	MLA-021		Y		Y									Y							Y		Y									
	Acenaphthylene	EPA 1625	MLA-021																						Y				Y	Y				
		EPA 8270	MLA-021				Y			Y	Y		Y																						
		SGS AXYS MLA-021	MLA-021		Y		Y									Y							Y		Y									
	Anthracene	EPA 1625	MLA-021																						Y				Y	Y				

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-101 Rev. 45

Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum	Solids										Tissue					Urine	Water	Water, Non-Potable										
				CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
		EPA 8270	MLA-021				Y			Y	Y		Y																			
		SGS AXYS MLA-021	MLA-021		Y		Y									Y						Y		Y									
	Benz[a]anthracene	EPA 1625	MLA-021																					Y				Y	Y				
		EPA 8270	MLA-021				Y			Y	Y		Y																				
		SGS AXYS MLA-021	MLA-021		Y		Y									Y						Y		Y									
	Benzo[a]pyrene	EPA 1625	MLA-021																					Y				Y	Y				
		EPA 8270	MLA-021				Y			Y	Y		Y																				
		SGS AXYS MLA-021	MLA-021		Y		Y									Y						Y		Y									
	Benzo[b]fluoranthene	EPA 1625	MLA-021																					Y				Y	Y		Y		
		EPA 8270	MLA-021				Y			Y	Y		Y																				
		SGS AXYS MLA-021	MLA-021		Y		Y									Y						Y		Y									
	Benzo[e]pyrene	SGS AXYS MLA-021	MLA-021		Y											Y						Y											
	Benzo[ghi]perylene	EPA 1625	MLA-021																					Y				Y	Y				
		EPA 8270	MLA-021				Y			Y	Y		Y																				
		SGS AXYS MLA-021	MLA-021		Y		Y									Y						Y		Y									
	Benzo[j/k]fluoranthenes	SGS AXYS MLA-021	MLA-021		Y											Y						Y											
	Benzo[k]fluoranthene	EPA 1625	MLA-021																					Y				Y	Y		Y		
		EPA 8270	MLA-021				Y			Y			Y																				
		SGS AXYS MLA-021	MLA-021				Y																	Y									
	Biphenyl	SGS AXYS MLA-021	MLA-021		Y																	Y											
	C1-Acenaphthenes	SGS AXYS MLA-021	MLA-021		Y																	Y											
	C1-Benz(a)anthracenes/chrysenes	SGS AXYS MLA-021	MLA-021		Y																	Y											
	C1-Benzofluoranthenes/ Benzopyrenes	SGS AXYS MLA-021	MLA-021		Y																	Y											
	C1-Biphenyls	SGS AXYS MLA-021	MLA-021		Y																	Y											
	C1-Dibenzothiophene	SGS AXYS MLA-021	MLA-021		Y																	Y											
	C1-Fluoranthenes/Pyrenes	SGS AXYS MLA-021	MLA-021		Y																	Y											
	C1-Fluorenes	SGS AXYS MLA-021	MLA-021		Y																	Y											
	C1-Naphthalenes	SGS AXYS MLA-021	MLA-021		Y																	Y											
	C1-Phenanthrenes/Anthracenes	SGS AXYS MLA-021	MLA-021		Y																	Y											
	C2-Benz(a)anthracenes/Chrysenes	SGS AXYS MLA-021	MLA-021		Y																	Y											
	C2-Benzofluoranthenes/ Benzopyrenes	SGS AXYS MLA-021	MLA-021		Y																	Y											
	C2-Biphenyls	SGS AXYS MLA-021	MLA-021		Y																	Y											
	C2-Dibenzothiophene	SGS AXYS MLA-021	MLA-021		Y																	Y											
	C2-Fluoranthenes/Pyrenes	SGS AXYS MLA-021	MLA-021		Y																	Y											
	C2-Fluorenes	SGS AXYS MLA-021	MLA-021		Y																	Y											
	C2-Naphthalenes	SGS AXYS MLA-021	MLA-021		Y																	Y											
	C2-Phenanthrenes/Anthracenes	SGS AXYS MLA-021	MLA-021		Y																	Y											
	C3-Benz(a)anthracenes/Chrysenes	SGS AXYS MLA-021	MLA-021		Y																	Y											
	C3-Dibenzothiophene	SGS AXYS MLA-021	MLA-021		Y																	Y											
	C3-Fluoranthenes/Pyrenes	SGS AXYS MLA-021	MLA-021		Y																	Y											
	C3-Fluorenes	SGS AXYS MLA-021	MLA-021		Y																	Y											
	C3-Naphthalenes	SGS AXYS MLA-021	MLA-021		Y																	Y											
	C3-Phenanthrenes/Anthracenes	SGS AXYS MLA-021	MLA-021		Y																	Y											
	C4-Benz(a)anthracenes/Chrysenes	SGS AXYS MLA-021	MLA-021		Y																	Y											
	C4-Dibenzothiophene	SGS AXYS MLA-021	MLA-021		Y																	Y											
	C4-Fluoranthenes/Pyrenes	SGS AXYS MLA-021	MLA-021		Y																	Y											
	C4-Naphthalenes	SGS AXYS MLA-021	MLA-021		Y																	Y											
	C4-Phenanthrenes/Anthracenes	SGS AXYS MLA-021	MLA-021		Y																	Y											
	Chrysene	EPA 1625	MLA-021																					Y				Y	Y				
		EPA 8270	MLA-021				Y			Y	Y		Y																				

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SGS AXYS Analytical Services Ltd.
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Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum	Solids										Tissue					Urine	Water	Water, Non-Potable										
				CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
		SGS AXYS MLA-021	MLA-021		Y		Y									Y						Y		Y								
	Dibenz[a,h]anthracene	EPA 1625	MLA-021																					Y				Y	Y			
		EPA 8270	MLA-021				Y			Y	Y		Y																			
		SGS AXYS MLA-021	MLA-021		Y		Y									Y						Y		Y								
	Dibenzothiophene	SGS AXYS MLA-021	MLA-021		Y																	Y										
	Fluoranthene	EPA 1625	MLA-021																					Y				Y	Y			
		EPA 8270	MLA-021				Y			Y	Y		Y																			
		SGS AXYS MLA-021	MLA-021		Y		Y									Y						Y		Y								
	Fluorene	EPA 1625	MLA-021																					Y				Y	Y			
		EPA 8270	MLA-021				Y			Y	Y		Y																			
		SGS AXYS MLA-021	MLA-021		Y		Y									Y						Y		Y								
	Indeno[1,2,3-cd]pyrene	EPA 1625	MLA-021																					Y				Y	Y			
		EPA 8270	MLA-021				Y			Y	Y		Y																			
		SGS AXYS MLA-021	MLA-021		Y		Y									Y						Y		Y								
	Naphthalene	EPA 1625	MLA-021																					Y				Y	Y			
		EPA 8270	MLA-021				Y			Y	Y		Y																			
		SGS AXYS MLA-021	MLA-021		Y		Y									Y						Y		Y								
	Perylene	SGS AXYS MLA-021	MLA-021		Y											Y						Y										
	Phenanthrene	EPA 1625	MLA-021																					Y				Y	Y			
		EPA 8270	MLA-021				Y			Y	Y		Y																			
		SGS AXYS MLA-021	MLA-021		Y		Y									Y						Y		Y								
	Pyrene	EPA 1625	MLA-021																					Y				Y	Y			
		EPA 8270	MLA-021				Y			Y	Y		Y																			
		SGS AXYS MLA-021	MLA-021		Y		Y									Y						Y		Y								
	Retene	SGS AXYS MLA-021	MLA-021		Y																	Y										
PBDPE	BDE 10 2,6-dibromodiphenylether	EPA 1614	MLA-033									Y																	Y			
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y										
	BDE 100 2,2',4,4',6-pentabromodiphenylether	EPA 1614	MLA-033									Y																	Y			
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y										
	BDE 105 2,3,3',4,4'-pentabromodiphenylether	EPA 1614	MLA-033									Y																	Y			
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y										
	BDE 11 3,3'-dibromodiphenylether	EPA 1614	MLA-033									Y																	Y			
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y										
	BDE 116 2,3,4,5,6-pentabromodiphenylether	EPA 1614	MLA-033									Y																	Y			
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y										
	BDE 119 2,3',4,4',6-pentabromodiphenylether	EPA 1614	MLA-033									Y																	Y			
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y										
	BDE 12 3,4-dibromodiphenylether	EPA 1614	MLA-033									Y																	Y			
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y										
	BDE 126 3,3',4,4',5-pentabromodiphenylether	EPA 1614	MLA-033									Y																	Y			
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y										
	BDE 13 3,4'-dibromodiphenylether	EPA 1614	MLA-033									Y																	Y			
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y										
	BDE 140 2,2',3,4,4',6'-hexabromodiphenylether	EPA 1614	MLA-033									Y																	Y			
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y										
	BDE 15 4,4'-dibromodiphenylether	EPA 1614	MLA-033									Y																	Y			
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y										
	BDE 153 2,2',4,4',5,5'-hexabromodiphenylether	EPA 1614	MLA-033									Y																	Y			
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y										
	BDE 154 2,2',4,4',5',6-hexabromodiphenylether	EPA 1614	MLA-033									Y																	Y			

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				Serum	Solids										Tissue					Urine	Water	Water, Non-Potable										
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y											
	BDE 155 2,2',4,4',6,6'-hexabromodiphenylether	EPA 1614	MLA-033									Y																	Y				
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y											
	BDE 166 2,3,4,4',5,6-hexabromodiphenylether	EPA 1614	MLA-033									Y																	Y				
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y											
	BDE 17 2,2',4-tribromodiphenylether	EPA 1614	MLA-033									Y																	Y				
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y											
	BDE 181 2,2',3,4,4',5,6-heptabromodiphenylether	EPA 1614	MLA-033									Y																	Y				
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y											
	BDE 183 2,2',3,4,4',5',6-heptabromodiphenylether	EPA 1614	MLA-033									Y																	Y				
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y											
	BDE 190 2,3,3',4,4',5,6-heptabromodiphenylether	EPA 1614	MLA-033									Y																	Y				
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y											
	BDE 206 2,2',3,3',4,4',5,5',6-nonabromodiphenylether	EPA 1614	MLA-033									Y																	Y				
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y											
	BDE 207 2,2',3,3',4,4',5,6,6'-nonabromodiphenylether	EPA 1614	MLA-033									Y																	Y				
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y											
	BDE 208 2,2',3,3',4,5,5',6,6'-nonabromodiphenylether	EPA 1614	MLA-033									Y																	Y				
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y											
	BDE 209 Decabromodiphenylether	EPA 1614	MLA-033									Y																	Y				
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y											
	BDE 25 2,3',4-tribromodiphenylether	EPA 1614	MLA-033									Y																	Y				
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y											
	BDE 28 2,4,4'-tribromodiphenylether	EPA 1614	MLA-033									Y																	Y				
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y											
	BDE 30 2,4,6-tribromodiphenylether	EPA 1614	MLA-033									Y																	Y				
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y											
	BDE 33 2',3,4-tribromodiphenylether	EPA 1614	MLA-033									Y																	Y				
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y											
	BDE 35 3,3',4-tribromodiphenylether	EPA 1614	MLA-033									Y																	Y				
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y											
	BDE 37 3,4,4'-tribromodiphenylether	EPA 1614	MLA-033									Y																	Y				
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y											
	BDE 47 2,2',4,4'-tetrabromodiphenylether	EPA 1614	MLA-033									Y																	Y				
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y											
	BDE 49 2,2',4,5'-tetrabromodiphenylether	EPA 1614	MLA-033									Y																	Y				
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y											
	BDE 66 2,3',4,4'-tetrabromodiphenylether	EPA 1614	MLA-033									Y																	Y				
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y											
	BDE 7 2,4-dibromodiphenylether	EPA 1614	MLA-033									Y																	Y				
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y											
	BDE 75 2,4,4',6-tetrabromodiphenylether	EPA 1614	MLA-033									Y																	Y				
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y											
	BDE 77 3,3',4,4'-tetrabromodiphenylether	EPA 1614	MLA-033									Y																	Y				
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y											
	BDE 8 2,4'-dibromodiphenylether	EPA 1614	MLA-033									Y																	Y				
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y											
	BDE 85 2,2',3,4,4'-pentabromodiphenylether	EPA 1614	MLA-033									Y																	Y				
		SGS AXYS MLA-033	MLA-033	Y	Y											Y						Y											
	BDE 99 2,2',4,4',5-pentabromodiphenylether	EPA 1614	MLA-033									Y																	Y				

Accreditation Scope

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				Serum	Solids											Tissue						Urine	Water	Water, Non-Potable										
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS		CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
		SGS AXYS MLA-033	MLA-033	Y	Y											Y							Y											
PCB Aroclors	"PCBs" category (CA only)	EPA 625	MLA-007																					Y										
		EPA 8270	MLA-007			Y																												
	PCB Aroclor 1016	EPA 1668	MLA-010				Y						Y												Y						Y			
		EPA 625	MLA-007																						Y				Y	Y		Y		
		EPA 8270	MLA-007				Y			Y	Y																								
		SGS AXYS MLA-010	MLA-010				Y																		Y										
		SGS AXYS MLA-007	MLA-007		Y		Y									Y							Y		Y										
	PCB Aroclor 1016/1242	EPA 8270	MLA-007									Y																						
	PCB Aroclor 1221	EPA 1668	MLA-010				Y						Y												Y						Y			
		EPA 625	MLA-007																						Y				Y	Y		Y		
		EPA 8270	MLA-007				Y			Y	Y	Y																							
		SGS AXYS MLA-010	MLA-010				Y																		Y										
		SGS AXYS MLA-007	MLA-007		Y		Y									Y							Y		Y										
	PCB Aroclor 1232	EPA 1668	MLA-010				Y						Y												Y						Y			
		EPA 625	MLA-007																						Y				Y	Y		Y		
		EPA 8270	MLA-007				Y			Y	Y	Y																							
		SGS AXYS MLA-010	MLA-010				Y																		Y										
		SGS AXYS MLA-007	MLA-007		Y		Y									Y							Y		Y										
	PCB Aroclor 1242	EPA 1668	MLA-010				Y						Y												Y						Y			
		EPA 625	MLA-007																						Y				Y	Y		Y		
		EPA 8270	MLA-007				Y			Y	Y																								
		SGS AXYS MLA-010	MLA-010				Y																		Y										
		SGS AXYS MLA-007	MLA-007		Y		Y									Y							Y		Y										
	PCB Aroclor 1248	EPA 1668	MLA-010				Y						Y												Y						Y			
		EPA 625	MLA-007																						Y				Y	Y		Y		
		EPA 8270	MLA-007				Y			Y	Y	Y																							
		SGS AXYS MLA-010	MLA-010				Y																		Y										
		SGS AXYS MLA-007	MLA-007		Y		Y									Y							Y		Y										
	PCB Aroclor 1254	EPA 1668	MLA-010				Y						Y												Y						Y			
		EPA 625	MLA-007																						Y				Y	Y		Y		
		EPA 8270	MLA-007				Y			Y	Y	Y																							
		SGS AXYS MLA-010	MLA-010				Y																		Y										
		SGS AXYS MLA-007	MLA-007		Y		Y									Y							Y		Y										
	PCB Aroclor 1260	EPA 1668	MLA-010				Y						Y												Y						Y			
		EPA 625	MLA-007																						Y				Y	Y		Y		
		EPA 8270	MLA-007				Y			Y	Y	Y																							
		SGS AXYS MLA-010	MLA-010				Y																		Y										
		SGS AXYS MLA-007	MLA-007		Y		Y									Y							Y		Y										
	PCB Aroclor 1268	SGS AXYS MLA-007	MLA-007		Y											Y							Y											
PCB congeners	PCB 1 2-Chlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y												Y		Y	Y	Y	Y		Y			
		EPA 8270	MLA-007									Y																							
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y							Y		Y										
	PCB 10 2,6-Dichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y													Y		Y	Y	Y	Y		Y			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y							Y		Y										
	PCB 100 2,2',4,4',6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y												Y		Y	Y	Y	Y		Y			
		EPA 8270	MLA-007									Y																							
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y							Y		Y										
	PCB 101 2,2',4,5,5'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y												Y		Y	Y	Y	Y		Y			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y							Y		Y										

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				Serum	Solids											Tissue											Urine	Water	Water, Non-Potable										
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
	PCB 101/90/89	EPA 8270	MLA-007									Y																									
		SGS AXYS MLA-007	MLA-007		Y											Y						Y															
	PCB 102 2,2',4,5,6'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y												
	PCB 103 2,2',4,5',6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y						
		EPA 8270	MLA-007									Y																									
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y												
	PCB 104 2,2',4,6,6'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y						
		EPA 8270	MLA-007									Y																									
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y												
	PCB 105 2,3,3',4,4'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y												
	PCB 105/127	EPA 8270	MLA-007									Y																									
		SGS AXYS MLA-007	MLA-007		Y											Y						Y															
	PCB 106 2,3,3',4,5-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y												
	PCB 107 2,3,3',4',5-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y												
	PCB 107/109	EPA 8270	MLA-007									Y																									
		SGS AXYS MLA-007	MLA-007		Y											Y						Y															
	PCB 108 2,3,3',4,5'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y												
	PCB 109 2,3,3',4,6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y												
	PCB 11 3,3'-Dichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y						
		EPA 8270	MLA-007									Y																									
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y												
	PCB 110 2,3,3',4',6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y						
		EPA 8270	MLA-007									Y																									
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y												
		SGS AXYS MLA-007	MLA-007		Y											Y						Y															
	PCB 111 2,3,3',5,5'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y												
	PCB 111/117	EPA 8270	MLA-007									Y																									
	PCB 112 2,3,3',5,6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y						
		EPA 8270	MLA-007									Y																									
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y												
	PCB 113 2,3,3',5',6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y						
		EPA 8270	MLA-007									Y																									
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y												
	PCB 114 2,3,4,4',5-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y						
		EPA 8270	MLA-007									Y																									
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y												
	PCB 115 2,3,4,4',6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y												
	PCB 116 2,3,4,5,6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y												
	PCB 117 2,3,4',5,6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y												
	PCB 118 2,3',4,4',5-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y						

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				Serum	Solids											Tissue											Urine	Water	Water, Non-Potable										
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y										
		SGS AXYS MLA-901	MLA-901	Y																														
	PCB 118/106	EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-007	MLA-007		Y											Y						Y												
	PCB 119 2,3',4,4',6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y				Y							Y		Y	Y	Y	Y		Y			
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y										
	PCB 12 3,4-Dichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y				Y							Y		Y	Y	Y	Y		Y			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y										
	PCB 12/13	EPA 8270	MLA-007									Y																						
	PCB 120 2,3',4,5,5'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y				Y							Y		Y	Y	Y	Y		Y			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y										
	PCB 121 2,3',4,5',6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y				Y							Y		Y	Y	Y	Y		Y			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y										
	PCB 122 2,3,3',4',5'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y				Y							Y		Y	Y	Y	Y		Y			
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y										
	PCB 123 2,3',4,4',5'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y				Y							Y		Y	Y	Y	Y		Y			
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y										
	PCB 124 2,3',4',5,5'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y				Y							Y		Y	Y	Y	Y		Y			
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y										
	PCB 125 2,3',4',5',6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y				Y							Y		Y	Y	Y	Y		Y			
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y										
	PCB 126 3,3',4,4',5-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y				Y							Y		Y	Y	Y	Y		Y			
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y										
		SGS AXYS MLA-007	MLA-007		Y											Y						Y												
	PCB 127 3,3',4,5,5'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y				Y							Y		Y	Y	Y	Y		Y			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y										
	PCB 128 2,2',3,3',4,4'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y				Y							Y		Y	Y	Y	Y		Y			
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y										
		SGS AXYS MLA-007	MLA-007		Y											Y						Y												
	PCB 129 2,2',3,3',4,5-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y				Y							Y		Y	Y	Y	Y		Y			
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y										
		SGS AXYS MLA-007	MLA-007		Y											Y						Y												
	PCB 13 3,4'-Dichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y				Y							Y		Y	Y	Y	Y		Y			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y										
	PCB 130 2,2',3,3',4,5'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y					Y							Y		Y	Y	Y	Y		Y			
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y										
		SGS AXYS MLA-007	MLA-007		Y											Y						Y												
	PCB 131 2,2',3,3',4,6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y				Y							Y		Y	Y	Y	Y		Y			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y										
	PCB 131/142	EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-007	MLA-007		Y											Y						Y												

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				Serum	Solids											Tissue											Urine	Water	Water, Non-Potable										
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
	PCB 132 2,2',3,3',4,6'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 132/168	EPA 8270	MLA-007									Y																					
	PCB 133 2,2',3,3',5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 134 2,2',3,3',5,6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 134/143	EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	PCB 135 2,2',3,3',5,6'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 136 2,2',3,3',6,6'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	PCB 137 2,2',3,4,4',5-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	PCB 138 2,2',3,4,4',5'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
		SGS AXYS MLA-901	MLA-901	Y																													
	PCB 138/163/164	EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	PCB 139 2,2',3,4,4',6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 14 3,5-Dichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 140 2,2',3,4,4',6'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 141 2,2',3,4,5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 142 2,2',3,4,5,6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 143 2,2',3,4,5,6'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 144 2,2',3,4,5',6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 144/135	EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	PCB 145 2,2',3,4,6,6'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 146 2,2',3,4',5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									

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Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum	Solids										Tissue					Urine	Water	Water, Non-Potable										
				CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
		SGS AXYS MLA-007	MLA-007		Y											Y						Y										
		SGS AXYS MLA-901	MLA-901	Y																												
	PCB 147 2,2',3,4',5,6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 148 2,2',3,4',5,6'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 149 2,2',3,4',5',6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 149/139	EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	PCB 15 4,4'-Dichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	PCB 150 2,2',3,4',6,6'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 151 2,2',3,5,5',6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	PCB 152 2,2',3,5,6,6'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 153 2,2',4,4',5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
		SGS AXYS MLA-901	MLA-901	Y																												
	PCB 154 2,2',4,4',5,6'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 155 2,2',4,4',6,6'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 156 2,3,3',4,4',5-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
		SGS AXYS MLA-901	MLA-901	Y																												
	PCB 157 2,3,3',4,4',5'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	PCB 158 2,3,3',4,4',6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 158/160	EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											

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				Serum	Solids											Tissue						Urine	Water	Water, Non-Potable									
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS		CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
	PCB 159 2,3,3',4,5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y												Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y							Y		Y								
		SGS AXYS MLA-007	MLA-007		Y											Y							Y										
	PCB 16 2,2',3-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y												Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y							Y		Y								
	PCB 16/32	EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-007	MLA-007		Y											Y							Y										
	PCB 160 2,3,3',4,5,6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y												Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y							Y		Y								
		SGS AXYS MLA-007	MLA-007		Y											Y							Y										
	PCB 161 2,3,3',4,5',6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y												Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y							Y		Y								
		SGS AXYS MLA-007	MLA-007		Y											Y							Y										
	PCB 162 2,3,3',4',5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y												Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y							Y		Y								
	PCB 163 2,3,3',4',5,6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y												Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y							Y		Y								
	PCB 164 2,3,3',4',5',6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y												Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y							Y		Y								
	PCB 165 2,3,3',5,5',6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y												Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y							Y		Y								
	PCB 166 2,3,4,4',5,6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y												Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y							Y		Y								
	PCB 167 2,3',4,4',5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y												Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y							Y		Y								
	PCB 168 2,3',4,4',5',6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y												Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y							Y		Y								
	PCB 169 3,3',4,4',5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y												Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y							Y		Y								
		SGS AXYS MLA-007	MLA-007		Y											Y							Y										
	PCB 17 2,2',4-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y												Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y							Y		Y								
		SGS AXYS MLA-007	MLA-007		Y											Y							Y										
	PCB 170 2,2',3,3',4,4',5-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y												Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y							Y		Y								
		SGS AXYS MLA-901	MLA-901	Y																														
	PCB 170/190	EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-007	MLA-007		Y											Y							Y										
	PCB 171 2,2',3,3',4,4',6-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y												Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y							Y		Y								
		SGS AXYS MLA-007	MLA-007		Y											Y							Y										

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				Serum	Solids											Tissue											Urine	Water	Water, Non-Potable										
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
	PCB 172 2,2',3,3',4,5,5'-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y												Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 172/192	EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	PCB 173 2,2',3,3',4,5,6-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y												Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 174 2,2',3,3',4,5,6'-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y												Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 174/181	EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	PCB 175 2,2',3,3',4,5',6-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y												Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	PCB 176 2,2',3,3',4,6,6'-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y												Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	PCB 177 2,2',3,3',4,5',6'-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y												Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	PCB 178 2,2',3,3',5,5',6-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y												Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	PCB 179 2,2',3,3',5,6,6'-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y												Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	PCB 18 2,2',5-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y												Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	PCB 180 2,2',3,4,4',5,5'-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y												Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
		SGS AXYS MLA-901	MLA-901	Y																													
	PCB 181 2,2',3,4,4',5,6-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y												Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 182 2,2',3,4,4',5,6'-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y												Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 183 2,2',3,4,4',5',6-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y												Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	PCB 184 2,2',3,4,4',6,6'-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y												Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					

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Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum	Solids										Tissue					Urine	Water	Water, Non-Potable									
				CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y								
	PCB 185 2,2',3,4,5,5',6-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																				
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y											Y						Y										
	PCB 186 2,2',3,4,5,6,6'-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																				
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y								
	PCB 187 2,2',3,4',5,5',6-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y								
		SGS AXYS MLA-901	MLA-901	Y																												
	PCB 187/182	EPA 8270	MLA-007									Y																				
		SGS AXYS MLA-007	MLA-007		Y											Y						Y										
	PCB 188 2,2',3,4',5,6,6'-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																				
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y								
	PCB 189 2,3,3',4,4',5,5'-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																				
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y											Y						Y										
	PCB 19 2,2',6-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																				
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y											Y						Y										
	PCB 190 2,3,3',4,4',5,6-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y								
	PCB 191 2,3,3',4,4',5',6-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																				
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y											Y						Y										
	PCB 192 2,3,3',4,5,5',6-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y								
	PCB 193 2,3,3',4',5,5',6-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																				
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y											Y						Y										
	PCB 194 2,2',3,3',4,4',5,5'-Octachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																				
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y											Y						Y										
		SGS AXYS MLA-901	MLA-901	Y																												
	PCB 195 2,2',3,3',4,4',5,6-Octachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																				
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y											Y						Y										
	PCB 196 2,2',3,3',4,4',5,6'-Octachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y								
	PCB 196/203	EPA 8270	MLA-007									Y																				
		SGS AXYS MLA-007	MLA-007		Y											Y						Y										
	PCB 197 2,2',3,3',4,4',6,6'-Octachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y												Y		Y	Y	Y	Y		Y		

Accreditation Scope

SGS AXYS Analytical Services Ltd.
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				Serum	Solids											Tissue											Urine	Water	Water, Non-Potable										
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS							CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
		EPA 8270	MLA-007									Y																										
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y												Y		Y								
		SGS AXYS MLA-007	MLA-007		Y											Y												Y										
	PCB 198 2,2',3,3',4,5,5',6-Octachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y																	Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																										
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y												Y		Y								
		SGS AXYS MLA-007	MLA-007		Y											Y												Y										
	PCB 199 2,2',3,3',4,5,5',6'-Octachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y																		Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																										
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y												Y		Y								
		SGS AXYS MLA-007	MLA-007		Y											Y												Y										
	PCB 2 3-Chlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y																	Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																										
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y												Y		Y								
	PCB 20 2,3,3'-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y																	Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y												Y		Y								
	PCB 200 2,2',3,3',4,5,6,6'-Octachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y																	Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																										
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y												Y		Y								
	PCB 201 2,2',3,3',4,5',6,6'-Octachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y																		Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																										
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y												Y		Y								
		SGS AXYS MLA-007	MLA-007		Y											Y												Y										
	PCB 202 2,2',3,3',5,5',6,6'-Octachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y																	Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																										
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y												Y		Y								
	PCB 203 2,2',3,4,4',5,5',6-Octachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y																	Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y												Y		Y								
	PCB 204 2,2',3,4,4',5,6,6'-Octachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y																	Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																										
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y												Y		Y								
	PCB 205 2,3,3',4,4',5,5',6-Octachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y																	Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																										
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y												Y		Y								
		SGS AXYS MLA-007	MLA-007		Y											Y												Y										
	PCB 206 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y																	Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																										
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y												Y		Y								
		SGS AXYS MLA-007	MLA-007		Y											Y												Y										
	PCB 207 2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y																		Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																										
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y												Y		Y								
		SGS AXYS MLA-007	MLA-007		Y											Y												Y										
	PCB 208 2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y																		Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																										
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y												Y		Y								
		SGS AXYS MLA-007	MLA-007		Y											Y												Y										
	PCB 209 Decachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y																	Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																										
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y												Y		Y								

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Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum	Solids										Tissue					Urine	Water	Water, Non-Potable										
				CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
		SGS AXYS MLA-007	MLA-007		Y											Y						Y										
	PCB 21 2,3,4-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y			Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y								
	PCB 22 2,3,4'-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y			Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y											Y						Y										
	PCB 23 2,3,5-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y												Y			Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y								
	PCB 23/34	EPA 8270	MLA-007									Y																					
	PCB 24 2,3,6-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y			Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y								
	PCB 24/27	EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-007	MLA-007		Y											Y						Y										
	PCB 25 2,3',4-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y			Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y											Y						Y										
	PCB 26 2,3',5-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y			Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y											Y						Y										
	PCB 27 2,3',6-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y			Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y								
	PCB 28 2,4,4'-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y			Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y											Y						Y										
	PCB 29 2,4,5-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y												Y			Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y								
	PCB 3 4-Chlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y			Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y								
	PCB 30 2,4,6-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y			Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y								
	PCB 31 2,4',5-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y			Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y											Y						Y										
	PCB 32 2,4',6-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y			Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y								
	PCB 33 2,3',4'-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y			Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y								
	PCB 33/20/21	EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-007	MLA-007		Y											Y						Y										
	PCB 34 2,3',5'-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y			Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y											Y						Y										
	PCB 35 3,3',4-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y			Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																					

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				Serum	Solids										Tissue						Urine	Water	Water, Non-Potable										
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 36 3,3',5-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 37 3,4,4'-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 38 3,4,5-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 39 3,4',5-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 4 2,2'-Dichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 4/10	EPA 8270	MLA-007									Y																					
	PCB 40 2,2',3,3'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	PCB 41 2,2',3,4-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 41/71/64/68	EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	PCB 42 2,2',3,4'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 42/59	EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	PCB 43 2,2',3,5-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 44 2,2',3,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	PCB 45 2,2',3,6-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	PCB 46 2,2',3,6'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	PCB 47 2,2',4,4'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 47/48/75	EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	PCB 48 2,2',4,5-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 49 2,2',4,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									

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				Serum	Solids											Tissue											Urine	Water	Water, Non-Potable										
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
	PCB 49/43	EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-007	MLA-007		Y											Y						Y												
	PCB 5 2,3-Dichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 50 2,2',4,6-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
		SGS AXYS MLA-007	MLA-007		Y											Y						Y												
	PCB 51 2,2',4,6'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 52 2,2',5,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 52/73	EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-007	MLA-007		Y											Y						Y												
	PCB 53 2,2',5,6'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 54 2,2',6,6'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 55 2,3,3',4-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 56 2,3,3',4'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 56/60	EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-007	MLA-007		Y											Y						Y												
	PCB 57 2,3,3',5-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 58 2,3,3',5'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 59 2,3,3',6-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 6 2,3'-Dichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 60 2,3,4,4'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 61 2,3,4,5-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 62 2,3,4,6-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 62/65	EPA 8270	MLA-007									Y																						
	PCB 63 2,3,4',5-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 64 2,3,4',6-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			

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SGS AXYS Analytical Services Ltd.
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				Serum	Solids										Tissue					Urine	Water	Water, Non-Potable									
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 65 2,3,5,6-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 66 2,3',4,4'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 66/80	EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	PCB 67 2,3',4,5-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 68 2,3',4,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 69 2,3',4,6-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 7 2,4-Dichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 7/9	EPA 8270	MLA-007									Y																					
	PCB 70 2,3',4',5-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 70/76	EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	PCB 71 2,3',4',6-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 72 2,3',5,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 73 2,3',5',6-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 74 2,4,4',5-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
		SGS AXYS MLA-901	MLA-901	Y																													
	PCB 74/61	EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	PCB 75 2,4,4',6-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 76 2,3',4',5'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 77 3,3',4,4'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	PCB 78 3,3',4,5-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 79 3,3',4,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 8 2,4'-Dichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									

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				Serum	Solids											Tissue											Urine	Water	Water, Non-Potable										
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
	PCB 8/5	EPA 8270	MLA-007									Y																									
		SGS AXYS MLA-007	MLA-007		Y											Y						Y															
	PCB 80 3,3',5,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y												
	PCB 81 3,4,4',5-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y						
		EPA 8270	MLA-007									Y																									
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y												
	PCB 82 2,2',3,3',4-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y						
		EPA 8270	MLA-007									Y																									
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y												
	PCB 83 2,2',3,3',5-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y												
	PCB 83/108	EPA 8270	MLA-007									Y																									
		SGS AXYS MLA-007	MLA-007		Y											Y						Y															
	PCB 84 2,2',3,3',6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y												Y		Y	Y	Y	Y		Y						
		EPA 8270	MLA-007									Y																									
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y												
		SGS AXYS MLA-007	MLA-007		Y											Y						Y															
	PCB 85 2,2',3,4,4'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y												
	PCB 85/120	EPA 8270	MLA-007									Y																									
		SGS AXYS MLA-007	MLA-007		Y											Y						Y															
	PCB 86 2,2',3,4,5-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y												
	PCB 87 2,2',3,4,5'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y												
	PCB 87/115/116	EPA 8270	MLA-007									Y																									
		SGS AXYS MLA-007	MLA-007		Y											Y						Y															
	PCB 88 2,2',3,4,6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y												
	PCB 88/121	EPA 8270	MLA-007									Y																									
	PCB 89 2,2',3,4,6'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y												
	PCB 9 2,5-Dichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y												Y		Y	Y	Y	Y		Y						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y												
	PCB 90 2,2',3,4',5-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y												
	PCB 91 2,2',3,4',6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y						
		EPA 8270	MLA-007									Y																									
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y												
		SGS AXYS MLA-007	MLA-007		Y											Y						Y															
	PCB 92 2,2',3,5,5'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y						
		EPA 8270	MLA-007									Y																									
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y												
	PCB 93 2,2',3,5,6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y												
	PCB 94 2,2',3,5,6'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y						
		EPA 8270	MLA-007									Y																									
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y												
	PCB 95 2,2',3,5',6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y						

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Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum	Solids										Tissue					Urine	Water	Water, Non-Potable										
				CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 95/93	EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	PCB 96 2,2',3,6,6'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 97 2,2',3,4',5'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 97/86	EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	PCB 98 2,2',3,4',6'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
	PCB 98/102	EPA 8270	MLA-007									Y																					
	PCB 99 2,2',4,4',5-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y											Y		Y	Y	Y	Y		Y			
		EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y						Y		Y									
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
		SGS AXYS MLA-901	MLA-901	Y																													
	PCB congeners, total	EPA 1668	MLA-010							Y																	Y						
	Total Dichlorobiphenyls	EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y											Y						Y											
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	Total Heptachlorobiphenyls	EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y											Y						Y											
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	Total Hexachlorobiphenyls	EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y											Y						Y											
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	Total Monochlorobiphenyls	SGS AXYS MLA-010	MLA-010	Y	Y											Y						Y											
	Total Nonachlorobiphenyls	EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y											Y						Y											
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	Total Octachlorobiphenyls	EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y											Y						Y											
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	Total Pentachlorobiphenyls	EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y											Y						Y											
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	Total Polychlorinated biphenyls	SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	Total Tetrachlorobiphenyls	EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y											Y						Y											
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
	Total Trichlorobiphenyls	EPA 8270	MLA-007									Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y											Y						Y											
		SGS AXYS MLA-007	MLA-007		Y											Y						Y											
PCDDF	"Dioxins and Dibenzofurans" category (CA only)	EPA 1613	MLA-017																				Y										
		EPA 8290	MLA-017			Y																											
	1,2,3,4,6,7,8-HpCDD	EPA 1613	MLA-017									Y			Y									Y		Y	Y	Y	Y	Y			Y
		EPA 8290	MLA-017				Y		Y	Y	Y		Y		Y		Y		Y	Y				Y			Y	Y					Y
		SGS AXYS MLA-017	MLA-017	Y	Y		Y									Y	Y					Y		Y									

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				Serum	Solids											Tissue										Urine	Water	Water, Non-Potable										
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
	1,2,3,4,6,7,8-HpCDF	EPA 1613	MLA-017									Y			Y									Y		Y	Y	Y	Y	Y			Y
		EPA 8290	MLA-017				Y		Y	Y	Y		Y		Y		Y		Y	Y				Y			Y	Y					Y
		SGS AXYS MLA-017	MLA-017	Y	Y		Y									Y	Y					Y		Y									
	1,2,3,4,7,8,9-HpCDF	EPA 1613	MLA-017									Y			Y									Y		Y	Y	Y	Y	Y			Y
		EPA 8290	MLA-017				Y		Y	Y	Y		Y		Y		Y		Y	Y				Y			Y	Y					Y
		SGS AXYS MLA-017	MLA-017	Y	Y		Y									Y	Y					Y		Y									
	1,2,3,4,7,8-HxCDD	EPA 1613	MLA-017									Y			Y									Y		Y	Y	Y	Y	Y			Y
		EPA 8290	MLA-017				Y		Y	Y	Y		Y		Y		Y		Y	Y				Y			Y	Y					Y
		SGS AXYS MLA-017	MLA-017	Y	Y		Y									Y	Y					Y		Y									
	1,2,3,4,7,8-HxCDF	EPA 1613	MLA-017									Y			Y									Y		Y	Y	Y	Y	Y			Y
		EPA 8290	MLA-017				Y		Y	Y	Y		Y		Y		Y		Y	Y				Y			Y	Y					Y
		SGS AXYS MLA-017	MLA-017	Y	Y		Y									Y	Y					Y		Y									
	1,2,3,6,7,8-HxCDD	EPA 1613	MLA-017									Y			Y									Y		Y	Y	Y	Y	Y			Y
		EPA 8290	MLA-017				Y		Y	Y	Y		Y		Y		Y		Y	Y				Y			Y	Y					Y
		SGS AXYS MLA-017	MLA-017	Y	Y		Y									Y	Y					Y		Y									
	1,2,3,6,7,8-HxCDF	EPA 1613	MLA-017									Y			Y									Y		Y	Y	Y	Y	Y			Y
		EPA 8290	MLA-017				Y		Y	Y	Y		Y		Y		Y		Y	Y				Y			Y	Y					Y
		SGS AXYS MLA-017	MLA-017	Y	Y		Y									Y	Y					Y		Y									
	1,2,3,7,8,9-HxCDD	EPA 1613	MLA-017									Y			Y									Y		Y	Y	Y	Y	Y			Y
		EPA 8290	MLA-017				Y		Y	Y	Y		Y		Y		Y		Y	Y				Y			Y	Y					Y
		SGS AXYS MLA-017	MLA-017	Y	Y		Y									Y	Y					Y		Y									
	1,2,3,7,8,9-HxCDF	EPA 1613	MLA-017									Y			Y									Y		Y	Y	Y	Y	Y			Y
		EPA 8290	MLA-017				Y		Y	Y	Y		Y		Y		Y		Y	Y				Y			Y	Y					Y
		SGS AXYS MLA-017	MLA-017	Y	Y		Y									Y	Y					Y		Y									
	1,2,3,7,8-PeCDD	EPA 1613	MLA-017									Y			Y									Y		Y	Y	Y	Y	Y			Y
		EPA 8290	MLA-017				Y		Y	Y	Y		Y		Y		Y		Y	Y				Y			Y	Y					Y
		SGS AXYS MLA-017	MLA-017	Y	Y		Y									Y	Y					Y		Y									
	1,2,3,7,8-PeCDF	EPA 1613	MLA-017									Y			Y									Y		Y	Y	Y	Y	Y			Y
		EPA 8290	MLA-017				Y		Y	Y	Y		Y		Y		Y		Y	Y				Y			Y	Y					Y
		SGS AXYS MLA-017	MLA-017	Y	Y		Y									Y	Y					Y		Y									
	2,3,4,6,7,8-HxCDF	EPA 1613	MLA-017									Y			Y									Y		Y	Y	Y	Y	Y			Y
		EPA 8290	MLA-017				Y		Y	Y	Y		Y		Y		Y		Y	Y				Y			Y	Y					Y
		SGS AXYS MLA-017	MLA-017	Y	Y		Y									Y	Y					Y		Y									
	2,3,4,7,8-PeCDF	EPA 1613	MLA-017									Y			Y									Y		Y	Y	Y	Y	Y			Y
		EPA 8290	MLA-017				Y		Y	Y	Y		Y		Y		Y		Y	Y				Y			Y	Y					Y
		SGS AXYS MLA-017	MLA-017	Y	Y		Y									Y	Y					Y		Y									
	2,3,7,8-TCDD	EPA 1613	MLA-017									Y			Y									Y		Y	Y	Y	Y	Y			Y
		EPA 8290	MLA-017				Y		Y	Y	Y		Y		Y		Y		Y	Y				Y			Y	Y					Y
		SGS AXYS MLA-017	MLA-017	Y	Y		Y									Y	Y					Y		Y									
	2,3,7,8-TCDF	EPA 1613	MLA-017									Y			Y									Y		Y	Y	Y	Y	Y			Y
		EPA 8290	MLA-017				Y		Y	Y	Y		Y		Y		Y		Y	Y				Y			Y	Y					Y
		SGS AXYS MLA-017	MLA-017	Y	Y		Y									Y	Y					Y		Y									
	OCDD	EPA 1613	MLA-017									Y			Y									Y		Y	Y	Y	Y	Y			Y
		EPA 8290	MLA-017				Y		Y	Y	Y		Y		Y		Y		Y	Y				Y			Y	Y					Y
		SGS AXYS MLA-017	MLA-017	Y	Y		Y									Y	Y					Y		Y									
	OCDF	EPA 1613	MLA-017									Y			Y									Y		Y	Y	Y	Y	Y			Y
		EPA 8290	MLA-017				Y		Y	Y	Y		Y		Y		Y		Y	Y				Y			Y	Y					Y
		SGS AXYS MLA-017	MLA-017	Y	Y		Y									Y	Y					Y		Y									
	Total HpCDD	EPA 1613	MLA-017												Y									Y							Y		Y
		EPA 8290	MLA-017				Y		Y		Y		Y		Y		Y		Y	Y				Y					Y					Y

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Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum	Solids										Tissue					Urine	Water	Water, Non-Potable									
				CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
		SGS AXYS MLA-017	MLA-017				Y										Y							Y								
	Total HpCDF	EPA 1613	MLA-017												Y									Y						Y		Y
		EPA 8290	MLA-017				Y		Y		Y		Y		Y		Y		Y	Y				Y				Y				Y
		SGS AXYS MLA-017	MLA-017				Y										Y							Y								
	Total HxCDD	EPA 1613	MLA-017												Y									Y						Y		Y
		EPA 8290	MLA-017				Y		Y		Y		Y		Y		Y		Y	Y				Y				Y				Y
		SGS AXYS MLA-017	MLA-017				Y										Y							Y								
	Total HxCDF	EPA 1613	MLA-017												Y									Y						Y		Y
		EPA 8290	MLA-017				Y		Y		Y		Y		Y		Y		Y	Y				Y				Y				Y
		SGS AXYS MLA-017	MLA-017				Y										Y							Y								
	Total PCDD	EPA 1613	MLA-017												Y																	Y
		EPA 8290	MLA-017												Y																	Y
	Total PCDD/F	EPA 1613	MLA-017												Y																	Y
		EPA 8290	MLA-017												Y																	Y
	Total PCDF	EPA 1613	MLA-017												Y																	Y
		EPA 8290	MLA-017												Y																	Y
	Total PeCDD	EPA 1613	MLA-017												Y									Y						Y		Y
		EPA 8290	MLA-017				Y		Y		Y		Y		Y		Y		Y	Y				Y				Y				Y
		SGS AXYS MLA-017	MLA-017				Y										Y							Y								
	Total PeCDF	EPA 1613	MLA-017												Y									Y						Y		Y
		EPA 8290	MLA-017				Y		Y		Y		Y		Y		Y		Y	Y				Y				Y				Y
		SGS AXYS MLA-017	MLA-017				Y										Y							Y								
	Total TCDD	EPA 1613	MLA-017												Y									Y						Y		Y
		EPA 8290	MLA-017				Y		Y		Y		Y		Y		Y		Y	Y				Y				Y				Y
		SGS AXYS MLA-017	MLA-017				Y										Y							Y								
	Total TCDF	EPA 1613	MLA-017												Y									Y						Y		Y
		EPA 8290	MLA-017				Y		Y		Y		Y		Y		Y		Y	Y				Y				Y				Y
		SGS AXYS MLA-017	MLA-017				Y										Y							Y								
PFAS	4:2 Fluorotelomersulfonate (4:2 FTS)	SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y								Y		Y	Y				Y			Y	
	6:2 Fluorotelomersulfonate (6:2 FTS)	SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y								Y		Y	Y				Y			Y	
	8:2 Fluorotelomersulfonate (8:2 FTS)	SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y								Y		Y	Y				Y			Y	
	N-Ethylperfluorooctanesulfonamide (N-EtFOSA)	SGS AXYS MLA-110	MLA-110		Y							Y										Y							Y				
	N-Ethylperfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y								Y		Y	Y				Y			Y	
	N-Ethylperfluorooctanesulfonamidoethanol (N-EtFOSE)	SGS AXYS MLA-110	MLA-110		Y							Y										Y							Y				
	N-Methylperfluorooctanesulfonamide (N-MeFOSA)	SGS AXYS MLA-110	MLA-110		Y							Y										Y							Y				
	N-Methylperfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y								Y		Y	Y				Y			Y	
	N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE)	SGS AXYS MLA-110	MLA-110		Y							Y										Y							Y				
	Perfluorobutanesulfonate (PFBS)	SGS AXYS MLA-060	MLA-060																			Y		Y	Y								
		SGS AXYS MLA-041	MLA-041		Y		Y	Y	Y																								
		SGS AXYS MLA-043	MLA-043													Y	Y	Y	Y														
		SGS AXYS MLA-042	MLA-042	Y																													
		SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y	Y							Y		Y	Y				Y			Y	Y
	Perfluorobutanoate (PFBA)	SGS AXYS MLA-060	MLA-060																			Y		Y	Y								
		SGS AXYS MLA-041	MLA-041		Y		Y	Y	Y																								
		SGS AXYS MLA-043	MLA-043													Y	Y	Y	Y														
		SGS AXYS MLA-042	MLA-042	Y																													
		SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y								Y		Y	Y				Y			Y	
	Perfluorodecanesulfonate (PFDS)	SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y								Y		Y	Y				Y			Y	
	Perfluorodecanoate (PFDA)	SGS AXYS MLA-060	MLA-060																			Y		Y	Y								
		SGS AXYS MLA-041	MLA-041		Y		Y	Y	Y																								

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Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum	Solids										Tissue					Urine	Water	Water, Non-Potable									
				CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
		SGS AXYS MLA-043	MLA-043													Y	Y	Y	Y													
		SGS AXYS MLA-042	MLA-042	Y																												
		SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y								Y		Y	Y				Y			Y	
	Perfluorododecanesulfonate (PFDoS)	SGS AXYS MLA-110	MLA-110		Y							Y										Y							Y				
	Perfluorododecanoate (PFDoA)	SGS AXYS MLA-060	MLA-060																			Y		Y	Y								
		SGS AXYS MLA-041	MLA-041		Y		Y	Y	Y																								
		SGS AXYS MLA-043	MLA-043													Y	Y	Y	Y														
		SGS AXYS MLA-042	MLA-042	Y																													
		SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y								Y		Y	Y				Y			Y	
	Perfluoroheptanesulfonate (PFHpS)	SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y								Y		Y	Y				Y			Y	
	Perfluoroheptanoate (PFHpA)	SGS AXYS MLA-060	MLA-060																			Y		Y	Y								
		SGS AXYS MLA-041	MLA-041		Y		Y	Y	Y																								
		SGS AXYS MLA-043	MLA-043													Y	Y	Y	Y														
		SGS AXYS MLA-042	MLA-042	Y																													
		SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y	Y							Y		Y	Y				Y			Y	Y
	Perfluorohexanesulfonate (PFHxS)	SGS AXYS MLA-060	MLA-060																			Y		Y	Y								
		SGS AXYS MLA-041	MLA-041		Y		Y	Y	Y																								
		SGS AXYS MLA-043	MLA-043													Y	Y	Y	Y														
		SGS AXYS MLA-042	MLA-042	Y																													
		SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y	Y							Y		Y	Y				Y			Y	Y
	Perfluorohexanoate (PFHxA)	SGS AXYS MLA-060	MLA-060																			Y		Y	Y								
		SGS AXYS MLA-041	MLA-041		Y		Y	Y	Y																								
		SGS AXYS MLA-043	MLA-043													Y	Y	Y	Y														
		SGS AXYS MLA-042	MLA-042	Y																													
		SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y								Y		Y	Y				Y			Y	
	Perfluorononanesulfonate (PFNS)	SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y								Y		Y	Y				Y			Y	
	Perfluorononanoate (PFNA)	SGS AXYS MLA-060	MLA-060																			Y		Y	Y								
		SGS AXYS MLA-041	MLA-041		Y		Y	Y	Y																								
		SGS AXYS MLA-043	MLA-043													Y	Y	Y	Y														
		SGS AXYS MLA-042	MLA-042	Y																													
		SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y	Y							Y		Y	Y				Y			Y	Y
	Perfluorooctanesulfonamide (PFOSA), a.k.a. FOSA	SGS AXYS MLA-060	MLA-060																			Y		Y	Y								
		SGS AXYS MLA-041	MLA-041		Y		Y	Y	Y																								
		SGS AXYS MLA-043	MLA-043													Y	Y	Y	Y														
		SGS AXYS MLA-042	MLA-042	Y																													
		SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y								Y		Y	Y				Y			Y	
	Perfluorooctanesulfonate (PFOS)	SGS AXYS MLA-060	MLA-060																			Y		Y	Y								
		SGS AXYS MLA-041	MLA-041		Y		Y	Y	Y																								
		SGS AXYS MLA-043	MLA-043													Y	Y	Y	Y														
		SGS AXYS MLA-042	MLA-042	Y																													
		SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y	Y							Y		Y	Y				Y			Y	Y
	Perfluorooctanoate (PFOA)	SGS AXYS MLA-060	MLA-060																			Y		Y	Y								
		SGS AXYS MLA-041	MLA-041		Y		Y	Y	Y																								
		SGS AXYS MLA-043	MLA-043													Y	Y	Y	Y														
		SGS AXYS MLA-042	MLA-042	Y																													
		SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y	Y							Y		Y	Y				Y			Y	Y
	Perfluoropentanesulfonate (PFPeS)	SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y								Y		Y	Y				Y			Y	
	Perfluoropentanoate (PFPeA)	SGS AXYS MLA-060	MLA-060																			Y		Y	Y								
		SGS AXYS MLA-041	MLA-041		Y		Y	Y	Y																								
		SGS AXYS MLA-043	MLA-043													Y	Y	Y	Y														

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				Serum	Solids										Tissue					Urine	Water	Water, Non-Potable								
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
		SGS AXYS MLA-042	MLA-042	Y																												
		SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y								Y		Y	Y				Y			Y
	Perfluorotetradecanoate (PFTeDA)	SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y										Y		Y	Y				Y			Y
	Perfluorotridecanoate (PFTrDA)	SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y										Y		Y	Y				Y			Y
	Perfluoroundecanoate (PFUnA)	SGS AXYS MLA-060	MLA-060																			Y		Y	Y							
		SGS AXYS MLA-041	MLA-041		Y		Y	Y	Y																							
		SGS AXYS MLA-043	MLA-043													Y	Y	Y	Y													
		SGS AXYS MLA-042	MLA-042	Y																												
		SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y								Y		Y	Y				Y			Y
PPCP	1,7-Dimethylxanthine	EPA 1694	MLA-075										Y																	Y		
		SGS AXYS MLA-075	MLA-075		Y																	Y										
	10-hydroxy-amitriptyline	SGS AXYS MLA-075	MLA-075		Y																	Y										
	2-hydroxy-ibuprofen	SGS AXYS MLA-075	MLA-075		Y																	Y										
	4-Epianhydrochlortetracycline (EACTC)	EPA 1694	MLA-075										Y																	Y		
		SGS AXYS MLA-075	MLA-075		Y																	Y										
	4-Epianhydrotetracycline (EATC)	EPA 1694	MLA-075										Y																	Y		
		SGS AXYS MLA-075	MLA-075		Y																	Y										
	4-Epichlortetracycline (ECTC)	EPA 1694	MLA-075										Y																	Y		
		SGS AXYS MLA-075	MLA-075		Y																	Y										
	4-Epioxytetracycline (EOTC)	EPA 1694	MLA-075										Y																	Y		
		SGS AXYS MLA-075	MLA-075		Y																	Y										
	4-Epitetracycline (ETC)	EPA 1694	MLA-075										Y																	Y		
		SGS AXYS MLA-075	MLA-075		Y																	Y										
	Acetaminophen	EPA 1694	MLA-075										Y																	Y		
		SGS AXYS MLA-075	MLA-075		Y																	Y										
	Albuterol	EPA 1694	MLA-075										Y																	Y		
		SGS AXYS MLA-075	MLA-075		Y																	Y										
	Alprazolam	SGS AXYS MLA-075	MLA-075		Y																	Y										
	Amitriptyline	SGS AXYS MLA-075	MLA-075		Y																	Y										
	Amlodipine	SGS AXYS MLA-075	MLA-075		Y																	Y										
	Amphetamine	SGS AXYS MLA-075	MLA-075		Y																	Y										
	Anhydrochlortetracycline (ACTC)	EPA 1694	MLA-075										Y																	Y		
		SGS AXYS MLA-075	MLA-075		Y																	Y										
	Anhydrotetracycline (ATC)	EPA 1694	MLA-075										Y																	Y		
		SGS AXYS MLA-075	MLA-075		Y																	Y										
	Atenolol	SGS AXYS MLA-075	MLA-075		Y																	Y										
	Atorvastatin	SGS AXYS MLA-075	MLA-075		Y																	Y										
	Azithromycin	EPA 1694	MLA-075										Y																	Y		
		SGS AXYS MLA-075	MLA-075		Y																	Y										
	Benzoylecgonine	SGS AXYS MLA-075	MLA-075		Y																	Y										
	Benztropine	SGS AXYS MLA-075	MLA-075		Y																	Y										
	Betamethasone	SGS AXYS MLA-075	MLA-075		Y																	Y										
	Bisphenol A	EPA 1694	MLA-075										Y																	Y		
		SGS AXYS MLA-075	MLA-075		Y																	Y										
	Caffeine	EPA 1694	MLA-075										Y																	Y		
		SGS AXYS MLA-075	MLA-075		Y																	Y										
	Carbadox	EPA 1694	MLA-075										Y																	Y		
		SGS AXYS MLA-075	MLA-075		Y																	Y										
	Carbamazepine	EPA 1694	MLA-075										Y																	Y		
		SGS AXYS MLA-075	MLA-075		Y																	Y										

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				Serum	Solids										Tissue					Urine	Water	Water, Non-Potable									
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
	Cefotaxime	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Chlortetracycline (CTC)	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Cimetidine	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Ciprofloxacin	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Clarithromycin	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Clinafloxacin	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Clonidine	SGS AXYS MLA-075	MLA-075		Y																	Y											
	Cloxacillin	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Cocaine	SGS AXYS MLA-075	MLA-075		Y																	Y											
	Codeine	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Cotinine	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	DEET (N,N-diethyl-m-toluamide)	SGS AXYS MLA-075	MLA-075		Y																	Y											
	Dehydronifedipine	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Demeclocycline	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Desmethyldiltiazem	SGS AXYS MLA-075	MLA-075		Y																	Y											
	Diazepam	SGS AXYS MLA-075	MLA-075		Y																	Y											
	Digoxigenin	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Digoxin	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Diltiazem	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Diphenhydramine	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Doxycycline	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Enalapril	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Enrofloxacin	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Erythromycin	SGS AXYS MLA-075	MLA-075		Y																	Y											
	Erythromycin anydrate	EPA 1694	MLA-075										Y																	Y			
	Flumequine	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Fluocinonide	SGS AXYS MLA-075	MLA-075		Y																	Y											
	Fluoxetine	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Fluticasone propionate	SGS AXYS MLA-075	MLA-075		Y																	Y											
	Furosemide	SGS AXYS MLA-075	MLA-075		Y																	Y											

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-101 Rev. 45

				Serum	Solids										Tissue					Urine	Water	Water, Non-Potable									
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
	Gemfibrozil	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Glipizide	SGS AXYS MLA-075	MLA-075		Y																	Y											
	Glyburide	SGS AXYS MLA-075	MLA-075		Y																	Y											
	Hydrochlorothiazide	SGS AXYS MLA-075	MLA-075		Y																	Y											
	Hydrocodone	SGS AXYS MLA-075	MLA-075		Y																	Y											
	Hydrocortisone	SGS AXYS MLA-075	MLA-075		Y																	Y											
	Ibuprofen	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Isochlortetracycline (ICTC)	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Lincomycin	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Lomefloxacin	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Meprobamate	SGS AXYS MLA-075	MLA-075		Y																	Y											
	Metformin	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Methylprednisolone	SGS AXYS MLA-075	MLA-075		Y																	Y											
	Metoprolol	SGS AXYS MLA-075	MLA-075		Y																	Y											
	Miconazole	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Minocycline	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Naproxen	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Norfloxacin	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Norfluoxetine	SGS AXYS MLA-075	MLA-075		Y																	Y											
	Norgestimate	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Norverapamil	SGS AXYS MLA-075	MLA-075		Y																	Y											
	Ofloxacin	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Ormetoprim	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Oxacillin	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Oxolinic acid	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Oxycodone	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Oxytetracycline (OTC)	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Paroxetine	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Penicillin G	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											
	Penicillin V	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y											

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-101 Rev. 45

				Serum	Solids											Tissue						Urine	Water	Water, Non-Potable										
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS		CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
	Prednisolone	SGS AXYS MLA-075	MLA-075		Y																		Y											
	Prednisone	SGS AXYS MLA-075	MLA-075		Y																		Y											
	Promethazine	SGS AXYS MLA-075	MLA-075		Y																		Y											
	Propoxyphene	SGS AXYS MLA-075	MLA-075		Y																		Y											
	Propranolol	SGS AXYS MLA-075	MLA-075		Y																		Y											
	Ranitidine	EPA 1694	MLA-075										Y																		Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Roxithromycin	EPA 1694	MLA-075										Y																		Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Sarafloxacin	EPA 1694	MLA-075										Y																		Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Sertraline	SGS AXYS MLA-075	MLA-075		Y																		Y											
	Simvastatin	SGS AXYS MLA-075	MLA-075		Y																		Y											
	Sulfachloropyridazine	EPA 1694	MLA-075										Y																		Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Sulfadiazine	EPA 1694	MLA-075										Y																		Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Sulfadimethoxine	EPA 1694	MLA-075										Y																		Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Sulfamerazine	EPA 1694	MLA-075										Y																		Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Sulfamethazine	EPA 1694	MLA-075										Y																		Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Sulfamethizole	EPA 1694	MLA-075										Y																		Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Sulfamethoxazole	EPA 1694	MLA-075										Y																		Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Sulfanilamide	EPA 1694	MLA-075										Y																		Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Sulfathiazole	EPA 1694	MLA-075										Y																		Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Tetracycline (TC)	EPA 1694	MLA-075										Y																		Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Theophylline	SGS AXYS MLA-075	MLA-075		Y																		Y											
	Thiabendazole	EPA 1694	MLA-075										Y																		Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Trenbolone	SGS AXYS MLA-075	MLA-075		Y																		Y											
	Trenbolone acetate	SGS AXYS MLA-075	MLA-075		Y																		Y											
	Triamterene	SGS AXYS MLA-075	MLA-075		Y																		Y											
	Triclocarban	EPA 1694	MLA-075										Y																		Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Triclosan	EPA 1694	MLA-075										Y																		Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Trimethoprim	EPA 1694	MLA-075										Y																		Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Tylosin	EPA 1694	MLA-075										Y																		Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Valsartan	SGS AXYS MLA-075	MLA-075		Y																		Y											
	Verapamil	SGS AXYS MLA-075	MLA-075		Y																		Y											
	Virginiamycin	EPA 1694	MLA-075										Y																		Y			

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-101 Rev. 45

				Serum	Solids											Tissue					Urine	Water	Water, Non-Potable										
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
		SGS AXYS MLA-075	MLA-075		Y																	Y										
	Warfarin	EPA 1694	MLA-075										Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																	Y										
Targeted Metabolites	11, 14, 17-eicosatrienoic acid (eicosatrienoic acid)	SGS AXYS MLM-001	MLM-001													Y																
	11, 14-eicosadienoic acid	SGS AXYS MLM-001	MLM-001													Y																
	3-hydroxytyrosine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Acetylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Acetylornithine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Alanine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	alpha-Aminoadipic acid	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Arginine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Asparagine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Aspartate	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Asymmetric dimethylarginine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Butenylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Butyrylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	C22:5 ISOMER 1 (tentatively all-cis-4, 8, 12, 15, 19-docosapentaenoic acid)	SGS AXYS MLM-001	MLM-001													Y																
	C22:5 ISOMER 2 (all-cis-7,10,13,16,19-docosapentaenoic acid (DPA)	SGS AXYS MLM-001	MLM-001													Y																
	C22:5 ISOMER 3 (tentatively all-cis-4, 7, 10, 13, 16-docosapentaenoic acid)	SGS AXYS MLM-001	MLM-001													Y																
	Carnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Carnosine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	chenodeoxycholic acid	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	cholic acid	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Citrulline	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Creatinine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Decadienylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	decanoic acid (capric acid)	SGS AXYS MLM-001	MLM-001													Y																
	Decanoylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Decenoylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	deoxycholic acid	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	docosahexaenoic acid (DHA)	SGS AXYS MLM-001	MLM-001													Y																
	docosatetraenoic acid (adrenic acid)	SGS AXYS MLM-001	MLM-001													Y																
	Dodecanedioylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Dodecanoylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Dodecenoylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Dopamine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	eicosapentaenoic acid (EPA)	SGS AXYS MLM-001	MLM-001													Y																
	Eicosatetraenoic acid (arachidonic acid)	SGS AXYS MLM-001	MLM-001													Y																
	eicosatrienoic acid (dihomo-γ-linolenic acid)	SGS AXYS MLM-001	MLM-001													Y																
	Glutaconylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Glutamate	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Glutamine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Glutarylcarnitine (Hydroxyhexanoylcarnitine)	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Glycine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	glycochenodeoxycholic acid	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	glycocholic acid	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	glycodeoxycholic acid	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Hexadecadienylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	hexadecanoic acid (palmitic acid)	SGS AXYS MLM-001	MLM-001													Y																
	Hexadecanoylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	hexadecenoic acid (palmitoleic acid)	SGS AXYS MLM-001	MLM-001													Y																
	Hexadecenoylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Hexanoylcarnitine (Fumarylcarnitine)	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Hexenoylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Hexose (sum isomers)	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Histamine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												

Accreditation Scope

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Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum	Solids											Tissue					Urine	Water	Water, Non-Potable										
				CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
	Histidine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Hydroxyhexadecadienylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Hydroxyhexadecanoylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Hydroxyhexadecenoylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Hydroxylbutyrylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Hydroxyoctadecenoylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Hydroxyproline	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Hydroxypropionylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Hydroxysphingomyeline C14:1	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Hydroxysphingomyeline C16:1	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Hydroxysphingomyeline C22:1	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Hydroxysphingomyeline C22:2	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Hydroxysphingomyeline C24:1	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Hydroxytetradecadienylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Hydroxytetradecenoylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Hydroxyvalerylcarnitine (Methylmalonylcarnitine)	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Isoleucine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Kynurenine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Leucine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	lithocholic acid	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Lysine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	lysoPhosphatidylcholine acyl C14:0	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	lysoPhosphatidylcholine acyl C16:0	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	lysoPhosphatidylcholine acyl C16:1	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	lysoPhosphatidylcholine acyl C17:0	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	lysoPhosphatidylcholine acyl C18:0	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	lysoPhosphatidylcholine acyl C18:1	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	lysoPhosphatidylcholine acyl C18:2	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	lysoPhosphatidylcholine acyl C20:3	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	lysoPhosphatidylcholine acyl C20:4	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	lysoPhosphatidylcholine acyl C24:0	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	lysoPhosphatidylcholine acyl C26:1	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	lysoPhosphatidylcholine acyl C28:0	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	lysoPhosphatidylcholine acyl C28:1	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Methionine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Methioninesulfoxide	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Methylglutarylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Nitrotyrosine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Nonaylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	octadecadienoic acid (linoleic acid)	SGS AXYS MLM-001	MLM-001													Y																	
	Octadecadienylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	octadecanoic acid (stearic acid)	SGS AXYS MLM-001	MLM-001													Y																	
	Octadecanoylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	octadecatrienoic acid (γ-linolenic acid)	SGS AXYS MLM-001	MLM-001													Y																	
	Octadecenoylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Octanoylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Ornithine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phenylalanine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phenylethylamine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C30:0	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C30:1	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C30:2	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C32:1	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C32:2	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C34:0	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C34:1	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C34:2	SGS AXYS MLM-001	MLM-001	Y												Y					Y												

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-101 Rev. 45

				Serum	Solids											Tissue					Urine	Water	Water, Non-Potable										
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
	Phosphatidylcholine acyl-alkyl C34:3	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C36:0	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C36:1	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C36:2	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C36:3	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C36:4	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C36:5	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C38:0	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C38:1	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C38:2	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C38:3	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C38:5	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C38:6	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C40:1	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C40:2	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C40:3	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C40:4	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C40:5	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C40:6	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C42:0	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C42:1	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C42:2	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C42:3	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C42:4	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C42:5	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C44:3	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C44:4	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C44:5	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine acyl-alkyl C44:6	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C24:0	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C26:0	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C28:1	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C30:0	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C30:2	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C32:0	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C32:1	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C32:2	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C32:3	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C34:1	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C34:2	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C34:3	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C34:4	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C36:0	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C36:1	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C36:2	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C36:3	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C36:4	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C36:5	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C36:6	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C38:0	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C38:1	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C38:3	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C38:4	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C38:5	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C38:6	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C40:1	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C40:2	SGS AXYS MLM-001	MLM-001	Y												Y					Y												

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-101 Rev. 45

				Serum	Solids											Tissue					Urine	Water	Water, Non-Potable										
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
	Phosphatidylcholine diacyl C40:3	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C40:4	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C40:5	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C40:6	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C42:0	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C42:1	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C42:2	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C42:4	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C42:5	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Phosphatidylcholine diacyl C42:6	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Pimelylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Proline	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Propenoylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Propionylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Putrescine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Sarcosine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Serine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Serotonin	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Spermidine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Spermine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Sphingomyeline C16:0	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Sphingomyeline C16:1	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Sphingomyeline C18:0	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Sphingomyeline C18:1	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Sphingomyeline C20:2	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Sphingomyeline C22:3	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Sphingomyeline C24:0	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Sphingomyeline C24:1	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Sphingomyeline C26:0	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Sphingomyeline C26:1	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Symmetric dimethylarginine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Taurine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	taurochenodeoxycholic acid	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	taurocholic acid	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	taurodeoxycholic acid	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	taurolithocholic acid	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	tauroursodexoycholic acid	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Tetradecadienylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	tetradecanoic acid (myristic acid)	SGS AXYS MLM-001	MLM-001													Y																	
	Tetradecanoylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Tetradecenoylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Threonine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Tiglylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Total dimethylarginine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Tryptophan	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Tyrosine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	ursodexoycholic acid	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Valerylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
	Valine	SGS AXYS MLM-001	MLM-001	Y												Y					Y												
TBBPA	Tetrabromobisphenol A	SGS AXYS MLA-079	MLA-079	Y																													
TOP	Perfluorobutanesulfonate (PFBS)	SGS AXYS MLA-111	MLA-111		Y																	Y											
	Perfluorobutanoate (PFBA)	SGS AXYS MLA-111	MLA-111		Y																	Y											
	Perfluorodecanesulfonate (PFDS)	SGS AXYS MLA-111	MLA-111		Y																	Y											
	Perfluorodecanoate (PFDA)	SGS AXYS MLA-111	MLA-111		Y																	Y											
	Perfluorododecanesulfonate (PFDoS)	SGS AXYS MLA-111	MLA-111		Y																	Y											
	Perfluorododecanoate (PFDoA)	SGS AXYS MLA-111	MLA-111		Y																	Y											
	Perfluoroheptanesulfonate (PFHpS)	SGS AXYS MLA-111	MLA-111		Y																	Y											

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-101 Rev. 45

				Serum	Solids											Tissue						Urine	Water	Water, Non-Potable										
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	Alaska DEC	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	Alaska DEC
	Perfluoroheptanoate (PFHpA)	SGS AXYS MLA-111	MLA-111		Y																	Y											
	Perfluorohexanesulfonate (PFHxS)	SGS AXYS MLA-111	MLA-111		Y																	Y											
	Perfluorohexanoate (PFHxA)	SGS AXYS MLA-111	MLA-111		Y																	Y											
	Perfluorononanesulfonate (PFNS)	SGS AXYS MLA-111	MLA-111		Y																	Y											
	Perfluorononanoate (PFNA)	SGS AXYS MLA-111	MLA-111		Y																	Y											
	Perfluorooctanesulfonate (PFOS)	SGS AXYS MLA-111	MLA-111		Y																	Y											
	Perfluorooctanoate (PFOA)	SGS AXYS MLA-111	MLA-111		Y																	Y											
	Perfluoropentanesulfonate (PFPeS)	SGS AXYS MLA-111	MLA-111		Y																	Y											
	Perfluoropentanoate (PFPeA)	SGS AXYS MLA-111	MLA-111		Y																	Y											
	Perfluorotetradecanoate (PFTeDA)	SGS AXYS MLA-111	MLA-111		Y																	Y											
	Perfluorotridecanoate (PFTrDA)	SGS AXYS MLA-111	MLA-111		Y																	Y											
	Perfluoroundecanoate (PFUnA)	SGS AXYS MLA-111	MLA-111		Y																	Y											

Note * Analysis of pesticides and PCBs in non-potable water samples by SGS AXYS method MLA-007, with the exception of NPDES or State permitted discharges and Stormwater applications, may fall within the scope of Washington State Department of Ecology solids matrix accreditation, subject to approval of the Ecology Project Manager.

Note ** PFAS by LC-MS/MS compliant with US DoD QSM 5.1.1 table B-15

Legend

Y	Accreditation scope
BFR	Brominated flame retardants (non-PBDPE)
BPA and mPE	Bisphenol A and mono-Phthalate Esters
HBCDD	Hexabromocyclododecane
OC Pesticides	Organochlorine Pesticides
PAH	Polycyclic Aromatic Hydrocarbons
PBDPE	Polybrominated diphenylethers
PCB	Polychlorinated Biphenyls
PCDDF	Polychlorinated dibenzodioxins/furans
PFAS	Per- and Polyfluoroalkyl Substances
PPCP	Pharmaceutical and Personal Care Products
TBBPA	Tetrabromobisphenol A
TOP	Total Oxidizable Precursors
California DPH	California Department of Public Health, Lab ID 2911
Florida DOH	Florida Department of Health, Lab ID E871007, (NELAC Standard)
Pennsylvania DEP	Pennsylvania Department of Environmental Protection
Minnesota DOH	Minnesota Department of Health, Lab ID 232-999-430, (NELAC Standard)
New Jersey DEP	New Jersey Department of Environmental Protection, Lab ID CANA005, (NELAC Standard)
New York DOH	New York Department of Health, Lab ID 11674, (NELAC Standard)
Washington DE	Washington Department of Ecology, Lab ID C404
Virginia DGS	Virginia Department of General Services, Division of Consolidated Laboratory Services, Lab ID 460224, (NELAC Standard)
Alaska DEC	Alaska Department of Environmental Conservation, Contaminated Sites Laboratory Approval 17-014
Maine DOH	Maine Center for Disease Control and Prevention, Department of Health and Human Services, Lab ID CN00003
ANAB DoD	ANSI-ASQ National Accreditation Board, certificate ADE-1861, (US DoD QSM 5.1.1 Standard)
CALA	Canadian Association for Laboratory Accreditation Inc., Lab ID A2637, (ISO/IEC 17025:2005 Standard)

APPENDIX D5
ANALYTICAL LABORATORY DATA SUMMARY REPORTS
CAPE FEAR ANALYTICAL

CFA | Cape Fear Analytical LLC
an affiliate of The GEL Group INC

3306 Kitty Hawk Road, Suite 120 Wilmington, NC 28405
P 910.795.0421
www.capefearanalytical.com

September 23, 2019

Mr. Jeffrey Parker
Pacific Groundwater Group
2377 Eastlake Avenue E
Seattle, Washington 98102

Re: Swan Island Lagoon Sediment Investigation
Work Order: 15468
SDG: 2006-00115_1

Dear Mr. Parker:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on August 30, 2019 and September 04, 2019. This original data report has been prepared and reviewed in accordance with CFA's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,

Cynde Larkins

Cynde Larkins
Project Manager

Enclosures

problem solved

CFA WO # 15468

[redacted] Other CF

Chain of Custody Record

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 8/28/2019	COC No: 1 of 8 COCs
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	standard			
206 329 0141 Phone	TAT if different from Below			SDG No.
206 329 6968 FAX	[x] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
PO #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Dlox/Evans 16130	Archive	Sample Specific Notes:
R4-SC1b-20to30-8 28 19	8/28/19	1400		S	1	X		5.2°
R4-SC1b-30to40-8 28 19	8/28/19	1405		S	1	X		
R4-SC1b-40to50-8 28 19	8/28/19	1510		S	1	X		
R4-SC1b-50to60-8 28 19	8/28/19	1520		S	1	X		
R4-SC1b-60to70-8 28 19	8/28/19	1550		S	1	X		
R4-SC1b-70to80-8 28 19	8/28/19	1555		S	1	X		
R4-SC1b-80to90-8 28 19	8/28/19	1630		S	1	X		
R4-SC1b-90to100-8 28 19	8/28/19	1640		S	1	X		
[redacted]								
R4-SC1b-10to20-8 28 19	8/28/19	1355		S	1		X	
	8/ /19			S	1			
	8/ /19			S	1			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] Return To Client [ ] Disposal By Lab [x] Archive For _____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	PGG	8/29/19 1300	Fedex		
Relinquished by: Fedex	Company:	Date/Time:	Received by: [signature]	Company: CFA	Date/Time: 9/30/19 9:55
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

CFA WO #15468

Other CF

Chain of Custody Record

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date:8/__/2019	COC No:
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	2 of 8 COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	*standard*			SDG No.
206 329 0141 Phone	TAT if different from Below _____			
206 329 6968 FAX	[X] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Dioxins/Furans (1613B)	Archive	Sample Specific Notes:
R4-SC1b-100to110-8[28]19	8/28/19	1700		S	1	X		5.2'
R4-SC1b-110to120-8[28]19	8/28/19	1710		S	1	X		
R4-SC1b-120to130-8[28]19	8/28/19	1820		S	1	X		
[illegible]	[illegible]	[illegible]		S	1			
[illegible]	[illegible]	[illegible]		S	1			
413-SC1b-40to50-82819	8/28/19	1045		S	1	X		3.5'
[illegible]	[illegible]	[illegible]		S	1			
[illegible]	[illegible]	[illegible]		S	1			
R4-SC1b-130to140-82819	8/28/19	1825		S	1	X		5.2'
R4-SC1b-140to150-82819	8/28/19	1830		S	1	X		
	8/ /19			S	1			
	8/ /19			S	1			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] Return To Client [ ] Disposal By Lab [X] Archive For _____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	PGG	8/29/19 1300	FedEx		
Relinquished by: FedEx	Company:	Date/Time:	Received by: [signature]	Company: CFA	Date/Time: 8/30/19 9:55
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

SAMPLE RECEIPT CHECKLIST

Cape Fear Analytical

Client: Pacific Groundwater Group	Work Order: 15468
Shipping Company: FedEx	Date/Time Received: 30AUG19 0955

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			✓
Samples identified as Foreign Soil?			✓

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?		✓	
Samples < 2x background?		✓	

* Notify RSO of any responses in this column immediately.

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?			✓

Air Witness: _____

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other(describe)
2	Custody seal/s present on cooler?	✓			Seal intact? (Yes) No
3	Chain of Custody documents included with shipment?	✓			
4	Samples requiring cold preservation within 0-6°C?	✓			Preservation Method: (ice bags) blue ice dry ice none other (describe) Temperature Blank present: (Yes) No 3.9°-0.1=3.8° 5.3°-0.1=5.2° 3.4°-0.1=3.3°
5	Aqueous samples found to have visible solids?			✓	Sample IDs, containers affected:
5	Samples requiring chemical preservation at proper pH?		✓		Sample IDs, containers affected and pH observed: pH=8 on both water containers If preservative added, Lot#:
7	Samples requiring preservation have no residual chlorine?	✓			Sample IDs, containers affected: If preservative added, Lot#:
8	Samples received within holding time?	✓			Sample IDs, tests affected:
9	Sample IDs on COC match IDs on containers?			✓	Sample IDs, containers affected: See below *
10	Date & time of COC match date & time on containers?	✓			Sample IDs, containers affected:
11	Number of containers received match number indicated on COC?			✓	List type and number of containers / Sample IDs, containers affected: 2-1L NMAG received for 711-82719 75-4 oz amber glass soil jars No containers received for 712-82819
12	COC form is properly signed in relinquished/received sections?	✓			

Comments:

* Sample ID discrepancies:

COC	Label
J6-SC1b-00to10-82719	J6-SC1-00to10-82719
J6-SC1b-10to20-82719	J6-SC1-10to20-82719
L3-SC1b-00to10-82619	CK 30AUG19 L3-SC2-00to10-82619
L3-SC1b-10to20-82619	L3-SC2-10to20-82619
D6-SC1b-10to20-82619	D6-SC2-10to20-82619

Checklist performed by: Initials: CK for RO Date: 30AUG19

CF-UD-F-7

Subject: RE: Fwd: RE: Swan Island sample receipt 30AUG19
From: "Jeff S. Parker" <JParker@PGWG.COM>
Date: 8/30/2019, 3:38 PM
To: Chris Cornwell <chr00735@cfanalytical.com>
CC: Janet Knox <janet@PGWG.COM>

Hi Chris,
Yes, please order 3 of the EDF-5183 (Cambridge SRM). I think the frequency of 1 per SDG (for 3 of the 4 SDGs Cynde is creating) makes sense.

Happy Holiday Weekend,
Jeff

Jeffrey Parker, LG | Environmental Geologist
Pacific Groundwater Group Water Resource & Environmental Consulting http://ww
(360) 570-8244 | jparker@pgwg.com | www.pgwg.com

From: Chris Cornwell <chr00735@cfanalytical.com>
Sent: Friday, August 30, 2019 12:14 PM
To: Jeff S. Parker <JParker@PGWG.COM>
Subject: Re: Fwd: RE: Swan Island sample receipt 30AUG19

Jeff,

Looks like we received about 75 samples. Everything looks OK receipt wise, Cynde is logging in now.

We have the Wellington SRM, not the Cambridge one. Want me to order the Cambridge? What frequency would you like for SRM's?

Having these logged in for method 1613, reporting J flags down to the EDL, EMPC's reported with a K flag.

Happy Friday!

Christopher K. Cornwell
Laboratory Director
Cape Fear Analytical
3306 Kitty Hawk Road
Suite 120
Wilmington, NC 28405
CCornwell@CFAnalytical.com
On 8/30/2019 3:05 PM, Cynde Larkins wrote:

-------- Forwarded Message --------
Subject:RE: Swan Island sample receipt 30AUG19
Date: Fri, 30 Aug 2019 19:02:55 +0000
From: Jeff S. Parker <JParker@PGWG.COM>
To: Cynde Larkins <Cynde.larkins@cfanalytical.com>
CC: Janet Knox <janet@PGWG.COM>

HI Cynde,

Can you send me copies of the COCs or the login file when you get a chance. We taped the COCs in the cooler before making copies and I didn't get a count of the # analyzed. We may need to remove a couple if we're way over our scope.

Also, I need to communicate with Chris about ordering the EDF-5183 (Cambridge SRM) to run with this batch. So, please hold the samples until we get those ordered and added too.

Thanks!
Jeff

From: Jeff S. Parker
Sent: Friday, August 30, 2019 11:55 AM
To: Cynde Larkins <Cynde.larkins@cfanalytical.com>
Subject: RE: Swan Island sample receipt 30AUG19

SRM1613 EDF-5183 9-9-19

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL
Rev 0

Certificate of Analysis

Clean Soil Reference Material

Catalog Number:	EDF-5183
Lot Number:	ER10091501
Expiration Date:	May 2023
Matrix:	Soil
Amount per Vial:	10 g
Storage and Handling:	Freezer.

Intended Use: For laboratory use only. This product is a sample of homogeneous soil matrix taken from an area where no known chemical contamination has occurred. This sample is intended for use in evaluating the performance of an analytical laboratory for the listed analytes.

Preparation: "Clean" soil was obtained from a location in Texas which was expected to contain minimal contamination. The soil was sieved to achieve uniform particle size and homogenized to within 5% using a disodium fluorescein indicator. Samples were then sterilized three times for two hours at 121°C and 15 psi.

Interlaboratory Analysis: This product was included in the Second Round of International Interlaboratory Study conducted by Cambridge Isotope Laboratories and Cerilliant Corporation. Participating laboratories used a variety of sample preparation and analytical techniques. The results listed below supersede those obtained in the First Round of Interlaboratory Study. This Second Round of Interlaboratory Study adds consensus values for one new dioxin, seventeen new PCBs, ten BDEs, and two new PAHs.

Interlaboratory Results: Results of the international interlaboratory study are attached. Consensus values were independently assigned by Manna Associates in the UK using the Cofino model of statistical analysis. These numbers are certified reference values. All values are presented at three significant figures. Analytes with fewer than five laboratories contributing acceptable data do not have assigned values reported in this study.

Cerilliant certifies that this standard meets or exceeds the specifications stated in this data sheet.

Authorized Signature:

Darron Ellsworth, Quality Assurance Manager

December 02, 2015
Date

Interlaboratory Participants:

Alta Analytical Laboratory, USA
CARSO, France
CEAEQ, Canada
Chinese Center for Disease Control and Prevention, China
Clean Harbors Environmental Services, USA
Columbia Analytical Services, Inc., USA
East Bay Municipal Utility District, USA
GfA (Gesellschaft für Arbeitsplatz und Umweltanalytik) mbH, Germany
Hong Kong Baptist University, Hong Kong
Labo Van Vooren, Belgium
Maxxam Analytics, Inc., Ontario Canada
Maxxam Analytics, Inc., British Columbia Canada
Military Institute of Chemistry and Radiometry, Poland
Nab Labs Ympäristöanalytiika Oy, Finland
National Central University, Taiwan
Oekometric GmbH, Germany
Pace Analytical Services, Inc., USA
Severn Trent Laboratories, CA USA
Severn Trent Laboratories, TN USA
SGS Institut Fresenius GmbH Bayreuth, Germany
Sun Dreams Environmental Technology Corp., Taiwan
Xiamen University, China

Interlaboratory Results:

Compound	*Assigned[1] Value (ng/kg)*	*Standard Deviation*	*Reference[2] Value (ng/kg)*	*(n)[3]*
Polychlorinated dioxins and furans				
2,3,7,8-Tetrachlorodibenzo-p-dioxin	0.11	0.07	0.11 ± 0.14	18
Total Tetrachlorodibenzo-p-dioxin	0.32	0.44	0.32 ± 0.88	8
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	0.39	0.16	0.39 ± 0.32	18
Total Pentachlorodibenzo-p-dioxin	2.96	1.20	2.96 ± 2.40	10
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	1.12	0.26	1.12 ± 0.52	18
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	4.39	0.44	4.39 ± 0.88	18
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	2.00	0.60	2.00 ± 1.20	18
Total Hexachlorodibenzo-p-dioxin	50.9	11.4	50.9 ± 22.8	10
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	153	28.6	153 ± 57.2	18
Total Heptachlorodibenzo-p-dioxin	492	123	492 ± 246	10
Octachlorodibenzo-p-dioxin	7,870	825	7,870 ± 1,650	18
2,3,7,8-Tetrachlorodibenzofuran	0.70	0.17	0.70 ± 0.34	18
Total Tetrachlorodibenzofuran	3.21	1.06	3.21 ± 2.12	10
1,2,3,7,8-Pentachlorodibenzofuran	0.23	0.11	0.23± 0.22	18
2,3,4,7,8-Pentachlorodibenzofuran	0.34	0.07	0.34 ± 0.14	18
Total Pentachlorodibenzofuran	3.31	2.87	3.31 ± 5.74	10
1,2,3,4,7,8-Hexachlorodibenzofuran	0.86	0.22	0.86 ± 0.44	18
1,2,3,6,7,8-Hexachlorodibenzofuran	0.58	0.13	0.58 ± 0.26	18
1,2,3,7,8,9-Hexachlorodibenzofuran	0.12	0.08	0.12 ± 0.16	17
2,3,4,6,7,8-Hexachlorodibenzofuran	0.72	0.48	0.72 ± 0.92	18
Total Hexachlorodibenzofuran	15.6	6.35	15.6 ± 12.7	10
1,2,3,4,6,7,8-Heptachlorodibenzofuran	13.9	1.84	13.9 ± 3.68	18
1,2,3,4,7,8,9-Heptachlorodibenzofuran	1.25	0.31	1.25 ± 0.62	18
Total Heptachlorodibenzofuran	54.0	7.98	54.0 ± 16.0	10
Octachlorodibenzofuran	58.2	16.2	58.2 ± 32.4	18

Interlaboratory Results (continued):

Compound	Assigned[1] Value (ng/kg)	Standard Deviation	Reference[2] Value (ng/kg)	(n)[3]
Polychlorinated biphenyls [4]				
2,2',5-Trichlorobiphenyl (#18)	78.9	15.2	78.9 ± 30.4	6
2,4,4'-Trichlorobiphenyl (#28)	140	63.6	140 ± 127	13
3,4,4'-Trichlorobiphenyl (#37)	1,710	220	1,710 ± 440	5
2,2',3,5'-Tetrachlorobiphenyl (#44)	1,070	276	1,070 ± 552	7
2,2',4,5'-Tetrachlorobiphenyl (#49)	638	175	638 ± 350	5
2,2',5,5'-Tetrachlorobiphenyl (#52)	2,020	372	2,020 ± 744	12
2,4,4',5-Tetrachlorobiphenyl (#74)	447,000	174,000	447,000 ± 348,000	5
3,3',4,4'-Tetrachlorobiphenyl (#77)	2,230	494	2,230 ± 988	13
3,4,4',5-Tetrachlorobiphenyl (#81)	5.52	3.71	5.52 ± 7.42	11
2,2',3,4,5'-Pentachlorobiphenyl (#87)	2,370	266	2,370 ± 532	6
2,2',4,4',5-Pentachlorobiphenyl (#99)	1,100	222	1,110 ± 444	7
2,2',4,5,5'-Pentachlorobiphenyl (#101)	5,370	782	5,370 ± 1,564	11
2,3,3',4,4'-Pentachlorobiphenyl (#105)	629	79.2	629 ± 158.4	15
2,3,3',4',6-Pentachlorobiphenyl (#110)	5,880	1,050	5,880 ± 2,110	7
2,3,4,4',5-Pentachlorobiphenyl (#114)	34.6	9.01	34.6 ± 18.0	13
2,3',4,4',5-Pentachlorobiphenyl (#118)	6,520	1,150	6,520 ± 2,300	14
2',3,4,4',5-Pentachlorobiphenyl (#123)	24.1	11.6	24.1 ± 23.2	12
3,3',4,4',5-Pentachlorobiphenyl (#126)	33.5	5.13	33.5 ± 10.3	13
2,2',3,3',4,4'-Hexachlorobiphenyl (#128)	342	68	342 ± 135	6
2,2',3,4,4',5-Hexachlorobiphenyl (#137)	87.1	16.4	87.1 ± 32.8	5
2,2',3,4,4',5'-Hexachlorobiphenyl (#138)	2,350	382	2,350 ± 764	11
2,2',3,4,5,5'-Hexachlorobiphenyl (#141)	514	55.8	514 ± 112	6
2,2',3,4',5',6-Hexachlorobiphenyl (#149)	2,280	212	2,280 ± 424	6
2,2',3,5,5',6-Hexachlorobiphenyl (#151)	910	376	910 ± 752	7
2,2',4,4',5,5'-Hexachlorobiphenyl (#153)	2,330	421	2,330 ± 842	13
2,3,3',4,4',5-Hexachlorobiphenyl (#156)	189	25.0	189 ± 25.0	14
2,3,3',4,4',5'-Hexachlorobiphenyl (#157)	31.0	7.56	31.0 ± 15.1	12
2,3,3',4,4',6-Hexachlorobiphenyl (#158)	224	22.4	224 ± 44.8	6
2,3',4,4',5,5'-Hexachlorobiphenyl (#167)	83.2	12.0	83.2 ± 12.0	13
3,3',4,4',5,5'-Hexachlorobiphenyl (#169)	0.57	0.34	0.57 ± 0.68	11
2,2',3,3',4,4',5-Heptachlorobiphenyl (#170)	436	51.2	436 ± 102	7
2,2',3,3',4',5,6-Heptachlorobiphenyl (#177)	362	39.5	362 ± 79.0	7
2,2',3,3',5,5',6-Heptachlorobiphenyl (#178)	135	11.3	135 ± 22.6	5
2,2',3,4,4',5,5'-Heptachlorobiphenyl (#180)	1,116	250	1,116 ± 500	13
2,2',3,4,4',5',6-Heptachlorobiphenyl (#183)	360	12.6	360 ± 25.2	7
2,2',3,4',5,5',6-Heptachlorobiphenyl (#187)	679	71.6	679 ± 143	5
2,3,3',4,4',5,5'-Heptachlorobiphenyl (#189)	14.2	2.66	14.2 ± 5.32	13
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (#194)	182	22.3	182 ± 44.6	7
2,2',3,3',4,4',5,6-Octachlorobiphenyl (#195)	90.6	8.61	90.6 ± 17.2	7
2,2',3,3',4,5,6,6'-Octachlorobiphenyl (#199)	229	17.1	229 ± 34.2	6
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (#206)[5]	74.8	54.1	74.8 ± 108	7
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (#208)[5]	38.3	30.7	38.3 ± 61.4	7
Decachlorobiphenyl (#209)	12.9	11.5	12.9 ± 23.0	7

Interlaboratory Results (continued):

Compound	Assigned [1] Value (ng/kg)	Standard Deviation	Reference [2] Value (ng/kg)	(n) [3]
Brominated diphenyl ethers [6]				
2,2',4-Tribromodiphenyl ether (#17)	4.80	3.05	4.80 ± 6.10	7
2,4,4'-Tribromodiphenyl ether (#28)	38.0	39.9	38.0 ± 79.8	11
2,2',4,4'-Tetrabromodiphenyl ether (#47)	192	123	192 ± 246	11
2,2',4,5'-Tetrabromodiphenyl ether (#49)	24.4	9.86	24.4 ± 19.7	5
2,3',4,4'-Tetrabromodiphenyl ether (#66)	12.6	5.46	12.6 ± 10.9	8
2,2',3,4,4'-Pentabromodiphenyl ether (#85)	19.5	8.97	19.5 ± 17.9	8
2,2',4,4',5-Pentabromodiphenyl ether (#99)	213	93.0	213 ± 186	11
2,2',4,4',6-Pentabromodiphenyl ether (#100)	55.4	15.5	55.4 ± 31.0	11
2,2',3,4,4',5-Hexabromodiphenyl ether (#138)	25.8	12.9	25.8 ± 25.8	9
2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)	111	12.0	111 ± 24.0	11
2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)	46.0	13.3	46.0 ± 26.6	11
2,2',3,4,4',5',6-Heptabromodiphenyl ether (#183)	286	35.4	286 ± 70.8	11
Decabromodiphenyl ether (#209)	1,930	1,150	1,930 ± 2,300	7
Polyaromatic hydrocarbons				
Anthracene	9,650	2,990	9,650 ± 5,980	6
Benz[*a*]anthracene	11,200	4,710	11,200 ± 9,420	7
Benzo[*b*]fluoranthene	18,100	9,580	18,100 ± 19,200	7
Benzo[*k*]fluoranthene	5,870	1,660	5,870 ± 3,320	7
Benzo[*g* ,*h* ,*i*]perylene	8,280	1,300	8,280 ± 2,600	7
Benzo[*a*]pyrene	7,620	3,080	7,620 ± 6,160	7
Chrysene	16,000	3,750	16,000 ± 7,500	7
Fluoranthene	33,000	5,170	33,000 ± 10,300	7
Indeno[1,2,3-*cd*]pyrene	9,550	2,070	9,550 ± 4,140	7
Phenanthrene	25,900	19,100	25,900 ± 38,200	6
Pyrene	26,300	4,340	26,300 ± 8,680	7

[1] Assigned Value as determined by Manna Associates in the UK using Cofino analysis of raw interlaboratory study data.

[2] Reference Value is the Assigned Value plus or minus two standard deviations. Negative numbers resulting from two standard deviations being greater than the assigned value have no significance.

[3] Number of laboratories providing results for this analyte.

[4] All numbers in parentheses refer to the IUPAC designation for the compound.

[5] Assigned values from the First Round of International Interlaboratory Study.

[6] All numbers in parentheses refer to the IUPAC designation for the related PCB congener.

COA Revision History

Revision No.	Date	Reason for Revision
00	December 02, 2015	Initial version



1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Clean Soil Reference Material 2003

Product Number : EDF-5183
Brand : Cerilliant

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Not a hazardous substance or mixture.

2.2 GHS Label elements, including precautionary statements

Not a hazardous substance or mixture.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

No components need to be disclosed according to the applicable regulations.

4. FIRST AID MEASURES

4.1 Description of first aid measures

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration.

In case of skin contact
Wash off with soap and plenty of water.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Nature of decomposition products not known.

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Avoid dust formation. Avoid breathing vapours, mist or gas.
For personal protection see section 8.

6.2 Environmental precautions
No special environmental precautions required.

6.3 Methods and materials for containment and cleaning up
Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Storage class (TRGS 510): Non Combustible Solids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls
General industrial hygiene practice.

Personal protective equipment

Eye/face protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
No special environmental precautions required.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: solid
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	No data available
f)	Initial boiling point and boiling range	No data available
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	No data available
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

IMDG

IATA

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
No SARA Hazards

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Soil	-	

New Jersey Right To Know Components

	CAS-No.	Revision Date

Soil

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

HMIS Rating

Health hazard:	0
Chronic Health Hazard:	
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	0
Fire Hazard:	0
Reactivity Hazard:	0

Further information
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Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.0 Revision Date: 05/20/2015 Print Date: 05/20/2015

High Resolution Dioxins and Furans Analysis

Case Narrative

HDOX Case Narrative
Pacific Groundwater Group (PGWG)
SDG 2006-00115_1
Work Order 15468

Method/Analysis Information

Product: **Dioxins/Furans by EPA Method 1613B in Solids**
Analytical Method: EPA Method 1613B
Extraction Method: SW846 3540C
Analytical Batch Number: 41713
Clean Up Batch Number: 41712
Extraction Batch Number: 41711

Sample Analysis

Samples were received at 5.2°C (15468001, 15468002, 15468003, 15468004, 15468005, 15468006, 15468007, 15468008, 15468009, 15468010, 15468011, 15468012, 15468014, 15468015) , 3.8°C (15468013) and ambient (15468016). The following samples were analyzed using the analytical protocol as established in Method 1613B:

Sample ID	Client ID
12024755	Method Blank (MB)
12024756	Laboratory Control Sample (LCS)
12024757	Laboratory Control Sample Duplicate (LCSD)
12024758	15468001(R4-SC1b-20to30-82819) Matrix Spike (MS)
12024759	15468001(R4-SC1b-20to30-82819) Matrix Spike Duplicate (MSD)
15468001	R4-SC1b-20to30-82819
15468002	R4-SC1b-30to40-82819
15468003	R4-SC1b-40to50-82819
15468004	R4-SC1b-50to60-82819
15468005	R4-SC1b-60to70-82819
15468006	R4-SC1b-70to80-82819
15468007	R4-SC1b-80to90-82819
15468008	R4-SC1b-90to100-82819
15468010	R4-SC1b-100to110-82819
15468011	R4-SC1b-110to120-82819
15468012	R4-SC1b-120to130-82819
15468013	413-SC1b-40to50-82819
15468014	R4-SC1b-130to140-82819
15468015	R4-SC1b-140to150-82819
15468016	SRM Lot# ER10091501

Samples 15468 001, 002, 003, 004, 005, 006, 007, 008, 009, 010, 011, 012, 013, 014 and 015 in this SDG were analyzed on a "dry weight" basis. Sample 15468 016 in this SDG was analyzed on an "as received" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-002 REV# 15.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements
All associated calibration verification standard(s) (CCV) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement
The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

Method Blank (MB) Statement
The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
All surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery
The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement
The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation
Sample 15468001 (R4-SC1b-20to30-82819)- Batch 41713 was selected for analysis as the matrix spike and matrix spike duplicate.

Matrix Spike/Duplicate (MS/MSD) Recovery Statement

The MS recoveries for this SDG were not within the acceptance limits. The failures confirm in the matrix spike duplicate and are attributed to matrix interference. 12024758 (R4-SC1b-20to30-82819) and 12024759 (R4-SC1b-20to30-82819)- Batch 41713.

MS/MSD Relative Percent Difference (RPD) Statement
The relative percent differences (RPD) between each MS and MSD were not within the required acceptance limits. Sample data is validated based on acceptable LCS/LCSD results. 12024759 (R4-SC1b-20to30-82819)- Batch 41713.

Technical Information

Holding Time Specifications
CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Nonconformance (NCR) Documentation
The following NCR was generated for this SDG: 647532 12024759 (R4-SC1b-20to30-82819)- Batch 41713.

Manual Integrations
Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction. Manual integrations were required for data files in this SDG.

Sample preparation
No difficulties were encountered during sample preparation.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional

packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Sample Data Summary

Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Qualifier Definition Report
for

PGWG001 Pacific Groundwater Group

Client SDG: 2006-00115_1 CFA Work Order: 15468

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

B The target analyte was detected in the associated blank.

E Value is estimated - Concentration of the target analyte exceeds the instrument calibration range

J Value is estimated

K Estimated Maximum Possible Concentration

Q Quantitative Interference; value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: [redacted] **Name: Heather Patterson**

Date: 23 SEP 2019 **Title: Group Leader**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15468001**	**Date Collected:**	**08/28/2019 14:00**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**47**
Client ID:	**R4-SC1b-20to30-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/17/2019 16:12**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A17SEP19C-5**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**18.97 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	JK	0.157	pg/g	0.0611	0.995
40321-76-4	1,2,3,7,8-PeCDD	JK	0.358	pg/g	0.125	4.98
39227-28-6	1,2,3,4,7,8-HxCDD	J	0.307	pg/g	0.148	4.98
57653-85-7	1,2,3,6,7,8-HxCDD	J	1.83	pg/g	0.146	4.98
19408-74-3	1,2,3,7,8,9-HxCDD	J	1.04	pg/g	0.149	4.98
35822-46-9	1,2,3,4,6,7,8-HpCDD		39.8	pg/g	0.532	4.98
3268-87-9	1,2,3,4,6,7,8,9-OCDD		586	pg/g	0.667	9.95
51207-31-9	2,3,7,8-TCDF	BJ	0.416	pg/g	0.106	0.995
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.209	pg/g	0.0858	4.98
57117-31-4	2,3,4,7,8-PeCDF	J	0.432	pg/g	0.0894	4.98
70648-26-9	1,2,3,4,7,8-HxCDF	BJ	0.796	pg/g	0.135	4.98
57117-44-9	1,2,3,6,7,8-HxCDF	J	0.780	pg/g	0.138	4.98
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.607	pg/g	0.140	4.98
72918-21-9	1,2,3,7,8,9-HxCDF	J	0.305	pg/g	0.173	4.98
67562-39-4	1,2,3,4,6,7,8-HpCDF		8.80	pg/g	0.172	4.98
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	0.844	pg/g	0.247	4.98
39001-02-0	1,2,3,4,6,7,8,9-OCDF		26.5	pg/g	0.344	9.95
41903-57-5	Total TeCDD	JK	1.12	pg/g	0.0611	0.995
36088-22-9	Total PeCDD	JK	3.04	pg/g	0.125	4.98
34465-46-8	Total HxCDD	J	14.2	pg/g	0.146	4.98
37871-00-4	Total HpCDD		90.0	pg/g	0.532	4.98
30402-14-3	Total TeCDF	BJK	3.35	pg/g	0.106	0.995
30402-15-4	Total PeCDF	JK	5.95	pg/g	0.0348	4.98
55684-94-1	Total HxCDF	J	14.0	pg/g	0.135	4.98
38998-75-3	Total HpCDF	J	31.3	pg/g	0.172	4.98
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		1.94	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		1.94	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		164	199	pg/g	82.2	(25%-164%)
13C-1,2,3,7,8-PeCDD		171	199	pg/g	86.0	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		155	199	pg/g	77.6	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		144	199	pg/g	72.5	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		160	199	pg/g	80.3	(23%-140%)
13C-OCDD		263	398	pg/g	66.0	(17%-157%)
13C-2,3,7,8-TCDF		176	199	pg/g	88.4	(24%-169%)
13C-1,2,3,7,8-PeCDF		193	199	pg/g	96.9	(24%-185%)
13C-2,3,4,7,8-PeCDF		184	199	pg/g	92.4	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		149	199	pg/g	75.1	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		143	199	pg/g	71.7	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		151	199	pg/g	75.7	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		156	199	pg/g	78.3	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15468001**	**Date Collected:**	**08/28/2019 14:00**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**47**
Client ID:	**R4-SC1b-20to30-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/17/2019 16:12**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A17SEP19C-5**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**18.97 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		146	199	pg/g	73.4	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		146	199	pg/g	73.3	(26%-138%)
37Cl-2,3,7,8-TCDD		20.5	19.9	pg/g	103	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**

J **Value is estimated**

K **Estimated Maximum Possible Concentration**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15468002**	**Date Collected:**	**08/28/2019 14:05**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**44.7**
Client ID:	**R4-SC1b-30to40-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/17/2019 18:39**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A17SEP19C-8**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**18.32 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	JK	0.107	pg/g	0.0533	0.987
40321-76-4	1,2,3,7,8-PeCDD	J	0.237	pg/g	0.114	4.94
39227-28-6	1,2,3,4,7,8-HxCDD	J	0.201	pg/g	0.159	4.94
57653-85-7	1,2,3,6,7,8-HxCDD	J	1.13	pg/g	0.158	4.94
19408-74-3	1,2,3,7,8,9-HxCDD	J	0.610	pg/g	0.161	4.94
35822-46-9	1,2,3,4,6,7,8-HpCDD		20.3	pg/g	0.405	4.94
3268-87-9	1,2,3,4,6,7,8,9-OCDD		271	pg/g	0.616	9.87
51207-31-9	2,3,7,8-TCDF	BJK	0.324	pg/g	0.0896	0.987
57117-41-6	1,2,3,7,8-PeCDF	BJK	0.255	pg/g	0.0991	4.94
57117-31-4	2,3,4,7,8-PeCDF	J	0.385	pg/g	0.0944	4.94
70648-26-9	1,2,3,4,7,8-HxCDF	BJ	0.630	pg/g	0.0819	4.94
57117-44-9	1,2,3,6,7,8-HxCDF	J	0.438	pg/g	0.0853	4.94
60851-34-5	2,3,4,6,7,8-HxCDF	JK	0.351	pg/g	0.0829	4.94
72918-21-9	1,2,3,7,8,9-HxCDF	JK	0.288	pg/g	0.0997	4.94
67562-39-4	1,2,3,4,6,7,8-HpCDF		5.01	pg/g	0.109	4.94
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	0.438	pg/g	0.167	4.94
39001-02-0	1,2,3,4,6,7,8,9-OCDF		13.4	pg/g	0.205	9.87
41903-57-5	Total TeCDD	JK	0.521	pg/g	0.0533	0.987
36088-22-9	Total PeCDD	JK	1.36	pg/g	0.114	4.94
34465-46-8	Total HxCDD	JK	7.59	pg/g	0.158	4.94
37871-00-4	Total HpCDD		42.5	pg/g	0.405	4.94
30402-14-3	Total TeCDF	BJK	2.12	pg/g	0.0896	0.987
30402-15-4	Total PeCDF	JK	3.79	pg/g	0.0363	4.94
55684-94-1	Total HxCDF	JK	8.28	pg/g	0.0819	4.94
38998-75-3	Total HpCDF	J	17.4	pg/g	0.109	4.94
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		1.21	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		1.21	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		162	197	pg/g	82.1	(25%-164%)
13C-1,2,3,7,8-PeCDD		170	197	pg/g	86.0	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		152	197	pg/g	77.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		148	197	pg/g	75.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		162	197	pg/g	82.0	(23%-140%)
13C-OCDD		258	395	pg/g	65.3	(17%-157%)
13C-2,3,7,8-TCDF		166	197	pg/g	84.0	(24%-169%)
13C-1,2,3,7,8-PeCDF		189	197	pg/g	95.6	(24%-185%)
13C-2,3,4,7,8-PeCDF		183	197	pg/g	92.8	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		153	197	pg/g	77.3	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		144	197	pg/g	73.0	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		154	197	pg/g	77.8	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		158	197	pg/g	79.9	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15468002**	**Date Collected:**	**08/28/2019 14:05**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**44.7**
Client ID:	**R4-SC1b-30to40-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/17/2019 18:39**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A17SEP19C-8**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**18.32 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		145	197	pg/g	73.4	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		146	197	pg/g	74.2	(26%-138%)
37Cl-2,3,7,8-TCDD		20.7	19.7	pg/g	105	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**

J **Value is estimated**

K **Estimated Maximum Possible Concentration**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15468003**	**Date Collected:**	**08/28/2019 15:10**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**46.3**
Client ID:	**R4-SC1b-40to50-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/17/2019 19:28**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A17SEP19C-9**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**18.8 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	0.503	pg/g	0.080	0.990
40321-76-4	1,2,3,7,8-PeCDD	J	1.28	pg/g	0.138	4.95
39227-28-6	1,2,3,4,7,8-HxCDD	J	1.55	pg/g	0.253	4.95
57653-85-7	1,2,3,6,7,8-HxCDD		7.67	pg/g	0.251	4.95
19408-74-3	1,2,3,7,8,9-HxCDD	J	4.00	pg/g	0.257	4.95
35822-46-9	1,2,3,4,6,7,8-HpCDD		186	pg/g	1.18	4.95
3268-87-9	1,2,3,4,6,7,8,9-OCDD		2440	pg/g	1.09	9.90
51207-31-9	2,3,7,8-TCDF	B	1.16	pg/g	0.200	0.990
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.986	pg/g	0.103	4.95
57117-31-4	2,3,4,7,8-PeCDF	J	2.06	pg/g	0.0962	4.95
70648-26-9	1,2,3,4,7,8-HxCDF		5.37	pg/g	0.192	4.95
57117-44-9	1,2,3,6,7,8-HxCDF	J	3.19	pg/g	0.198	4.95
60851-34-5	2,3,4,6,7,8-HxCDF	J	2.79	pg/g	0.202	4.95
72918-21-9	1,2,3,7,8,9-HxCDF	J	1.22	pg/g	0.240	4.95
67562-39-4	1,2,3,4,6,7,8-HpCDF		49.5	pg/g	0.303	4.95
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	3.60	pg/g	0.406	4.95
39001-02-0	1,2,3,4,6,7,8,9-OCDF		133	pg/g	0.475	9.90
41903-57-5	Total TeCDD	JK	5.07	pg/g	0.080	0.990
36088-22-9	Total PeCDD	JKQ	10.9	pg/g	0.138	4.95
34465-46-8	Total HxCDD	JK	56.7	pg/g	0.251	4.95
37871-00-4	Total HpCDD		384	pg/g	1.18	4.95
30402-14-3	Total TeCDF	JK	16.2	pg/g	0.200	0.990
30402-15-4	Total PeCDF	JKQ	30.2	pg/g	0.041	4.95
55684-94-1	Total HxCDF	JK	69.2	pg/g	0.192	4.95
38998-75-3	Total HpCDF	J	171	pg/g	0.303	4.95
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		8.29	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		8.29	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		159	198	pg/g	80.1	(25%-164%)
13C-1,2,3,7,8-PeCDD		174	198	pg/g	88.1	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		160	198	pg/g	81.0	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		148	198	pg/g	74.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		172	198	pg/g	86.7	(23%-140%)
13C-OCDD		299	396	pg/g	75.4	(17%-157%)
13C-2,3,7,8-TCDF		179	198	pg/g	90.3	(24%-169%)
13C-1,2,3,7,8-PeCDF		183	198	pg/g	92.6	(24%-185%)
13C-2,3,4,7,8-PeCDF		183	198	pg/g	92.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		152	198	pg/g	77.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		146	198	pg/g	74.0	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		152	198	pg/g	77.0	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		158	198	pg/g	79.7	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15468003**	**Date Collected:**	**08/28/2019 15:10**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**46.3**
Client ID:	**R4-SC1b-40to50-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/17/2019 19:28**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A17SEP19C-9**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**18.8 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		153	198	pg/g	77.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		158	198	pg/g	79.9	(26%-138%)
37Cl-2,3,7,8-TCDD		20.1	19.8	pg/g	101	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
Q **Quantitative Interference; value is estimated**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15468003**	**Date Collected:**	**08/28/2019 15:10**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**46.3**
Client ID:	**R4-SC1b-40to50-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/20/2019 10:56**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A20SEP19A-4**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**18.8 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF	B	1.41	pg/g	0.232	0.990

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

B The target analyte was detected in the associated blank.
J Value is estimated
K Estimated Maximum Possible Concentration
Q Quantitative Interference; value is estimated
U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15468004**	**Date Collected:**	**08/28/2019 15:20**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**44.9**
Client ID:	**R4-SC1b-50to60-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/17/2019 20:17**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A17SEP19C-10**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**18.28 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	JK	0.201	pg/g	0.0862	0.993
40321-76-4	1,2,3,7,8-PeCDD	J	0.443	pg/g	0.199	4.97
39227-28-6	1,2,3,4,7,8-HxCDD	JK	0.542	pg/g	0.256	4.97
57653-85-7	1,2,3,6,7,8-HxCDD	J	2.46	pg/g	0.260	4.97
19408-74-3	1,2,3,7,8,9-HxCDD	J	1.36	pg/g	0.262	4.97
35822-46-9	1,2,3,4,6,7,8-HpCDD		61.0	pg/g	0.834	4.97
3268-87-9	1,2,3,4,6,7,8,9-OCDD		904	pg/g	0.805	9.93
51207-31-9	2,3,7,8-TCDF	BJ	0.437	pg/g	0.124	0.993
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.377	pg/g	0.117	4.97
57117-31-4	2,3,4,7,8-PeCDF	JK	0.634	pg/g	0.109	4.97
70648-26-9	1,2,3,4,7,8-HxCDF	J	1.36	pg/g	0.159	4.97
57117-44-9	1,2,3,6,7,8-HxCDF	J	1.32	pg/g	0.153	4.97
60851-34-5	2,3,4,6,7,8-HxCDF	JK	1.07	pg/g	0.154	4.97
72918-21-9	1,2,3,7,8,9-HxCDF	JK	0.473	pg/g	0.207	4.97
67562-39-4	1,2,3,4,6,7,8-HpCDF		23.5	pg/g	0.264	4.97
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	1.41	pg/g	0.372	4.97
39001-02-0	1,2,3,4,6,7,8,9-OCDF		63.9	pg/g	0.419	9.93
41903-57-5	Total TeCDD	JK	1.67	pg/g	0.0862	0.993
36088-22-9	Total PeCDD	JK	4.13	pg/g	0.199	4.97
34465-46-8	Total HxCDD	JK	20.1	pg/g	0.256	4.97
37871-00-4	Total HpCDD		132	pg/g	0.834	4.97
30402-14-3	Total TeCDF	BJK	4.59	pg/g	0.124	0.993
30402-15-4	Total PeCDF	JK	11.1	pg/g	0.0425	4.97
55684-94-1	Total HxCDF	JK	28.5	pg/g	0.153	4.97
38998-75-3	Total HpCDF	J	78.9	pg/g	0.264	4.97
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		2.90	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		2.90	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		174	199	pg/g	87.6	(25%-164%)
13C-1,2,3,7,8-PeCDD		194	199	pg/g	97.4	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		169	199	pg/g	85.3	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		162	199	pg/g	81.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		177	199	pg/g	89.2	(23%-140%)
13C-OCDD		296	397	pg/g	74.5	(17%-157%)
13C-2,3,7,8-TCDF		190	199	pg/g	95.4	(24%-169%)
13C-1,2,3,7,8-PeCDF		213	199	pg/g	107	(24%-185%)
13C-2,3,4,7,8-PeCDF		213	199	pg/g	107	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		169	199	pg/g	84.9	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		159	199	pg/g	80.3	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		170	199	pg/g	85.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		173	199	pg/g	87.3	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15468004**	**Date Collected:**	**08/28/2019 15:20**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**44.9**
Client ID:	**R4-SC1b-50to60-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/17/2019 20:17**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A17SEP19C-10**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**18.28 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		162	199	pg/g	81.5	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		164	199	pg/g	82.4	(26%-138%)
37Cl-2,3,7,8-TCDD		21.4	19.9	pg/g	108	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**

J **Value is estimated**

K **Estimated Maximum Possible Concentration**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15468005**	**Date Collected:**	**08/28/2019 15:50**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**45.7**
Client ID:	**R4-SC1b-60to70-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/17/2019 21:06**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A17SEP19C-11**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**18.7 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0922	pg/g	0.0922	0.985
40321-76-4	1,2,3,7,8-PeCDD	J	0.228	pg/g	0.180	4.92
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.339	pg/g	0.339	4.92
57653-85-7	1,2,3,6,7,8-HxCDD	J	1.27	pg/g	0.331	4.92
19408-74-3	1,2,3,7,8,9-HxCDD	J	0.644	pg/g	0.339	4.92
35822-46-9	1,2,3,4,6,7,8-HpCDD		28.1	pg/g	0.522	4.92
3268-87-9	1,2,3,4,6,7,8,9-OCDD		394	pg/g	0.670	9.85
51207-31-9	2,3,7,8-TCDF	BJK	0.575	pg/g	0.124	0.985
57117-41-6	1,2,3,7,8-PeCDF	BJK	0.278	pg/g	0.093	4.92
57117-31-4	2,3,4,7,8-PeCDF	J	0.483	pg/g	0.091	4.92
70648-26-9	1,2,3,4,7,8-HxCDF	J	1.27	pg/g	0.175	4.92
57117-44-9	1,2,3,6,7,8-HxCDF	JK	0.949	pg/g	0.176	4.92
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.717	pg/g	0.181	4.92
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.236	pg/g	0.236	4.92
67562-39-4	1,2,3,4,6,7,8-HpCDF		12.4	pg/g	0.223	4.92
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	0.878	pg/g	0.339	4.92
39001-02-0	1,2,3,4,6,7,8,9-OCDF		29.0	pg/g	0.356	9.85
41903-57-5	Total TeCDD	JK	0.831	pg/g	0.0922	0.985
36088-22-9	Total PeCDD	JK	2.07	pg/g	0.180	4.92
34465-46-8	Total HxCDD	J	9.55	pg/g	0.331	4.92
37871-00-4	Total HpCDD		63.8	pg/g	0.522	4.92
30402-14-3	Total TeCDF	BJK	4.39	pg/g	0.124	0.985
30402-15-4	Total PeCDF	JK	8.28	pg/g	0.0384	4.92
55684-94-1	Total HxCDF	JK	17.6	pg/g	0.175	4.92
38998-75-3	Total HpCDF	J	40.8	pg/g	0.223	4.92
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		1.46	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		1.54	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		164	197	pg/g	83.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		187	197	pg/g	95.0	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		161	197	pg/g	81.9	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		151	197	pg/g	76.8	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		163	197	pg/g	82.5	(23%-140%)
13C-OCDD		262	394	pg/g	66.5	(17%-157%)
13C-2,3,7,8-TCDF		178	197	pg/g	90.1	(24%-169%)
13C-1,2,3,7,8-PeCDF		207	197	pg/g	105	(24%-185%)
13C-2,3,4,7,8-PeCDF		203	197	pg/g	103	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		160	197	pg/g	81.2	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		149	197	pg/g	75.7	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		157	197	pg/g	79.5	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		164	197	pg/g	83.3	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15468005**	**Date Collected:**	**08/28/2019 15:50**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**45.7**
Client ID:	**R4-SC1b-60to70-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/17/2019 21:06**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A17SEP19C-11**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**18.7 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		150	197	pg/g	76.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		151	197	pg/g	76.6	(26%-138%)
37Cl-2,3,7,8-TCDD		20.4	19.7	pg/g	104	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15468006**	**Date Collected:**	**08/28/2019 15:55**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**44.2**
Client ID:	**R4-SC1b-70to80-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/17/2019 21:55**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A17SEP19C-12**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**18.11 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0775	pg/g	0.0775	0.989
40321-76-4	1,2,3,7,8-PeCDD	U	0.133	pg/g	0.133	4.94
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.237	pg/g	0.237	4.94
57653-85-7	1,2,3,6,7,8-HxCDD	JK	0.840	pg/g	0.247	4.94
19408-74-3	1,2,3,7,8,9-HxCDD	J	0.419	pg/g	0.245	4.94
35822-46-9	1,2,3,4,6,7,8-HpCDD		16.6	pg/g	0.455	4.94
3268-87-9	1,2,3,4,6,7,8,9-OCDD		249	pg/g	0.625	9.89
51207-31-9	2,3,7,8-TCDF	BJ	0.409	pg/g	0.119	0.989
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.259	pg/g	0.0765	4.94
57117-31-4	2,3,4,7,8-PeCDF	J	0.605	pg/g	0.0791	4.94
70648-26-9	1,2,3,4,7,8-HxCDF	BJ	0.575	pg/g	0.216	4.94
57117-44-9	1,2,3,6,7,8-HxCDF	J	0.884	pg/g	0.223	4.94
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.526	pg/g	0.216	4.94
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.287	pg/g	0.287	4.94
67562-39-4	1,2,3,4,6,7,8-HpCDF		9.25	pg/g	0.165	4.94
55673-89-7	1,2,3,4,7,8,9-HpCDF	JK	0.599	pg/g	0.225	4.94
39001-02-0	1,2,3,4,6,7,8,9-OCDF		16.9	pg/g	0.243	9.89
41903-57-5	Total TeCDD	JK	1.08	pg/g	0.0775	0.989
36088-22-9	Total PeCDD	JK	1.69	pg/g	0.133	4.94
34465-46-8	Total HxCDD	JK	7.10	pg/g	0.237	4.94
37871-00-4	Total HpCDD		40.7	pg/g	0.455	4.94
30402-14-3	Total TeCDF	BJK	4.03	pg/g	0.119	0.989
30402-15-4	Total PeCDF	JK	9.35	pg/g	0.0407	4.94
55684-94-1	Total HxCDF	J	12.7	pg/g	0.216	4.94
38998-75-3	Total HpCDF	JK	26.6	pg/g	0.165	4.94
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.899	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		1.03	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		160	198	pg/g	80.7	(25%-164%)
13C-1,2,3,7,8-PeCDD		180	198	pg/g	91.1	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		162	198	pg/g	81.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		150	198	pg/g	76.0	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		162	198	pg/g	82.1	(23%-140%)
13C-OCDD		269	396	pg/g	67.9	(17%-157%)
13C-2,3,7,8-TCDF		181	198	pg/g	91.3	(24%-169%)
13C-1,2,3,7,8-PeCDF		197	198	pg/g	99.5	(24%-185%)
13C-2,3,4,7,8-PeCDF		191	198	pg/g	96.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		161	198	pg/g	81.4	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		150	198	pg/g	75.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		159	198	pg/g	80.5	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		162	198	pg/g	82.0	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15468006**	**Date Collected:**	**08/28/2019 15:55**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**44.2**
Client ID:	**R4-SC1b-70to80-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/17/2019 21:55**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A17SEP19C-12**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**18.11 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		150	198	pg/g	75.7	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		151	198	pg/g	76.2	(26%-138%)
37Cl-2,3,7,8-TCDD		21.2	19.8	pg/g	107	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15468007**	**Date Collected:**	**08/28/2019 16:30**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**45.8**
Client ID:	**R4-SC1b-80to90-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/17/2019 22:44**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A17SEP19C-13**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**18.55 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	JK	0.0776	pg/g	0.0595	0.994
40321-76-4	1,2,3,7,8-PeCDD	U	0.133	pg/g	0.133	4.97
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.122	pg/g	0.122	4.97
57653-85-7	1,2,3,6,7,8-HxCDD	JK	0.537	pg/g	0.126	4.97
19408-74-3	1,2,3,7,8,9-HxCDD	J	0.213	pg/g	0.126	4.97
35822-46-9	1,2,3,4,6,7,8-HpCDD		6.75	pg/g	0.288	4.97
3268-87-9	1,2,3,4,6,7,8,9-OCDD		122	pg/g	0.505	9.94
51207-31-9	2,3,7,8-TCDF	BJK	0.533	pg/g	0.0937	0.994
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.255	pg/g	0.102	4.97
57117-31-4	2,3,4,7,8-PeCDF	JK	0.517	pg/g	0.097	4.97
70648-26-9	1,2,3,4,7,8-HxCDF	BJ	0.455	pg/g	0.146	4.97
57117-44-9	1,2,3,6,7,8-HxCDF	J	0.714	pg/g	0.142	4.97
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.374	pg/g	0.151	4.97
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.188	pg/g	0.188	4.97
67562-39-4	1,2,3,4,6,7,8-HpCDF		7.57	pg/g	0.110	4.97
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	0.302	pg/g	0.158	4.97
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	8.80	pg/g	0.225	9.94
41903-57-5	Total TeCDD	JK	0.650	pg/g	0.0595	0.994
36088-22-9	Total PeCDD	J	0.833	pg/g	0.133	4.97
34465-46-8	Total HxCDD	JK	4.01	pg/g	0.122	4.97
37871-00-4	Total HpCDD		18.9	pg/g	0.288	4.97
30402-14-3	Total TeCDF	BJK	4.17	pg/g	0.0937	0.994
30402-15-4	Total PeCDF	JK	7.33	pg/g	0.0348	4.97
55684-94-1	Total HxCDF	JK	9.23	pg/g	0.142	4.97
38998-75-3	Total HpCDF	J	17.5	pg/g	0.110	4.97
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.708	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.791	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		162	199	pg/g	81.4	(25%-164%)
13C-1,2,3,7,8-PeCDD		182	199	pg/g	91.3	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		159	199	pg/g	79.9	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		155	199	pg/g	78.0	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		165	199	pg/g	83.2	(23%-140%)
13C-OCDD		266	398	pg/g	66.8	(17%-157%)
13C-2,3,7,8-TCDF		175	199	pg/g	88.0	(24%-169%)
13C-1,2,3,7,8-PeCDF		201	199	pg/g	101	(24%-185%)
13C-2,3,4,7,8-PeCDF		198	199	pg/g	99.5	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		159	199	pg/g	80.1	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		152	199	pg/g	76.2	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		159	199	pg/g	80.0	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		166	199	pg/g	83.3	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15468007**	**Date Collected:**	**08/28/2019 16:30**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**45.8**
Client ID:	**R4-SC1b-80to90-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/17/2019 22:44**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A17SEP19C-13**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**18.55 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		150	199	pg/g	75.3	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		152	199	pg/g	76.5	(26%-138%)
37Cl-2,3,7,8-TCDD		20.9	19.9	pg/g	105	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15468008**	**Date Collected:**	**08/28/2019 16:40**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**44.2**
Client ID:	**R4-SC1b-90to100-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/19/2019 06:11**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A18SEP19D_2-2**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**18.04 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0512	pg/g	0.0512	0.993
40321-76-4	1,2,3,7,8-PeCDD	U	0.118	pg/g	0.118	4.97
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.114	pg/g	0.114	4.97
57653-85-7	1,2,3,6,7,8-HxCDD	J	0.280	pg/g	0.111	4.97
19408-74-3	1,2,3,7,8,9-HxCDD	J	0.135	pg/g	0.114	4.97
35822-46-9	1,2,3,4,6,7,8-HpCDD		5.00	pg/g	0.250	4.97
3268-87-9	1,2,3,4,6,7,8,9-OCDD		83.5	pg/g	0.395	9.93
51207-31-9	2,3,7,8-TCDF	BJ	0.395	pg/g	0.101	0.993
57117-41-6	1,2,3,7,8-PeCDF	U	0.105	pg/g	0.105	4.97
57117-31-4	2,3,4,7,8-PeCDF	J	0.308	pg/g	0.0971	4.97
70648-26-9	1,2,3,4,7,8-HxCDF	BJK	0.248	pg/g	0.0715	4.97
57117-44-9	1,2,3,6,7,8-HxCDF	J	0.334	pg/g	0.0745	4.97
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.270	pg/g	0.0759	4.97
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.0995	pg/g	0.0995	4.97
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	3.33	pg/g	0.102	4.97
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	0.167	pg/g	0.137	4.97
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	4.80	pg/g	0.180	9.93
41903-57-5	Total TeCDD	JK	0.520	pg/g	0.0512	0.993
36088-22-9	Total PeCDD	JK	0.481	pg/g	0.118	4.97
34465-46-8	Total HxCDD	JK	2.40	pg/g	0.111	4.97
37871-00-4	Total HpCDD		13.1	pg/g	0.250	4.97
30402-14-3	Total TeCDF	BJK	1.76	pg/g	0.101	0.993
30402-15-4	Total PeCDF	J	4.78	pg/g	0.0403	4.97
55684-94-1	Total HxCDF	JK	5.09	pg/g	0.0715	4.97
38998-75-3	Total HpCDF	J	8.42	pg/g	0.102	4.97
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.370	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.467	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		165	199	pg/g	83.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		160	199	pg/g	80.6	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		159	199	pg/g	79.9	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		153	199	pg/g	76.8	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		153	199	pg/g	77.0	(23%-140%)
13C-OCDD		250	397	pg/g	62.9	(17%-157%)
13C-2,3,7,8-TCDF		164	199	pg/g	82.8	(24%-169%)
13C-1,2,3,7,8-PeCDF		166	199	pg/g	83.8	(24%-185%)
13C-2,3,4,7,8-PeCDF		162	199	pg/g	81.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		150	199	pg/g	75.4	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		140	199	pg/g	70.4	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		149	199	pg/g	74.8	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		151	199	pg/g	76.1	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15468008**	**Date Collected:**	**08/28/2019 16:40**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**44.2**
Client ID:	**R4-SC1b-90to100-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/19/2019 06:11**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A18SEP19D_2-2**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**18.04 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		131	199	pg/g	66.1	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		134	199	pg/g	67.6	(26%-138%)
37Cl-2,3,7,8-TCDD		20.0	19.9	pg/g	101	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15468010**	**Date Collected:**	**08/28/2019 17:00**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**46.7**
Client ID:	**R4-SC1b-100to110-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/19/2019 07:00**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A18SEP19D_2-3**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**18.91 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0613	pg/g	0.0613	0.992
40321-76-4	1,2,3,7,8-PeCDD	U	0.129	pg/g	0.129	4.96
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.136	pg/g	0.136	4.96
57653-85-7	1,2,3,6,7,8-HxCDD	J	0.337	pg/g	0.131	4.96
19408-74-3	1,2,3,7,8,9-HxCDD	JK	0.208	pg/g	0.135	4.96
35822-46-9	1,2,3,4,6,7,8-HpCDD		8.12	pg/g	0.317	4.96
3268-87-9	1,2,3,4,6,7,8,9-OCDD		110	pg/g	0.423	9.92
51207-31-9	2,3,7,8-TCDF	BJ	0.367	pg/g	0.122	0.992
57117-41-6	1,2,3,7,8-PeCDF	BJK	0.190	pg/g	0.0774	4.96
57117-31-4	2,3,4,7,8-PeCDF	J	0.446	pg/g	0.0728	4.96
70648-26-9	1,2,3,4,7,8-HxCDF	BJ	0.361	pg/g	0.141	4.96
57117-44-9	1,2,3,6,7,8-HxCDF	J	0.730	pg/g	0.155	4.96
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.389	pg/g	0.158	4.96
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.191	pg/g	0.191	4.96
67562-39-4	1,2,3,4,6,7,8-HpCDF		6.93	pg/g	0.138	4.96
55673-89-7	1,2,3,4,7,8,9-HpCDF	JK	0.246	pg/g	0.197	4.96
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	8.43	pg/g	0.184	9.92
41903-57-5	Total TeCDD	JK	0.490	pg/g	0.0613	0.992
36088-22-9	Total PeCDD	JK	0.706	pg/g	0.129	4.96
34465-46-8	Total HxCDD	JK	4.23	pg/g	0.131	4.96
37871-00-4	Total HpCDD		48.0	pg/g	0.317	4.96
30402-14-3	Total TeCDF	BJK	3.18	pg/g	0.122	0.992
30402-15-4	Total PeCDF	JK	7.84	pg/g	0.0468	4.96
55684-94-1	Total HxCDF	J	8.25	pg/g	0.141	4.96
38998-75-3	Total HpCDF	JK	16.8	pg/g	0.138	4.96
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.567	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.679	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		180	198	pg/g	90.6	(25%-164%)
13C-1,2,3,7,8-PeCDD		173	198	pg/g	87.2	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		163	198	pg/g	82.0	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		162	198	pg/g	81.6	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		172	198	pg/g	86.5	(23%-140%)
13C-OCDD		299	397	pg/g	75.5	(17%-157%)
13C-2,3,7,8-TCDF		164	198	pg/g	82.8	(24%-169%)
13C-1,2,3,7,8-PeCDF		175	198	pg/g	88.2	(24%-185%)
13C-2,3,4,7,8-PeCDF		172	198	pg/g	86.7	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		153	198	pg/g	77.2	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		146	198	pg/g	73.4	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		153	198	pg/g	77.0	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		160	198	pg/g	80.5	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15468010**	**Date Collected:**	**08/28/2019 17:00**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**46.7**
Client ID:	**R4-SC1b-100to110-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/19/2019 07:00**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A18SEP19D_2-3**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**18.91 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		145	198	pg/g	73.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		151	198	pg/g	76.1	(26%-138%)
37Cl-2,3,7,8-TCDD		20.6	19.8	pg/g	104	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15468011**	**Date Collected:**	**08/28/2019 17:10**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**45.4**
Client ID:	**R4-SC1b-110to120-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/19/2019 07:49**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A18SEP19D_2-4**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**18.33 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0552	pg/g	0.0552	1.00
40321-76-4	1,2,3,7,8-PeCDD	J	0.130	pg/g	0.111	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.114	pg/g	0.114	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	J	0.474	pg/g	0.113	5.00
19408-74-3	1,2,3,7,8,9-HxCDD	JK	0.182	pg/g	0.115	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		6.94	pg/g	0.272	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		131	pg/g	0.374	10.0
51207-31-9	2,3,7,8-TCDF	BJ	0.288	pg/g	0.102	1.00
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.186	pg/g	0.0768	5.00
57117-31-4	2,3,4,7,8-PeCDF	J	0.484	pg/g	0.0696	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	BJ	0.360	pg/g	0.0898	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	J	1.14	pg/g	0.094	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	JK	0.460	pg/g	0.0946	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	J	0.196	pg/g	0.119	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		9.95	pg/g	0.112	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	0.244	pg/g	0.155	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	7.70	pg/g	0.178	10.0
41903-57-5	Total TeCDD	JK	0.618	pg/g	0.0552	1.00
36088-22-9	Total PeCDD	JK	1.11	pg/g	0.111	5.00
34465-46-8	Total HxCDD	JK	4.00	pg/g	0.113	5.00
37871-00-4	Total HpCDD		20.1	pg/g	0.272	5.00
30402-14-3	Total TeCDF	BJK	3.92	pg/g	0.102	1.00
30402-15-4	Total PeCDF	JK	9.62	pg/g	0.030	5.00
55684-94-1	Total HxCDF	JK	11.3	pg/g	0.0898	5.00
38998-75-3	Total HpCDF	J	20.7	pg/g	0.112	5.00
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.804	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.837	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		178	200	pg/g	89.1	(25%-164%)
13C-1,2,3,7,8-PeCDD		185	200	pg/g	92.5	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		174	200	pg/g	87.2	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		174	200	pg/g	87.0	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		180	200	pg/g	89.8	(23%-140%)
13C-OCDD		292	400	pg/g	73.1	(17%-157%)
13C-2,3,7,8-TCDF		178	200	pg/g	89.0	(24%-169%)
13C-1,2,3,7,8-PeCDF		188	200	pg/g	94.1	(24%-185%)
13C-2,3,4,7,8-PeCDF		186	200	pg/g	92.8	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		167	200	pg/g	83.5	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		157	200	pg/g	78.5	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		165	200	pg/g	82.5	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		170	200	pg/g	85.2	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15468011**	**Date Collected:**	**08/28/2019 17:10**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**45.4**
Client ID:	**R4-SC1b-110to120-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/19/2019 07:49**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A18SEP19D_2-4**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**18.33 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		152	200	pg/g	76.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		155	200	pg/g	77.3	(26%-138%)
37Cl-2,3,7,8-TCDD		20.8	20.0	pg/g	104	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15468012**	**Date Collected:**	**08/28/2019 18:20**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**44.8**
Client ID:	**R4-SC1b-120to130-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/19/2019 08:38**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A18SEP19D_2-5**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**18.21 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0868	pg/g	0.0868	0.995
40321-76-4	1,2,3,7,8-PeCDD	J	0.169	pg/g	0.149	4.98
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.136	pg/g	0.136	4.98
57653-85-7	1,2,3,6,7,8-HxCDD	J	0.516	pg/g	0.140	4.98
19408-74-3	1,2,3,7,8,9-HxCDD	J	0.225	pg/g	0.141	4.98
35822-46-9	1,2,3,4,6,7,8-HpCDD		7.30	pg/g	0.247	4.98
3268-87-9	1,2,3,4,6,7,8,9-OCDD		118	pg/g	0.583	9.95
51207-31-9	2,3,7,8-TCDF	BJ	0.446	pg/g	0.125	0.995
57117-41-6	1,2,3,7,8-PeCDF	BJK	0.315	pg/g	0.0729	4.98
57117-31-4	2,3,4,7,8-PeCDF	JK	0.533	pg/g	0.0697	4.98
70648-26-9	1,2,3,4,7,8-HxCDF	BJ	0.474	pg/g	0.0979	4.98
57117-44-9	1,2,3,6,7,8-HxCDF	J	0.928	pg/g	0.102	4.98
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.416	pg/g	0.102	4.98
72918-21-9	1,2,3,7,8,9-HxCDF	JK	0.199	pg/g	0.124	4.98
67562-39-4	1,2,3,4,6,7,8-HpCDF		8.41	pg/g	0.0973	4.98
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	0.277	pg/g	0.131	4.98
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	6.64	pg/g	0.251	9.95
41903-57-5	Total TeCDD	JK	1.12	pg/g	0.0868	0.995
36088-22-9	Total PeCDD	JK	1.26	pg/g	0.149	4.98
34465-46-8	Total HxCDD	J	3.92	pg/g	0.136	4.98
37871-00-4	Total HpCDD		18.6	pg/g	0.247	4.98
30402-14-3	Total TeCDF	BJK	3.89	pg/g	0.125	0.995
30402-15-4	Total PeCDF	JK	8.28	pg/g	0.0446	4.98
55684-94-1	Total HxCDF	JK	10.2	pg/g	0.0979	4.98
38998-75-3	Total HpCDF	J	18.2	pg/g	0.0973	4.98
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.856	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.906	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		155	199	pg/g	77.7	(25%-164%)
13C-1,2,3,7,8-PeCDD		169	199	pg/g	84.7	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		159	199	pg/g	79.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		156	199	pg/g	78.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		181	199	pg/g	90.9	(23%-140%)
13C-OCDD		327	398	pg/g	82.1	(17%-157%)
13C-2,3,7,8-TCDF		169	199	pg/g	85.0	(24%-169%)
13C-1,2,3,7,8-PeCDF		171	199	pg/g	85.9	(24%-185%)
13C-2,3,4,7,8-PeCDF		168	199	pg/g	84.2	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		151	199	pg/g	75.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		144	199	pg/g	72.5	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		152	199	pg/g	76.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		160	199	pg/g	80.4	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15468012**	**Date Collected:**	**08/28/2019 18:20**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**44.8**
Client ID:	**R4-SC1b-120to130-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/19/2019 08:38**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A18SEP19D_2-5**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**18.21 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		154	199	pg/g	77.5	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		164	199	pg/g	82.5	(26%-138%)
37Cl-2,3,7,8-TCDD		19.6	19.9	pg/g	98.5	(35%-197%)

Comments:

B The target analyte was detected in the associated blank.
J Value is estimated
K Estimated Maximum Possible Concentration
U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15468013**	**Date Collected:**	**08/28/2019 10:45**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**44.2**
Client ID:	**413-SC1b-40to50-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/19/2019 09:26**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A18SEP19D_2-6**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**17.96 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.115	pg/g	0.115	0.998
40321-76-4	1,2,3,7,8-PeCDD	JK	0.251	pg/g	0.189	4.99
39227-28-6	1,2,3,4,7,8-HxCDD	J	0.283	pg/g	0.174	4.99
57653-85-7	1,2,3,6,7,8-HxCDD	J	1.56	pg/g	0.163	4.99
19408-74-3	1,2,3,7,8,9-HxCDD	JK	0.866	pg/g	0.171	4.99
35822-46-9	1,2,3,4,6,7,8-HpCDD		32.9	pg/g	0.485	4.99
3268-87-9	1,2,3,4,6,7,8,9-OCDD		460	pg/g	0.710	9.98
51207-31-9	2,3,7,8-TCDF	BJ	0.519	pg/g	0.144	0.998
57117-41-6	1,2,3,7,8-PeCDF	BJK	0.269	pg/g	0.172	4.99
57117-31-4	2,3,4,7,8-PeCDF	J	0.431	pg/g	0.170	4.99
70648-26-9	1,2,3,4,7,8-HxCDF	BJ	0.852	pg/g	0.124	4.99
57117-44-9	1,2,3,6,7,8-HxCDF	J	0.648	pg/g	0.125	4.99
60851-34-5	2,3,4,6,7,8-HxCDF	JK	0.555	pg/g	0.123	4.99
72918-21-9	1,2,3,7,8,9-HxCDF	J	0.231	pg/g	0.148	4.99
67562-39-4	1,2,3,4,6,7,8-HpCDF		7.53	pg/g	0.145	4.99
55673-89-7	1,2,3,4,7,8,9-HpCDF	JK	0.583	pg/g	0.193	4.99
39001-02-0	1,2,3,4,6,7,8,9-OCDF		22.2	pg/g	0.309	9.98
41903-57-5	Total TeCDD	JK	0.642	pg/g	0.115	0.998
36088-22-9	Total PeCDD	JK	1.59	pg/g	0.189	4.99
34465-46-8	Total HxCDD	JK	11.0	pg/g	0.163	4.99
37871-00-4	Total HpCDD		69.6	pg/g	0.485	4.99
30402-14-3	Total TeCDF	BJK	3.63	pg/g	0.144	0.998
30402-15-4	Total PeCDF	JK	5.86	pg/g	0.0563	4.99
55684-94-1	Total HxCDF	JK	12.4	pg/g	0.123	4.99
38998-75-3	Total HpCDF	JK	29.4	pg/g	0.145	4.99
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		1.50	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		1.55	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		155	200	pg/g	77.9	(25%-164%)
13C-1,2,3,7,8-PeCDD		161	200	pg/g	80.7	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		158	200	pg/g	79.0	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		151	200	pg/g	75.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		174	200	pg/g	87.2	(23%-140%)
13C-OCDD		310	399	pg/g	77.7	(17%-157%)
13C-2,3,7,8-TCDF		162	200	pg/g	81.0	(24%-169%)
13C-1,2,3,7,8-PeCDF		166	200	pg/g	83.0	(24%-185%)
13C-2,3,4,7,8-PeCDF		164	200	pg/g	82.4	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		147	200	pg/g	73.7	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		142	200	pg/g	71.2	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		147	200	pg/g	73.9	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		156	200	pg/g	78.2	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15468013**	**Date Collected:**	**08/28/2019 10:45**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**44.2**
Client ID:	**413-SC1b-40to50-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/19/2019 09:26**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A18SEP19D_2-6**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**17.96 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		147	200	pg/g	73.5	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		157	200	pg/g	78.7	(26%-138%)
37Cl-2,3,7,8-TCDD		19.6	20.0	pg/g	98.1	(35%-197%)

Comments:

B The target analyte was detected in the associated blank.
J Value is estimated
K Estimated Maximum Possible Concentration
U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15468014**	**Date Collected:**	**08/28/2019 18:25**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**34.5**
Client ID:	**R4-SC1b-130to140-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/19/2019 10:15**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A18SEP19D_2-7**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**15.59 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0696	pg/g	0.0696	0.980
40321-76-4	1,2,3,7,8-PeCDD	U	0.098	pg/g	0.098	4.90
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.108	pg/g	0.108	4.90
57653-85-7	1,2,3,6,7,8-HxCDD	J	0.151	pg/g	0.104	4.90
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.108	pg/g	0.108	4.90
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	2.60	pg/g	0.200	4.90
3268-87-9	1,2,3,4,6,7,8,9-OCDD		62.2	pg/g	0.341	9.80
51207-31-9	2,3,7,8-TCDF	BJ	0.374	pg/g	0.103	0.980
57117-41-6	1,2,3,7,8-PeCDF	U	0.0882	pg/g	0.0882	4.90
57117-31-4	2,3,4,7,8-PeCDF	U	0.086	pg/g	0.086	4.90
70648-26-9	1,2,3,4,7,8-HxCDF	BJK	0.174	pg/g	0.0757	4.90
57117-44-9	1,2,3,6,7,8-HxCDF	JK	0.233	pg/g	0.0741	4.90
60851-34-5	2,3,4,6,7,8-HxCDF	JK	0.178	pg/g	0.0735	4.90
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.1	pg/g	0.100	4.90
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	4.51	pg/g	0.0882	4.90
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.12	pg/g	0.120	4.90
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	4.56	pg/g	0.162	9.80
41903-57-5	Total TeCDD	JK	0.257	pg/g	0.0696	0.980
36088-22-9	Total PeCDD	JK	0.314	pg/g	0.098	4.90
34465-46-8	Total HxCDD	JK	1.37	pg/g	0.104	4.90
37871-00-4	Total HpCDD	J	7.05	pg/g	0.200	4.90
30402-14-3	Total TeCDF	BJK	1.46	pg/g	0.103	0.980
30402-15-4	Total PeCDF	JK	2.02	pg/g	0.0404	4.90
55684-94-1	Total HxCDF	JK	3.23	pg/g	0.0735	4.90
38998-75-3	Total HpCDF	J	8.31	pg/g	0.0882	4.90
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.202	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.317	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		155	196	pg/g	79.2	(25%-164%)
13C-1,2,3,7,8-PeCDD		165	196	pg/g	84.0	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		157	196	pg/g	80.2	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		153	196	pg/g	78.1	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		178	196	pg/g	90.6	(23%-140%)
13C-OCDD		311	392	pg/g	79.4	(17%-157%)
13C-2,3,7,8-TCDF		161	196	pg/g	82.2	(24%-169%)
13C-1,2,3,7,8-PeCDF		168	196	pg/g	85.5	(24%-185%)
13C-2,3,4,7,8-PeCDF		164	196	pg/g	83.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		147	196	pg/g	75.2	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		142	196	pg/g	72.5	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		149	196	pg/g	75.8	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		154	196	pg/g	78.6	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15468014**	**Date Collected:**	**08/28/2019 18:25**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**34.5**
Client ID:	**R4-SC1b-130to140-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/19/2019 10:15**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A18SEP19D_2-7**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**15.59 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		147	196	pg/g	75.1	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		157	196	pg/g	80.3	(26%-138%)
37Cl-2,3,7,8-TCDD		18.1	19.6	pg/g	92.6	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15468015**	**Date Collected:**	**08/28/2019 18:30**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**23.4**
Client ID:	**R4-SC1b-140to150-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/19/2019 11:04**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A18SEP19D_2-8**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**13.33 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0719	pg/g	0.0719	0.980
40321-76-4	1,2,3,7,8-PeCDD	U	0.116	pg/g	0.116	4.90
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.143	pg/g	0.143	4.90
57653-85-7	1,2,3,6,7,8-HxCDD	JK	0.562	pg/g	0.137	4.90
19408-74-3	1,2,3,7,8,9-HxCDD	JK	0.196	pg/g	0.142	4.90
35822-46-9	1,2,3,4,6,7,8-HpCDD		15.1	pg/g	0.396	4.90
3268-87-9	1,2,3,4,6,7,8,9-OCDD		201	pg/g	0.551	9.80
51207-31-9	2,3,7,8-TCDF	BJ	0.263	pg/g	0.104	0.980
57117-41-6	1,2,3,7,8-PeCDF	BJK	0.141	pg/g	0.136	4.90
57117-31-4	2,3,4,7,8-PeCDF	J	0.194	pg/g	0.135	4.90
70648-26-9	1,2,3,4,7,8-HxCDF	BJ	0.263	pg/g	0.118	4.90
57117-44-9	1,2,3,6,7,8-HxCDF	J	0.445	pg/g	0.119	4.90
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.249	pg/g	0.122	4.90
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.152	pg/g	0.152	4.90
67562-39-4	1,2,3,4,6,7,8-HpCDF		17.2	pg/g	0.190	4.90
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	0.321	pg/g	0.247	4.90
39001-02-0	1,2,3,4,6,7,8,9-OCDF		51.7	pg/g	0.321	9.80
41903-57-5	Total TeCDD	JK	0.390	pg/g	0.0719	0.980
36088-22-9	Total PeCDD	JK	0.496	pg/g	0.116	4.90
34465-46-8	Total HxCDD	JK	3.73	pg/g	0.137	4.90
37871-00-4	Total HpCDD		51.2	pg/g	0.396	4.90
30402-14-3	Total TeCDF	BJK	1.78	pg/g	0.104	0.980
30402-15-4	Total PeCDF	JK	3.68	pg/g	0.0498	4.90
55684-94-1	Total HxCDF	J	10.6	pg/g	0.118	4.90
38998-75-3	Total HpCDF	J	57.6	pg/g	0.190	4.90
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.662	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.771	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		159	196	pg/g	81.4	(25%-164%)
13C-1,2,3,7,8-PeCDD		164	196	pg/g	83.9	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		161	196	pg/g	81.9	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		161	196	pg/g	82.0	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		177	196	pg/g	90.5	(23%-140%)
13C-OCDD		311	392	pg/g	79.2	(17%-157%)
13C-2,3,7,8-TCDF		166	196	pg/g	84.5	(24%-169%)
13C-1,2,3,7,8-PeCDF		169	196	pg/g	86.4	(24%-185%)
13C-2,3,4,7,8-PeCDF		165	196	pg/g	84.1	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		151	196	pg/g	77.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		149	196	pg/g	75.8	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		153	196	pg/g	77.9	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		158	196	pg/g	80.6	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15468015**	**Date Collected:**	**08/28/2019 18:30**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**23.4**
Client ID:	**R4-SC1b-140to150-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/19/2019 11:04**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A18SEP19D_2-8**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**13.33 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		148	196	pg/g	75.6	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		159	196	pg/g	81.1	(26%-138%)
37Cl-2,3,7,8-TCDD		19.1	19.6	pg/g	97.4	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15468016**	**Date Collected:**	**08/28/2019 12:00**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil SRM**	**Date Received:**	**09/04/2019 11:28**		
Client ID:	**SRM Lot# ER10091501**			**Prep Basis:**	**As Received**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/19/2019 11:53**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A18SEP19D_2-9**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**9.77 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	JK	0.229	pg/g	0.0995	1.02
40321-76-4	1,2,3,7,8-PeCDD	J	0.334	pg/g	0.177	5.12
39227-28-6	1,2,3,4,7,8-HxCDD	J	1.10	pg/g	0.321	5.12
57653-85-7	1,2,3,6,7,8-HxCDD	J	3.11	pg/g	0.317	5.12
19408-74-3	1,2,3,7,8,9-HxCDD	J	1.65	pg/g	0.325	5.12
35822-46-9	1,2,3,4,6,7,8-HpCDD		124	pg/g	2.00	5.12
3268-87-9	1,2,3,4,6,7,8,9-OCDD	E	7310	pg/g	2.11	10.2
51207-31-9	2,3,7,8-TCDF	BJ	0.884	pg/g	0.179	1.02
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.262	pg/g	0.123	5.12
57117-31-4	2,3,4,7,8-PeCDF	J	0.344	pg/g	0.116	5.12
70648-26-9	1,2,3,4,7,8-HxCDF	BJ	0.704	pg/g	0.183	5.12
57117-44-9	1,2,3,6,7,8-HxCDF	J	0.485	pg/g	0.181	5.12
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.653	pg/g	0.181	5.12
72918-21-9	1,2,3,7,8,9-HxCDF	J	0.340	pg/g	0.231	5.12
67562-39-4	1,2,3,4,6,7,8-HpCDF		12.0	pg/g	0.256	5.12
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	0.940	pg/g	0.328	5.12
39001-02-0	1,2,3,4,6,7,8,9-OCDF		46.2	pg/g	0.499	10.2
41903-57-5	Total TeCDD	JK	1.19	pg/g	0.0995	1.02
36088-22-9	Total PeCDD	JK	3.82	pg/g	0.177	5.12
34465-46-8	Total HxCDD	J	33.4	pg/g	0.317	5.12
37871-00-4	Total HpCDD		367	pg/g	2.00	5.12
30402-14-3	Total TeCDF	JK	6.99	pg/g	0.179	1.02
30402-15-4	Total PeCDF	JK	4.58	pg/g	0.0688	5.12
55684-94-1	Total HxCDF	J	14.2	pg/g	0.181	5.12
38998-75-3	Total HpCDF	J	43.6	pg/g	0.256	5.12
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		5.14	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		5.14	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		165	205	pg/g	80.5	(25%-164%)
13C-1,2,3,7,8-PeCDD		177	205	pg/g	86.5	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		170	205	pg/g	82.9	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		164	205	pg/g	79.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		189	205	pg/g	92.3	(23%-140%)
13C-OCDD		362	409	pg/g	88.3	(17%-157%)
13C-2,3,7,8-TCDF		180	205	pg/g	87.9	(24%-169%)
13C-1,2,3,7,8-PeCDF		182	205	pg/g	89.0	(24%-185%)
13C-2,3,4,7,8-PeCDF		181	205	pg/g	88.4	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		161	205	pg/g	78.5	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		155	205	pg/g	75.5	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		162	205	pg/g	79.2	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		169	205	pg/g	82.6	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15468016**	**Date Collected:**	**08/28/2019 12:00**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil SRM**	**Date Received:**	**09/04/2019 11:28**		
Client ID:	**SRM Lot# ER10091501**			**Prep Basis:**	**As Received**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/19/2019 11:53**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A18SEP19D_2-9**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**9.77 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		158	205	pg/g	77.3	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		171	205	pg/g	83.7	(26%-138%)
37Cl-2,3,7,8-TCDD		19.7	20.5	pg/g	96.3	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
E **Value is estimated - Concentration of the target analyte exceeds the instrument calibration range**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**

Quality Control Summary

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: 2006-00115_1

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12024756	LCS for batch 41711	13C-2,3,7,8-TCDD		85.1	(20%-175%)
		13C-1,2,3,7,8-PeCDD		87.8	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		80.0	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		75.9	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		83.5	(22%-166%)
		13C-OCDD		68.3	(13%-199%)
		13C-2,3,7,8-TCDF		91.3	(22%-152%)
		13C-1,2,3,7,8-PeCDF		95.7	(21%-192%)
		13C-2,3,4,7,8-PeCDF		92.7	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		78.3	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		73.7	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		78.8	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		79.4	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		74.6	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		76.3	(20%-186%)
		37Cl-2,3,7,8-TCDD		106	(31%-191%)
12024757	LCSD for batch 41711	13C-2,3,7,8-TCDD		81.3	(20%-175%)
		13C-1,2,3,7,8-PeCDD		84.8	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		79.0	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		78.3	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		87.0	(22%-166%)
		13C-OCDD		67.8	(13%-199%)
		13C-2,3,7,8-TCDF		88.1	(22%-152%)
		13C-1,2,3,7,8-PeCDF		92.7	(21%-192%)
		13C-2,3,4,7,8-PeCDF		89.5	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		79.8	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		73.6	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		79.9	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		80.9	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		77.5	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		77.5	(20%-186%)
		37Cl-2,3,7,8-TCDD		103	(31%-191%)
12024755	MB for batch 41711	13C-2,3,7,8-TCDD		86.1	(25%-164%)
		13C-1,2,3,7,8-PeCDD		87.8	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		80.9	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		77.0	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		84.7	(23%-140%)
		13C-OCDD		66.2	(17%-157%)
		13C-2,3,7,8-TCDF		92.7	(24%-169%)
		13C-1,2,3,7,8-PeCDF		97.4	(24%-185%)
		13C-2,3,4,7,8-PeCDF		92.8	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		80.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		76.0	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		79.9	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		81.0	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		74.8	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		76.3	(26%-138%)
		37Cl-2,3,7,8-TCDD		108	(35%-197%)
15468001	R4-SC1b-20to30-82819	13C-2,3,7,8-TCDD		82.2	(25%-164%)

Surrogate Recovery Report

SDG Number: 2006-00115_1

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
15468001	R4-SC1b-20to30-82819	13C-1,2,3,7,8-PeCDD		86.0	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		77.6	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		72.5	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		80.3	(23%-140%)
		13C-OCDD		66.0	(17%-157%)
		13C-2,3,7,8-TCDF		88.4	(24%-169%)
		13C-1,2,3,7,8-PeCDF		96.9	(24%-185%)
		13C-2,3,4,7,8-PeCDF		92.4	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		75.1	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		71.7	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		75.7	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		78.3	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		73.4	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		73.3	(26%-138%)
		37Cl-2,3,7,8-TCDD		103	(35%-197%)
12024758	R4-SC1b-20to30-82819(15468001MS)	13C-2,3,7,8-TCDD		79.4	(25%-164%)
		13C-1,2,3,7,8-PeCDD		88.0	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		78.4	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		71.4	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		81.7	(23%-140%)
		13C-OCDD		71.3	(17%-157%)
		13C-2,3,7,8-TCDF		89.1	(24%-169%)
		13C-1,2,3,7,8-PeCDF		95.4	(24%-185%)
		13C-2,3,4,7,8-PeCDF		92.9	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		76.3	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		71.6	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		75.4	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		77.7	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		72.3	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		74.4	(26%-138%)
		37Cl-2,3,7,8-TCDD		106	(35%-197%)
12024759	R4-SC1b-20to30-82819(15468001MSD)	13C-2,3,7,8-TCDD		86.8	(25%-164%)
		13C-1,2,3,7,8-PeCDD		92.3	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		78.6	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		76.8	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		84.1	(23%-140%)
		13C-OCDD		69.0	(17%-157%)
		13C-2,3,7,8-TCDF		91.4	(24%-169%)
		13C-1,2,3,7,8-PeCDF		103	(24%-185%)
		13C-2,3,4,7,8-PeCDF		101	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		79.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		75.2	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		79.0	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		81.5	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		74.8	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		77.4	(26%-138%)
		37Cl-2,3,7,8-TCDD		113	(35%-197%)
15468002	R4-SC1b-30to40-82819	13C-2,3,7,8-TCDD		82.1	(25%-164%)
		13C-1,2,3,7,8-PeCDD		86.0	(25%-181%)

Surrogate Recovery Report

SDG Number: 2006-00115_1

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
15468002	R4-SC1b-30to40-82819	13C-1,2,3,4,7,8-HxCDD		77.1	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		75.2	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		82.0	(23%-140%)
		13C-OCDD		65.3	(17%-157%)
		13C-2,3,7,8-TCDF		84.0	(24%-169%)
		13C-1,2,3,7,8-PeCDF		95.6	(24%-185%)
		13C-2,3,4,7,8-PeCDF		92.8	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		77.3	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		73.0	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		77.8	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		79.9	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		73.4	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		74.2	(26%-138%)
		37Cl-2,3,7,8-TCDD		105	(35%-197%)
15468003	R4-SC1b-40to50-82819	13C-2,3,7,8-TCDD		80.1	(25%-164%)
		13C-1,2,3,7,8-PeCDD		88.1	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		81.0	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		74.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		86.7	(23%-140%)
		13C-OCDD		75.4	(17%-157%)
		13C-2,3,7,8-TCDF		90.3	(24%-169%)
		13C-1,2,3,7,8-PeCDF		92.6	(24%-185%)
		13C-2,3,4,7,8-PeCDF		92.6	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		77.0	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		74.0	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		77.0	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		79.7	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		77.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		79.9	(26%-138%)
		37Cl-2,3,7,8-TCDD		101	(35%-197%)
15468004	R4-SC1b-50to60-82819	13C-2,3,7,8-TCDD		87.6	(25%-164%)
		13C-1,2,3,7,8-PeCDD		97.4	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		85.3	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		81.4	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		89.2	(23%-140%)
		13C-OCDD		74.5	(17%-157%)
		13C-2,3,7,8-TCDF		95.4	(24%-169%)
		13C-1,2,3,7,8-PeCDF		107	(24%-185%)
		13C-2,3,4,7,8-PeCDF		107	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		84.9	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		80.3	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		85.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		87.3	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		81.5	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		82.4	(26%-138%)
		37Cl-2,3,7,8-TCDD		108	(35%-197%)
15468005	R4-SC1b-60to70-82819	13C-2,3,7,8-TCDD		83.0	(25%-164%)
		13C-1,2,3,7,8-PeCDD		95.0	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		81.9	(32%-141%)

Surrogate Recovery Report

SDG Number: 2006-00115_1

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
15468005	R4-SC1b-60to70-82819	13C-1,2,3,6,7,8-HxCDD		76.8	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		82.5	(23%-140%)
		13C-OCDD		66.5	(17%-157%)
		13C-2,3,7,8-TCDF		90.1	(24%-169%)
		13C-1,2,3,7,8-PeCDF		105	(24%-185%)
		13C-2,3,4,7,8-PeCDF		103	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		81.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		75.7	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		79.5	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		83.3	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		76.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		76.6	(26%-138%)
		37Cl-2,3,7,8-TCDD		104	(35%-197%)
15468006	R4-SC1b-70to80-82819	13C-2,3,7,8-TCDD		80.7	(25%-164%)
		13C-1,2,3,7,8-PeCDD		91.1	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		81.8	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		76.0	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		82.1	(23%-140%)
		13C-OCDD		67.9	(17%-157%)
		13C-2,3,7,8-TCDF		91.3	(24%-169%)
		13C-1,2,3,7,8-PeCDF		99.5	(24%-185%)
		13C-2,3,4,7,8-PeCDF		96.6	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		81.4	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		75.9	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		80.5	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		82.0	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		75.7	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		76.2	(26%-138%)
		37Cl-2,3,7,8-TCDD		107	(35%-197%)
15468007	R4-SC1b-80to90-82819	13C-2,3,7,8-TCDD		81.4	(25%-164%)
		13C-1,2,3,7,8-PeCDD		91.3	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		79.9	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		78.0	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		83.2	(23%-140%)
		13C-OCDD		66.8	(17%-157%)
		13C-2,3,7,8-TCDF		88.0	(24%-169%)
		13C-1,2,3,7,8-PeCDF		101	(24%-185%)
		13C-2,3,4,7,8-PeCDF		99.5	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		80.1	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		76.2	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		80.0	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		83.3	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		75.3	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		76.5	(26%-138%)
		37Cl-2,3,7,8-TCDD		105	(35%-197%)
15468008	R4-SC1b-90to100-82819	13C-2,3,7,8-TCDD		83.0	(25%-164%)
		13C-1,2,3,7,8-PeCDD		80.6	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		79.9	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		76.8	(28%-130%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: 2006-00115_1

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
15468008	R4-SC1b-90to100-82819	13C-1,2,3,4,6,7,8-HpCDD		77.0	(23%-140%)
		13C-OCDD		62.9	(17%-157%)
		13C-2,3,7,8-TCDF		82.8	(24%-169%)
		13C-1,2,3,7,8-PeCDF		83.8	(24%-185%)
		13C-2,3,4,7,8-PeCDF		81.6	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		75.4	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		70.4	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		74.8	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		76.1	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		66.1	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		67.6	(26%-138%)
		37Cl-2,3,7,8-TCDD		101	(35%-197%)
15468010	R4-SC1b-100to110-82819	13C-2,3,7,8-TCDD		90.6	(25%-164%)
		13C-1,2,3,7,8-PeCDD		87.2	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		82.0	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		81.6	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		86.5	(23%-140%)
		13C-OCDD		75.5	(17%-157%)
		13C-2,3,7,8-TCDF		82.8	(24%-169%)
		13C-1,2,3,7,8-PeCDF		88.2	(24%-185%)
		13C-2,3,4,7,8-PeCDF		86.7	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		77.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		73.4	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		77.0	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		80.5	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		73.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		76.1	(26%-138%)
		37Cl-2,3,7,8-TCDD		104	(35%-197%)
15468011	R4-SC1b-110to120-82819	13C-2,3,7,8-TCDD		89.1	(25%-164%)
		13C-1,2,3,7,8-PeCDD		92.5	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		87.2	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		87.0	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		89.8	(23%-140%)
		13C-OCDD		73.1	(17%-157%)
		13C-2,3,7,8-TCDF		89.0	(24%-169%)
		13C-1,2,3,7,8-PeCDF		94.1	(24%-185%)
		13C-2,3,4,7,8-PeCDF		92.8	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		83.5	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		78.5	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		82.5	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		85.2	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		76.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		77.3	(26%-138%)
		37Cl-2,3,7,8-TCDD		104	(35%-197%)
15468012	R4-SC1b-120to130-82819	13C-2,3,7,8-TCDD		77.7	(25%-164%)
		13C-1,2,3,7,8-PeCDD		84.7	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		79.8	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		78.2	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		90.9	(23%-140%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: 2006-00115_1

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
15468012	R4-SC1b-120to130-82819	13C-OCDD		82.1	(17%-157%)
		13C-2,3,7,8-TCDF		85.0	(24%-169%)
		13C-1,2,3,7,8-PeCDF		85.9	(24%-185%)
		13C-2,3,4,7,8-PeCDF		84.2	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		75.8	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		72.5	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		76.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		80.4	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		77.5	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		82.5	(26%-138%)
		37Cl-2,3,7,8-TCDD		98.5	(35%-197%)
15468013	413-SC1b-40to50-82819	13C-2,3,7,8-TCDD		77.9	(25%-164%)
		13C-1,2,3,7,8-PeCDD		80.7	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		79.0	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		75.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		87.2	(23%-140%)
		13C-OCDD		77.7	(17%-157%)
		13C-2,3,7,8-TCDF		81.0	(24%-169%)
		13C-1,2,3,7,8-PeCDF		83.0	(24%-185%)
		13C-2,3,4,7,8-PeCDF		82.4	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		73.7	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		71.2	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		73.9	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		78.2	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		73.5	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		78.7	(26%-138%)
		37Cl-2,3,7,8-TCDD		98.1	(35%-197%)
15468014	R4-SC1b-130to140-82819	13C-2,3,7,8-TCDD		79.2	(25%-164%)
		13C-1,2,3,7,8-PeCDD		84.0	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		80.2	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		78.1	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		90.6	(23%-140%)
		13C-OCDD		79.4	(17%-157%)
		13C-2,3,7,8-TCDF		82.2	(24%-169%)
		13C-1,2,3,7,8-PeCDF		85.5	(24%-185%)
		13C-2,3,4,7,8-PeCDF		83.6	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		75.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		72.5	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		75.8	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		78.6	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		75.1	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		80.3	(26%-138%)
		37Cl-2,3,7,8-TCDD		92.6	(35%-197%)
15468015	R4-SC1b-140to150-82819	13C-2,3,7,8-TCDD		81.4	(25%-164%)
		13C-1,2,3,7,8-PeCDD		83.9	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		81.9	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		82.0	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		90.5	(23%-140%)
		13C-OCDD		79.2	(17%-157%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: 2006-00115_1

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
15468015	R4-SC1b-140to150-82819	13C-2,3,7,8-TCDF		84.5	(24%-169%)
		13C-1,2,3,7,8-PeCDF		86.4	(24%-185%)
		13C-2,3,4,7,8-PeCDF		84.1	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		77.0	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		75.8	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		77.9	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		80.6	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		75.6	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		81.1	(26%-138%)
		37Cl-2,3,7,8-TCDD		97.4	(35%-197%)
15468016	SRM Lot# ER10091501	13C-2,3,7,8-TCDD		80.5	(25%-164%)
		13C-1,2,3,7,8-PeCDD		86.5	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		82.9	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		79.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		92.3	(23%-140%)
		13C-OCDD		88.3	(17%-157%)
		13C-2,3,7,8-TCDF		87.9	(24%-169%)
		13C-1,2,3,7,8-PeCDF		89.0	(24%-185%)
		13C-2,3,4,7,8-PeCDF		88.4	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		78.5	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		75.5	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		79.2	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		82.6	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		77.3	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		83.7	(26%-138%)
		37Cl-2,3,7,8-TCDD		96.3	(35%-197%)

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: 2006-00115_1 **Sample Type:** Laboratory Control Sample

Client ID: LCS for batch 41711 **Matrix:** SOIL

Lab Sample ID: 12024756

Instrument: HRP750 **Analysis Date:** 09/17/2019 13:46 **Dilution:** 1

Analyst: MJC **Prep Batch ID:** 41711

Batch ID: 41713

CAS No.		Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	LCS	2,3,7,8-TCDD	20.0	21.5	107	67-158
40321-76-4	LCS	1,2,3,7,8-PeCDD	100	119	119	70-142
39227-28-6	LCS	1,2,3,4,7,8-HxCDD	100	116	116	70-164
57653-85-7	LCS	1,2,3,6,7,8-HxCDD	100	115	115	76-134
19408-74-3	LCS	1,2,3,7,8,9-HxCDD	100	124	124	64-162
35822-46-9	LCS	1,2,3,4,6,7,8-HpCDD	100	107	107	70-140
3268-87-9	LCS	1,2,3,4,6,7,8,9-OCDD	200	229	115	78-144
51207-31-9	LCS	2,3,7,8-TCDF	20.0	21.2	106	75-158
57117-41-6	LCS	1,2,3,7,8-PeCDF	100	108	108	80-134
57117-31-4	LCS	2,3,4,7,8-PeCDF	100	107	107	68-160
70648-26-9	LCS	1,2,3,4,7,8-HxCDF	100	111	111	72-134
57117-44-9	LCS	1,2,3,6,7,8-HxCDF	100	113	113	84-130
60851-34-5	LCS	2,3,4,6,7,8-HxCDF	100	111	111	70-156
72918-21-9	LCS	1,2,3,7,8,9-HxCDF	100	110	110	78-130
67562-39-4	LCS	1,2,3,4,6,7,8-HpCDF	100	122	122	82-122
55673-89-7	LCS	1,2,3,4,7,8,9-HpCDF	100	113	113	78-138
39001-02-0	LCS	1,2,3,4,6,7,8,9-OCDF	200	222	111	63-170

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: 2006-00115_1 **Sample Type:** Laboratory Control Sample Duplicate

Client ID: LCSD for batch 41711 **Matrix:** SOIL

Lab Sample ID: 12024757

Instrument: HRP750 **Analysis Date:** 09/17/2019 14:35 **Dilution:** 1

Analyst: MJC **Prep Batch ID:** 41711

Batch ID: 41713

CAS No.		Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD	2,3,7,8-TCDD	20.0	20.8	104	67-158	3.23	0-20
40321-76-4	LCSD	1,2,3,7,8-PeCDD	100	110	110	70-142	7.87	0-20
39227-28-6	LCSD	1,2,3,4,7,8-HxCDD	100	110	110	70-164	4.85	0-20
57653-85-7	LCSD	1,2,3,6,7,8-HxCDD	100	103	103	76-134	11.2	0-20
19408-74-3	LCSD	1,2,3,7,8,9-HxCDD	100	116	116	64-162	7.01	0-20
35822-46-9	LCSD	1,2,3,4,6,7,8-HpCDD	100	98.3	98.3	70-140	8.43	0-20
3268-87-9	LCSD	1,2,3,4,6,7,8,9-OCDD	200	205	103	78-144	11.2	0-20
51207-31-9	LCSD	2,3,7,8-TCDF	20.0	19.9	99.4	75-158	6.24	0-20
57117-41-6	LCSD	1,2,3,7,8-PeCDF	100	98.1	98.1	80-134	9.15	0-20
57117-31-4	LCSD	2,3,4,7,8-PeCDF	100	99.5	99.5	68-160	7.24	0-20
70648-26-9	LCSD	1,2,3,4,7,8-HxCDF	100	103	103	72-134	7.28	0-20
57117-44-9	LCSD	1,2,3,6,7,8-HxCDF	100	107	107	84-130	5.44	0-20
60851-34-5	LCSD	2,3,4,6,7,8-HxCDF	100	101	101	70-156	9.68	0-20
72918-21-9	LCSD	1,2,3,7,8,9-HxCDF	100	103	103	78-130	6.25	0-20
67562-39-4	LCSD	1,2,3,4,6,7,8-HpCDF	100	112	112	82-122	8.29	0-20
55673-89-7	LCSD	1,2,3,4,7,8,9-HpCDF	100	106	106	78-138	6.28	0-20
39001-02-0	LCSD	1,2,3,4,6,7,8,9-OCDF	200	200	100	63-170	10.2	0-20

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: 2006-00115_1
Client ID: R4-SC1b-20to30-82819(15468001MS)
Lab Sample ID: 12024758
Instrument: HRP750
Analyst: MJC

Sample Type: Matrix Spike
Matrix: SOIL
%Moisture: 47
Analysis Date: 09/17/2019 17:01
Prep Batch ID: 41711
Batch ID: 41713

Dilution: 1

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	MS	2,3,7,8-TCDD	19.9	JK	19.6	97.5	70-130
40321-76-4	MS	1,2,3,7,8-PeCDD	99.5	JK	104	104	70-130
39227-28-6	MS	1,2,3,4,7,8-HxCDD	99.5	J	101	101	70-130
57653-85-7	MS	1,2,3,6,7,8-HxCDD	99.5	J	104	103	70-130
19408-74-3	MS	1,2,3,7,8,9-HxCDD	99.5	J	109	109	70-130
35822-46-9	MS	1,2,3,4,6,7,8-HpCDD	99.5		179	140 *	70-130
3268-87-9	MS	1,2,3,4,6,7,8,9-OCDD	199		1360	391 *	70-130
51207-31-9	MS	2,3,7,8-TCDF	19.9	BJ	19.3	95.1	70-130
57117-41-6	MS	1,2,3,7,8-PeCDF	99.5	BJ	93.1	93.4	70-130
57117-31-4	MS	2,3,4,7,8-PeCDF	99.5	J	94.3	94.4	70-130
70648-26-9	MS	1,2,3,4,7,8-HxCDF	99.5	BJ	98.1	97.8	70-130
57117-44-9	MS	1,2,3,6,7,8-HxCDF	99.5	J	99.5	99.2	70-130
60851-34-5	MS	2,3,4,6,7,8-HxCDF	99.5	J	98.9	98.9	70-130
72918-21-9	MS	1,2,3,7,8,9-HxCDF	99.5	J	97.8	98	70-130
67562-39-4	MS	1,2,3,4,6,7,8-HpCDF	99.5		126	118	70-130
55673-89-7	MS	1,2,3,4,7,8,9-HpCDF	99.5	J	100	99.7	70-130
39001-02-0	MS	1,2,3,4,6,7,8,9-OCDF	199		243	109	70-130

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: 2006-00115_1
Client ID: R4-SC1b-20to30-82819(15468001MSD)
Lab Sample ID: 12024759
Instrument: HRP750
Analyst: MJC

Sample Type: Matrix Spike Duplicate
Matrix: SOIL
%Moisture: 47
Analysis Date: 09/17/2019 17:50
Dilution: 1
Prep Batch ID: 41711
Batch ID: 41713

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	MSD	2,3,7,8-TCDD	19.8	JK	21.1	105	70-130	7.50	0-20
40321-76-4	MSD	1,2,3,7,8-PeCDD	99.2	JK	113	113	70-130	7.93	0-20
39227-28-6	MSD	1,2,3,4,7,8-HxCDD	99.2	J	110	111	70-130	8.59	0-20
57653-85-7	MSD	1,2,3,6,7,8-HxCDD	99.2	J	107	106	70-130	2.39	0-20
19408-74-3	MSD	1,2,3,7,8,9-HxCDD	99.2	J	120	120	70-130	9.29	0-20
35822-46-9	MSD	1,2,3,4,6,7,8-HpCDD	99.2		128	89.2	70-130	33.1 *	0-20
3268-87-9	MSD	1,2,3,4,6,7,8,9-OCDD	198		603	8.95 *	70-130	77.3 *	0-20
51207-31-9	MSD	2,3,7,8-TCDF	19.8	BJ	20.5	101	70-130	5.65	0-20
57117-41-6	MSD	1,2,3,7,8-PeCDF	99.2	BJ	100	101	70-130	7.52	0-20
57117-31-4	MSD	2,3,4,7,8-PeCDF	99.2	J	102	102	70-130	7.37	0-20
70648-26-9	MSD	1,2,3,4,7,8-HxCDF	99.2	BJ	105	105	70-130	6.58	0-20
57117-44-9	MSD	1,2,3,6,7,8-HxCDF	99.2	J	106	106	70-130	6.22	0-20
60851-34-5	MSD	2,3,4,6,7,8-HxCDF	99.2	J	104	104	70-130	4.72	0-20
72918-21-9	MSD	1,2,3,7,8,9-HxCDF	99.2	J	105	105	70-130	6.88	0-20
67562-39-4	MSD	1,2,3,4,6,7,8-HpCDF	99.2		119	112	70-130	5.63	0-20
55673-89-7	MSD	1,2,3,4,7,8,9-HpCDF	99.2	J	109	109	70-130	8.32	0-20
39001-02-0	MSD	1,2,3,4,6,7,8,9-OCDF	198		222	98.8	70-130	8.69	0-20

Method Blank Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Matrix:**	**SOIL**
Client ID:	**MB for batch 41711**	**Instrument ID:**	**HRP750**	**Data File:**	**A17SEP19C-4**
Lab Sample ID:	**12024755**	**Prep Date:**	**11-SEP-19**	**Analyzed:**	**09/17/19 15:23**
Column:					

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 41711	12024756	A17SEP19C-2	09/17/19	1346
02	LCSD for batch 41711	12024757	A17SEP19C-3	09/17/19	1435
03	R4-SC1b-20to30-82819	15468001	A17SEP19C-5	09/17/19	1612
04	R4-SC1b-20to30-82819(15468001MS)	12024758	A17SEP19C-6	09/17/19	1701
05	R4-SC1b-20to30-82819(15468001MSD)	12024759	A17SEP19C-7	09/17/19	1750
06	R4-SC1b-30to40-82819	15468002	A17SEP19C-8	09/17/19	1839
07	R4-SC1b-40to50-82819	15468003	A17SEP19C-9	09/17/19	1928
08	R4-SC1b-50to60-82819	15468004	A17SEP19C-10	09/17/19	2017
09	R4-SC1b-60to70-82819	15468005	A17SEP19C-11	09/17/19	2106
10	R4-SC1b-70to80-82819	15468006	A17SEP19C-12	09/17/19	2155
11	R4-SC1b-80to90-82819	15468007	A17SEP19C-13	09/17/19	2244
12	R4-SC1b-90to100-82819	15468008	A18SEP19D_2-2	09/19/19	0611
13	R4-SC1b-100to110-82819	15468010	A18SEP19D_2-3	09/19/19	0700
14	R4-SC1b-110to120-82819	15468011	A18SEP19D_2-4	09/19/19	0749
15	R4-SC1b-120to130-82819	15468012	A18SEP19D_2-5	09/19/19	0838
16	413-SC1b-40to50-82819	15468013	A18SEP19D_2-6	09/19/19	0926
17	R4-SC1b-130to140-82819	15468014	A18SEP19D_2-7	09/19/19	1015
18	R4-SC1b-140to150-82819	15468015	A18SEP19D_2-8	09/19/19	1104
19	SRM Lot# ER10091501	15468016	A18SEP19D_2-9	09/19/19	1153
20	R4-SC1b-40to50-82819	15468003	A20SEP19A-4	09/20/19	1056

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024755**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41711**				
Client ID:	**MB for batch 41711**			**Prep Basis:**	**As Received**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/17/2019 15:23**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A17SEP19C-4**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0606	pg/g	0.0606	1.00
40321-76-4	1,2,3,7,8-PeCDD	U	0.105	pg/g	0.105	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.097	pg/g	0.097	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.0954	pg/g	0.0954	5.00
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.0978	pg/g	0.0978	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	0.106	pg/g	0.106	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD	JK	0.524	pg/g	0.220	10.0
51207-31-9	2,3,7,8-TCDF	JK	0.276	pg/g	0.0726	1.00
57117-41-6	1,2,3,7,8-PeCDF	J	0.104	pg/g	0.0818	5.00
57117-31-4	2,3,4,7,8-PeCDF	U	0.0736	pg/g	0.0736	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	JK	0.104	pg/g	0.0862	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.0846	pg/g	0.0846	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.0872	pg/g	0.0872	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.114	pg/g	0.114	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	0.098	pg/g	0.087	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.123	pg/g	0.123	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	0.189	pg/g	0.189	10.0
41903-57-5	Total TeCDD	U	0.0606	pg/g	0.0606	1.00
36088-22-9	Total PeCDD	U	0.105	pg/g	0.105	5.00
34465-46-8	Total HxCDD	U	0.0954	pg/g	0.0954	5.00
37871-00-4	Total HpCDD	U	0.106	pg/g	0.106	5.00
30402-14-3	Total TeCDF	JK	0.462	pg/g	0.0726	1.00
30402-15-4	Total PeCDF	JK	0.174	pg/g	0.0478	5.00
55684-94-1	Total HxCDF	JK	0.104	pg/g	0.0846	5.00
38998-75-3	Total HpCDF	J	0.098	pg/g	0.087	5.00
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.0423	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.166	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		172	200	pg/g	86.1	(25%-164%)
13C-1,2,3,7,8-PeCDD		176	200	pg/g	87.8	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		162	200	pg/g	80.9	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		154	200	pg/g	77.0	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		169	200	pg/g	84.7	(23%-140%)
13C-OCDD		265	400	pg/g	66.2	(17%-157%)
13C-2,3,7,8-TCDF		185	200	pg/g	92.7	(24%-169%)
13C-1,2,3,7,8-PeCDF		195	200	pg/g	97.4	(24%-185%)
13C-2,3,4,7,8-PeCDF		186	200	pg/g	92.8	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		160	200	pg/g	80.2	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		152	200	pg/g	76.0	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		160	200	pg/g	79.9	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		162	200	pg/g	81.0	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024755**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41711**				
Client ID:	**MB for batch 41711**			**Prep Basis:**	**As Received**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/17/2019 15:23**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A17SEP19C-4**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		150	200	pg/g	74.8	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		153	200	pg/g	76.3	(26%-138%)
37Cl-2,3,7,8-TCDD		21.5	20.0	pg/g	108	(35%-197%)

Comments:

J **Value is estimated**

K **Estimated Maximum Possible Concentration**

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024756**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41711**				
Client ID:	**LCS for batch 41711**			**Prep Basis:**	**As Received**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/17/2019 13:46**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A17SEP19C-2**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		21.5	pg/g	0.0624	1.00
40321-76-4	1,2,3,7,8-PeCDD		119	pg/g	0.143	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		116	pg/g	0.240	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		115	pg/g	0.242	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		124	pg/g	0.244	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		107	pg/g	0.380	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		229	pg/g	0.494	10.0
51207-31-9	2,3,7,8-TCDF		21.2	pg/g	0.0828	1.00
57117-41-6	1,2,3,7,8-PeCDF		108	pg/g	0.158	5.00
57117-31-4	2,3,4,7,8-PeCDF		107	pg/g	0.149	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		111	pg/g	0.312	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		113	pg/g	0.320	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		111	pg/g	0.318	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		110	pg/g	0.420	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		122	pg/g	0.354	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		113	pg/g	0.512	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		222	pg/g	0.500	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		170	200	pg/g	85.1	(20%-175%)
13C-1,2,3,7,8-PeCDD		176	200	pg/g	87.8	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		160	200	pg/g	80.0	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		152	200	pg/g	75.9	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		167	200	pg/g	83.5	(22%-166%)
13C-OCDD		273	400	pg/g	68.3	(13%-199%)
13C-2,3,7,8-TCDF		183	200	pg/g	91.3	(22%-152%)
13C-1,2,3,7,8-PeCDF		191	200	pg/g	95.7	(21%-192%)
13C-2,3,4,7,8-PeCDF		185	200	pg/g	92.7	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		157	200	pg/g	78.3	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		147	200	pg/g	73.7	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		158	200	pg/g	78.8	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		159	200	pg/g	79.4	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		149	200	pg/g	74.6	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		153	200	pg/g	76.3	(20%-186%)
37Cl-2,3,7,8-TCDD		21.1	20.0	pg/g	106	(31%-191%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024757**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41711**				
Client ID:	**LCSD for batch 41711**			**Prep Basis:**	**As Received**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/17/2019 14:35**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A17SEP19C-3**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		20.8	pg/g	0.0784	1.00
40321-76-4	1,2,3,7,8-PeCDD		110	pg/g	0.169	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		110	pg/g	0.244	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		103	pg/g	0.236	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		116	pg/g	0.244	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		98.3	pg/g	0.310	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		205	pg/g	0.380	10.0
51207-31-9	2,3,7,8-TCDF		19.9	pg/g	0.0762	1.00
57117-41-6	1,2,3,7,8-PeCDF		98.1	pg/g	0.126	5.00
57117-31-4	2,3,4,7,8-PeCDF		99.5	pg/g	0.124	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		103	pg/g	0.272	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		107	pg/g	0.264	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		101	pg/g	0.276	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		103	pg/g	0.358	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		112	pg/g	0.310	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		106	pg/g	0.438	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		200	pg/g	0.440	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		163	200	pg/g	81.3	(20%-175%)
13C-1,2,3,7,8-PeCDD		170	200	pg/g	84.8	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		158	200	pg/g	79.0	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		157	200	pg/g	78.3	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		174	200	pg/g	87.0	(22%-166%)
13C-OCDD		271	400	pg/g	67.8	(13%-199%)
13C-2,3,7,8-TCDF		176	200	pg/g	88.1	(22%-152%)
13C-1,2,3,7,8-PeCDF		185	200	pg/g	92.7	(21%-192%)
13C-2,3,4,7,8-PeCDF		179	200	pg/g	89.5	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		160	200	pg/g	79.8	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		147	200	pg/g	73.6	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		160	200	pg/g	79.9	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		162	200	pg/g	80.9	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		155	200	pg/g	77.5	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		155	200	pg/g	77.5	(20%-186%)
37Cl-2,3,7,8-TCDD		20.7	20.0	pg/g	103	(31%-191%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024758**	**Date Collected:**	**08/28/2019 14:00**	**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41711**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**47**
Client ID:	**R4-SC1b-20to30-82819(15468001MS**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/17/2019 17:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A17SEP19C-6**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**18.98 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		19.6	pg/g	0.0842	0.995
40321-76-4	1,2,3,7,8-PeCDD		104	pg/g	0.159	4.97
39227-28-6	1,2,3,4,7,8-HxCDD		101	pg/g	0.372	4.97
57653-85-7	1,2,3,6,7,8-HxCDD		104	pg/g	0.390	4.97
19408-74-3	1,2,3,7,8,9-HxCDD		109	pg/g	0.388	4.97
35822-46-9	1,2,3,4,6,7,8-HpCDD		179	pg/g	0.866	4.97
3268-87-9	1,2,3,4,6,7,8,9-OCDD		1360	pg/g	1.06	9.95
51207-31-9	2,3,7,8-TCDF		19.3	pg/g	0.111	0.995
57117-41-6	1,2,3,7,8-PeCDF		93.1	pg/g	0.149	4.97
57117-31-4	2,3,4,7,8-PeCDF		94.3	pg/g	0.152	4.97
70648-26-9	1,2,3,4,7,8-HxCDF		98.1	pg/g	0.287	4.97
57117-44-9	1,2,3,6,7,8-HxCDF		99.5	pg/g	0.292	4.97
60851-34-5	2,3,4,6,7,8-HxCDF		98.9	pg/g	0.312	4.97
72918-21-9	1,2,3,7,8,9-HxCDF		97.8	pg/g	0.358	4.97
67562-39-4	1,2,3,4,6,7,8-HpCDF		126	pg/g	0.364	4.97
55673-89-7	1,2,3,4,7,8,9-HpCDF		100	pg/g	0.517	4.97
39001-02-0	1,2,3,4,6,7,8,9-OCDF		243	pg/g	0.547	9.95

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		158	199	pg/g	79.4	(25%-164%)
13C-1,2,3,7,8-PeCDD		175	199	pg/g	88.0	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		156	199	pg/g	78.4	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		142	199	pg/g	71.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		163	199	pg/g	81.7	(23%-140%)
13C-OCDD		284	398	pg/g	71.3	(17%-157%)
13C-2,3,7,8-TCDF		177	199	pg/g	89.1	(24%-169%)
13C-1,2,3,7,8-PeCDF		190	199	pg/g	95.4	(24%-185%)
13C-2,3,4,7,8-PeCDF		185	199	pg/g	92.9	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		152	199	pg/g	76.3	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		143	199	pg/g	71.6	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		150	199	pg/g	75.4	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		155	199	pg/g	77.7	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		144	199	pg/g	72.3	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		148	199	pg/g	74.4	(26%-138%)
37Cl-2,3,7,8-TCDD		21.2	19.9	pg/g	106	(35%-197%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_1**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024759**	**Date Collected:**	**08/28/2019 14:00**	**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41711**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**47**
Client ID:	**R4-SC1b-20to30-82819(15468001MS**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/17/2019 17:50**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A17SEP19C-7**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**19.04 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		21.1	pg/g	0.0504	0.992
40321-76-4	1,2,3,7,8-PeCDD		113	pg/g	0.180	4.96
39227-28-6	1,2,3,4,7,8-HxCDD		110	pg/g	0.208	4.96
57653-85-7	1,2,3,6,7,8-HxCDD		107	pg/g	0.210	4.96
19408-74-3	1,2,3,7,8,9-HxCDD		120	pg/g	0.214	4.96
35822-46-9	1,2,3,4,6,7,8-HpCDD		128	pg/g	0.524	4.96
3268-87-9	1,2,3,4,6,7,8,9-OCDD		603	pg/g	0.621	9.92
51207-31-9	2,3,7,8-TCDF		20.5	pg/g	0.0968	0.992
57117-41-6	1,2,3,7,8-PeCDF		100	pg/g	0.138	4.96
57117-31-4	2,3,4,7,8-PeCDF		102	pg/g	0.129	4.96
70648-26-9	1,2,3,4,7,8-HxCDF		105	pg/g	0.284	4.96
57117-44-9	1,2,3,6,7,8-HxCDF		106	pg/g	0.299	4.96
60851-34-5	2,3,4,6,7,8-HxCDF		104	pg/g	0.299	4.96
72918-21-9	1,2,3,7,8,9-HxCDF		105	pg/g	0.375	4.96
67562-39-4	1,2,3,4,6,7,8-HpCDF		119	pg/g	0.309	4.96
55673-89-7	1,2,3,4,7,8,9-HpCDF		109	pg/g	0.440	4.96
39001-02-0	1,2,3,4,6,7,8,9-OCDF		222	pg/g	0.420	9.92

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		172	198	pg/g	86.8	(25%-164%)
13C-1,2,3,7,8-PeCDD		183	198	pg/g	92.3	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		156	198	pg/g	78.6	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		152	198	pg/g	76.8	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		167	198	pg/g	84.1	(23%-140%)
13C-OCDD		274	397	pg/g	69.0	(17%-157%)
13C-2,3,7,8-TCDF		181	198	pg/g	91.4	(24%-169%)
13C-1,2,3,7,8-PeCDF		204	198	pg/g	103	(24%-185%)
13C-2,3,4,7,8-PeCDF		200	198	pg/g	101	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		157	198	pg/g	79.2	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		149	198	pg/g	75.2	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		157	198	pg/g	79.0	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		162	198	pg/g	81.5	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		148	198	pg/g	74.8	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		153	198	pg/g	77.4	(26%-138%)
37Cl-2,3,7,8-TCDD		22.5	19.8	pg/g	113	(35%-197%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

CFA | Cape Fear Analytical LLC
an affiliate of The GEL Group INC

3306 Kitty Hawk Road, Suite 120 Wilmington, NC 28405
P 910.795.0421
www.capefearanalytical.com

October 04, 2019

Mr. Jeffrey Parker
Pacific Groundwater Group
2377 Eastlake Avenue E
Seattle, Washington 98102

Re: Swan Island Lagoon Sediment Investigation
Work Order: 15469
SDG: 2006-00115_2

Dear Mr. Parker:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on August 30, 2019. This original data report has been prepared and reviewed in accordance with CFA's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,

Cynde Larkins

Cynde Larkins
Project Manager

Enclosures

problem solved

Other CF

CFA WO #15469

Chain of Custody Record

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 8/27/2019 – 8/28/2019	COC No:
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	3 of 8 COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	*standard*			
206 329 0141 Phone	TAT if different from Below ____			SDG No.
206 329 6968 FAX	[x] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
PO#	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Dioxins/Furans 1613B	Archive	Sample Specific Notes:
J6-SC1b-20to30-828 19	8/28/19	0920		S	1	X		3.8°
J6-SC1b-30to40-828 19	8/28/19	0925		S	1	X		
J6-SC1b-40to50-828 19	8/28/19	1025		S	1	X		
J6-SC1b-50to60-828 19	8/28/19	1030		S	1	X		
J6-SC1b-60to70-828 19	8/28/19	1035		S	1	X		
J6-SC1b-70to80-828 19	8/28/19	1040		S	1	X		3.3°
J6-SC1b-80to90-828 19	8/28/19	1155		S	1	X		
J6-SC1b-90to100-828 19	8/28/19	1200		S	1	X		
J6-SC1b-100to110-828 19	8/28/19	1205		S	1	X		
J6-SC1b-110to120-828 19	8/28/19	1210		S	1	X		
J6-SC1b-00to10-82719	8/27/19	1930		S	1		X	
J6-SC1b-10to20-82719	8/27/19	1935		S	1		X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] Return To Client [ ] Disposal By Lab [x] Archive For _____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PGG	8/29/19 1300	Fedex		
Relinquished by: Fedex	Company:	Date/Time:	Received by:	Company: CH4	Date/Time: 9/30/19 9:55
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Other CF

CFA WO #15469

Chain of Custody Record

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 8/29/2019	COC No: 4 of 8 COCs
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	standard			
206 329 0141 Phone	TAT if different from Below			SDG No.
206 329 6968 FAX	[X] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Dioxins/Furans 1613B	Archive	Sample Specific Notes:
H3-SC1b-20to30-8[illegible]19	8/[illegible]/19	2015		S	1	X		5.2"
H3-SC1b-30to40-8[illegible]19	8/[illegible]/19	[illegible] 0825		S	1	X		
H3-SC1b-40to50-8[illegible]19	8/[illegible]/19	0830		S	1	X		
H3-SC1b-50to60-8[illegible]19	8/[illegible]/19	0835		S	1	X		
H3-SC1b-60to70-8[illegible]19	8/[illegible]/19	0900		S	1	X		
H3-SC1b-70to80-8[illegible]19	8/[illegible]/19	0905		S	1	X		
H3-SC1b-80to90-8[illegible]19	8/[illegible]/19	0930		S	1	X		
H3-SC1b-90to100-8[illegible]19	8/[illegible]/19	0935		S	1	X		
H3-SC1b-100to110-8[illegible]19	8/[illegible]/19	0950		S	1	X		
H3-SC1b-00to10-82819	8/[illegible]/19	2005		S	1	[illegible]	X	
H3-SC1b-10-20-82819	8/[illegible]/19	2010		S	1	X	X	
	8/ /19			S	1			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification

[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

[ ] Return To Client [ ] Disposal By Lab [X] Archive For _____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	PGG	8/29/19 1300	Fed Ex		
Fed Ex			[signature]	CFA	8/30/19 9:55

SAMPLE RECEIPT CHECKLIST

Cape Fear Analytical

Client: Pacific Groundwater Group	Work Order: 15469
Shipping Company: FedEx	Date/Time Received: 30AUG19 0955

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			✓
Samples identified as Foreign Soil?			✓

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?		✓	
Samples < 2x background?		✓	

* Notify RSO of any responses in this column immediately.

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?			✓

Air Witness: _____

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other(describe)
2	Custody seal/s present on cooler?	✓			Seal intact? (Yes) No
3	Chain of Custody documents included with shipment?	✓			
4	Samples requiring cold preservation within 0-6°C?	✓			Preservation Method: (ice bags) blue ice dry ice none other (describe) Temperature Blank present: (Yes) No 3.9°-0.1=3.8° 5.3°-0.1=5.2° 3.4°-0.1=3.3°
5	Aqueous samples found to have visible solids?			✓	Sample IDs, containers affected:
5	Samples requiring chemical preservation at proper pH?		✓		Sample IDs, containers affected and pH observed: pH=8 on both water containers If preservative added, Lot#:
7	Samples requiring preservation have no residual chlorine?	✓			Sample IDs, containers affected: If preservative added, Lot#:
8	Samples received within holding time?	✓			Sample IDs, tests affected:
9	Sample IDs on COC match IDs on containers?			✓	Sample IDs, containers affected: See below *
10	Date & time of COC match date & time on containers?	✓			Sample IDs, containers affected:
11	Number of containers received match number indicated on COC?			✓	List type and number of containers / Sample IDs, containers affected: 2-1L NMAG received for 711-82719 75-4 oz amber glass soil jars No containers received for 712-82819
12	COC form is properly signed in relinquished/received sections?	✓			

Comments:

* Sample ID discrepancies:

COC	Label
J6-SC1b-00to10-82719	J6-SC1-00to10-82719
J6-SC1b-10to20-82719	J6-SC1-10to20-82719
L3-SC1b-00to10-82619	CR 30AUG19 L3-SC2-00to10-82619
L3-SC1b-10to20-82619	L3-SC2-10to20-82619
D6-SC1b-10to20-82619	D6-SC2-10to20-82619

Checklist performed by: Initials: CL for RO Date: 30AUG19

CF-UD-F-7

Subject: RE: Swan Island sample receipt 30AUG19
From: "Jeff S. Parker" <JParker@PGWG.COM>
Date: 8/30/2019, 5:55 PM
To: Cynde Larkins <Cynde.larkins@cfanalytical.com>
CC: Janet Knox <janet@PGWG.COM>

WO #15469

Hi Cynde,
Good catch.
Re: H3-SC1b-30to40-82919 ("29" is the correct ID), so the COC date of "28" is wrong and should be "29"

Thanks,
Jeff

From: Cynde Larkins <Cynde.larkins@cfanalytical.com>
Sent: Friday, August 30, 2019 2:52 PM
To: Jeff S. Parker <JParker@PGWG.COM>
Cc: Janet Knox <janet@PGWG.COM>
Subject: Re: Swan Island sample receipt 30AUG19

Jeff,

I have found one more discrepancy for you to look at. The ID and date on the label for this sample was marked through/corrected to -82919 and 8/29/19, but the COC has 8/28/19 as the collection date and it is difficult to discern the date in the ID: H3-SC1b-30to40-82919 (or -82819).

Thank you,
Cynde

On 8/30/2019 3:08 PM, Jeff S. Parker wrote:

> That'll work!
>
> **From:** Cynde Larkins <Cynde.larkins@cfanalytical.com>
> **Sent:** Friday, August 30, 2019 12:05 PM
> **To:** Jeff S. Parker <JParker@PGWG.COM>
> **Cc:** Janet Knox <janet@PGWG.COM>
> **Subject:** Re: Swan Island sample receipt 30AUG19
>
> Yes sir, I'll send you our Sample Receipt Notification form and the COC's as soon as I finish logging them.
> I was going to split them up into 4 (more easily manageable) SDG's if that is okay?
>
> Chris mentioned SRM's to me this morning, I'll make sure he contacts you about that.
>
> Thank you!

Cynde

On 8/30/2019 3:02 PM, Jeff S. Parker wrote:

> HI Cynde,
>
> Can you send me copies of the COCs or the login file when you get a chance. We taped the COCs in the cooler before making copies and I didn't get a count of the # analyzed. We may need to remove a couple if we're way over our scope.
>
> Also, I need to communicate with Chris about ordering the EDF-5183 (Cambridge SRM) to run with this batch. So, please hold the samples until we get those ordered and added too.
>
> Thanks!
> Jeff

From: Jeff S. Parker
Sent: Friday, August 30, 2019 11:55 AM
To: Cynde Larkins <Cynde.larkins@cfanalytical.com>
Subject: RE: Swan Island sample receipt 30AUG19

No problems, thanks!

From: Cynde Larkins <Cynde.larkins@cfanalytical.com>
Sent: Friday, August 30, 2019 11:42 AM
To: Jeff S. Parker <JParker@PGWG.COM>
Subject: Re: Swan Island sample receipt 30AUG19

Thank you!

By the way - that "00to20" was my mistake. The COC and the label have "00to10". My apologies!

On 8/30/2019 2:36 PM, Jeff S. Parker wrote:

> HI Cynde,
> I'm glad you got them without too much ice melt! Here are the answers to the login questions:
>
> 1. D6-SC1b-10to20-82619 is archive, 411-SC1b-50to60-82619 is analyze.
> 2. We misplaced those in a cooler to another lab and will get those

to you asap.

3. The ID on the COC are correct (highlighted are correct) for those samples with one exception where both are incorrect. The first L3 sample should be "00to10" instead of "00to20":

ID on COC	
J6-SC1b-00to10-82719	J(
J6-SC1b-10to20-082719	J(
L3-SC1b-00to20-82619	L:
L3-SC1b-10to20-82619	L:
D6-SC1b-10to20-82619	D

Thanks,
Jeff

Jeffrey Parker, LG | Environmental Geologist
Pacific Groundwater Group **Water Resource & Environmental Consulting**
(360) 570-8244 | jparker@pgwg.com |
www.pgwg.com

From: Cynde Larkins <Cynde.larkins@cfanalytical.com>
Sent: Friday, August 30, 2019 11:28 AM
To: Jeff S. Parker <JParker@PGWG.COM>
Subject: Swan Island sample receipt 30AUG19

Good afternoon,

CFA received your samples today for the Swan Island Lagoon project in good condition and within temperature. There are several discrepancies listed below that I need to your help to resolve.

1. Sample D6-SC1b-10to20-82619, collected 8/26/19 at 12:10, is marked on the COC for both 1613B analysis and Archive. The sample listed beneath this one, 411-SC1b-50to60-82619, collected 8/26/19 at 15:00 is not marked for either 1613B or Archive. It looks like one of the X's is on the wrong line perhaps? Please advise.

2. There were no bottles received for sample 712-82819. Two containers were received for 711-82719.

3. There are sample ID discrepancies between the COC and the labels

for the samples listed in the table below (collection dates and times match). Please verify which ID should be used for log in.

ID on COC	ID on label
J6-SC1b-00to10-82719	J6-SC1-00to10-82719
J6-SC1b-10to20-082719	J6-SC1-10to20-82719
L3-SC1b-00to20-82619	L3-SC2-00to20-82619
L3-SC1b-10to20-82619	L3-SC2-10to20-82619
D6-SC1b-10to20-82619	D6-SC2-10to20-82619

Thank you!

--
Cynde Larkins
Project Manager
Cape Fear Analytical, LLC
3306 Kitty Hawk Road, Suite 120
Wilmington, NC 28405
(910) 795-0421

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feedback@cfanalytical.com
http://www.gellaboratories.com

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feedback@cfanalytical.com
http://www.gellaboratories.com

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feedback@cfanalytical.com
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http://www.gellaboratories.com

High Resolution Dioxins and Furans Analysis

Case Narrative

HDOX Case Narrative
Pacific Groundwater Group (PGWG)
SDG 2006-00115_2
Work Order 15469

Method/Analysis Information

Product: **Dioxins/Furans by EPA Method 1613B in Solids**
Analytical Method: EPA Method 1613B
Extraction Method: SW846 3540C
Analytical Batch Number: 41747
Clean Up Batch Number: 41746
Extraction Batch Number: 41745

Sample Analysis

Samples were received at 3.8°C (15469001, 15469002, 15469003, 15469004, 15469005) , 3.3°C (15469006, 15469007, 15469008, 15469009, 15469010, 15469011, 15469012) and 5.2°C (15469013, 15469014, 15469015, 15469016, 15469017, 15469018, 15469019, 15469020, 15469021, 15469022, 15469023). The following samples were analyzed using the analytical protocol as established in Method 1613B:

Sample ID	Client ID
12024792	Method Blank (MB)
12024793	Laboratory Control Sample (LCS)
12024794	Laboratory Control Sample Duplicate (LCSD)
12024795	15469001(J6-SC1b-20to30-82819) Matrix Spike (MS)
12024796	15469001(J6-SC1b-20to30-82819) Matrix Spike Duplicate (MSD)
15469001	J6-SC1b-20to30-82819
15469002	J6-SC1b-30to40-82819
15469003	J6-SC1b-40to50-82819
15469004	J6-SC1b-50to60-82819
15469005	J6-SC1b-60to70-82819
15469006	J6-SC1b-70to80-82819
15469007	J6-SC1b-80to90-82819
15469008	J6-SC1b-90to100-82819
15469009	J6-SC1b-100to110-82819
15469010	J6-SC1b-110to120-82819
15469011	J6-SC1b-00to10-82719
15469012	J6-SC1b-10to20-82719
15469013	H3-SC1b-20to30-82819
15469014	H3-SC1b-30to40-82919

15469015	H3-SC1b-40to50-82919
15469016	H3-SC1b-50to60-82919
15469017	H3-SC1b-60to70-82919
15469018	H3-SC1b-70to80-82919
15469019	H3-SC1b-80to90-82919
15469020	H3-SC1b-90to100-82919
15469021	H3-SC1b-100to110-82919
15469022	H3-SC1b-00to10-82819
15469023	H3-SC1b-10-20-82819

The samples in this SDG were analyzed on a "dry weight" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-002 REV# 15.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements
All associated calibration verification standard(s) (CCV) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement
The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

Method Blank (MB) Statement
The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
All surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery
The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement
The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation
Sample 15469001 (J6-SC1b-20to30-82819)- Batch 41747 was selected for analysis as the matrix spike and matrix spike duplicate.

Matrix Spike/Duplicate (MS/MSD) Recovery Statement
The MS recoveries for this SDG were not within the acceptance limits. The failures confirm in the matrix spike duplicate and are attributed to matrix interference. 12024795 (J6-SC1b-20to30-82819) and 12024796 (J6-SC1b-20to30-82819)- Batch 41747.

MS/MSD Relative Percent Difference (RPD) Statement
The relative percent differences (RPD) between each MS and MSD were not within the required acceptance limits. Sample data is validated based on acceptable LCS/LCSD results. 12024796 (J6-SC1b-20to30-82819)- Batch 41747.

Technical Information

Holding Time Specifications
CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Nonconformance (NCR) Documentation
The following NCR was generated for this SDG: 647562 12024795 (J6-SC1b-20to30-82819) and 12024796 (J6-SC1b-20to30-82819)- Batch 41747.

Manual Integrations
Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction. Manual integrations were required for data files in this SDG.

Sample preparation
No difficulties were encountered during sample preparation.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Sample Data Summary

Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Qualifier Definition Report
for

PGWG001 Pacific Groundwater Group

Client SDG: 2006-00115_2 CFA Work Order: 15469

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria
** Analyte is a surrogate compound
B The target analyte was detected in the associated blank.
E Value is estimated - Concentration of the target analyte exceeds the instrument calibration range
J Value is estimated
K Estimated Maximum Possible Concentration
Q Quantitative Interference; value is estimated
U Analyte was analyzed for, but not detected above the specified detection limit.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature:  **Name: Heather Patterson**

Date: 04 OCT 2019 **Title: Group Leader**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469001**	**Date Collected:**	**08/28/2019 09:20**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**47.3**
Client ID:	**J6-SC1b-20to30-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 01:26**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-3**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**19.2 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	0.527	pg/g	0.189	0.988
40321-76-4	1,2,3,7,8-PeCDD	J	1.27	pg/g	0.171	4.94
39227-28-6	1,2,3,4,7,8-HxCDD	J	0.859	pg/g	0.371	4.94
57653-85-7	1,2,3,6,7,8-HxCDD		7.87	pg/g	0.360	4.94
19408-74-3	1,2,3,7,8,9-HxCDD	J	3.53	pg/g	0.373	4.94
35822-46-9	1,2,3,4,6,7,8-HpCDD		171	pg/g	0.998	4.94
3268-87-9	1,2,3,4,6,7,8,9-OCDD		2630	pg/g	1.79	9.88
51207-31-9	2,3,7,8-TCDF	B	1.57	pg/g	0.371	0.988
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.792	pg/g	0.200	4.94
57117-31-4	2,3,4,7,8-PeCDF	J	1.73	pg/g	0.174	4.94
70648-26-9	1,2,3,4,7,8-HxCDF	J	3.01	pg/g	0.181	4.94
57117-44-9	1,2,3,6,7,8-HxCDF	J	3.96	pg/g	0.189	4.94
60851-34-5	2,3,4,6,7,8-HxCDF	J	2.55	pg/g	0.202	4.94
72918-21-9	1,2,3,7,8,9-HxCDF	BJ	0.889	pg/g	0.203	4.94
67562-39-4	1,2,3,4,6,7,8-HpCDF		35.3	pg/g	0.381	4.94
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	2.61	pg/g	0.508	4.94
39001-02-0	1,2,3,4,6,7,8,9-OCDF		109	pg/g	0.648	9.88
41903-57-5	Total TeCDD	JK	4.10	pg/g	0.189	0.988
36088-22-9	Total PeCDD	J	10.8	pg/g	0.171	4.94
34465-46-8	Total HxCDD	J	57.7	pg/g	0.360	4.94
37871-00-4	Total HpCDD		382	pg/g	0.998	4.94
30402-14-3	Total TeCDF	JK	15.9	pg/g	0.371	0.988
30402-15-4	Total PeCDF	J	30.3	pg/g	0.0794	4.94
55684-94-1	Total HxCDF	JK	58.0	pg/g	0.181	4.94
38998-75-3	Total HpCDF	J	128	pg/g	0.381	4.94
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		7.68	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		7.68	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		148	198	pg/g	75.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		165	198	pg/g	83.4	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		174	198	pg/g	87.9	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		135	198	pg/g	68.1	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		188	198	pg/g	95.1	(23%-140%)
13C-OCDD		402	395	pg/g	102	(17%-157%)
13C-2,3,7,8-TCDF		136	198	pg/g	69.0	(24%-169%)
13C-1,2,3,7,8-PeCDF		154	198	pg/g	77.7	(24%-185%)
13C-2,3,4,7,8-PeCDF		156	198	pg/g	78.7	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		148	198	pg/g	74.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		139	198	pg/g	70.2	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		141	198	pg/g	71.4	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		160	198	pg/g	81.2	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469001**	**Date Collected:**	**08/28/2019 09:20**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**47.3**
Client ID:	**J6-SC1b-20to30-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 01:26**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-3**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**19.2 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		154	198	pg/g	77.8	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		187	198	pg/g	94.9	(26%-138%)
37Cl-2,3,7,8-TCDD		18.6	19.8	pg/g	94.2	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469001**	**Date Collected:**	**08/28/2019 09:20**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**47.3**
Client ID:	**J6-SC1b-20to30-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/30/2019 16:31**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b30sep19a_2-3**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**19.2 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF	B	1.41	pg/g	0.187	0.988

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

B The target analyte was detected in the associated blank.
J Value is estimated
K Estimated Maximum Possible Concentration
U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469002**	**Date Collected:**	**08/28/2019 09:25**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**45.6**
Client ID:	**J6-SC1b-30to40-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 03:51**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-6**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**19.04 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	0.303	pg/g	0.141	0.966
40321-76-4	1,2,3,7,8-PeCDD	J	0.622	pg/g	0.185	4.83
39227-28-6	1,2,3,4,7,8-HxCDD	JK	0.585	pg/g	0.352	4.83
57653-85-7	1,2,3,6,7,8-HxCDD	J	4.71	pg/g	0.326	4.83
19408-74-3	1,2,3,7,8,9-HxCDD	J	2.10	pg/g	0.348	4.83
35822-46-9	1,2,3,4,6,7,8-HpCDD		110	pg/g	0.666	4.83
3268-87-9	1,2,3,4,6,7,8,9-OCDD		1320	pg/g	1.02	9.66
51207-31-9	2,3,7,8-TCDF	BJ	0.894	pg/g	0.261	0.966
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.481	pg/g	0.120	4.83
57117-31-4	2,3,4,7,8-PeCDF	J	1.03	pg/g	0.111	4.83
70648-26-9	1,2,3,4,7,8-HxCDF	J	2.32	pg/g	0.148	4.83
57117-44-9	1,2,3,6,7,8-HxCDF	J	1.74	pg/g	0.163	4.83
60851-34-5	2,3,4,6,7,8-HxCDF	J	1.42	pg/g	0.166	4.83
72918-21-9	1,2,3,7,8,9-HxCDF	BJ	0.464	pg/g	0.188	4.83
67562-39-4	1,2,3,4,6,7,8-HpCDF		24.6	pg/g	0.240	4.83
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	1.83	pg/g	0.311	4.83
39001-02-0	1,2,3,4,6,7,8,9-OCDF		94.8	pg/g	0.359	9.66
41903-57-5	Total TeCDD	JK	1.90	pg/g	0.141	0.966
36088-22-9	Total PeCDD	JK	5.52	pg/g	0.185	4.83
34465-46-8	Total HxCDD	JK	32.8	pg/g	0.326	4.83
37871-00-4	Total HpCDD		222	pg/g	0.666	4.83
30402-14-3	Total TeCDF	JK	7.69	pg/g	0.261	0.966
30402-15-4	Total PeCDF	JK	15.3	pg/g	0.0616	4.83
55684-94-1	Total HxCDF	JK	36.8	pg/g	0.148	4.83
38998-75-3	Total HpCDF	J	99.9	pg/g	0.240	4.83
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		4.46	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		4.46	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		151	193	pg/g	78.2	(25%-164%)
13C-1,2,3,7,8-PeCDD		170	193	pg/g	87.8	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		163	193	pg/g	84.6	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		138	193	pg/g	71.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		186	193	pg/g	96.4	(23%-140%)
13C-OCDD		393	386	pg/g	102	(17%-157%)
13C-2,3,7,8-TCDF		139	193	pg/g	72.2	(24%-169%)
13C-1,2,3,7,8-PeCDF		158	193	pg/g	81.9	(24%-185%)
13C-2,3,4,7,8-PeCDF		160	193	pg/g	82.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		152	193	pg/g	78.9	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		131	193	pg/g	67.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		140	193	pg/g	72.4	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		158	193	pg/g	81.7	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469002**	**Date Collected:**	**08/28/2019 09:25**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**45.6**
Client ID:	**J6-SC1b-30to40-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 03:51**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-6**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**19.04 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		155	193	pg/g	80.3	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		185	193	pg/g	95.8	(26%-138%)
37Cl-2,3,7,8-TCDD		18.8	19.3	pg/g	97.4	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**

J **Value is estimated**

K **Estimated Maximum Possible Concentration**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469003**	**Date Collected:**	**08/28/2019 10:25**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**44.6**
Client ID:	**J6-SC1b-40to50-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 04:40**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-7**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**18.56 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	JK	0.297	pg/g	0.149	0.972
40321-76-4	1,2,3,7,8-PeCDD	J	0.533	pg/g	0.147	4.86
39227-28-6	1,2,3,4,7,8-HxCDD	J	0.632	pg/g	0.235	4.86
57653-85-7	1,2,3,6,7,8-HxCDD	J	4.00	pg/g	0.237	4.86
19408-74-3	1,2,3,7,8,9-HxCDD	J	1.82	pg/g	0.241	4.86
35822-46-9	1,2,3,4,6,7,8-HpCDD		95.0	pg/g	0.665	4.86
3268-87-9	1,2,3,4,6,7,8,9-OCDD		1220	pg/g	1.01	9.72
51207-31-9	2,3,7,8-TCDF	BJ	0.746	pg/g	0.420	0.972
57117-41-6	1,2,3,7,8-PeCDF	BJK	0.484	pg/g	0.155	4.86
57117-31-4	2,3,4,7,8-PeCDF	JK	1.03	pg/g	0.140	4.86
70648-26-9	1,2,3,4,7,8-HxCDF	J	2.03	pg/g	0.143	4.86
57117-44-9	1,2,3,6,7,8-HxCDF	J	1.62	pg/g	0.148	4.86
60851-34-5	2,3,4,6,7,8-HxCDF	BJ	1.28	pg/g	0.155	4.86
72918-21-9	1,2,3,7,8,9-HxCDF	BJ	0.550	pg/g	0.183	4.86
67562-39-4	1,2,3,4,6,7,8-HpCDF		18.9	pg/g	0.247	4.86
55673-89-7	1,2,3,4,7,8,9-HpCDF	BJ	1.44	pg/g	0.317	4.86
39001-02-0	1,2,3,4,6,7,8,9-OCDF		59.5	pg/g	0.410	9.72
41903-57-5	Total TeCDD	JK	1.57	pg/g	0.149	0.972
36088-22-9	Total PeCDD	JK	4.79	pg/g	0.147	4.86
34465-46-8	Total HxCDD	J	29.5	pg/g	0.235	4.86
37871-00-4	Total HpCDD		196	pg/g	0.665	4.86
30402-14-3	Total TeCDF	JK	6.20	pg/g	0.420	0.972
30402-15-4	Total PeCDF	JK	14.4	pg/g	0.0614	4.86
55684-94-1	Total HxCDF	JK	30.7	pg/g	0.143	4.86
38998-75-3	Total HpCDF	J	72.3	pg/g	0.247	4.86
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		3.96	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		3.96	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		161	194	pg/g	83.1	(25%-164%)
13C-1,2,3,7,8-PeCDD		186	194	pg/g	95.8	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		165	194	pg/g	85.0	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		150	194	pg/g	77.3	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		198	194	pg/g	102	(23%-140%)
13C-OCDD		422	389	pg/g	108	(17%-157%)
13C-2,3,7,8-TCDF		150	194	pg/g	77.3	(24%-169%)
13C-1,2,3,7,8-PeCDF		174	194	pg/g	89.5	(24%-185%)
13C-2,3,4,7,8-PeCDF		173	194	pg/g	89.1	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		162	194	pg/g	83.5	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		138	194	pg/g	70.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		149	194	pg/g	76.5	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		167	194	pg/g	86.0	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469003**	**Date Collected:**	**08/28/2019 10:25**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**44.6**
Client ID:	**J6-SC1b-40to50-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 04:40**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-7**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**18.56 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		161	194	pg/g	82.9	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		197	194	pg/g	101	(26%-138%)
37Cl-2,3,7,8-TCDD		19.7	19.4	pg/g	101	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**

J **Value is estimated**

K **Estimated Maximum Possible Concentration**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469004**	**Date Collected:**	**08/28/2019 10:30**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**42.2**
Client ID:	**J6-SC1b-50to60-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 05:28**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-8**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**18.77 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	JK	0.439	pg/g	0.160	0.922
40321-76-4	1,2,3,7,8-PeCDD	J	0.982	pg/g	0.240	4.61
39227-28-6	1,2,3,4,7,8-HxCDD	JK	1.12	pg/g	0.387	4.61
57653-85-7	1,2,3,6,7,8-HxCDD		6.56	pg/g	0.369	4.61
19408-74-3	1,2,3,7,8,9-HxCDD	J	2.96	pg/g	0.387	4.61
35822-46-9	1,2,3,4,6,7,8-HpCDD		169	pg/g	0.793	4.61
3268-87-9	1,2,3,4,6,7,8,9-OCDD		1830	pg/g	1.39	9.22
51207-31-9	2,3,7,8-TCDF	B	1.62	pg/g	0.387	0.922
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.936	pg/g	0.203	4.61
57117-31-4	2,3,4,7,8-PeCDF	J	1.76	pg/g	0.188	4.61
70648-26-9	1,2,3,4,7,8-HxCDF		5.79	pg/g	0.230	4.61
57117-44-9	1,2,3,6,7,8-HxCDF	J	2.68	pg/g	0.240	4.61
60851-34-5	2,3,4,6,7,8-HxCDF	J	2.51	pg/g	0.256	4.61
72918-21-9	1,2,3,7,8,9-HxCDF	BJ	1.05	pg/g	0.282	4.61
67562-39-4	1,2,3,4,6,7,8-HpCDF		54.1	pg/g	0.470	4.61
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	3.45	pg/g	0.592	4.61
39001-02-0	1,2,3,4,6,7,8,9-OCDF		184	pg/g	0.441	9.22
41903-57-5	Total TeCDD	JK	2.94	pg/g	0.160	0.922
36088-22-9	Total PeCDD	JK	7.38	pg/g	0.240	4.61
34465-46-8	Total HxCDD	JK	42.6	pg/g	0.369	4.61
37871-00-4	Total HpCDD		329	pg/g	0.793	4.61
30402-14-3	Total TeCDF	JK	17.3	pg/g	0.387	0.922
30402-15-4	Total PeCDF	J	26.6	pg/g	0.0669	4.61
55684-94-1	Total HxCDF	J	71.2	pg/g	0.230	4.61
38998-75-3	Total HpCDF	J	206	pg/g	0.470	4.61
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		7.28	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		7.28	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		143	184	pg/g	77.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		165	184	pg/g	89.3	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		168	184	pg/g	91.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		133	184	pg/g	71.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		188	184	pg/g	102	(23%-140%)
13C-OCDD		404	369	pg/g	110	(17%-157%)
13C-2,3,7,8-TCDF		136	184	pg/g	73.7	(24%-169%)
13C-1,2,3,7,8-PeCDF		152	184	pg/g	82.7	(24%-185%)
13C-2,3,4,7,8-PeCDF		154	184	pg/g	83.5	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		151	184	pg/g	82.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		128	184	pg/g	69.4	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		139	184	pg/g	75.4	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		156	184	pg/g	84.6	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469004**	**Date Collected:**	**08/28/2019 10:30**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**42.2**
Client ID:	**J6-SC1b-50to60-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 05:28**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-8**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**18.77 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		153	184	pg/g	83.3	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		190	184	pg/g	103	(26%-138%)
37Cl-2,3,7,8-TCDD		16.8	18.4	pg/g	91.1	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469004**	**Date Collected:**	**08/28/2019 10:30**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**42.2**
Client ID:	**J6-SC1b-50to60-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/30/2019 17:36**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b30sep19a_2-6**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**18.77 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF	B	1.28	pg/g	0.182	0.922

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469005**	**Date Collected:**	**08/28/2019 10:35**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**40**
Client ID:	**J6-SC1b-60to70-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 06:17**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-9**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**17.95 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	0.507	pg/g	0.193	0.928
40321-76-4	1,2,3,7,8-PeCDD	J	1.17	pg/g	0.185	4.64
39227-28-6	1,2,3,4,7,8-HxCDD	J	2.81	pg/g	0.260	4.64
57653-85-7	1,2,3,6,7,8-HxCDD		7.77	pg/g	0.297	4.64
19408-74-3	1,2,3,7,8,9-HxCDD	J	3.88	pg/g	0.284	4.64
35822-46-9	1,2,3,4,6,7,8-HpCDD		208	pg/g	0.709	4.64
3268-87-9	1,2,3,4,6,7,8,9-OCDD		2250	pg/g	1.09	9.28
51207-31-9	2,3,7,8-TCDF	B	0.937	pg/g	0.308	0.928
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.911	pg/g	0.202	4.64
57117-31-4	2,3,4,7,8-PeCDF	J	1.73	pg/g	0.197	4.64
70648-26-9	1,2,3,4,7,8-HxCDF		5.98	pg/g	0.236	4.64
57117-44-9	1,2,3,6,7,8-HxCDF	J	3.75	pg/g	0.251	4.64
60851-34-5	2,3,4,6,7,8-HxCDF	J	3.23	pg/g	0.243	4.64
72918-21-9	1,2,3,7,8,9-HxCDF	BJ	1.13	pg/g	0.197	4.64
67562-39-4	1,2,3,4,6,7,8-HpCDF		75.5	pg/g	0.329	4.64
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	4.54	pg/g	0.436	4.64
39001-02-0	1,2,3,4,6,7,8,9-OCDF		276	pg/g	0.433	9.28
41903-57-5	Total TeCDD	J	3.90	pg/g	0.193	0.928
36088-22-9	Total PeCDD	JKQ	11.5	pg/g	0.185	4.64
34465-46-8	Total HxCDD	J	64.9	pg/g	0.260	4.64
37871-00-4	Total HpCDD		406	pg/g	0.709	4.64
30402-14-3	Total TeCDF	JK	12.9	pg/g	0.308	0.928
30402-15-4	Total PeCDF	JKQ	34.1	pg/g	0.0538	4.64
55684-94-1	Total HxCDF	JK	98.7	pg/g	0.197	4.64
38998-75-3	Total HpCDF	J	287	pg/g	0.329	4.64
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		8.80	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		8.80	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		142	186	pg/g	76.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		151	186	pg/g	81.6	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		167	186	pg/g	89.7	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		106	186	pg/g	57.3	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		184	186	pg/g	99.1	(23%-140%)
13C-OCDD		387	371	pg/g	104	(17%-157%)
13C-2,3,7,8-TCDF		136	186	pg/g	73.2	(24%-169%)
13C-1,2,3,7,8-PeCDF		146	186	pg/g	78.6	(24%-185%)
13C-2,3,4,7,8-PeCDF		146	186	pg/g	78.9	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		176	186	pg/g	95.1	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		106	186	pg/g	57.0	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		136	186	pg/g	73.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		127	186	pg/g	68.4	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469005**	**Date Collected:**	**08/28/2019 10:35**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**40**
Client ID:	**J6-SC1b-60to70-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 06:17**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-9**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**17.95 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		153	186	pg/g	82.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		190	186	pg/g	102	(26%-138%)
37Cl-2,3,7,8-TCDD		16.8	18.6	pg/g	90.5	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
Q **Quantitative Interference; value is estimated**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469005**	**Date Collected:**	**08/28/2019 10:35**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**40**
Client ID:	**J6-SC1b-60to70-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/30/2019 17:58**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b30sep19a_2-7**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**17.95 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF	BJ	0.754	pg/g	0.172	0.928

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

B The target analyte was detected in the associated blank.
J Value is estimated
K Estimated Maximum Possible Concentration
Q Quantitative Interference; value is estimated
U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469006**	**Date Collected:**	**08/28/2019 10:40**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**31.2**
Client ID:	**J6-SC1b-70to80-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 07:05**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-10**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**15.39 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.092	pg/g	0.092	0.945
40321-76-4	1,2,3,7,8-PeCDD	U	0.0992	pg/g	0.0992	4.72
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.139	pg/g	0.139	4.72
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.148	pg/g	0.148	4.72
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.147	pg/g	0.147	4.72
35822-46-9	1,2,3,4,6,7,8-HpCDD	BJ	0.941	pg/g	0.181	4.72
3268-87-9	1,2,3,4,6,7,8,9-OCDD		11.9	pg/g	0.285	9.45
51207-31-9	2,3,7,8-TCDF	BJ	0.367	pg/g	0.153	0.945
57117-41-6	1,2,3,7,8-PeCDF	U	0.13	pg/g	0.130	4.72
57117-31-4	2,3,4,7,8-PeCDF	U	0.108	pg/g	0.108	4.72
70648-26-9	1,2,3,4,7,8-HxCDF	U	0.108	pg/g	0.108	4.72
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.112	pg/g	0.112	4.72
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.114	pg/g	0.114	4.72
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.152	pg/g	0.152	4.72
67562-39-4	1,2,3,4,6,7,8-HpCDF	BJ	0.478	pg/g	0.164	4.72
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.225	pg/g	0.225	4.72
39001-02-0	1,2,3,4,6,7,8,9-OCDF	BJ	1.21	pg/g	0.244	9.45
41903-57-5	Total TeCDD	BJK	0.108	pg/g	0.0495	0.945
36088-22-9	Total PeCDD	U	0.0992	pg/g	0.0992	4.72
34465-46-8	Total HxCDD	BJK	0.414	pg/g	0.139	4.72
37871-00-4	Total HpCDD	J	2.14	pg/g	0.181	4.72
30402-14-3	Total TeCDF	BJ	0.586	pg/g	0.153	0.945
30402-15-4	Total PeCDF	BJ	0.253	pg/g	0.075	4.72
55684-94-1	Total HxCDF	BJK	0.608	pg/g	0.108	4.72
38998-75-3	Total HpCDF	BJ	1.67	pg/g	0.164	4.72
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.0548	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.216	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		148	189	pg/g	78.5	(25%-164%)
13C-1,2,3,7,8-PeCDD		169	189	pg/g	89.3	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		162	189	pg/g	85.6	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		134	189	pg/g	71.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		183	189	pg/g	96.9	(23%-140%)
13C-OCDD		384	378	pg/g	102	(17%-157%)
13C-2,3,7,8-TCDF		136	189	pg/g	72.0	(24%-169%)
13C-1,2,3,7,8-PeCDF		135	189	pg/g	71.2	(24%-185%)
13C-2,3,4,7,8-PeCDF		156	189	pg/g	82.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		145	189	pg/g	76.7	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		131	189	pg/g	69.6	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		139	189	pg/g	73.4	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		155	189	pg/g	81.9	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469006**	**Date Collected:**	**08/28/2019 10:40**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**31.2**
Client ID:	**J6-SC1b-70to80-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 07:05**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-10**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**15.39 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		152	189	pg/g	80.4	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		181	189	pg/g	95.9	(26%-138%)
37Cl-2,3,7,8-TCDD		17.7	18.9	pg/g	93.7	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469007**	**Date Collected:**	**08/28/2019 11:55**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**28.8**
Client ID:	**J6-SC1b-80to90-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 07:53**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-11**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**14.56 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.199	pg/g	0.199	0.965
40321-76-4	1,2,3,7,8-PeCDD	U	0.187	pg/g	0.187	4.82
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.233	pg/g	0.233	4.82
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.216	pg/g	0.216	4.82
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.23	pg/g	0.230	4.82
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	3.71	pg/g	0.438	4.82
3268-87-9	1,2,3,4,6,7,8,9-OCDD		37.7	pg/g	0.417	9.65
51207-31-9	2,3,7,8-TCDF	BJ	0.293	pg/g	0.278	0.965
57117-41-6	1,2,3,7,8-PeCDF	U	0.162	pg/g	0.162	4.82
57117-31-4	2,3,4,7,8-PeCDF	U	0.145	pg/g	0.145	4.82
70648-26-9	1,2,3,4,7,8-HxCDF	U	0.139	pg/g	0.139	4.82
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.146	pg/g	0.146	4.82
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.154	pg/g	0.154	4.82
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.19	pg/g	0.190	4.82
67562-39-4	1,2,3,4,6,7,8-HpCDF	BJ	1.24	pg/g	0.130	4.82
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.174	pg/g	0.174	4.82
39001-02-0	1,2,3,4,6,7,8,9-OCDF	BJ	3.74	pg/g	0.446	9.65
41903-57-5	Total TeCDD	U	0.199	pg/g	0.199	0.965
36088-22-9	Total PeCDD	U	0.187	pg/g	0.187	4.82
34465-46-8	Total HxCDD	BJ	1.02	pg/g	0.216	4.82
37871-00-4	Total HpCDD	J	7.11	pg/g	0.438	4.82
30402-14-3	Total TeCDF	BJ	0.604	pg/g	0.278	0.965
30402-15-4	Total PeCDF	BJK	0.612	pg/g	0.104	4.82
55684-94-1	Total HxCDF	BJK	1.45	pg/g	0.139	4.82
38998-75-3	Total HpCDF	J	4.62	pg/g	0.130	4.82
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.0913	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.375	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		160	193	pg/g	83.1	(25%-164%)
13C-1,2,3,7,8-PeCDD		184	193	pg/g	95.3	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		169	193	pg/g	87.4	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		146	193	pg/g	75.5	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		196	193	pg/g	102	(23%-140%)
13C-OCDD		404	386	pg/g	105	(17%-157%)
13C-2,3,7,8-TCDF		151	193	pg/g	78.5	(24%-169%)
13C-1,2,3,7,8-PeCDF		176	193	pg/g	91.1	(24%-185%)
13C-2,3,4,7,8-PeCDF		176	193	pg/g	91.0	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		158	193	pg/g	81.7	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		138	193	pg/g	71.3	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		147	193	pg/g	76.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		166	193	pg/g	85.8	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469007**	**Date Collected:**	**08/28/2019 11:55**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**28.8**
Client ID:	**J6-SC1b-80to90-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 07:53**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-11**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**14.56 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		164	193	pg/g	84.9	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		197	193	pg/g	102	(26%-138%)
37Cl-2,3,7,8-TCDD		18.9	19.3	pg/g	97.7	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469008**	**Date Collected:**	**08/28/2019 12:00**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**31**
Client ID:	**J6-SC1b-90to100-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 08:42**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-12**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**14.83 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.33	pg/g	0.330	0.977
40321-76-4	1,2,3,7,8-PeCDD	U	0.282	pg/g	0.282	4.89
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.282	pg/g	0.282	4.89
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.287	pg/g	0.287	4.89
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.291	pg/g	0.291	4.89
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	0.569	pg/g	0.569	4.89
3268-87-9	1,2,3,4,6,7,8,9-OCDD	U	0.833	pg/g	0.833	9.77
51207-31-9	2,3,7,8-TCDF	U	0.573	pg/g	0.573	0.977
57117-41-6	1,2,3,7,8-PeCDF	U	0.199	pg/g	0.199	4.89
57117-31-4	2,3,4,7,8-PeCDF	U	0.191	pg/g	0.191	4.89
70648-26-9	1,2,3,4,7,8-HxCDF	U	0.213	pg/g	0.213	4.89
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.219	pg/g	0.219	4.89
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.227	pg/g	0.227	4.89
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.332	pg/g	0.332	4.89
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	0.297	pg/g	0.297	4.89
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.452	pg/g	0.452	4.89
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	1.14	pg/g	1.14	9.77
41903-57-5	Total TeCDD	U	0.33	pg/g	0.330	0.977
36088-22-9	Total PeCDD	U	0.282	pg/g	0.282	4.89
34465-46-8	Total HxCDD	U	0.282	pg/g	0.282	4.89
37871-00-4	Total HpCDD	U	0.569	pg/g	0.569	4.89
30402-14-3	Total TeCDF	U	0.573	pg/g	0.573	0.977
30402-15-4	Total PeCDF	U	0.191	pg/g	0.191	4.89
55684-94-1	Total HxCDF	U	0.213	pg/g	0.213	4.89
38998-75-3	Total HpCDF	U	0.297	pg/g	0.297	4.89
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.00	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.466	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		149	195	pg/g	76.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		173	195	pg/g	88.7	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		166	195	pg/g	85.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		160	195	pg/g	81.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		196	195	pg/g	100	(23%-140%)
13C-OCDD		395	391	pg/g	101	(17%-157%)
13C-2,3,7,8-TCDF		142	195	pg/g	72.8	(24%-169%)
13C-1,2,3,7,8-PeCDF		163	195	pg/g	83.5	(24%-185%)
13C-2,3,4,7,8-PeCDF		162	195	pg/g	82.9	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		163	195	pg/g	83.2	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		151	195	pg/g	77.4	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		155	195	pg/g	79.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		160	195	pg/g	81.8	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469008**	**Date Collected:**	**08/28/2019 12:00**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**31**
Client ID:	**J6-SC1b-90to100-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 08:42**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-12**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**14.83 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		168	195	pg/g	85.8	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		195	195	pg/g	99.5	(26%-138%)
37Cl-2,3,7,8-TCDD		17.6	19.5	pg/g	90.2	(35%-197%)

Comments:

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469009**	**Date Collected:**	**08/28/2019 12:05**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**30.5**
Client ID:	**J6-SC1b-100to110-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 09:56**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-3**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**15.58 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0979	pg/g	0.0979	0.924
40321-76-4	1,2,3,7,8-PeCDD	U	0.114	pg/g	0.114	4.62
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.116	pg/g	0.116	4.62
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.112	pg/g	0.112	4.62
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.116	pg/g	0.116	4.62
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	0.246	pg/g	0.246	4.62
3268-87-9	1,2,3,4,6,7,8,9-OCDD	BJ	0.722	pg/g	0.578	9.24
51207-31-9	2,3,7,8-TCDF	BJ	0.301	pg/g	0.170	0.924
57117-41-6	1,2,3,7,8-PeCDF	U	0.0903	pg/g	0.0903	4.62
57117-31-4	2,3,4,7,8-PeCDF	U	0.0792	pg/g	0.0792	4.62
70648-26-9	1,2,3,4,7,8-HxCDF	U	0.0901	pg/g	0.0901	4.62
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.0981	pg/g	0.0981	4.62
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.0997	pg/g	0.0997	4.62
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.151	pg/g	0.151	4.62
67562-39-4	1,2,3,4,6,7,8-HpCDF	BJ	0.111	pg/g	0.110	4.62
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.188	pg/g	0.188	4.62
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	0.495	pg/g	0.495	9.24
41903-57-5	Total TeCDD	U	0.0979	pg/g	0.0979	0.924
36088-22-9	Total PeCDD	U	0.114	pg/g	0.114	4.62
34465-46-8	Total HxCDD	U	0.112	pg/g	0.112	4.62
37871-00-4	Total HpCDD	U	0.246	pg/g	0.246	4.62
30402-14-3	Total TeCDF	BJ	0.519	pg/g	0.170	0.924
30402-15-4	Total PeCDF	U	0.0792	pg/g	0.0792	4.62
55684-94-1	Total HxCDF	U	0.0901	pg/g	0.0901	4.62
38998-75-3	Total HpCDF	BJ	0.111	pg/g	0.110	4.62
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.0314	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.192	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		149	185	pg/g	80.5	(25%-164%)
13C-1,2,3,7,8-PeCDD		141	185	pg/g	76.2	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		145	185	pg/g	78.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		158	185	pg/g	85.7	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		154	185	pg/g	83.2	(23%-140%)
13C-OCDD		229	369	pg/g	61.9	(17%-157%)
13C-2,3,7,8-TCDF		137	185	pg/g	73.9	(24%-169%)
13C-1,2,3,7,8-PeCDF		137	185	pg/g	74.3	(24%-185%)
13C-2,3,4,7,8-PeCDF		135	185	pg/g	73.3	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		153	185	pg/g	82.7	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		149	185	pg/g	80.7	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		147	185	pg/g	79.5	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		145	185	pg/g	78.7	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469009**	**Date Collected:**	**08/28/2019 12:05**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**30.5**
Client ID:	**J6-SC1b-100to110-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 09:56**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-3**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**15.58 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		151	185	pg/g	81.6	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		145	185	pg/g	78.4	(26%-138%)
37Cl-2,3,7,8-TCDD		16.9	18.5	pg/g	91.3	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**

J **Value is estimated**

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469010**	**Date Collected:**	**08/28/2019 12:10**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**26.1**
Client ID:	**J6-SC1b-110to120-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 10:44**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-4**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**15.22 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0786	pg/g	0.0786	0.889
40321-76-4	1,2,3,7,8-PeCDD	U	0.0672	pg/g	0.0672	4.44
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.086	pg/g	0.086	4.44
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.0775	pg/g	0.0775	4.44
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.0827	pg/g	0.0827	4.44
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	0.203	pg/g	0.203	4.44
3268-87-9	1,2,3,4,6,7,8,9-OCDD	BJ	0.731	pg/g	0.327	8.89
51207-31-9	2,3,7,8-TCDF	BJ	0.245	pg/g	0.116	0.889
57117-41-6	1,2,3,7,8-PeCDF	U	0.0731	pg/g	0.0731	4.44
57117-31-4	2,3,4,7,8-PeCDF	U	0.0629	pg/g	0.0629	4.44
70648-26-9	1,2,3,4,7,8-HxCDF	U	0.064	pg/g	0.064	4.44
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.0652	pg/g	0.0652	4.44
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.0699	pg/g	0.0699	4.44
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.112	pg/g	0.112	4.44
67562-39-4	1,2,3,4,6,7,8-HpCDF	BJ	0.0978	pg/g	0.0777	4.44
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.132	pg/g	0.132	4.44
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	0.368	pg/g	0.368	8.89
41903-57-5	Total TeCDD	U	0.0786	pg/g	0.0786	0.889
36088-22-9	Total PeCDD	U	0.0672	pg/g	0.0672	4.44
34465-46-8	Total HxCDD	U	0.0775	pg/g	0.0775	4.44
37871-00-4	Total HpCDD	U	0.203	pg/g	0.203	4.44
30402-14-3	Total TeCDF	BJ	0.478	pg/g	0.116	0.889
30402-15-4	Total PeCDF	U	0.0556	pg/g	0.0556	4.44
55684-94-1	Total HxCDF	U	0.064	pg/g	0.064	4.44
38998-75-3	Total HpCDF	BJ	0.0978	pg/g	0.0777	4.44
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.0257	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.139	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		141	178	pg/g	79.5	(25%-164%)
13C-1,2,3,7,8-PeCDD		131	178	pg/g	73.5	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		132	178	pg/g	74.4	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		142	178	pg/g	79.6	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		143	178	pg/g	80.2	(23%-140%)
13C-OCDD		220	356	pg/g	61.9	(17%-157%)
13C-2,3,7,8-TCDF		124	178	pg/g	69.9	(24%-169%)
13C-1,2,3,7,8-PeCDF		122	178	pg/g	68.9	(24%-185%)
13C-2,3,4,7,8-PeCDF		123	178	pg/g	69.4	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		135	178	pg/g	75.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		140	178	pg/g	78.8	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		134	178	pg/g	75.6	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		132	178	pg/g	74.5	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469010**	**Date Collected:**	**08/28/2019 12:10**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**26.1**
Client ID:	**J6-SC1b-110to120-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 10:44**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-4**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**15.22 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		141	178	pg/g	79.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		134	178	pg/g	75.6	(26%-138%)
37Cl-2,3,7,8-TCDD		16.8	17.8	pg/g	94.5	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**

J **Value is estimated**

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469013**	**Date Collected:**	**08/28/2019 20:15**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**40**
Client ID:	**H3-SC1b-20to30-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/25/2019 02:45**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A24SEP19A_3-4**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**17.47 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF	B	1.62	pg/g	0.557	0.953

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

B The target analyte was detected in the associated blank.
E Value is estimated - Concentration of the target analyte exceeds the instrument calibration range
J Value is estimated
K Estimated Maximum Possible Concentration
Q Quantitative Interference; value is estimated
U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469013**	**Date Collected:**	**08/28/2019 20:15**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**40**
Client ID:	**H3-SC1b-20to30-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 11:32**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-5**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**17.47 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	0.761	pg/g	0.223	0.953
40321-76-4	1,2,3,7,8-PeCDD	JK	1.84	pg/g	0.236	4.77
39227-28-6	1,2,3,4,7,8-HxCDD	J	2.51	pg/g	0.471	4.77
57653-85-7	1,2,3,6,7,8-HxCDD		13.6	pg/g	0.460	4.77
19408-74-3	1,2,3,7,8,9-HxCDD		5.97	pg/g	0.475	4.77
35822-46-9	1,2,3,4,6,7,8-HpCDD		315	pg/g	1.13	4.77
3268-87-9	1,2,3,4,6,7,8,9-OCDD	E	3870	pg/g	2.35	9.53
51207-31-9	2,3,7,8-TCDF	B	1.66	pg/g	0.471	0.953
57117-41-6	1,2,3,7,8-PeCDF	J	1.95	pg/g	0.275	4.77
57117-31-4	2,3,4,7,8-PeCDF		10.7	pg/g	0.238	4.77
70648-26-9	1,2,3,4,7,8-HxCDF		10.4	pg/g	0.328	4.77
57117-44-9	1,2,3,6,7,8-HxCDF		11.6	pg/g	0.345	4.77
60851-34-5	2,3,4,6,7,8-HxCDF		11.2	pg/g	0.336	4.77
72918-21-9	1,2,3,7,8,9-HxCDF	J	2.32	pg/g	0.454	4.77
67562-39-4	1,2,3,4,6,7,8-HpCDF		230	pg/g	0.608	4.77
55673-89-7	1,2,3,4,7,8,9-HpCDF		8.92	pg/g	0.778	4.77
39001-02-0	1,2,3,4,6,7,8,9-OCDF		408	pg/g	1.03	9.53
41903-57-5	Total TeCDD	JK	24.5	pg/g	0.223	0.953
36088-22-9	Total PeCDD	JKQ	31.3	pg/g	0.236	4.77
34465-46-8	Total HxCDD	J	106	pg/g	0.460	4.77
37871-00-4	Total HpCDD		697	pg/g	1.13	4.77
30402-14-3	Total TeCDF	JK	69.5	pg/g	0.471	0.953
30402-15-4	Total PeCDF	JKQ	210	pg/g	0.130	4.77
55684-94-1	Total HxCDF	J	276	pg/g	0.328	4.77
38998-75-3	Total HpCDF	JK	621	pg/g	0.608	4.77
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		18.6	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		18.6	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		122	191	pg/g	64.2	(25%-164%)
13C-1,2,3,7,8-PeCDD		121	191	pg/g	63.5	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		164	191	pg/g	86.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		148	191	pg/g	77.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		197	191	pg/g	103	(23%-140%)
13C-OCDD		412	381	pg/g	108	(17%-157%)
13C-2,3,7,8-TCDF		131	191	pg/g	68.7	(24%-169%)
13C-1,2,3,7,8-PeCDF		115	191	pg/g	60.3	(24%-185%)
13C-2,3,4,7,8-PeCDF		112	191	pg/g	58.5	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		166	191	pg/g	87.1	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		135	191	pg/g	70.8	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		145	191	pg/g	76.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		126	191	pg/g	66.0	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469013**	**Date Collected:**	**08/28/2019 20:15**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**40**
Client ID:	**H3-SC1b-20to30-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 11:32**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-5**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**17.47 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		177	191	pg/g	93.1	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		214	191	pg/g	112	(26%-138%)
37Cl-2,3,7,8-TCDD		13.6	19.1	pg/g	71.3	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
E **Value is estimated - Concentration of the target analyte exceeds the instrument calibration range**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
Q **Quantitative Interference; value is estimated**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469014**	**Date Collected:**	**08/29/2019 08:25**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**26.7**
Client ID:	**H3-SC1b-30to40-82919**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 00:38**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-2**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**14.09 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.158	pg/g	0.158	0.969
40321-76-4	1,2,3,7,8-PeCDD	U	0.161	pg/g	0.161	4.84
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.225	pg/g	0.225	4.84
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.229	pg/g	0.229	4.84
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.233	pg/g	0.233	4.84
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	4.29	pg/g	0.372	4.84
3268-87-9	1,2,3,4,6,7,8,9-OCDD		52.6	pg/g	0.740	9.69
51207-31-9	2,3,7,8-TCDF	BJ	0.475	pg/g	0.347	0.969
57117-41-6	1,2,3,7,8-PeCDF	U	0.202	pg/g	0.202	4.84
57117-31-4	2,3,4,7,8-PeCDF	BJK	0.378	pg/g	0.183	4.84
70648-26-9	1,2,3,4,7,8-HxCDF	BJK	0.316	pg/g	0.181	4.84
57117-44-9	1,2,3,6,7,8-HxCDF	BJ	0.649	pg/g	0.188	4.84
60851-34-5	2,3,4,6,7,8-HxCDF	BJ	0.382	pg/g	0.188	4.84
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.242	pg/g	0.242	4.84
67562-39-4	1,2,3,4,6,7,8-HpCDF		10.8	pg/g	0.345	4.84
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.455	pg/g	0.455	4.84
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	6.35	pg/g	0.661	9.69
41903-57-5	Total TeCDD	BJK	0.262	pg/g	0.158	0.969
36088-22-9	Total PeCDD	JK	0.469	pg/g	0.161	4.84
34465-46-8	Total HxCDD	BJ	1.82	pg/g	0.225	4.84
37871-00-4	Total HpCDD	J	9.69	pg/g	0.372	4.84
30402-14-3	Total TeCDF	JK	2.51	pg/g	0.347	0.969
30402-15-4	Total PeCDF	JK	5.94	pg/g	0.105	4.84
55684-94-1	Total HxCDF	JK	8.96	pg/g	0.181	4.84
38998-75-3	Total HpCDF		18.7	pg/g	0.345	4.84
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.464	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.675	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		137	194	pg/g	70.7	(25%-164%)
13C-1,2,3,7,8-PeCDD		159	194	pg/g	82.2	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		143	194	pg/g	74.0	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		128	194	pg/g	65.8	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		163	194	pg/g	83.9	(23%-140%)
13C-OCDD		328	388	pg/g	84.7	(17%-157%)
13C-2,3,7,8-TCDF		126	194	pg/g	64.8	(24%-169%)
13C-1,2,3,7,8-PeCDF		150	194	pg/g	77.6	(24%-185%)
13C-2,3,4,7,8-PeCDF		148	194	pg/g	76.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		130	194	pg/g	67.2	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		124	194	pg/g	64.1	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		127	194	pg/g	65.5	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		143	194	pg/g	73.9	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469014**	**Date Collected:**	**08/29/2019 08:25**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**26.7**
Client ID:	**H3-SC1b-30to40-82919**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 00:38**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-2**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**14.09 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		138	194	pg/g	71.0	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		162	194	pg/g	83.6	(26%-138%)
37Cl-2,3,7,8-TCDD		18.0	19.4	pg/g	92.6	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469015**	**Date Collected:**	**08/29/2019 08:30**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**25.9**
Client ID:	**H3-SC1b-40to50-82919**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 13:09**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-7**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**14.46 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0962	pg/g	0.0962	0.934
40321-76-4	1,2,3,7,8-PeCDD	JK	0.325	pg/g	0.108	4.67
39227-28-6	1,2,3,4,7,8-HxCDD	J	0.261	pg/g	0.132	4.67
57653-85-7	1,2,3,6,7,8-HxCDD	J	2.08	pg/g	0.134	4.67
19408-74-3	1,2,3,7,8,9-HxCDD	BJ	0.859	pg/g	0.136	4.67
35822-46-9	1,2,3,4,6,7,8-HpCDD		34.2	pg/g	0.325	4.67
3268-87-9	1,2,3,4,6,7,8,9-OCDD		559	pg/g	1.00	9.34
51207-31-9	2,3,7,8-TCDF	BJ	0.803	pg/g	0.166	0.934
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.562	pg/g	0.0831	4.67
57117-31-4	2,3,4,7,8-PeCDF	J	2.10	pg/g	0.0739	4.67
70648-26-9	1,2,3,4,7,8-HxCDF	J	1.72	pg/g	0.132	4.67
57117-44-9	1,2,3,6,7,8-HxCDF		6.08	pg/g	0.141	4.67
60851-34-5	2,3,4,6,7,8-HxCDF	J	2.88	pg/g	0.136	4.67
72918-21-9	1,2,3,7,8,9-HxCDF	BJ	0.527	pg/g	0.173	4.67
67562-39-4	1,2,3,4,6,7,8-HpCDF		94.2	pg/g	0.218	4.67
55673-89-7	1,2,3,4,7,8,9-HpCDF	BJ	1.18	pg/g	0.310	4.67
39001-02-0	1,2,3,4,6,7,8,9-OCDF		45.4	pg/g	0.349	9.34
41903-57-5	Total TeCDD	JK	1.61	pg/g	0.0962	0.934
36088-22-9	Total PeCDD	JKQ	4.90	pg/g	0.108	4.67
34465-46-8	Total HxCDD	J	17.4	pg/g	0.132	4.67
37871-00-4	Total HpCDD		87.7	pg/g	0.325	4.67
30402-14-3	Total TeCDF	JK	14.9	pg/g	0.166	0.934
30402-15-4	Total PeCDF	JKQ	50.2	pg/g	0.0457	4.67
55684-94-1	Total HxCDF	J	75.2	pg/g	0.132	4.67
38998-75-3	Total HpCDF	J	170	pg/g	0.218	4.67
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		3.97	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		4.02	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		131	187	pg/g	70.4	(25%-164%)
13C-1,2,3,7,8-PeCDD		115	187	pg/g	61.4	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		154	187	pg/g	82.7	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		137	187	pg/g	73.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		186	187	pg/g	99.9	(23%-140%)
13C-OCDD		347	373	pg/g	93.0	(17%-157%)
13C-2,3,7,8-TCDF		134	187	pg/g	72.0	(24%-169%)
13C-1,2,3,7,8-PeCDF		108	187	pg/g	57.7	(24%-185%)
13C-2,3,4,7,8-PeCDF		110	187	pg/g	58.8	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		148	187	pg/g	79.5	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		131	187	pg/g	70.0	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		136	187	pg/g	72.8	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		136	187	pg/g	72.7	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469015**	**Date Collected:**	**08/29/2019 08:30**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**25.9**
Client ID:	**H3-SC1b-40to50-82919**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 13:09**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-7**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**14.46 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		163	187	pg/g	87.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		187	187	pg/g	100	(26%-138%)
37Cl-2,3,7,8-TCDD		15.4	18.7	pg/g	82.7	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
Q **Quantitative Interference; value is estimated**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469016**	**Date Collected:**	**08/29/2019 08:35**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**29.8**
Client ID:	**H3-SC1b-50to60-82919**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 13:58**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-8**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**15.36 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0716	pg/g	0.0716	0.927
40321-76-4	1,2,3,7,8-PeCDD	U	0.0736	pg/g	0.0736	4.64
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.0979	pg/g	0.0979	4.64
57653-85-7	1,2,3,6,7,8-HxCDD	BJK	0.217	pg/g	0.095	4.64
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.0985	pg/g	0.0985	4.64
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	1.96	pg/g	0.200	4.64
3268-87-9	1,2,3,4,6,7,8,9-OCDD		24.9	pg/g	0.363	9.27
51207-31-9	2,3,7,8-TCDF	BJ	0.282	pg/g	0.131	0.927
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.113	pg/g	0.0671	4.64
57117-31-4	2,3,4,7,8-PeCDF	BJ	0.213	pg/g	0.0593	4.64
70648-26-9	1,2,3,4,7,8-HxCDF	BJ	0.202	pg/g	0.064	4.64
57117-44-9	1,2,3,6,7,8-HxCDF	BJ	0.655	pg/g	0.0666	4.64
60851-34-5	2,3,4,6,7,8-HxCDF	BJ	0.319	pg/g	0.0686	4.64
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.089	pg/g	0.089	4.64
67562-39-4	1,2,3,4,6,7,8-HpCDF		10.3	pg/g	0.110	4.64
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.174	pg/g	0.174	4.64
39001-02-0	1,2,3,4,6,7,8,9-OCDF	BJ	3.05	pg/g	0.265	9.27
41903-57-5	Total TeCDD	BJK	0.167	pg/g	0.0716	0.927
36088-22-9	Total PeCDD	JK	0.395	pg/g	0.0736	4.64
34465-46-8	Total HxCDD	BJK	1.60	pg/g	0.095	4.64
37871-00-4	Total HpCDD	J	4.94	pg/g	0.200	4.64
30402-14-3	Total TeCDF	JK	2.07	pg/g	0.131	0.927
30402-15-4	Total PeCDF	JK	6.06	pg/g	0.0428	4.64
55684-94-1	Total HxCDF	J	8.49	pg/g	0.064	4.64
38998-75-3	Total HpCDF		16.7	pg/g	0.110	4.64
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.366	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.454	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		136	185	pg/g	73.2	(25%-164%)
13C-1,2,3,7,8-PeCDD		126	185	pg/g	68.0	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		152	185	pg/g	81.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		132	185	pg/g	71.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		167	185	pg/g	89.9	(23%-140%)
13C-OCDD		283	371	pg/g	76.3	(17%-157%)
13C-2,3,7,8-TCDF		127	185	pg/g	68.3	(24%-169%)
13C-1,2,3,7,8-PeCDF		117	185	pg/g	62.9	(24%-185%)
13C-2,3,4,7,8-PeCDF		118	185	pg/g	63.4	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		145	185	pg/g	78.1	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		128	185	pg/g	69.3	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		132	185	pg/g	71.1	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		142	185	pg/g	76.7	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469016**	**Date Collected:**	**08/29/2019 08:35**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**29.8**
Client ID:	**H3-SC1b-50to60-82919**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 13:58**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-8**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**15.36 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		151	185	pg/g	81.5	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		163	185	pg/g	88.1	(26%-138%)
37Cl-2,3,7,8-TCDD		16.3	18.5	pg/g	88.0	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469017**	**Date Collected:**	**08/29/2019 09:00**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**36.1**
Client ID:	**H3-SC1b-60to70-82919**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 14:46**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-9**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**16.48 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0733	pg/g	0.0733	0.949
40321-76-4	1,2,3,7,8-PeCDD	J	0.271	pg/g	0.108	4.75
39227-28-6	1,2,3,4,7,8-HxCDD	JK	0.178	pg/g	0.118	4.75
57653-85-7	1,2,3,6,7,8-HxCDD	J	1.22	pg/g	0.118	4.75
19408-74-3	1,2,3,7,8,9-HxCDD	BJK	0.509	pg/g	0.120	4.75
35822-46-9	1,2,3,4,6,7,8-HpCDD		24.1	pg/g	0.321	4.75
3268-87-9	1,2,3,4,6,7,8,9-OCDD		373	pg/g	0.944	9.49
51207-31-9	2,3,7,8-TCDF	BJK	0.389	pg/g	0.143	0.949
57117-41-6	1,2,3,7,8-PeCDF	BJK	0.253	pg/g	0.0706	4.75
57117-31-4	2,3,4,7,8-PeCDF	J	1.13	pg/g	0.0632	4.75
70648-26-9	1,2,3,4,7,8-HxCDF	BJ	0.862	pg/g	0.0883	4.75
57117-44-9	1,2,3,6,7,8-HxCDF	J	2.16	pg/g	0.0966	4.75
60851-34-5	2,3,4,6,7,8-HxCDF	J	1.41	pg/g	0.0987	4.75
72918-21-9	1,2,3,7,8,9-HxCDF	BJK	0.247	pg/g	0.119	4.75
67562-39-4	1,2,3,4,6,7,8-HpCDF		43.6	pg/g	0.183	4.75
55673-89-7	1,2,3,4,7,8,9-HpCDF	BJ	0.592	pg/g	0.281	4.75
39001-02-0	1,2,3,4,6,7,8,9-OCDF		28.6	pg/g	0.380	9.49
41903-57-5	Total TeCDD	BJK	0.625	pg/g	0.0733	0.949
36088-22-9	Total PeCDD	JKQ	2.73	pg/g	0.108	4.75
34465-46-8	Total HxCDD	JK	11.3	pg/g	0.118	4.75
37871-00-4	Total HpCDD		62.6	pg/g	0.321	4.75
30402-14-3	Total TeCDF	JK	8.61	pg/g	0.143	0.949
30402-15-4	Total PeCDF	JKQ	28.7	pg/g	0.0454	4.75
55684-94-1	Total HxCDF	JK	35.8	pg/g	0.0883	4.75
38998-75-3	Total HpCDF	J	81.3	pg/g	0.183	4.75
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		2.12	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		2.16	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		131	190	pg/g	69.2	(25%-164%)
13C-1,2,3,7,8-PeCDD		121	190	pg/g	63.9	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		143	190	pg/g	75.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		132	190	pg/g	69.5	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		163	190	pg/g	85.8	(23%-140%)
13C-OCDD		283	380	pg/g	74.6	(17%-157%)
13C-2,3,7,8-TCDF		125	190	pg/g	65.7	(24%-169%)
13C-1,2,3,7,8-PeCDF		114	190	pg/g	59.9	(24%-185%)
13C-2,3,4,7,8-PeCDF		115	190	pg/g	60.4	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		139	190	pg/g	73.4	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		124	190	pg/g	65.6	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		129	190	pg/g	68.1	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		129	190	pg/g	68.0	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469017**	**Date Collected:**	**08/29/2019 09:00**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**36.1**
Client ID:	**H3-SC1b-60to70-82919**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 14:46**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-9**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**16.48 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		147	190	pg/g	77.3	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		164	190	pg/g	86.3	(26%-138%)
37Cl-2,3,7,8-TCDD		15.5	19.0	pg/g	81.5	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
Q **Quantitative Interference; value is estimated**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469018**	**Date Collected:**	**08/29/2019 09:05**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**48.9**
Client ID:	**H3-SC1b-70to80-82919**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 15:35**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-10**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**20.11 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0882	pg/g	0.0882	0.974
40321-76-4	1,2,3,7,8-PeCDD	JK	0.234	pg/g	0.169	4.87
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.163	pg/g	0.163	4.87
57653-85-7	1,2,3,6,7,8-HxCDD	BJK	0.386	pg/g	0.163	4.87
19408-74-3	1,2,3,7,8,9-HxCDD	BJK	0.456	pg/g	0.167	4.87
35822-46-9	1,2,3,4,6,7,8-HpCDD		5.54	pg/g	0.208	4.87
3268-87-9	1,2,3,4,6,7,8,9-OCDD		57.1	pg/g	0.580	9.74
51207-31-9	2,3,7,8-TCDF	BJK	0.732	pg/g	0.155	0.974
57117-41-6	1,2,3,7,8-PeCDF	BJK	0.335	pg/g	0.191	4.87
57117-31-4	2,3,4,7,8-PeCDF	BJK	0.614	pg/g	0.163	4.87
70648-26-9	1,2,3,4,7,8-HxCDF	BJK	0.563	pg/g	0.115	4.87
57117-44-9	1,2,3,6,7,8-HxCDF	BJ	0.802	pg/g	0.123	4.87
60851-34-5	2,3,4,6,7,8-HxCDF	BJ	0.540	pg/g	0.116	4.87
72918-21-9	1,2,3,7,8,9-HxCDF	QU	0.163	pg/g	0.163	4.87
67562-39-4	1,2,3,4,6,7,8-HpCDF		9.08	pg/g	0.130	4.87
55673-89-7	1,2,3,4,7,8,9-HpCDF	BJ	0.356	pg/g	0.182	4.87
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	5.78	pg/g	0.358	9.74
41903-57-5	Total TeCDD	JK	2.35	pg/g	0.0882	0.974
36088-22-9	Total PeCDD	JKQ	2.47	pg/g	0.169	4.87
34465-46-8	Total HxCDD	JK	5.20	pg/g	0.163	4.87
37871-00-4	Total HpCDD		14.0	pg/g	0.208	4.87
30402-14-3	Total TeCDF	JK	9.53	pg/g	0.155	0.974
30402-15-4	Total PeCDF	JKQ	9.93	pg/g	0.0508	4.87
55684-94-1	Total HxCDF	JKQ	9.91	pg/g	0.115	4.87
38998-75-3	Total HpCDF	J	17.3	pg/g	0.130	4.87
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.944	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		1.00	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		127	195	pg/g	65.4	(25%-164%)
13C-1,2,3,7,8-PeCDD		109	195	pg/g	56.2	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		165	195	pg/g	85.0	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		142	195	pg/g	73.1	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		185	195	pg/g	95.1	(23%-140%)
13C-OCDD		349	390	pg/g	89.6	(17%-157%)
13C-2,3,7,8-TCDF		131	195	pg/g	67.1	(24%-169%)
13C-1,2,3,7,8-PeCDF		107	195	pg/g	54.7	(24%-185%)
13C-2,3,4,7,8-PeCDF		105	195	pg/g	53.8	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		157	195	pg/g	80.5	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		128	195	pg/g	65.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		144	195	pg/g	74.1	(28%-136%)
13C-1,2,3,7,8,9-HxCDF	Q	115	195	pg/g	59.0	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469018**	**Date Collected:**	**08/29/2019 09:05**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**48.9**
Client ID:	**H3-SC1b-70to80-82919**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 15:35**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-10**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**20.11 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		166	195	pg/g	85.4	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		192	195	pg/g	98.8	(26%-138%)
37Cl-2,3,7,8-TCDD		13.9	19.5	pg/g	71.3	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
Q **Quantitative Interference; value is estimated**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469019**	**Date Collected:**	**08/29/2019 09:30**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**43.1**
Client ID:	**H3-SC1b-80to90-82919**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 16:23**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-11**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**18.65 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0673	pg/g	0.0673	0.943
40321-76-4	1,2,3,7,8-PeCDD	U	0.109	pg/g	0.109	4.71
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.126	pg/g	0.126	4.71
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.131	pg/g	0.131	4.71
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.132	pg/g	0.132	4.71
35822-46-9	1,2,3,4,6,7,8-HpCDD	BJ	1.04	pg/g	0.140	4.71
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	8.95	pg/g	0.341	9.43
51207-31-9	2,3,7,8-TCDF	BJ	0.413	pg/g	0.106	0.943
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.117	pg/g	0.083	4.71
57117-31-4	2,3,4,7,8-PeCDF	BJK	0.111	pg/g	0.0717	4.71
70648-26-9	1,2,3,4,7,8-HxCDF	BJK	0.141	pg/g	0.0698	4.71
57117-44-9	1,2,3,6,7,8-HxCDF	BJK	0.100	pg/g	0.0713	4.71
60851-34-5	2,3,4,6,7,8-HxCDF	BJK	0.083	pg/g	0.0753	4.71
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.0975	pg/g	0.0975	4.71
67562-39-4	1,2,3,4,6,7,8-HpCDF	BJ	0.685	pg/g	0.0734	4.71
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.115	pg/g	0.115	4.71
39001-02-0	1,2,3,4,6,7,8,9-OCDF	BJ	0.368	pg/g	0.275	9.43
41903-57-5	Total TeCDD	BJ	0.571	pg/g	0.0673	0.943
36088-22-9	Total PeCDD	JK	0.287	pg/g	0.109	4.71
34465-46-8	Total HxCDD	BJK	1.00	pg/g	0.126	4.71
37871-00-4	Total HpCDD	J	2.61	pg/g	0.140	4.71
30402-14-3	Total TeCDF	JK	1.90	pg/g	0.106	0.943
30402-15-4	Total PeCDF	BJK	0.824	pg/g	0.0455	4.71
55684-94-1	Total HxCDF	BJK	0.892	pg/g	0.0698	4.71
38998-75-3	Total HpCDF	BJ	1.19	pg/g	0.0734	4.71
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.131	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.244	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		135	189	pg/g	71.7	(25%-164%)
13C-1,2,3,7,8-PeCDD		117	189	pg/g	62.3	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		152	189	pg/g	80.5	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		145	189	pg/g	77.1	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		179	189	pg/g	94.6	(23%-140%)
13C-OCDD		313	377	pg/g	82.9	(17%-157%)
13C-2,3,7,8-TCDF		133	189	pg/g	70.3	(24%-169%)
13C-1,2,3,7,8-PeCDF		107	189	pg/g	56.8	(24%-185%)
13C-2,3,4,7,8-PeCDF		111	189	pg/g	58.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		147	189	pg/g	78.2	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		138	189	pg/g	72.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		139	189	pg/g	73.7	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		142	189	pg/g	75.2	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469019**	**Date Collected:**	**08/29/2019 09:30**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**43.1**
Client ID:	**H3-SC1b-80to90-82919**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 16:23**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-11**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**18.65 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		159	189	pg/g	84.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		176	189	pg/g	93.4	(26%-138%)
37Cl-2,3,7,8-TCDD		16.0	18.9	pg/g	84.8	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469020**	**Date Collected:**	**08/29/2019 09:35**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**36.6**
Client ID:	**H3-SC1b-90to100-82919**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 17:11**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-12**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**16.91 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0459	pg/g	0.0459	0.933
40321-76-4	1,2,3,7,8-PeCDD	U	0.0664	pg/g	0.0664	4.66
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.104	pg/g	0.104	4.66
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.102	pg/g	0.102	4.66
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.105	pg/g	0.105	4.66
35822-46-9	1,2,3,4,6,7,8-HpCDD	BJK	0.496	pg/g	0.150	4.66
3268-87-9	1,2,3,4,6,7,8,9-OCDD	BJ	3.59	pg/g	0.276	9.33
51207-31-9	2,3,7,8-TCDF	BJ	0.405	pg/g	0.119	0.933
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.097	pg/g	0.0638	4.66
57117-31-4	2,3,4,7,8-PeCDF	U	0.0567	pg/g	0.0567	4.66
70648-26-9	1,2,3,4,7,8-HxCDF	BJ	0.0485	pg/g	0.0405	4.66
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.0429	pg/g	0.0429	4.66
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.0448	pg/g	0.0448	4.66
72918-21-9	1,2,3,7,8,9-HxCDF	BJ	0.0653	pg/g	0.061	4.66
67562-39-4	1,2,3,4,6,7,8-HpCDF	BJ	0.127	pg/g	0.0543	4.66
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.0852	pg/g	0.0852	4.66
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	0.214	pg/g	0.214	9.33
41903-57-5	Total TeCDD	BJK	0.367	pg/g	0.0459	0.933
36088-22-9	Total PeCDD	JK	0.0746	pg/g	0.0664	4.66
34465-46-8	Total HxCDD	BJK	0.636	pg/g	0.102	4.66
37871-00-4	Total HpCDD	BJK	1.23	pg/g	0.150	4.66
30402-14-3	Total TeCDF	BJK	0.854	pg/g	0.119	0.933
30402-15-4	Total PeCDF	BJK	0.356	pg/g	0.0311	4.66
55684-94-1	Total HxCDF	BJ	0.201	pg/g	0.0405	4.66
38998-75-3	Total HpCDF	BJ	0.127	pg/g	0.0543	4.66
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.0621	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.147	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		150	187	pg/g	80.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		134	187	pg/g	71.8	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		166	187	pg/g	88.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		150	187	pg/g	80.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		178	187	pg/g	95.2	(23%-140%)
13C-OCDD		297	373	pg/g	79.7	(17%-157%)
13C-2,3,7,8-TCDF		142	187	pg/g	76.4	(24%-169%)
13C-1,2,3,7,8-PeCDF		126	187	pg/g	67.5	(24%-185%)
13C-2,3,4,7,8-PeCDF		127	187	pg/g	68.1	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		158	187	pg/g	84.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		145	187	pg/g	77.8	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		147	187	pg/g	78.6	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		156	187	pg/g	83.5	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469020**	**Date Collected:**	**08/29/2019 09:35**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**36.6**
Client ID:	**H3-SC1b-90to100-82919**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 17:11**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-12**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**16.91 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		162	187	pg/g	87.0	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		173	187	pg/g	92.9	(26%-138%)
37Cl-2,3,7,8-TCDD		16.9	18.7	pg/g	90.6	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469021**	**Date Collected:**	**08/29/2019 09:50**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**35**
Client ID:	**H3-SC1b-100to110-82919**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 18:00**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-13**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**16.36 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0634	pg/g	0.0634	0.940
40321-76-4	1,2,3,7,8-PeCDD	U	0.0741	pg/g	0.0741	4.70
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.0784	pg/g	0.0784	4.70
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.0765	pg/g	0.0765	4.70
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.079	pg/g	0.079	4.70
35822-46-9	1,2,3,4,6,7,8-HpCDD	BJ	1.03	pg/g	0.142	4.70
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	9.18	pg/g	0.376	9.40
51207-31-9	2,3,7,8-TCDF	BJ	0.352	pg/g	0.0833	0.940
57117-41-6	1,2,3,7,8-PeCDF	BJK	0.0545	pg/g	0.0449	4.70
57117-31-4	2,3,4,7,8-PeCDF	U	0.0408	pg/g	0.0408	4.70
70648-26-9	1,2,3,4,7,8-HxCDF	U	0.0446	pg/g	0.0446	4.70
57117-44-9	1,2,3,6,7,8-HxCDF	BJ	0.047	pg/g	0.0451	4.70
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.0464	pg/g	0.0464	4.70
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.0692	pg/g	0.0692	4.70
67562-39-4	1,2,3,4,6,7,8-HpCDF	BJ	0.416	pg/g	0.0489	4.70
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.0829	pg/g	0.0829	4.70
39001-02-0	1,2,3,4,6,7,8,9-OCDF	BJ	0.323	pg/g	0.222	9.40
41903-57-5	Total TeCDD	BJ	0.284	pg/g	0.0634	0.940
36088-22-9	Total PeCDD	JK	0.299	pg/g	0.0741	4.70
34465-46-8	Total HxCDD	BJK	0.980	pg/g	0.0765	4.70
37871-00-4	Total HpCDD	J	2.73	pg/g	0.142	4.70
30402-14-3	Total TeCDF	BJK	0.893	pg/g	0.0833	0.940
30402-15-4	Total PeCDF	BJK	0.367	pg/g	0.0301	4.70
55684-94-1	Total HxCDF	BJK	0.451	pg/g	0.0446	4.70
38998-75-3	Total HpCDF	BJ	0.782	pg/g	0.0489	4.70
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.0588	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.154	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		150	188	pg/g	79.8	(25%-164%)
13C-1,2,3,7,8-PeCDD		140	188	pg/g	74.7	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		157	188	pg/g	83.3	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		147	188	pg/g	78.0	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		168	188	pg/g	89.4	(23%-140%)
13C-OCDD		263	376	pg/g	70.0	(17%-157%)
13C-2,3,7,8-TCDF		137	188	pg/g	72.6	(24%-169%)
13C-1,2,3,7,8-PeCDF		132	188	pg/g	70.2	(24%-185%)
13C-2,3,4,7,8-PeCDF		134	188	pg/g	71.1	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		150	188	pg/g	79.9	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		143	188	pg/g	75.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		142	188	pg/g	75.5	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		151	188	pg/g	80.3	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469021**	**Date Collected:**	**08/29/2019 09:50**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**35**
Client ID:	**H3-SC1b-100to110-82919**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 18:00**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-13**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**16.36 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		157	188	pg/g	83.7	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		161	188	pg/g	85.4	(26%-138%)
37Cl-2,3,7,8-TCDD		17.0	18.8	pg/g	90.5	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Quality Control Summary

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: 2006-00115_2

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12024793	LCS for batch 41745	13C-2,3,7,8-TCDD		77.4	(20%-175%)
		13C-1,2,3,7,8-PeCDD		72.2	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		73.5	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		80.0	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		74.9	(22%-166%)
		13C-OCDD		56.6	(13%-199%)
		13C-2,3,7,8-TCDF		66.7	(22%-152%)
		13C-1,2,3,7,8-PeCDF		70.1	(21%-192%)
		13C-2,3,4,7,8-PeCDF		66.5	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		75.0	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		72.4	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		70.7	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		70.7	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		70.0	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		69.8	(20%-186%)
		37Cl-2,3,7,8-TCDD		94.4	(31%-191%)
15469009	J6-SC1b-100to110-82819	13C-2,3,7,8-TCDD		80.5	(25%-164%)
		13C-1,2,3,7,8-PeCDD		76.2	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		78.8	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		85.7	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		83.2	(23%-140%)
		13C-OCDD		61.9	(17%-157%)
		13C-2,3,7,8-TCDF		73.9	(24%-169%)
		13C-1,2,3,7,8-PeCDF		74.3	(24%-185%)
		13C-2,3,4,7,8-PeCDF		73.3	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		82.7	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		80.7	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		79.5	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		78.7	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		81.6	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		78.4	(26%-138%)
		37Cl-2,3,7,8-TCDD		91.3	(35%-197%)
15469010	J6-SC1b-110to120-82819	13C-2,3,7,8-TCDD		79.5	(25%-164%)
		13C-1,2,3,7,8-PeCDD		73.5	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		74.4	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		79.6	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		80.2	(23%-140%)
		13C-OCDD		61.9	(17%-157%)
		13C-2,3,7,8-TCDF		69.9	(24%-169%)
		13C-1,2,3,7,8-PeCDF		68.9	(24%-185%)
		13C-2,3,4,7,8-PeCDF		69.4	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		75.8	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		78.8	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		75.6	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		74.5	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		79.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		75.6	(26%-138%)
		37Cl-2,3,7,8-TCDD		94.5	(35%-197%)
15469013	H3-SC1b-20to30-82819	13C-2,3,7,8-TCDD		64.2	(25%-164%)

Surrogate Recovery Report

SDG Number: 2006-00115_2

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
15469013	H3-SC1b-20to30-82819	13C-1,2,3,7,8-PeCDD		63.5	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		86.1	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		77.4	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		103	(23%-140%)
		13C-OCDD		108	(17%-157%)
		13C-2,3,7,8-TCDF		68.7	(24%-169%)
		13C-1,2,3,7,8-PeCDF		60.3	(24%-185%)
		13C-2,3,4,7,8-PeCDF		58.5	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		87.1	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		70.8	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		76.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		66.0	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		93.1	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		112	(26%-138%)
		37Cl-2,3,7,8-TCDD		71.3	(35%-197%)
15469015	H3-SC1b-40to50-82919	13C-2,3,7,8-TCDD		70.4	(25%-164%)
		13C-1,2,3,7,8-PeCDD		61.4	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		82.7	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		73.4	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		99.9	(23%-140%)
		13C-OCDD		93.0	(17%-157%)
		13C-2,3,7,8-TCDF		72.0	(24%-169%)
		13C-1,2,3,7,8-PeCDF		57.7	(24%-185%)
		13C-2,3,4,7,8-PeCDF		58.8	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		79.5	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		70.0	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		72.8	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		72.7	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		87.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		100	(26%-138%)
		37Cl-2,3,7,8-TCDD		82.7	(35%-197%)
15469016	H3-SC1b-50to60-82919	13C-2,3,7,8-TCDD		73.2	(25%-164%)
		13C-1,2,3,7,8-PeCDD		68.0	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		81.8	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		71.4	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		89.9	(23%-140%)
		13C-OCDD		76.3	(17%-157%)
		13C-2,3,7,8-TCDF		68.3	(24%-169%)
		13C-1,2,3,7,8-PeCDF		62.9	(24%-185%)
		13C-2,3,4,7,8-PeCDF		63.4	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		78.1	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		69.3	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		71.1	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		76.7	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		81.5	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		88.1	(26%-138%)
		37Cl-2,3,7,8-TCDD		88.0	(35%-197%)
15469017	H3-SC1b-60to70-82919	13C-2,3,7,8-TCDD		69.2	(25%-164%)
		13C-1,2,3,7,8-PeCDD		63.9	(25%-181%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: 2006-00115_2

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
15469017	H3-SC1b-60to70-82919	13C-1,2,3,4,7,8-HxCDD		75.1	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		69.5	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		85.8	(23%-140%)
		13C-OCDD		74.6	(17%-157%)
		13C-2,3,7,8-TCDF		65.7	(24%-169%)
		13C-1,2,3,7,8-PeCDF		59.9	(24%-185%)
		13C-2,3,4,7,8-PeCDF		60.4	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		73.4	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		65.6	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		68.1	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		68.0	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		77.3	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		86.3	(26%-138%)
		37Cl-2,3,7,8-TCDD		81.5	(35%-197%)
15469018	H3-SC1b-70to80-82919	13C-2,3,7,8-TCDD		65.4	(25%-164%)
		13C-1,2,3,7,8-PeCDD		56.2	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		85.0	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		73.1	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		95.1	(23%-140%)
		13C-OCDD		89.6	(17%-157%)
		13C-2,3,7,8-TCDF		67.1	(24%-169%)
		13C-1,2,3,7,8-PeCDF		54.7	(24%-185%)
		13C-2,3,4,7,8-PeCDF		53.8	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		80.5	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		65.9	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		74.1	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF	Q	59.0	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		85.4	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		98.8	(26%-138%)
		37Cl-2,3,7,8-TCDD		71.3	(35%-197%)
15469019	H3-SC1b-80to90-82919	13C-2,3,7,8-TCDD		71.7	(25%-164%)
		13C-1,2,3,7,8-PeCDD		62.3	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		80.5	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		77.1	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		94.6	(23%-140%)
		13C-OCDD		82.9	(17%-157%)
		13C-2,3,7,8-TCDF		70.3	(24%-169%)
		13C-1,2,3,7,8-PeCDF		56.8	(24%-185%)
		13C-2,3,4,7,8-PeCDF		58.6	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		78.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		72.9	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		73.7	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		75.2	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		84.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		93.4	(26%-138%)
		37Cl-2,3,7,8-TCDD		84.8	(35%-197%)
15469020	H3-SC1b-90to100-82919	13C-2,3,7,8-TCDD		80.3	(25%-164%)
		13C-1,2,3,7,8-PeCDD		71.8	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		88.8	(32%-141%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: 2006-00115_2

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
15469020	H3-SC1b-90to100-82919	13C-1,2,3,6,7,8-HxCDD		80.2	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		95.2	(23%-140%)
		13C-OCDD		79.7	(17%-157%)
		13C-2,3,7,8-TCDF		76.4	(24%-169%)
		13C-1,2,3,7,8-PeCDF		67.5	(24%-185%)
		13C-2,3,4,7,8-PeCDF		68.1	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		84.8	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		77.8	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		78.6	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		83.5	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		87.0	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		92.9	(26%-138%)
		37Cl-2,3,7,8-TCDD		90.6	(35%-197%)
15469021	H3-SC1b-100to110-82919	13C-2,3,7,8-TCDD		79.8	(25%-164%)
		13C-1,2,3,7,8-PeCDD		74.7	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		83.3	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		78.0	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		89.4	(23%-140%)
		13C-OCDD		70.0	(17%-157%)
		13C-2,3,7,8-TCDF		72.6	(24%-169%)
		13C-1,2,3,7,8-PeCDF		70.2	(24%-185%)
		13C-2,3,4,7,8-PeCDF		71.1	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		79.9	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		75.9	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		75.5	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		80.3	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		83.7	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		85.4	(26%-138%)
		37Cl-2,3,7,8-TCDD		90.5	(35%-197%)
12024794	LCSD for batch 41745	13C-2,3,7,8-TCDD		82.4	(20%-175%)
		13C-1,2,3,7,8-PeCDD		76.1	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		78.9	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		86.1	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		86.7	(22%-166%)
		13C-OCDD		68.1	(13%-199%)
		13C-2,3,7,8-TCDF		74.7	(22%-152%)
		13C-1,2,3,7,8-PeCDF		75.2	(21%-192%)
		13C-2,3,4,7,8-PeCDF		72.5	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		83.1	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		81.3	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		79.3	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		80.8	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		86.0	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		83.7	(20%-186%)
		37Cl-2,3,7,8-TCDD		93.4	(31%-191%)
12024792	MB for batch 41745	13C-2,3,7,8-TCDD		84.5	(25%-164%)
		13C-1,2,3,7,8-PeCDD		76.2	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		76.1	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		82.4	(28%-130%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: 2006-00115_2

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12024792	MB for batch 41745	13C-1,2,3,4,6,7,8-HpCDD		84.5	(23%-140%)
		13C-OCDD		65.7	(17%-157%)
		13C-2,3,7,8-TCDF		74.4	(24%-169%)
		13C-1,2,3,7,8-PeCDF		74.9	(24%-185%)
		13C-2,3,4,7,8-PeCDF		72.8	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		80.7	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		78.5	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		76.4	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		79.2	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		84.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		80.8	(26%-138%)
		37Cl-2,3,7,8-TCDD		93.7	(35%-197%)
15469014	H3-SC1b-30to40-82919	13C-2,3,7,8-TCDD		70.7	(25%-164%)
		13C-1,2,3,7,8-PeCDD		82.2	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		74.0	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		65.8	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		83.9	(23%-140%)
		13C-OCDD		84.7	(17%-157%)
		13C-2,3,7,8-TCDF		64.8	(24%-169%)
		13C-1,2,3,7,8-PeCDF		77.6	(24%-185%)
		13C-2,3,4,7,8-PeCDF		76.6	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		67.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		64.1	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		65.5	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		73.9	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		71.0	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		83.6	(26%-138%)
		37Cl-2,3,7,8-TCDD		92.6	(35%-197%)
15469001	J6-SC1b-20to30-82819	13C-2,3,7,8-TCDD		75.0	(25%-164%)
		13C-1,2,3,7,8-PeCDD		83.4	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		87.9	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		68.1	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		95.1	(23%-140%)
		13C-OCDD		102	(17%-157%)
		13C-2,3,7,8-TCDF		69.0	(24%-169%)
		13C-1,2,3,7,8-PeCDF		77.7	(24%-185%)
		13C-2,3,4,7,8-PeCDF		78.7	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		74.8	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		70.2	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		71.4	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		81.2	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		77.8	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		94.9	(26%-138%)
		37Cl-2,3,7,8-TCDD		94.2	(35%-197%)
12024795	J6-SC1b-20to30-82819(15469001MS)	13C-2,3,7,8-TCDD		77.1	(25%-164%)
		13C-1,2,3,7,8-PeCDD		85.4	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		91.2	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		69.6	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		91.4	(23%-140%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: 2006-00115_2

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12024795	J6-SC1b-20to30-82819(15469001MS)	13C-OCDD		105	(17%-157%)
		13C-2,3,7,8-TCDF		71.3	(24%-169%)
		13C-1,2,3,7,8-PeCDF		79.6	(24%-185%)
		13C-2,3,4,7,8-PeCDF		79.9	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		78.3	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		70.0	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		72.8	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		80.1	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		83.9	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		91.0	(26%-138%)
		37Cl-2,3,7,8-TCDD		89.8	(35%-197%)
12024796	J6-SC1b-20to30-82819(15469001MSD)	13C-2,3,7,8-TCDD		81.3	(25%-164%)
		13C-1,2,3,7,8-PeCDD		93.5	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		87.9	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		75.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		100	(23%-140%)
		13C-OCDD		107	(17%-157%)
		13C-2,3,7,8-TCDF		75.5	(24%-169%)
		13C-1,2,3,7,8-PeCDF		85.5	(24%-185%)
		13C-2,3,4,7,8-PeCDF		86.6	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		78.9	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		72.2	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		74.5	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		85.9	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		84.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		103	(26%-138%)
		37Cl-2,3,7,8-TCDD		96.3	(35%-197%)
15469002	J6-SC1b-30to40-82819	13C-2,3,7,8-TCDD		78.2	(25%-164%)
		13C-1,2,3,7,8-PeCDD		87.8	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		84.6	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		71.4	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		96.4	(23%-140%)
		13C-OCDD		102	(17%-157%)
		13C-2,3,7,8-TCDF		72.2	(24%-169%)
		13C-1,2,3,7,8-PeCDF		81.9	(24%-185%)
		13C-2,3,4,7,8-PeCDF		82.6	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		78.9	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		67.9	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		72.4	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		81.7	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		80.3	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		95.8	(26%-138%)
		37Cl-2,3,7,8-TCDD		97.4	(35%-197%)
15469003	J6-SC1b-40to50-82819	13C-2,3,7,8-TCDD		83.1	(25%-164%)
		13C-1,2,3,7,8-PeCDD		95.8	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		85.0	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		77.3	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		102	(23%-140%)
		13C-OCDD		108	(17%-157%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: 2006-00115_2

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
15469003	J6-SC1b-40to50-82819	13C-2,3,7,8-TCDF		77.3	(24%-169%)
		13C-1,2,3,7,8-PeCDF		89.5	(24%-185%)
		13C-2,3,4,7,8-PeCDF		89.1	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		83.5	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		70.9	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		76.5	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		86.0	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		82.9	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		101	(26%-138%)
		37Cl-2,3,7,8-TCDD		101	(35%-197%)
15469004	J6-SC1b-50to60-82819	13C-2,3,7,8-TCDD		77.3	(25%-164%)
		13C-1,2,3,7,8-PeCDD		89.3	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		91.1	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		71.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		102	(23%-140%)
		13C-OCDD		110	(17%-157%)
		13C-2,3,7,8-TCDF		73.7	(24%-169%)
		13C-1,2,3,7,8-PeCDF		82.7	(24%-185%)
		13C-2,3,4,7,8-PeCDF		83.5	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		82.0	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		69.4	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		75.4	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		84.6	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		83.3	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		103	(26%-138%)
		37Cl-2,3,7,8-TCDD		91.1	(35%-197%)
15469005	J6-SC1b-60to70-82819	13C-2,3,7,8-TCDD		76.3	(25%-164%)
		13C-1,2,3,7,8-PeCDD		81.6	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		89.7	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		57.3	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		99.1	(23%-140%)
		13C-OCDD		104	(17%-157%)
		13C-2,3,7,8-TCDF		73.2	(24%-169%)
		13C-1,2,3,7,8-PeCDF		78.6	(24%-185%)
		13C-2,3,4,7,8-PeCDF		78.9	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		95.1	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		57.0	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		73.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		68.4	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		82.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		102	(26%-138%)
		37Cl-2,3,7,8-TCDD		90.5	(35%-197%)
15469006	J6-SC1b-70to80-82819	13C-2,3,7,8-TCDD		78.5	(25%-164%)
		13C-1,2,3,7,8-PeCDD		89.3	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		85.6	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		71.2	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		96.9	(23%-140%)
		13C-OCDD		102	(17%-157%)
		13C-2,3,7,8-TCDF		72.0	(24%-169%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: 2006-00115_2

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
15469006	J6-SC1b-70to80-82819	13C-1,2,3,7,8-PeCDF		71.2	(24%-185%)
		13C-2,3,4,7,8-PeCDF		82.6	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		76.7	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		69.6	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		73.4	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		81.9	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		80.4	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		95.9	(26%-138%)
		37Cl-2,3,7,8-TCDD		93.7	(35%-197%)
15469007	J6-SC1b-80to90-82819	13C-2,3,7,8-TCDD		83.1	(25%-164%)
		13C-1,2,3,7,8-PeCDD		95.3	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		87.4	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		75.5	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		102	(23%-140%)
		13C-OCDD		105	(17%-157%)
		13C-2,3,7,8-TCDF		78.5	(24%-169%)
		13C-1,2,3,7,8-PeCDF		91.1	(24%-185%)
		13C-2,3,4,7,8-PeCDF		91.0	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		81.7	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		71.3	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		76.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		85.8	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		84.9	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		102	(26%-138%)
		37Cl-2,3,7,8-TCDD		97.7	(35%-197%)
15469008	J6-SC1b-90to100-82819	13C-2,3,7,8-TCDD		76.3	(25%-164%)
		13C-1,2,3,7,8-PeCDD		88.7	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		85.1	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		81.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		100	(23%-140%)
		13C-OCDD		101	(17%-157%)
		13C-2,3,7,8-TCDF		72.8	(24%-169%)
		13C-1,2,3,7,8-PeCDF		83.5	(24%-185%)
		13C-2,3,4,7,8-PeCDF		82.9	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		83.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		77.4	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		79.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		81.8	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		85.8	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		99.5	(26%-138%)
		37Cl-2,3,7,8-TCDD		90.2	(35%-197%)

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: 2006-00115_2
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 41745
Matrix: SOIL
Lab Sample ID: 12024793
Instrument: HRP763
Analysis Date: 09/21/2019 22:43
Dilution: 1
Analyst: MLS
Prep Batch ID: 41745
Batch ID: 41747

CAS No.		Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	LCS	2,3,7,8-TCDD	20.0	18.1	90.3	67-158
40321-76-4	LCS	1,2,3,7,8-PeCDD	100	99.8	99.8	70-142
39227-28-6	LCS	1,2,3,4,7,8-HxCDD	100	97.2	97.2	70-164
57653-85-7	LCS	1,2,3,6,7,8-HxCDD	100	102	102	76-134
19408-74-3	LCS	1,2,3,7,8,9-HxCDD	100	106	106	64-162
35822-46-9	LCS	1,2,3,4,6,7,8-HpCDD	100	102	102	70-140
3268-87-9	LCS	1,2,3,4,6,7,8,9-OCDD	200	201	101	78-144
51207-31-9	LCS	2,3,7,8-TCDF	20.0	20.9	104	75-158
57117-41-6	LCS	1,2,3,7,8-PeCDF	100	106	106	80-134
57117-31-4	LCS	2,3,4,7,8-PeCDF	100	107	107	68-160
70648-26-9	LCS	1,2,3,4,7,8-HxCDF	100	105	105	72-134
57117-44-9	LCS	1,2,3,6,7,8-HxCDF	100	112	112	84-130
60851-34-5	LCS	2,3,4,6,7,8-HxCDF	100	109	109	70-156
72918-21-9	LCS	1,2,3,7,8,9-HxCDF	100	107	107	78-130
67562-39-4	LCS	1,2,3,4,6,7,8-HpCDF	100	110	110	82-122
55673-89-7	LCS	1,2,3,4,7,8,9-HpCDF	100	106	106	78-138
39001-02-0	LCS	1,2,3,4,6,7,8,9-OCDF	200	204	102	63-170

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: 2006-00115_2 **Sample Type:** Laboratory Control Sample Duplicate

Client ID: LCSD for batch 41745 **Matrix:** SOIL

Lab Sample ID: 12024794

Instrument: HRP763 **Analysis Date:** 09/24/2019 09:35 **Dilution:** 1

Analyst: MLS **Prep Batch ID:** 41745

Batch ID: 41747

CAS No.		Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD	2,3,7,8-TCDD	20.0	17.7	88.7	67-158	1.79	0-20
40321-76-4	LCSD	1,2,3,7,8-PeCDD	100	102	102	70-142	1.96	0-20
39227-28-6	LCSD	1,2,3,4,7,8-HxCDD	100	99.1	99.1	70-164	2.02	0-20
57653-85-7	LCSD	1,2,3,6,7,8-HxCDD	100	106	106	76-134	3.61	0-20
19408-74-3	LCSD	1,2,3,7,8,9-HxCDD	100	108	108	64-162	1.69	0-20
35822-46-9	LCSD	1,2,3,4,6,7,8-HpCDD	100	107	107	70-140	4.39	0-20
3268-87-9	LCSD	1,2,3,4,6,7,8,9-OCDD	200	207	104	78-144	2.72	0-20
51207-31-9	LCSD	2,3,7,8-TCDF	20.0	21.5	107	75-158	2.64	0-20
57117-41-6	LCSD	1,2,3,7,8-PeCDF	100	108	108	80-134	1.99	0-20
57117-31-4	LCSD	2,3,4,7,8-PeCDF	100	110	110	68-160	2.78	0-20
70648-26-9	LCSD	1,2,3,4,7,8-HxCDF	100	109	109	72-134	3.98	0-20
57117-44-9	LCSD	1,2,3,6,7,8-HxCDF	100	118	118	84-130	4.81	0-20
60851-34-5	LCSD	2,3,4,6,7,8-HxCDF	100	115	115	70-156	5.75	0-20
72918-21-9	LCSD	1,2,3,7,8,9-HxCDF	100	112	112	78-130	4.25	0-20
67562-39-4	LCSD	1,2,3,4,6,7,8-HpCDF	100	111	111	82-122	0.851	0-20
55673-89-7	LCSD	1,2,3,4,7,8,9-HpCDF	100	110	110	78-138	3.27	0-20
39001-02-0	LCSD	1,2,3,4,6,7,8,9-OCDF	200	212	106	63-170	4.17	0-20

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: 2006-00115_2
Client ID: J6-SC1b-20to30-82819(15469001MS)
Lab Sample ID: 12024795
Instrument: HRP763
Analyst: MLS

Sample Type: Matrix Spike
Matrix: SOIL
%Moisture: 47.3
Analysis Date: 09/28/2019 02:14
Prep Batch ID: 41745
Batch ID: 41747

Dilution: 1

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	MS	2,3,7,8-TCDD	19.9	J	19.9	97.7	70-130
40321-76-4	MS	1,2,3,7,8-PeCDD	99.3	J	104	103	70-130
39227-28-6	MS	1,2,3,4,7,8-HxCDD	99.3	J	102	101	70-130
57653-85-7	MS	1,2,3,6,7,8-HxCDD	99.3		122	114	70-130
19408-74-3	MS	1,2,3,7,8,9-HxCDD	99.3	J	119	117	70-130
35822-46-9	MS	1,2,3,4,6,7,8-HpCDD	99.3		487	319 *	70-130
3268-87-9	MS	1,2,3,4,6,7,8,9-OCDD	199		5860	1620 *	70-130
51207-31-9	MS	2,3,7,8-TCDF	19.9	B	23.7	111	70-130
57117-41-6	MS	1,2,3,7,8-PeCDF	99.3	BJ	105	105	70-130
57117-31-4	MS	2,3,4,7,8-PeCDF	99.3	J	109	108	70-130
70648-26-9	MS	1,2,3,4,7,8-HxCDF	99.3	J	108	105	70-130
57117-44-9	MS	1,2,3,6,7,8-HxCDF	99.3	J	118	115	70-130
60851-34-5	MS	2,3,4,6,7,8-HxCDF	99.3	J	113	111	70-130
72918-21-9	MS	1,2,3,7,8,9-HxCDF	99.3	BJ	105	105	70-130
67562-39-4	MS	1,2,3,4,6,7,8-HpCDF	99.3		184	150 *	70-130
55673-89-7	MS	1,2,3,4,7,8,9-HpCDF	99.3	J	110	108	70-130
39001-02-0	MS	1,2,3,4,6,7,8,9-OCDF	199		470	182 *	70-130

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: 2006-00115_2
Client ID: J6-SC1b-20to30-82819(15469001MSD)
Lab Sample ID: 12024796
Instrument: HRP763
Analyst: MLS

Sample Type: Matrix Spike Duplicate
Matrix: SOIL
%Moisture: 47.3
Analysis Date: 09/28/2019 03:03
Dilution: 1
Prep Batch ID: 41745
Batch ID: 41747

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	MSD	2,3,7,8-TCDD	19.9	J	18.9	92.7	70-130	5.13	0-20
40321-76-4	MSD	1,2,3,7,8-PeCDD	99.3	J	102	101	70-130	1.97	0-20
39227-28-6	MSD	1,2,3,4,7,8-HxCDD	99.3	J	97.1	96.9	70-130	4.60	0-20
57653-85-7	MSD	1,2,3,6,7,8-HxCDD	99.3		107	100	70-130	12.6	0-20
19408-74-3	MSD	1,2,3,7,8,9-HxCDD	99.3	J	110	108	70-130	7.98	0-20
35822-46-9	MSD	1,2,3,4,6,7,8-HpCDD	99.3		202	31.2 *	70-130	82.8 *	0-20
3268-87-9	MSD	1,2,3,4,6,7,8,9-OCDD	199		1640	-498 *	70-130	112 *	0-20
51207-31-9	MSD	2,3,7,8-TCDF	19.9	B	21.5	101	70-130	9.60	0-20
57117-41-6	MSD	1,2,3,7,8-PeCDF	99.3	BJ	103	103	70-130	2.42	0-20
57117-31-4	MSD	2,3,4,7,8-PeCDF	99.3	J	104	103	70-130	4.96	0-20
70648-26-9	MSD	1,2,3,4,7,8-HxCDF	99.3	J	109	107	70-130	1.77	0-20
57117-44-9	MSD	1,2,3,6,7,8-HxCDF	99.3	J	105	102	70-130	11.4	0-20
60851-34-5	MSD	2,3,4,6,7,8-HxCDF	99.3	J	109	107	70-130	3.17	0-20
72918-21-9	MSD	1,2,3,7,8,9-HxCDF	99.3	BJ	105	105	70-130	0.112	0-20
67562-39-4	MSD	1,2,3,4,6,7,8-HpCDF	99.3		123	88.1	70-130	40.0 *	0-20
55673-89-7	MSD	1,2,3,4,7,8,9-HpCDF	99.3	J	103	101	70-130	7.22	0-20
39001-02-0	MSD	1,2,3,4,6,7,8,9-OCDF	199		267	79.9	70-130	54.9 *	0-20

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number:	**2006-00115_2**	**Sample Type:**	**Matrix Spike**
Client ID:	**J6-SC1b-20to30-82819(15469001MS)**	**Matrix:**	**SOIL**
Lab Sample ID:	**12024795**	**%Moisture:**	**47.3**
Instrument:	**HRP763**	**Analysis Date:**	**09/30/2019 16:53**
Analyst:	**MLS**	**Prep Batch ID:**	**41745**
		Batch ID:	**41747**

Dilution: 1

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits
51207-31-9	MS	2,3,7,8-TCDF	19.9	B	24.4	116	70-130

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number:	**2006-00115_2**	**Sample Type:**	**Matrix Spike Duplicate**
Client ID:	**J6-SC1b-20to30-82819(15469001MSD)**	**Matrix:**	**SOIL**
Lab Sample ID:	**12024796**	**%Moisture:**	**47.3**
Instrument:	**HRP763**	**Analysis Date:**	**09/30/2019 17:15**
Analyst:	**MLS**	**Prep Batch ID:**	**41745**
		Batch ID:	**41747**

Dilution: 1

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
51207-31-9	MSD	2,3,7,8-TCDF	19.9	B	22.6	107	70-130	7.64	0-20

Method Blank Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Matrix:**	**SOIL**
Client ID:	**MB for batch 41745**	**Instrument ID:**	**HRP763**	**Data File:**	**b23sep19a_3-4**
Lab Sample ID:	**12024792**	**Prep Date:**	**16-SEP-19**	**Analyzed:**	**09/24/19 10:23**
Column:					

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 41745	12024793	b21sep19a_2-1	09/21/19	2243
02	J6-SC1b-100to110-82819	15469009	b23sep19a-3	09/23/19	0956
03	J6-SC1b-110to120-82819	15469010	b23sep19a-4	09/23/19	1044
04	H3-SC1b-20to30-82819	15469013	b23sep19a-5	09/23/19	1132
05	H3-SC1b-40to50-82919	15469015	b23sep19a-7	09/23/19	1309
06	H3-SC1b-50to60-82919	15469016	b23sep19a-8	09/23/19	1358
07	H3-SC1b-60to70-82919	15469017	b23sep19a-9	09/23/19	1446
08	H3-SC1b-70to80-82919	15469018	b23sep19a-10	09/23/19	1535
09	H3-SC1b-80to90-82919	15469019	b23sep19a-11	09/23/19	1623
10	H3-SC1b-90to100-82919	15469020	b23sep19a-12	09/23/19	1711
11	H3-SC1b-100to110-82919	15469021	b23sep19a-13	09/23/19	1800
12	LCSD for batch 41745	12024794	b23sep19a_3-3	09/24/19	0935
13	H3-SC1b-20to30-82819	15469013	A24SEP19A_3-4	09/25/19	0245
14	H3-SC1b-30to40-82919	15469014	b26sep19a_5-2	09/28/19	0038
15	J6-SC1b-20to30-82819	15469001	b26sep19a_5-3	09/28/19	0126
16	J6-SC1b-20to30-82819(15469001MS)	12024795	b26sep19a_5-4	09/28/19	0214
17	J6-SC1b-20to30-82819(15469001MSD)	12024796	b26sep19a_5-5	09/28/19	0303
18	J6-SC1b-30to40-82819	15469002	b26sep19a_5-6	09/28/19	0351
19	J6-SC1b-40to50-82819	15469003	b26sep19a_5-7	09/28/19	0440
20	J6-SC1b-50to60-82819	15469004	b26sep19a_5-8	09/28/19	0528
21	J6-SC1b-60to70-82819	15469005	b26sep19a_5-9	09/28/19	0617
22	J6-SC1b-70to80-82819	15469006	b26sep19a_5-10	09/28/19	0705
23	J6-SC1b-80to90-82819	15469007	b26sep19a_5-11	09/28/19	0753
24	J6-SC1b-90to100-82819	15469008	b26sep19a_5-12	09/28/19	0842
25	J6-SC1b-20to30-82819	15469001	b30sep19a_2-3	09/30/19	1631
26	J6-SC1b-20to30-82819(15469001MS)	12024795	b30sep19a_2-4	09/30/19	1653
27	J6-SC1b-20to30-82819(15469001MSD)	12024796	b30sep19a_2-5	09/30/19	1715
28	J6-SC1b-50to60-82819	15469004	b30sep19a_2-6	09/30/19	1736
29	J6-SC1b-60to70-82819	15469005	b30sep19a_2-7	09/30/19	1758

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024792**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41745**				
Client ID:	**MB for batch 41745**			**Prep Basis:**	**As Received**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 10:23**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_3-4**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0684	pg/g	0.0684	1.00
40321-76-4	1,2,3,7,8-PeCDD	U	0.0744	pg/g	0.0744	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.102	pg/g	0.102	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	J	0.104	pg/g	0.0958	5.00
19408-74-3	1,2,3,7,8,9-HxCDD	J	0.132	pg/g	0.100	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	0.192	pg/g	0.155	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	0.614	pg/g	0.276	10.0
51207-31-9	2,3,7,8-TCDF	J	0.188	pg/g	0.120	1.00
57117-41-6	1,2,3,7,8-PeCDF	JK	0.118	pg/g	0.073	5.00
57117-31-4	2,3,4,7,8-PeCDF	J	0.080	pg/g	0.0664	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	JK	0.138	pg/g	0.0672	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	J	0.112	pg/g	0.0688	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.132	pg/g	0.0724	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	J	0.188	pg/g	0.111	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	0.160	pg/g	0.0756	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	0.178	pg/g	0.129	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	0.426	pg/g	0.350	10.0
41903-57-5	Total TeCDD	J	0.106	pg/g	0.0684	1.00
36088-22-9	Total PeCDD	U	0.0744	pg/g	0.0744	5.00
34465-46-8	Total HxCDD	J	0.236	pg/g	0.0958	5.00
37871-00-4	Total HpCDD	J	0.192	pg/g	0.155	5.00
30402-14-3	Total TeCDF	J	0.188	pg/g	0.120	1.00
30402-15-4	Total PeCDF	JK	0.198	pg/g	0.0564	5.00
55684-94-1	Total HxCDF	JK	0.570	pg/g	0.0672	5.00
38998-75-3	Total HpCDF	J	0.338	pg/g	0.0756	5.00
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.133	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.209	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		169	200	pg/g	84.5	(25%-164%)
13C-1,2,3,7,8-PeCDD		152	200	pg/g	76.2	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		152	200	pg/g	76.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		165	200	pg/g	82.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		169	200	pg/g	84.5	(23%-140%)
13C-OCDD		263	400	pg/g	65.7	(17%-157%)
13C-2,3,7,8-TCDF		149	200	pg/g	74.4	(24%-169%)
13C-1,2,3,7,8-PeCDF		150	200	pg/g	74.9	(24%-185%)
13C-2,3,4,7,8-PeCDF		146	200	pg/g	72.8	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		161	200	pg/g	80.7	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		157	200	pg/g	78.5	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		153	200	pg/g	76.4	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		158	200	pg/g	79.2	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024792**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41745**				
Client ID:	**MB for batch 41745**			**Prep Basis:**	**As Received**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 10:23**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_3-4**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		168	200	pg/g	84.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		162	200	pg/g	80.8	(26%-138%)
37Cl-2,3,7,8-TCDD		18.7	20.0	pg/g	93.7	(35%-197%)

Comments:

J **Value is estimated**

K **Estimated Maximum Possible Concentration**

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024793**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41745**				
Client ID:	**LCS for batch 41745**			**Prep Basis:**	**As Received**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/21/2019 22:43**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b21sep19a_2-1**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		18.1	pg/g	0.082	1.00
40321-76-4	1,2,3,7,8-PeCDD		99.8	pg/g	0.166	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		97.2	pg/g	0.340	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		102	pg/g	0.332	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		106	pg/g	0.342	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		102	pg/g	0.526	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		201	pg/g	1.48	10.0
51207-31-9	2,3,7,8-TCDF		20.9	pg/g	0.131	1.00
57117-41-6	1,2,3,7,8-PeCDF		106	pg/g	0.159	5.00
57117-31-4	2,3,4,7,8-PeCDF		107	pg/g	0.148	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		105	pg/g	0.368	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		112	pg/g	0.392	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		109	pg/g	0.406	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		107	pg/g	0.654	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		110	pg/g	0.450	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		106	pg/g	0.796	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		204	pg/g	1.11	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		155	200	pg/g	77.4	(20%-175%)
13C-1,2,3,7,8-PeCDD		144	200	pg/g	72.2	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		147	200	pg/g	73.5	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		160	200	pg/g	80.0	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		150	200	pg/g	74.9	(22%-166%)
13C-OCDD		226	400	pg/g	56.6	(13%-199%)
13C-2,3,7,8-TCDF		133	200	pg/g	66.7	(22%-152%)
13C-1,2,3,7,8-PeCDF		140	200	pg/g	70.1	(21%-192%)
13C-2,3,4,7,8-PeCDF		133	200	pg/g	66.5	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		150	200	pg/g	75.0	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		145	200	pg/g	72.4	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		141	200	pg/g	70.7	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		141	200	pg/g	70.7	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		140	200	pg/g	70.0	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		140	200	pg/g	69.8	(20%-186%)
37Cl-2,3,7,8-TCDD		18.9	20.0	pg/g	94.4	(31%-191%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024794**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41745**				
Client ID:	**LCSD for batch 41745**			**Prep Basis:**	**As Received**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 09:35**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_3-3**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		17.7	pg/g	0.0818	1.00
40321-76-4	1,2,3,7,8-PeCDD		102	pg/g	0.132	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		99.1	pg/g	0.246	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		106	pg/g	0.246	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		108	pg/g	0.252	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		107	pg/g	0.402	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		207	pg/g	0.916	10.0
51207-31-9	2,3,7,8-TCDF		21.5	pg/g	0.110	1.00
57117-41-6	1,2,3,7,8-PeCDF		108	pg/g	0.163	5.00
57117-31-4	2,3,4,7,8-PeCDF		110	pg/g	0.142	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		109	pg/g	0.244	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		118	pg/g	0.258	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		115	pg/g	0.266	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		112	pg/g	0.406	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		111	pg/g	0.350	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		110	pg/g	0.590	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		212	pg/g	0.992	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		165	200	pg/g	82.4	(20%-175%)
13C-1,2,3,7,8-PeCDD		152	200	pg/g	76.1	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		158	200	pg/g	78.9	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		172	200	pg/g	86.1	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		173	200	pg/g	86.7	(22%-166%)
13C-OCDD		272	400	pg/g	68.1	(13%-199%)
13C-2,3,7,8-TCDF		149	200	pg/g	74.7	(22%-152%)
13C-1,2,3,7,8-PeCDF		150	200	pg/g	75.2	(21%-192%)
13C-2,3,4,7,8-PeCDF		145	200	pg/g	72.5	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		166	200	pg/g	83.1	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		163	200	pg/g	81.3	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		159	200	pg/g	79.3	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		162	200	pg/g	80.8	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		172	200	pg/g	86.0	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		167	200	pg/g	83.7	(20%-186%)
37Cl-2,3,7,8-TCDD		18.7	20.0	pg/g	93.4	(31%-191%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024795**	**Date Collected:**	**08/28/2019 09:20**	**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41745**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**47.3**
Client ID:	**J6-SC1b-20to30-82819(15469001MS)**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 02:14**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-4**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**19.09 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		19.9	pg/g	0.207	0.993
40321-76-4	1,2,3,7,8-PeCDD		104	pg/g	0.437	4.97
39227-28-6	1,2,3,4,7,8-HxCDD		102	pg/g	0.719	4.97
57653-85-7	1,2,3,6,7,8-HxCDD		122	pg/g	0.721	4.97
19408-74-3	1,2,3,7,8,9-HxCDD		119	pg/g	0.739	4.97
35822-46-9	1,2,3,4,6,7,8-HpCDD		487	pg/g	1.48	4.97
3268-87-9	1,2,3,4,6,7,8,9-OCDD	E	5860	pg/g	1.77	9.93
51207-31-9	2,3,7,8-TCDF		23.7	pg/g	0.505	0.993
57117-41-6	1,2,3,7,8-PeCDF		105	pg/g	0.342	4.97
57117-31-4	2,3,4,7,8-PeCDF		109	pg/g	0.302	4.97
70648-26-9	1,2,3,4,7,8-HxCDF		108	pg/g	0.447	4.97
57117-44-9	1,2,3,6,7,8-HxCDF		118	pg/g	0.477	4.97
60851-34-5	2,3,4,6,7,8-HxCDF		113	pg/g	0.483	4.97
72918-21-9	1,2,3,7,8,9-HxCDF		105	pg/g	0.473	4.97
67562-39-4	1,2,3,4,6,7,8-HpCDF		184	pg/g	0.397	4.97
55673-89-7	1,2,3,4,7,8,9-HpCDF		110	pg/g	0.614	4.97
39001-02-0	1,2,3,4,6,7,8,9-OCDF		470	pg/g	0.697	9.93

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		153	199	pg/g	77.1	(25%-164%)
13C-1,2,3,7,8-PeCDD		170	199	pg/g	85.4	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		181	199	pg/g	91.2	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		138	199	pg/g	69.6	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		182	199	pg/g	91.4	(23%-140%)
13C-OCDD		416	397	pg/g	105	(17%-157%)
13C-2,3,7,8-TCDF		142	199	pg/g	71.3	(24%-169%)
13C-1,2,3,7,8-PeCDF		158	199	pg/g	79.6	(24%-185%)
13C-2,3,4,7,8-PeCDF		159	199	pg/g	79.9	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		155	199	pg/g	78.3	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		139	199	pg/g	70.0	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		145	199	pg/g	72.8	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		159	199	pg/g	80.1	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		167	199	pg/g	83.9	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		181	199	pg/g	91.0	(26%-138%)
37Cl-2,3,7,8-TCDD		17.8	19.9	pg/g	89.8	(35%-197%)

Comments:

E Value is estimated - Concentration of the target analyte exceeds the instrument calibration range

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024795**	**Date Collected:**	**08/28/2019 09:20**	**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41745**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**47.3**
Client ID:	**J6-SC1b-20to30-82819(15469001MS)**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/30/2019 16:53**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b30sep19a_2-4**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**19.09 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF		24.4	pg/g	0.236	0.993

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

E **Value is estimated - Concentration of the target analyte exceeds the instrument calibration range**

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024796**	**Date Collected:**	**08/28/2019 09:20**	**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41745**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**47.3**
Client ID:	**J6-SC1b-20to30-82819(15469001MSD**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 03:03**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-5**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**19.1 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		18.9	pg/g	0.212	0.993
40321-76-4	1,2,3,7,8-PeCDD		102	pg/g	0.340	4.96
39227-28-6	1,2,3,4,7,8-HxCDD		97.1	pg/g	0.540	4.96
57653-85-7	1,2,3,6,7,8-HxCDD		107	pg/g	0.554	4.96
19408-74-3	1,2,3,7,8,9-HxCDD		110	pg/g	0.560	4.96
35822-46-9	1,2,3,4,6,7,8-HpCDD		202	pg/g	0.826	4.96
3268-87-9	1,2,3,4,6,7,8,9-OCDD		1640	pg/g	1.65	9.93
51207-31-9	2,3,7,8-TCDF		21.5	pg/g	0.385	0.993
57117-41-6	1,2,3,7,8-PeCDF		103	pg/g	0.332	4.96
57117-31-4	2,3,4,7,8-PeCDF		104	pg/g	0.300	4.96
70648-26-9	1,2,3,4,7,8-HxCDF		109	pg/g	0.429	4.96
57117-44-9	1,2,3,6,7,8-HxCDF		105	pg/g	0.447	4.96
60851-34-5	2,3,4,6,7,8-HxCDF		109	pg/g	0.453	4.96
72918-21-9	1,2,3,7,8,9-HxCDF		105	pg/g	0.540	4.96
67562-39-4	1,2,3,4,6,7,8-HpCDF		123	pg/g	0.542	4.96
55673-89-7	1,2,3,4,7,8,9-HpCDF		103	pg/g	0.741	4.96
39001-02-0	1,2,3,4,6,7,8,9-OCDF		267	pg/g	0.610	9.93

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		162	199	pg/g	81.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		186	199	pg/g	93.5	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		175	199	pg/g	87.9	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		151	199	pg/g	75.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		199	199	pg/g	100	(23%-140%)
13C-OCDD		425	397	pg/g	107	(17%-157%)
13C-2,3,7,8-TCDF		150	199	pg/g	75.5	(24%-169%)
13C-1,2,3,7,8-PeCDF		170	199	pg/g	85.5	(24%-185%)
13C-2,3,4,7,8-PeCDF		172	199	pg/g	86.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		157	199	pg/g	78.9	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		143	199	pg/g	72.2	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		148	199	pg/g	74.5	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		170	199	pg/g	85.9	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		167	199	pg/g	84.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		204	199	pg/g	103	(26%-138%)
37Cl-2,3,7,8-TCDD		19.1	19.9	pg/g	96.3	(35%-197%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024796**	**Date Collected:**	**08/28/2019 09:20**	**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41745**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**47.3**
Client ID:	**J6-SC1b-20to30-82819(15469001MSD**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/30/2019 17:15**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b30sep19a_2-5**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**19.1 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF		22.6	pg/g	0.182	0.993

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

CFA | Cape Fear Analytical LLC
an affiliate of The GEL Group INC

3306 Kitty Hawk Road, Suite 120 Wilmington, NC 28405
P 910.795.0421
www.capefearanalytical.com

October 04, 2019

Mr. Jeffrey Parker
Pacific Groundwater Group
2377 Eastlake Avenue E
Seattle, Washington 98102

Re: Swan Island Lagoon Sediment Investigation
Work Order: 15470
SDG: 2006-00115_3

Dear Mr. Parker:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on August 30, 2019 and September 10, 2019. This original data report has been prepared and reviewed in accordance with CFA's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,

Cynde Larkins

Cynde Larkins
Project Manager

Enclosures

problem solved

other CF

Chain of Custody Record

CFA WO#15470

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 8/26/2019	COC No: 5 of 8 COCs
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	Job No. 2006-00115
Pacific Groundwater Group	Analysis Turnaround Time			
2377 Eastlake Ave E, Seattle WA 98102	standard			
206 329 0141 Phone	TAT if different from Below _____			
206 329 6968 FAX	[X] standard			SDG No.
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Dioxins/Furans 16/13B	ARCHIVE	Sample Specific Notes:
D6-SC1b-20to30-8 26 19	8/26/19	1245		S	1	X		3.30
D6-SC1b-30to40-8 26 19	8/26/19	1300		S	1	X		
D6-SC1b-40to50-8 26 19	8/26/19	1445		S	1	X		
D6-SC1b-50to60-8 26 19	8/26/19	1450		S	1	X		
D6-SC1b-60to70-8 26 19	3/26/19	1530		S	1	X		
D6-SC1b-70to80-8 26 19	8/26/19	1540		S	1	X		
D6-SC1b-80to90-8 26 19	8/26/19	1655		S	1	X		
D6-SC1b-90to100-8 26 19	8/26/19	1700		S	1	X		
D6-SC1b-100to110-8 26 19	8/26/19	1740		S	1	X		
D6-SC1b-110to120-8 26 19	8/26/19	1750		S	1	X		
D6-SC1b-10to20-82619	8/26/19	1210		S	1	X CR 30AUG19	X	Archive } per client email
411-SC1b-50to60-82619	8/26/19	1500		S	1	X CR 30AUG19		Analyze } CR 30AUG19

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
[ ] *Non-Hazard* [ ] *Flammable* [ ] *Skin Irritant* *Poison B* [ ] *Unknown* [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] *Return To Client* [ ] *Disposal By Lab* [X] *Archive For* _____ *Months*

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	PGG	8/29/19 1300	FedEx		
FedEx			[signature]	CFA	8/30/19 9:55

Other CF

Chain of Custody Record

CFA WO#15470

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 8/29/2019	COC No: 6 of 8 COCs
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	Job No. 2006-00115
Pacific Groundwater Group	Analysis Turnaround Time			SDG No.
2377 Eastlake Ave E, Seattle WA 98102	standard			
206 329 0141 Phone	TAT if different from Below			
206 329 6968 FAX	[X] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Dioxins/Furans 1613B	Sample Specific Notes:
J3-SC1b-20to30-827 19	8/27/19	1000		S	1	X	3.80
J3-SC1b-30to40-827 19	8/27/19	1005		S	1	X	
J3-SC1b-40to50-827 19	8/27/19	1120		S	1	X	
J3-SC1b-50to60-827 19	8/27/19	1125		S	1	X	
J3-SC1b-60to70-827 19	8/27/19	1130		S	1	X	
J3-SC1b-70to80-827 19	8/27/19	1135		S	1	X	
J3-SC1b-80to90-827 19	8/27/19	1220		S	1	X	
J3-SC1b-90to100-827 19	8/27/19	1225		S	1	X	
J3-SC1b-10to20-82719	8/27/19	0955		S	1	X	
[redacted]	8/ /19			S	1		
412-SC1b-80to90-82719	8/27/19	1235		S	1	X	
	8/ /19			S	1		

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] Return To Client [ ] Disposal By Lab [X] Archive For _____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	PGG	8/29/19 1300	FedEx		
Relinquished by: FedEx	Company:	Date/Time:	Received by: [signature]	Company: CFA	Date/Time: 8/30/19 9:55
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

SAMPLE RECEIPT CHECKLIST

Cape Fear Analytical

Client: Pacific Groundwater Group	Work Order: 15470
Shipping Company: FedEx	Date/Time Received: 30AUG19 0955

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			✓
Samples identified as Foreign Soil?			✓

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?		✓	
Samples < 2x background?		✓	

* Notify RSO of any responses in this column immediately.

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?			✓

Air Witness: _____

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other(describe)
2	Custody seal/s present on cooler?	✓			Seal intact? (Yes) No
3	Chain of Custody documents included with shipment?	✓			
4	Samples requiring cold preservation within 0-6°C?	✓			Preservation Method: (ice bags) blue ice dry ice none other (describe) Temperature Blank present: (Yes) No 3.9°-0.1=3.8° 5.3°-0.1=5.2° 3.4°-0.1=3.3°
5	Aqueous samples found to have visible solids?			✓	Sample IDs, containers affected:
5	Samples requiring chemical preservation at proper pH?		✓		Sample IDs, containers affected and pH observed: pH=8 on both water containers If preservative added, Lot#:
7	Samples requiring preservation have no residual chlorine?	✓			Sample IDs, containers affected: If preservative added, Lot#:
8	Samples received within holding time?	✓			Sample IDs, tests affected:
9	Sample IDs on COC match IDs on containers?			✓	Sample IDs, containers affected: See below *
10	Date & time of COC match date & time on containers?	✓			Sample IDs, containers affected:
11	Number of containers received match number indicated on COC?			✓	List type and number of containers / Sample IDs, containers affected: 2-1L NMAG received for 711-82719 75-4 oz amber glass soil jars No containers received for 712-82819
12	COC form is properly signed in relinquished/received sections?	✓			

Comments:

* Sample ID discrepancies:

COC	Label
J6-SC1b-00to10-82719	J6-SC1-00to10-82719
J6-SC1b-10to20-82719	J6-SC1-10to20-82719
L3-SC1b-00to10-82619	CR 30AUG19 L3-SC2-00to10-82619
L3-SC1b-10to20-82619	L3-SC2-10to20-82619
D6-SC1b-10to20-82619	D6-SC2-10to20-82619

Checklist performed by: Initials: CL for RO Date: 30AUG19

CF-UD-F-7

Subject: RE: Swan Island sample receipt 30AUG19
From: "Jeff S. Parker" <JParker@PGWG.COM>
Date: 8/30/2019, 2:54 PM
To: Cynde Larkins <Cynde.larkins@cfanalytical.com>

No problems, thanks!

From: Cynde Larkins <Cynde.larkins@cfanalytical.com>
Sent: Friday, August 30, 2019 11:42 AM
To: Jeff S. Parker <JParker@PGWG.COM>
Subject: Re: Swan Island sample receipt 30AUG19

Thank you!

By the way - that "00to20" was my mistake. The COC and the label have "00to10". My apologies!

On 8/30/2019 2:36 PM, Jeff S. Parker wrote:

> HI Cynde,
> I'm glad you got them without too much ice melt! Here are the answers to the login questions:
>
> 1. D6-SC1b-10to20-82619 is archive, 411-SC1b-50to60-82619 is analyze.
> 2. We misplaced those in a cooler to another lab and will get those to you asap.
> 3. The ID on the COC are correct (highlighted are correct) for those samples with one exception where both are incorrect. The first L3 sample should be "00to10" instead of "00to20":

ID on COC	ID on la
J6-SC1b-00to10-82719	J6-SC1-00to1
J6-SC1b-10to20-082719	J6-SC1-10to2
L3-SC1b-00to20-82619	L3-SC2-00to2
L3-SC1b-10to20-82619	L3-SC2-10to2
D6-SC1b-10to20-82619	D6-SC2-10to2

> Thanks,
> Jeff

Jeffrey Parker, LG | Environmental Geologist
Pacific Groundwater Group **Water Resource & Environmental Consulting**
(360) 570-8244 | jparker@pgwg.com | www.pgwg.com

From: Cynde Larkins <Cynde.larkins@cfanalytical.com>
Sent: Friday, August 30, 2019 11:28 AM
To: Jeff S. Parker <JParker@PGWG.COM>
Subject: Swan Island sample receipt 30AUG19

Good afternoon,

CFA received your samples today for the Swan Island Lagoon project in good condition and within temperature. There are several discrepancies listed below that I need to your help to resolve.

1. Sample D6-SC1b-10to20-82619, collected 8/26/19 at 12:10, is marked on the COC for both 1613B analysis and Archive. The sample listed beneath this one, 411-SC1b-50to60-82619, collected 8/26/19 at 15:00 is not marked for either 1613B or Archive. It looks like one of the X's is on the wrong line perhaps? Please advise.

2. There were no bottles received for sample 712-82819. Two containers were received for 711-82719.

3. There are sample ID discrepancies between the COC and the labels for the samples listed in the table below (collection dates and times match). Please verify which ID should be used for log in.

ID on COC	ID on label
J6-SC1b-00to10-82719	J6-SC1-00to10-82719
J6-SC1b-10to20-082719	J6-SC1-10to20-82719
L3-SC1b-00to20-82619	L3-SC2-00to20-82619
L3-SC1b-10to20-82619	L3-SC2-10to20-82619
D6-SC1b-10to20-82619	D6-SC2-10to20-82619

Thank you!

--
Cynde Larkins
Project Manager
Cape Fear Analytical, LLC
3306 Kitty Hawk Road, Suite 120
Wilmington, NC 28405
(910) 795-0421

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http://www.gellaboratories.com

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Cynde Larkins
Project Manager
Cape Fear Analytical, LLC
3306 Kitty Hawk Road, Suite 120
Wilmington, NC 28405
(910) 795-0421

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http://www.gellaboratories.com

Subject: RE: Fwd: RE: Swan Island sample receipt 30AUG19
From: "Jeff S. Parker" <JParker@PGWG.COM>
Date: 8/30/2019, 3:38 PM
To: Chris Cornwell <chr00735@cfanalytical.com>
CC: Janet Knox <janet@PGWG.COM>

Hi Chris,
Yes, please order 3 of the EDF-5183 (Cambridge SRM). I think the frequency of 1 per SDG (for 3 of the 4 SDGs Cynde is creating) makes sense.

Happy Holiday Weekend,
Jeff

Jeffrey Parker, LG | Environmental Geologist
Pacific Groundwater Group Water Resource & Environmental Consulting http://ww
(360) 570-8244 | jparker@pgwg.com | www.pgwg.com

From: Chris Cornwell <chr00735@cfanalytical.com>
Sent: Friday, August 30, 2019 12:14 PM
To: Jeff S. Parker <JParker@PGWG.COM>
Subject: Re: Fwd: RE: Swan Island sample receipt 30AUG19

Jeff,

Looks like we received about 75 samples. Everything looks OK receipt wise, Cynde is logging in now.

We have the Wellington SRM, not the Cambridge one. Want me to order the Cambridge? What frequency would you like for SRM's?

Having these logged in for method 1613, reporting J flags down to the EDL, EMPC's reported with a K flag.

Happy Friday!

Christopher K. Cornwell
Laboratory Director
Cape Fear Analytical
3306 Kitty Hawk Road
Suite 120
Wilmington, NC 28405
CCornwell@CFAnalytical.com
On 8/30/2019 3:05 PM, Cynde Larkins wrote:

-------- Forwarded Message --------
Subject:RE: Swan Island sample receipt 30AUG19
Date: Fri, 30 Aug 2019 19:02:55 +0000
From: Jeff S. Parker <JParker@PGWG.COM>
To: Cynde Larkins <Cynde.larkins@cfanalytical.com>
CC: Janet Knox <janet@PGWG.COM>

HI Cynde,

Can you send me copies of the COCs or the login file when you get a chance. We taped the COCs in the cooler before making copies and I didn't get a count of the # analyzed. We may need to remove a couple if we're way over our scope.

Also, I need to communicate with Chris about ordering the EDF-5183 (Cambridge SRM) to run with this batch. So, please hold the samples until we get those ordered and added too.

Thanks!
Jeff

From: Jeff S. Parker
Sent: Friday, August 30, 2019 11:55 AM
To: Cynde Larkins <Cynde.larkins@cfanalytical.com>
Subject: RE: Swan Island sample receipt 30AUG19

SRM1613 EDF-5183 9-9-19

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL
Rev 0

Certificate of Analysis

Clean Soil Reference Material

Catalog Number:	EDF-5183
Lot Number:	ER10091501
Expiration Date:	May 2023
Matrix:	Soil
Amount per Vial:	10 g
Storage and Handling:	Freezer.

Intended Use: For laboratory use only. This product is a sample of homogeneous soil matrix taken from an area where no known chemical contamination has occurred. This sample is intended for use in evaluating the performance of an analytical laboratory for the listed analytes.

Preparation: "Clean" soil was obtained from a location in Texas which was expected to contain minimal contamination. The soil was sieved to achieve uniform particle size and homogenized to within 5% using a disodium fluorescein indicator. Samples were then sterilized three times for two hours at 121°C and 15 psi.

Interlaboratory Analysis: This product was included in the Second Round of International Interlaboratory Study conducted by Cambridge Isotope Laboratories and Cerilliant Corporation. Participating laboratories used a variety of sample preparation and analytical techniques. The results listed below supersede those obtained in the First Round of Interlaboratory Study. This Second Round of Interlaboratory Study adds consensus values for one new dioxin, seventeen new PCBs, ten BDEs, and two new PAHs.

Interlaboratory Results: Results of the international interlaboratory study are attached. Consensus values were independently assigned by Manna Associates in the UK using the Cofino model of statistical analysis. These numbers are certified reference values. All values are presented at three significant figures. Analytes with fewer than five laboratories contributing acceptable data do not have assigned values reported in this study.

Cerilliant certifies that this standard meets or exceeds the specifications stated in this data sheet.

Authorized Signature:

Darron Ellsworth, Quality Assurance Manager

December 02, 2015
Date

Interlaboratory Participants:

Alta Analytical Laboratory, USA
CARSO, France
CEAEQ, Canada
Chinese Center for Disease Control and Prevention, China
Clean Harbors Environmental Services, USA
Columbia Analytical Services, Inc., USA
East Bay Municipal Utility District, USA
GfA (Gesellschaft für Arbeitsplatz und Umweltanalytik) mbH, Germany
Hong Kong Baptist University, Hong Kong
Labo Van Vooren, Belgium
Maxxam Analytics, Inc., Ontario Canada
Maxxam Analytics, Inc., British Columbia Canada
Military Institute of Chemistry and Radiometry, Poland
Nab Labs Ympäristöanalytiika Oy, Finland
National Central University, Taiwan
Oekometric GmbH, Germany
Pace Analytical Services, Inc., USA
Severn Trent Laboratories, CA USA
Severn Trent Laboratories, TN USA
SGS Institut Fresenius GmbH Bayreuth, Germany
Sun Dreams Environmental Technology Corp., Taiwan
Xiamen University, China

Interlaboratory Results:

Compound	*Assigned[1] Value (ng/kg)*	*Standard Deviation*	*Reference[2] Value (ng/kg)*	*(n)[3]*
Polychlorinated dioxins and furans				
2,3,7,8-Tetrachlorodibenzo-p-dioxin	0.11	0.07	0.11 ± 0.14	18
Total Tetrachlorodibenzo-p-dioxin	0.32	0.44	0.32 ± 0.88	8
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	0.39	0.16	0.39 ± 0.32	18
Total Pentachlorodibenzo-p-dioxin	2.96	1.20	2.96 ± 2.40	10
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	1.12	0.26	1.12 ± 0.52	18
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	4.39	0.44	4.39 ± 0.88	18
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	2.00	0.60	2.00 ± 1.20	18
Total Hexachlorodibenzo-p-dioxin	50.9	11.4	50.9 ± 22.8	10
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	153	28.6	153 ± 57.2	18
Total Heptachlorodibenzo-p-dioxin	492	123	492 ± 246	10
Octachlorodibenzo-p-dioxin	7,870	825	7,870 ± 1,650	18
2,3,7,8-Tetrachlorodibenzofuran	0.70	0.17	0.70 ± 0.34	18
Total Tetrachlorodibenzofuran	3.21	1.06	3.21 ± 2.12	10
1,2,3,7,8-Pentachlorodibenzofuran	0.23	0.11	0.23± 0.22	18
2,3,4,7,8-Pentachlorodibenzofuran	0.34	0.07	0.34 ± 0.14	18
Total Pentachlorodibenzofuran	3.31	2.87	3.31 ± 5.74	10
1,2,3,4,7,8-Hexachlorodibenzofuran	0.86	0.22	0.86 ± 0.44	18
1,2,3,6,7,8-Hexachlorodibenzofuran	0.58	0.13	0.58 ± 0.26	18
1,2,3,7,8,9-Hexachlorodibenzofuran	0.12	0.08	0.12 ± 0.16	17
2,3,4,6,7,8-Hexachlorodibenzofuran	0.72	0.48	0.72 ± 0.92	18
Total Hexachlorodibenzofuran	15.6	6.35	15.6 ± 12.7	10
1,2,3,4,6,7,8-Heptachlorodibenzofuran	13.9	1.84	13.9 ± 3.68	18
1,2,3,4,7,8,9-Heptachlorodibenzofuran	1.25	0.31	1.25 ± 0.62	18
Total Heptachlorodibenzofuran	54.0	7.98	54.0 ± 16.0	10
Octachlorodibenzofuran	58.2	16.2	58.2 ± 32.4	18

Interlaboratory Results (continued):

Compound	Assigned[1] Value (ng/kg)	Standard Deviation	Reference[2] Value (ng/kg)	(n)[3]
Polychlorinated biphenyls [4]				
2,2',5-Trichlorobiphenyl (#18)	78.9	15.2	78.9 ± 30.4	6
2,4,4'-Trichlorobiphenyl (#28)	140	63.6	140 ± 127	13
3,4,4'-Trichlorobiphenyl (#37)	1,710	220	1,710 ± 440	5
2,2',3,5'-Tetrachlorobiphenyl (#44)	1,070	276	1,070 ± 552	7
2,2',4,5'-Tetrachlorobiphenyl (#49)	638	175	638 ± 350	5
2,2',5,5'-Tetrachlorobiphenyl (#52)	2,020	372	2,020 ± 744	12
2,4,4',5-Tetrachlorobiphenyl (#74)	447,000	174,000	447,000 ± 348,000	5
3,3',4,4'-Tetrachlorobiphenyl (#77)	2,230	494	2,230 ± 988	13
3,4,4',5-Tetrachlorobiphenyl (#81)	5.52	3.71	5.52 ± 7.42	11
2,2',3,4,5'-Pentachlorobiphenyl (#87)	2,370	266	2,370 ± 532	6
2,2',4,4',5-Pentachlorobiphenyl (#99)	1,100	222	1,110 ± 444	7
2,2',4,5,5'-Pentachlorobiphenyl (#101)	5,370	782	5,370 ± 1,564	11
2,3,3',4,4'-Pentachlorobiphenyl (#105)	629	79.2	629 ± 158.4	15
2,3,3',4',6-Pentachlorobiphenyl (#110)	5,880	1,050	5,880 ± 2,110	7
2,3,4,4',5-Pentachlorobiphenyl (#114)	34.6	9.01	34.6 ± 18.0	13
2,3',4,4',5-Pentachlorobiphenyl (#118)	6,520	1,150	6,520 ± 2,300	14
2',3,4,4',5-Pentachlorobiphenyl (#123)	24.1	11.6	24.1 ± 23.2	12
3,3',4,4',5-Pentachlorobiphenyl (#126)	33.5	5.13	33.5 ± 10.3	13
2,2',3,3',4,4'-Hexachlorobiphenyl (#128)	342	68	342 ± 135	6
2,2',3,4,4',5-Hexachlorobiphenyl (#137)	87.1	16.4	87.1 ± 32.8	5
2,2',3,4,4',5'-Hexachlorobiphenyl (#138)	2,350	382	2,350 ± 764	11
2,2',3,4,5,5'-Hexachlorobiphenyl (#141)	514	55.8	514 ± 112	6
2,2',3,4',5',6-Hexachlorobiphenyl (#149)	2,280	212	2,280 ± 424	6
2,2',3,5,5',6-Hexachlorobiphenyl (#151)	910	376	910 ± 752	7
2,2',4,4',5,5'-Hexachlorobiphenyl (#153)	2,330	421	2,330 ± 842	13
2,3,3',4,4',5-Hexachlorobiphenyl (#156)	189	25.0	189 ± 25.0	14
2,3,3',4,4',5'-Hexachlorobiphenyl (#157)	31.0	7.56	31.0 ± 15.1	12
2,3,3',4,4',6-Hexachlorobiphenyl (#158)	224	22.4	224 ± 44.8	6
2,3',4,4',5,5'-Hexachlorobiphenyl (#167)	83.2	12.0	83.2 ± 12.0	13
3,3',4,4',5,5'-Hexachlorobiphenyl (#169)	0.57	0.34	0.57 ± 0.68	11
2,2',3,3',4,4',5-Heptachlorobiphenyl (#170)	436	51.2	436 ± 102	7
2,2',3,3',4',5,6-Heptachlorobiphenyl (#177)	362	39.5	362 ± 79.0	7
2,2',3,3',5,5',6-Heptachlorobiphenyl (#178)	135	11.3	135 ± 22.6	5
2,2',3,4,4',5,5'-Heptachlorobiphenyl (#180)	1,116	250	1,116 ± 500	13
2,2',3,4,4',5',6-Heptachlorobiphenyl (#183)	360	12.6	360 ± 25.2	7
2,2',3,4',5,5',6-Heptachlorobiphenyl (#187)	679	71.6	679 ± 143	5
2,3,3',4,4',5,5'-Heptachlorobiphenyl (#189)	14.2	2.66	14.2 ± 5.32	13
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (#194)	182	22.3	182 ± 44.6	7
2,2',3,3',4,4',5,6-Octachlorobiphenyl (#195)	90.6	8.61	90.6 ± 17.2	7
2,2',3,3',4,5,6,6'-Octachlorobiphenyl (#199)	229	17.1	229 ± 34.2	6
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (#206)[5]	74.8	54.1	74.8 ± 108	7
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (#208)[5]	38.3	30.7	38.3 ± 61.4	7
Decachlorobiphenyl (#209)	12.9	11.5	12.9 ± 23.0	7

Interlaboratory Results (continued):

Compound	Assigned [1] Value (ng/kg)	Standard Deviation	Reference [2] Value (ng/kg)	(n) [3]
Brominated diphenyl ethers [6]				
2,2',4-Tribromodiphenyl ether (#17)	4.80	3.05	4.80 ± 6.10	7
2,4,4'-Tribromodiphenyl ether (#28)	38.0	39.9	38.0 ± 79.8	11
2,2',4,4'-Tetrabromodiphenyl ether (#47)	192	123	192 ± 246	11
2,2',4,5'-Tetrabromodiphenyl ether (#49)	24.4	9.86	24.4 ± 19.7	5
2,3',4,4'-Tetrabromodiphenyl ether (#66)	12.6	5.46	12.6 ± 10.9	8
2,2',3,4,4'-Pentabromodiphenyl ether (#85)	19.5	8.97	19.5 ± 17.9	8
2,2',4,4',5-Pentabromodiphenyl ether (#99)	213	93.0	213 ± 186	11
2,2',4,4',6-Pentabromodiphenyl ether (#100)	55.4	15.5	55.4 ± 31.0	11
2,2',3,4,4',5-Hexabromodiphenyl ether (#138)	25.8	12.9	25.8 ± 25.8	9
2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)	111	12.0	111 ± 24.0	11
2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)	46.0	13.3	46.0 ± 26.6	11
2,2',3,4,4',5',6-Heptabromodiphenyl ether (#183)	286	35.4	286 ± 70.8	11
Decabromodiphenyl ether (#209)	1,930	1,150	1,930 ± 2,300	7
Polyaromatic hydrocarbons				
Anthracene	9,650	2,990	9,650 ± 5,980	6
Benz[*a*]anthracene	11,200	4,710	11,200 ± 9,420	7
Benzo[*b*]fluoranthene	18,100	9,580	18,100 ± 19,200	7
Benzo[*k*]fluoranthene	5,870	1,660	5,870 ± 3,320	7
Benzo[*g* ,*h* ,*i*]perylene	8,280	1,300	8,280 ± 2,600	7
Benzo[*a*]pyrene	7,620	3,080	7,620 ± 6,160	7
Chrysene	16,000	3,750	16,000 ± 7,500	7
Fluoranthene	33,000	5,170	33,000 ± 10,300	7
Indeno[1,2,3-*cd*]pyrene	9,550	2,070	9,550 ± 4,140	7
Phenanthrene	25,900	19,100	25,900 ± 38,200	6
Pyrene	26,300	4,340	26,300 ± 8,680	7

[1] Assigned Value as determined by Manna Associates in the UK using Cofino analysis of raw interlaboratory study data.

[2] Reference Value is the Assigned Value plus or minus two standard deviations. Negative numbers resulting from two standard deviations being greater than the assigned value have no significance.

[3] Number of laboratories providing results for this analyte.

[4] All numbers in parentheses refer to the IUPAC designation for the compound.

[5] Assigned values from the First Round of International Interlaboratory Study.

[6] All numbers in parentheses refer to the IUPAC designation for the related PCB congener.

COA Revision History

Revision No.	Date	Reason for Revision
00	December 02, 2015	Initial version



1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Clean Soil Reference Material 2003

Product Number : EDF-5183
Brand : Cerilliant

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Not a hazardous substance or mixture.

2.2 GHS Label elements, including precautionary statements

Not a hazardous substance or mixture.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

No components need to be disclosed according to the applicable regulations.

4. FIRST AID MEASURES

4.1 Description of first aid measures

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration.

In case of skin contact
Wash off with soap and plenty of water.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Nature of decomposition products not known.

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Avoid dust formation. Avoid breathing vapours, mist or gas.
For personal protection see section 8.

6.2 Environmental precautions
No special environmental precautions required.

6.3 Methods and materials for containment and cleaning up
Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Storage class (TRGS 510): Non Combustible Solids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls
General industrial hygiene practice.

Personal protective equipment

Eye/face protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
No special environmental precautions required.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: solid
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	No data available
f)	Initial boiling point and boiling range	No data available
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	No data available
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

IMDG

IATA

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
No SARA Hazards

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Soil	-	

New Jersey Right To Know Components

	CAS-No.	Revision Date

Soil

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

HMIS Rating

Health hazard:	0
Chronic Health Hazard:	
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	0
Fire Hazard:	0
Reactivity Hazard:	0

Further information
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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.0 Revision Date: 05/20/2015 Print Date: 05/20/2015

High Resolution Dioxins and Furans Analysis

Case Narrative

HDOX Case Narrative
Pacific Groundwater Group (PGWG)
SDG 2006-00115_3
Work Order 15470

Method/Analysis Information

Product: **Dioxins/Furans by EPA Method 1613B in Solids**
Analytical Method: EPA Method 1613B
Extraction Method: SW846 3540C
Analytical Batch Number: 41713, 41778
Clean Up Batch Number: 41712, 41777
Extraction Batch Number: 41711, 41776

Sample Analysis

Samples were received at 3.3°C (15470001, 15470002, 15470003, 15470004, 15470005, 15470006, 15470007, 15470008, 15470009, 15470010, 15470011, 15470012, 15470013, 15470014, 15470015, 15470016, 15470017, 15470018, 15470019, 15470020, 15470021, 15470022) and ambient. (15470023). The following samples were analyzed using the analytical protocol as established in Method 1613B:

Sample ID	Client ID
12024755	Method Blank (MB)
12024756	Laboratory Control Sample (LCS)
12024757	Laboratory Control Sample Duplicate (LCSD)
12024827	Method Blank (MB)
12024828	Laboratory Control Sample (LCS)
12024829	Laboratory Control Sample Duplicate (LCSD)
12024830	15470018(J3-SC1b-70to80-82719) Matrix Spike (MS)
12024831	15470018(J3-SC1b-70to80-82719) Matrix Spike Duplicate (MSD)
15470001	D6-SC1b-20to30-82619
15470002	D6-SC1b-30to40-82619
15470003	D6-SC1b-40to50-82619
15470004	D6-SC1b-50to60-82619
15470005	D6-SC1b-60to70-82619
15470006	D6-SC1b-70to80-82619
15470007	D6-SC1b-80to90-82619
15470008	D6-SC1b-90to100-82619
15470009	D6-SC1b-100to110-82619
15470010	D6-SC1b-110to120-82619
15470012	411-SC1b-50to60-82619

15470013	J3-SC1b-20to30-82719
15470014	J3-SC1b-30to40-82719
15470015	J3-SC1b-40to50-82719
15470016	J3-SC1b-50to60-82719
15470017	J3-SC1b-60to70-82719
15470018	J3-SC1b-70to80-82719
15470019	J3-SC1b-80to90-82719
15470020	J3-SC1b-90to100-82719
15470021	J3-SC1b-10to20-82719
15470022	412-SC1b-80to90-82719
15470023	SRM Lot# ER10091501

Samples 15470 001, 002, 003, 004, 005, 006, 007, 008, 009, 010, 011, 012, 013, 014, 015, 016, 017, 018, 019, 020, 021 and 022 in this SDG were analyzed on a "dry weight" basis. Sample 15470 023 in this SDG was analyzed on an "as received" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-002 REV# 15.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements
All associated calibration verification standard(s) (CCV) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement
The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

Method Blank (MB) Statement
The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
All surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS) Recovery

The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery
The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement
The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation
Sample 15470018 (J3-SC1b-70to80-82719)- Batch 41778 was selected for analysis as the matrix spike and matrix spike duplicate.

Matrix Spike (MS) Recovery Statement
The MS recoveries were within the established acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement
The RPDs between the MS and MSD met the acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD recoveries were within the established acceptance limits.

Technical Information

Holding Time Specifications
CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Nonconformance (NCR) Documentation
A NCR was not required for this SDG.

Manual Integrations
Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies

of all manual integration peak profiles are included in the raw data section of this fraction. Manual integrations were required for data files in this SDG.

Sample preparation
No difficulties were encountered during sample preparation.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Sample Data Summary

Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Qualifier Definition Report
for

PGWG001 Pacific Groundwater Group

Client SDG: 2006-00115_3 CFA Work Order: 15470

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

B The target analyte was detected in the associated blank.

E Value is estimated - Concentration of the target analyte exceeds the instrument calibration range

J Value is estimated

K Estimated Maximum Possible Concentration

Q Quantitative Interference; value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

DL Indicates that sample is diluted.

RA Indicates that sample is re-analyzed without re-extraction.

RE Indicates that sample is re-extracted.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: [redacted] **Name: Heather Patterson**

Date: 04 OCT 2019 **Title: Group Leader**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470001**	**Date Collected:**	**08/26/2019 12:45**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**45.8**
Client ID:	**D6-SC1b-20to30-82619**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/19/2019 12:42**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A18SEP19D_2-10**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**18.56 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	JK	0.451	pg/g	0.123	0.994
40321-76-4	1,2,3,7,8-PeCDD	J	1.22	pg/g	0.166	4.97
39227-28-6	1,2,3,4,7,8-HxCDD	J	1.70	pg/g	0.455	4.97
57653-85-7	1,2,3,6,7,8-HxCDD		15.1	pg/g	0.439	4.97
19408-74-3	1,2,3,7,8,9-HxCDD		5.34	pg/g	0.453	4.97
35822-46-9	1,2,3,4,6,7,8-HpCDD		434	pg/g	1.72	4.97
3268-87-9	1,2,3,4,6,7,8,9-OCDD	E	5850	pg/g	1.90	9.94
51207-31-9	2,3,7,8-TCDF	B	1.54	pg/g	0.203	0.994
57117-41-6	1,2,3,7,8-PeCDF	J	1.11	pg/g	0.147	4.97
57117-31-4	2,3,4,7,8-PeCDF	J	2.40	pg/g	0.137	4.97
70648-26-9	1,2,3,4,7,8-HxCDF		6.19	pg/g	0.302	4.97
57117-44-9	1,2,3,6,7,8-HxCDF	J	3.88	pg/g	0.300	4.97
60851-34-5	2,3,4,6,7,8-HxCDF	J	3.56	pg/g	0.322	4.97
72918-21-9	1,2,3,7,8,9-HxCDF	J	1.24	pg/g	0.358	4.97
67562-39-4	1,2,3,4,6,7,8-HpCDF		138	pg/g	0.537	4.97
55673-89-7	1,2,3,4,7,8,9-HpCDF		7.20	pg/g	0.732	4.97
39001-02-0	1,2,3,4,6,7,8,9-OCDF		620	pg/g	0.809	9.94
41903-57-5	Total TeCDD	JK	6.11	pg/g	0.123	0.994
36088-22-9	Total PeCDD	JKQ	13.8	pg/g	0.166	4.97
34465-46-8	Total HxCDD	JK	101	pg/g	0.439	4.97
37871-00-4	Total HpCDD		832	pg/g	1.72	4.97
30402-14-3	Total TeCDF	JK	19.8	pg/g	0.203	0.994
30402-15-4	Total PeCDF	JKQ	37.5	pg/g	0.0676	4.97
55684-94-1	Total HxCDF	J	142	pg/g	0.300	4.97
38998-75-3	Total HpCDF	J	633	pg/g	0.537	4.97
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		14.0	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		14.0	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		151	199	pg/g	76.1	(25%-164%)
13C-1,2,3,7,8-PeCDD		161	199	pg/g	81.0	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		160	199	pg/g	80.4	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		146	199	pg/g	73.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		183	199	pg/g	92.2	(23%-140%)
13C-OCDD		352	398	pg/g	88.5	(17%-157%)
13C-2,3,7,8-TCDF		165	199	pg/g	83.2	(24%-169%)
13C-1,2,3,7,8-PeCDF		163	199	pg/g	81.9	(24%-185%)
13C-2,3,4,7,8-PeCDF		161	199	pg/g	80.7	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		144	199	pg/g	72.3	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		138	199	pg/g	69.3	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		146	199	pg/g	73.2	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		150	199	pg/g	75.3	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470001**	**Date Collected:**	**08/26/2019 12:45**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**45.8**
Client ID:	**D6-SC1b-20to30-82619**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/19/2019 12:42**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A18SEP19D_2-10**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**18.56 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		148	199	pg/g	74.3	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		163	199	pg/g	81.8	(26%-138%)
37Cl-2,3,7,8-TCDD		18.7	19.9	pg/g	93.9	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
E **Value is estimated - Concentration of the target analyte exceeds the instrument calibration range**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
Q **Quantitative Interference; value is estimated**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470001**	**Date Collected:**	**08/26/2019 12:45**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**45.8**
Client ID:	**D6-SC1b-20to30-82619**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/20/2019 11:18**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A20SEP19A-5**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**18.56 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF	B	1.80	pg/g	0.229	0.994

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

B The target analyte was detected in the associated blank.
E Value is estimated - Concentration of the target analyte exceeds the instrument calibration range
J Value is estimated
K Estimated Maximum Possible Concentration
Q Quantitative Interference; value is estimated
U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470002**	**Date Collected:**	**08/26/2019 13:00**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**44.8**
Client ID:	**D6-SC1b-30to40-82619**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/19/2019 13:31**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A18SEP19D_2-11**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**18.13 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.103	pg/g	0.103	0.999
40321-76-4	1,2,3,7,8-PeCDD	U	0.204	pg/g	0.204	4.99
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.22	pg/g	0.220	4.99
57653-85-7	1,2,3,6,7,8-HxCDD	J	1.13	pg/g	0.206	4.99
19408-74-3	1,2,3,7,8,9-HxCDD	JK	0.467	pg/g	0.216	4.99
35822-46-9	1,2,3,4,6,7,8-HpCDD		24.7	pg/g	0.507	4.99
3268-87-9	1,2,3,4,6,7,8,9-OCDD		293	pg/g	0.905	9.99
51207-31-9	2,3,7,8-TCDF	BJ	0.517	pg/g	0.177	0.999
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.711	pg/g	0.155	4.99
57117-31-4	2,3,4,7,8-PeCDF	J	0.405	pg/g	0.146	4.99
70648-26-9	1,2,3,4,7,8-HxCDF	J	2.14	pg/g	0.214	4.99
57117-44-9	1,2,3,6,7,8-HxCDF	JK	0.789	pg/g	0.226	4.99
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.423	pg/g	0.220	4.99
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.272	pg/g	0.272	4.99
67562-39-4	1,2,3,4,6,7,8-HpCDF		9.68	pg/g	0.278	4.99
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	0.603	pg/g	0.377	4.99
39001-02-0	1,2,3,4,6,7,8,9-OCDF		30.3	pg/g	0.360	9.99
41903-57-5	Total TeCDD	JK	0.547	pg/g	0.103	0.999
36088-22-9	Total PeCDD	JK	1.02	pg/g	0.204	4.99
34465-46-8	Total HxCDD	JK	7.46	pg/g	0.206	4.99
37871-00-4	Total HpCDD		49.8	pg/g	0.507	4.99
30402-14-3	Total TeCDF	BJK	3.29	pg/g	0.177	0.999
30402-15-4	Total PeCDF	JK	5.05	pg/g	0.0671	4.99
55684-94-1	Total HxCDF	JK	13.1	pg/g	0.214	4.99
38998-75-3	Total HpCDF	J	35.9	pg/g	0.278	4.99
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		1.14	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		1.31	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		156	200	pg/g	77.9	(25%-164%)
13C-1,2,3,7,8-PeCDD		168	200	pg/g	84.1	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		157	200	pg/g	78.5	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		152	200	pg/g	76.1	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		176	200	pg/g	88.1	(23%-140%)
13C-OCDD		319	399	pg/g	79.8	(17%-157%)
13C-2,3,7,8-TCDF		161	200	pg/g	80.7	(24%-169%)
13C-1,2,3,7,8-PeCDF		170	200	pg/g	85.1	(24%-185%)
13C-2,3,4,7,8-PeCDF		163	200	pg/g	81.8	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		147	200	pg/g	73.5	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		141	200	pg/g	70.7	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		147	200	pg/g	73.6	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		152	200	pg/g	76.3	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470002**	**Date Collected:**	**08/26/2019 13:00**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**44.8**
Client ID:	**D6-SC1b-30to40-82619**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/19/2019 13:31**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A18SEP19D_2-11**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**18.13 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		142	200	pg/g	71.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		156	200	pg/g	78.2	(26%-138%)
37Cl-2,3,7,8-TCDD		18.2	20.0	pg/g	91.4	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470003**	**Date Collected:**	**08/26/2019 14:45**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**41.4**
Client ID:	**D6-SC1b-40to50-82619**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/19/2019 14:19**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A18SEP19D_2-12**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**17.19 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	JK	0.530	pg/g	0.0877	0.992
40321-76-4	1,2,3,7,8-PeCDD	J	0.998	pg/g	0.194	4.96
39227-28-6	1,2,3,4,7,8-HxCDD	J	1.45	pg/g	0.312	4.96
57653-85-7	1,2,3,6,7,8-HxCDD		6.31	pg/g	0.296	4.96
19408-74-3	1,2,3,7,8,9-HxCDD	J	3.70	pg/g	0.310	4.96
35822-46-9	1,2,3,4,6,7,8-HpCDD		169	pg/g	0.959	4.96
3268-87-9	1,2,3,4,6,7,8,9-OCDD		2090	pg/g	1.07	9.92
51207-31-9	2,3,7,8-TCDF	BJ	0.808	pg/g	0.163	0.992
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.780	pg/g	0.130	4.96
57117-31-4	2,3,4,7,8-PeCDF	J	1.69	pg/g	0.123	4.96
70648-26-9	1,2,3,4,7,8-HxCDF	J	4.02	pg/g	0.230	4.96
57117-44-9	1,2,3,6,7,8-HxCDF	J	3.63	pg/g	0.224	4.96
60851-34-5	2,3,4,6,7,8-HxCDF	J	2.86	pg/g	0.228	4.96
72918-21-9	1,2,3,7,8,9-HxCDF	J	0.873	pg/g	0.266	4.96
67562-39-4	1,2,3,4,6,7,8-HpCDF		75.3	pg/g	0.333	4.96
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	3.59	pg/g	0.435	4.96
39001-02-0	1,2,3,4,6,7,8,9-OCDF		188	pg/g	0.673	9.92
41903-57-5	Total TeCDD	JK	5.18	pg/g	0.0877	0.992
36088-22-9	Total PeCDD	JKQ	9.85	pg/g	0.194	4.96
34465-46-8	Total HxCDD	J	53.7	pg/g	0.296	4.96
37871-00-4	Total HpCDD		338	pg/g	0.959	4.96
30402-14-3	Total TeCDF	JK	13.6	pg/g	0.163	0.992
30402-15-4	Total PeCDF	JKQ	31.5	pg/g	0.0506	4.96
55684-94-1	Total HxCDF	JK	78.1	pg/g	0.224	4.96
38998-75-3	Total HpCDF	JK	247	pg/g	0.333	4.96
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		7.58	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		7.58	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		152	198	pg/g	76.4	(25%-164%)
13C-1,2,3,7,8-PeCDD		162	198	pg/g	81.7	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		163	198	pg/g	82.3	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		159	198	pg/g	80.1	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		194	198	pg/g	97.5	(23%-140%)
13C-OCDD		359	397	pg/g	90.4	(17%-157%)
13C-2,3,7,8-TCDF		166	198	pg/g	83.5	(24%-169%)
13C-1,2,3,7,8-PeCDF		166	198	pg/g	83.7	(24%-185%)
13C-2,3,4,7,8-PeCDF		162	198	pg/g	81.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		153	198	pg/g	76.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		149	198	pg/g	75.0	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		154	198	pg/g	77.5	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		161	198	pg/g	81.2	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470003**	**Date Collected:**	**08/26/2019 14:45**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**41.4**
Client ID:	**D6-SC1b-40to50-82619**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/19/2019 14:19**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A18SEP19D_2-12**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**17.19 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		156	198	pg/g	78.5	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		175	198	pg/g	88.2	(26%-138%)
37Cl-2,3,7,8-TCDD		18.2	19.8	pg/g	91.5	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
Q **Quantitative Interference; value is estimated**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470004**	**Date Collected:**	**08/26/2019 14:50**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**38.9**
Client ID:	**D6-SC1b-50to60-82619**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 12:08**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_3-6**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**17.11 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	0.0976	pg/g	0.0744	0.957
40321-76-4	1,2,3,7,8-PeCDD	J	0.279	pg/g	0.119	4.78
39227-28-6	1,2,3,4,7,8-HxCDD	JK	0.293	pg/g	0.132	4.78
57653-85-7	1,2,3,6,7,8-HxCDD	J	1.34	pg/g	0.129	4.78
19408-74-3	1,2,3,7,8,9-HxCDD	J	0.630	pg/g	0.133	4.78
35822-46-9	1,2,3,4,6,7,8-HpCDD		38.8	pg/g	0.448	4.78
3268-87-9	1,2,3,4,6,7,8,9-OCDD		505	pg/g	1.28	9.57
51207-31-9	2,3,7,8-TCDF	BJ	0.425	pg/g	0.131	0.957
57117-41-6	1,2,3,7,8-PeCDF	BJK	0.247	pg/g	0.071	4.78
57117-31-4	2,3,4,7,8-PeCDF	BJ	0.513	pg/g	0.0599	4.78
70648-26-9	1,2,3,4,7,8-HxCDF	J	0.966	pg/g	0.103	4.78
57117-44-9	1,2,3,6,7,8-HxCDF	J	1.04	pg/g	0.105	4.78
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.859	pg/g	0.118	4.78
72918-21-9	1,2,3,7,8,9-HxCDF	BJ	0.366	pg/g	0.158	4.78
67562-39-4	1,2,3,4,6,7,8-HpCDF		18.4	pg/g	0.226	4.78
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	0.934	pg/g	0.356	4.78
39001-02-0	1,2,3,4,6,7,8,9-OCDF		53.7	pg/g	0.488	9.57
41903-57-5	Total TeCDD	J	0.788	pg/g	0.0744	0.957
36088-22-9	Total PeCDD	JK	2.34	pg/g	0.119	4.78
34465-46-8	Total HxCDD	JK	12.1	pg/g	0.129	4.78
37871-00-4	Total HpCDD		86.9	pg/g	0.448	4.78
30402-14-3	Total TeCDF	BJ	4.11	pg/g	0.131	0.957
30402-15-4	Total PeCDF	JK	10.9	pg/g	0.0383	4.78
55684-94-1	Total HxCDF	J	21.9	pg/g	0.103	4.78
38998-75-3	Total HpCDF	J	64.9	pg/g	0.226	4.78
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		1.88	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		1.88	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		151	191	pg/g	79.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		135	191	pg/g	70.6	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		145	191	pg/g	75.9	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		152	191	pg/g	79.6	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		169	191	pg/g	88.4	(23%-140%)
13C-OCDD		270	383	pg/g	70.4	(17%-157%)
13C-2,3,7,8-TCDF		143	191	pg/g	74.6	(24%-169%)
13C-1,2,3,7,8-PeCDF		131	191	pg/g	68.3	(24%-185%)
13C-2,3,4,7,8-PeCDF		130	191	pg/g	68.1	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		146	191	pg/g	76.1	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		151	191	pg/g	78.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		144	191	pg/g	75.5	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		153	191	pg/g	79.8	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470004**	**Date Collected:**	**08/26/2019 14:50**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**38.9**
Client ID:	**D6-SC1b-50to60-82619**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 12:08**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_3-6**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**17.11 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		157	191	pg/g	82.0	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		164	191	pg/g	85.8	(26%-138%)
37Cl-2,3,7,8-TCDD		16.8	19.1	pg/g	87.7	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**

J **Value is estimated**

K **Estimated Maximum Possible Concentration**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470005**	**Date Collected:**	**08/26/2019 15:30**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**36.7**
Client ID:	**D6-SC1b-60to70-82619**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 12:56**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_3-7**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**16.02 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	0.0848	pg/g	0.0578	0.986
40321-76-4	1,2,3,7,8-PeCDD	J	0.146	pg/g	0.0746	4.93
39227-28-6	1,2,3,4,7,8-HxCDD	JK	0.189	pg/g	0.161	4.93
57653-85-7	1,2,3,6,7,8-HxCDD	J	0.840	pg/g	0.150	4.93
19408-74-3	1,2,3,7,8,9-HxCDD	J	0.434	pg/g	0.158	4.93
35822-46-9	1,2,3,4,6,7,8-HpCDD		23.0	pg/g	0.329	4.93
3268-87-9	1,2,3,4,6,7,8,9-OCDD		271	pg/g	0.937	9.86
51207-31-9	2,3,7,8-TCDF	BJ	0.260	pg/g	0.106	0.986
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.170	pg/g	0.0676	4.93
57117-31-4	2,3,4,7,8-PeCDF	BJ	0.270	pg/g	0.0592	4.93
70648-26-9	1,2,3,4,7,8-HxCDF	BJ	0.554	pg/g	0.125	4.93
57117-44-9	1,2,3,6,7,8-HxCDF	J	0.562	pg/g	0.133	4.93
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.463	pg/g	0.143	4.93
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.189	pg/g	0.189	4.93
67562-39-4	1,2,3,4,6,7,8-HpCDF		10.5	pg/g	0.126	4.93
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	0.615	pg/g	0.205	4.93
39001-02-0	1,2,3,4,6,7,8,9-OCDF		30.5	pg/g	0.377	9.86
41903-57-5	Total TeCDD	J	0.659	pg/g	0.0578	0.986
36088-22-9	Total PeCDD	JK	1.76	pg/g	0.0746	4.93
34465-46-8	Total HxCDD	JK	7.50	pg/g	0.150	4.93
37871-00-4	Total HpCDD		50.2	pg/g	0.329	4.93
30402-14-3	Total TeCDF	BJK	2.45	pg/g	0.106	0.986
30402-15-4	Total PeCDF	J	6.24	pg/g	0.0363	4.93
55684-94-1	Total HxCDF	J	12.6	pg/g	0.125	4.93
38998-75-3	Total HpCDF	J	38.8	pg/g	0.126	4.93
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		1.08	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		1.09	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		142	197	pg/g	72.1	(25%-164%)
13C-1,2,3,7,8-PeCDD		132	197	pg/g	66.9	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		141	197	pg/g	71.5	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		151	197	pg/g	76.5	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		162	197	pg/g	82.0	(23%-140%)
13C-OCDD		261	394	pg/g	66.1	(17%-157%)
13C-2,3,7,8-TCDF		135	197	pg/g	68.6	(24%-169%)
13C-1,2,3,7,8-PeCDF		125	197	pg/g	63.2	(24%-185%)
13C-2,3,4,7,8-PeCDF		126	197	pg/g	64.1	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		150	197	pg/g	76.2	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		144	197	pg/g	72.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		140	197	pg/g	71.0	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		149	197	pg/g	75.7	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470005**	**Date Collected:**	**08/26/2019 15:30**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**36.7**
Client ID:	**D6-SC1b-60to70-82619**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 12:56**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_3-7**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**16.02 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		149	197	pg/g	75.5	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		155	197	pg/g	78.3	(26%-138%)
37Cl-2,3,7,8-TCDD		15.7	19.7	pg/g	79.9	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470006**	**Date Collected:**	**08/26/2019 15:40**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**32.9**
Client ID:	**D6-SC1b-70to80-82619**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 13:45**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_3-8**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**15.6 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	0.0955	pg/g	0.0632	0.955
40321-76-4	1,2,3,7,8-PeCDD	J	0.237	pg/g	0.0739	4.78
39227-28-6	1,2,3,4,7,8-HxCDD	J	0.266	pg/g	0.158	4.78
57653-85-7	1,2,3,6,7,8-HxCDD	J	1.19	pg/g	0.151	4.78
19408-74-3	1,2,3,7,8,9-HxCDD	J	0.755	pg/g	0.157	4.78
35822-46-9	1,2,3,4,6,7,8-HpCDD		32.4	pg/g	0.445	4.78
3268-87-9	1,2,3,4,6,7,8,9-OCDD		440	pg/g	1.06	9.55
51207-31-9	2,3,7,8-TCDF	BJ	0.327	pg/g	0.113	0.955
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.227	pg/g	0.0709	4.78
57117-31-4	2,3,4,7,8-PeCDF	BJ	0.384	pg/g	0.0629	4.78
70648-26-9	1,2,3,4,7,8-HxCDF	BJ	0.823	pg/g	0.112	4.78
57117-44-9	1,2,3,6,7,8-HxCDF	J	0.812	pg/g	0.112	4.78
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.594	pg/g	0.121	4.78
72918-21-9	1,2,3,7,8,9-HxCDF	BJ	0.210	pg/g	0.169	4.78
67562-39-4	1,2,3,4,6,7,8-HpCDF		13.6	pg/g	0.170	4.78
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	0.659	pg/g	0.298	4.78
39001-02-0	1,2,3,4,6,7,8,9-OCDF		35.5	pg/g	0.508	9.55
41903-57-5	Total TeCDD	J	1.32	pg/g	0.0632	0.955
36088-22-9	Total PeCDD	J	2.25	pg/g	0.0739	4.78
34465-46-8	Total HxCDD	J	11.7	pg/g	0.151	4.78
37871-00-4	Total HpCDD		74.1	pg/g	0.445	4.78
30402-14-3	Total TeCDF	BJK	2.99	pg/g	0.113	0.955
30402-15-4	Total PeCDF	JK	7.69	pg/g	0.0321	4.78
55684-94-1	Total HxCDF	J	16.7	pg/g	0.112	4.78
38998-75-3	Total HpCDF	J	47.4	pg/g	0.170	4.78
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		1.56	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		1.56	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		144	191	pg/g	75.6	(25%-164%)
13C-1,2,3,7,8-PeCDD		131	191	pg/g	68.6	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		147	191	pg/g	77.0	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		146	191	pg/g	76.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		162	191	pg/g	84.8	(23%-140%)
13C-OCDD		259	382	pg/g	67.8	(17%-157%)
13C-2,3,7,8-TCDF		136	191	pg/g	71.4	(24%-169%)
13C-1,2,3,7,8-PeCDF		127	191	pg/g	66.7	(24%-185%)
13C-2,3,4,7,8-PeCDF		125	191	pg/g	65.3	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		145	191	pg/g	76.1	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		143	191	pg/g	75.1	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		139	191	pg/g	72.6	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		150	191	pg/g	78.7	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470006**	**Date Collected:**	**08/26/2019 15:40**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**32.9**
Client ID:	**D6-SC1b-70to80-82619**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 13:45**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_3-8**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**15.6 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		150	191	pg/g	78.7	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		153	191	pg/g	80.1	(26%-138%)
37Cl-2,3,7,8-TCDD		15.7	19.1	pg/g	82.2	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**

J **Value is estimated**

K **Estimated Maximum Possible Concentration**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470007**	**Date Collected:**	**08/26/2019 16:55**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**30.9**
Client ID:	**D6-SC1b-80to90-82619**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 14:33**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_3-9**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**15.47 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0606	pg/g	0.0606	0.935
40321-76-4	1,2,3,7,8-PeCDD	U	0.0816	pg/g	0.0816	4.68
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.128	pg/g	0.128	4.68
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.121	pg/g	0.121	4.68
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.127	pg/g	0.127	4.68
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	2.71	pg/g	0.234	4.68
3268-87-9	1,2,3,4,6,7,8,9-OCDD		32.1	pg/g	0.582	9.35
51207-31-9	2,3,7,8-TCDF	BJ	0.166	pg/g	0.0986	0.935
57117-41-6	1,2,3,7,8-PeCDF	BJK	0.0617	pg/g	0.0486	4.68
57117-31-4	2,3,4,7,8-PeCDF	BJK	0.0599	pg/g	0.0451	4.68
70648-26-9	1,2,3,4,7,8-HxCDF	BJ	0.127	pg/g	0.0668	4.68
57117-44-9	1,2,3,6,7,8-HxCDF	JK	0.0804	pg/g	0.0649	4.68
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.0696	pg/g	0.0696	4.68
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.106	pg/g	0.106	4.68
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	1.24	pg/g	0.120	4.68
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.2	pg/g	0.200	4.68
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	3.81	pg/g	0.599	9.35
41903-57-5	Total TeCDD	J	0.0636	pg/g	0.0606	0.935
36088-22-9	Total PeCDD	J	0.0991	pg/g	0.0816	4.68
34465-46-8	Total HxCDD	JK	0.945	pg/g	0.121	4.68
37871-00-4	Total HpCDD	J	5.72	pg/g	0.234	4.68
30402-14-3	Total TeCDF	BJK	0.443	pg/g	0.0986	0.935
30402-15-4	Total PeCDF	BJK	0.730	pg/g	0.0417	4.68
55684-94-1	Total HxCDF	BJK	1.55	pg/g	0.0649	4.68
38998-75-3	Total HpCDF	J	4.36	pg/g	0.120	4.68
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.107	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.207	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		147	187	pg/g	78.8	(25%-164%)
13C-1,2,3,7,8-PeCDD		131	187	pg/g	69.9	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		147	187	pg/g	78.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		149	187	pg/g	79.5	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		158	187	pg/g	84.7	(23%-140%)
13C-OCDD		245	374	pg/g	65.6	(17%-157%)
13C-2,3,7,8-TCDF		134	187	pg/g	71.8	(24%-169%)
13C-1,2,3,7,8-PeCDF		127	187	pg/g	67.7	(24%-185%)
13C-2,3,4,7,8-PeCDF		125	187	pg/g	66.8	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		146	187	pg/g	78.2	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		150	187	pg/g	79.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		144	187	pg/g	77.0	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		145	187	pg/g	77.5	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470007**	**Date Collected:**	**08/26/2019 16:55**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**30.9**
Client ID:	**D6-SC1b-80to90-82619**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 14:33**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_3-9**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**15.47 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		150	187	pg/g	80.3	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		150	187	pg/g	80.2	(26%-138%)
37Cl-2,3,7,8-TCDD		16.7	18.7	pg/g	89.1	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470008**	**Date Collected:**	**08/26/2019 17:00**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**27.3**
Client ID:	**D6-SC1b-90to100-82619**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 15:22**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_3-10**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**14.97 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0498	pg/g	0.0498	0.919
40321-76-4	1,2,3,7,8-PeCDD	U	0.0757	pg/g	0.0757	4.60
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.0891	pg/g	0.0891	4.60
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.0785	pg/g	0.0785	4.60
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.0847	pg/g	0.0847	4.60
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	1.53	pg/g	0.189	4.60
3268-87-9	1,2,3,4,6,7,8,9-OCDD		18.4	pg/g	0.937	9.19
51207-31-9	2,3,7,8-TCDF	BJ	0.186	pg/g	0.0978	0.919
57117-41-6	1,2,3,7,8-PeCDF	U	0.0603	pg/g	0.0603	4.60
57117-31-4	2,3,4,7,8-PeCDF	U	0.0509	pg/g	0.0509	4.60
70648-26-9	1,2,3,4,7,8-HxCDF	BJK	0.0919	pg/g	0.0671	4.60
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.0652	pg/g	0.0652	4.60
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.0726	pg/g	0.0726	4.60
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.11	pg/g	0.110	4.60
67562-39-4	1,2,3,4,6,7,8-HpCDF	BJ	0.636	pg/g	0.0704	4.60
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.117	pg/g	0.117	4.60
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	1.48	pg/g	0.336	9.19
41903-57-5	Total TeCDD	JK	0.349	pg/g	0.0498	0.919
36088-22-9	Total PeCDD	JK	0.199	pg/g	0.0757	4.60
34465-46-8	Total HxCDD	JK	0.890	pg/g	0.0785	4.60
37871-00-4	Total HpCDD	J	3.41	pg/g	0.189	4.60
30402-14-3	Total TeCDF	BJ	0.338	pg/g	0.0978	0.919
30402-15-4	Total PeCDF	BJ	0.360	pg/g	0.0377	4.60
55684-94-1	Total HxCDF	BJK	0.761	pg/g	0.0652	4.60
38998-75-3	Total HpCDF	J	2.03	pg/g	0.0704	4.60
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.0554	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.152	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		151	184	pg/g	81.9	(25%-164%)
13C-1,2,3,7,8-PeCDD		134	184	pg/g	73.1	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		148	184	pg/g	80.7	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		154	184	pg/g	84.0	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		162	184	pg/g	88.4	(23%-140%)
13C-OCDD		252	368	pg/g	68.4	(17%-157%)
13C-2,3,7,8-TCDF		136	184	pg/g	74.1	(24%-169%)
13C-1,2,3,7,8-PeCDF		127	184	pg/g	68.9	(24%-185%)
13C-2,3,4,7,8-PeCDF		130	184	pg/g	70.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		151	184	pg/g	82.2	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		152	184	pg/g	82.6	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		148	184	pg/g	80.5	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		147	184	pg/g	79.9	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470008**	**Date Collected:**	**08/26/2019 17:00**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**27.3**
Client ID:	**D6-SC1b-90to100-82619**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 15:22**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_3-10**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**14.97 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		159	184	pg/g	86.3	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		154	184	pg/g	83.6	(26%-138%)
37Cl-2,3,7,8-TCDD		15.8	18.4	pg/g	85.7	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470009**	**Date Collected:**	**08/26/2019 17:40**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**27.8**
Client ID:	**D6-SC1b-100to110-82619**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 16:10**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_3-11**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**14.72 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.116	pg/g	0.116	0.941
40321-76-4	1,2,3,7,8-PeCDD	U	0.108	pg/g	0.108	4.71
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.155	pg/g	0.155	4.71
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.135	pg/g	0.135	4.71
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.146	pg/g	0.146	4.71
35822-46-9	1,2,3,4,6,7,8-HpCDD	JK	1.39	pg/g	0.341	4.71
3268-87-9	1,2,3,4,6,7,8,9-OCDD		12.6	pg/g	1.03	9.41
51207-31-9	2,3,7,8-TCDF	BJK	0.232	pg/g	0.140	0.941
57117-41-6	1,2,3,7,8-PeCDF	U	0.0798	pg/g	0.0798	4.71
57117-31-4	2,3,4,7,8-PeCDF	U	0.0704	pg/g	0.0704	4.71
70648-26-9	1,2,3,4,7,8-HxCDF	U	0.0872	pg/g	0.0872	4.71
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.0921	pg/g	0.0921	4.71
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.0977	pg/g	0.0977	4.71
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.149	pg/g	0.149	4.71
67562-39-4	1,2,3,4,6,7,8-HpCDF	BJ	0.422	pg/g	0.121	4.71
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.205	pg/g	0.205	4.71
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	1.20	pg/g	0.634	9.41
41903-57-5	Total TeCDD	JK	0.337	pg/g	0.116	0.941
36088-22-9	Total PeCDD	U	0.108	pg/g	0.108	4.71
34465-46-8	Total HxCDD	JK	0.657	pg/g	0.135	4.71
37871-00-4	Total HpCDD	JK	3.19	pg/g	0.341	4.71
30402-14-3	Total TeCDF	BJK	0.446	pg/g	0.140	0.941
30402-15-4	Total PeCDF	BJ	0.139	pg/g	0.0629	4.71
55684-94-1	Total HxCDF	BJ	0.390	pg/g	0.0872	4.71
38998-75-3	Total HpCDF	J	1.43	pg/g	0.121	4.71
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.0454	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.214	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		148	188	pg/g	78.9	(25%-164%)
13C-1,2,3,7,8-PeCDD		136	188	pg/g	72.0	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		142	188	pg/g	75.7	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		147	188	pg/g	78.1	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		151	188	pg/g	80.5	(23%-140%)
13C-OCDD		233	377	pg/g	62.0	(17%-157%)
13C-2,3,7,8-TCDF		140	188	pg/g	74.5	(24%-169%)
13C-1,2,3,7,8-PeCDF		131	188	pg/g	69.6	(24%-185%)
13C-2,3,4,7,8-PeCDF		129	188	pg/g	68.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		148	188	pg/g	78.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		145	188	pg/g	77.0	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		143	188	pg/g	75.7	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		144	188	pg/g	76.6	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470009**	**Date Collected:**	**08/26/2019 17:40**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**27.8**
Client ID:	**D6-SC1b-100to110-82619**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 16:10**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_3-11**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**14.72 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		147	188	pg/g	78.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		146	188	pg/g	77.4	(26%-138%)
37Cl-2,3,7,8-TCDD		17.2	18.8	pg/g	91.5	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470010**	**Date Collected:**	**08/26/2019 17:50**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**27.7**
Client ID:	**D6-SC1b-110to120-82619**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 16:58**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_3-12**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**14.28 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.111	pg/g	0.111	0.969
40321-76-4	1,2,3,7,8-PeCDD	U	0.118	pg/g	0.118	4.84
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.139	pg/g	0.139	4.84
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.14	pg/g	0.140	4.84
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.142	pg/g	0.142	4.84
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	1.00	pg/g	0.395	4.84
3268-87-9	1,2,3,4,6,7,8,9-OCDD		11.4	pg/g	1.50	9.69
51207-31-9	2,3,7,8-TCDF	BJ	0.207	pg/g	0.170	0.969
57117-41-6	1,2,3,7,8-PeCDF	U	0.0874	pg/g	0.0874	4.84
57117-31-4	2,3,4,7,8-PeCDF	U	0.0817	pg/g	0.0817	4.84
70648-26-9	1,2,3,4,7,8-HxCDF	U	0.0794	pg/g	0.0794	4.84
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.0796	pg/g	0.0796	4.84
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.0852	pg/g	0.0852	4.84
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.13	pg/g	0.130	4.84
67562-39-4	1,2,3,4,6,7,8-HpCDF	BJ	0.186	pg/g	0.130	4.84
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.219	pg/g	0.219	4.84
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	0.57	pg/g	0.570	9.69
41903-57-5	Total TeCDD	J	0.281	pg/g	0.111	0.969
36088-22-9	Total PeCDD	J	0.122	pg/g	0.118	4.84
34465-46-8	Total HxCDD	JK	1.21	pg/g	0.139	4.84
37871-00-4	Total HpCDD	J	2.75	pg/g	0.395	4.84
30402-14-3	Total TeCDF	BJ	0.207	pg/g	0.170	0.969
30402-15-4	Total PeCDF	BJK	0.122	pg/g	0.0715	4.84
55684-94-1	Total HxCDF	U	0.0794	pg/g	0.0794	4.84
38998-75-3	Total HpCDF	BJ	0.482	pg/g	0.130	4.84
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.036	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.205	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		160	194	pg/g	82.7	(25%-164%)
13C-1,2,3,7,8-PeCDD		150	194	pg/g	77.4	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		151	194	pg/g	78.0	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		161	194	pg/g	83.0	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		165	194	pg/g	85.1	(23%-140%)
13C-OCDD		258	387	pg/g	66.7	(17%-157%)
13C-2,3,7,8-TCDF		148	194	pg/g	76.5	(24%-169%)
13C-1,2,3,7,8-PeCDF		143	194	pg/g	73.7	(24%-185%)
13C-2,3,4,7,8-PeCDF		143	194	pg/g	74.0	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		161	194	pg/g	83.3	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		158	194	pg/g	81.6	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		152	194	pg/g	78.5	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		157	194	pg/g	81.0	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470010**	**Date Collected:**	**08/26/2019 17:50**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**27.7**
Client ID:	**D6-SC1b-110to120-82619**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 16:58**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_3-12**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**14.28 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		168	194	pg/g	86.8	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		164	194	pg/g	84.5	(26%-138%)
37Cl-2,3,7,8-TCDD		18.0	19.4	pg/g	93.0	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470012**	**Date Collected:**	**08/26/2019 15:00**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**39.1**
Client ID:	**411-SC1b-50to60-82619**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 17:47**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_3-13**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**17.51 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.15	pg/g	0.150	0.938
40321-76-4	1,2,3,7,8-PeCDD	J	0.338	pg/g	0.185	4.69
39227-28-6	1,2,3,4,7,8-HxCDD	JK	0.441	pg/g	0.298	4.69
57653-85-7	1,2,3,6,7,8-HxCDD	J	2.59	pg/g	0.281	4.69
19408-74-3	1,2,3,7,8,9-HxCDD	J	1.07	pg/g	0.296	4.69
35822-46-9	1,2,3,4,6,7,8-HpCDD		78.6	pg/g	0.974	4.69
3268-87-9	1,2,3,4,6,7,8,9-OCDD		981	pg/g	2.21	9.38
51207-31-9	2,3,7,8-TCDF	BJ	0.501	pg/g	0.278	0.938
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.643	pg/g	0.130	4.69
57117-31-4	2,3,4,7,8-PeCDF	J	1.10	pg/g	0.120	4.69
70648-26-9	1,2,3,4,7,8-HxCDF	J	2.25	pg/g	0.195	4.69
57117-44-9	1,2,3,6,7,8-HxCDF	J	2.33	pg/g	0.193	4.69
60851-34-5	2,3,4,6,7,8-HxCDF	J	1.53	pg/g	0.201	4.69
72918-21-9	1,2,3,7,8,9-HxCDF	BJ	0.533	pg/g	0.261	4.69
67562-39-4	1,2,3,4,6,7,8-HpCDF		36.7	pg/g	0.311	4.69
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	2.07	pg/g	0.482	4.69
39001-02-0	1,2,3,4,6,7,8,9-OCDF		105	pg/g	0.996	9.38
41903-57-5	Total TeCDD	J	1.35	pg/g	0.150	0.938
36088-22-9	Total PeCDD	JK	4.28	pg/g	0.185	4.69
34465-46-8	Total HxCDD	JK	23.0	pg/g	0.281	4.69
37871-00-4	Total HpCDD		173	pg/g	0.974	4.69
30402-14-3	Total TeCDF	JK	6.89	pg/g	0.278	0.938
30402-15-4	Total PeCDF	JK	21.6	pg/g	0.106	4.69
55684-94-1	Total HxCDF	J	43.6	pg/g	0.193	4.69
38998-75-3	Total HpCDF	J	129	pg/g	0.311	4.69
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		3.31	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		3.39	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		134	188	pg/g	71.6	(25%-164%)
13C-1,2,3,7,8-PeCDD		121	188	pg/g	64.6	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		145	188	pg/g	77.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		137	188	pg/g	73.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		163	188	pg/g	87.0	(23%-140%)
13C-OCDD		288	375	pg/g	76.8	(17%-157%)
13C-2,3,7,8-TCDF		129	188	pg/g	68.6	(24%-169%)
13C-1,2,3,7,8-PeCDF		112	188	pg/g	59.6	(24%-185%)
13C-2,3,4,7,8-PeCDF		115	188	pg/g	61.1	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		142	188	pg/g	75.6	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		135	188	pg/g	72.2	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		135	188	pg/g	72.1	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		141	188	pg/g	75.1	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470012**	**Date Collected:**	**08/26/2019 15:00**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**39.1**
Client ID:	**411-SC1b-50to60-82619**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 17:47**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_3-13**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**17.51 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		153	188	pg/g	81.7	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		163	188	pg/g	86.9	(26%-138%)
37Cl-2,3,7,8-TCDD		15.0	18.8	pg/g	80.2	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470013**	**Date Collected:**	**08/27/2019 10:00**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**34.1**
Client ID:	**J3-SC1b-20to30-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/27/2019 18:03**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_4-8**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**16.72 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.2	pg/g	0.200	0.907
40321-76-4	1,2,3,7,8-PeCDD	J	0.390	pg/g	0.265	4.54
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.332	pg/g	0.332	4.54
57653-85-7	1,2,3,6,7,8-HxCDD	J	2.17	pg/g	0.321	4.54
19408-74-3	1,2,3,7,8,9-HxCDD	J	1.09	pg/g	0.332	4.54
35822-46-9	1,2,3,4,6,7,8-HpCDD		56.8	pg/g	0.918	4.54
3268-87-9	1,2,3,4,6,7,8,9-OCDD		692	pg/g	1.94	9.07
51207-31-9	2,3,7,8-TCDF	U	0.401	pg/g	0.401	0.907
57117-41-6	1,2,3,7,8-PeCDF	BJK	0.394	pg/g	0.212	4.54
57117-31-4	2,3,4,7,8-PeCDF	J	0.857	pg/g	0.185	4.54
70648-26-9	1,2,3,4,7,8-HxCDF	J	2.33	pg/g	0.232	4.54
57117-44-9	1,2,3,6,7,8-HxCDF	J	1.46	pg/g	0.240	4.54
60851-34-5	2,3,4,6,7,8-HxCDF	J	1.33	pg/g	0.269	4.54
72918-21-9	1,2,3,7,8,9-HxCDF	BJ	0.530	pg/g	0.287	4.54
67562-39-4	1,2,3,4,6,7,8-HpCDF		22.1	pg/g	0.423	4.54
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	1.25	pg/g	0.581	4.54
39001-02-0	1,2,3,4,6,7,8,9-OCDF		68.9	pg/g	0.662	9.07
41903-57-5	Total TeCDD	K	1.03	pg/g	0.200	0.907
36088-22-9	Total PeCDD	JK	3.10	pg/g	0.265	4.54
34465-46-8	Total HxCDD	J	17.0	pg/g	0.321	4.54
37871-00-4	Total HpCDD		118	pg/g	0.918	4.54
30402-14-3	Total TeCDF	JK	5.13	pg/g	0.401	0.907
30402-15-4	Total PeCDF	JK	13.9	pg/g	0.0873	4.54
55684-94-1	Total HxCDF	J	29.3	pg/g	0.232	4.54
38998-75-3	Total HpCDF	J	77.8	pg/g	0.423	4.54
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		2.58	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		2.72	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		134	181	pg/g	73.6	(25%-164%)
13C-1,2,3,7,8-PeCDD		158	181	pg/g	87.0	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		138	181	pg/g	76.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		143	181	pg/g	79.1	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		158	181	pg/g	86.8	(23%-140%)
13C-OCDD		316	363	pg/g	87.0	(17%-157%)
13C-2,3,7,8-TCDF		123	181	pg/g	67.7	(24%-169%)
13C-1,2,3,7,8-PeCDF		147	181	pg/g	81.2	(24%-185%)
13C-2,3,4,7,8-PeCDF		153	181	pg/g	84.3	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		142	181	pg/g	78.5	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		135	181	pg/g	74.4	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		135	181	pg/g	74.2	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		159	181	pg/g	87.4	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470013**	**Date Collected:**	**08/27/2019 10:00**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**34.1**
Client ID:	**J3-SC1b-20to30-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/27/2019 18:03**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_4-8**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**16.72 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		135	181	pg/g	74.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		162	181	pg/g	89.1	(26%-138%)
37Cl-2,3,7,8-TCDD		15.0	18.1	pg/g	82.4	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470014**	**Date Collected:**	**08/27/2019 10:05**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**40.9**
Client ID:	**J3-SC1b-30to40-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/27/2019 18:51**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_4-9**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**17.02 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	0.499	pg/g	0.213	0.995
40321-76-4	1,2,3,7,8-PeCDD	J	1.74	pg/g	0.245	4.97
39227-28-6	1,2,3,4,7,8-HxCDD	J	3.45	pg/g	0.366	4.97
57653-85-7	1,2,3,6,7,8-HxCDD		11.3	pg/g	0.386	4.97
19408-74-3	1,2,3,7,8,9-HxCDD		5.18	pg/g	0.384	4.97
35822-46-9	1,2,3,4,6,7,8-HpCDD		315	pg/g	1.39	4.97
3268-87-9	1,2,3,4,6,7,8,9-OCDD		3740	pg/g	2.01	9.95
51207-31-9	2,3,7,8-TCDF	BJ	0.987	pg/g	0.479	0.995
57117-41-6	1,2,3,7,8-PeCDF	JK	1.34	pg/g	0.142	4.97
57117-31-4	2,3,4,7,8-PeCDF	J	3.64	pg/g	0.137	4.97
70648-26-9	1,2,3,4,7,8-HxCDF		11.4	pg/g	0.304	4.97
57117-44-9	1,2,3,6,7,8-HxCDF		6.19	pg/g	0.306	4.97
60851-34-5	2,3,4,6,7,8-HxCDF		6.28	pg/g	0.328	4.97
72918-21-9	1,2,3,7,8,9-HxCDF	J	1.75	pg/g	0.269	4.97
67562-39-4	1,2,3,4,6,7,8-HpCDF		127	pg/g	0.527	4.97
55673-89-7	1,2,3,4,7,8,9-HpCDF		8.49	pg/g	0.670	4.97
39001-02-0	1,2,3,4,6,7,8,9-OCDF		418	pg/g	0.726	9.95
41903-57-5	Total TeCDD	JK	10.8	pg/g	0.213	0.995
36088-22-9	Total PeCDD	JQ	18.5	pg/g	0.245	4.97
34465-46-8	Total HxCDD	J	94.0	pg/g	0.366	4.97
37871-00-4	Total HpCDD		669	pg/g	1.39	4.97
30402-14-3	Total TeCDF	JK	27.7	pg/g	0.479	0.995
30402-15-4	Total PeCDF	JKQ	72.1	pg/g	0.0738	4.97
55684-94-1	Total HxCDF	J	162	pg/g	0.269	4.97
38998-75-3	Total HpCDF	J	458	pg/g	0.527	4.97
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		13.8	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		13.8	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		146	199	pg/g	73.4	(25%-164%)
13C-1,2,3,7,8-PeCDD		162	199	pg/g	81.3	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		190	199	pg/g	95.3	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		122	199	pg/g	61.5	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		191	199	pg/g	96.1	(23%-140%)
13C-OCDD		405	398	pg/g	102	(17%-157%)
13C-2,3,7,8-TCDF		143	199	pg/g	71.9	(24%-169%)
13C-1,2,3,7,8-PeCDF		152	199	pg/g	76.5	(24%-185%)
13C-2,3,4,7,8-PeCDF		154	199	pg/g	77.4	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		159	199	pg/g	80.1	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		135	199	pg/g	67.8	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		144	199	pg/g	72.4	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		147	199	pg/g	73.8	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470014**	**Date Collected:**	**08/27/2019 10:05**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**40.9**
Client ID:	**J3-SC1b-30to40-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/27/2019 18:51**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_4-9**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**17.02 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		161	199	pg/g	80.7	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		195	199	pg/g	98.1	(26%-138%)
37Cl-2,3,7,8-TCDD		16.5	19.9	pg/g	82.9	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
Q **Quantitative Interference; value is estimated**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470014**	**Date Collected:**	**08/27/2019 10:05**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**40.9**
Client ID:	**J3-SC1b-30to40-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/30/2019 18:19**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b30sep19a_2-8**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**17.02 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF	B	1.04	pg/g	0.138	0.995

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

B The target analyte was detected in the associated blank.
J Value is estimated
K Estimated Maximum Possible Concentration
Q Quantitative Interference; value is estimated
U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470015**	**Date Collected:**	**08/27/2019 11:20**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**33.4**
Client ID:	**J3-SC1b-40to50-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 17:03**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b28sep19a-3**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**16.25 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.139	pg/g	0.139	0.924
40321-76-4	1,2,3,7,8-PeCDD	J	0.262	pg/g	0.139	4.62
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.205	pg/g	0.205	4.62
57653-85-7	1,2,3,6,7,8-HxCDD	J	1.28	pg/g	0.211	4.62
19408-74-3	1,2,3,7,8,9-HxCDD	J	0.713	pg/g	0.212	4.62
35822-46-9	1,2,3,4,6,7,8-HpCDD		26.3	pg/g	0.547	4.62
3268-87-9	1,2,3,4,6,7,8,9-OCDD		357	pg/g	1.09	9.24
51207-31-9	2,3,7,8-TCDF	BJK	0.347	pg/g	0.297	0.924
57117-41-6	1,2,3,7,8-PeCDF	BJK	0.238	pg/g	0.106	4.62
57117-31-4	2,3,4,7,8-PeCDF	J	1.37	pg/g	0.094	4.62
70648-26-9	1,2,3,4,7,8-HxCDF	J	0.870	pg/g	0.149	4.62
57117-44-9	1,2,3,6,7,8-HxCDF	J	1.65	pg/g	0.151	4.62
60851-34-5	2,3,4,6,7,8-HxCDF	J	1.30	pg/g	0.158	4.62
72918-21-9	1,2,3,7,8,9-HxCDF	BJ	0.338	pg/g	0.205	4.62
67562-39-4	1,2,3,4,6,7,8-HpCDF		26.7	pg/g	0.253	4.62
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	0.695	pg/g	0.357	4.62
39001-02-0	1,2,3,4,6,7,8,9-OCDF		30.2	pg/g	0.436	9.24
41903-57-5	Total TeCDD	J	2.01	pg/g	0.139	0.924
36088-22-9	Total PeCDD	JK	3.41	pg/g	0.139	4.62
34465-46-8	Total HxCDD	JK	10.2	pg/g	0.205	4.62
37871-00-4	Total HpCDD		61.4	pg/g	0.547	4.62
30402-14-3	Total TeCDF	JK	9.58	pg/g	0.297	0.924
30402-15-4	Total PeCDF	JK	27.1	pg/g	0.0789	4.62
55684-94-1	Total HxCDF	JK	27.8	pg/g	0.149	4.62
38998-75-3	Total HpCDF	J	59.3	pg/g	0.253	4.62
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		1.98	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		2.06	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		152	185	pg/g	82.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		158	185	pg/g	85.3	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		158	185	pg/g	85.3	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		155	185	pg/g	83.7	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		190	185	pg/g	103	(23%-140%)
13C-OCDD		397	369	pg/g	107	(17%-157%)
13C-2,3,7,8-TCDF		139	185	pg/g	75.4	(24%-169%)
13C-1,2,3,7,8-PeCDF		139	185	pg/g	75.2	(24%-185%)
13C-2,3,4,7,8-PeCDF		142	185	pg/g	77.1	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		149	185	pg/g	80.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		138	185	pg/g	74.7	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		142	185	pg/g	76.7	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		156	185	pg/g	84.3	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470015**	**Date Collected:**	**08/27/2019 11:20**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**33.4**
Client ID:	**J3-SC1b-40to50-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 17:03**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b28sep19a-3**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**16.25 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		155	185	pg/g	83.8	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		185	185	pg/g	100	(26%-138%)
37Cl-2,3,7,8-TCDD		15.8	18.5	pg/g	85.5	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470016**	**Date Collected:**	**08/27/2019 11:25**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**23.3**
Client ID:	**J3-SC1b-50to60-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 17:52**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b28sep19a-4**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**14.6 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.115	pg/g	0.115	0.893
40321-76-4	1,2,3,7,8-PeCDD	J	0.241	pg/g	0.116	4.47
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.177	pg/g	0.177	4.47
57653-85-7	1,2,3,6,7,8-HxCDD	J	0.618	pg/g	0.168	4.47
19408-74-3	1,2,3,7,8,9-HxCDD	J	0.236	pg/g	0.176	4.47
35822-46-9	1,2,3,4,6,7,8-HpCDD		9.47	pg/g	0.334	4.47
3268-87-9	1,2,3,4,6,7,8,9-OCDD		115	pg/g	0.786	8.93
51207-31-9	2,3,7,8-TCDF	U	0.341	pg/g	0.341	0.893
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.288	pg/g	0.126	4.47
57117-31-4	2,3,4,7,8-PeCDF	J	0.816	pg/g	0.110	4.47
70648-26-9	1,2,3,4,7,8-HxCDF	J	1.03	pg/g	0.126	4.47
57117-44-9	1,2,3,6,7,8-HxCDF	J	2.84	pg/g	0.135	4.47
60851-34-5	2,3,4,6,7,8-HxCDF	J	1.28	pg/g	0.136	4.47
72918-21-9	1,2,3,7,8,9-HxCDF	BJ	0.364	pg/g	0.188	4.47
67562-39-4	1,2,3,4,6,7,8-HpCDF		45.6	pg/g	0.295	4.47
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.422	pg/g	0.422	4.47
39001-02-0	1,2,3,4,6,7,8,9-OCDF		15.0	pg/g	0.507	8.93
41903-57-5	Total TeCDD	JK	0.370	pg/g	0.115	0.893
36088-22-9	Total PeCDD	JK	1.88	pg/g	0.116	4.47
34465-46-8	Total HxCDD	J	5.46	pg/g	0.168	4.47
37871-00-4	Total HpCDD		20.9	pg/g	0.334	4.47
30402-14-3	Total TeCDF	JK	5.46	pg/g	0.341	0.893
30402-15-4	Total PeCDF	JK	21.8	pg/g	0.0754	4.47
55684-94-1	Total HxCDF	J	35.7	pg/g	0.126	4.47
38998-75-3	Total HpCDF		76.3	pg/g	0.295	4.47
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		1.72	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		1.81	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		145	179	pg/g	81.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		154	179	pg/g	86.0	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		155	179	pg/g	87.0	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		143	179	pg/g	80.0	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		178	179	pg/g	99.7	(23%-140%)
13C-OCDD		358	357	pg/g	100	(17%-157%)
13C-2,3,7,8-TCDF		131	179	pg/g	73.6	(24%-169%)
13C-1,2,3,7,8-PeCDF		139	179	pg/g	77.8	(24%-185%)
13C-2,3,4,7,8-PeCDF		139	179	pg/g	77.8	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		141	179	pg/g	79.2	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		136	179	pg/g	76.1	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		135	179	pg/g	75.4	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		152	179	pg/g	85.3	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470016**	**Date Collected:**	**08/27/2019 11:25**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**23.3**
Client ID:	**J3-SC1b-50to60-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 17:52**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b28sep19a-4**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**14.6 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		149	179	pg/g	83.6	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		178	179	pg/g	99.9	(26%-138%)
37Cl-2,3,7,8-TCDD		15.0	17.9	pg/g	83.9	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470017**	**Date Collected:**	**08/27/2019 11:30**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**15.7**
Client ID:	**J3-SC1b-60to70-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 18:40**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b28sep19a-5**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**12.22 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.138	pg/g	0.138	0.970
40321-76-4	1,2,3,7,8-PeCDD	U	0.127	pg/g	0.127	4.85
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.176	pg/g	0.176	4.85
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.166	pg/g	0.166	4.85
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.174	pg/g	0.174	4.85
35822-46-9	1,2,3,4,6,7,8-HpCDD	JK	0.978	pg/g	0.326	4.85
3268-87-9	1,2,3,4,6,7,8,9-OCDD		11.6	pg/g	0.798	9.70
51207-31-9	2,3,7,8-TCDF	BJ	0.217	pg/g	0.202	0.970
57117-41-6	1,2,3,7,8-PeCDF	U	0.0974	pg/g	0.0974	4.85
57117-31-4	2,3,4,7,8-PeCDF	U	0.0873	pg/g	0.0873	4.85
70648-26-9	1,2,3,4,7,8-HxCDF	U	0.117	pg/g	0.117	4.85
57117-44-9	1,2,3,6,7,8-HxCDF	J	0.169	pg/g	0.122	4.85
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.125	pg/g	0.125	4.85
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.179	pg/g	0.179	4.85
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	1.45	pg/g	0.198	4.85
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.283	pg/g	0.283	4.85
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	1.26	pg/g	0.549	9.70
41903-57-5	Total TeCDD	U	0.138	pg/g	0.138	0.970
36088-22-9	Total PeCDD	U	0.127	pg/g	0.127	4.85
34465-46-8	Total HxCDD	J	0.215	pg/g	0.166	4.85
37871-00-4	Total HpCDD	JK	2.33	pg/g	0.326	4.85
30402-14-3	Total TeCDF	BJ	0.217	pg/g	0.202	0.970
30402-15-4	Total PeCDF	BJ	1.00	pg/g	0.0873	4.85
55684-94-1	Total HxCDF	BJK	1.52	pg/g	0.117	4.85
38998-75-3	Total HpCDF	J	3.00	pg/g	0.198	4.85
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.0668	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.262	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		159	194	pg/g	82.1	(25%-164%)
13C-1,2,3,7,8-PeCDD		163	194	pg/g	84.2	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		160	194	pg/g	82.6	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		156	194	pg/g	80.1	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		183	194	pg/g	94.2	(23%-140%)
13C-OCDD		373	388	pg/g	96.1	(17%-157%)
13C-2,3,7,8-TCDF		139	194	pg/g	71.7	(24%-169%)
13C-1,2,3,7,8-PeCDF		153	194	pg/g	78.9	(24%-185%)
13C-2,3,4,7,8-PeCDF		151	194	pg/g	78.1	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		154	194	pg/g	79.3	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		140	194	pg/g	72.0	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		146	194	pg/g	75.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		158	194	pg/g	81.5	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470017**	**Date Collected:**	**08/27/2019 11:30**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**15.7**
Client ID:	**J3-SC1b-60to70-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 18:40**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b28sep19a-5**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**12.22 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		159	194	pg/g	81.7	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		185	194	pg/g	95.3	(26%-138%)
37Cl-2,3,7,8-TCDD		16.5	19.4	pg/g	85.2	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470018**	**Date Collected:**	**08/27/2019 11:35**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**19.4**
Client ID:	**J3-SC1b-70to80-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 19:28**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b28sep19a-6**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**13.29 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.19	pg/g	0.190	0.933
40321-76-4	1,2,3,7,8-PeCDD	U	0.149	pg/g	0.149	4.67
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.222	pg/g	0.222	4.67
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.209	pg/g	0.209	4.67
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.218	pg/g	0.218	4.67
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	1.20	pg/g	0.411	4.67
3268-87-9	1,2,3,4,6,7,8,9-OCDD		13.2	pg/g	0.504	9.33
51207-31-9	2,3,7,8-TCDF	U	0.267	pg/g	0.267	0.933
57117-41-6	1,2,3,7,8-PeCDF	U	0.158	pg/g	0.158	4.67
57117-31-4	2,3,4,7,8-PeCDF	U	0.133	pg/g	0.133	4.67
70648-26-9	1,2,3,4,7,8-HxCDF	U	0.138	pg/g	0.138	4.67
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.136	pg/g	0.136	4.67
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.146	pg/g	0.146	4.67
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.19	pg/g	0.190	4.67
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	2.00	pg/g	0.243	4.67
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.353	pg/g	0.353	4.67
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	1.20	pg/g	0.655	9.33
41903-57-5	Total TeCDD	U	0.19	pg/g	0.190	0.933
36088-22-9	Total PeCDD	U	0.149	pg/g	0.149	4.67
34465-46-8	Total HxCDD	JK	0.670	pg/g	0.209	4.67
37871-00-4	Total HpCDD	J	3.03	pg/g	0.411	4.67
30402-14-3	Total TeCDF	U	0.267	pg/g	0.267	0.933
30402-15-4	Total PeCDF	BJK	0.978	pg/g	0.101	4.67
55684-94-1	Total HxCDF	BJK	1.56	pg/g	0.136	4.67
38998-75-3	Total HpCDF	J	3.57	pg/g	0.243	4.67
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.0362	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.307	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		141	187	pg/g	75.5	(25%-164%)
13C-1,2,3,7,8-PeCDD		152	187	pg/g	81.3	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		144	187	pg/g	76.9	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		148	187	pg/g	79.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		164	187	pg/g	87.7	(23%-140%)
13C-OCDD		333	373	pg/g	89.2	(17%-157%)
13C-2,3,7,8-TCDF		127	187	pg/g	67.9	(24%-169%)
13C-1,2,3,7,8-PeCDF		139	187	pg/g	74.2	(24%-185%)
13C-2,3,4,7,8-PeCDF		140	187	pg/g	75.2	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		139	187	pg/g	74.3	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		135	187	pg/g	72.5	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		134	187	pg/g	71.6	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		150	187	pg/g	80.1	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470018**	**Date Collected:**	**08/27/2019 11:35**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**19.4**
Client ID:	**J3-SC1b-70to80-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 19:28**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b28sep19a-6**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**13.29 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		143	187	pg/g	76.9	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		169	187	pg/g	90.7	(26%-138%)
37Cl-2,3,7,8-TCDD		16.5	18.7	pg/g	88.5	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470019**	**Date Collected:**	**08/27/2019 12:20**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**19.5**
Client ID:	**J3-SC1b-80to90-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 21:54**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b28sep19a-9**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**13.07 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.085	pg/g	0.085	0.951
40321-76-4	1,2,3,7,8-PeCDD	JK	0.213	pg/g	0.114	4.75
39227-28-6	1,2,3,4,7,8-HxCDD	J	0.160	pg/g	0.111	4.75
57653-85-7	1,2,3,6,7,8-HxCDD	J	0.816	pg/g	0.110	4.75
19408-74-3	1,2,3,7,8,9-HxCDD	J	0.451	pg/g	0.113	4.75
35822-46-9	1,2,3,4,6,7,8-HpCDD		9.62	pg/g	0.318	4.75
3268-87-9	1,2,3,4,6,7,8,9-OCDD		138	pg/g	0.633	9.51
51207-31-9	2,3,7,8-TCDF	BJK	0.226	pg/g	0.159	0.951
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.348	pg/g	0.105	4.75
57117-31-4	2,3,4,7,8-PeCDF	J	0.877	pg/g	0.0871	4.75
70648-26-9	1,2,3,4,7,8-HxCDF	J	0.972	pg/g	0.151	4.75
57117-44-9	1,2,3,6,7,8-HxCDF	J	2.96	pg/g	0.158	4.75
60851-34-5	2,3,4,6,7,8-HxCDF	J	1.56	pg/g	0.172	4.75
72918-21-9	1,2,3,7,8,9-HxCDF	BJ	0.287	pg/g	0.202	4.75
67562-39-4	1,2,3,4,6,7,8-HpCDF		54.9	pg/g	0.217	4.75
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	0.494	pg/g	0.310	4.75
39001-02-0	1,2,3,4,6,7,8,9-OCDF		18.5	pg/g	0.272	9.51
41903-57-5	Total TeCDD	JK	0.325	pg/g	0.085	0.951
36088-22-9	Total PeCDD	JK	1.82	pg/g	0.114	4.75
34465-46-8	Total HxCDD	JK	6.98	pg/g	0.110	4.75
37871-00-4	Total HpCDD		24.2	pg/g	0.318	4.75
30402-14-3	Total TeCDF	JK	7.01	pg/g	0.159	0.951
30402-15-4	Total PeCDF	J	26.4	pg/g	0.0489	4.75
55684-94-1	Total HxCDF	J	39.0	pg/g	0.151	4.75
38998-75-3	Total HpCDF	J	87.4	pg/g	0.217	4.75
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		1.93	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		1.97	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		162	190	pg/g	85.1	(25%-164%)
13C-1,2,3,7,8-PeCDD		167	190	pg/g	87.9	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		165	190	pg/g	86.7	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		161	190	pg/g	84.8	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		195	190	pg/g	103	(23%-140%)
13C-OCDD		389	380	pg/g	102	(17%-157%)
13C-2,3,7,8-TCDF		149	190	pg/g	78.6	(24%-169%)
13C-1,2,3,7,8-PeCDF		152	190	pg/g	79.9	(24%-185%)
13C-2,3,4,7,8-PeCDF		154	190	pg/g	81.0	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		153	190	pg/g	80.6	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		151	190	pg/g	79.6	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		148	190	pg/g	78.0	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		167	190	pg/g	87.6	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470019**	**Date Collected:**	**08/27/2019 12:20**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**19.5**
Client ID:	**J3-SC1b-80to90-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 21:54**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b28sep19a-9**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**13.07 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		165	190	pg/g	86.7	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		195	190	pg/g	103	(26%-138%)
37Cl-2,3,7,8-TCDD		16.6	19.0	pg/g	87.2	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470020**	**Date Collected:**	**08/27/2019 12:25**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**21.6**
Client ID:	**J3-SC1b-90to100-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 22:42**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b28sep19a-10**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**13.5 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.11	pg/g	0.110	0.945
40321-76-4	1,2,3,7,8-PeCDD	U	0.126	pg/g	0.126	4.73
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.169	pg/g	0.169	4.73
57653-85-7	1,2,3,6,7,8-HxCDD	JK	0.236	pg/g	0.165	4.73
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.17	pg/g	0.170	4.73
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	3.87	pg/g	0.359	4.73
3268-87-9	1,2,3,4,6,7,8,9-OCDD		58.0	pg/g	0.667	9.45
51207-31-9	2,3,7,8-TCDF	BJK	0.204	pg/g	0.177	0.945
57117-41-6	1,2,3,7,8-PeCDF	U	0.104	pg/g	0.104	4.73
57117-31-4	2,3,4,7,8-PeCDF	BJ	0.246	pg/g	0.0972	4.73
70648-26-9	1,2,3,4,7,8-HxCDF	BJK	0.219	pg/g	0.0928	4.73
57117-44-9	1,2,3,6,7,8-HxCDF	JK	0.361	pg/g	0.102	4.73
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.200	pg/g	0.106	4.73
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.14	pg/g	0.140	4.73
67562-39-4	1,2,3,4,6,7,8-HpCDF		6.09	pg/g	0.156	4.73
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.214	pg/g	0.214	4.73
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	4.89	pg/g	0.442	9.45
41903-57-5	Total TeCDD	JK	0.161	pg/g	0.110	0.945
36088-22-9	Total PeCDD	J	0.200	pg/g	0.126	4.73
34465-46-8	Total HxCDD	JK	1.86	pg/g	0.165	4.73
37871-00-4	Total HpCDD	J	10.1	pg/g	0.359	4.73
30402-14-3	Total TeCDF	BJK	1.54	pg/g	0.177	0.945
30402-15-4	Total PeCDF	J	3.98	pg/g	0.0724	4.73
55684-94-1	Total HxCDF	JK	4.78	pg/g	0.0928	4.73
38998-75-3	Total HpCDF		11.3	pg/g	0.156	4.73
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.314	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.459	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		162	189	pg/g	85.5	(25%-164%)
13C-1,2,3,7,8-PeCDD		172	189	pg/g	91.0	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		162	189	pg/g	85.9	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		157	189	pg/g	83.1	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		191	189	pg/g	101	(23%-140%)
13C-OCDD		379	378	pg/g	100	(17%-157%)
13C-2,3,7,8-TCDF		143	189	pg/g	75.7	(24%-169%)
13C-1,2,3,7,8-PeCDF		158	189	pg/g	83.7	(24%-185%)
13C-2,3,4,7,8-PeCDF		156	189	pg/g	82.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		157	189	pg/g	83.1	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		141	189	pg/g	74.6	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		148	189	pg/g	78.0	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		165	189	pg/g	87.4	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470020**	**Date Collected:**	**08/27/2019 12:25**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**21.6**
Client ID:	**J3-SC1b-90to100-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 22:42**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b28sep19a-10**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**13.5 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		160	189	pg/g	84.5	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		189	189	pg/g	100	(26%-138%)
37Cl-2,3,7,8-TCDD		16.9	18.9	pg/g	89.1	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470021**	**Date Collected:**	**08/27/2019 09:55**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**19.1**
Client ID:	**J3-SC1b-10to20-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 23:31**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b28sep19a-11**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**13.4 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.112	pg/g	0.112	0.923
40321-76-4	1,2,3,7,8-PeCDD	U	0.173	pg/g	0.173	4.61
39227-28-6	1,2,3,4,7,8-HxCDD	JK	0.188	pg/g	0.180	4.61
57653-85-7	1,2,3,6,7,8-HxCDD	JK	0.927	pg/g	0.175	4.61
19408-74-3	1,2,3,7,8,9-HxCDD	J	0.369	pg/g	0.181	4.61
35822-46-9	1,2,3,4,6,7,8-HpCDD		29.5	pg/g	0.509	4.61
3268-87-9	1,2,3,4,6,7,8,9-OCDD		296	pg/g	1.07	9.23
51207-31-9	2,3,7,8-TCDF	BJ	0.251	pg/g	0.207	0.923
57117-41-6	1,2,3,7,8-PeCDF	BJK	0.153	pg/g	0.0904	4.61
57117-31-4	2,3,4,7,8-PeCDF	BJ	0.397	pg/g	0.0788	4.61
70648-26-9	1,2,3,4,7,8-HxCDF	BJ	0.672	pg/g	0.153	4.61
57117-44-9	1,2,3,6,7,8-HxCDF	J	0.498	pg/g	0.159	4.61
60851-34-5	2,3,4,6,7,8-HxCDF	JK	0.404	pg/g	0.164	4.61
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.21	pg/g	0.210	4.61
67562-39-4	1,2,3,4,6,7,8-HpCDF		11.7	pg/g	0.262	4.61
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	0.474	pg/g	0.382	4.61
39001-02-0	1,2,3,4,6,7,8,9-OCDF		42.3	pg/g	0.484	9.23
41903-57-5	Total TeCDD	JK	0.223	pg/g	0.112	0.923
36088-22-9	Total PeCDD	JK	0.727	pg/g	0.173	4.61
34465-46-8	Total HxCDD	JK	7.39	pg/g	0.175	4.61
37871-00-4	Total HpCDD		56.9	pg/g	0.509	4.61
30402-14-3	Total TeCDF	BJK	1.93	pg/g	0.207	0.923
30402-15-4	Total PeCDF	JK	6.50	pg/g	0.0674	4.61
55684-94-1	Total HxCDF	JK	12.3	pg/g	0.153	4.61
38998-75-3	Total HpCDF	J	43.3	pg/g	0.262	4.61
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.973	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		1.13	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		163	185	pg/g	88.4	(25%-164%)
13C-1,2,3,7,8-PeCDD		167	185	pg/g	90.7	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		158	185	pg/g	85.4	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		160	185	pg/g	86.6	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		190	185	pg/g	103	(23%-140%)
13C-OCDD		372	369	pg/g	101	(17%-157%)
13C-2,3,7,8-TCDF		144	185	pg/g	78.2	(24%-169%)
13C-1,2,3,7,8-PeCDF		155	185	pg/g	83.7	(24%-185%)
13C-2,3,4,7,8-PeCDF		152	185	pg/g	82.5	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		152	185	pg/g	82.2	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		143	185	pg/g	77.6	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		145	185	pg/g	78.7	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		170	185	pg/g	92.1	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470021**	**Date Collected:**	**08/27/2019 09:55**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**19.1**
Client ID:	**J3-SC1b-10to20-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 23:31**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b28sep19a-11**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**13.4 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		161	185	pg/g	87.1	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		189	185	pg/g	102	(26%-138%)
37Cl-2,3,7,8-TCDD		16.6	18.5	pg/g	90.1	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470022**	**Date Collected:**	**08/27/2019 12:35**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**22.4**
Client ID:	**412-SC1b-80to90-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/29/2019 00:19**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b28sep19a-12**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**13.03 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.129	pg/g	0.129	0.989
40321-76-4	1,2,3,7,8-PeCDD	J	0.451	pg/g	0.162	4.95
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.23	pg/g	0.230	4.95
57653-85-7	1,2,3,6,7,8-HxCDD	J	1.36	pg/g	0.220	4.95
19408-74-3	1,2,3,7,8,9-HxCDD	J	0.568	pg/g	0.230	4.95
35822-46-9	1,2,3,4,6,7,8-HpCDD		17.6	pg/g	0.471	4.95
3268-87-9	1,2,3,4,6,7,8,9-OCDD		285	pg/g	1.14	9.89
51207-31-9	2,3,7,8-TCDF	BJ	0.289	pg/g	0.214	0.989
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.406	pg/g	0.141	4.95
57117-31-4	2,3,4,7,8-PeCDF	J	1.37	pg/g	0.128	4.95
70648-26-9	1,2,3,4,7,8-HxCDF	J	1.29	pg/g	0.191	4.95
57117-44-9	1,2,3,6,7,8-HxCDF		5.17	pg/g	0.202	4.95
60851-34-5	2,3,4,6,7,8-HxCDF	J	2.36	pg/g	0.216	4.95
72918-21-9	1,2,3,7,8,9-HxCDF	BJK	0.479	pg/g	0.251	4.95
67562-39-4	1,2,3,4,6,7,8-HpCDF		99.5	pg/g	0.412	4.95
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	0.883	pg/g	0.568	4.95
39001-02-0	1,2,3,4,6,7,8,9-OCDF		36.4	pg/g	0.625	9.89
41903-57-5	Total TeCDD	J	0.481	pg/g	0.129	0.989
36088-22-9	Total PeCDD	JK	3.17	pg/g	0.162	4.95
34465-46-8	Total HxCDD	J	11.1	pg/g	0.220	4.95
37871-00-4	Total HpCDD		44.8	pg/g	0.471	4.95
30402-14-3	Total TeCDF	JK	10.4	pg/g	0.214	0.989
30402-15-4	Total PeCDF	J	40.0	pg/g	0.0754	4.95
55684-94-1	Total HxCDF	JK	63.8	pg/g	0.191	4.95
38998-75-3	Total HpCDF	J	158	pg/g	0.412	4.95
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		3.30	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		3.38	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		168	198	pg/g	85.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		173	198	pg/g	87.5	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		172	198	pg/g	87.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		161	198	pg/g	81.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		196	198	pg/g	99.1	(23%-140%)
13C-OCDD		397	396	pg/g	100	(17%-157%)
13C-2,3,7,8-TCDF		151	198	pg/g	76.1	(24%-169%)
13C-1,2,3,7,8-PeCDF		158	198	pg/g	80.1	(24%-185%)
13C-2,3,4,7,8-PeCDF		160	198	pg/g	80.7	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		159	198	pg/g	80.5	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		148	198	pg/g	74.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		151	198	pg/g	76.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		169	198	pg/g	85.3	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470022**	**Date Collected:**	**08/27/2019 12:35**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**22.4**
Client ID:	**412-SC1b-80to90-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/29/2019 00:19**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b28sep19a-12**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**13.03 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		168	198	pg/g	85.1	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		198	198	pg/g	99.8	(26%-138%)
37Cl-2,3,7,8-TCDD		17.5	19.8	pg/g	88.3	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470023**	**Date Collected:**	**08/27/2019 12:00**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil SRM**	**Date Received:**	**09/10/2019 09:43**		
Client ID:	**SRM Lot# ER10091501**			**Prep Basis:**	**As Received**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/29/2019 01:07**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b28sep19a-13**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**9.8 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	JK	0.196	pg/g	0.140	1.02
40321-76-4	1,2,3,7,8-PeCDD	JK	0.363	pg/g	0.255	5.10
39227-28-6	1,2,3,4,7,8-HxCDD	J	0.698	pg/g	0.392	5.10
57653-85-7	1,2,3,6,7,8-HxCDD	J	3.78	pg/g	0.359	5.10
19408-74-3	1,2,3,7,8,9-HxCDD	J	1.62	pg/g	0.382	5.10
35822-46-9	1,2,3,4,6,7,8-HpCDD		187	pg/g	1.97	5.10
3268-87-9	1,2,3,4,6,7,8,9-OCDD	E	7440	pg/g	3.02	10.2
51207-31-9	2,3,7,8-TCDF	BJ	0.620	pg/g	0.233	1.02
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.198	pg/g	0.197	5.10
57117-31-4	2,3,4,7,8-PeCDF	BJ	0.343	pg/g	0.173	5.10
70648-26-9	1,2,3,4,7,8-HxCDF	BJ	0.643	pg/g	0.171	5.10
57117-44-9	1,2,3,6,7,8-HxCDF	J	0.351	pg/g	0.179	5.10
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.784	pg/g	0.187	5.10
72918-21-9	1,2,3,7,8,9-HxCDF	BJ	0.359	pg/g	0.233	5.10
67562-39-4	1,2,3,4,6,7,8-HpCDF		13.5	pg/g	0.355	5.10
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	0.900	pg/g	0.478	5.10
39001-02-0	1,2,3,4,6,7,8,9-OCDF		66.0	pg/g	0.659	10.2
41903-57-5	Total TeCDD	JK	0.827	pg/g	0.140	1.02
36088-22-9	Total PeCDD	JK	3.56	pg/g	0.255	5.10
34465-46-8	Total HxCDD	JK	42.1	pg/g	0.359	5.10
37871-00-4	Total HpCDD		613	pg/g	1.97	5.10
30402-14-3	Total TeCDF	JK	5.53	pg/g	0.233	1.02
30402-15-4	Total PeCDF	JK	4.43	pg/g	0.0765	5.10
55684-94-1	Total HxCDF	J	16.3	pg/g	0.171	5.10
38998-75-3	Total HpCDF	J	54.7	pg/g	0.355	5.10
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		5.82	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		5.82	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		171	204	pg/g	83.9	(25%-164%)
13C-1,2,3,7,8-PeCDD		179	204	pg/g	87.7	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		174	204	pg/g	85.4	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		166	204	pg/g	81.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		201	204	pg/g	98.5	(23%-140%)
13C-OCDD		446	408	pg/g	109	(17%-157%)
13C-2,3,7,8-TCDF		151	204	pg/g	74.0	(24%-169%)
13C-1,2,3,7,8-PeCDF		165	204	pg/g	80.7	(24%-185%)
13C-2,3,4,7,8-PeCDF		163	204	pg/g	80.0	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		162	204	pg/g	79.3	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		147	204	pg/g	72.0	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		153	204	pg/g	74.7	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		172	204	pg/g	84.5	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15470023**	**Date Collected:**	**08/27/2019 12:00**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil SRM**	**Date Received:**	**09/10/2019 09:43**		
Client ID:	**SRM Lot# ER10091501**			**Prep Basis:**	**As Received**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/29/2019 01:07**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b28sep19a-13**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**9.8 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		171	204	pg/g	83.6	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		202	204	pg/g	98.9	(26%-138%)
37Cl-2,3,7,8-TCDD		18.3	20.4	pg/g	89.6	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
E **Value is estimated - Concentration of the target analyte exceeds the instrument calibration range**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**

Quality Control Summary

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: 2006-00115_3

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12024756	LCS for batch 41711	13C-2,3,7,8-TCDD		85.1	(20%-175%)
		13C-1,2,3,7,8-PeCDD		87.8	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		80.0	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		75.9	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		83.5	(22%-166%)
		13C-OCDD		68.3	(13%-199%)
		13C-2,3,7,8-TCDF		91.3	(22%-152%)
		13C-1,2,3,7,8-PeCDF		95.7	(21%-192%)
		13C-2,3,4,7,8-PeCDF		92.7	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		78.3	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		73.7	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		78.8	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		79.4	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		74.6	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		76.3	(20%-186%)
		37Cl-2,3,7,8-TCDD		106	(31%-191%)
12024757	LCSD for batch 41711	13C-2,3,7,8-TCDD		81.3	(20%-175%)
		13C-1,2,3,7,8-PeCDD		84.8	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		79.0	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		78.3	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		87.0	(22%-166%)
		13C-OCDD		67.8	(13%-199%)
		13C-2,3,7,8-TCDF		88.1	(22%-152%)
		13C-1,2,3,7,8-PeCDF		92.7	(21%-192%)
		13C-2,3,4,7,8-PeCDF		89.5	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		79.8	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		73.6	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		79.9	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		80.9	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		77.5	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		77.5	(20%-186%)
		37Cl-2,3,7,8-TCDD		103	(31%-191%)
12024755	MB for batch 41711	13C-2,3,7,8-TCDD		86.1	(25%-164%)
		13C-1,2,3,7,8-PeCDD		87.8	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		80.9	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		77.0	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		84.7	(23%-140%)
		13C-OCDD		66.2	(17%-157%)
		13C-2,3,7,8-TCDF		92.7	(24%-169%)
		13C-1,2,3,7,8-PeCDF		97.4	(24%-185%)
		13C-2,3,4,7,8-PeCDF		92.8	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		80.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		76.0	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		79.9	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		81.0	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		74.8	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		76.3	(26%-138%)
		37Cl-2,3,7,8-TCDD		108	(35%-197%)
15470001	D6-SC1b-20to30-82619	13C-2,3,7,8-TCDD		76.1	(25%-164%)

Surrogate Recovery Report

SDG Number: 2006-00115_3

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
15470001	D6-SC1b-20to30-82619	13C-1,2,3,7,8-PeCDD		81.0	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		80.4	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		73.4	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		92.2	(23%-140%)
		13C-OCDD		88.5	(17%-157%)
		13C-2,3,7,8-TCDF		83.2	(24%-169%)
		13C-1,2,3,7,8-PeCDF		81.9	(24%-185%)
		13C-2,3,4,7,8-PeCDF		80.7	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		72.3	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		69.3	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		73.2	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		75.3	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		74.3	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		81.8	(26%-138%)
		37Cl-2,3,7,8-TCDD		93.9	(35%-197%)
15470002	D6-SC1b-30to40-82619	13C-2,3,7,8-TCDD		77.9	(25%-164%)
		13C-1,2,3,7,8-PeCDD		84.1	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		78.5	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		76.1	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		88.1	(23%-140%)
		13C-OCDD		79.8	(17%-157%)
		13C-2,3,7,8-TCDF		80.7	(24%-169%)
		13C-1,2,3,7,8-PeCDF		85.1	(24%-185%)
		13C-2,3,4,7,8-PeCDF		81.8	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		73.5	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		70.7	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		73.6	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		76.3	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		71.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		78.2	(26%-138%)
		37Cl-2,3,7,8-TCDD		91.4	(35%-197%)
15470003	D6-SC1b-40to50-82619	13C-2,3,7,8-TCDD		76.4	(25%-164%)
		13C-1,2,3,7,8-PeCDD		81.7	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		82.3	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		80.1	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		97.5	(23%-140%)
		13C-OCDD		90.4	(17%-157%)
		13C-2,3,7,8-TCDF		83.5	(24%-169%)
		13C-1,2,3,7,8-PeCDF		83.7	(24%-185%)
		13C-2,3,4,7,8-PeCDF		81.6	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		76.8	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		75.0	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		77.5	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		81.2	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		78.5	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		88.2	(26%-138%)
		37Cl-2,3,7,8-TCDD		91.5	(35%-197%)
12024828	LCS for batch 41776	13C-2,3,7,8-TCDD		82.5	(20%-175%)
		13C-1,2,3,7,8-PeCDD		75.2	(21%-227%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: 2006-00115_3

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12024828	LCS for batch 41776	13C-1,2,3,4,7,8-HxCDD		81.8	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		85.0	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		89.1	(22%-166%)
		13C-OCDD		64.9	(13%-199%)
		13C-2,3,7,8-TCDF		79.3	(22%-152%)
		13C-1,2,3,7,8-PeCDF		70.8	(21%-192%)
		13C-2,3,4,7,8-PeCDF		70.4	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		84.6	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		80.2	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		76.7	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		82.5	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		83.2	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		83.0	(20%-186%)
		37Cl-2,3,7,8-TCDD		92.7	(31%-191%)
12024829	LCSD for batch 41776	13C-2,3,7,8-TCDD		78.7	(20%-175%)
		13C-1,2,3,7,8-PeCDD		70.0	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		75.5	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		77.9	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		80.0	(22%-166%)
		13C-OCDD		60.8	(13%-199%)
		13C-2,3,7,8-TCDF		71.4	(22%-152%)
		13C-1,2,3,7,8-PeCDF		69.8	(21%-192%)
		13C-2,3,4,7,8-PeCDF		67.9	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		78.3	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		73.3	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		73.7	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		74.9	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		78.3	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		76.2	(20%-186%)
		37Cl-2,3,7,8-TCDD		88.2	(31%-191%)
12024827	MB for batch 41776	13C-2,3,7,8-TCDD		81.0	(25%-164%)
		13C-1,2,3,7,8-PeCDD		75.3	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		76.7	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		80.3	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		79.2	(23%-140%)
		13C-OCDD		54.5	(17%-157%)
		13C-2,3,7,8-TCDF		73.8	(24%-169%)
		13C-1,2,3,7,8-PeCDF		72.0	(24%-185%)
		13C-2,3,4,7,8-PeCDF		70.6	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		77.3	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		81.9	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		76.8	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		75.6	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		77.6	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		73.7	(26%-138%)
		37Cl-2,3,7,8-TCDD		90.9	(35%-197%)
15470004	D6-SC1b-50to60-82619	13C-2,3,7,8-TCDD		79.0	(25%-164%)
		13C-1,2,3,7,8-PeCDD		70.6	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		75.9	(32%-141%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: 2006-00115_3

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
15470004	D6-SC1b-50to60-82619	13C-1,2,3,6,7,8-HxCDD		79.6	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		88.4	(23%-140%)
		13C-OCDD		70.4	(17%-157%)
		13C-2,3,7,8-TCDF		74.6	(24%-169%)
		13C-1,2,3,7,8-PeCDF		68.3	(24%-185%)
		13C-2,3,4,7,8-PeCDF		68.1	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		76.1	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		78.9	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		75.5	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		79.8	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		82.0	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		85.8	(26%-138%)
		37Cl-2,3,7,8-TCDD		87.7	(35%-197%)
15470005	D6-SC1b-60to70-82619	13C-2,3,7,8-TCDD		72.1	(25%-164%)
		13C-1,2,3,7,8-PeCDD		66.9	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		71.5	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		76.5	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		82.0	(23%-140%)
		13C-OCDD		66.1	(17%-157%)
		13C-2,3,7,8-TCDF		68.6	(24%-169%)
		13C-1,2,3,7,8-PeCDF		63.2	(24%-185%)
		13C-2,3,4,7,8-PeCDF		64.1	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		76.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		72.9	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		71.0	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		75.7	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		75.5	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		78.3	(26%-138%)
		37Cl-2,3,7,8-TCDD		79.9	(35%-197%)
15470006	D6-SC1b-70to80-82619	13C-2,3,7,8-TCDD		75.6	(25%-164%)
		13C-1,2,3,7,8-PeCDD		68.6	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		77.0	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		76.2	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		84.8	(23%-140%)
		13C-OCDD		67.8	(17%-157%)
		13C-2,3,7,8-TCDF		71.4	(24%-169%)
		13C-1,2,3,7,8-PeCDF		66.7	(24%-185%)
		13C-2,3,4,7,8-PeCDF		65.3	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		76.1	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		75.1	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		72.6	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		78.7	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		78.7	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		80.1	(26%-138%)
		37Cl-2,3,7,8-TCDD		82.2	(35%-197%)
15470007	D6-SC1b-80to90-82619	13C-2,3,7,8-TCDD		78.8	(25%-164%)
		13C-1,2,3,7,8-PeCDD		69.9	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		78.8	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		79.5	(28%-130%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: 2006-00115_3

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
15470007	D6-SC1b-80to90-82619	13C-1,2,3,4,6,7,8-HpCDD		84.7	(23%-140%)
		13C-OCDD		65.6	(17%-157%)
		13C-2,3,7,8-TCDF		71.8	(24%-169%)
		13C-1,2,3,7,8-PeCDF		67.7	(24%-185%)
		13C-2,3,4,7,8-PeCDF		66.8	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		78.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		79.9	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		77.0	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		77.5	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		80.3	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		80.2	(26%-138%)
		37Cl-2,3,7,8-TCDD		89.1	(35%-197%)
15470008	D6-SC1b-90to100-82619	13C-2,3,7,8-TCDD		81.9	(25%-164%)
		13C-1,2,3,7,8-PeCDD		73.1	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		80.7	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		84.0	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		88.4	(23%-140%)
		13C-OCDD		68.4	(17%-157%)
		13C-2,3,7,8-TCDF		74.1	(24%-169%)
		13C-1,2,3,7,8-PeCDF		68.9	(24%-185%)
		13C-2,3,4,7,8-PeCDF		70.6	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		82.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		82.6	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		80.5	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		79.9	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		86.3	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		83.6	(26%-138%)
		37Cl-2,3,7,8-TCDD		85.7	(35%-197%)
15470009	D6-SC1b-100to110-82619	13C-2,3,7,8-TCDD		78.9	(25%-164%)
		13C-1,2,3,7,8-PeCDD		72.0	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		75.7	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		78.1	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		80.5	(23%-140%)
		13C-OCDD		62.0	(17%-157%)
		13C-2,3,7,8-TCDF		74.5	(24%-169%)
		13C-1,2,3,7,8-PeCDF		69.6	(24%-185%)
		13C-2,3,4,7,8-PeCDF		68.6	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		78.8	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		77.0	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		75.7	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		76.6	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		78.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		77.4	(26%-138%)
		37Cl-2,3,7,8-TCDD		91.5	(35%-197%)
15470010	D6-SC1b-110to120-82619	13C-2,3,7,8-TCDD		82.7	(25%-164%)
		13C-1,2,3,7,8-PeCDD		77.4	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		78.0	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		83.0	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		85.1	(23%-140%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: 2006-00115_3

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
15470010	D6-SC1b-110to120-82619	13C-OCDD		66.7	(17%-157%)
		13C-2,3,7,8-TCDF		76.5	(24%-169%)
		13C-1,2,3,7,8-PeCDF		73.7	(24%-185%)
		13C-2,3,4,7,8-PeCDF		74.0	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		83.3	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		81.6	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		78.5	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		81.0	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		86.8	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		84.5	(26%-138%)
		37Cl-2,3,7,8-TCDD		93.0	(35%-197%)
15470012	411-SC1b-50to60-82619	13C-2,3,7,8-TCDD		71.6	(25%-164%)
		13C-1,2,3,7,8-PeCDD		64.6	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		77.1	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		73.2	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		87.0	(23%-140%)
		13C-OCDD		76.8	(17%-157%)
		13C-2,3,7,8-TCDF		68.6	(24%-169%)
		13C-1,2,3,7,8-PeCDF		59.6	(24%-185%)
		13C-2,3,4,7,8-PeCDF		61.1	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		75.6	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		72.2	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		72.1	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		75.1	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		81.7	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		86.9	(26%-138%)
		37Cl-2,3,7,8-TCDD		80.2	(35%-197%)
15470013	J3-SC1b-20to30-82719	13C-2,3,7,8-TCDD		73.6	(25%-164%)
		13C-1,2,3,7,8-PeCDD		87.0	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		76.1	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		79.1	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		86.8	(23%-140%)
		13C-OCDD		87.0	(17%-157%)
		13C-2,3,7,8-TCDF		67.7	(24%-169%)
		13C-1,2,3,7,8-PeCDF		81.2	(24%-185%)
		13C-2,3,4,7,8-PeCDF		84.3	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		78.5	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		74.4	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		74.2	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		87.4	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		74.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		89.1	(26%-138%)
		37Cl-2,3,7,8-TCDD		82.4	(35%-197%)
15470014	J3-SC1b-30to40-82719	13C-2,3,7,8-TCDD		73.4	(25%-164%)
		13C-1,2,3,7,8-PeCDD		81.3	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		95.3	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		61.5	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		96.1	(23%-140%)
		13C-OCDD		102	(17%-157%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: 2006-00115_3

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
15470014	J3-SC1b-30to40-82719	13C-2,3,7,8-TCDF		71.9	(24%-169%)
		13C-1,2,3,7,8-PeCDF		76.5	(24%-185%)
		13C-2,3,4,7,8-PeCDF		77.4	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		80.1	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		67.8	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		72.4	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		73.8	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		80.7	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		98.1	(26%-138%)
		37Cl-2,3,7,8-TCDD		82.9	(35%-197%)
15470015	J3-SC1b-40to50-82719	13C-2,3,7,8-TCDD		82.0	(25%-164%)
		13C-1,2,3,7,8-PeCDD		85.3	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		85.3	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		83.7	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		103	(23%-140%)
		13C-OCDD		107	(17%-157%)
		13C-2,3,7,8-TCDF		75.4	(24%-169%)
		13C-1,2,3,7,8-PeCDF		75.2	(24%-185%)
		13C-2,3,4,7,8-PeCDF		77.1	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		80.8	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		74.7	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		76.7	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		84.3	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		83.8	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		100	(26%-138%)
		37Cl-2,3,7,8-TCDD		85.5	(35%-197%)
15470016	J3-SC1b-50to60-82719	13C-2,3,7,8-TCDD		81.3	(25%-164%)
		13C-1,2,3,7,8-PeCDD		86.0	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		87.0	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		80.0	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		99.7	(23%-140%)
		13C-OCDD		100	(17%-157%)
		13C-2,3,7,8-TCDF		73.6	(24%-169%)
		13C-1,2,3,7,8-PeCDF		77.8	(24%-185%)
		13C-2,3,4,7,8-PeCDF		77.8	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		79.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		76.1	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		75.4	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		85.3	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		83.6	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		99.9	(26%-138%)
		37Cl-2,3,7,8-TCDD		83.9	(35%-197%)
15470017	J3-SC1b-60to70-82719	13C-2,3,7,8-TCDD		82.1	(25%-164%)
		13C-1,2,3,7,8-PeCDD		84.2	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		82.6	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		80.1	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		94.2	(23%-140%)
		13C-OCDD		96.1	(17%-157%)
		13C-2,3,7,8-TCDF		71.7	(24%-169%)

Surrogate Recovery Report

SDG Number: 2006-00115_3

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
15470017	J3-SC1b-60to70-82719	13C-1,2,3,7,8-PeCDF		78.9	(24%-185%)
		13C-2,3,4,7,8-PeCDF		78.1	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		79.3	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		72.0	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		75.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		81.5	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		81.7	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		95.3	(26%-138%)
		37Cl-2,3,7,8-TCDD		85.2	(35%-197%)
15470018	J3-SC1b-70to80-82719	13C-2,3,7,8-TCDD		75.5	(25%-164%)
		13C-1,2,3,7,8-PeCDD		81.3	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		76.9	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		79.4	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		87.7	(23%-140%)
		13C-OCDD		89.2	(17%-157%)
		13C-2,3,7,8-TCDF		67.9	(24%-169%)
		13C-1,2,3,7,8-PeCDF		74.2	(24%-185%)
		13C-2,3,4,7,8-PeCDF		75.2	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		74.3	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		72.5	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		71.6	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		80.1	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		76.9	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		90.7	(26%-138%)
		37Cl-2,3,7,8-TCDD		88.5	(35%-197%)
12024830	J3-SC1b-70to80-82719(15470018MS)	13C-2,3,7,8-TCDD		81.0	(25%-164%)
		13C-1,2,3,7,8-PeCDD		86.5	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		78.9	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		79.7	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		93.6	(23%-140%)
		13C-OCDD		93.7	(17%-157%)
		13C-2,3,7,8-TCDF		72.2	(24%-169%)
		13C-1,2,3,7,8-PeCDF		78.3	(24%-185%)
		13C-2,3,4,7,8-PeCDF		77.9	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		76.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		73.4	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		72.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		82.4	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		79.9	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		94.1	(26%-138%)
		37Cl-2,3,7,8-TCDD		95.5	(35%-197%)
12024831	J3-SC1b-70to80-82719(15470018MSD)	13C-2,3,7,8-TCDD		81.5	(25%-164%)
		13C-1,2,3,7,8-PeCDD		85.1	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		81.9	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		79.1	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		94.5	(23%-140%)
		13C-OCDD		94.6	(17%-157%)
		13C-2,3,7,8-TCDF		71.9	(24%-169%)
		13C-1,2,3,7,8-PeCDF		78.8	(24%-185%)

Surrogate Recovery Report

SDG Number: 2006-00115_3

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12024831	J3-SC1b-70to80-82719(15470018MSD)	13C-2,3,4,7,8-PeCDF		78.6	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		78.9	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		73.7	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		75.9	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		85.3	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		81.6	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		93.2	(26%-138%)
		37Cl-2,3,7,8-TCDD		90.0	(35%-197%)
15470019	J3-SC1b-80to90-82719	13C-2,3,7,8-TCDD		85.1	(25%-164%)
		13C-1,2,3,7,8-PeCDD		87.9	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		86.7	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		84.8	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		103	(23%-140%)
		13C-OCDD		102	(17%-157%)
		13C-2,3,7,8-TCDF		78.6	(24%-169%)
		13C-1,2,3,7,8-PeCDF		79.9	(24%-185%)
		13C-2,3,4,7,8-PeCDF		81.0	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		80.6	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		79.6	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		78.0	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		87.6	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		86.7	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		103	(26%-138%)
		37Cl-2,3,7,8-TCDD		87.2	(35%-197%)
15470020	J3-SC1b-90to100-82719	13C-2,3,7,8-TCDD		85.5	(25%-164%)
		13C-1,2,3,7,8-PeCDD		91.0	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		85.9	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		83.1	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		101	(23%-140%)
		13C-OCDD		100	(17%-157%)
		13C-2,3,7,8-TCDF		75.7	(24%-169%)
		13C-1,2,3,7,8-PeCDF		83.7	(24%-185%)
		13C-2,3,4,7,8-PeCDF		82.6	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		83.1	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		74.6	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		78.0	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		87.4	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		84.5	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		100	(26%-138%)
		37Cl-2,3,7,8-TCDD		89.1	(35%-197%)
15470021	J3-SC1b-10to20-82719	13C-2,3,7,8-TCDD		88.4	(25%-164%)
		13C-1,2,3,7,8-PeCDD		90.7	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		85.4	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		86.6	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		103	(23%-140%)
		13C-OCDD		101	(17%-157%)
		13C-2,3,7,8-TCDF		78.2	(24%-169%)
		13C-1,2,3,7,8-PeCDF		83.7	(24%-185%)
		13C-2,3,4,7,8-PeCDF		82.5	(21%-178%)

Surrogate Recovery Report

SDG Number: 2006-00115_3

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
15470021	J3-SC1b-10to20-82719	13C-1,2,3,4,7,8-HxCDF		82.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		77.6	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		78.7	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		92.1	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		87.1	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		102	(26%-138%)
		37Cl-2,3,7,8-TCDD		90.1	(35%-197%)
15470022	412-SC1b-80to90-82719	13C-2,3,7,8-TCDD		85.0	(25%-164%)
		13C-1,2,3,7,8-PeCDD		87.5	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		87.1	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		81.2	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		99.1	(23%-140%)
		13C-OCDD		100	(17%-157%)
		13C-2,3,7,8-TCDF		76.1	(24%-169%)
		13C-1,2,3,7,8-PeCDF		80.1	(24%-185%)
		13C-2,3,4,7,8-PeCDF		80.7	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		80.5	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		74.9	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		76.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		85.3	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		85.1	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		99.8	(26%-138%)
		37Cl-2,3,7,8-TCDD		88.3	(35%-197%)
15470023	SRM Lot# ER10091501	13C-2,3,7,8-TCDD		83.9	(25%-164%)
		13C-1,2,3,7,8-PeCDD		87.7	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		85.4	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		81.2	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		98.5	(23%-140%)
		13C-OCDD		109	(17%-157%)
		13C-2,3,7,8-TCDF		74.0	(24%-169%)
		13C-1,2,3,7,8-PeCDF		80.7	(24%-185%)
		13C-2,3,4,7,8-PeCDF		80.0	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		79.3	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		72.0	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		74.7	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		84.5	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		83.6	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		98.9	(26%-138%)
		37Cl-2,3,7,8-TCDD		89.6	(35%-197%)

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: 2006-00115_3 **Sample Type:** Laboratory Control Sample

Client ID: LCS for batch 41711 **Matrix:** SOIL

Lab Sample ID: 12024756

Instrument: HRP750 **Analysis Date:** 09/17/2019 13:46 **Dilution:** 1

Analyst: MJC **Prep Batch ID:** 41711

Batch ID: 41713

CAS No.		Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	LCS	2,3,7,8-TCDD	20.0	21.5	107	67-158
40321-76-4	LCS	1,2,3,7,8-PeCDD	100	119	119	70-142
39227-28-6	LCS	1,2,3,4,7,8-HxCDD	100	116	116	70-164
57653-85-7	LCS	1,2,3,6,7,8-HxCDD	100	115	115	76-134
19408-74-3	LCS	1,2,3,7,8,9-HxCDD	100	124	124	64-162
35822-46-9	LCS	1,2,3,4,6,7,8-HpCDD	100	107	107	70-140
3268-87-9	LCS	1,2,3,4,6,7,8,9-OCDD	200	229	115	78-144
51207-31-9	LCS	2,3,7,8-TCDF	20.0	21.2	106	75-158
57117-41-6	LCS	1,2,3,7,8-PeCDF	100	108	108	80-134
57117-31-4	LCS	2,3,4,7,8-PeCDF	100	107	107	68-160
70648-26-9	LCS	1,2,3,4,7,8-HxCDF	100	111	111	72-134
57117-44-9	LCS	1,2,3,6,7,8-HxCDF	100	113	113	84-130
60851-34-5	LCS	2,3,4,6,7,8-HxCDF	100	111	111	70-156
72918-21-9	LCS	1,2,3,7,8,9-HxCDF	100	110	110	78-130
67562-39-4	LCS	1,2,3,4,6,7,8-HpCDF	100	122	122	82-122
55673-89-7	LCS	1,2,3,4,7,8,9-HpCDF	100	113	113	78-138
39001-02-0	LCS	1,2,3,4,6,7,8,9-OCDF	200	222	111	63-170

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: 2006-00115_3 **Sample Type:** Laboratory Control Sample Duplicate

Client ID: LCSD for batch 41711 **Matrix:** SOIL

Lab Sample ID: 12024757

Instrument: HRP750 **Analysis Date:** 09/17/2019 14:35 **Dilution:** 1

Analyst: MJC **Prep Batch ID:** 41711

Batch ID: 41713

CAS No.		Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD	2,3,7,8-TCDD	20.0	20.8	104	67-158	3.23	0-20
40321-76-4	LCSD	1,2,3,7,8-PeCDD	100	110	110	70-142	7.87	0-20
39227-28-6	LCSD	1,2,3,4,7,8-HxCDD	100	110	110	70-164	4.85	0-20
57653-85-7	LCSD	1,2,3,6,7,8-HxCDD	100	103	103	76-134	11.2	0-20
19408-74-3	LCSD	1,2,3,7,8,9-HxCDD	100	116	116	64-162	7.01	0-20
35822-46-9	LCSD	1,2,3,4,6,7,8-HpCDD	100	98.3	98.3	70-140	8.43	0-20
3268-87-9	LCSD	1,2,3,4,6,7,8,9-OCDD	200	205	103	78-144	11.2	0-20
51207-31-9	LCSD	2,3,7,8-TCDF	20.0	19.9	99.4	75-158	6.24	0-20
57117-41-6	LCSD	1,2,3,7,8-PeCDF	100	98.1	98.1	80-134	9.15	0-20
57117-31-4	LCSD	2,3,4,7,8-PeCDF	100	99.5	99.5	68-160	7.24	0-20
70648-26-9	LCSD	1,2,3,4,7,8-HxCDF	100	103	103	72-134	7.28	0-20
57117-44-9	LCSD	1,2,3,6,7,8-HxCDF	100	107	107	84-130	5.44	0-20
60851-34-5	LCSD	2,3,4,6,7,8-HxCDF	100	101	101	70-156	9.68	0-20
72918-21-9	LCSD	1,2,3,7,8,9-HxCDF	100	103	103	78-130	6.25	0-20
67562-39-4	LCSD	1,2,3,4,6,7,8-HpCDF	100	112	112	82-122	8.29	0-20
55673-89-7	LCSD	1,2,3,4,7,8,9-HpCDF	100	106	106	78-138	6.28	0-20
39001-02-0	LCSD	1,2,3,4,6,7,8,9-OCDF	200	200	100	63-170	10.2	0-20

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: 2006-00115_3 **Sample Type:** Laboratory Control Sample
Client ID: LCS for batch 41776 **Matrix:** SOIL
Lab Sample ID: 12024828
Instrument: HRP763 **Analysis Date:** 09/24/2019 07:59 **Dilution:** 1
Analyst: MLS **Prep Batch ID:** 41776
Batch ID: 41778

CAS No.		Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	LCS	2,3,7,8-TCDD	20.0	18.6	93.2	67-158
40321-76-4	LCS	1,2,3,7,8-PeCDD	100	103	103	70-142
39227-28-6	LCS	1,2,3,4,7,8-HxCDD	100	98.5	98.5	70-164
57653-85-7	LCS	1,2,3,6,7,8-HxCDD	100	104	104	76-134
19408-74-3	LCS	1,2,3,7,8,9-HxCDD	100	107	107	64-162
35822-46-9	LCS	1,2,3,4,6,7,8-HpCDD	100	103	103	70-140
3268-87-9	LCS	1,2,3,4,6,7,8,9-OCDD	200	206	103	78-144
51207-31-9	LCS	2,3,7,8-TCDF	20.0	21.3	106	75-158
57117-41-6	LCS	1,2,3,7,8-PeCDF	100	110	110	80-134
57117-31-4	LCS	2,3,4,7,8-PeCDF	100	109	109	68-160
70648-26-9	LCS	1,2,3,4,7,8-HxCDF	100	108	108	72-134
57117-44-9	LCS	1,2,3,6,7,8-HxCDF	100	114	114	84-130
60851-34-5	LCS	2,3,4,6,7,8-HxCDF	100	115	115	70-156
72918-21-9	LCS	1,2,3,7,8,9-HxCDF	100	110	110	78-130
67562-39-4	LCS	1,2,3,4,6,7,8-HpCDF	100	110	110	82-122
55673-89-7	LCS	1,2,3,4,7,8,9-HpCDF	100	111	111	78-138
39001-02-0	LCS	1,2,3,4,6,7,8,9-OCDF	200	207	103	63-170

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: 2006-00115_3 **Sample Type:** Laboratory Control Sample Duplicate

Client ID: LCSD for batch 41776 **Matrix:** SOIL

Lab Sample ID: 12024829

Instrument: HRP763 **Analysis Date:** 09/24/2019 08:47 **Dilution:** 1

Analyst: MLS **Prep Batch ID:** 41776

Batch ID: 41778

CAS No.		Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD	2,3,7,8-TCDD	20.0	17.8	89	67-158	4.62	0-20
40321-76-4	LCSD	1,2,3,7,8-PeCDD	100	100	100	70-142	2.39	0-20
39227-28-6	LCSD	1,2,3,4,7,8-HxCDD	100	100	100	70-164	1.76	0-20
57653-85-7	LCSD	1,2,3,6,7,8-HxCDD	100	106	106	76-134	1.92	0-20
19408-74-3	LCSD	1,2,3,7,8,9-HxCDD	100	109	109	64-162	1.77	0-20
35822-46-9	LCSD	1,2,3,4,6,7,8-HpCDD	100	105	105	70-140	2.23	0-20
3268-87-9	LCSD	1,2,3,4,6,7,8,9-OCDD	200	202	101	78-144	2.15	0-20
51207-31-9	LCSD	2,3,7,8-TCDF	20.0	21.8	109	75-158	2.30	0-20
57117-41-6	LCSD	1,2,3,7,8-PeCDF	100	109	109	80-134	0.587	0-20
57117-31-4	LCSD	2,3,4,7,8-PeCDF	100	112	112	68-160	2.14	0-20
70648-26-9	LCSD	1,2,3,4,7,8-HxCDF	100	108	108	72-134	0.0797	0-20
57117-44-9	LCSD	1,2,3,6,7,8-HxCDF	100	119	119	84-130	4.24	0-20
60851-34-5	LCSD	2,3,4,6,7,8-HxCDF	100	113	113	70-156	1.91	0-20
72918-21-9	LCSD	1,2,3,7,8,9-HxCDF	100	114	114	78-130	3.39	0-20
67562-39-4	LCSD	1,2,3,4,6,7,8-HpCDF	100	110	110	82-122	0.303	0-20
55673-89-7	LCSD	1,2,3,4,7,8,9-HpCDF	100	111	111	78-138	0.248	0-20
39001-02-0	LCSD	1,2,3,4,6,7,8,9-OCDF	200	210	105	63-170	1.63	0-20

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: 2006-00115_3
Client ID: J3-SC1b-70to80-82719(15470018MS)
Lab Sample ID: 12024830
Instrument: HRP763
Analyst: MLS

Sample Type: Matrix Spike
Matrix: SOIL
%Moisture: 19.4
Analysis Date: 09/28/2019 20:17
Prep Batch ID: 41776
Batch ID: 41778

Dilution: 1

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	MS	2,3,7,8-TCDD	18.7	U	16.8	89.9	70-130
40321-76-4	MS	1,2,3,7,8-PeCDD	93.6	U	91.1	97.3	70-130
39227-28-6	MS	1,2,3,4,7,8-HxCDD	93.6	U	92.9	99.3	70-130
57653-85-7	MS	1,2,3,6,7,8-HxCDD	93.6	U	90.2	96.4	70-130
19408-74-3	MS	1,2,3,7,8,9-HxCDD	93.6	U	97.8	104	70-130
35822-46-9	MS	1,2,3,4,6,7,8-HpCDD	93.6	J	95.2	100	70-130
3268-87-9	MS	1,2,3,4,6,7,8,9-OCDD	187		190	94.6	70-130
51207-31-9	MS	2,3,7,8-TCDF	18.7	U	19.3	103	70-130
57117-41-6	MS	1,2,3,7,8-PeCDF	93.6	U	96.2	103	70-130
57117-31-4	MS	2,3,4,7,8-PeCDF	93.6	U	95.3	102	70-130
70648-26-9	MS	1,2,3,4,7,8-HxCDF	93.6	U	94.7	101	70-130
57117-44-9	MS	1,2,3,6,7,8-HxCDF	93.6	U	98.3	105	70-130
60851-34-5	MS	2,3,4,6,7,8-HxCDF	93.6	U	100	107	70-130
72918-21-9	MS	1,2,3,7,8,9-HxCDF	93.6	U	97.6	104	70-130
67562-39-4	MS	1,2,3,4,6,7,8-HpCDF	93.6	J	98.0	103	70-130
55673-89-7	MS	1,2,3,4,7,8,9-HpCDF	93.6	U	97.2	104	70-130
39001-02-0	MS	1,2,3,4,6,7,8,9-OCDF	187	J	192	102	70-130

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: 2006-00115_3
Client ID: J3-SC1b-70to80-82719(15470018MSD)
Lab Sample ID: 12024831
Instrument: HRP763
Analyst: MLS

Sample Type: Matrix Spike Duplicate
Matrix: SOIL
%Moisture: 19.4
Analysis Date: 09/28/2019 21:05
Dilution: 1
Prep Batch ID: 41776
Batch ID: 41778

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	MSD	2,3,7,8-TCDD	18.6	U	16.8	90.7	70-130	0.0788	0-20
40321-76-4	MSD	1,2,3,7,8-PeCDD	92.9	U	92.1	99.2	70-130	1.10	0-20
39227-28-6	MSD	1,2,3,4,7,8-HxCDD	92.9	U	88.7	95.5	70-130	4.64	0-20
57653-85-7	MSD	1,2,3,6,7,8-HxCDD	92.9	U	93.9	101	70-130	3.99	0-20
19408-74-3	MSD	1,2,3,7,8,9-HxCDD	92.9	U	97.4	105	70-130	0.417	0-20
35822-46-9	MSD	1,2,3,4,6,7,8-HpCDD	92.9	J	95.2	101	70-130	0.00758	0-20
3268-87-9	MSD	1,2,3,4,6,7,8,9-OCDD	186		196	98.6	70-130	3.15	0-20
51207-31-9	MSD	2,3,7,8-TCDF	18.6	U	18.8	101	70-130	2.74	0-20
57117-41-6	MSD	1,2,3,7,8-PeCDF	92.9	U	95.2	102	70-130	1.02	0-20
57117-31-4	MSD	2,3,4,7,8-PeCDF	92.9	U	95.9	103	70-130	0.700	0-20
70648-26-9	MSD	1,2,3,4,7,8-HxCDF	92.9	U	94.7	102	70-130	0.0812	0-20
57117-44-9	MSD	1,2,3,6,7,8-HxCDF	92.9	U	97.8	105	70-130	0.577	0-20
60851-34-5	MSD	2,3,4,6,7,8-HxCDF	92.9	U	96.5	104	70-130	3.70	0-20
72918-21-9	MSD	1,2,3,7,8,9-HxCDF	92.9	U	98.0	105	70-130	0.442	0-20
67562-39-4	MSD	1,2,3,4,6,7,8-HpCDF	92.9	J	98.2	104	70-130	0.185	0-20
55673-89-7	MSD	1,2,3,4,7,8,9-HpCDF	92.9	U	96.7	104	70-130	0.494	0-20
39001-02-0	MSD	1,2,3,4,6,7,8,9-OCDF	186	J	197	106	70-130	2.89	0-20

Method Blank Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Matrix:**	**SOIL**
Client ID:	**MB for batch 41711**	**Instrument ID:**	**HRP750**	**Data File:**	**A17SEP19C-4**
Lab Sample ID:	**12024755**	**Prep Date:**	**11-SEP-19**	**Analyzed:**	**09/17/19 15:23**
Column:					

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 41711	12024756	A17SEP19C-2	09/17/19	1346
02	LCSD for batch 41711	12024757	A17SEP19C-3	09/17/19	1435
03	D6-SC1b-20to30-82619	15470001	A18SEP19D_2-10	09/19/19	1242
04	D6-SC1b-30to40-82619	15470002	A18SEP19D_2-11	09/19/19	1331
05	D6-SC1b-40to50-82619	15470003	A18SEP19D_2-12	09/19/19	1419
06	D6-SC1b-20to30-82619	15470001	A20SEP19A-5	09/20/19	1118

Method Blank Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Matrix:**	**SOIL**
Client ID:	**MB for batch 41776**	**Instrument ID:**	**HRP763**	**Data File:**	**b23sep19a_3-5**
Lab Sample ID:	**12024827**	**Prep Date:**	**18-SEP-19**	**Analyzed:**	**09/24/19 11:20**
Column:					

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 41776	12024828	b23sep19a_3-1	09/24/19	0759
02	LCSD for batch 41776	12024829	b23sep19a_3-2	09/24/19	0847
03	D6-SC1b-50to60-82619	15470004	b23sep19a_3-6	09/24/19	1208
04	D6-SC1b-60to70-82619	15470005	b23sep19a_3-7	09/24/19	1256
05	D6-SC1b-70to80-82619	15470006	b23sep19a_3-8	09/24/19	1345
06	D6-SC1b-80to90-82619	15470007	b23sep19a_3-9	09/24/19	1433
07	D6-SC1b-90to100-82619	15470008	b23sep19a_3-10	09/24/19	1522
08	D6-SC1b-100to110-82619	15470009	b23sep19a_3-11	09/24/19	1610
09	D6-SC1b-110to120-82619	15470010	b23sep19a_3-12	09/24/19	1658
10	411-SC1b-50to60-82619	15470012	b23sep19a_3-13	09/24/19	1747
11	J3-SC1b-20to30-82719	15470013	b26sep19a_4-8	09/27/19	1803
12	J3-SC1b-30to40-82719	15470014	b26sep19a_4-9	09/27/19	1851
13	J3-SC1b-40to50-82719	15470015	b28sep19a-3	09/28/19	1703
14	J3-SC1b-50to60-82719	15470016	b28sep19a-4	09/28/19	1752
15	J3-SC1b-60to70-82719	15470017	b28sep19a-5	09/28/19	1840
16	J3-SC1b-70to80-82719	15470018	b28sep19a-6	09/28/19	1928
17	J3-SC1b-70to80-82719(15470018MS)	12024830	b28sep19a-7	09/28/19	2017
18	J3-SC1b-70to80-82719(15470018MSD)	12024831	b28sep19a-8	09/28/19	2105
19	J3-SC1b-80to90-82719	15470019	b28sep19a-9	09/28/19	2154
20	J3-SC1b-90to100-82719	15470020	b28sep19a-10	09/28/19	2242
21	J3-SC1b-10to20-82719	15470021	b28sep19a-11	09/28/19	2331
22	412-SC1b-80to90-82719	15470022	b28sep19a-12	09/29/19	0019
23	SRM Lot# ER10091501	15470023	b28sep19a-13	09/29/19	0107
24	J3-SC1b-30to40-82719	15470014	b30sep19a_2-8	09/30/19	1819

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024755**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41711**				
Client ID:	**MB for batch 41711**			**Prep Basis:**	**As Received**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/17/2019 15:23**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A17SEP19C-4**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0606	pg/g	0.0606	1.00
40321-76-4	1,2,3,7,8-PeCDD	U	0.105	pg/g	0.105	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.097	pg/g	0.097	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.0954	pg/g	0.0954	5.00
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.0978	pg/g	0.0978	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	0.106	pg/g	0.106	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD	JK	0.524	pg/g	0.220	10.0
51207-31-9	2,3,7,8-TCDF	JK	0.276	pg/g	0.0726	1.00
57117-41-6	1,2,3,7,8-PeCDF	J	0.104	pg/g	0.0818	5.00
57117-31-4	2,3,4,7,8-PeCDF	U	0.0736	pg/g	0.0736	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	JK	0.104	pg/g	0.0862	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.0846	pg/g	0.0846	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.0872	pg/g	0.0872	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.114	pg/g	0.114	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	0.098	pg/g	0.087	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.123	pg/g	0.123	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	0.189	pg/g	0.189	10.0
41903-57-5	Total TeCDD	U	0.0606	pg/g	0.0606	1.00
36088-22-9	Total PeCDD	U	0.105	pg/g	0.105	5.00
34465-46-8	Total HxCDD	U	0.0954	pg/g	0.0954	5.00
37871-00-4	Total HpCDD	U	0.106	pg/g	0.106	5.00
30402-14-3	Total TeCDF	JK	0.462	pg/g	0.0726	1.00
30402-15-4	Total PeCDF	JK	0.174	pg/g	0.0478	5.00
55684-94-1	Total HxCDF	JK	0.104	pg/g	0.0846	5.00
38998-75-3	Total HpCDF	J	0.098	pg/g	0.087	5.00
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.0423	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.166	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		172	200	pg/g	86.1	(25%-164%)
13C-1,2,3,7,8-PeCDD		176	200	pg/g	87.8	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		162	200	pg/g	80.9	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		154	200	pg/g	77.0	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		169	200	pg/g	84.7	(23%-140%)
13C-OCDD		265	400	pg/g	66.2	(17%-157%)
13C-2,3,7,8-TCDF		185	200	pg/g	92.7	(24%-169%)
13C-1,2,3,7,8-PeCDF		195	200	pg/g	97.4	(24%-185%)
13C-2,3,4,7,8-PeCDF		186	200	pg/g	92.8	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		160	200	pg/g	80.2	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		152	200	pg/g	76.0	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		160	200	pg/g	79.9	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		162	200	pg/g	81.0	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024755**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41711**				
Client ID:	**MB for batch 41711**			**Prep Basis:**	**As Received**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/17/2019 15:23**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A17SEP19C-4**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		150	200	pg/g	74.8	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		153	200	pg/g	76.3	(26%-138%)
37Cl-2,3,7,8-TCDD		21.5	20.0	pg/g	108	(35%-197%)

Comments:

J **Value is estimated**

K **Estimated Maximum Possible Concentration**

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024756**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41711**				
Client ID:	**LCS for batch 41711**			**Prep Basis:**	**As Received**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/17/2019 13:46**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A17SEP19C-2**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		21.5	pg/g	0.0624	1.00
40321-76-4	1,2,3,7,8-PeCDD		119	pg/g	0.143	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		116	pg/g	0.240	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		115	pg/g	0.242	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		124	pg/g	0.244	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		107	pg/g	0.380	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		229	pg/g	0.494	10.0
51207-31-9	2,3,7,8-TCDF		21.2	pg/g	0.0828	1.00
57117-41-6	1,2,3,7,8-PeCDF		108	pg/g	0.158	5.00
57117-31-4	2,3,4,7,8-PeCDF		107	pg/g	0.149	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		111	pg/g	0.312	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		113	pg/g	0.320	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		111	pg/g	0.318	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		110	pg/g	0.420	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		122	pg/g	0.354	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		113	pg/g	0.512	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		222	pg/g	0.500	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		170	200	pg/g	85.1	(20%-175%)
13C-1,2,3,7,8-PeCDD		176	200	pg/g	87.8	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		160	200	pg/g	80.0	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		152	200	pg/g	75.9	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		167	200	pg/g	83.5	(22%-166%)
13C-OCDD		273	400	pg/g	68.3	(13%-199%)
13C-2,3,7,8-TCDF		183	200	pg/g	91.3	(22%-152%)
13C-1,2,3,7,8-PeCDF		191	200	pg/g	95.7	(21%-192%)
13C-2,3,4,7,8-PeCDF		185	200	pg/g	92.7	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		157	200	pg/g	78.3	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		147	200	pg/g	73.7	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		158	200	pg/g	78.8	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		159	200	pg/g	79.4	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		149	200	pg/g	74.6	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		153	200	pg/g	76.3	(20%-186%)
37Cl-2,3,7,8-TCDD		21.1	20.0	pg/g	106	(31%-191%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024757**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41711**				
Client ID:	**LCSD for batch 41711**			**Prep Basis:**	**As Received**
Batch ID:	**41713**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/17/2019 14:35**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A17SEP19C-3**			**Dilution:**	**1**
Prep Batch:	**41711**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**11-SEP-19**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		20.8	pg/g	0.0784	1.00
40321-76-4	1,2,3,7,8-PeCDD		110	pg/g	0.169	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		110	pg/g	0.244	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		103	pg/g	0.236	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		116	pg/g	0.244	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		98.3	pg/g	0.310	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		205	pg/g	0.380	10.0
51207-31-9	2,3,7,8-TCDF		19.9	pg/g	0.0762	1.00
57117-41-6	1,2,3,7,8-PeCDF		98.1	pg/g	0.126	5.00
57117-31-4	2,3,4,7,8-PeCDF		99.5	pg/g	0.124	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		103	pg/g	0.272	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		107	pg/g	0.264	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		101	pg/g	0.276	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		103	pg/g	0.358	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		112	pg/g	0.310	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		106	pg/g	0.438	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		200	pg/g	0.440	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		163	200	pg/g	81.3	(20%-175%)
13C-1,2,3,7,8-PeCDD		170	200	pg/g	84.8	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		158	200	pg/g	79.0	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		157	200	pg/g	78.3	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		174	200	pg/g	87.0	(22%-166%)
13C-OCDD		271	400	pg/g	67.8	(13%-199%)
13C-2,3,7,8-TCDF		176	200	pg/g	88.1	(22%-152%)
13C-1,2,3,7,8-PeCDF		185	200	pg/g	92.7	(21%-192%)
13C-2,3,4,7,8-PeCDF		179	200	pg/g	89.5	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		160	200	pg/g	79.8	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		147	200	pg/g	73.6	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		160	200	pg/g	79.9	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		162	200	pg/g	80.9	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		155	200	pg/g	77.5	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		155	200	pg/g	77.5	(20%-186%)
37Cl-2,3,7,8-TCDD		20.7	20.0	pg/g	103	(31%-191%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024827**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41776**				
Client ID:	**MB for batch 41776**			**Prep Basis:**	**As Received**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 11:20**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_3-5**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0742	pg/g	0.0742	1.00
40321-76-4	1,2,3,7,8-PeCDD	U	0.0746	pg/g	0.0746	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.107	pg/g	0.107	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.104	pg/g	0.104	5.00
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.107	pg/g	0.107	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	0.166	pg/g	0.166	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	0.582	pg/g	0.342	10.0
51207-31-9	2,3,7,8-TCDF	J	0.128	pg/g	0.0998	1.00
57117-41-6	1,2,3,7,8-PeCDF	J	0.094	pg/g	0.0662	5.00
57117-31-4	2,3,4,7,8-PeCDF	JK	0.074	pg/g	0.0614	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	J	0.086	pg/g	0.0676	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.0674	pg/g	0.0674	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.0742	pg/g	0.0742	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	J	0.144	pg/g	0.117	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF	JK	0.122	pg/g	0.0928	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.162	pg/g	0.162	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	0.464	pg/g	0.464	10.0
41903-57-5	Total TeCDD	U	0.0742	pg/g	0.0742	1.00
36088-22-9	Total PeCDD	U	0.0746	pg/g	0.0746	5.00
34465-46-8	Total HxCDD	U	0.104	pg/g	0.104	5.00
37871-00-4	Total HpCDD	U	0.166	pg/g	0.166	5.00
30402-14-3	Total TeCDF	JK	0.480	pg/g	0.0998	1.00
30402-15-4	Total PeCDF	JK	0.248	pg/g	0.0486	5.00
55684-94-1	Total HxCDF	J	0.230	pg/g	0.0674	5.00
38998-75-3	Total HpCDF	JK	0.122	pg/g	0.0928	5.00
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.0622	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.161	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		162	200	pg/g	81.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		151	200	pg/g	75.3	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		153	200	pg/g	76.7	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		161	200	pg/g	80.3	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		158	200	pg/g	79.2	(23%-140%)
13C-OCDD		218	400	pg/g	54.5	(17%-157%)
13C-2,3,7,8-TCDF		148	200	pg/g	73.8	(24%-169%)
13C-1,2,3,7,8-PeCDF		144	200	pg/g	72.0	(24%-185%)
13C-2,3,4,7,8-PeCDF		141	200	pg/g	70.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		155	200	pg/g	77.3	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		164	200	pg/g	81.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		154	200	pg/g	76.8	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		151	200	pg/g	75.6	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024827**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41776**				
Client ID:	**MB for batch 41776**			**Prep Basis:**	**As Received**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 11:20**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_3-5**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		155	200	pg/g	77.6	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		147	200	pg/g	73.7	(26%-138%)
37Cl-2,3,7,8-TCDD		18.2	20.0	pg/g	90.9	(35%-197%)

Comments:

J **Value is estimated**

K **Estimated Maximum Possible Concentration**

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024828**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41776**				
Client ID:	**LCS for batch 41776**			**Prep Basis:**	**As Received**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 07:59**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_3-1**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		18.6	pg/g	0.0568	1.00
40321-76-4	1,2,3,7,8-PeCDD		103	pg/g	0.0622	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		98.5	pg/g	0.222	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		104	pg/g	0.228	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		107	pg/g	0.230	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		103	pg/g	0.256	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		206	pg/g	0.734	10.0
51207-31-9	2,3,7,8-TCDF		21.3	pg/g	0.0748	1.00
57117-41-6	1,2,3,7,8-PeCDF		110	pg/g	0.130	5.00
57117-31-4	2,3,4,7,8-PeCDF		109	pg/g	0.116	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		108	pg/g	0.234	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		114	pg/g	0.252	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		115	pg/g	0.266	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		110	pg/g	0.392	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		110	pg/g	0.238	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		111	pg/g	0.400	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		207	pg/g	0.758	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		165	200	pg/g	82.5	(20%-175%)
13C-1,2,3,7,8-PeCDD		150	200	pg/g	75.2	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		164	200	pg/g	81.8	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		170	200	pg/g	85.0	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		178	200	pg/g	89.1	(22%-166%)
13C-OCDD		259	400	pg/g	64.9	(13%-199%)
13C-2,3,7,8-TCDF		159	200	pg/g	79.3	(22%-152%)
13C-1,2,3,7,8-PeCDF		142	200	pg/g	70.8	(21%-192%)
13C-2,3,4,7,8-PeCDF		141	200	pg/g	70.4	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		169	200	pg/g	84.6	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		160	200	pg/g	80.2	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		153	200	pg/g	76.7	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		165	200	pg/g	82.5	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		166	200	pg/g	83.2	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		166	200	pg/g	83.0	(20%-186%)
37Cl-2,3,7,8-TCDD		18.5	20.0	pg/g	92.7	(31%-191%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024829**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41776**				
Client ID:	**LCSD for batch 41776**			**Prep Basis:**	**As Received**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 08:47**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_3-2**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		17.8	pg/g	0.083	1.00
40321-76-4	1,2,3,7,8-PeCDD		100	pg/g	0.171	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		100	pg/g	0.202	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		106	pg/g	0.196	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		109	pg/g	0.202	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		105	pg/g	0.416	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		202	pg/g	0.788	10.0
51207-31-9	2,3,7,8-TCDF		21.8	pg/g	0.105	1.00
57117-41-6	1,2,3,7,8-PeCDF		109	pg/g	0.244	5.00
57117-31-4	2,3,4,7,8-PeCDF		112	pg/g	0.212	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		108	pg/g	0.262	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		119	pg/g	0.272	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		113	pg/g	0.280	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		114	pg/g	0.434	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		110	pg/g	0.324	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		111	pg/g	0.544	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		210	pg/g	1.02	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		157	200	pg/g	78.7	(20%-175%)
13C-1,2,3,7,8-PeCDD		140	200	pg/g	70.0	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		151	200	pg/g	75.5	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		156	200	pg/g	77.9	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		160	200	pg/g	80.0	(22%-166%)
13C-OCDD		243	400	pg/g	60.8	(13%-199%)
13C-2,3,7,8-TCDF		143	200	pg/g	71.4	(22%-152%)
13C-1,2,3,7,8-PeCDF		140	200	pg/g	69.8	(21%-192%)
13C-2,3,4,7,8-PeCDF		136	200	pg/g	67.9	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		157	200	pg/g	78.3	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		147	200	pg/g	73.3	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		147	200	pg/g	73.7	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		150	200	pg/g	74.9	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		157	200	pg/g	78.3	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		152	200	pg/g	76.2	(20%-186%)
37Cl-2,3,7,8-TCDD		17.6	20.0	pg/g	88.2	(31%-191%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024830**	**Date Collected:**	**08/27/2019 11:35**	**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41776**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**19.4**
Client ID:	**J3-SC1b-70to80-82719(15470018MS)**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 20:17**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b28sep19a-7**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**13.25 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		16.8	pg/g	0.121	0.936
40321-76-4	1,2,3,7,8-PeCDD		91.1	pg/g	0.242	4.68
39227-28-6	1,2,3,4,7,8-HxCDD		92.9	pg/g	0.447	4.68
57653-85-7	1,2,3,6,7,8-HxCDD		90.2	pg/g	0.436	4.68
19408-74-3	1,2,3,7,8,9-HxCDD		97.8	pg/g	0.449	4.68
35822-46-9	1,2,3,4,6,7,8-HpCDD		95.2	pg/g	0.535	4.68
3268-87-9	1,2,3,4,6,7,8,9-OCDD		190	pg/g	1.25	9.36
51207-31-9	2,3,7,8-TCDF		19.3	pg/g	0.215	0.936
57117-41-6	1,2,3,7,8-PeCDF		96.2	pg/g	0.200	4.68
57117-31-4	2,3,4,7,8-PeCDF		95.3	pg/g	0.176	4.68
70648-26-9	1,2,3,4,7,8-HxCDF		94.7	pg/g	0.335	4.68
57117-44-9	1,2,3,6,7,8-HxCDF		98.3	pg/g	0.346	4.68
60851-34-5	2,3,4,6,7,8-HxCDF		100	pg/g	0.344	4.68
72918-21-9	1,2,3,7,8,9-HxCDF		97.6	pg/g	0.491	4.68
67562-39-4	1,2,3,4,6,7,8-HpCDF		98.0	pg/g	0.455	4.68
55673-89-7	1,2,3,4,7,8,9-HpCDF		97.2	pg/g	0.659	4.68
39001-02-0	1,2,3,4,6,7,8,9-OCDF		192	pg/g	0.769	9.36

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		152	187	pg/g	81.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		162	187	pg/g	86.5	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		148	187	pg/g	78.9	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		149	187	pg/g	79.7	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		175	187	pg/g	93.6	(23%-140%)
13C-OCDD		351	374	pg/g	93.7	(17%-157%)
13C-2,3,7,8-TCDF		135	187	pg/g	72.2	(24%-169%)
13C-1,2,3,7,8-PeCDF		147	187	pg/g	78.3	(24%-185%)
13C-2,3,4,7,8-PeCDF		146	187	pg/g	77.9	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		143	187	pg/g	76.2	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		137	187	pg/g	73.4	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		135	187	pg/g	72.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		154	187	pg/g	82.4	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		150	187	pg/g	79.9	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		176	187	pg/g	94.1	(26%-138%)
37Cl-2,3,7,8-TCDD		17.9	18.7	pg/g	95.5	(35%-197%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_3**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024831**	**Date Collected:**	**08/27/2019 11:35**	**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41776**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**19.4**
Client ID:	**J3-SC1b-70to80-82719(15470018MSD**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41778**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 21:05**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b28sep19a-8**			**Dilution:**	**1**
Prep Batch:	**41776**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**18-SEP-19**	**Prep Aliquot:**	**13.35 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		16.8	pg/g	0.141	0.929
40321-76-4	1,2,3,7,8-PeCDD		92.1	pg/g	0.266	4.65
39227-28-6	1,2,3,4,7,8-HxCDD		88.7	pg/g	0.439	4.65
57653-85-7	1,2,3,6,7,8-HxCDD		93.9	pg/g	0.440	4.65
19408-74-3	1,2,3,7,8,9-HxCDD		97.4	pg/g	0.450	4.65
35822-46-9	1,2,3,4,6,7,8-HpCDD		95.2	pg/g	0.567	4.65
3268-87-9	1,2,3,4,6,7,8,9-OCDD		196	pg/g	0.851	9.29
51207-31-9	2,3,7,8-TCDF		18.8	pg/g	0.240	0.929
57117-41-6	1,2,3,7,8-PeCDF		95.2	pg/g	0.240	4.65
57117-31-4	2,3,4,7,8-PeCDF		95.9	pg/g	0.214	4.65
70648-26-9	1,2,3,4,7,8-HxCDF		94.7	pg/g	0.474	4.65
57117-44-9	1,2,3,6,7,8-HxCDF		97.8	pg/g	0.496	4.65
60851-34-5	2,3,4,6,7,8-HxCDF		96.5	pg/g	0.518	4.65
72918-21-9	1,2,3,7,8,9-HxCDF		98.0	pg/g	0.704	4.65
67562-39-4	1,2,3,4,6,7,8-HpCDF		98.2	pg/g	0.416	4.65
55673-89-7	1,2,3,4,7,8,9-HpCDF		96.7	pg/g	0.606	4.65
39001-02-0	1,2,3,4,6,7,8,9-OCDF		197	pg/g	0.873	9.29

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		152	186	pg/g	81.5	(25%-164%)
13C-1,2,3,7,8-PeCDD		158	186	pg/g	85.1	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		152	186	pg/g	81.9	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		147	186	pg/g	79.1	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		176	186	pg/g	94.5	(23%-140%)
13C-OCDD		352	372	pg/g	94.6	(17%-157%)
13C-2,3,7,8-TCDF		134	186	pg/g	71.9	(24%-169%)
13C-1,2,3,7,8-PeCDF		146	186	pg/g	78.8	(24%-185%)
13C-2,3,4,7,8-PeCDF		146	186	pg/g	78.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		147	186	pg/g	78.9	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		137	186	pg/g	73.7	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		141	186	pg/g	75.9	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		159	186	pg/g	85.3	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		152	186	pg/g	81.6	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		173	186	pg/g	93.2	(26%-138%)
37Cl-2,3,7,8-TCDD		16.7	18.6	pg/g	90.0	(35%-197%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

CFA | Cape Fear Analytical LLC
an affiliate of The GEL Group INC

3306 Kitty Hawk Road, Suite 120 Wilmington, NC 28405
P 910.795.0421
www.capefearanalytical.com

October 02, 2019

Mr. Jeffrey Parker
Pacific Groundwater Group
2377 Eastlake Avenue E
Seattle, Washington 98102

Re: Swan Island Lagoon Sediment Investigation
Work Order: 15471
SDG: 2006-00115_4

Dear Mr. Parker:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on August 30, 2019, September 04, 2019 and September 10, 2019. This original data report has been prepared and reviewed in accordance with CFA's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,

Cynde Larkins

Cynde Larkins
Project Manager

Enclosures

problem solved

Other
CF

CFA WO#15471

Chain of Custody Record

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 8/27/2019	COC No: 6 of 8 COCs
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	*standard*			SDG No.
206 329 0141 Phone	TAT if different from Below ____			
206 329 6968 FAX	[X] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
PO#	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Dioxin/Furans 1613B	Archive	Sample Specific Notes:
J5-SC1b-20to30-8 27 19	8/27/19	1455		S	1	X		3.9'
J5-SC1b-30to40-8 27 19	8/27/19	1500		S	1	X		
J5-SC1b-40to50-8 27 19	8/27/19	1610		S	1	X		
J5-SC1b-50to60-8 27 19	8/27/19	1615		S	1	X		
J5-SC1b-60to70-8 27 19	8/27/19	1620		S	1	X		
J5-SC1b-70to80-8 27 19	8/27/19	1625		S	1	X		
J5-SC1b-80to90-8 27 19	8/27/19	1725		S	1	X		
J5-SC1b-90to100-8 27 19	8/27/19	1730		S	1	X		
J5-SC1b-100to110-8 27 19	8/27/19	1735		S	1	X		
[redacted]								
J5-SC1b-00to10-82719	8/27/19	1445		S	1		X	
J5-SC1b-10to20-82719	8/27/19	1450		S	1		X	

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other ____

Possible Hazard Identification
[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] Return To Client [ ] Disposal By Lab [X] Archive For ____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	POG	8/29/19 1300	Fedex		
Relinquished by: Fedex	Company:	Date/Time:	Received by: [signature]	Company: CFA	Date/Time: 9/30/19 9:55
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

other CF

CFA WO#15471(

Chain of Custody Record

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date:8/__/2019	COC No: 7 of 8 COCs
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	*standard*			SDG No.
206 329 0141 Phone	TAT if different from Below ____			
206 329 6968 FAX	[x] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Dioxins/Furans 1613B	ARCHIVE	Sample Specific Notes:
L3-SC1b-20to30-826 19	8/26/19	1030		S	1	X		3.50
L3-SC1b-30to40-826 19	8/26/19	1035		S	1	X		
L3-SC1b-00to10-82619	8/26/19	1006		S	1		✓	
L3-SC1b-10to20-82619	8/26/19	1007		S	1		✓	
	8/ /19			S	1			
	8/ /19			S	1			
	8/ /19			S	1			
	8/ /19			S	1			
	8/ /19			S	1			
	8/ /19			S	1			
	8/ /19			S	1			
	8/ /19			S	1			

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____

Possible Hazard Identification
[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] Return To Client [ ] Disposal By Lab [x] Archive For _____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	PGG	8/29/19 1300	Fedex		
Relinquished by: Fed Ex	Company:	Date/Time:	Received by: [signature]	Company: CFA	Date/Time: 3/30/19 9:55
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

ALS Environmental

CHAIN OF CUSTODY

Sediment and Tissue Chemistry

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • FAX (360) 636-1068

CFA WO# 15471

SR#: _____

PAGE 8 OF 8 COC# _____

PROJECT NAME	Swan Island Lagoon Sed. Invest.
PROJECT NUMBER	2006-00115
PROJECT MANAGER	Janet Knox
COMPANY NAME	Pacific Groundwater Group
ADDRESS	2377 Eastlake Ave E
CITY/STATE/ZIP	Seattle WA 98103
E-MAIL ADDRESS	
PHONE #	206 329 0141
FAX #	
SAMPLER'S SIGNATURE	

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Total Volatile Solids ☐ Total Solids	TOC ☐ (ASTM D4129M) ☐ PSEP	Grain Size ☐PSEP ☐ASTMD422	Sulfide ☐ Total (9030M)	☐PSEP ☐ Water Soluble	☐ AVS ☐ SEM (metals list below)	Ammonia ☐ Total (350.1M)	Metals (list below) ☐ Plumb ☐ Pore Water	Pesticides (8081)	PCBs (8082) ☐ Aroclors ☐ Congeners	Semivolatiles ☐ GC/MS SIM (PAH) ☐8270-L	Organotins ☐ Bulk ☐ Pore Water ☐ TBT only	Volatiles (8260)	Dioxins ☐1613 ☐8290	TPH ☐GRO ☐ DRO ☐ RRO	☐Lipids	Tissue Sample Preparations (Instructions below)	Dioxins/Furans 1613B			REMARKS
✓ 711-82719	8/27/19	0840		A																		1				33°
712-82819	8/27/19	0820		A																		1				

REPORT REQUIREMENTS

- ___ I. Routine Report: Method Blank, Surrogate, as required
- ___ II. Report Dup., MS, MSD as required
- ___ III. CLP Like Summary (no raw data)
- ___ IV. Data Validation Report
- ___ V. EDD

INVOICE INFORMATION

P.O. # _____

Bill To: _____

TURNAROUND REQUIREMENTS

___ 24 hr. ___ 48 hr.

___ 5 day

___ Standard (15 working days)

Requested Report Date

Circle which metals are to be analyzed:

SMS Metals: As Cd Cr Cu Pb Hg Ag Zn

CA Metals: Ag As Cd Cr Cu Hg Ni Pb Se Zn

SEM Metals: Cd Cu Pb Hg Ni Zn

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

SPECIAL INSTRUCTIONS/COMMENTS:

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature]	Signature: FedEx	Signature: FedEx	Signature: [signature]
Date/Time: 1300 8/29/19	Date/Time:	Date/Time:	Date/Time: 8/30/19 9:55
Printed Name: Jeff Parker	Printed Name:	Printed Name:	Printed Name: Rebecca O'Neill
Firm: PGG	Firm:	Firm:	Firm: CFA

SAMPLE RECEIPT CHECKLIST

Cape Fear Analytical

Client: Pacific Groundwater Group	Work Order: 15471
Shipping Company: FedEx	Date/Time Received: 30AUG19 0955

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			✓
Samples identified as Foreign Soil?			✓

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?		✓	
Samples < 2x background?		✓	

* Notify RSO of any responses in this column immediately.

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?			✓

Air Witness: _____

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other(describe)
2	Custody seal/s present on cooler?	✓			Seal intact? (Yes) No
3	Chain of Custody documents included with shipment?	✓			
4	Samples requiring cold preservation within 0-6°C?	✓			Preservation Method: (ice bags) blue ice dry ice none other (describe) Temperature Blank present: (Yes) No 3.9°-0.1=3.8° 5.3°-0.1=5.2° 3.4°-0.1=3.3°
5	Aqueous samples found to have visible solids?			✓	Sample IDs, containers affected:
5	Samples requiring chemical preservation at proper pH?		✓		Sample IDs, containers affected and pH observed: pH=8 on both water containers If preservative added, Lot#:
7	Samples requiring preservation have no residual chlorine?	✓			Sample IDs, containers affected: If preservative added, Lot#:
8	Samples received within holding time?	✓			Sample IDs, tests affected:
9	Sample IDs on COC match IDs on containers?			✓	Sample IDs, containers affected: See below *
10	Date & time of COC match date & time on containers?	✓			Sample IDs, containers affected:
11	Number of containers received match number indicated on COC?			✓	List type and number of containers / Sample IDs, containers affected: 2-1L NMAG received for 711-82719 No containers received for 712-82819 75-4 oz amber glass soil jars
12	COC form is properly signed in relinquished/received sections?	✓			

Comments:

* Sample ID discrepancies:

COC	Label
J6-SC1b-00to10-82719	J6-SC1-00to10-82719
J6-SC1b-10to20-82719	J6-SC1-10to20-82719
L3-SC1b-00to10-82619	CR 30AUG19 L3-SC2-00to10-82619
L3-SC1b-10to20-82619	L3-SC2-10to20-82619
D6-SC1b-10to20-82619	D6-SC2-10to20-82619

Checklist performed by: Initials: CR for RO Date: 30AUG19

CF-UD-F-7

Subject: RE: Swan Island sample receipt 30AUG19
From: "Jeff S. Parker" <JParker@PGWG.COM>
Date: 8/30/2019, 2:54 PM
To: Cynde Larkins <Cynde.larkins@cfanalytical.com>

No problems, thanks!

From: Cynde Larkins <Cynde.larkins@cfanalytical.com>
Sent: Friday, August 30, 2019 11:42 AM
To: Jeff S. Parker <JParker@PGWG.COM>
Subject: Re: Swan Island sample receipt 30AUG19

Thank you!

By the way - that "00to20" was my mistake. The COC and the label have "00to10". My apologies!

On 8/30/2019 2:36 PM, Jeff S. Parker wrote:

> HI Cynde,
> I'm glad you got them without too much ice melt! Here are the answers to the login questions:
>
> 1. D6-SC1b-10to20-82619 is archive, 411-SC1b-50to60-82619 is analyze.
> 2. We misplaced those in a cooler to another lab and will get those to you asap.
> 3. The ID on the COC are correct (highlighted are correct) for those samples with one exception where both are incorrect. The first L3 sample should be "00to10" instead of "00to20":

ID on COC	ID on la
J6-SC1b-00to10-82719	J6-SC1-00to1
J6-SC1b-10to20-082719	J6-SC1-10to2
L3-SC1b-00to20-82619	L3-SC2-00to2
L3-SC1b-10to20-82619	L3-SC2-10to2
D6-SC1b-10to20-82619	D6-SC2-10to2

> Thanks,
> Jeff

Jeffrey Parker, LG | Environmental Geologist
Pacific Groundwater Group **Water Resource & Environmental Consulting**
(360) 570-8244 | jparker@pgwg.com | www.pgwg.com

From: Cynde Larkins <Cynde.larkins@cfanalytical.com>
Sent: Friday, August 30, 2019 11:28 AM
To: Jeff S. Parker <JParker@PGWG.COM>
Subject: Swan Island sample receipt 30AUG19

Good afternoon,

CFA received your samples today for the Swan Island Lagoon project in good condition and within temperature. There are several discrepancies listed below that I need to your help to resolve.

1. Sample D6-SC1b-10to20-82619, collected 8/26/19 at 12:10, is marked on the COC for both 1613B analysis and Archive. The sample listed beneath this one, 411-SC1b-50to60-82619, collected 8/26/19 at 15:00 is not marked for either 1613B or Archive. It looks like one of the X's is on the wrong line perhaps? Please advise.

2. There were no bottles received for sample 712-82819. Two containers were received for 711-82719.

3. There are sample ID discrepancies between the COC and the labels for the samples listed in the table below (collection dates and times match). Please verify which ID should be used for log in.

ID on COC	ID on label
J6-SC1b-00to10-82719	J6-SC1-00to10-82719
J6-SC1b-10to20-082719	J6-SC1-10to20-82719
L3-SC1b-00to20-82619	L3-SC2-00to20-82619
L3-SC1b-10to20-82619	L3-SC2-10to20-82619
D6-SC1b-10to20-82619	D6-SC2-10to20-82619

Thank you!

--
Cynde Larkins
Project Manager
Cape Fear Analytical, LLC
3306 Kitty Hawk Road, Suite 120
Wilmington, NC 28405
(910) 795-0421

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http://www.gellaboratories.com

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Cynde Larkins
Project Manager
Cape Fear Analytical, LLC
3306 Kitty Hawk Road, Suite 120
Wilmington, NC 28405
(910) 795-0421

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http://www.gellaboratories.com

Subject: RE: Fwd: RE: Swan Island sample receipt 30AUG19
From: "Jeff S. Parker" <JParker@PGWG.COM>
Date: 8/30/2019, 3:38 PM
To: Chris Cornwell <chr00735@cfanalytical.com>
CC: Janet Knox <janet@PGWG.COM>

Hi Chris,
Yes, please order 3 of the EDF-5183 (Cambridge SRM). I think the frequency of 1 per SDG (for 3 of the 4 SDGs Cynde is creating) makes sense.

Happy Holiday Weekend,
Jeff

Jeffrey Parker, LG | Environmental Geologist
Pacific Groundwater Group Water Resource & Environmental Consulting http://ww
(360) 570-8244 | jparker@pgwg.com | www.pgwg.com

From: Chris Cornwell <chr00735@cfanalytical.com>
Sent: Friday, August 30, 2019 12:14 PM
To: Jeff S. Parker <JParker@PGWG.COM>
Subject: Re: Fwd: RE: Swan Island sample receipt 30AUG19

Jeff,

Looks like we received about 75 samples. Everything looks OK receipt wise, Cynde is logging in now.

We have the Wellington SRM, not the Cambridge one. Want me to order the Cambridge? What frequency would you like for SRM's?

Having these logged in for method 1613, reporting J flags down to the EDL, EMPC's reported with a K flag.

Happy Friday!

Christopher K. Cornwell
Laboratory Director
Cape Fear Analytical
3306 Kitty Hawk Road
Suite 120
Wilmington, NC 28405
CCornwell@CFAnalytical.com
On 8/30/2019 3:05 PM, Cynde Larkins wrote:

-------- Forwarded Message --------
Subject:RE: Swan Island sample receipt 30AUG19
Date: Fri, 30 Aug 2019 19:02:55 +0000
From: Jeff S. Parker <JParker@PGWG.COM>
To: Cynde Larkins <Cynde.larkins@cfanalytical.com>
CC: Janet Knox <janet@PGWG.COM>

HI Cynde,

Can you send me copies of the COCs or the login file when you get a chance. We taped the COCs in the cooler before making copies and I didn't get a count of the # analyzed. We may need to remove a couple if we're way over our scope.

Also, I need to communicate with Chris about ordering the EDF-5183 (Cambridge SRM) to run with this batch. So, please hold the samples until we get those ordered and added too.

Thanks!
Jeff

From: Jeff S. Parker
Sent: Friday, August 30, 2019 11:55 AM
To: Cynde Larkins <Cynde.larkins@cfanalytical.com>
Subject: RE: Swan Island sample receipt 30AUG19

SRM1613 EDF-5183 9-9-19

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL
Rev 0

Certificate of Analysis

Clean Soil Reference Material

Catalog Number:	EDF-5183
Lot Number:	ER10091501
Expiration Date:	May 2023
Matrix:	Soil
Amount per Vial:	10 g
Storage and Handling:	Freezer.

Intended Use: For laboratory use only. This product is a sample of homogeneous soil matrix taken from an area where no known chemical contamination has occurred. This sample is intended for use in evaluating the performance of an analytical laboratory for the listed analytes.

Preparation: "Clean" soil was obtained from a location in Texas which was expected to contain minimal contamination. The soil was sieved to achieve uniform particle size and homogenized to within 5% using a disodium fluorescein indicator. Samples were then sterilized three times for two hours at 121°C and 15 psi.

Interlaboratory Analysis: This product was included in the Second Round of International Interlaboratory Study conducted by Cambridge Isotope Laboratories and Cerilliant Corporation. Participating laboratories used a variety of sample preparation and analytical techniques. The results listed below supersede those obtained in the First Round of Interlaboratory Study. This Second Round of Interlaboratory Study adds consensus values for one new dioxin, seventeen new PCBs, ten BDEs, and two new PAHs.

Interlaboratory Results: Results of the international interlaboratory study are attached. Consensus values were independently assigned by Manna Associates in the UK using the Cofino model of statistical analysis. These numbers are certified reference values. All values are presented at three significant figures. Analytes with fewer than five laboratories contributing acceptable data do not have assigned values reported in this study.

Cerilliant certifies that this standard meets or exceeds the specifications stated in this data sheet.

Authorized Signature:

Darron Ellsworth, Quality Assurance Manager

December 02, 2015
Date

Interlaboratory Participants:

Alta Analytical Laboratory, USA
CARSO, France
CEAEQ, Canada
Chinese Center for Disease Control and Prevention, China
Clean Harbors Environmental Services, USA
Columbia Analytical Services, Inc., USA
East Bay Municipal Utility District, USA
GfA (Gesellschaft für Arbeitsplatz und Umweltanalytik) mbH, Germany
Hong Kong Baptist University, Hong Kong
Labo Van Vooren, Belgium
Maxxam Analytics, Inc., Ontario Canada
Maxxam Analytics, Inc., British Columbia Canada
Military Institute of Chemistry and Radiometry, Poland
Nab Labs Ympäristöanalytiika Oy, Finland
National Central University, Taiwan
Oekometric GmbH, Germany
Pace Analytical Services, Inc., USA
Severn Trent Laboratories, CA USA
Severn Trent Laboratories, TN USA
SGS Institut Fresenius GmbH Bayreuth, Germany
Sun Dreams Environmental Technology Corp., Taiwan
Xiamen University, China

Interlaboratory Results:

Compound	*Assigned[1] Value (ng/kg)*	*Standard Deviation*	*Reference[2] Value (ng/kg)*	*(n)[3]*
Polychlorinated dioxins and furans				
2,3,7,8-Tetrachlorodibenzo-p-dioxin	0.11	0.07	0.11 ± 0.14	18
Total Tetrachlorodibenzo-p-dioxin	0.32	0.44	0.32 ± 0.88	8
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	0.39	0.16	0.39 ± 0.32	18
Total Pentachlorodibenzo-p-dioxin	2.96	1.20	2.96 ± 2.40	10
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	1.12	0.26	1.12 ± 0.52	18
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	4.39	0.44	4.39 ± 0.88	18
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	2.00	0.60	2.00 ± 1.20	18
Total Hexachlorodibenzo-p-dioxin	50.9	11.4	50.9 ± 22.8	10
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	153	28.6	153 ± 57.2	18
Total Heptachlorodibenzo-p-dioxin	492	123	492 ± 246	10
Octachlorodibenzo-p-dioxin	7,870	825	7,870 ± 1,650	18
2,3,7,8-Tetrachlorodibenzofuran	0.70	0.17	0.70 ± 0.34	18
Total Tetrachlorodibenzofuran	3.21	1.06	3.21 ± 2.12	10
1,2,3,7,8-Pentachlorodibenzofuran	0.23	0.11	0.23± 0.22	18
2,3,4,7,8-Pentachlorodibenzofuran	0.34	0.07	0.34 ± 0.14	18
Total Pentachlorodibenzofuran	3.31	2.87	3.31 ± 5.74	10
1,2,3,4,7,8-Hexachlorodibenzofuran	0.86	0.22	0.86 ± 0.44	18
1,2,3,6,7,8-Hexachlorodibenzofuran	0.58	0.13	0.58 ± 0.26	18
1,2,3,7,8,9-Hexachlorodibenzofuran	0.12	0.08	0.12 ± 0.16	17
2,3,4,6,7,8-Hexachlorodibenzofuran	0.72	0.48	0.72 ± 0.92	18
Total Hexachlorodibenzofuran	15.6	6.35	15.6 ± 12.7	10
1,2,3,4,6,7,8-Heptachlorodibenzofuran	13.9	1.84	13.9 ± 3.68	18
1,2,3,4,7,8,9-Heptachlorodibenzofuran	1.25	0.31	1.25 ± 0.62	18
Total Heptachlorodibenzofuran	54.0	7.98	54.0 ± 16.0	10
Octachlorodibenzofuran	58.2	16.2	58.2 ± 32.4	18

Interlaboratory Results (continued):

Compound	Assigned[1] Value (ng/kg)	Standard Deviation	Reference[2] Value (ng/kg)	(n)[3]
Polychlorinated biphenyls [4]				
2,2',5-Trichlorobiphenyl (#18)	78.9	15.2	78.9 ± 30.4	6
2,4,4'-Trichlorobiphenyl (#28)	140	63.6	140 ± 127	13
3,4,4'-Trichlorobiphenyl (#37)	1,710	220	1,710 ± 440	5
2,2',3,5'-Tetrachlorobiphenyl (#44)	1,070	276	1,070 ± 552	7
2,2',4,5'-Tetrachlorobiphenyl (#49)	638	175	638 ± 350	5
2,2',5,5'-Tetrachlorobiphenyl (#52)	2,020	372	2,020 ± 744	12
2,4,4',5-Tetrachlorobiphenyl (#74)	447,000	174,000	447,000 ± 348,000	5
3,3',4,4'-Tetrachlorobiphenyl (#77)	2,230	494	2,230 ± 988	13
3,4,4',5-Tetrachlorobiphenyl (#81)	5.52	3.71	5.52 ± 7.42	11
2,2',3,4,5'-Pentachlorobiphenyl (#87)	2,370	266	2,370 ± 532	6
2,2',4,4',5-Pentachlorobiphenyl (#99)	1,100	222	1,110 ± 444	7
2,2',4,5,5'-Pentachlorobiphenyl (#101)	5,370	782	5,370 ± 1,564	11
2,3,3',4,4'-Pentachlorobiphenyl (#105)	629	79.2	629 ± 158.4	15
2,3,3',4',6-Pentachlorobiphenyl (#110)	5,880	1,050	5,880 ± 2,110	7
2,3,4,4',5-Pentachlorobiphenyl (#114)	34.6	9.01	34.6 ± 18.0	13
2,3',4,4',5-Pentachlorobiphenyl (#118)	6,520	1,150	6,520 ± 2,300	14
2',3,4,4',5-Pentachlorobiphenyl (#123)	24.1	11.6	24.1 ± 23.2	12
3,3',4,4',5-Pentachlorobiphenyl (#126)	33.5	5.13	33.5 ± 10.3	13
2,2',3,3',4,4'-Hexachlorobiphenyl (#128)	342	68	342 ± 135	6
2,2',3,4,4',5-Hexachlorobiphenyl (#137)	87.1	16.4	87.1 ± 32.8	5
2,2',3,4,4',5'-Hexachlorobiphenyl (#138)	2,350	382	2,350 ± 764	11
2,2',3,4,5,5'-Hexachlorobiphenyl (#141)	514	55.8	514 ± 112	6
2,2',3,4',5',6-Hexachlorobiphenyl (#149)	2,280	212	2,280 ± 424	6
2,2',3,5,5',6-Hexachlorobiphenyl (#151)	910	376	910 ± 752	7
2,2',4,4',5,5'-Hexachlorobiphenyl (#153)	2,330	421	2,330 ± 842	13
2,3,3',4,4',5-Hexachlorobiphenyl (#156)	189	25.0	189 ± 25.0	14
2,3,3',4,4',5'-Hexachlorobiphenyl (#157)	31.0	7.56	31.0 ± 15.1	12
2,3,3',4,4',6-Hexachlorobiphenyl (#158)	224	22.4	224 ± 44.8	6
2,3',4,4',5,5'-Hexachlorobiphenyl (#167)	83.2	12.0	83.2 ± 12.0	13
3,3',4,4',5,5'-Hexachlorobiphenyl (#169)	0.57	0.34	0.57 ± 0.68	11
2,2',3,3',4,4',5-Heptachlorobiphenyl (#170)	436	51.2	436 ± 102	7
2,2',3,3',4',5,6-Heptachlorobiphenyl (#177)	362	39.5	362 ± 79.0	7
2,2',3,3',5,5',6-Heptachlorobiphenyl (#178)	135	11.3	135 ± 22.6	5
2,2',3,4,4',5,5'-Heptachlorobiphenyl (#180)	1,116	250	1,116 ± 500	13
2,2',3,4,4',5',6-Heptachlorobiphenyl (#183)	360	12.6	360 ± 25.2	7
2,2',3,4',5,5',6-Heptachlorobiphenyl (#187)	679	71.6	679 ± 143	5
2,3,3',4,4',5,5'-Heptachlorobiphenyl (#189)	14.2	2.66	14.2 ± 5.32	13
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (#194)	182	22.3	182 ± 44.6	7
2,2',3,3',4,4',5,6-Octachlorobiphenyl (#195)	90.6	8.61	90.6 ± 17.2	7
2,2',3,3',4,5,6,6'-Octachlorobiphenyl (#199)	229	17.1	229 ± 34.2	6
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (#206)[5]	74.8	54.1	74.8 ± 108	7
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (#208)[5]	38.3	30.7	38.3 ± 61.4	7
Decachlorobiphenyl (#209)	12.9	11.5	12.9 ± 23.0	7

Interlaboratory Results (continued):

Compound	Assigned[1] Value (ng/kg)	Standard Deviation	Reference[2] Value (ng/kg)	(n)[3]
Brominated diphenyl ethers [6]				
2,2',4-Tribromodiphenyl ether (#17)	4.80	3.05	4.80 ± 6.10	7
2,4,4'-Tribromodiphenyl ether (#28)	38.0	39.9	38.0 ± 79.8	11
2,2',4,4'-Tetrabromodiphenyl ether (#47)	192	123	192 ± 246	11
2,2',4,5'-Tetrabromodiphenyl ether (#49)	24.4	9.86	24.4 ± 19.7	5
2,3',4,4'-Tetrabromodiphenyl ether (#66)	12.6	5.46	12.6 ± 10.9	8
2,2',3,4,4'-Pentabromodiphenyl ether (#85)	19.5	8.97	19.5 ± 17.9	8
2,2',4,4',5-Pentabromodiphenyl ether (#99)	213	93.0	213 ± 186	11
2,2',4,4',6-Pentabromodiphenyl ether (#100)	55.4	15.5	55.4 ± 31.0	11
2,2',3,4,4',5-Hexabromodiphenyl ether (#138)	25.8	12.9	25.8 ± 25.8	9
2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)	111	12.0	111 ± 24.0	11
2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)	46.0	13.3	46.0 ± 26.6	11
2,2',3,4,4',5',6-Heptabromodiphenyl ether (#183)	286	35.4	286 ± 70.8	11
Decabromodiphenyl ether (#209)	1,930	1,150	1,930 ± 2,300	7
Polyaromatic hydrocarbons				
Anthracene	9,650	2,990	9,650 ± 5,980	6
Benz[*a*]anthracene	11,200	4,710	11,200 ± 9,420	7
Benzo[*b*]fluoranthene	18,100	9,580	18,100 ± 19,200	7
Benzo[*k*]fluoranthene	5,870	1,660	5,870 ± 3,320	7
Benzo[*g* ,*h* ,*i*]perylene	8,280	1,300	8,280 ± 2,600	7
Benzo[*a*]pyrene	7,620	3,080	7,620 ± 6,160	7
Chrysene	16,000	3,750	16,000 ± 7,500	7
Fluoranthene	33,000	5,170	33,000 ± 10,300	7
Indeno[1,2,3-*cd*]pyrene	9,550	2,070	9,550 ± 4,140	7
Phenanthrene	25,900	19,100	25,900 ± 38,200	6
Pyrene	26,300	4,340	26,300 ± 8,680	7

[1] Assigned Value as determined by Manna Associates in the UK using Cofino analysis of raw interlaboratory study data.

[2] Reference Value is the Assigned Value plus or minus two standard deviations. Negative numbers resulting from two standard deviations being greater than the assigned value have no significance.

[3] Number of laboratories providing results for this analyte.

[4] All numbers in parentheses refer to the IUPAC designation for the compound.

[5] Assigned values from the First Round of International Interlaboratory Study.

[6] All numbers in parentheses refer to the IUPAC designation for the related PCB congener.

COA Revision History

Revision No.	Date	Reason for Revision
00	December 02, 2015	Initial version



1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Clean Soil Reference Material 2003

Product Number : EDF-5183
Brand : Cerilliant

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Not a hazardous substance or mixture.

2.2 GHS Label elements, including precautionary statements

Not a hazardous substance or mixture.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

No components need to be disclosed according to the applicable regulations.

4. FIRST AID MEASURES

4.1 Description of first aid measures

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration.

In case of skin contact
Wash off with soap and plenty of water.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Nature of decomposition products not known.

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Avoid dust formation. Avoid breathing vapours, mist or gas.
For personal protection see section 8.

6.2 Environmental precautions
No special environmental precautions required.

6.3 Methods and materials for containment and cleaning up
Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Storage class (TRGS 510): Non Combustible Solids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls
General industrial hygiene practice.

Personal protective equipment

Eye/face protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
No special environmental precautions required.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: solid
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	No data available
f)	Initial boiling point and boiling range	No data available
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	No data available
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

IMDG

IATA

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
No SARA Hazards

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Soil	-	

New Jersey Right To Know Components

	CAS-No.	Revision Date

Soil

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

HMIS Rating

Health hazard:	0
Chronic Health Hazard:	
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	0
Fire Hazard:	0
Reactivity Hazard:	0

Further information
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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.0 Revision Date: 05/20/2015 Print Date: 05/20/2015

High Resolution Dioxins and Furans Analysis

Case Narrative

HDOX Case Narrative
Pacific Groundwater Group (PGWG)
SDG 2006-00115_4
Work Order 15471

Method/Analysis Information

Product: **Dioxins/Furans by EPA Method 1613B**
Analytical Method: EPA Method 1613B
Extraction Method: SW846 3520C, 3540C
Analytical Batch Number: 41726, 41761
Clean Up Batch Number: 41725, 41760
Extraction Batch Number: 41724, 41759

Sample Analysis

Samples were received at 3.8°C (15471001, 15471002, 15471003, 15471004, 15471005, 15471006, 15471007, 15471008, 15471009, 15471010, 15471011, 15471012, 15471013, 15471014, 15471015) , Ambient (15471016) , 3.3°C (15471017) and 4.2°C (15471018). The following samples were analyzed using the analytical protocol as established in EPA Method 1613B:

Sample ID	Client ID
12024769	Method Blank (MB)
12024770	Laboratory Control Sample (LCS)
12024771	Laboratory Control Sample Duplicate (LCSD)
12024810	Method Blank (MB)
12024811	Laboratory Control Sample (LCS)
12024812	Laboratory Control Sample Duplicate (LCSD)
12024813	15471001(J5-SC1b-20to30-82719) Matrix Spike (MS)
12024814	15471001(J5-SC1b-20to30-82719) Matrix Spike Duplicate (MSD)
15471001	J5-SC1b-20to30-82719
15471002	J5-SC1b-30to40-82719
15471003	J5-SC1b-40to50-82719
15471004	J5-SC1b-50to60-82719
15471005	J5-SC1b-60to70-82719
15471006	J5-SC1b-70to80-82719
15471007	J5-SC1b-80to90-82719
15471008	J5-SC1b-90to100-82719
15471009	J5-SC1b-100to110-82719
15471012	L3-SC1b-20to30-82619
15471013	L3-SC1b-30to40-82619

15471016	SRM Lot# ER10091501
15471017	711-82719
15471018	712-82819

Samples 15471 001, 002, 003, 004, 005, 006, 007, 008, 009, 010, 011, 012, 013, 014 and 015 in this SDG were analyzed on a "dry weight" basis. Samples 15471 016, 017 and 018 in this SDG were analyzed on an "as received" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-002 REV# 15.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements
All associated calibration verification standard(s) (CCV) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement
The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

Method Blank (MB) Statement
The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
All surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery
The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement
The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation

Sample 15471001 (J5-SC1b-20to30-82719)- Batch 41761 was selected for analysis as the matrix spike and matrix spike duplicate.

Matrix Spike (MS) Recovery Statement
The MS recoveies were outside the acceptance limits, possibly due to matrix interference. 12024813 (J5-SC1b-20to30-82719)- Batch 41761.

Matrix Spike Duplicate (MSD) Recovery Statement
One MSD recovery was outside acceptance limits. 12024814 (J5-SC1b-20to30-82719)- Batch 41761.

MS/MSD Relative Percent Difference (RPD) Statement
The relative percent differences (RPD) between each MS and MSD were not within the acceptance limits. Sample data is validated based on acceptable LCS/LCSD results. 12024814 (J5-SC1b-20to30-82719)- Batch 41761.

Technical Information

Holding Time Specifications
CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
The samples in this SDG did not require dilutions.
Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Nonconformance (NCR) Documentation
The following NCR was generated for this SDG: 647556 12024814 (J5-SC1b-20to30-82719)- Batch 41761.

Manual Integrations
Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction. Manual integrations were required for data files in this SDG.

Sample preparation
No difficulties were encountered during sample preparation.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Sample Data Summary

Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Qualifier Definition Report
for

PGWG001 Pacific Groundwater Group

Client SDG: 2006-00115_4 CFA Work Order: 15471

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

B The target analyte was detected in the associated blank.

E Value is estimated - Concentration of the target analyte exceeds the instrument calibration range

J Value is estimated

K Estimated Maximum Possible Concentration

Q Quantitative Interference; value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: [redacted] **Name: Heather Patterson**

Date: 02 OCT 2019 **Title: Group Leader**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15471001**	**Date Collected:**	**08/27/2019 14:55**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**49.6**
Client ID:	**J5-SC1b-20to30-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/25/2019 03:08**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A24SEP19A_3-5**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**19.95 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF	BJ	0.841	pg/g	0.296	0.994

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

B The target analyte was detected in the associated blank.
J Value is estimated
K Estimated Maximum Possible Concentration
Q Quantitative Interference; value is estimated
U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15471001**	**Date Collected:**	**08/27/2019 14:55**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**49.6**
Client ID:	**J5-SC1b-20to30-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 22:58**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_2-4**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**19.95 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	JK	0.358	pg/g	0.0718	0.994
40321-76-4	1,2,3,7,8-PeCDD	BJ	0.954	pg/g	0.106	4.97
39227-28-6	1,2,3,4,7,8-HxCDD	BJ	0.982	pg/g	0.260	4.97
57653-85-7	1,2,3,6,7,8-HxCDD		5.17	pg/g	0.252	4.97
19408-74-3	1,2,3,7,8,9-HxCDD	J	2.74	pg/g	0.260	4.97
35822-46-9	1,2,3,4,6,7,8-HpCDD		138	pg/g	0.741	4.97
3268-87-9	1,2,3,4,6,7,8,9-OCDD		1990	pg/g	1.57	9.94
51207-31-9	2,3,7,8-TCDF	B	1.07	pg/g	0.160	0.994
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.729	pg/g	0.0702	4.97
57117-31-4	2,3,4,7,8-PeCDF	J	1.65	pg/g	0.0626	4.97
70648-26-9	1,2,3,4,7,8-HxCDF	J	3.09	pg/g	0.125	4.97
57117-44-9	1,2,3,6,7,8-HxCDF	J	3.16	pg/g	0.123	4.97
60851-34-5	2,3,4,6,7,8-HxCDF	J	2.29	pg/g	0.130	4.97
72918-21-9	1,2,3,7,8,9-HxCDF	BJ	0.789	pg/g	0.175	4.97
67562-39-4	1,2,3,4,6,7,8-HpCDF		38.4	pg/g	0.252	4.97
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	2.68	pg/g	0.374	4.97
39001-02-0	1,2,3,4,6,7,8,9-OCDF		123	pg/g	0.555	9.94
41903-57-5	Total TeCDD	JK	3.69	pg/g	0.0718	0.994
36088-22-9	Total PeCDD	JKQ	8.27	pg/g	0.106	4.97
34465-46-8	Total HxCDD	J	44.7	pg/g	0.252	4.97
37871-00-4	Total HpCDD		304	pg/g	0.741	4.97
30402-14-3	Total TeCDF	JK	12.4	pg/g	0.160	0.994
30402-15-4	Total PeCDF	JKQ	29.0	pg/g	0.034	4.97
55684-94-1	Total HxCDF	J	57.9	pg/g	0.123	4.97
38998-75-3	Total HpCDF	J	143	pg/g	0.252	4.97
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		6.19	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		6.19	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		137	199	pg/g	69.1	(25%-164%)
13C-1,2,3,7,8-PeCDD		125	199	pg/g	62.7	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		145	199	pg/g	73.0	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		142	199	pg/g	71.7	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		170	199	pg/g	85.4	(23%-140%)
13C-OCDD		290	398	pg/g	73.1	(17%-157%)
13C-2,3,7,8-TCDF		131	199	pg/g	66.1	(24%-169%)
13C-1,2,3,7,8-PeCDF		118	199	pg/g	59.4	(24%-185%)
13C-2,3,4,7,8-PeCDF		117	199	pg/g	58.8	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		141	199	pg/g	70.7	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		140	199	pg/g	70.3	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		138	199	pg/g	69.4	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		138	199	pg/g	69.6	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15471001**	**Date Collected:**	**08/27/2019 14:55**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**49.6**
Client ID:	**J5-SC1b-20to30-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 22:58**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_2-4**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**19.95 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		148	199	pg/g	74.5	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		162	199	pg/g	81.7	(26%-138%)
37Cl-2,3,7,8-TCDD		15.7	19.9	pg/g	78.9	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
Q **Quantitative Interference; value is estimated**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15471002**	**Date Collected:**	**08/27/2019 15:00**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**47.9**
Client ID:	**J5-SC1b-30to40-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 01:23**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_2-7**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**19.26 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	JK	0.213	pg/g	0.0737	0.996
40321-76-4	1,2,3,7,8-PeCDD	BJ	0.595	pg/g	0.122	4.98
39227-28-6	1,2,3,4,7,8-HxCDD	BJ	0.482	pg/g	0.164	4.98
57653-85-7	1,2,3,6,7,8-HxCDD	J	3.02	pg/g	0.159	4.98
19408-74-3	1,2,3,7,8,9-HxCDD	J	1.52	pg/g	0.165	4.98
35822-46-9	1,2,3,4,6,7,8-HpCDD		68.8	pg/g	0.474	4.98
3268-87-9	1,2,3,4,6,7,8,9-OCDD		926	pg/g	1.15	9.96
51207-31-9	2,3,7,8-TCDF	BJ	0.733	pg/g	0.163	0.996
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.410	pg/g	0.0854	4.98
57117-31-4	2,3,4,7,8-PeCDF	BJ	0.777	pg/g	0.0791	4.98
70648-26-9	1,2,3,4,7,8-HxCDF	BJ	1.13	pg/g	0.095	4.98
57117-44-9	1,2,3,6,7,8-HxCDF	J	1.46	pg/g	0.097	4.98
60851-34-5	2,3,4,6,7,8-HxCDF	BJ	0.998	pg/g	0.107	4.98
72918-21-9	1,2,3,7,8,9-HxCDF	BJ	0.460	pg/g	0.146	4.98
67562-39-4	1,2,3,4,6,7,8-HpCDF		14.2	pg/g	0.125	4.98
55673-89-7	1,2,3,4,7,8,9-HpCDF	BJ	1.15	pg/g	0.186	4.98
39001-02-0	1,2,3,4,6,7,8,9-OCDF		41.4	pg/g	0.376	9.96
41903-57-5	Total TeCDD	JK	1.97	pg/g	0.0737	0.996
36088-22-9	Total PeCDD	J	4.93	pg/g	0.122	4.98
34465-46-8	Total HxCDD	J	24.2	pg/g	0.159	4.98
37871-00-4	Total HpCDD		152	pg/g	0.474	4.98
30402-14-3	Total TeCDF	JK	7.30	pg/g	0.163	0.996
30402-15-4	Total PeCDF	J	14.2	pg/g	0.0394	4.98
55684-94-1	Total HxCDF	J	23.9	pg/g	0.095	4.98
38998-75-3	Total HpCDF	JK	50.6	pg/g	0.125	4.98
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		3.17	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		3.17	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		148	199	pg/g	74.2	(25%-164%)
13C-1,2,3,7,8-PeCDD		135	199	pg/g	67.6	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		160	199	pg/g	80.5	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		150	199	pg/g	75.3	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		177	199	pg/g	89.0	(23%-140%)
13C-OCDD		301	398	pg/g	75.6	(17%-157%)
13C-2,3,7,8-TCDF		142	199	pg/g	71.3	(24%-169%)
13C-1,2,3,7,8-PeCDF		128	199	pg/g	64.2	(24%-185%)
13C-2,3,4,7,8-PeCDF		127	199	pg/g	63.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		152	199	pg/g	76.4	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		144	199	pg/g	72.3	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		144	199	pg/g	72.4	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		151	199	pg/g	75.7	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15471002**	**Date Collected:**	**08/27/2019 15:00**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**47.9**
Client ID:	**J5-SC1b-30to40-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 01:23**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_2-7**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**19.26 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		157	199	pg/g	79.0	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		175	199	pg/g	87.6	(26%-138%)
37Cl-2,3,7,8-TCDD		16.7	19.9	pg/g	83.8	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**

J **Value is estimated**

K **Estimated Maximum Possible Concentration**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15471003**	**Date Collected:**	**08/27/2019 16:10**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**45.4**
Client ID:	**J5-SC1b-40to50-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 02:12**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_2-8**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**18.37 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	JK	0.225	pg/g	0.063	0.996
40321-76-4	1,2,3,7,8-PeCDD	BJ	0.779	pg/g	0.0859	4.98
39227-28-6	1,2,3,4,7,8-HxCDD	BJ	0.767	pg/g	0.165	4.98
57653-85-7	1,2,3,6,7,8-HxCDD		5.49	pg/g	0.162	4.98
19408-74-3	1,2,3,7,8,9-HxCDD	J	2.59	pg/g	0.167	4.98
35822-46-9	1,2,3,4,6,7,8-HpCDD		136	pg/g	0.616	4.98
3268-87-9	1,2,3,4,6,7,8,9-OCDD		1460	pg/g	1.06	9.96
51207-31-9	2,3,7,8-TCDF	BJ	0.841	pg/g	0.169	0.996
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.566	pg/g	0.0707	4.98
57117-31-4	2,3,4,7,8-PeCDF	J	1.33	pg/g	0.0624	4.98
70648-26-9	1,2,3,4,7,8-HxCDF	J	3.30	pg/g	0.143	4.98
57117-44-9	1,2,3,6,7,8-HxCDF	J	1.96	pg/g	0.147	4.98
60851-34-5	2,3,4,6,7,8-HxCDF	J	1.86	pg/g	0.152	4.98
72918-21-9	1,2,3,7,8,9-HxCDF	BJ	0.727	pg/g	0.203	4.98
67562-39-4	1,2,3,4,6,7,8-HpCDF		34.8	pg/g	0.225	4.98
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	2.31	pg/g	0.345	4.98
39001-02-0	1,2,3,4,6,7,8,9-OCDF		103	pg/g	0.476	9.96
41903-57-5	Total TeCDD	JK	2.29	pg/g	0.063	0.996
36088-22-9	Total PeCDD	JKQ	6.13	pg/g	0.0859	4.98
34465-46-8	Total HxCDD	J	37.7	pg/g	0.162	4.98
37871-00-4	Total HpCDD		268	pg/g	0.616	4.98
30402-14-3	Total TeCDF	JK	10.4	pg/g	0.169	0.996
30402-15-4	Total PeCDF	JKQ	21.5	pg/g	0.0309	4.98
55684-94-1	Total HxCDF	J	50.2	pg/g	0.143	4.98
38998-75-3	Total HpCDF	J	129	pg/g	0.225	4.98
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		5.38	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		5.38	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		145	199	pg/g	72.7	(25%-164%)
13C-1,2,3,7,8-PeCDD		130	199	pg/g	65.0	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		159	199	pg/g	79.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		147	199	pg/g	73.8	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		177	199	pg/g	88.7	(23%-140%)
13C-OCDD		316	399	pg/g	79.4	(17%-157%)
13C-2,3,7,8-TCDF		139	199	pg/g	70.0	(24%-169%)
13C-1,2,3,7,8-PeCDF		122	199	pg/g	61.3	(24%-185%)
13C-2,3,4,7,8-PeCDF		123	199	pg/g	61.8	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		152	199	pg/g	76.2	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		142	199	pg/g	71.3	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		143	199	pg/g	72.0	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		148	199	pg/g	74.3	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15471003**	**Date Collected:**	**08/27/2019 16:10**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**45.4**
Client ID:	**J5-SC1b-40to50-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 02:12**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_2-8**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**18.37 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		161	199	pg/g	80.7	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		177	199	pg/g	88.6	(26%-138%)
37Cl-2,3,7,8-TCDD		16.4	19.9	pg/g	82.4	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
Q **Quantitative Interference; value is estimated**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15471004**	**Date Collected:**	**08/27/2019 16:15**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**44.6**
Client ID:	**J5-SC1b-50to60-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/25/2019 04:38**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A24SEP19A_3-9**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**18.18 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF	B	1.01	pg/g	0.336	0.994

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

B The target analyte was detected in the associated blank.
J Value is estimated
K Estimated Maximum Possible Concentration
Q Quantitative Interference; value is estimated
U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15471004**	**Date Collected:**	**08/27/2019 16:15**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**44.6**
Client ID:	**J5-SC1b-50to60-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 03:00**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_2-9**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**18.18 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	0.308	pg/g	0.0956	0.994
40321-76-4	1,2,3,7,8-PeCDD	BJ	0.858	pg/g	0.120	4.97
39227-28-6	1,2,3,4,7,8-HxCDD	BJ	0.976	pg/g	0.205	4.97
57653-85-7	1,2,3,6,7,8-HxCDD		6.96	pg/g	0.205	4.97
19408-74-3	1,2,3,7,8,9-HxCDD	J	2.54	pg/g	0.209	4.97
35822-46-9	1,2,3,4,6,7,8-HpCDD		218	pg/g	0.616	4.97
3268-87-9	1,2,3,4,6,7,8,9-OCDD		1880	pg/g	1.22	9.94
51207-31-9	2,3,7,8-TCDF	B	1.10	pg/g	0.158	0.994
57117-41-6	1,2,3,7,8-PeCDF	BJQ	0.974	pg/g	0.189	4.97
57117-31-4	2,3,4,7,8-PeCDF	JQ	1.65	pg/g	0.166	4.97
70648-26-9	1,2,3,4,7,8-HxCDF		5.43	pg/g	0.131	4.97
57117-44-9	1,2,3,6,7,8-HxCDF	J	2.49	pg/g	0.136	4.97
60851-34-5	2,3,4,6,7,8-HxCDF	J	2.52	pg/g	0.144	4.97
72918-21-9	1,2,3,7,8,9-HxCDF	BJ	0.854	pg/g	0.179	4.97
67562-39-4	1,2,3,4,6,7,8-HpCDF		89.9	pg/g	0.290	4.97
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	4.86	pg/g	0.445	4.97
39001-02-0	1,2,3,4,6,7,8,9-OCDF		405	pg/g	0.743	9.94
41903-57-5	Total TeCDD	JK	3.56	pg/g	0.0956	0.994
36088-22-9	Total PeCDD	JKQ	7.70	pg/g	0.120	4.97
34465-46-8	Total HxCDD	JK	41.9	pg/g	0.205	4.97
37871-00-4	Total HpCDD		386	pg/g	0.616	4.97
30402-14-3	Total TeCDF	JK	14.9	pg/g	0.158	0.994
30402-15-4	Total PeCDF	JQ	29.0	pg/g	0.0368	4.97
55684-94-1	Total HxCDF	J	108	pg/g	0.131	4.97
38998-75-3	Total HpCDF	J	413	pg/g	0.290	4.97
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		7.80	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		7.80	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		133	199	pg/g	66.9	(25%-164%)
13C-1,2,3,7,8-PeCDD		118	199	pg/g	59.3	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		146	199	pg/g	73.6	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		137	199	pg/g	69.1	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		166	199	pg/g	83.6	(23%-140%)
13C-OCDD		296	397	pg/g	74.5	(17%-157%)
13C-2,3,7,8-TCDF		131	199	pg/g	66.1	(24%-169%)
13C-1,2,3,7,8-PeCDF	Q	111	199	pg/g	55.7	(24%-185%)
13C-2,3,4,7,8-PeCDF	Q	113	199	pg/g	56.7	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		140	199	pg/g	70.6	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		130	199	pg/g	65.3	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		132	199	pg/g	66.5	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		129	199	pg/g	64.8	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15471004**	**Date Collected:**	**08/27/2019 16:15**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**44.6**
Client ID:	**J5-SC1b-50to60-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 03:00**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_2-9**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**18.18 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		147	199	pg/g	74.0	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		162	199	pg/g	81.5	(26%-138%)
37Cl-2,3,7,8-TCDD		16.0	19.9	pg/g	80.3	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
Q **Quantitative Interference; value is estimated**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15471005**	**Date Collected:**	**08/27/2019 16:20**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**43.5**
Client ID:	**J5-SC1b-60to70-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 03:49**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_2-10**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**17.95 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	0.158	pg/g	0.0515	0.987
40321-76-4	1,2,3,7,8-PeCDD	BJ	0.385	pg/g	0.0762	4.93
39227-28-6	1,2,3,4,7,8-HxCDD	BJK	0.410	pg/g	0.125	4.93
57653-85-7	1,2,3,6,7,8-HxCDD	J	1.98	pg/g	0.115	4.93
19408-74-3	1,2,3,7,8,9-HxCDD	BJ	1.18	pg/g	0.122	4.93
35822-46-9	1,2,3,4,6,7,8-HpCDD		57.3	pg/g	0.349	4.93
3268-87-9	1,2,3,4,6,7,8,9-OCDD		649	pg/g	0.957	9.87
51207-31-9	2,3,7,8-TCDF	BJ	0.541	pg/g	0.116	0.987
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.314	pg/g	0.0523	4.93
57117-31-4	2,3,4,7,8-PeCDF	BJ	0.576	pg/g	0.0448	4.93
70648-26-9	1,2,3,4,7,8-HxCDF	BJ	1.31	pg/g	0.0673	4.93
57117-44-9	1,2,3,6,7,8-HxCDF	J	1.14	pg/g	0.072	4.93
60851-34-5	2,3,4,6,7,8-HxCDF	BJ	0.969	pg/g	0.0752	4.93
72918-21-9	1,2,3,7,8,9-HxCDF	BJ	0.391	pg/g	0.105	4.93
67562-39-4	1,2,3,4,6,7,8-HpCDF		20.8	pg/g	0.175	4.93
55673-89-7	1,2,3,4,7,8,9-HpCDF	BJ	1.18	pg/g	0.255	4.93
39001-02-0	1,2,3,4,6,7,8,9-OCDF		56.5	pg/g	0.464	9.87
41903-57-5	Total TeCDD	BJK	1.12	pg/g	0.0515	0.987
36088-22-9	Total PeCDD	JK	3.24	pg/g	0.0762	4.93
34465-46-8	Total HxCDD	JK	17.0	pg/g	0.115	4.93
37871-00-4	Total HpCDD		117	pg/g	0.349	4.93
30402-14-3	Total TeCDF	JK	4.55	pg/g	0.116	0.987
30402-15-4	Total PeCDF	J	12.6	pg/g	0.0302	4.93
55684-94-1	Total HxCDF	J	26.9	pg/g	0.0673	4.93
38998-75-3	Total HpCDF	JK	72.3	pg/g	0.175	4.93
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		2.52	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		2.52	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		144	197	pg/g	72.9	(25%-164%)
13C-1,2,3,7,8-PeCDD		132	197	pg/g	67.1	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		150	197	pg/g	76.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		144	197	pg/g	72.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		165	197	pg/g	83.4	(23%-140%)
13C-OCDD		270	395	pg/g	68.5	(17%-157%)
13C-2,3,7,8-TCDF		133	197	pg/g	67.4	(24%-169%)
13C-1,2,3,7,8-PeCDF		124	197	pg/g	63.0	(24%-185%)
13C-2,3,4,7,8-PeCDF		122	197	pg/g	61.9	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		147	197	pg/g	74.6	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		136	197	pg/g	69.1	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		136	197	pg/g	69.1	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		144	197	pg/g	73.1	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15471005**	**Date Collected:**	**08/27/2019 16:20**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**43.5**
Client ID:	**J5-SC1b-60to70-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 03:49**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_2-10**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**17.95 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		148	197	pg/g	75.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		161	197	pg/g	81.4	(26%-138%)
37Cl-2,3,7,8-TCDD		16.2	19.7	pg/g	82.1	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**

J **Value is estimated**

K **Estimated Maximum Possible Concentration**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15471006**	**Date Collected:**	**08/27/2019 16:25**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**35.1**
Client ID:	**J5-SC1b-70to80-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 04:37**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_2-11**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**15.53 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	0.191	pg/g	0.0649	0.992
40321-76-4	1,2,3,7,8-PeCDD	BJ	0.464	pg/g	0.109	4.96
39227-28-6	1,2,3,4,7,8-HxCDD	BJK	0.520	pg/g	0.128	4.96
57653-85-7	1,2,3,6,7,8-HxCDD	J	2.75	pg/g	0.126	4.96
19408-74-3	1,2,3,7,8,9-HxCDD	BJ	1.22	pg/g	0.130	4.96
35822-46-9	1,2,3,4,6,7,8-HpCDD		69.3	pg/g	0.395	4.96
3268-87-9	1,2,3,4,6,7,8,9-OCDD		899	pg/g	1.06	9.92
51207-31-9	2,3,7,8-TCDF	BJ	0.629	pg/g	0.0984	0.992
57117-41-6	1,2,3,7,8-PeCDF	BJK	0.530	pg/g	0.0607	4.96
57117-31-4	2,3,4,7,8-PeCDF	JK	1.41	pg/g	0.0603	4.96
70648-26-9	1,2,3,4,7,8-HxCDF	J	2.30	pg/g	0.108	4.96
57117-44-9	1,2,3,6,7,8-HxCDF	J	3.14	pg/g	0.111	4.96
60851-34-5	2,3,4,6,7,8-HxCDF	J	2.25	pg/g	0.114	4.96
72918-21-9	1,2,3,7,8,9-HxCDF	BJ	0.552	pg/g	0.150	4.96
67562-39-4	1,2,3,4,6,7,8-HpCDF		61.6	pg/g	0.194	4.96
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	2.03	pg/g	0.300	4.96
39001-02-0	1,2,3,4,6,7,8,9-OCDF		97.2	pg/g	0.339	9.92
41903-57-5	Total TeCDD	JK	3.27	pg/g	0.0649	0.992
36088-22-9	Total PeCDD	JQ	6.47	pg/g	0.109	4.96
34465-46-8	Total HxCDD	JK	23.7	pg/g	0.126	4.96
37871-00-4	Total HpCDD		156	pg/g	0.395	4.96
30402-14-3	Total TeCDF	JK	11.7	pg/g	0.0984	0.992
30402-15-4	Total PeCDF	JKQ	36.9	pg/g	0.0272	4.96
55684-94-1	Total HxCDF	JK	59.1	pg/g	0.108	4.96
38998-75-3	Total HpCDF	J	156	pg/g	0.194	4.96
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		4.06	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		4.06	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		145	198	pg/g	73.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		96.9	198	pg/g	48.9	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		155	198	pg/g	78.0	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		153	198	pg/g	76.8	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		182	198	pg/g	91.8	(23%-140%)
13C-OCDD		318	397	pg/g	80.2	(17%-157%)
13C-2,3,7,8-TCDF		144	198	pg/g	72.3	(24%-169%)
13C-1,2,3,7,8-PeCDF		122	198	pg/g	61.5	(24%-185%)
13C-2,3,4,7,8-PeCDF		107	198	pg/g	54.1	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		150	198	pg/g	75.7	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		147	198	pg/g	73.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		143	198	pg/g	72.0	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		146	198	pg/g	73.7	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15471006**	**Date Collected:**	**08/27/2019 16:25**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**35.1**
Client ID:	**J5-SC1b-70to80-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 04:37**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_2-11**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**15.53 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		162	198	pg/g	81.5	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		178	198	pg/g	89.5	(26%-138%)
37Cl-2,3,7,8-TCDD		15.9	19.8	pg/g	80.1	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
Q **Quantitative Interference; value is estimated**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15471007**	**Date Collected:**	**08/27/2019 17:25**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**29**
Client ID:	**J5-SC1b-80to90-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 05:25**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_2-12**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**14.2 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0377	pg/g	0.0377	0.991
40321-76-4	1,2,3,7,8-PeCDD	U	0.0587	pg/g	0.0587	4.96
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.0575	pg/g	0.0575	4.96
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.0565	pg/g	0.0565	4.96
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.0581	pg/g	0.0581	4.96
35822-46-9	1,2,3,4,6,7,8-HpCDD	BJ	0.244	pg/g	0.124	4.96
3268-87-9	1,2,3,4,6,7,8,9-OCDD	BJ	2.31	pg/g	0.240	9.91
51207-31-9	2,3,7,8-TCDF	BJ	0.325	pg/g	0.0674	0.991
57117-41-6	1,2,3,7,8-PeCDF	U	0.0613	pg/g	0.0613	4.96
57117-31-4	2,3,4,7,8-PeCDF	U	0.0476	pg/g	0.0476	4.96
70648-26-9	1,2,3,4,7,8-HxCDF	BJK	0.0476	pg/g	0.0408	4.96
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.043	pg/g	0.043	4.96
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.045	pg/g	0.045	4.96
72918-21-9	1,2,3,7,8,9-HxCDF	BJ	0.0813	pg/g	0.070	4.96
67562-39-4	1,2,3,4,6,7,8-HpCDF	BJ	0.190	pg/g	0.0537	4.96
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.0946	pg/g	0.0946	4.96
39001-02-0	1,2,3,4,6,7,8,9-OCDF	BJ	0.230	pg/g	0.162	9.91
41903-57-5	Total TeCDD	BJK	0.180	pg/g	0.0377	0.991
36088-22-9	Total PeCDD	U	0.0587	pg/g	0.0587	4.96
34465-46-8	Total HxCDD	BJK	0.125	pg/g	0.0565	4.96
37871-00-4	Total HpCDD	BJ	0.577	pg/g	0.124	4.96
30402-14-3	Total TeCDF	BJK	0.757	pg/g	0.0674	0.991
30402-15-4	Total PeCDF	BJK	0.230	pg/g	0.0287	4.96
55684-94-1	Total HxCDF	BJK	0.276	pg/g	0.0408	4.96
38998-75-3	Total HpCDF	BJK	0.379	pg/g	0.0537	4.96
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.0505	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.120	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		152	198	pg/g	76.6	(25%-164%)
13C-1,2,3,7,8-PeCDD		110	198	pg/g	55.6	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		154	198	pg/g	77.5	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		160	198	pg/g	80.5	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		172	198	pg/g	86.8	(23%-140%)
13C-OCDD		258	397	pg/g	65.0	(17%-157%)
13C-2,3,7,8-TCDF		140	198	pg/g	70.4	(24%-169%)
13C-1,2,3,7,8-PeCDF		93.9	198	pg/g	47.4	(24%-185%)
13C-2,3,4,7,8-PeCDF		105	198	pg/g	53.1	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		158	198	pg/g	79.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		151	198	pg/g	76.3	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		145	198	pg/g	73.0	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		152	198	pg/g	76.6	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15471007**	**Date Collected:**	**08/27/2019 17:25**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**29**
Client ID:	**J5-SC1b-80to90-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 05:25**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_2-12**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**14.2 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		158	198	pg/g	79.5	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		160	198	pg/g	80.5	(26%-138%)
37Cl-2,3,7,8-TCDD		17.1	19.8	pg/g	86.0	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15471008**	**Date Collected:**	**08/27/2019 17:30**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**27.8**
Client ID:	**J5-SC1b-90to100-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 06:14**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_2-13**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**14.06 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	JK	0.0532	pg/g	0.0353	0.985
40321-76-4	1,2,3,7,8-PeCDD	U	0.0611	pg/g	0.0611	4.93
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.0757	pg/g	0.0757	4.93
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.0769	pg/g	0.0769	4.93
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.078	pg/g	0.078	4.93
35822-46-9	1,2,3,4,6,7,8-HpCDD	BJ	1.49	pg/g	0.0922	4.93
3268-87-9	1,2,3,4,6,7,8,9-OCDD		17.0	pg/g	0.323	9.85
51207-31-9	2,3,7,8-TCDF	BJ	0.280	pg/g	0.0696	0.985
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.0788	pg/g	0.0388	4.93
57117-31-4	2,3,4,7,8-PeCDF	BJ	0.0493	pg/g	0.0365	4.93
70648-26-9	1,2,3,4,7,8-HxCDF	BJ	0.0887	pg/g	0.0422	4.93
57117-44-9	1,2,3,6,7,8-HxCDF	BJ	0.0591	pg/g	0.043	4.93
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.0465	pg/g	0.0465	4.93
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.0715	pg/g	0.0715	4.93
67562-39-4	1,2,3,4,6,7,8-HpCDF	BJ	0.623	pg/g	0.0497	4.93
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.0808	pg/g	0.0808	4.93
39001-02-0	1,2,3,4,6,7,8,9-OCDF	BJ	1.22	pg/g	0.225	9.85
41903-57-5	Total TeCDD	BJK	0.365	pg/g	0.0353	0.985
36088-22-9	Total PeCDD	BJK	0.177	pg/g	0.0611	4.93
34465-46-8	Total HxCDD	BJK	0.770	pg/g	0.0757	4.93
37871-00-4	Total HpCDD	J	3.45	pg/g	0.0922	4.93
30402-14-3	Total TeCDF	BJK	0.786	pg/g	0.0696	0.985
30402-15-4	Total PeCDF	BJK	0.556	pg/g	0.0184	4.93
55684-94-1	Total HxCDF	BJK	0.798	pg/g	0.0422	4.93
38998-75-3	Total HpCDF	BJ	1.96	pg/g	0.0497	4.93
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.140	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.188	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		159	197	pg/g	80.7	(25%-164%)
13C-1,2,3,7,8-PeCDD		148	197	pg/g	75.1	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		163	197	pg/g	82.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		158	197	pg/g	80.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		175	197	pg/g	88.8	(23%-140%)
13C-OCDD		265	394	pg/g	67.2	(17%-157%)
13C-2,3,7,8-TCDF		147	197	pg/g	74.8	(24%-169%)
13C-1,2,3,7,8-PeCDF		140	197	pg/g	71.3	(24%-185%)
13C-2,3,4,7,8-PeCDF		138	197	pg/g	70.1	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		158	197	pg/g	80.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		156	197	pg/g	79.3	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		149	197	pg/g	75.6	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		157	197	pg/g	79.7	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15471008**	**Date Collected:**	**08/27/2019 17:30**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**27.8**
Client ID:	**J5-SC1b-90to100-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 06:14**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_2-13**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**14.06 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		161	197	pg/g	81.5	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		164	197	pg/g	83.1	(26%-138%)
37Cl-2,3,7,8-TCDD		17.1	19.7	pg/g	87.0	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15471009**	**Date Collected:**	**08/27/2019 17:35**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**28.9**
Client ID:	**J5-SC1b-100to110-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/27/2019 19:40**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_4-10**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**14.17 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.166	pg/g	0.166	0.992
40321-76-4	1,2,3,7,8-PeCDD	U	0.158	pg/g	0.158	4.96
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.181	pg/g	0.181	4.96
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.168	pg/g	0.168	4.96
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.178	pg/g	0.178	4.96
35822-46-9	1,2,3,4,6,7,8-HpCDD	BJ	1.27	pg/g	0.256	4.96
3268-87-9	1,2,3,4,6,7,8,9-OCDD		16.3	pg/g	0.429	9.92
51207-31-9	2,3,7,8-TCDF	BJ	0.464	pg/g	0.206	0.992
57117-41-6	1,2,3,7,8-PeCDF	U	0.0966	pg/g	0.0966	4.96
57117-31-4	2,3,4,7,8-PeCDF	U	0.0883	pg/g	0.0883	4.96
70648-26-9	1,2,3,4,7,8-HxCDF	U	0.116	pg/g	0.116	4.96
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.116	pg/g	0.116	4.96
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.122	pg/g	0.122	4.96
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.165	pg/g	0.165	4.96
67562-39-4	1,2,3,4,6,7,8-HpCDF	BJK	0.288	pg/g	0.119	4.96
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.17	pg/g	0.170	4.96
39001-02-0	1,2,3,4,6,7,8,9-OCDF	BJ	0.534	pg/g	0.359	9.92
41903-57-5	Total TeCDD	BJK	0.377	pg/g	0.166	0.992
36088-22-9	Total PeCDD	U	0.158	pg/g	0.158	4.96
34465-46-8	Total HxCDD	BJK	0.859	pg/g	0.168	4.96
37871-00-4	Total HpCDD	J	3.30	pg/g	0.256	4.96
30402-14-3	Total TeCDF	BJK	0.754	pg/g	0.206	0.992
30402-15-4	Total PeCDF	BJK	0.125	pg/g	0.0458	4.96
55684-94-1	Total HxCDF	BJ	0.171	pg/g	0.116	4.96
38998-75-3	Total HpCDF	BJK	0.734	pg/g	0.119	4.96
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.0671	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.297	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		147	198	pg/g	74.2	(25%-164%)
13C-1,2,3,7,8-PeCDD		179	198	pg/g	90.1	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		159	198	pg/g	80.0	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		145	198	pg/g	73.1	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		184	198	pg/g	92.9	(23%-140%)
13C-OCDD		377	397	pg/g	94.9	(17%-157%)
13C-2,3,7,8-TCDF		138	198	pg/g	69.7	(24%-169%)
13C-1,2,3,7,8-PeCDF		165	198	pg/g	83.3	(24%-185%)
13C-2,3,4,7,8-PeCDF		167	198	pg/g	84.0	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		148	198	pg/g	74.4	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		136	198	pg/g	68.4	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		143	198	pg/g	71.9	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		157	198	pg/g	79.1	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15471009**	**Date Collected:**	**08/27/2019 17:35**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**28.9**
Client ID:	**J5-SC1b-100to110-82719**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/27/2019 19:40**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_4-10**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**14.17 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		155	198	pg/g	78.1	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		188	198	pg/g	94.7	(26%-138%)
37Cl-2,3,7,8-TCDD		16.3	19.8	pg/g	82.1	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15471012**	**Date Collected:**	**08/26/2019 10:30**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**18.6**
Client ID:	**L3-SC1b-20to30-82619**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/27/2019 20:28**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_4-11**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**12.47 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.164	pg/g	0.164	0.985
40321-76-4	1,2,3,7,8-PeCDD	U	0.276	pg/g	0.276	4.93
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.258	pg/g	0.258	4.93
57653-85-7	1,2,3,6,7,8-HxCDD	J	2.20	pg/g	0.256	4.93
19408-74-3	1,2,3,7,8,9-HxCDD	BJ	0.440	pg/g	0.262	4.93
35822-46-9	1,2,3,4,6,7,8-HpCDD		57.7	pg/g	0.684	4.93
3268-87-9	1,2,3,4,6,7,8,9-OCDD		571	pg/g	1.31	9.85
51207-31-9	2,3,7,8-TCDF	BJ	0.501	pg/g	0.260	0.985
57117-41-6	1,2,3,7,8-PeCDF	BJK	0.392	pg/g	0.139	4.93
57117-31-4	2,3,4,7,8-PeCDF	J	1.18	pg/g	0.128	4.93
70648-26-9	1,2,3,4,7,8-HxCDF		9.14	pg/g	0.284	4.93
57117-44-9	1,2,3,6,7,8-HxCDF	J	1.76	pg/g	0.284	4.93
60851-34-5	2,3,4,6,7,8-HxCDF	J	2.24	pg/g	0.305	4.93
72918-21-9	1,2,3,7,8,9-HxCDF	BJ	1.29	pg/g	0.374	4.93
67562-39-4	1,2,3,4,6,7,8-HpCDF		37.8	pg/g	0.416	4.93
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	3.57	pg/g	0.581	4.93
39001-02-0	1,2,3,4,6,7,8,9-OCDF		57.4	pg/g	0.623	9.85
41903-57-5	Total TeCDD	BJK	0.424	pg/g	0.164	0.985
36088-22-9	Total PeCDD	BJK	0.944	pg/g	0.276	4.93
34465-46-8	Total HxCDD	JK	10.5	pg/g	0.256	4.93
37871-00-4	Total HpCDD		108	pg/g	0.684	4.93
30402-14-3	Total TeCDF	BJ	2.93	pg/g	0.260	0.985
30402-15-4	Total PeCDF	JK	12.3	pg/g	0.0786	4.93
55684-94-1	Total HxCDF	J	69.9	pg/g	0.284	4.93
38998-75-3	Total HpCDF	J	134	pg/g	0.416	4.93
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		3.30	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		3.54	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		148	197	pg/g	75.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		161	197	pg/g	81.5	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		160	197	pg/g	81.3	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		145	197	pg/g	73.6	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		180	197	pg/g	91.3	(23%-140%)
13C-OCDD		366	394	pg/g	92.8	(17%-157%)
13C-2,3,7,8-TCDF		139	197	pg/g	70.7	(24%-169%)
13C-1,2,3,7,8-PeCDF		151	197	pg/g	76.8	(24%-185%)
13C-2,3,4,7,8-PeCDF		150	197	pg/g	76.0	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		146	197	pg/g	74.1	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		143	197	pg/g	72.7	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		140	197	pg/g	71.1	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		158	197	pg/g	80.4	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15471012**	**Date Collected:**	**08/26/2019 10:30**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**18.6**
Client ID:	**L3-SC1b-20to30-82619**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/27/2019 20:28**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_4-11**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**12.47 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		150	197	pg/g	76.3	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		182	197	pg/g	92.2	(26%-138%)
37Cl-2,3,7,8-TCDD		17.1	19.7	pg/g	87.0	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15471013**	**Date Collected:**	**08/26/2019 10:35**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**17.7**
Client ID:	**L3-SC1b-30to40-82619**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/27/2019 21:16**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_4-12**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**12.8 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.146	pg/g	0.146	0.950
40321-76-4	1,2,3,7,8-PeCDD	U	0.155	pg/g	0.155	4.75
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.293	pg/g	0.293	4.75
57653-85-7	1,2,3,6,7,8-HxCDD	BJ	0.775	pg/g	0.262	4.75
19408-74-3	1,2,3,7,8,9-HxCDD	BJ	0.511	pg/g	0.283	4.75
35822-46-9	1,2,3,4,6,7,8-HpCDD		23.1	pg/g	0.450	4.75
3268-87-9	1,2,3,4,6,7,8,9-OCDD		254	pg/g	0.952	9.50
51207-31-9	2,3,7,8-TCDF	BJ	0.482	pg/g	0.289	0.950
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.213	pg/g	0.127	4.75
57117-31-4	2,3,4,7,8-PeCDF	BJK	0.317	pg/g	0.117	4.75
70648-26-9	1,2,3,4,7,8-HxCDF	BJ	0.819	pg/g	0.144	4.75
57117-44-9	1,2,3,6,7,8-HxCDF	BJ	0.532	pg/g	0.142	4.75
60851-34-5	2,3,4,6,7,8-HxCDF	BJ	0.454	pg/g	0.151	4.75
72918-21-9	1,2,3,7,8,9-HxCDF	BJ	0.234	pg/g	0.187	4.75
67562-39-4	1,2,3,4,6,7,8-HpCDF		9.29	pg/g	0.247	4.75
55673-89-7	1,2,3,4,7,8,9-HpCDF	BJ	0.424	pg/g	0.355	4.75
39001-02-0	1,2,3,4,6,7,8,9-OCDF		22.7	pg/g	0.505	9.50
41903-57-5	Total TeCDD	BJK	0.437	pg/g	0.146	0.950
36088-22-9	Total PeCDD	BJK	1.57	pg/g	0.155	4.75
34465-46-8	Total HxCDD	J	7.40	pg/g	0.262	4.75
37871-00-4	Total HpCDD		47.8	pg/g	0.450	4.75
30402-14-3	Total TeCDF	BJK	2.08	pg/g	0.289	0.950
30402-15-4	Total PeCDF	JK	5.72	pg/g	0.0775	4.75
55684-94-1	Total HxCDF	J	11.6	pg/g	0.142	4.75
38998-75-3	Total HpCDF	J	29.3	pg/g	0.247	4.75
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.894	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		1.06	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		156	190	pg/g	82.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		174	190	pg/g	91.8	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		160	190	pg/g	84.3	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		146	190	pg/g	76.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		184	190	pg/g	96.7	(23%-140%)
13C-OCDD		373	380	pg/g	98.3	(17%-157%)
13C-2,3,7,8-TCDF		144	190	pg/g	75.7	(24%-169%)
13C-1,2,3,7,8-PeCDF		169	190	pg/g	89.2	(24%-185%)
13C-2,3,4,7,8-PeCDF		163	190	pg/g	86.0	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		150	190	pg/g	78.9	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		138	190	pg/g	72.7	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		142	190	pg/g	74.7	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		160	190	pg/g	84.0	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15471013**	**Date Collected:**	**08/26/2019 10:35**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**17.7**
Client ID:	**L3-SC1b-30to40-82619**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/27/2019 21:16**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_4-12**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**12.8 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		153	190	pg/g	80.6	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		181	190	pg/g	95.2	(26%-138%)
37Cl-2,3,7,8-TCDD		17.4	19.0	pg/g	91.7	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15471016**	**Date Collected:**	**08/26/2019 12:00**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil SRM**	**Date Received:**	**09/10/2019 09:43**		
Client ID:	**SRM Lot# ER10091501**			**Prep Basis:**	**As Received**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/27/2019 22:05**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_4-13**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**10.12 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	0.352	pg/g	0.184	0.988
40321-76-4	1,2,3,7,8-PeCDD	BJK	0.585	pg/g	0.255	4.94
39227-28-6	1,2,3,4,7,8-HxCDD	J	1.03	pg/g	0.409	4.94
57653-85-7	1,2,3,6,7,8-HxCDD	J	3.58	pg/g	0.421	4.94
19408-74-3	1,2,3,7,8,9-HxCDD	J	1.74	pg/g	0.425	4.94
35822-46-9	1,2,3,4,6,7,8-HpCDD		162	pg/g	1.91	4.94
3268-87-9	1,2,3,4,6,7,8,9-OCDD	E	8550	pg/g	2.94	9.88
51207-31-9	2,3,7,8-TCDF	BK	1.07	pg/g	0.338	0.988
57117-41-6	1,2,3,7,8-PeCDF	BJK	0.292	pg/g	0.138	4.94
57117-31-4	2,3,4,7,8-PeCDF	BJK	0.374	pg/g	0.123	4.94
70648-26-9	1,2,3,4,7,8-HxCDF	BJ	0.881	pg/g	0.194	4.94
57117-44-9	1,2,3,6,7,8-HxCDF	BJ	0.457	pg/g	0.200	4.94
60851-34-5	2,3,4,6,7,8-HxCDF	BJ	0.812	pg/g	0.208	4.94
72918-21-9	1,2,3,7,8,9-HxCDF	BJ	0.304	pg/g	0.261	4.94
67562-39-4	1,2,3,4,6,7,8-HpCDF		15.0	pg/g	0.308	4.94
55673-89-7	1,2,3,4,7,8,9-HpCDF	BJ	1.27	pg/g	0.409	4.94
39001-02-0	1,2,3,4,6,7,8,9-OCDF		63.5	pg/g	0.711	9.88
41903-57-5	Total TeCDD	JK	2.03	pg/g	0.184	0.988
36088-22-9	Total PeCDD	JK	4.04	pg/g	0.255	4.94
34465-46-8	Total HxCDD	J	38.4	pg/g	0.409	4.94
37871-00-4	Total HpCDD		452	pg/g	1.91	4.94
30402-14-3	Total TeCDF	JK	9.19	pg/g	0.338	0.988
30402-15-4	Total PeCDF	JK	5.08	pg/g	0.0709	4.94
55684-94-1	Total HxCDF	J	17.6	pg/g	0.194	4.94
38998-75-3	Total HpCDF	J	54.5	pg/g	0.308	4.94
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		6.41	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		6.41	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		149	198	pg/g	75.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		174	198	pg/g	87.9	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		161	198	pg/g	81.2	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		143	198	pg/g	72.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		182	198	pg/g	92.3	(23%-140%)
13C-OCDD		404	395	pg/g	102	(17%-157%)
13C-2,3,7,8-TCDF		141	198	pg/g	71.5	(24%-169%)
13C-1,2,3,7,8-PeCDF		163	198	pg/g	82.2	(24%-185%)
13C-2,3,4,7,8-PeCDF		163	198	pg/g	82.3	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		146	198	pg/g	73.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		139	198	pg/g	70.1	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		140	198	pg/g	71.0	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		156	198	pg/g	78.9	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15471016**	**Date Collected:**	**08/26/2019 12:00**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil SRM**	**Date Received:**	**09/10/2019 09:43**		
Client ID:	**SRM Lot# ER10091501**			**Prep Basis:**	**As Received**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/27/2019 22:05**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_4-13**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**10.12 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		150	198	pg/g	75.9	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		181	198	pg/g	91.7	(26%-138%)
37Cl-2,3,7,8-TCDD		16.6	19.8	pg/g	83.9	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
E **Value is estimated - Concentration of the target analyte exceeds the instrument calibration range**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15471016**	**Date Collected:**	**08/26/2019 12:00**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil SRM**	**Date Received:**	**09/10/2019 09:43**		
Client ID:	**SRM Lot# ER10091501**			**Prep Basis:**	**As Received**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/30/2019 18:41**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b30sep19a_2-9**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**10.12 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF	BJ	0.842	pg/g	0.194	0.988

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

B The target analyte was detected in the associated blank.
E Value is estimated - Concentration of the target analyte exceeds the instrument calibration range
J Value is estimated
K Estimated Maximum Possible Concentration
U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15471017**	**Date Collected:**	**08/27/2019 08:40**	**Matrix:**	**WATER**
Client Sample:	**1613B Water**	**Date Received:**	**08/30/2019 09:55**		
Client ID:	**711-82719**			**Prep Basis:**	**As Received**
Batch ID:	**41726**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/18/2019 23:33**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A18SEP19D-9**			**Dilution:**	**1**
Prep Batch:	**41724**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**12-SEP-19**	**Prep Aliquot:**	**966.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.658	pg/L	0.658	10.3
40321-76-4	1,2,3,7,8-PeCDD	U	0.968	pg/L	0.968	51.7
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.935	pg/L	0.935	51.7
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.894	pg/L	0.894	51.7
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.929	pg/L	0.929	51.7
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	1.11	pg/L	1.11	51.7
3268-87-9	1,2,3,4,6,7,8,9-OCDD	U	1.97	pg/L	1.97	103
51207-31-9	2,3,7,8-TCDF	U	0.685	pg/L	0.685	10.3
57117-41-6	1,2,3,7,8-PeCDF	U	0.716	pg/L	0.716	51.7
57117-31-4	2,3,4,7,8-PeCDF	U	0.654	pg/L	0.654	51.7
70648-26-9	1,2,3,4,7,8-HxCDF	U	0.707	pg/L	0.707	51.7
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.751	pg/L	0.751	51.7
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.718	pg/L	0.718	51.7
72918-21-9	1,2,3,7,8,9-HxCDF	JK	0.951	pg/L	0.918	51.7
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	0.848	pg/L	0.848	51.7
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	1.18	pg/L	1.18	51.7
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	2.25	pg/L	2.25	103
41903-57-5	Total TeCDD	U	0.658	pg/L	0.658	10.3
36088-22-9	Total PeCDD	U	0.968	pg/L	0.968	51.7
34465-46-8	Total HxCDD	U	0.894	pg/L	0.894	51.7
37871-00-4	Total HpCDD	U	1.11	pg/L	1.11	51.7
30402-14-3	Total TeCDF	U	0.685	pg/L	0.685	10.3
30402-15-4	Total PeCDF	U	0.465	pg/L	0.465	51.7
55684-94-1	Total HxCDF	JK	0.951	pg/L	0.707	51.7
38998-75-3	Total HpCDF	U	0.848	pg/L	0.848	51.7
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.0951	pg/L		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		1.31	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1670	2070	pg/L	81.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		1860	2070	pg/L	89.8	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		1740	2070	pg/L	84.2	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		1760	2070	pg/L	85.0	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		1890	2070	pg/L	91.2	(23%-140%)
13C-OCDD		2790	4140	pg/L	67.4	(17%-157%)
13C-2,3,7,8-TCDF		1720	2070	pg/L	83.1	(24%-169%)
13C-1,2,3,7,8-PeCDF		1880	2070	pg/L	90.7	(24%-185%)
13C-2,3,4,7,8-PeCDF		1860	2070	pg/L	89.8	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		1680	2070	pg/L	81.2	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		1610	2070	pg/L	77.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		1700	2070	pg/L	82.0	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		1770	2070	pg/L	85.3	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15471017**	**Date Collected:**	**08/27/2019 08:40**	**Matrix:**	**WATER**
Client Sample:	**1613B Water**	**Date Received:**	**08/30/2019 09:55**		
Client ID:	**711-82719**			**Prep Basis:**	**As Received**
Batch ID:	**41726**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/18/2019 23:33**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A18SEP19D-9**			**Dilution:**	**1**
Prep Batch:	**41724**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**12-SEP-19**	**Prep Aliquot:**	**966.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		1660	2070	pg/L	80.3	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		1680	2070	pg/L	81.1	(26%-138%)
37Cl-2,3,7,8-TCDD		204	207	pg/L	98.8	(35%-197%)

Comments:

J **Value is estimated**

K **Estimated Maximum Possible Concentration**

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15471018**	**Date Collected:**	**08/27/2019 08:20**	**Matrix:**	**WATER**
Client Sample:	**1613B Water**	**Date Received:**	**09/04/2019 11:30**		
Client ID:	**712-82819**			**Prep Basis:**	**As Received**
Batch ID:	**41726**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/19/2019 00:22**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A18SEP19D-10**			**Dilution:**	**1**
Prep Batch:	**41724**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**12-SEP-19**	**Prep Aliquot:**	**959.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.788	pg/L	0.788	10.4
40321-76-4	1,2,3,7,8-PeCDD	U	1.01	pg/L	1.01	52.1
39227-28-6	1,2,3,4,7,8-HxCDD	U	1.04	pg/L	1.04	52.1
57653-85-7	1,2,3,6,7,8-HxCDD	U	1.03	pg/L	1.03	52.1
19408-74-3	1,2,3,7,8,9-HxCDD	U	1.05	pg/L	1.05	52.1
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	0.959	pg/L	0.959	52.1
3268-87-9	1,2,3,4,6,7,8,9-OCDD	U	1.88	pg/L	1.88	104
51207-31-9	2,3,7,8-TCDF	U	0.727	pg/L	0.727	10.4
57117-41-6	1,2,3,7,8-PeCDF	U	0.769	pg/L	0.769	52.1
57117-31-4	2,3,4,7,8-PeCDF	U	0.719	pg/L	0.719	52.1
70648-26-9	1,2,3,4,7,8-HxCDF	U	0.8	pg/L	0.800	52.1
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.78	pg/L	0.780	52.1
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.74	pg/L	0.740	52.1
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.973	pg/L	0.973	52.1
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	0.944	pg/L	0.944	52.1
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	1.28	pg/L	1.28	52.1
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	2.31	pg/L	2.31	104
41903-57-5	Total TeCDD	U	0.788	pg/L	0.788	10.4
36088-22-9	Total PeCDD	U	1.01	pg/L	1.01	52.1
34465-46-8	Total HxCDD	U	1.03	pg/L	1.03	52.1
37871-00-4	Total HpCDD	U	0.959	pg/L	0.959	52.1
30402-14-3	Total TeCDF	U	0.727	pg/L	0.727	10.4
30402-15-4	Total PeCDF	U	0.594	pg/L	0.594	52.1
55684-94-1	Total HxCDF	U	0.74	pg/L	0.740	52.1
38998-75-3	Total HpCDF	U	0.944	pg/L	0.944	52.1
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.00	pg/L		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		1.39	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1690	2080	pg/L	81.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		1980	2080	pg/L	95.0	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		1700	2080	pg/L	81.6	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		1710	2080	pg/L	82.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		1780	2080	pg/L	85.6	(23%-140%)
13C-OCDD		2800	4170	pg/L	67.2	(17%-157%)
13C-2,3,7,8-TCDF		1630	2080	pg/L	78.4	(24%-169%)
13C-1,2,3,7,8-PeCDF		1970	2080	pg/L	94.4	(24%-185%)
13C-2,3,4,7,8-PeCDF		1970	2080	pg/L	94.5	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		1610	2080	pg/L	77.3	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		1540	2080	pg/L	73.8	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		1650	2080	pg/L	79.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		1720	2080	pg/L	82.3	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15471018**	**Date Collected:**	**08/27/2019 08:20**	**Matrix:**	**WATER**
Client Sample:	**1613B Water**	**Date Received:**	**09/04/2019 11:30**		
Client ID:	**712-82819**			**Prep Basis:**	**As Received**
Batch ID:	**41726**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/19/2019 00:22**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A18SEP19D-10**			**Dilution:**	**1**
Prep Batch:	**41724**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**12-SEP-19**	**Prep Aliquot:**	**959.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		1520	2080	pg/L	73.0	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		1570	2080	pg/L	75.1	(26%-138%)
37Cl-2,3,7,8-TCDD		206	208	pg/L	98.9	(35%-197%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Quality Control Summary

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: 2006-00115_4

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12024770	LCS for batch 41724	13C-2,3,7,8-TCDD		88.2	(20%-175%)
		13C-1,2,3,7,8-PeCDD		90.2	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		87.2	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		85.5	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		91.4	(22%-166%)
		13C-OCDD		71.0	(13%-199%)
		13C-2,3,7,8-TCDF		90.4	(22%-152%)
		13C-1,2,3,7,8-PeCDF		94.2	(21%-192%)
		13C-2,3,4,7,8-PeCDF		94.1	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		84.3	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		80.9	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		83.4	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		87.1	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		78.2	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		83.3	(20%-186%)
		37Cl-2,3,7,8-TCDD		96.5	(31%-191%)
12024771	LCSD for batch 41724	13C-2,3,7,8-TCDD		82.3	(20%-175%)
		13C-1,2,3,7,8-PeCDD		82.1	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		80.0	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		78.8	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		81.2	(22%-166%)
		13C-OCDD		63.3	(13%-199%)
		13C-2,3,7,8-TCDF		85.3	(22%-152%)
		13C-1,2,3,7,8-PeCDF		85.8	(21%-192%)
		13C-2,3,4,7,8-PeCDF		85.2	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		78.6	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		76.3	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		78.1	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		80.9	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		71.9	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		71.7	(20%-186%)
		37Cl-2,3,7,8-TCDD		94.4	(31%-191%)
12024769	MB for batch 41724	13C-2,3,7,8-TCDD		83.6	(25%-164%)
		13C-1,2,3,7,8-PeCDD		85.6	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		82.6	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		83.7	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		82.5	(23%-140%)
		13C-OCDD		61.0	(17%-157%)
		13C-2,3,7,8-TCDF		89.3	(24%-169%)
		13C-1,2,3,7,8-PeCDF		90.5	(24%-185%)
		13C-2,3,4,7,8-PeCDF		87.7	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		82.0	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		78.9	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		81.6	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		85.2	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		73.1	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		74.7	(26%-138%)
		37Cl-2,3,7,8-TCDD		94.0	(35%-197%)
15471017	711-82719	13C-2,3,7,8-TCDD		81.0	(25%-164%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: 2006-00115_4

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
15471017	711-82719	13C-1,2,3,7,8-PeCDD		89.8	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		84.2	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		85.0	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		91.2	(23%-140%)
		13C-OCDD		67.4	(17%-157%)
		13C-2,3,7,8-TCDF		83.1	(24%-169%)
		13C-1,2,3,7,8-PeCDF		90.7	(24%-185%)
		13C-2,3,4,7,8-PeCDF		89.8	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		81.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		77.9	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		82.0	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		85.3	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		80.3	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		81.1	(26%-138%)
		37Cl-2,3,7,8-TCDD		98.8	(35%-197%)
15471018	712-82819	13C-2,3,7,8-TCDD		81.3	(25%-164%)
		13C-1,2,3,7,8-PeCDD		95.0	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		81.6	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		82.2	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		85.6	(23%-140%)
		13C-OCDD		67.2	(17%-157%)
		13C-2,3,7,8-TCDF		78.4	(24%-169%)
		13C-1,2,3,7,8-PeCDF		94.4	(24%-185%)
		13C-2,3,4,7,8-PeCDF		94.5	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		77.3	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		73.8	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		79.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		82.3	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		73.0	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		75.1	(26%-138%)
		37Cl-2,3,7,8-TCDD		98.9	(35%-197%)

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: 2006-00115_4

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12024811	LCS for batch 41759	13C-2,3,7,8-TCDD		72.8	(20%-175%)
		13C-1,2,3,7,8-PeCDD		64.3	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		72.2	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		71.2	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		74.3	(22%-166%)
		13C-OCDD		53.6	(13%-199%)
		13C-2,3,7,8-TCDF		64.7	(22%-152%)
		13C-1,2,3,7,8-PeCDF		63.2	(21%-192%)
		13C-2,3,4,7,8-PeCDF		60.4	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		68.8	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		70.0	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		66.2	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		66.6	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		68.0	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		66.7	(20%-186%)
		37Cl-2,3,7,8-TCDD		82.4	(31%-191%)
12024812	LCSD for batch 41759	13C-2,3,7,8-TCDD		73.4	(20%-175%)
		13C-1,2,3,7,8-PeCDD		69.2	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		75.1	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		73.4	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		77.4	(22%-166%)
		13C-OCDD		57.8	(13%-199%)
		13C-2,3,7,8-TCDF		66.9	(22%-152%)
		13C-1,2,3,7,8-PeCDF		67.0	(21%-192%)
		13C-2,3,4,7,8-PeCDF		64.4	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		71.8	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		73.1	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		68.9	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		70.1	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		72.8	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		71.8	(20%-186%)
		37Cl-2,3,7,8-TCDD		86.3	(31%-191%)
12024810	MB for batch 41759	13C-2,3,7,8-TCDD		74.6	(25%-164%)
		13C-1,2,3,7,8-PeCDD		67.4	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		70.2	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		75.7	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		75.9	(23%-140%)
		13C-OCDD		56.3	(17%-157%)
		13C-2,3,7,8-TCDF		65.6	(24%-169%)
		13C-1,2,3,7,8-PeCDF		65.8	(24%-185%)
		13C-2,3,4,7,8-PeCDF		61.9	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		71.0	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		70.7	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		67.8	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		66.8	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		68.8	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		67.4	(26%-138%)
		37Cl-2,3,7,8-TCDD		85.4	(35%-197%)
15471001	J5-SC1b-20to30-82719	13C-2,3,7,8-TCDD		69.1	(25%-164%)

SDG Number: 2006-00115_4

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
15471001	J5-SC1b-20to30-82719	13C-1,2,3,7,8-PeCDD		62.7	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		73.0	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		71.7	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		85.4	(23%-140%)
		13C-OCDD		73.1	(17%-157%)
		13C-2,3,7,8-TCDF		66.1	(24%-169%)
		13C-1,2,3,7,8-PeCDF		59.4	(24%-185%)
		13C-2,3,4,7,8-PeCDF		58.8	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		70.7	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		70.3	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		69.4	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		69.6	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		74.5	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		81.7	(26%-138%)
		37Cl-2,3,7,8-TCDD		78.9	(35%-197%)
12024813	J5-SC1b-20to30-82719(15471001MS)	13C-2,3,7,8-TCDD		72.0	(25%-164%)
		13C-1,2,3,7,8-PeCDD		60.9	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		87.7	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		71.3	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		98.9	(23%-140%)
		13C-OCDD		97.3	(17%-157%)
		13C-2,3,7,8-TCDF		72.1	(24%-169%)
		13C-1,2,3,7,8-PeCDF		60.0	(24%-185%)
		13C-2,3,4,7,8-PeCDF		59.2	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		83.7	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		69.3	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		74.8	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		61.7	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		84.4	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		100	(26%-138%)
		37Cl-2,3,7,8-TCDD		77.5	(35%-197%)
12024814	J5-SC1b-20to30-82719(15471001MSD)	13C-2,3,7,8-TCDD		73.4	(25%-164%)
		13C-1,2,3,7,8-PeCDD		66.7	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		83.1	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		77.1	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		93.1	(23%-140%)
		13C-OCDD		81.9	(17%-157%)
		13C-2,3,7,8-TCDF		73.1	(24%-169%)
		13C-1,2,3,7,8-PeCDF		62.1	(24%-185%)
		13C-2,3,4,7,8-PeCDF		62.4	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		79.3	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		73.8	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		73.8	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		73.5	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		83.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		90.7	(26%-138%)
		37Cl-2,3,7,8-TCDD		82.6	(35%-197%)
15471002	J5-SC1b-30to40-82719	13C-2,3,7,8-TCDD		74.2	(25%-164%)
		13C-1,2,3,7,8-PeCDD		67.6	(25%-181%)

Surrogate Recovery Report

SDG Number: 2006-00115_4

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
15471002	J5-SC1b-30to40-82719	13C-1,2,3,4,7,8-HxCDD		80.5	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		75.3	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		89.0	(23%-140%)
		13C-OCDD		75.6	(17%-157%)
		13C-2,3,7,8-TCDF		71.3	(24%-169%)
		13C-1,2,3,7,8-PeCDF		64.2	(24%-185%)
		13C-2,3,4,7,8-PeCDF		63.6	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		76.4	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		72.3	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		72.4	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		75.7	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		79.0	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		87.6	(26%-138%)
		37Cl-2,3,7,8-TCDD		83.8	(35%-197%)
15471003	J5-SC1b-40to50-82719	13C-2,3,7,8-TCDD		72.7	(25%-164%)
		13C-1,2,3,7,8-PeCDD		65.0	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		79.8	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		73.8	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		88.7	(23%-140%)
		13C-OCDD		79.4	(17%-157%)
		13C-2,3,7,8-TCDF		70.0	(24%-169%)
		13C-1,2,3,7,8-PeCDF		61.3	(24%-185%)
		13C-2,3,4,7,8-PeCDF		61.8	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		76.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		71.3	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		72.0	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		74.3	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		80.7	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		88.6	(26%-138%)
		37Cl-2,3,7,8-TCDD		82.4	(35%-197%)
15471004	J5-SC1b-50to60-82719	13C-2,3,7,8-TCDD		66.9	(25%-164%)
		13C-1,2,3,7,8-PeCDD		59.3	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		73.6	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		69.1	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		83.6	(23%-140%)
		13C-OCDD		74.5	(17%-157%)
		13C-2,3,7,8-TCDF		66.1	(24%-169%)
		13C-1,2,3,7,8-PeCDF	Q	55.7	(24%-185%)
		13C-2,3,4,7,8-PeCDF	Q	56.7	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		70.6	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		65.3	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		66.5	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		64.8	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		74.0	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		81.5	(26%-138%)
		37Cl-2,3,7,8-TCDD		80.3	(35%-197%)
15471005	J5-SC1b-60to70-82719	13C-2,3,7,8-TCDD		72.9	(25%-164%)
		13C-1,2,3,7,8-PeCDD		67.1	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		76.1	(32%-141%)

Surrogate Recovery Report

SDG Number: 2006-00115_4

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
15471005	J5-SC1b-60to70-82719	13C-1,2,3,6,7,8-HxCDD		72.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		83.4	(23%-140%)
		13C-OCDD		68.5	(17%-157%)
		13C-2,3,7,8-TCDF		67.4	(24%-169%)
		13C-1,2,3,7,8-PeCDF		63.0	(24%-185%)
		13C-2,3,4,7,8-PeCDF		61.9	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		74.6	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		69.1	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		69.1	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		73.1	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		75.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		81.4	(26%-138%)
		37Cl-2,3,7,8-TCDD		82.1	(35%-197%)
15471006	J5-SC1b-70to80-82719	13C-2,3,7,8-TCDD		73.0	(25%-164%)
		13C-1,2,3,7,8-PeCDD		48.9	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		78.0	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		76.8	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		91.8	(23%-140%)
		13C-OCDD		80.2	(17%-157%)
		13C-2,3,7,8-TCDF		72.3	(24%-169%)
		13C-1,2,3,7,8-PeCDF		61.5	(24%-185%)
		13C-2,3,4,7,8-PeCDF		54.1	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		75.7	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		73.9	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		72.0	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		73.7	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		81.5	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		89.5	(26%-138%)
		37Cl-2,3,7,8-TCDD		80.1	(35%-197%)
15471007	J5-SC1b-80to90-82719	13C-2,3,7,8-TCDD		76.6	(25%-164%)
		13C-1,2,3,7,8-PeCDD		55.6	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		77.5	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		80.5	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		86.8	(23%-140%)
		13C-OCDD		65.0	(17%-157%)
		13C-2,3,7,8-TCDF		70.4	(24%-169%)
		13C-1,2,3,7,8-PeCDF		47.4	(24%-185%)
		13C-2,3,4,7,8-PeCDF		53.1	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		79.8	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		76.3	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		73.0	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		76.6	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		79.5	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		80.5	(26%-138%)
		37Cl-2,3,7,8-TCDD		86.0	(35%-197%)
15471008	J5-SC1b-90to100-82719	13C-2,3,7,8-TCDD		80.7	(25%-164%)
		13C-1,2,3,7,8-PeCDD		75.1	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		82.8	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		80.2	(28%-130%)

Surrogate Recovery Report

SDG Number: 2006-00115_4

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
15471008	J5-SC1b-90to100-82719	13C-1,2,3,4,6,7,8-HpCDD		88.8	(23%-140%)
		13C-OCDD		67.2	(17%-157%)
		13C-2,3,7,8-TCDF		74.8	(24%-169%)
		13C-1,2,3,7,8-PeCDF		71.3	(24%-185%)
		13C-2,3,4,7,8-PeCDF		70.1	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		80.0	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		79.3	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		75.6	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		79.7	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		81.5	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		83.1	(26%-138%)
		37Cl-2,3,7,8-TCDD		87.0	(35%-197%)
15471009	J5-SC1b-100to110-82719	13C-2,3,7,8-TCDD		74.2	(25%-164%)
		13C-1,2,3,7,8-PeCDD		90.1	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		80.0	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		73.1	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		92.9	(23%-140%)
		13C-OCDD		94.9	(17%-157%)
		13C-2,3,7,8-TCDF		69.7	(24%-169%)
		13C-1,2,3,7,8-PeCDF		83.3	(24%-185%)
		13C-2,3,4,7,8-PeCDF		84.0	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		74.4	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		68.4	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		71.9	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		79.1	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		78.1	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		94.7	(26%-138%)
		37Cl-2,3,7,8-TCDD		82.1	(35%-197%)
15471012	L3-SC1b-20to30-82619	13C-2,3,7,8-TCDD		75.3	(25%-164%)
		13C-1,2,3,7,8-PeCDD		81.5	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		81.3	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		73.6	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		91.3	(23%-140%)
		13C-OCDD		92.8	(17%-157%)
		13C-2,3,7,8-TCDF		70.7	(24%-169%)
		13C-1,2,3,7,8-PeCDF		76.8	(24%-185%)
		13C-2,3,4,7,8-PeCDF		76.0	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		74.1	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		72.7	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		71.1	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		80.4	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		76.3	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		92.2	(26%-138%)
		37Cl-2,3,7,8-TCDD		87.0	(35%-197%)
15471013	L3-SC1b-30to40-82619	13C-2,3,7,8-TCDD		82.0	(25%-164%)
		13C-1,2,3,7,8-PeCDD		91.8	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		84.3	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		76.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		96.7	(23%-140%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: 2006-00115_4

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
15471013	L3-SC1b-30to40-82619	13C-OCDD		98.3	(17%-157%)
		13C-2,3,7,8-TCDF		75.7	(24%-169%)
		13C-1,2,3,7,8-PeCDF		89.2	(24%-185%)
		13C-2,3,4,7,8-PeCDF		86.0	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		78.9	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		72.7	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		74.7	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		84.0	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		80.6	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		95.2	(26%-138%)
		37Cl-2,3,7,8-TCDD		91.7	(35%-197%)
15471016	SRM Lot# ER10091501	13C-2,3,7,8-TCDD		75.3	(25%-164%)
		13C-1,2,3,7,8-PeCDD		87.9	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		81.2	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		72.2	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		92.3	(23%-140%)
		13C-OCDD		102	(17%-157%)
		13C-2,3,7,8-TCDF		71.5	(24%-169%)
		13C-1,2,3,7,8-PeCDF		82.2	(24%-185%)
		13C-2,3,4,7,8-PeCDF		82.3	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		73.8	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		70.1	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		71.0	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		78.9	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		75.9	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		91.7	(26%-138%)
		37Cl-2,3,7,8-TCDD		83.9	(35%-197%)

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: 2006-00115_4 **Sample Type:** Laboratory Control Sample

Client ID: LCS for batch 41724 **Matrix:** WATER

Lab Sample ID: 12024770

Instrument: HRP750 **Analysis Date:** 09/18/2019 17:52 **Dilution:** 1

Analyst: MJC **Prep Batch ID:** 41724

Batch ID: 41726

CAS No.		Parmname	Amount Added pg/L	Spike Conc. pg/L	Recovery %	Acceptance Limits
1746-01-6	LCS	2,3,7,8-TCDD	200	202	101	67-158
40321-76-4	LCS	1,2,3,7,8-PeCDD	1000	1110	111	70-142
39227-28-6	LCS	1,2,3,4,7,8-HxCDD	1000	1060	106	70-164
57653-85-7	LCS	1,2,3,6,7,8-HxCDD	1000	1050	105	74-134
19408-74-3	LCS	1,2,3,7,8,9-HxCDD	1000	1090	109	64-162
35822-46-9	LCS	1,2,3,4,6,7,8-HpCDD	1000	963	96.3	70-140
3268-87-9	LCS	1,2,3,4,6,7,8,9-OCDD	2000	2060	103	78-144
51207-31-9	LCS	2,3,7,8-TCDF	200	194	96.8	75-158
57117-41-6	LCS	1,2,3,7,8-PeCDF	1000	1020	102	80-134
57117-31-4	LCS	2,3,4,7,8-PeCDF	1000	1000	100	68-160
70648-26-9	LCS	1,2,3,4,7,8-HxCDF	1000	1060	106	72-134
57117-44-9	LCS	1,2,3,6,7,8-HxCDF	1000	1110	111	84-130
60851-34-5	LCS	2,3,4,6,7,8-HxCDF	1000	1070	107	70-156
72918-21-9	LCS	1,2,3,7,8,9-HxCDF	1000	1060	106	78-130
67562-39-4	LCS	1,2,3,4,6,7,8-HpCDF	1000	1090	109	82-122
55673-89-7	LCS	1,2,3,4,7,8,9-HpCDF	1000	1060	106	78-138
39001-02-0	LCS	1,2,3,4,6,7,8,9-OCDF	2000	2020	101	63-170

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: 2006-00115_4 **Sample Type:** Laboratory Control Sample Duplicate

Client ID: LCSD for batch 41724 **Matrix:** WATER

Lab Sample ID: 12024771

Instrument: HRP750 **Analysis Date:** 09/18/2019 18:40 **Dilution:** 1

Analyst: MJC **Prep Batch ID:** 41724

Batch ID: 41726

CAS No.		Parmname	Amount Added pg/L	Spike Conc. pg/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD	2,3,7,8-TCDD	200	197	98.4	67-158	2.67	0-20
40321-76-4	LCSD	1,2,3,7,8-PeCDD	1000	1080	108	70-142	2.98	0-20
39227-28-6	LCSD	1,2,3,4,7,8-HxCDD	1000	1060	106	70-164	0.789	0-20
57653-85-7	LCSD	1,2,3,6,7,8-HxCDD	1000	1050	105	74-134	0.449	0-20
19408-74-3	LCSD	1,2,3,7,8,9-HxCDD	1000	1110	111	64-162	1.98	0-20
35822-46-9	LCSD	1,2,3,4,6,7,8-HpCDD	1000	961	96.1	70-140	0.189	0-20
3268-87-9	LCSD	1,2,3,4,6,7,8,9-OCDD	2000	2010	100	78-144	2.63	0-20
51207-31-9	LCSD	2,3,7,8-TCDF	200	186	92.8	75-158	4.26	0-20
57117-41-6	LCSD	1,2,3,7,8-PeCDF	1000	988	98.8	80-134	3.21	0-20
57117-31-4	LCSD	2,3,4,7,8-PeCDF	1000	1010	101	68-160	0.539	0-20
70648-26-9	LCSD	1,2,3,4,7,8-HxCDF	1000	1040	104	72-134	1.94	0-20
57117-44-9	LCSD	1,2,3,6,7,8-HxCDF	1000	1040	104	84-130	6.61	0-20
60851-34-5	LCSD	2,3,4,6,7,8-HxCDF	1000	1040	104	70-156	2.63	0-20
72918-21-9	LCSD	1,2,3,7,8,9-HxCDF	1000	1020	102	78-130	3.81	0-20
67562-39-4	LCSD	1,2,3,4,6,7,8-HpCDF	1000	1060	106	82-122	2.75	0-20
55673-89-7	LCSD	1,2,3,4,7,8,9-HpCDF	1000	1050	105	78-138	0.539	0-20
39001-02-0	LCSD	1,2,3,4,6,7,8,9-OCDF	2000	1980	98.8	63-170	2.28	0-20

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: 2006-00115_4 **Sample Type:** Laboratory Control Sample

Client ID: LCS for batch 41759 **Matrix:** SOIL

Lab Sample ID: 12024811

Instrument: HRP763 **Analysis Date:** 09/23/2019 20:33 **Dilution:** 1

Analyst: MLS **Prep Batch ID:** 41759

Batch ID: 41761

CAS No.		Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	LCS	2,3,7,8-TCDD	20.0	17.9	89.6	67-158
40321-76-4	LCS	1,2,3,7,8-PeCDD	100	101	101	70-142
39227-28-6	LCS	1,2,3,4,7,8-HxCDD	100	97.9	97.9	70-164
57653-85-7	LCS	1,2,3,6,7,8-HxCDD	100	104	104	76-134
19408-74-3	LCS	1,2,3,7,8,9-HxCDD	100	107	107	64-162
35822-46-9	LCS	1,2,3,4,6,7,8-HpCDD	100	103	103	70-140
3268-87-9	LCS	1,2,3,4,6,7,8,9-OCDD	200	203	101	78-144
51207-31-9	LCS	2,3,7,8-TCDF	20.0	21.9	109	75-158
57117-41-6	LCS	1,2,3,7,8-PeCDF	100	108	108	80-134
57117-31-4	LCS	2,3,4,7,8-PeCDF	100	110	110	68-160
70648-26-9	LCS	1,2,3,4,7,8-HxCDF	100	107	107	72-134
57117-44-9	LCS	1,2,3,6,7,8-HxCDF	100	114	114	84-130
60851-34-5	LCS	2,3,4,6,7,8-HxCDF	100	112	112	70-156
72918-21-9	LCS	1,2,3,7,8,9-HxCDF	100	110	110	78-130
67562-39-4	LCS	1,2,3,4,6,7,8-HpCDF	100	117	117	82-122
55673-89-7	LCS	1,2,3,4,7,8,9-HpCDF	100	113	113	78-138
39001-02-0	LCS	1,2,3,4,6,7,8,9-OCDF	200	206	103	63-170

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: 2006-00115_4 **Sample Type:** Laboratory Control Sample Duplicate

Client ID: LCSD for batch 41759 **Matrix:** SOIL

Lab Sample ID: 12024812

Instrument: HRP763 **Analysis Date:** 09/23/2019 21:21 **Dilution:** 1

Analyst: MLS **Prep Batch ID:** 41759

Batch ID: 41761

CAS No.		Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD	2,3,7,8-TCDD	20.0	17.8	88.9	67-158	0.684	0-20
40321-76-4	LCSD	1,2,3,7,8-PeCDD	100	98.7	98.7	70-142	2.69	0-20
39227-28-6	LCSD	1,2,3,4,7,8-HxCDD	100	95.4	95.4	70-164	2.62	0-20
57653-85-7	LCSD	1,2,3,6,7,8-HxCDD	100	102	102	76-134	2.64	0-20
19408-74-3	LCSD	1,2,3,7,8,9-HxCDD	100	106	106	64-162	0.748	0-20
35822-46-9	LCSD	1,2,3,4,6,7,8-HpCDD	100	101	101	70-140	1.44	0-20
3268-87-9	LCSD	1,2,3,4,6,7,8,9-OCDD	200	192	96.1	78-144	5.43	0-20
51207-31-9	LCSD	2,3,7,8-TCDF	20.0	21.3	106	75-158	2.82	0-20
57117-41-6	LCSD	1,2,3,7,8-PeCDF	100	105	105	80-134	2.74	0-20
57117-31-4	LCSD	2,3,4,7,8-PeCDF	100	107	107	68-160	2.98	0-20
70648-26-9	LCSD	1,2,3,4,7,8-HxCDF	100	104	104	72-134	2.51	0-20
57117-44-9	LCSD	1,2,3,6,7,8-HxCDF	100	110	110	84-130	3.68	0-20
60851-34-5	LCSD	2,3,4,6,7,8-HxCDF	100	111	111	70-156	0.417	0-20
72918-21-9	LCSD	1,2,3,7,8,9-HxCDF	100	108	108	78-130	1.75	0-20
67562-39-4	LCSD	1,2,3,4,6,7,8-HpCDF	100	112	112	82-122	3.80	0-20
55673-89-7	LCSD	1,2,3,4,7,8,9-HpCDF	100	108	108	78-138	4.73	0-20
39001-02-0	LCSD	1,2,3,4,6,7,8,9-OCDF	200	199	99.3	63-170	3.63	0-20

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number:	**2006-00115_4**	**Sample Type:**	**Matrix Spike**		
Client ID:	**J5-SC1b-20to30-82719(15471001MS)**	**Matrix:**	**SOIL**		
Lab Sample ID:	**12024813**	**%Moisture:**	**49.6**		
Instrument:	**HRP750**	**Analysis Date:**	**09/25/2019 03:31**	**Dilution:**	**1**
Analyst:	**MJC**	**Prep Batch ID:**	**41759**		
		Batch ID:	**41761**		

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits
51207-31-9	MS	2,3,7,8-TCDF	19.9	BJ	23.9	116	70-130

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number:	**2006-00115_4**	**Sample Type:**	**Matrix Spike Duplicate**
Client ID:	**J5-SC1b-20to30-82719(15471001MSD)**	**Matrix:**	**SOIL**
Lab Sample ID:	**12024814**	**%Moisture:**	**49.6**
Instrument:	**HRP750**	**Analysis Date:**	**09/25/2019 03:53**
Analyst:	**MJC**	**Prep Batch ID:**	**41759**
		Batch ID:	**41761**

Dilution: 1

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
51207-31-9	MSD	2,3,7,8-TCDF	20.0	BJ	21.1	101	70-130	12.1	0-20

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: 2006-00115_4
Client ID: J5-SC1b-20to30-82719(15471001MS)
Lab Sample ID: 12024813
Instrument: HRP763
Analyst: MLS

Sample Type: Matrix Spike
Matrix: SOIL
%Moisture: 49.6
Analysis Date: 09/23/2019 23:46
Prep Batch ID: 41759
Batch ID: 41761

Dilution: 1

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	MS	2,3,7,8-TCDD	19.9	JK	19.3	95.1	70-130
40321-76-4	MS	1,2,3,7,8-PeCDD	99.4	BJ	106	106	70-130
39227-28-6	MS	1,2,3,4,7,8-HxCDD	99.4	BJ	108	108	70-130
57653-85-7	MS	1,2,3,6,7,8-HxCDD	99.4		133	129	70-130
19408-74-3	MS	1,2,3,7,8,9-HxCDD	99.4	J	127	125	70-130
35822-46-9	MS	1,2,3,4,6,7,8-HpCDD	99.4		1240	1110 *	70-130
3268-87-9	MS	1,2,3,4,6,7,8,9-OCDD	199		9710	3880 *	70-130
51207-31-9	MS	2,3,7,8-TCDF	19.9	B	26.6	129	70-130
57117-41-6	MS	1,2,3,7,8-PeCDF	99.4	BJ	113	113	70-130
57117-31-4	MS	2,3,4,7,8-PeCDF	99.4	J	117	116	70-130
70648-26-9	MS	1,2,3,4,7,8-HxCDF	99.4	J	123	121	70-130
57117-44-9	MS	1,2,3,6,7,8-HxCDF	99.4	J	127	124	70-130
60851-34-5	MS	2,3,4,6,7,8-HxCDF	99.4	J	123	121	70-130
72918-21-9	MS	1,2,3,7,8,9-HxCDF	99.4	BJ	108	108	70-130
67562-39-4	MS	1,2,3,4,6,7,8-HpCDF	99.4		291	254 *	70-130
55673-89-7	MS	1,2,3,4,7,8,9-HpCDF	99.4	J	123	121	70-130
39001-02-0	MS	1,2,3,4,6,7,8,9-OCDF	199		833	357 *	70-130

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: 2006-00115_4
Sample Type: Matrix Spike Duplicate
Client ID: J5-SC1b-20to30-82719(15471001MSD)
Matrix: SOIL
Lab Sample ID: 12024814
%Moisture: 49.6
Instrument: HRP763
Analysis Date: 09/24/2019 00:35
Dilution: 1
Analyst: MLS
Prep Batch ID: 41759
Batch ID: 41761

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	MSD	2,3,7,8-TCDD	20.0	JK	18.8	92.1	70-130	2.65	0-20
40321-76-4	MSD	1,2,3,7,8-PeCDD	100	BJ	102	101	70-130	3.63	0-20
39227-28-6	MSD	1,2,3,4,7,8-HxCDD	100	BJ	104	103	70-130	3.80	0-20
57653-85-7	MSD	1,2,3,6,7,8-HxCDD	100		108	103	70-130	20.9 *	0-20
19408-74-3	MSD	1,2,3,7,8,9-HxCDD	100	J	112	109	70-130	12.8	0-20
35822-46-9	MSD	1,2,3,4,6,7,8-HpCDD	100		235	97.2	70-130	136 *	0-20
3268-87-9	MSD	1,2,3,4,6,7,8,9-OCDD	200		1860	-68.1 *	70-130	136 *	0-20
51207-31-9	MSD	2,3,7,8-TCDF	20.0	B	22.5	107	70-130	17.0	0-20
57117-41-6	MSD	1,2,3,7,8-PeCDF	100	BJ	111	110	70-130	1.81	0-20
57117-31-4	MSD	2,3,4,7,8-PeCDF	100	J	113	111	70-130	3.57	0-20
70648-26-9	MSD	1,2,3,4,7,8-HxCDF	100	J	114	111	70-130	7.50	0-20
57117-44-9	MSD	1,2,3,6,7,8-HxCDF	100	J	113	110	70-130	11.2	0-20
60851-34-5	MSD	2,3,4,6,7,8-HxCDF	100	J	116	114	70-130	5.30	0-20
72918-21-9	MSD	1,2,3,7,8,9-HxCDF	100	BJ	113	112	70-130	4.51	0-20
67562-39-4	MSD	1,2,3,4,6,7,8-HpCDF	100		145	107	70-130	66.7 *	0-20
55673-89-7	MSD	1,2,3,4,7,8,9-HpCDF	100	J	115	112	70-130	6.50	0-20
39001-02-0	MSD	1,2,3,4,6,7,8,9-OCDF	200		319	98.1	70-130	89.2 *	0-20

Method Blank Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Matrix:**	**WATER**
Client ID:	**MB for batch 41724**	**Instrument ID:**	**HRP750**	**Data File:**	**A18SEP19D-4**
Lab Sample ID:	**12024769**	**Prep Date:**	**12-SEP-19**	**Analyzed:**	**09/18/19 19:29**
Column:					

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 41724	12024770	A18SEP19D-2	09/18/19	1752
02	LCSD for batch 41724	12024771	A18SEP19D-3	09/18/19	1840
03	711-82719	15471017	A18SEP19D-9	09/18/19	2333
04	712-82819	15471018	A18SEP19D-10	09/19/19	0022

Method Blank Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Matrix:**	**SOIL**
Client ID:	**MB for batch 41759**	**Instrument ID:**	**HRP763**	**Data File:**	**b23sep19a_2-3**
Lab Sample ID:	**12024810**	**Prep Date:**	**17-SEP-19**	**Analyzed:**	**09/23/19 22:10**
Column:					

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 41759	12024811	b23sep19a_2-1	09/23/19	2033
02	LCSD for batch 41759	12024812	b23sep19a_2-2	09/23/19	2121
03	J5-SC1b-20to30-82719	15471001	b23sep19a_2-4	09/23/19	2258
04	J5-SC1b-20to30-82719(15471001MS)	12024813	b23sep19a_2-5	09/23/19	2346
05	J5-SC1b-20to30-82719(15471001MSD)	12024814	b23sep19a_2-6	09/24/19	0035
06	J5-SC1b-30to40-82719	15471002	b23sep19a_2-7	09/24/19	0123
07	J5-SC1b-40to50-82719	15471003	b23sep19a_2-8	09/24/19	0212
08	J5-SC1b-50to60-82719	15471004	b23sep19a_2-9	09/24/19	0300
09	J5-SC1b-60to70-82719	15471005	b23sep19a_2-10	09/24/19	0349
10	J5-SC1b-70to80-82719	15471006	b23sep19a_2-11	09/24/19	0437
11	J5-SC1b-80to90-82719	15471007	b23sep19a_2-12	09/24/19	0525
12	J5-SC1b-90to100-82719	15471008	b23sep19a_2-13	09/24/19	0614
13	J5-SC1b-20to30-82719	15471001	A24SEP19A_3-5	09/25/19	0308
14	J5-SC1b-20to30-82719(15471001MS)	12024813	A24SEP19A_3-6	09/25/19	0331
15	J5-SC1b-20to30-82719(15471001MSD)	12024814	A24SEP19A_3-7	09/25/19	0353
16	J5-SC1b-50to60-82719	15471004	A24SEP19A_3-9	09/25/19	0438
17	J5-SC1b-100to110-82719	15471009	b26sep19a_4-10	09/27/19	1940
18	L3-SC1b-20to30-82619	15471012	b26sep19a_4-11	09/27/19	2028
19	L3-SC1b-30to40-82619	15471013	b26sep19a_4-12	09/27/19	2116
20	SRM Lot# ER10091501	15471016	b26sep19a_4-13	09/27/19	2205
21	SRM Lot# ER10091501	15471016	b30sep19a_2-9	09/30/19	1841

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024769**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 41724**				
Client ID:	**MB for batch 41724**			**Prep Basis:**	**As Received**
Batch ID:	**41726**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/18/2019 19:29**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A18SEP19D-4**			**Dilution:**	**1**
Prep Batch:	**41724**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**12-SEP-19**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.734	pg/L	0.734	10.0
40321-76-4	1,2,3,7,8-PeCDD	U	0.962	pg/L	0.962	50.0
39227-28-6	1,2,3,4,7,8-HxCDD	U	1.27	pg/L	1.27	50.0
57653-85-7	1,2,3,6,7,8-HxCDD	U	1.2	pg/L	1.20	50.0
19408-74-3	1,2,3,7,8,9-HxCDD	U	1.26	pg/L	1.26	50.0
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	1.72	pg/L	1.72	50.0
3268-87-9	1,2,3,4,6,7,8,9-OCDD	JK	2.26	pg/L	1.90	100
51207-31-9	2,3,7,8-TCDF	U	0.858	pg/L	0.858	10.0
57117-41-6	1,2,3,7,8-PeCDF	U	0.942	pg/L	0.942	50.0
57117-31-4	2,3,4,7,8-PeCDF	U	0.878	pg/L	0.878	50.0
70648-26-9	1,2,3,4,7,8-HxCDF	U	1.14	pg/L	1.14	50.0
57117-44-9	1,2,3,6,7,8-HxCDF	U	1.26	pg/L	1.26	50.0
60851-34-5	2,3,4,6,7,8-HxCDF	U	1.24	pg/L	1.24	50.0
72918-21-9	1,2,3,7,8,9-HxCDF	U	1.57	pg/L	1.57	50.0
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	1.41	pg/L	1.41	50.0
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	2.08	pg/L	2.08	50.0
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	2.44	pg/L	2.44	100
41903-57-5	Total TeCDD	U	0.734	pg/L	0.734	10.0
36088-22-9	Total PeCDD	U	0.962	pg/L	0.962	50.0
34465-46-8	Total HxCDD	U	1.2	pg/L	1.20	50.0
37871-00-4	Total HpCDD	U	1.72	pg/L	1.72	50.0
30402-14-3	Total TeCDF	U	0.858	pg/L	0.858	10.0
30402-15-4	Total PeCDF	U	0.658	pg/L	0.658	50.0
55684-94-1	Total HxCDF	U	1.14	pg/L	1.14	50.0
38998-75-3	Total HpCDF	U	1.41	pg/L	1.41	50.0
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.000678	pg/L		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		1.51	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1670	2000	pg/L	83.6	(25%-164%)
13C-1,2,3,7,8-PeCDD		1710	2000	pg/L	85.6	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		1650	2000	pg/L	82.6	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		1670	2000	pg/L	83.7	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		1650	2000	pg/L	82.5	(23%-140%)
13C-OCDD		2440	4000	pg/L	61.0	(17%-157%)
13C-2,3,7,8-TCDF		1790	2000	pg/L	89.3	(24%-169%)
13C-1,2,3,7,8-PeCDF		1810	2000	pg/L	90.5	(24%-185%)
13C-2,3,4,7,8-PeCDF		1750	2000	pg/L	87.7	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		1640	2000	pg/L	82.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		1580	2000	pg/L	78.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		1630	2000	pg/L	81.6	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		1700	2000	pg/L	85.2	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024769**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 41724**				
Client ID:	**MB for batch 41724**			**Prep Basis:**	**As Received**
Batch ID:	**41726**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/18/2019 19:29**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A18SEP19D-4**			**Dilution:**	**1**
Prep Batch:	**41724**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**12-SEP-19**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		1460	2000	pg/L	73.1	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		1490	2000	pg/L	74.7	(26%-138%)
37Cl-2,3,7,8-TCDD		188	200	pg/L	94.0	(35%-197%)

Comments:

J **Value is estimated**

K **Estimated Maximum Possible Concentration**

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024770**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 41724**				
Client ID:	**LCS for batch 41724**			**Prep Basis:**	**As Received**
Batch ID:	**41726**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/18/2019 17:52**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A18SEP19D-2**			**Dilution:**	**1**
Prep Batch:	**41724**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**12-SEP-19**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		202	pg/L	0.802	10.0
40321-76-4	1,2,3,7,8-PeCDD		1110	pg/L	2.42	50.0
39227-28-6	1,2,3,4,7,8-HxCDD		1060	pg/L	4.30	50.0
57653-85-7	1,2,3,6,7,8-HxCDD		1050	pg/L	4.20	50.0
19408-74-3	1,2,3,7,8,9-HxCDD		1090	pg/L	4.32	50.0
35822-46-9	1,2,3,4,6,7,8-HpCDD		963	pg/L	7.22	50.0
3268-87-9	1,2,3,4,6,7,8,9-OCDD		2060	pg/L	10.9	100
51207-31-9	2,3,7,8-TCDF		194	pg/L	0.986	10.0
57117-41-6	1,2,3,7,8-PeCDF		1020	pg/L	2.78	50.0
57117-31-4	2,3,4,7,8-PeCDF		1000	pg/L	2.52	50.0
70648-26-9	1,2,3,4,7,8-HxCDF		1060	pg/L	5.44	50.0
57117-44-9	1,2,3,6,7,8-HxCDF		1110	pg/L	5.62	50.0
60851-34-5	2,3,4,6,7,8-HxCDF		1070	pg/L	5.30	50.0
72918-21-9	1,2,3,7,8,9-HxCDF		1060	pg/L	7.66	50.0
67562-39-4	1,2,3,4,6,7,8-HpCDF		1090	pg/L	6.88	50.0
55673-89-7	1,2,3,4,7,8,9-HpCDF		1060	pg/L	8.98	50.0
39001-02-0	1,2,3,4,6,7,8,9-OCDF		2020	pg/L	8.38	100

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1760	2000	pg/L	88.2	(20%-175%)
13C-1,2,3,7,8-PeCDD		1800	2000	pg/L	90.2	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		1740	2000	pg/L	87.2	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		1710	2000	pg/L	85.5	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		1830	2000	pg/L	91.4	(22%-166%)
13C-OCDD		2840	4000	pg/L	71.0	(13%-199%)
13C-2,3,7,8-TCDF		1810	2000	pg/L	90.4	(22%-152%)
13C-1,2,3,7,8-PeCDF		1880	2000	pg/L	94.2	(21%-192%)
13C-2,3,4,7,8-PeCDF		1880	2000	pg/L	94.1	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		1690	2000	pg/L	84.3	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		1620	2000	pg/L	80.9	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		1670	2000	pg/L	83.4	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		1740	2000	pg/L	87.1	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		1560	2000	pg/L	78.2	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		1670	2000	pg/L	83.3	(20%-186%)
37Cl-2,3,7,8-TCDD		193	200	pg/L	96.5	(31%-191%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024771**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 41724**				
Client ID:	**LCSD for batch 41724**			**Prep Basis:**	**As Received**
Batch ID:	**41726**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/18/2019 18:40**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A18SEP19D-3**			**Dilution:**	**1**
Prep Batch:	**41724**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**12-SEP-19**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		197	pg/L	0.760	10.0
40321-76-4	1,2,3,7,8-PeCDD		1080	pg/L	2.22	50.0
39227-28-6	1,2,3,4,7,8-HxCDD		1060	pg/L	3.84	50.0
57653-85-7	1,2,3,6,7,8-HxCDD		1050	pg/L	3.74	50.0
19408-74-3	1,2,3,7,8,9-HxCDD		1110	pg/L	3.84	50.0
35822-46-9	1,2,3,4,6,7,8-HpCDD		961	pg/L	7.96	50.0
3268-87-9	1,2,3,4,6,7,8,9-OCDD		2010	pg/L	7.82	100
51207-31-9	2,3,7,8-TCDF		186	pg/L	1.01	10.0
57117-41-6	1,2,3,7,8-PeCDF		988	pg/L	2.42	50.0
57117-31-4	2,3,4,7,8-PeCDF		1010	pg/L	2.16	50.0
70648-26-9	1,2,3,4,7,8-HxCDF		1040	pg/L	4.74	50.0
57117-44-9	1,2,3,6,7,8-HxCDF		1040	pg/L	4.86	50.0
60851-34-5	2,3,4,6,7,8-HxCDF		1040	pg/L	4.94	50.0
72918-21-9	1,2,3,7,8,9-HxCDF		1020	pg/L	6.48	50.0
67562-39-4	1,2,3,4,6,7,8-HpCDF		1060	pg/L	7.40	50.0
55673-89-7	1,2,3,4,7,8,9-HpCDF		1050	pg/L	10.7	50.0
39001-02-0	1,2,3,4,6,7,8,9-OCDF		1980	pg/L	6.60	100

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1650	2000	pg/L	82.3	(20%-175%)
13C-1,2,3,7,8-PeCDD		1640	2000	pg/L	82.1	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		1600	2000	pg/L	80.0	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		1580	2000	pg/L	78.8	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		1620	2000	pg/L	81.2	(22%-166%)
13C-OCDD		2530	4000	pg/L	63.3	(13%-199%)
13C-2,3,7,8-TCDF		1710	2000	pg/L	85.3	(22%-152%)
13C-1,2,3,7,8-PeCDF		1720	2000	pg/L	85.8	(21%-192%)
13C-2,3,4,7,8-PeCDF		1700	2000	pg/L	85.2	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		1570	2000	pg/L	78.6	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		1530	2000	pg/L	76.3	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		1560	2000	pg/L	78.1	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		1620	2000	pg/L	80.9	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		1440	2000	pg/L	71.9	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		1430	2000	pg/L	71.7	(20%-186%)
37Cl-2,3,7,8-TCDD		189	200	pg/L	94.4	(31%-191%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024810**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41759**				
Client ID:	**MB for batch 41759**			**Prep Basis:**	**As Received**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 22:10**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_2-3**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0462	pg/g	0.0462	1.00
40321-76-4	1,2,3,7,8-PeCDD	J	0.100	pg/g	0.050	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	JK	0.102	pg/g	0.0852	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	JK	0.098	pg/g	0.083	5.00
19408-74-3	1,2,3,7,8,9-HxCDD	J	0.124	pg/g	0.0856	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	0.228	pg/g	0.117	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	0.620	pg/g	0.248	10.0
51207-31-9	2,3,7,8-TCDF	JK	0.198	pg/g	0.069	1.00
57117-41-6	1,2,3,7,8-PeCDF	JK	0.124	pg/g	0.0558	5.00
57117-31-4	2,3,4,7,8-PeCDF	JK	0.104	pg/g	0.0494	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	J	0.160	pg/g	0.0452	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	J	0.110	pg/g	0.045	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.118	pg/g	0.0502	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	J	0.222	pg/g	0.0774	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	0.186	pg/g	0.072	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	0.180	pg/g	0.122	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	JK	0.296	pg/g	0.228	10.0
41903-57-5	Total TeCDD	J	0.122	pg/g	0.0462	1.00
36088-22-9	Total PeCDD	JK	0.256	pg/g	0.050	5.00
34465-46-8	Total HxCDD	JK	0.554	pg/g	0.083	5.00
37871-00-4	Total HpCDD	J	0.228	pg/g	0.117	5.00
30402-14-3	Total TeCDF	JK	0.438	pg/g	0.069	1.00
30402-15-4	Total PeCDF	JK	0.294	pg/g	0.038	5.00
55684-94-1	Total HxCDF	J	0.610	pg/g	0.045	5.00
38998-75-3	Total HpCDF	J	0.366	pg/g	0.072	5.00
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.254	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.277	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		149	200	pg/g	74.6	(25%-164%)
13C-1,2,3,7,8-PeCDD		135	200	pg/g	67.4	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		140	200	pg/g	70.2	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		151	200	pg/g	75.7	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		152	200	pg/g	75.9	(23%-140%)
13C-OCDD		225	400	pg/g	56.3	(17%-157%)
13C-2,3,7,8-TCDF		131	200	pg/g	65.6	(24%-169%)
13C-1,2,3,7,8-PeCDF		132	200	pg/g	65.8	(24%-185%)
13C-2,3,4,7,8-PeCDF		124	200	pg/g	61.9	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		142	200	pg/g	71.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		141	200	pg/g	70.7	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		136	200	pg/g	67.8	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		134	200	pg/g	66.8	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024810**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41759**				
Client ID:	**MB for batch 41759**			**Prep Basis:**	**As Received**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 22:10**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_2-3**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		138	200	pg/g	68.8	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		135	200	pg/g	67.4	(26%-138%)
37Cl-2,3,7,8-TCDD		17.1	20.0	pg/g	85.4	(35%-197%)

Comments:

J **Value is estimated**

K **Estimated Maximum Possible Concentration**

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024811**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41759**				
Client ID:	**LCS for batch 41759**			**Prep Basis:**	**As Received**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 20:33**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_2-1**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		17.9	pg/g	0.0472	1.00
40321-76-4	1,2,3,7,8-PeCDD		101	pg/g	0.117	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		97.9	pg/g	0.248	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		104	pg/g	0.234	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		107	pg/g	0.246	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		103	pg/g	0.364	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		203	pg/g	0.844	10.0
51207-31-9	2,3,7,8-TCDF		21.9	pg/g	0.0762	1.00
57117-41-6	1,2,3,7,8-PeCDF		108	pg/g	0.175	5.00
57117-31-4	2,3,4,7,8-PeCDF		110	pg/g	0.164	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		107	pg/g	0.244	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		114	pg/g	0.240	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		112	pg/g	0.264	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		110	pg/g	0.426	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		117	pg/g	0.288	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		113	pg/g	0.504	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		206	pg/g	0.568	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		146	200	pg/g	72.8	(20%-175%)
13C-1,2,3,7,8-PeCDD		129	200	pg/g	64.3	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		144	200	pg/g	72.2	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		142	200	pg/g	71.2	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		149	200	pg/g	74.3	(22%-166%)
13C-OCDD		214	400	pg/g	53.6	(13%-199%)
13C-2,3,7,8-TCDF		129	200	pg/g	64.7	(22%-152%)
13C-1,2,3,7,8-PeCDF		126	200	pg/g	63.2	(21%-192%)
13C-2,3,4,7,8-PeCDF		121	200	pg/g	60.4	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		138	200	pg/g	68.8	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		140	200	pg/g	70.0	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		132	200	pg/g	66.2	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		133	200	pg/g	66.6	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		136	200	pg/g	68.0	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		133	200	pg/g	66.7	(20%-186%)
37Cl-2,3,7,8-TCDD		16.5	20.0	pg/g	82.4	(31%-191%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024812**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41759**				
Client ID:	**LCSD for batch 41759**			**Prep Basis:**	**As Received**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 21:21**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_2-2**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		17.8	pg/g	0.0542	1.00
40321-76-4	1,2,3,7,8-PeCDD		98.7	pg/g	0.116	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		95.4	pg/g	0.224	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		102	pg/g	0.216	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		106	pg/g	0.224	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		101	pg/g	0.380	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		192	pg/g	1.15	10.0
51207-31-9	2,3,7,8-TCDF		21.3	pg/g	0.103	1.00
57117-41-6	1,2,3,7,8-PeCDF		105	pg/g	0.136	5.00
57117-31-4	2,3,4,7,8-PeCDF		107	pg/g	0.124	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		104	pg/g	0.218	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		110	pg/g	0.212	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		111	pg/g	0.244	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		108	pg/g	0.376	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		112	pg/g	0.322	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		108	pg/g	0.574	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		199	pg/g	0.678	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		147	200	pg/g	73.4	(20%-175%)
13C-1,2,3,7,8-PeCDD		138	200	pg/g	69.2	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		150	200	pg/g	75.1	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		147	200	pg/g	73.4	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		155	200	pg/g	77.4	(22%-166%)
13C-OCDD		231	400	pg/g	57.8	(13%-199%)
13C-2,3,7,8-TCDF		134	200	pg/g	66.9	(22%-152%)
13C-1,2,3,7,8-PeCDF		134	200	pg/g	67.0	(21%-192%)
13C-2,3,4,7,8-PeCDF		129	200	pg/g	64.4	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		144	200	pg/g	71.8	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		146	200	pg/g	73.1	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		138	200	pg/g	68.9	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		140	200	pg/g	70.1	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		146	200	pg/g	72.8	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		144	200	pg/g	71.8	(20%-186%)
37Cl-2,3,7,8-TCDD		17.3	20.0	pg/g	86.3	(31%-191%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024813**	**Date Collected:**	**08/27/2019 14:55**	**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41759**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**49.6**
Client ID:	**J5-SC1b-20to30-82719(15471001MS)**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/25/2019 03:31**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A24SEP19A_3-6**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**19.95 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF		23.9	pg/g	0.382	0.994

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

E **Value is estimated - Concentration of the target analyte exceeds the instrument calibration range**

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024813**	**Date Collected:**	**08/27/2019 14:55**	**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41759**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**49.6**
Client ID:	**J5-SC1b-20to30-82719(15471001MS)**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 23:46**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_2-5**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**19.95 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		19.3	pg/g	0.099	0.994
40321-76-4	1,2,3,7,8-PeCDD		106	pg/g	0.310	4.97
39227-28-6	1,2,3,4,7,8-HxCDD		108	pg/g	0.527	4.97
57653-85-7	1,2,3,6,7,8-HxCDD		133	pg/g	0.539	4.97
19408-74-3	1,2,3,7,8,9-HxCDD		127	pg/g	0.547	4.97
35822-46-9	1,2,3,4,6,7,8-HpCDD		1240	pg/g	1.48	4.97
3268-87-9	1,2,3,4,6,7,8,9-OCDD	E	9710	pg/g	2.39	9.94
51207-31-9	2,3,7,8-TCDF		26.6	pg/g	0.179	0.994
57117-41-6	1,2,3,7,8-PeCDF		113	pg/g	0.213	4.97
57117-31-4	2,3,4,7,8-PeCDF		117	pg/g	0.190	4.97
70648-26-9	1,2,3,4,7,8-HxCDF		123	pg/g	0.411	4.97
57117-44-9	1,2,3,6,7,8-HxCDF		127	pg/g	0.423	4.97
60851-34-5	2,3,4,6,7,8-HxCDF		123	pg/g	0.421	4.97
72918-21-9	1,2,3,7,8,9-HxCDF		108	pg/g	0.539	4.97
67562-39-4	1,2,3,4,6,7,8-HpCDF		291	pg/g	0.616	4.97
55673-89-7	1,2,3,4,7,8,9-HpCDF		123	pg/g	0.841	4.97
39001-02-0	1,2,3,4,6,7,8,9-OCDF		833	pg/g	0.815	9.94

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		143	199	pg/g	72.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		121	199	pg/g	60.9	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		174	199	pg/g	87.7	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		142	199	pg/g	71.3	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		197	199	pg/g	98.9	(23%-140%)
13C-OCDD		387	398	pg/g	97.3	(17%-157%)
13C-2,3,7,8-TCDF		143	199	pg/g	72.1	(24%-169%)
13C-1,2,3,7,8-PeCDF		119	199	pg/g	60.0	(24%-185%)
13C-2,3,4,7,8-PeCDF		118	199	pg/g	59.2	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		166	199	pg/g	83.7	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		138	199	pg/g	69.3	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		149	199	pg/g	74.8	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		123	199	pg/g	61.7	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		168	199	pg/g	84.4	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		199	199	pg/g	100	(26%-138%)
37Cl-2,3,7,8-TCDD		15.4	19.9	pg/g	77.5	(35%-197%)

Comments:

E Value is estimated - Concentration of the target analyte exceeds the instrument calibration range

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024814**	**Date Collected:**	**08/27/2019 14:55**	**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41759**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**49.6**
Client ID:	**J5-SC1b-20to30-82719(15471001MSD**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/25/2019 03:53**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A24SEP19A_3-7**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**19.83 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF		21.1	pg/g	0.356	1.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_4**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024814**	**Date Collected:**	**08/27/2019 14:55**	**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41759**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**49.6**
Client ID:	**J5-SC1b-20to30-82719(15471001MSD**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41761**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 00:35**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_2-6**			**Dilution:**	**1**
Prep Batch:	**41759**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**17-SEP-19**	**Prep Aliquot:**	**19.83 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		18.8	pg/g	0.065	1.00
40321-76-4	1,2,3,7,8-PeCDD		102	pg/g	0.165	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		104	pg/g	0.244	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		108	pg/g	0.226	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		112	pg/g	0.238	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		235	pg/g	0.692	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		1860	pg/g	1.20	10.0
51207-31-9	2,3,7,8-TCDF		22.5	pg/g	0.116	1.00
57117-41-6	1,2,3,7,8-PeCDF		111	pg/g	0.159	5.00
57117-31-4	2,3,4,7,8-PeCDF		113	pg/g	0.140	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		114	pg/g	0.236	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		113	pg/g	0.222	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		116	pg/g	0.252	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		113	pg/g	0.338	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		145	pg/g	0.352	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		115	pg/g	0.516	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		319	pg/g	0.486	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		147	200	pg/g	73.4	(25%-164%)
13C-1,2,3,7,8-PeCDD		133	200	pg/g	66.7	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		166	200	pg/g	83.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		154	200	pg/g	77.1	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		186	200	pg/g	93.1	(23%-140%)
13C-OCDD		328	400	pg/g	81.9	(17%-157%)
13C-2,3,7,8-TCDF		146	200	pg/g	73.1	(24%-169%)
13C-1,2,3,7,8-PeCDF		124	200	pg/g	62.1	(24%-185%)
13C-2,3,4,7,8-PeCDF		125	200	pg/g	62.4	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		159	200	pg/g	79.3	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		148	200	pg/g	73.8	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		148	200	pg/g	73.8	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		147	200	pg/g	73.5	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		166	200	pg/g	83.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		181	200	pg/g	90.7	(26%-138%)
37Cl-2,3,7,8-TCDD		16.5	20.0	pg/g	82.6	(35%-197%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

APPENDIX E
DATA VALIDATION REPORTS

DATA VALIDATION REPORT
Portland Harbor
Swan Island Lagoon Phases 1b & 2

Prepared for:

Pacific Groundwater Group
2377 Eastlake Avenue East, Suite 200
Seattle, Washington 98102

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, Washington 98101

EcoChem Project: C27701-3

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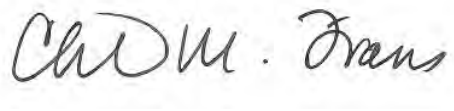
Approved for Release:



Christina Mott Frans
Project Manager
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report presents the results of Summary and Full Validation (EPA Stage 2A and EPA Stage 4) performed on sediment and field and laboratory quality control sample data for samples collected at the Head of Swan Island Lagoon at Portland Harbor. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by TestAmerica Laboratories, Inc. Tacoma, Washington, TestAmerica Laboratories, Inc., Knoxville, Tennessee, TestAmerica Laboratories, Inc. Sacramento, California, ALS Environmental, Kelso, Washington, and Cape Fear Analytical LLC, Wilmington, North Carolina. The analytical methods and EcoChem project chemists are listed below.

ANALYSIS	METHOD	PRIMARY REVIEW	SECONDARY REVIEW
PCB Congeners	EPA 1668A	E. Clayton	C. Frans
Dioxins/Furans	EPA 1613B		
Polycyclic Aromatic Hydrocarbons	SW8270D-SIM	R. Frans & E. Clayton	
BEHP	SW8270D	R. Frans	
Tributyltin	ALS SOP GC-FPD		
Organochlorine Pesticides	ALS SOP GC-MS/MS	R. Frans & E. Clayton	
PCB Aroclors	SW8082A	E. Clayton	
Diesel Range Organics	NWTPH-Dx		
Metals + Mercury	SW6020B & SW7471A		
Grain Size	ASTM D422		
Total Solids	SM 2540 G & EPA 160.3		
Specific Gravity & Density	SDTM D854		
Total Organic Carbon	SW9060		

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Head of Swan Island Lagoon Sediment Field Sampling Plan Portland Harbor Superfund Site* (Pacific Groundwater Group, October 22, 2018*); National Functional Guidelines for Organic Data Review* (USEPA 2008 & 2014); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2010); *National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) & Chlorinated Dibenzofurans (CDFs) Data Review,* (USEPA September 2011); and USEPA *R10 Data Validation and Review Guidelines for Polychlorinated Dibenzo-p-Dioxin and Polychlorinated Dibenzofuran Data (PCDD/PCDF) Using Method 1613B and SW846 Method 8290A (USEPA May 2014)*.

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned an R, the data are to be rejected and should not be used for

any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced previously.

Data qualifier definitions, reason codes, and validation criteria are included as Appendix A. A Qualified Data Summary Table is included in Appendix B. Data Validation Worksheets will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index

Pacific Groundwater Group - Portland Harbor SIL Phases 1b and 2

		Laboratory ID														Conventional Tests			
SDG	Sample ID	ALS-Kelso	TestAmerica	Cape Fear	PCB Aroclor	PCB Congener	Dioxins/Furans	BEHP	PAHs	TBT	DRO	OCPs	NWTPH-Dx	Metals	Grain Size	Total Solids	Specific Gravity	TOC
K1906902	O7-0TO27-101918	K1906902-001						✓	✓	✓		✓				✓		
	515-0TO26-101918	K1906902-002						✓	✓	✓		✓				✓		
	M4-0TO26-101918	K1906902-003						✓	✓	✓		✓				✓		
	A1-0TO30-102018	K1906902-004						✓	✓	✓		✓				✓		
	Q6-0TO27-102018	K1906902-005						✓	✓	✓		✓				✓		
	A5-0TO25-100818	K1906902-006						✓	✓	✓		✓				✓		
	A4-0TO25-100818	K1906902-007						✓	✓	✓		✓				✓		
	A3-0TO31-100818	K1906902-008						✓	✓	✓		✓				✓		
	A2-0TO26-100818	K1906902-009						✓	✓	✓		✓				✓		
	A6-0TO23-100818	K1906902-010						✓	✓	✓		✓				✓		
	C4-0TO27-100918	K1906902-011						✓	✓	✓		✓				✓		
	A7-0TO26-100918	K1906902-012						✓	✓	✓		✓				✓		
	D2-0TO19-101018	K1906902-013						✓	✓	✓		✓				✓		
	F2-0TO19-101018	K1906902-014						✓	✓	✓		✓				✓		
	H2-0TO30-101218	K1906902-015						✓	✓	✓		✓				✓		
	J2A3-0TO18-101218	K1906902-016						✓	✓	✓		✓				✓		
	Q2-0TO13-101818	K1906902-017						✓	✓	✓		✓				✓		
	G6-0TO27-101818	K1906902-018						✓	✓	✓		✓				✓		
	T6-0TO29-101618	K1906902-019						✓	✓	✓		✓				✓		
K1907934	711-82719	K1907934-001							✓			✓				✓		
	712-82819	K1907934-002							✓			✓				✓		
	R4-SC1B-20TO30-82819	K1907934-003							✓			✓				✓		
	R4-SC1B-30TO40-82819	K1907934-004							✓			✓				✓		
	R4-SC1B-40TO50-82819	K1907934-005							✓			✓				✓		
	R4-SC1B-50TO60-82819	K1907934-006							✓			✓				✓		

Sample Index

Pacific Groundwater Group - Portland Harbor SIL Phases 1b and 2

		Laboratory ID														Conventional Tests			
SDG	Sample ID	ALS-Kelso	TestAmerica	Cape Fear	PCB Aroclor	PCB Congener	Dioxins/Furans	BEHP	PAHs	TBT	DRO	OCPs	NWTPH-Dx	Metals	Grain Size	Total Solids	Specific Gravity	TOC
K1907934	R4-SC1B-60TO70-82819	K1907934-007							✓			✓				✓		
	R4-SC1B-70TO80-82819	K1907934-008							✓			✓				✓		
	R4-SC1B-80TO90-82819	K1907934-009							✓			✓				✓		
	R4-SC1B-90TO100-82819	K1907934-010							✓			✓				✓		
	R4-SC1B-100TO110-82819	K1907934-012							✓			✓				✓		
	R4-SC1B-110TO120-82819	K1907934-013							✓			✓				✓		
	R4-SC1B-120TO130-82819	K1907934-014							✓			✓				✓		
	413-SC1B-40TO50-82819	K1907934-015							✓			✓				✓		
	R4-SC1B-130TO140-82819	K1907934-016							✓			✓				✓		
	R4-SC1B-140TO150-82819	K1907934-017							✓			✓				✓		
	J6-SC1B-20TO30-82819	K1907934-018							✓			✓				✓		
	J6-SC1B-30TO40-82819	K1907934-019							✓			✓				✓		
	J6-SC1B-40TO50-82819	K1907934-020							✓			✓				✓		
	J6-SC1B-50TO60-82819	K1907934-021							✓			✓				✓		
	J6-SC1B-60TO70-82819	K1907934-022							✓			✓				✓		
	J6-SC1B-70TO80-82819	K1907934-023							✓			✓				✓		
	J6-SC1B-80TO90-82819	K1907934-024							✓			✓				✓		
	J6-SC1B-90TO100-82819	K1907934-025							✓			✓				✓		
	J6-SC1B-100TO110-82819	K1907934-026							✓			✓				✓		
	J6-SC1B-110TO120-82819	K1907934-027							✓			✓				✓		
	H3-SC1B-20TO30-82819	K1907934-030							✓			✓				✓		
	H3-SC1B-30TO40-82919	K1907934-031							✓			✓				✓		
	H3-SC1B-40TO50-82919	K1907934-032							✓			✓				✓		
	H3-SC1B-50TO60-82919	K1907934-033							✓			✓				✓		
	H3-SC1B-60TO70-82919	K1907934-034							✓			✓				✓		

Sample Index

Pacific Groundwater Group - Portland Harbor SIL Phases 1b and 2

		Laboratory ID														Conventional Tests			
SDG	Sample ID	ALS-Kelso	TestAmerica	Cape Fear	PCB Aroclor	PCB Congener	Dioxins/Furans	BEHP	PAHs	TBT	DRO	OCPs	NWTPH-Dx	Metals	Grain Size	Total Solids	Specific Gravity	TOC
K1907934	H3-SC1B-70TO80-82919	K1907934-035							✓			✓				✓		
	H3-SC1B-80TO90-82919	K1907934-036							✓			✓				✓		
	H3-SC1B-90TO100-82919	K1907934-037							✓			✓				✓		
	H3-SC1B-100TO110-82919	K1907934-038							✓			✓				✓		
	D6-SC1B-20TO30-82619	K1907934-041							✓			✓				✓		
	D6-SC1B-30TO40-82619	K1907934-042							✓			✓				✓		
	D6-SC1B-40TO50-82619	K1907934-043							✓			✓				✓		
	D6-SC1B-50TO60-82619	K1907934-044							✓			✓				✓		
	D6-SC1B-60TO70-82619	K1907934-045							✓			✓				✓		
	D6-SC1B-70TO80-82619	K1907934-046							✓			✓				✓		
	D6-SC1B-80TO90-82619	K1907934-047							✓			✓				✓		
	D6-SC1B-90TO100-82619	K1907934-048							✓			✓				✓		
	D6-SC1B-100TO110-82619	K1907934-049							✓			✓				✓		
	D6-SC1B-110TO120-82619	K1907934-050							✓			✓				✓		
	411-SC1B-50TO60-82619	K1907934-052							✓			✓				✓		
	J5-SC1B-20TO30-82719	K1907934-053							✓			✓				✓		
	J5-SC1B-30TO40-82719	K1907934-054							✓			✓				✓		
	J5-SC1B-40TO50-82719	K1907934-055							✓			✓				✓		
	J5-SC1B-50TO60-82719	K1907934-056							✓			✓				✓		
	J5-SC1B-60TO70-82719	K1907934-057							✓			✓				✓		
	J5-SC1B-70TO80-82719	K1907934-058							✓			✓				✓		
	J5-SC1B-80TO90-82719	K1907934-059							✓			✓				✓		
	J5-SC1B-90TO100-82719	K1907934-060							✓			✓				✓		
	J5-SC1B-100TO110-82719	K1907934-061							✓			✓				✓		
	J3-SC1B-20TO30-82719	K1907934-064							✓			✓				✓		

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Pacific Groundwater Group - Portland Harbor SIL Phases 1b and 2

		Laboratory ID														Conventional Tests			
SDG	Sample ID	ALS-Kelso	TestAmerica	Cape Fear	PCB Aroclor	PCB Congener	Dioxins/Furans	BEHP	PAHs	TBT	DRO	OCPs	NWTPH-Dx	Metals	Grain Size	Total Solids	Specific Gravity	TOC
K1907934	J3-SC1B-30TO40-82719	K1907934-065							✓			✓				✓		
	J3-SC1B-40TO50-82719	K1907934-066							✓			✓				✓		
	J3-SC1B-50TO60-82719	K1907934-067							✓			✓				✓		
	J3-SC1B-60TO70-82719	K1907934-068							✓			✓				✓		
	J3-SC1B-70TO80-82719	K1907934-069							✓			✓				✓		
	J3-SC1B-80TO90-82719	K1907934-070							✓			✓				✓		
	J3-SC1B-90TO100-82719	K1907934-071							✓			✓				✓		
	J3-SC1B-10TO20-82719	K1907934-072							✓			✓				✓		
	412-SC1B-80TO90-82719	K1907934-073							✓			✓				✓		
	L3-SC1B-20TO30-82619	K1907934-074							✓			✓				✓		
	L3-SC1B-30TO40-82619	K1907934-075							✓			✓				✓		
580-88125	A1-0to30-102018		580-88125-1		✓	✓	✓						✓	✓	✓	✓	✓	✓
	A2-0to26-100818		580-88125-2		✓	✓	✓						✓	✓	✓	✓	✓	✓
	A3-0to31-100818		580-88125-3		✓	✓	✓						✓	✓	✓	✓	✓	✓
	A4-0to25-100818		580-88125-4		✓	✓	✓						✓	✓	✓	✓	✓	✓
	A5-0to25-100818		580-88125-5		✓	✓	✓						✓	✓	✓	✓	✓	✓
	A6-0to23-100818		580-88125-6		✓	✓	✓						✓	✓	✓	✓	✓	✓
	A7-0to26-100918		580-88125-7		✓	✓	✓						✓	✓	✓	✓	✓	✓
	C4-0to27-100918		580-88125-8		✓	✓	✓						✓	✓	✓	✓	✓	✓
	D2-0to19-101018		580-88125-9		✓	✓	✓						✓	✓	✓	✓	✓	✓
	F2-0to19-101018		580-88125-10		✓	✓	✓						✓	✓	✓	✓	✓	✓
	G6-0to27-101818		580-88125-11		✓	✓	✓						✓	✓	✓	✓	✓	✓
	H2-0to30-101218		580-88125-12		✓	✓	✓						✓	✓	✓	✓	✓	✓
	J2A3-0to18-101218		580-88125-13		✓	✓	✓						✓	✓	✓	✓	✓	✓
	M4-0to26-101918		580-88125-14		✓	✓	✓						✓	✓	✓	✓	✓	✓

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Pacific Groundwater Group - Portland Harbor SIL Phases 1b and 2

		Laboratory ID													Conventional Tests			
SDG	Sample ID	ALS-Kelso	TestAmerica	Cape Fear	PCB Aroclor	PCB Congener	Dioxins/Furans	BEHP	PAHs	TBT	DRO	OCPs	NWTPH-Dx	Metals	Grain Size	Total Solids	Specific Gravity	TOC
580-88125	515-0to26-101918		580-88125-15		✓	✓	✓						✓	✓	✓	✓	✓	✓
	N5-0to28-101418		580-88125-16		✓	✓	✓						✓	✓	✓	✓	✓	✓
	N7-0to27-101418		580-88125-17		✓	✓	✓						✓	✓	✓	✓	✓	✓
	O7-0to27-101918		580-88125-18		✓	✓	✓						✓	✓	✓	✓	✓	✓
	Q2-0to13-101818		580-88125-19		✓	✓	✓						✓	✓	✓	✓	✓	✓
	Q6-0to27-102018		580-88125-20		✓	✓	✓						✓	✓	✓	✓	✓	✓
	T6-0to29-101618		580-88125-21		✓	✓	✓						✓	✓	✓	✓	✓	✓
580-88908	J5-SC1b-20to30-82719		580-88908-26			✓												
	J5-SC1b-30to40-82719		580-88908-27			✓												
	J5-SC1b-40to50-82719		580-88908-28			✓												
	J5-SC1b-50to60-82719		580-88908-29			✓												
	J5-SC1b-60to70-82719		580-88908-30			✓												
	J5-SC1b-70to80-82719		580-88908-31			✓												
	J5-SC1b-80to90-82719		580-88908-32			✓												
	J5-SC1b-90to100-82719		580-88908-33			✓												
	J5-SC1b-100to110-82719		580-88908-34			✓												
	J5-SC1b-00to10-82719		580-88908-35			✓												
	J5-SC1b-10to20-82719		580-88908-36			✓												
	711-82719		580-88908-74			✓												
15468	R4-SC1b-20to30-82819			15468001			✓											
	R4-SC1b-30to40-82819			15468002			✓											
	R4-SC1b-40to50-82819			15468003			✓											
	R4-SC1b-50to60-82819			15468004			✓											
	R4-SC1b-60to70-82819			15468005			✓											
	R4-SC1b-70to80-82819			15468006			✓											

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Pacific Groundwater Group - Portland Harbor SIL Phases 1b and 2

		Laboratory ID														Conventional Tests			
SDG	Sample ID	ALS-Kelso	TestAmerica	Cape Fear	PCB Aroclor	PCB Congener	Dioxins/Furans	BEHP	PAHs	TBT	DRO	OCPs	NWTPH-Dx	Metals	Grain Size	Total Solids	Specific Gravity	TOC
15468	R4-SC1b-80to90-82819			15468007			✓											
	R4-SC1b-90to100-82819			15468008			✓											
	R4-SC1b-100to110-82819			15468010			✓											
	R4-SC1b-110to120-82819			15468011			✓											
	R4-SC1b-120to130-82819			15468012			✓											
	413-SC1b-40to50-82819			15468013			✓											
	R4-SC1b-130to140-82819			15468014			✓											
	R4-SC1b-140to150-82819			15468015			✓											
15469	J6-SC1b-20to30-82819			15469001			✓											
	J6-SC1b-30to40-82819			15469002			✓											
	J6-SC1b-40to50-82819			15469003			✓											
	J6-SC1b-50to60-82819			15469004			✓											
	J6-SC1b-60to70-82819			15469005			✓											
	J6-SC1b-70to80-82819			15469006			✓											
	J6-SC1b-80to90-82819			15469007			✓											
	J6-SC1b-90to100-82819			15469008			✓											
	J6-SC1b-100to110-82819			15469009			✓											
	J6-SC1b-110to120-82819			15469010			✓											
	H3-SC1b-20to30-82819			15469013			✓											
	H3-SC1b-30to40-82919			15469014			✓											
	H3-SC1b-40to50-82919			15469015			✓											
	H3-SC1b-50to60-82919			15469016			✓											
	H3-SC1b-60to70-82919			15469017			✓											
	H3-SC1b-70to80-82919			15469018			✓											
	H3-SC1b-80to90-82919			15469019			✓											

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		Laboratory ID														Conventional Tests			
SDG	Sample ID	ALS-Kelso	TestAmerica	Cape Fear	PCB Aroclor	PCB Congener	Dioxins/Furans	BEHP	PAHs	TBT	DRO	OCPs	NWTPH-Dx	Metals	Grain Size	Total Solids	Specific Gravity	TOC
15469	H3-SC1b-90to100-82919			15469020			✓											
	H3-SC1b-100to110-82919			15469021			✓											
15470	D6-SC1b-20to30-82619			15470001			✓											
	D6-SC1b-30to40-82619			15470002			✓											
	D6-SC1b-40to50-82619			15470003			✓											
	D6-SC1b-50to60-82619			15470004			✓											
	D6-SC1b-60to70-82619			15470005			✓											
	D6-SC1b-70to80-82619			15470006			✓											
	D6-SC1b-80to90-82619			15470007			✓											
	D6-SC1b-90to100-82619			15470008			✓											
	D6-SC1b-100to110-82619			15470009			✓											
	D6-SC1b-110to120-82619			15470010			✓											
	411-SC1b-50to60-82619			15470012			✓											
	J3-SC1b-20to30-82719			15470013			✓											
	J3-SC1b-30to40-82719			15470014			✓											
	J3-SC1b-40to50-82719			15470015			✓											
	J3-SC1b-50to60-82719			15470016			✓											
	J3-SC1b-60to70-82719			15470017			✓											
	J3-SC1b-70to80-82719			15470018			✓											
	J3-SC1b-80to90-82719			15470019			✓											
	J3-SC1b-90to100-82719			15470020			✓											
	J3-SC1b-10to20-82719			15470021			✓											
	412-SC1b-80to90-82719			15470022			✓											
15471	J5-SC1b-20to30-82719			15471001			✓											
	J5-SC1b-30to40-82719			15471002			✓											

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		Laboratory ID														Conventional Tests			
SDG	Sample ID	ALS-Kelso	TestAmerica	Cape Fear	PCB Aroclor	PCB Congener	Dioxins/Furans	BEHP	PAHs	TBT	DRO	OCPs	NWTPH-Dx	Metals	Grain Size	Total Solids	Specific Gravity	TOC
15471	J5-SC1b-40to50-82719			15471003			✓											
	J5-SC1b-50to60-82719			15471004			✓											
	J5-SC1b-60to70-82719			15471005			✓											
	J5-SC1b-70to80-82719			15471006			✓											
	J5-SC1b-80to90-82719			15471007			✓											
	J5-SC1b-90to100-82719			15471008			✓											
	J5-SC1b-100to110-82719			15471009			✓											
	L3-SC1b-20to30-82619			15471012			✓											
	L3-SC1b-30to40-82619			15471013			✓											
	711-82719			15471017			✓											
	712-82819			15471018			✓											

DATA VALIDATION REPORT
Pacific Groundwater Group: PH SIL Phases 1b & 2
Bis(2-ethylhexyl) phthalate by EPA SW8270D

This report documents the review of analytical data from the analysis of sediment and surface water samples and the associated laboratory quality control (QC) samples. Samples were analyzed by ALS Environmental, Inc., Kelso, Washington. Refer to the Sample Index for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
K1906902	19 Sediment	EPA Stage 4

DATA PACKAGE COMPLETENESS

With the following exception, the laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

The laboratory pdf report was missing the results for the internal standard compound, naphthalene-d8, on the summary form as well as the individual quantitation forms for the samples. Upon notification, the laboratory resubmitted the pdf data package with the missing information.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Ten percent (10%) of the sample results and laboratory QC results were also verified.

TECHNICAL DATA VALIDATION

The quality control (QC) requirements that were reviewed are listed in the following table:

1	Sample Receipt, Preservation, and Holding Times	1	Field Duplicates
✓	GC/MS Instrument Performance	✓	Target Analyte List
✓	Initial Calibration (ICAL)	✓	Internal Standards
✓	Continuing Calibration (CCAL)	1	Certified Reference Material
✓	Laboratory Blanks	1	Reporting Limits
1	Field Blanks	✓	Reported Results
1	Surrogate Compounds	✓	Compound Identification
✓	Laboratory Control Samples (LCS)	1	Calculation Verification
2	Matrix Spike/Matrix Spike Duplicates (MS/MSD)		

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.
[1] Quality control results are discussed below, but no data were qualified.
[2] Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of 2° to 6°C. With the following exceptions noted below, the laboratory received the sample coolers within the advisory temperature range.

Two sample coolers were received with the temperature greater than the upper control limit at 6.1˚C and 6.2˚C. These outliers did not impact data quality and no qualifiers were required.

Samples analyzed in this data set were archived and frozen upon receipt; all analyses were completed within holding times.

Field Blanks

There were no field blank samples associated with this data set.

Surrogate Compounds

The surrogate compound, terphenyl-d14, was added to all field and batch QC samples. When %R values are below the laboratory control limits and indicate a potential low bias, associated results for the affected sample is estimated (J/UJ-13L). When %R values are greater than the laboratory control limit and indicate a potential high bias, only the positive result for a sample is estimated (J-13H). With the exception noted below, all surrogate spike recoveries were within the laboratory control limits.

The terphenyl-d14 %R values for Sample J2A3-0to18-101218 and the matrix spike duplicate for Sample 515-0to26-101918 were greater than the upper control limit. Sample J2A3-0to18-101218 was analyzed at a dilution factor of 10X preventing accurate quantitation of the surrogate and qualifiers are not applied to QC samples, therefore no qualifiers were required for either sample.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) samples were analyzed at the appropriate frequency. No action is taken unless both the MS and MSD %R values are outside the control limits for MS/MSD %R outliers. Precision is evaluated using the RPD values calculated between the MS and MSD results. Any RPD values outside the control limits indicate uncertainty in the measured results for the sample. Qualifiers were only issued to the parent sample.

Sample 515-0TO26-101918 was used for the matrix spike analyses. The MS %R for bis(2-ethylhexyl) phthalate (BEHP) was greater than the upper control limit and the MSD %R was less than the lower control limit. The parent result was estimated (J-8) without a bias indicator as the matrix spike recoveries do not indicate a consistent bias. The RPD for bis(2-ethylhexyl) phthalate was greater than the control limit; the parent sample result for this analyte was estimated (J-9).

Field Duplicates

For sediment samples, the RPD control limit is 50% for results greater than 5x the reporting limit (RL). For results less than 5x the RL, the absolute difference between the sample and replicate must be less than 2x the RL. No data were qualified based on field duplicate precision outliers. Users of the data should consider the impact of field precision outliers on the reported results.

Samples M4-0to26-101918 & 515-0to26-101918 were submitted as field duplicates. The RPD value for BEHP was greater than the control limit at 81%.

Certified Reference Material

No certified reference materials were submitted.

Calculation Verification

Results were verified by recalculation from the raw data. No calculation or transcription errors were found.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted previously, accuracy was acceptable as demonstrated by the surrogate, LCS, and MS/MSD recovery values. With the exception noted above, precision was acceptable as demonstrated by the RPD values for the MS/MSD and field duplicate analyses.

One result was estimated due to MS/MSD accuracy and precision outliers.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
Pacific Groundwater Group: PH Head of Swan Island Sediments
Polynuclear Aromatic Hydrocarbon Compounds by EPA SW8270D-SIM

This report documents the review of analytical data from the analysis of sediment samples and the associated field and laboratory quality control (QC) samples. Samples were analyzed by ALS Environmental, Inc., Kelso, Washington. Refer to the Sample Index for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
K1906902	19 Sediments	EPA Stage 4
K1907934	65 Sediments & 2 Field Blank	EPA Stage 4

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

SDG K1907934: During validation it was determined that the laboratory used the incorrect initial calibration file to quantitate the samples analyzed on instrument MS20. The laboratory was notified and reprocessed the sample data using the correct initial calibration and resubmitted the data.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Ten percent (10%) of the laboratory QC results were also verified.

TECHNICAL DATA VALIDATION

The quality control (QC) requirements that were reviewed are listed in the following table:

1	Sample Receipt, Preservation, and Holding Times	1	Field Duplicates
✓	GC/MS Instrument Performance	✓	Target Analyte List
✓	Initial Calibration (ICAL)	✓	Internal Standards
✓	Continuing Calibration (CCAL)	1	Certified Reference Material
2	Laboratory Blanks	1	Reporting Limits
1	Field Blanks	2	Reported Results
✓	Surrogate Compounds	✓	Compound Identification
2	Laboratory Control Samples (LCS/LCSD)	1	Calculation Verification
2	Matrix Spike/Matrix Spike Duplicates (MS/MSD)		

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.
[1] Quality control results are discussed below, but no data were qualified.
[2] Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of 2° to 6°C. With the following exception noted below, the laboratory received the sample coolers within the advisory temperature range.

SDG K1906902: Two sample coolers were received with the temperature greater than the upper control limit at 6.1˚C and 6.2˚C. These outliers did not impact data quality and no qualifiers were required.

Samples analyzed in this data set were archived and frozen upon receipt; all analyses were completed within holding times.

Laboratory Blanks

A method blank was analyzed at the required frequency of one per batch of 20 or fewer samples. Action levels were established at five times (5x) the concentration reported in the field blank. If a contaminant is reported in an associated field sample and the concentration is less than the action level, the result is qualified as not detected (U-7). No action is taken if the sample result is greater than the action level, or for non-detected results.

SDG K1906902: Pyrene, phenanthrene, fluoranthene, benzo(a)anthracene, and dibenzofuran were detected in the method blank above the MDL. Results in the associated samples that were less than the action level were qualified (U-7) as not detected at the reported concentrations.

SDG K1907934: In aqueous extraction batch 343632, phenanthrene, naphthalene, benzo(a)anthracene were detected; associated sample results less than the 5x action level were qualified as not detected (U-7) at the reported concentrations.

In sediment extraction batch 343658, phenanthrene was detected; associated sample results less than the 5x action level were qualified as not detected (U-7) at the reported concentrations.

Field Blanks

Field blanks were evaluated for impact of any contaminant on the reported sample results. Action levels were established at five times (5x) the concentration reported in the field blank. If a contaminant is reported in an associated field sample and the concentration is less than the action level, the result is qualified as not detected (U-6). No action is taken if the sample result is greater than the action level, or for non-detected results.

SDG K1907934: Samples 711-82719 and 712-82819 were submitted as field blanks. After evaluation of the method blank only 2-methylnaphthalene were detected. All associated sample results were either not detected or were greater than the 5x action level; no data were qualified.

Laboratory Control Samples

Laboratory control samples (LCS) and/or laboratory control sample/laboratory control sample duplicates (LCS/LCSD) were analyzed at the required frequency of one per batch of 20 or fewer samples. For batches with both and LCS and LCSD, no action is taken unless both the LCS and LCSD %R values are outside the control limits. Precision is evaluated using the relative percent difference (RPD) values calculated between the LCS and LCSD results.

When the LCS or LCS/LCSD %R values indicate a potential low bias, associated results are estimated (J/UJ-10L). Only associated positive results are estimated (J-10H) if the %R values indicate a potential high bias. Associated positive results are estimated (J-9) if the RPD values indicate uncertainty. Qualifiers were issued to all samples in the extraction batch.

SDG K1906902: The LCS recoveries for all target analytes except pyrene and benzo(b)fluoranthene were less than the workplan control limits of 70-130% with recovery values ranging from 55% to 69%. Associated sample results were estimated (J/UJ-10L) to indicate a potential low bias.

SDG K1907934: The LCS/LCSD recoveries for extraction batch 343655 were less that the workplan control limits for 2-methylnaphthalene, acenaphthene, acenaphthylene, dibenzofuran, fluoranthene, fluorene, naphthalene, and phenanthrene with recovery values ranging from 54% to 69%. Associated sample results were estimated (J-10L) to indicate a potential low bias.

The LCS/LCSD recoveries for extraction batch 343659 were less that the workplan control limits for 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo(g,h,i)perylene, dibenzofuran, fluoranthene, fluorene, naphthalene, and phenanthrene with recovery values ranging from 58% to 69%. Associated sample results were estimated (J-10L) to indicate a potential low bias. Additionally, the LCSD %R values for chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene were less than the FSP lower control limits. No qualifiers were required for these single outliers.

The LCS/LCSD recoveries for extraction batch 343656 were less that the workplan control limits for 2-methylnaphthalene, acenaphthene, acenaphthylene, dibenzofuran, fluorene, naphthalene, and phenanthrene with recovery values ranging from 51% to 68%. Associated sample results were estimated (J-10L) to indicate a potential low bias. Additionally, the LCSD %R values for several other analytes were less than the workplan lower control limits. No qualifiers were required for these single outliers.

The LCS/LCSD recoveries for extraction batch 343658 were less that the workplan control limits for 2-methylnaphthalene and naphthalene with recovery values ranging from 64% to 67%. Associated sample results were estimated (J/UJ-10L) to indicate a potential low bias.

The LCS/LCSD recoveries for extraction batch 344130 were less that the workplan control limits for 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(g,h,i)perylene, chrysene, dibenzo(a,h)anthracene, dibenzofuran, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, and phenanthrene with recovery values ranging from 53% to 69%. Associated sample results were estimated (J-10L) to indicate a potential low bias. Additionally, the LCS %R values for benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, and pyrene were less than the workplan lower control limits. No qualifiers were required for these single outliers.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) samples were analyzed at the appropriate frequency. No action is taken unless both the MS and MSD %R values are outside the workplan control limits for MS/MSD %R outliers. Precision is evaluated using the RPD values calculated between the MS and MSD results. Any RPD values outside the FSP control limits indicate uncertainty in the measured results for the sample. Qualifiers were only issued to the parent sample.

When the MS/MSD %R values indicate a potential low bias, associated results are estimated (JUJ-8L). Only the associated positive results are estimated (J-8H) if the %R values indicate a potential high bias. Associated positive results are estimated (J-9) if the RPD values indicate uncertainty.

SDG	Parent Sample ID	Analyte	MS %R	MSD %R	RPD	Potential Bias	Action
K1906902	M4-0TO26-101918	2-Methylnaphthalene	50	46	-	Low	J-8L
		Anthracene	55	55	-	Low	J-8L
		Benzo(a)anthracene	8	57	46	Low	J-8L, 9
		Benzo(a)pyrene	-3	35	-	Low	J-8L
		Benzo(b)fluoranthene	-32	14	47	Low	J-8L, 9
		Benzo(g,h,i)perylene	8	32	-	Low	J-8L
		Benzo(k)Fluoranthene	29	51	-	Low	J-8L
		Chrysene	-23	-	78	-	J-9
		Dibenzo(a,h)anthracene	51	53	-	Low	J-8L
		Dibenzofuran	60	54	-	Low	J-8L
		Fluoranthene	-43	-7	-	Low	J-8L
		Indeno(1,2,3-cd)pyrene	9	36	-	Low	J-8L
		Naphthalene	47	43	-	Low	J-8L
		Phenanthrene	14	29	-	Low	J-8L
		Pyrene	-50	-5	-	Low	J-8L

Field Duplicates

For sediment samples, the RPD control limit is 50% for results greater than 5x the reporting limit (RL). For results less than 5x the RL, the absolute difference between the sample and replicate must be less than 2x the RL. No data were qualified based on field duplicate precision outliers. Users of the data should consider the impact of field precision outliers on the reported results.

SDG K1906902: Samples M4-0to26-101918 & 515-0to26-101918 were submitted as field duplicates. The RPD or difference values were greater than the control limits for all target analytes except acenaphthylene. The RPD values ranged between 79% and 169%.

SDG K1907934: Samples D6-SC1b-50to60-82619 & 411-50to60-82619 were submitted as field duplicates. Field precision was acceptable.

Samples J3-SC1b-48to90-82719 & 413-SC1b-80to90-82719 were submitted as field duplicates. The difference value for acenaphthene was greater than 2X the RL; all other RPD and difference values were within the control limits.

Samples R4-SC1b-40to50-82819 & 413-SC1b-40to50-82819 were submitted as field duplicates. The RPD values for benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene, fluoranthene, fluorene, naphthalene, phenanthrene, and pyrene were greater than the control limit with RPD values between 52% and 103%. In addition, the difference values for acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, and dibenzofuran were greater than 2X the RL. All other RPD and difference values were within the control limits.

Certified Reference Material

No certified reference materials were submitted.

Reporting Limits

All SDGs: Reporting limits for naphthalene and 2-methylnaphlene are higher than the workplan specified values.

Reporting limits were elevated due to required dilutions for one or more samples.

Calculation Verification

All SDGs: Results were verified by recalculation from the raw data. No calculation or transcription errors were found.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted previously, accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, and MS/MSD recovery values. Precision was acceptable as demonstrated by the RPD values for the MS/MSD and field duplicate samples.

Results were qualified as not detected at the reported concentrations due to method blank contamination. Results were estimated due to LCS/LCSD recovery outliers and MS/MSD recovery outliers and RPD outliers.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
Pacific Groundwater Group: PH Head of Swan Island Sediments
Tributyltin by ALS SOP Organotin (GC-FPD)

This report documents the review of analytical data from the analyses of sediment samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by ALS Environmental, Inc., Kelso, Washington. Refer to the Sample Index for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
K1906902	19 Sediment	EPA Stage 4

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Preservation and Holding Times	1	Matrix Spikes/Matrix Spike Duplicates
✓	Initial Calibration (ICAL)	✓	Laboratory Duplicates
1	Continuing Calibration (CCAL)	1	Field Duplicates
✓	Laboratory Blanks	1	Reporting Limits
1	Field Blanks	✓	Compound Identification
✓	Surrogate Compounds	✓	Reported Results
1	Laboratory Control Samples (LCS)	✓	Calculation Verification

✓ *Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed*

1 *Quality control outliers are discussed below, but no data were qualified.*

2 *Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.*

Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of 2° to 6°C. With the following exceptions noted below, the laboratory received the sample coolers within the advisory temperature range.

Two sample coolers were received with the temperatures greater than the upper control limit at 6.1°C and 6.2°C. These outliers did not impact data quality and no qualifiers were required.

Continuing Calibration

A continuing calibration verification standard was analyzed at the required frequency. With the following exception; the percent difference (%D) values were within the criteria of ±25%.

The %D for the CCV from column 1 was greater than the upper control limit for tributyl tin; the associated sample results were reported from column 2 which was in control; no results were qualified.

Field Blanks

No field blanks were submitted with this sampling event.

Laboratory Control Samples

Laboratory control samples (LCS) were analyzed at the required frequency of one per batch of 20 or fewer samples. With the following exceptions, all spike recoveries were within the laboratory control limits.

The laboratory indicated in the case narrative that the LCS was spiked with a spiking standard that did not pass the laboratory's verification check for a new standard lot. An acceptable lot was not immediately obtainable, so an additional LCS/LCSD pair was extracted and analyzed with the batch from the previously used, but now expired standard. Because the LCS and LCSD recoveries form the additional QC samples were in control and indicated that although the spiking solution was expired that it had not degraded; no results were qualified.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) samples were analyzed at the appropriate frequency. No action is taken unless both the MS and MSD %R values are outside the control limits for MS/MSD %R outliers. Precision is evaluated using the RPD values calculated between the MS and MSD results. Any RPD values outside the control limits indicate uncertainty in the measured results for the sample. Qualifiers were only issued to the parent sample.

When the MS/MSD %R values indicate a potential low bias, associated results are estimated (J/UJ-8). Only the associated positive results are estimated (J-8) if the %R values indicate a potential high bias. Associated positive results are estimated (J-9) if the RPD values indicate uncertainty.

The MS/MSD analyses were performed using sample A4-0TO25-100818 and although the %R values for tri-n-butyl tin were greater than upper control limit; the result in the parent sample was greater than four times the spike amount, therefore no results were qualified.

Laboratory Duplicates

There were no laboratory duplicates analyzed with this dataset.

Field Duplicates

For sediment samples, the RPD control limit is 50% for results greater than 5x the reporting limit (RL). For results less than 5x the RL, the absolute difference between the sample and replicate must be less than 2x the RL. No data were qualified based on field duplicate precision outliers. Users of the data should consider the impact of field precision outliers on the reported results.

SDG K1906902: Samples M4-0to26-101918 & 515-0to26-101918 were submitted as field duplicates. Field precision was acceptable.

Reporting Limits

The target reporting limits for samples were adjusted for sample size and required dilutions. No data were qualified.

Compound Identification

As required for gas chromatography methods, the laboratory analyzed any samples with positive detections on a confirmatory column. The results from the two analytical columns were compared for agreement. An elevated RPD value may indicate the presence of an interference resulting in a high bias. When the RPD value was greater than or equal to 40% but less than 60% the reported value was estimated (J-3). If the RPD value was greater than 60%, the result was qualified as a tentative identification (NJ-3). All confirmation results were within 40% RPD and no qualifiers were necessary.

Reported Results

No anomalies were noted during validation for evaluated results.

Calculation Verification

Several results in this SDG were verified by recalculation from the raw data. No calculation or transcription errors were found.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted above, accuracy was acceptable, as demonstrated by the surrogate, LCS/LCSD, and MS/MSD percent recovery values. Precision was also acceptable as demonstrated by the LCS/LCSD, MS/MSD, and field duplicate relative percent difference values.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

DATA VALIDATION REPORT
Pacific Groundwater Group: PH Head of Swan Island Sediments
Chlorinated Pesticides by ALS SOP PEST MSMS

This report documents the review of analytical data from the analyses of tissue samples and the associated laboratory quality control (QC) samples. Samples were analyzed by ALS Environmental, Kelso, Washington. Refer to the Sample Index for a list of samples reviewed.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
K1906902	19 Sediments	EPA Stage 4
K1907934	65 Sediments & 2 Field Blank	EPA Stage 2A

DATA PACKAGE COMPLETENESS

With the following exception, the laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and anomalies were discussed in the case narrative.

SDG K1906902: One of the DDT and Endrin breakdown summaries and both tune summaries were missing from the data package for the pesticide analysis. The lab was contacted and provided the missing documentation.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Ten percent (10%) of the laboratory QC results were also verified.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Receipt, Preservation, and Holding Times	**1**	Reference Material
✓	Tune	✓	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)
✓	Initial Calibration	**1**	Field Duplicates
✓	Continuing Calibration	✓	Target Analyte List
✓	Laboratory Blanks	✓	Reporting Limits
1	Field Blanks	✓	Reported Results
2	Labeled Compounds/ Surrogate Compounds	✓	Compound Identification
1	Internal Standards	✓	Calculation Verification (Full Validation only)
1	Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)		

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.
[1] Quality control results are discussed below, but no data were qualified.
[2] Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of 2° to 6°C. With the following exception noted below, the laboratory received the sample coolers within the advisory temperature range.

SDG K1906902: Two sample coolers were received with the temperature greater than the upper control limit at 6.1 °C and 6.2°C. This outlier did not impact data quality and no qualifiers were required.

Samples analyzed in this SDG were archived and frozen upon receipt; all analyses were completed within holding times.

SDG K1907934: Sample 712-82819 had a collection date on the chain-of-custody (COC) of 8/27/19, but the imbedded date segment "82819" suggests a collection date of 8/28/19. Sample H3-SC1B-30TO40-82919 had a collection date on the COC of 8/28/19, but the segment "82919" suggests an 8/29/19 collection date. The client was contacted and confirmed that the imbedded date segment is correct.

Field Blanks

Field blanks were evaluated for impact of any contaminant on the reported sample results. Action levels were established at five times (5x) the concentration reported in the field blank. If a contaminant is reported in an associated field sample and the concentration is less than the action level, the result is qualified as not detected (U-6). No action is taken if the sample result is greater than the action level, or for non-detected results.

SDG K1906902: No field blanks were submitted.

SDG K1907934: Samples 711-82719 and 712-82819 were submitted as field blanks. No target analytes were detected.

Labeled Compounds/Surrogate Compounds

Isotope-stable labeled compounds were added to each field and QC sample extract. Because they are added prior to extraction and are also used to quantitate the associated target compound analog, they act as internal standards as well as surrogate compounds. Based on the dual nature of the way the labeled compounds are used in this method, they have been evaluated using both internal standard and surrogate criteria.

The responses for the labeled compounds were evaluated using the typical internal standard acceptance limits of 50-200% of the response in the associated calibration verification standard. All positive results for associated target compounds in the following samples were qualified (J-19) due to labeled compound recoveries greater than the control limits:

SDG	Sample ID	Labeled Compound	Associated Analog Compound	Qualifier
K1906902	M4-0to26-101918	4,4'-DDD-d4	2,4'-DDE 4,4'-DDE 4,4'-DDD	J-19
	A4-0to25-100818 A3-0to31-100818 A2-0to26-100818 A6-0to23-100818 C4-0to27-100918 A7-0to26-100918 D2-0to19-101018 F2-0to19-101018 H2-0to30-101218 J2A3-0to18-101218 Q2-0to13-101218 G6-0to27-101818 T6-0to29-101618	4,4'-DDD-d4 4,4'-DDT-d4 Endrin-13C12	2,4'-DDE 4,4'-DDE 2,4'-DDD 4,4'-DDD 2,4'-DDT 4,4'-DDT	

The labeled compounds are added to the samples prior to extraction, so they function as indicators for extraction efficiency and matrix interference in addition to being used for target analyte quantitation. All labeled compound %R values were within the laboratory's surrogate control limits.

Internal Standards

The internal standard, pyrene-d10, was added to all samples as a quantitation reference for the isotope-labeled compounds. With the following exception, all internal standard responses were within the method specified control limits of 50%-200% of the response in the associated calibration verification standard.

SDG K1906902: The internal standard areas for all field samples were greater than the upper control limit. No qualification was applied as this internal standard compound is only used to quantitate the isotope-labeled compounds.

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Samples

Laboratory control/laboratory control duplicate samples (LCS/LCSD) were analyzed at the required frequency of one per batch of 20 or fewer samples. With the following exceptions, all spike recoveries were within the laboratory control limits.

SDG K1907934: For extraction batch 343719, the %R value for 4,4'-DDD was greater than the upper control limit but was in control in the associated LCSD sample; no data were qualified for a single outlier.

Reference Material

A reference material sample was not analyzed with this data set.

Matrix Spikes/Matrix Spike Duplicates

Matrix spikes were not analyzed with these data sets. Accuracy and precision were assessed using the Laboratory Control Sample/Laboratory Control Sample Duplicate.

Field Duplicates

For sediment samples, the RPD control limit is 50% for results greater than 5x the reporting limit (RL). For results less than 5x the RL, the absolute difference between the sample and replicate must be less than 2x the RL. No data were qualified based on field duplicate precision outliers. Users of the data should consider the impact of field precision outliers on the reported results.

SDG K1906902: Samples M4-0to26-101918 & 515-0to26-101918 were submitted as field duplicates. Field precision was acceptable.

SDG K1907934: Samples D6-SC1b-50to60-82619 & 411-50to60-82619, J3-SC1b-48to90-82719 & 413-SC1b-80to90-82719, and R4-SC1b-40to50-82819 & 413-SC1b-40to50-82819 were submitted as field duplicates. The difference value for 4,4'-DDE was greater than 2X the RL for Samples R4-SC1b-40to50-82819 & 413-SC1b-40to50-82819. All other RPD and difference values were within the control limits.

Calculation Verification

SDG K1906902: Calculation verifications were performed for this sample delivery group (SDG). No calculation or transcription errors were found.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory performed the specified analytical method. Accuracy was acceptable, as demonstrated by the surrogate, LCS/LCSD, and MS/MSD percent recoveries. Precision was also acceptable as demonstrated by the LCS/LCSD, MS/MSD, and field duplicate RPD values.

Data were qualified due to labeled compound response outliers.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
Pacific Groundwater Group: PH Head of Swan Island Sediments
PCB Aroclors by EPA 8082A

This report documents the review of analytical data from the analysis of sediment samples and the associated field and laboratory quality control (QC) samples. Samples were analyzed by Eurofins TestAmerica Laboratories, Inc., Tacoma, Washington. Refer to the Sample Index for a complete list of samples.

SDG	Number of Samples	Validation Level
J88125-1	21 Sediment	EPA Stage 2A EPA Stage 4 (batch 580-308212)

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Ten percent (10%) of the laboratory QC results were also verified.

TECHNICAL DATA VALIDATION

This report documents the review of analytical QC requirements as listed in the following table.

1	Sample Receipt, Preservation, and Holding Times	✓	Laboratory Control Samples (LCS)
✓	Initial Calibration (ICAL)	1	Certified Reference Material
1	Continuing Calibration (CCAL)	1	Field Duplicates
✓	Laboratory Blanks	✓	Target Analyte List
1	Field Blanks	1	Reporting Limits
2	Surrogate Compounds	2	Compound Identification
✓	Internal Standards	✓	Reported Results
2	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)	1	Calculation Verification (Full validation only)

1 Quality control results are discussed below, but no data were qualified.
2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of ≤6°C. With the following exception noted below, the laboratory received the sample coolers within the advisory temperature range.

All samples were archived and kept frozen until client requested analyses within 1 year.

Continuing Calibration

All continuing calibration (CCAL) percent difference (%D) values were within the ±20% control limit, with the exceptions noted below.

For the CCALs analyzed on 8/15/19 and 8/16/19, PCB-1016 exhibited a high bias on the DB-35ms column, but within the control limit on the DB-XLB column; no qualifiers were required.

Field Blanks

Field blanks were not submitted with this data set.

Surrogate Compounds

The surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples. When a surrogate %R value is below the control limit and indicates a potential low bias, associated results are estimated (J/UJ-13L). When a surrogate %R value is greater than the control limit and indicates a potential high bias, only the positive results for a sample are estimated (J-13H). With the exceptions noted below, all surrogate spike recoveries were within the laboratory control limits.

Sample ID	DCBP %R	Action
F2-0to19-101018	37	J/UJ-13L
A2-0to26-100818	37	
A4-0to25-100818	32	
A6-0to23-100818	32	
A7-0to26-100918	31	
C4-0to27-100918	36	
D2-0to19-101018	37	

Matrix Spikes/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were analyzed at the appropriate frequency. No action is taken unless both the MS and MSD %R values are outside the control limits for MS/MSD %R outliers. Precision is indicated by the relative percent difference (RPD) between the MS and MSD values. Any RPD values outside the control limits indicate uncertainty in the measured results for the sample. Qualifiers were only issued to the parent sample.

When the MS/MSD %R values indicate a potential low bias, associated results are estimated (J/UJ-8). Only the associated positive results are estimated (J-8) if the %R values indicate a potential high bias. Associated positive results are estimated (J-9) if the RPD values indicate uncertainty.

Sample A1-0to30-102018 was analyzed as the MS/MSD sample. The MS %R value for Aroclor 1260 was greater than the upper control limit and the MSD %R value was less than the lower control limit; the associated results in the parent sample were estimated (J-8) without a bias indicator as the matrix

spike recoveries do not indicate a consistent bias. The RPD value was greater than the control limit; the result in the parent sample was estimated (J-9).

Certified Reference Material

No certified reference material was submitted.

Field Duplicates

For sediment samples, the RPD control limit is 50% for results greater than 5x the reporting limit (RL). For results less than 5x the RL, the absolute difference between the sample and replicate must be less than 2x the RL. No data were qualified based on field duplicate precision outliers. Users of the data should consider the impact of field precision outliers on the reported results.

Samples M4-0to26-101918 and 515-0to26-101918 were submitted as field duplicates. The RPD values for PCB-1254 and PCB-1260 were greater than the control limit at 177% and 146%, respectively.

Reporting Limits

Reporting limits were elevated due to required dilutions and/or percent moisture adjustment and were greater than the workplan specified limits.

Compound Identification

As required by the method, the laboratory analyzed any samples with positive detections on a confirmatory column. The results from the two analytical columns were compared for agreement. An elevated RPD value may indicate the presence of an interference resulting in a high bias. When the RPD value was greater than or equal to 40% but less than 60% the reported value was estimated (J-3). If the RPD value was greater than 60%, the result was qualified as a tentative identification (NJ-3). Confirmation outliers resulting in data qualification are discussed below.

For the following samples, the second column confirmation RPD values were greater than 40% and were qualified as estimated (J-3) or tentatively identified (NJ-3):

SDG	Sample ID	Compound	RPD	Qualifier
J88125-1	F2-0to19-101018	PCB-1254	55.0	J-3
	G6-0to27-101818	PCB-1260	45.2	J-3
	H2-0to30-101218	PCB-1260	46.8	J-3
	M4-0to26-101918	PCB-1260	70.8	NJ-3
	N7-0to27-101418	PCB-1260	63.1	NJ-3
	O7-0to27-101918	PCB-1254	57.0	J-3
	A2-0to26-100818	PCB-1260	48.5	J-3
	A4-0to25-100818	PCB-1254	41.4	J-3
	D2-0to19-101018	PCB-1260	56.6	J-3

Calculation Verification

Several results in batch 580-308212 of this SDG were verified by recalculation from the raw data. No calculation or transcription errors were found.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted above, accuracy was acceptable as demonstrated by the surrogate, LCS, and MS/MSD recoveries. With the exceptions noted above, precision was also acceptable as demonstrated by the MS/MSD and field duplicate RPD values.

Data were estimated due to surrogate and matrix spike accuracy outliers, a matrix spike precision outlier, and dual column confirmation RPD outliers.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
Pacific Groundwater Group: PH Head of Swan Island Sediments
Diesel Range Organics - Method NWTPH-Dx

This report documents the review of analytical data from the analyses of sediment samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Eurofins TestAmerica, Tacoma, Washington. Refer to the Sample Index for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
J88125-1	21 Sediment	EPA Stage 2A & Stage 4 (batch 580-308116)

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Preservation and Holding Times	✓	Laboratory Control Samples (LCS)
✓	INITIAL CALIBRATION (ICAL)	✓	Matrix Spikes/Matrix Spike Duplicates
✓	CONTINUING CALIBRATION (CCAL)	✓	Laboratory Duplicates
✓	Laboratory Blanks	1	Field Duplicates
1	Field Blanks	1	Reporting Limits
2	Surrogate Compounds	✓	Reported Results

✓ *Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed*
1 *Quality control outliers are discussed below, but no data were qualified.*
2 *Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.*

Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of ≤6°C. The laboratory received the sample coolers within the advisory temperature range.

SDG J88125-1: All samples were archived and kept frozen until client requested analyses within 1 year.

Field Blanks

No field blanks were submitted with this sampling event.

Surrogate Compounds

The surrogate compound, o-terphenyl, was added to all field and batch QC samples. When a surrogate %R value is below the control limit and indicates a potential low bias, associated results are estimated (J/UJ-13L). When a surrogate %R value is greater than the control limit and indicates a potential high bias, only the positive results for a sample are estimated (J-13H). With the exceptions noted below, all surrogate spike recoveries were within the laboratory control limits.

The o-terphenyl recoveries for Samples J2A3-0to18-101218 and A6-0to23-100818 were less than the lower control limit; associated sample results were estimated (J/UJ-13L).

Field Duplicates

For sediment samples, the FSP RPD control limit is 50% for results greater than 5x the reporting limit (RL). For results less than 5x the RL, the absolute difference between the sample and replicate must be less than 2x the RL. No data were qualified based on field duplicate precision outliers. Users of the data should consider the impact of field precision outliers on the reported results.

Samples M4-0to26-101918 and 515-0to26-101918 were submitted as field duplicates. Field precision was acceptable.

Reporting Limits

The target reporting limits for samples were adjusted for sample size and required dilutions. No data were qualified.

Reported Results

No anomalies were noted during validation for evaluated results.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted above, accuracy was acceptable, as demonstrated by the surrogate, LCS/LCSD, and MS/MSD percent recovery values. Precision was also acceptable as demonstrated by the LCS/LCSD, MS/MSD, and laboratory and field duplicate relative percent difference values.

Results were estimated based on surrogate recovery outliers.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
Pacific Groundwater Group: PH Head of Swan Island Sediments
Dioxin/Furan Compounds by EPA 1613B

This report documents the review of analytical data from the analysis of sediment samples and the associated field and laboratory quality control (QC) samples. Samples were analyzed by TestAmerica Laboratories, Inc., Sacramento, California. Refer to the Sample Index for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
J88125-1	21 Sediment	EPA Stage 2A & Stage 4 (batch 320-315077)

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative. The laboratory reported more analytes in the report and the EDD than were requested. The laboratory resubmitted the reports and EDD files with the extra results removed.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Ten percent (10%) of the laboratory QC results were also verified.

TECHNICAL DATA VALIDATION

The quality control (QC) requirements that were reviewed are listed in the following table.

1	Sample Receipt, Preservation, and Holding Times	2	Certified Reference Material
✓	System Performance and Resolution Checks	1	Field Duplicates
✓	Initial Calibration (ICAL)	✓	Target Analyte List
✓	Calibration Verification (CVER)	✓	Reporting Limits
1	Laboratory Blanks	2	Compound Identification
1	Field Blanks	2	Compound Quantitation
✓	Labeled Compound Recovery	✓	Reported Results
1	Matrix Spike/Matrix Spike Duplicates (MS/MSD)	1	Calculation Verification (Full Validation Only)
✓	Ongoing Precision and Recovery (OPR)		

✓Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.
1 Quality control results are discussed below, but no data were qualified.
2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of ≤6°C. With the following exception noted below, the laboratory received the sample coolers within the advisory temperature range.

SDG J88125-1: All samples were archived and kept frozen until client requested analyses within 1 year.

Laboratory Blanks

To assess the impact of any blank contaminant (excluding homologs) on the reported sample results, an action level is established at five times (5x) the concentration reported in the blank. If a contaminant is reported in an associated field sample and the concentration is less than the action level, the result is qualified as not detected (U-7). No action is taken if the sample result is greater than the action level, or for non-detected results. The laboratory assigned EMPC-flags to values when a peak was detected but did not meet identification criteria. These values cannot be considered as positive identifications but are "estimated maximum possible concentrations". When these occurred in the method blank the results were considered as false positives. No action levels were established for these analytes.

Method blanks were analyzed at the appropriate frequency. Contaminant levels, associated samples, and action levels are documented in the data validation worksheets.

SDG J88125-2: OCDD detected was detected in both method blanks; the associated sample results were greater than the 5x action level; no qualification was required.

Field Blanks

No field blanks were submitted.

Matrix Spike/Matrix Spike Duplicate

Matrix spike/matrix spike duplicate (MS/MSD) analyses were not performed. Accuracy was assessed using labeled compound recoveries and laboratory control samples. This QC sample goes through the entire extraction process prior to analysis. Precision is evaluated using the field duplicate analyses.

Certified Reference Material

The laboratory extracted and analyzed Clean Soil Reference Material (EDF-5183). The criterion for CRM recovery is that the reported result is within ±2x the standard deviation of the true value for analytes with reference concentrations greater than five times the detection limit. The acceptance criteria were not applied to results for 2,3,4,7,8-PeCDF, 2,3,7,8-TCDD, 1,2,3,7,8-PeCDD, and 1,2,3,7,8-PeCDF because the certified values were less than five times (5x) the detection limit.

SDG J88125-1: For extraction batch 320-315077, 1,2,3,4,6,7,8-HpCDF and 1,2,3,6,7,8-HxCDD recovered less than the lower control limits; associated sample results were estimated (J/UJ-12L).

For extraction batch 320-315080, 1,2,3,6,7,8-HxCDD recovered less than the lower control limit; associated sample results were estimated (J-12L).

Field Duplicates

For sediment samples, the FSP RPD control limit is 50% for results greater than 5x the reporting limit (RL). For results less than 5x the RL, the absolute difference between the sample and replicate must be less than 2x the RL. No data were qualified based on field duplicate precision outliers. Users of the data should consider the impact of field precision outliers on the reported results.

Samples M4-0to26-101918 and 515-0to26-101918 were submitted as field duplicates. The difference value for 1,2,3,7,8-PeCDF was greater than 2x the RL.

Compound Identification

The method requires the confirmation of 2,3,7,8-TCDF detects using an alternate GC column, however this compound was not an analyte of interest for this event, therefore confirmation was not required.

For several samples, the laboratory reported EMPC or "estimated maximum possible concentration" values for one or more of the target analytes. An EMPC value is reported when a peak was detected but did not meet identification criteria, as required by the method; therefore, the result cannot be considered as a positive identification for the analyte. To indicate that the reported result for an individual analyte is in effect an elevated detection limit, the EMPC values were qualified as not detected (U-25) for all compound results below the reporting limit and were estimated (J-25) for all compound results greater than the reporting limit.

Compound Quantitation

SDG J88125-1: The results for OCDD in thirteen samples exceeded the linear calibrated range of the instrument and were flagged "E" by the laboratory. These results were estimated (J-20).

Calculation Verification

Calculation verifications were performed for batch 320-315077. No calculation or transcription errors were found.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory performed the specified analytical method. With the exceptions noted previously, accuracy was acceptable, as demonstrated by the labeled compound, CRM, and OPR recoveries. Precision was also acceptable as indicated by the field duplicate samples.

Results were estimated due to reference material recovery outliers and calibration range exceedances. Data were qualified as not detected or estimated to indicate that EMPC values represent elevated detection limits.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
Pacific Groundwater Group: PH Head of Swan Island Sediments
Dioxin/Furan Compounds by EPA 1613B

This report documents the review of analytical data from the analysis of solid samples and the associated laboratory quality control (QC) samples. Samples were analyzed by Cape Fear Analytical, Wilmington, North Carolina. Refer to the Sample Index for a complete list of samples.

SDG	Number of Samples	Validation Level
15468	14 Solid	Stage 4
15469	19 Solid	Stage 2A
15470	21 Solid	Stage 2A
15471	11 Solid & 2 Field Blank	Stage 2A

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and anomalies were discussed in the case narrative. The laboratory reported more analytes in the report and the EDD than were requested. The laboratory resubmitted the reports and EDD files with the extra results removed.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Ten percent (10%) of the laboratory QC results were also verified.

TECHNICAL DATA VALIDATION

The quality control (QC) requirements that were reviewed are listed in the following table.

1	Sample Receipt, Preservation, and Holding Times	1	Certified Reference Material
✓	System Performance and Resolution Checks	1	Field Duplicates
✓	Initial Calibration (ICAL)	✓	Target Analyte List
✓	Calibration Verification (CVER)	✓	Reporting Limits
2	Laboratory Blanks	2	Compound Identification
1	Field Blanks	2	Compound Quantitation
✓	Labeled Compound Recovery	✓	Reported Results
2	Matrix Spike/Matrix Spike Duplicates (MS/MSD)	1	Calculation Verification (Full Validation Only)
✓	Ongoing Precision and Recovery (OPR)		

✓Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.
1 Quality control results are discussed below, but no data were qualified.
2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

SDG 15471: Sample 712-82819 has a collection date of 8/27/19 as listed on the chain-of-custody (COC), but the identification (ID) segment indicates a date of 8/28/19. The client was contacted and verified the 8/28/19 date was correct.

Laboratory Blanks

To assess the impact of any blank contaminant (excluding homologs) on the reported sample results, an action level is established at five times (5x) the concentration reported in the blank. If a contaminant is reported in an associated field sample and the concentration is less than the action level, the result is qualified as not detected (U-7). No action is taken if the sample result is greater than the action level, or for non-detected results. The laboratory assigned EMPC-flags to values when a peak was detected but did not meet identification criteria. These values cannot be considered as positive identifications but are "estimated maximum possible concentrations". When these occurred in the method blank the results were considered as false positives. No action levels were established for these analytes.

Method blanks were analyzed at the appropriate frequency. Contaminant levels, associated samples, and action levels are documented in the data validation worksheets.

SDG 15468, 15470: For extraction batch, 41713, 1,2,3,4,6,7,8-HpCDF and 1,2,3,7,8-PeCDF were detected; the associated sample results less than the 5x action level were qualified as not detected (U-7) at the reported concentrations.

SDG 15469: For extraction batch, 41747, the following analytes were detected; the associated sample results less than the 5x action level were qualified as not detected (U-7) at the reported concentrations.

1,2,3,4,6,7,8,9-OCDF	1,2,3,4,7,8,9-HpCDF	1,2,3,4,6,7,8-HpCDF	1,2,3,7,8,9-HxCDF
2,3,4,6,7,8-HxCDF	1,2,3,6,7,8-HxCDF	2,3,4,7,8-PeCDF	2,3,7,8-TCDF
1,2,3,4,6,7,8,9-OCDD	1,2,3,4,6,7,8-HpCDD	1,2,3,7,8,9-HxCDD	1,2,3,6,7,8-HxCDD

SDG 15470: For extraction batch, 41778, 1,2,3,7,8,9-HxCDF, 1,2,3,4,7,8-HxCDF, 1,2,3,7,8-PeCDF, 2,3,7,8-TCDF, and 1,2,3,4,6,7,8,9-OCDD were detected; the associated sample results less than the 5x action level were qualified as not detected (U-7) at the reported concentrations.

SDG 15471: For extraction batch, 41761, the following analytes were detected; the associated sample results less than the 5x action level were qualified as not detected (U-7) at the reported concentrations.

1,2,3,4,7,8,9-HpCDF	1,2,3,4,6,7,8-HpCDF	1,2,3,7,8,9-HxCDF	2,3,4,6,7,8-HxCDF
1,2,3,6,7,8-HxCDF	1,2,3,4,7,8-HxCDF	1,2,3,4,6,7,8,9-OCDD	1,2,3,4,6,7,8-HpCDD
1,2,3,7,8,9-HxCDD	1,2,3,7,8-PeCDD		

Field Blanks

SDG 15471: Samples 711-82719 and 712-82819 were submitted as field blanks. After evaluation of method blank contamination and EMPC results, no positive results remained.

Matrix Spike/Matrix Spike Duplicate

Matrix spike/matrix spike duplicate (MS/MSD) samples were analyzed at the appropriate frequency. No action is taken unless both the MS and MSD %R values are outside the control limits for MS/MSD %R outliers. When the MS/MSD %R values indicate a potential low bias, associated results are estimated (J/UJ-8L). Only the associated positive results are estimated (J-8H) if the %R values indicate a potential high bias. Precision is evaluated using the relative percent difference (RPD) values calculated between the MS and MSD results. Any RPD values outside the control limits indicate uncertainty in the measured results for the sample. Associated positive results are estimated (J-9) when the RPD values indicate uncertainty. Qualifiers were only issued to the parent sample.

SDG 15468: Sample R4-SC1b-20to30-82819 was analyzed as the matrix spike/matrix spike duplicate (MS/MSD) sample. The MS %R value for 1,2,3,4,6,7,8,9-OCDD was greater than the upper control limit but was less than the lower control limit in the associated MSD sample; associated sample results were estimated (J-8). The RPD values for 1,2,3,4,6,7,8,9-OCDD and 1,2,3,4,6,7,8-HpCDD were greater than the control limit; associated results in the parent sample were estimated (J-9).

SDG 15469: Sample J6-SC1b-20to30-82819 was analyzed as the MS/MSD sample. The MS %R value for 1,2,3,4,6,7,8-HpCDD was greater than the upper control limit but was less than the lower control limit in the associated MSD sample; associated sample results were estimated (J-8). The RPD value for this compound was greater than the control limit; the associated result in the parent sample was estimated (J-9).

SDG 15471: Sample J5-SC1b-20to30-82719 was analyzed as the MS/MSD sample. The RPD values for 1,2,3,4,6,7,8,9-OCDD, 1,2,3,4,6,7,8,9-OCDF, 1,2,3,4,6,7,8-HpCDD, 1,2,3,4,6,7,8-HpCDF, and 1,2,3,6,7,8-HxCDD were greater than the control limit; the associated results in the parent sample were estimated (J-9).

Certified Reference Material

The laboratory extracted and analyzed Clean Soil Reference Material (EDF-5183). The criterion for CRM recovery is that the reported result is within ±2x the standard deviation of the true value for analytes with reference concentrations greater than five times the detection limit. The acceptance criteria were only applied to results for 1,2,3,4,6,7,8-HpCDD, 1,2,3,4,6,7,8,9-OCDD, 1,2,3,4,6,7,8-HpCDF, 1,2,3,4,6,7,8,9-OCDF, total HxCDD, total HpCDD, and total HpCDF because the certified values were greater than five times (5x) the detection limit.

SDG 15468, 15470, 15471: All acceptance criteria were met.

Field Duplicates

For sediment samples, the FSP RPD control limit is 50% for results greater than 5x the reporting limit (RL). For results less than 5x the RL, the absolute difference between the sample and replicate must be less than 2x the RL. No data were qualified based on field duplicate precision outliers. Users of the data should consider the impact of field precision outliers on the reported results.

The following compounds exceeded acceptance criteria:

SDG	Parent & Duplicate Sample IDs	Analyte	Outlier Type
15468	R4-SC1b-40to50-82819 & 413-SC1b-40to50-82819	1,2,3,4,6,7,8,9-OCDD	137% RPD
		1,2,3,4,6,7,8,9-OCDF	Diff >2x RL
		1,2,3,4,6,7,8-HpCDD	140% RPD
		1,2,3,4,6,7,8-HpCDF	Diff >2x RL
		Total HpCDF	141% RPD
		Total HpCDD	139% RPD
		Total HxCDF	Diff >2x RL
		Total HxCDD	Diff >2x RL
		Total PeCDF	Diff >2x RL
		Total TeCDF	Diff >2x RL
		Total TeCDD	Diff >2x RL
15470	D6-SC1b-50to60-82619 & 411-SC1b-50to60-82619	1,2,3,4,6,7,8-HpCDD	68% RPD
		1,2,3,4,6,7,8-HpCDF	Diff >2x RL
		1,2,3,4,6,7,8,9-OCDF	65% RPD
		1,2,3,4,6,7,8,9-OCDD	64% RPD
		Total HpCDF	66% RPD
		Total HxCDF	Diff >2x RL
		Total HpCDD	66% RPD
		Total HxCDD	Diff >2x RL
		Total PeCDF	Diff >2x RL
		Total TeCDF	Diff >2x RL
	J3-SC1b-80to90-82719 & 412-SC1b-80to90-82719	1,2,3,4,6,7,8,9-OCDD	70% RPD
		1,2,3,4,6,7,8-HpCDF	58% RPD
		Total HpCDD	60% RPD
		Total HpCDF	58% RPD

Compound Identification

The method requires the confirmation of 2,3,7,8-TCDF detects using an alternate GC column. The DB5 column that is typically used cannot fully separate 2,3,7,8-TCDF from closely eluting non-target TCDF isomers. The laboratory performed a second column confirmation for all samples with detections greater than the reporting limit on a DB225 column. All 2,3,7,8-TCDF results reported from the DB5 column were qualified as do-not-report (DNR-11) in favor of the DB225 results.

For several samples, the laboratory reported EMPC or "estimated maximum possible concentration" values for one or more of the target analytes. An EMPC value is reported when a peak was detected

but did not meet identification criteria, as required by the method; therefore, the result cannot be considered as a positive identification for the analyte. To indicate that the reported result for an individual analyte is in effect an elevated detection limit, the EMPC values were qualified as not detected (U-25) for all compound results below the reporting limit and were estimated (J-25) for all compound results greater than the reporting limit.

Compound Quantitation

SDG 15469: The result for OCDD in Sample H3-SC1b-110to120-82819 exceeded the linear calibrated range of the instrument and was flagged "E" by the laboratory. This result was estimated (J-20).

SDG 15470: The result for OCDD in Sample D6-SC1b-20to30-82619 exceeded the linear calibrated range of the instrument and was flagged "E" by the laboratory. This result was estimated (J-20).

Calculation Verification

SDGs 15468: Calculation verifications were performed. No calculation or transcription errors were found.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory performed the specified analytical method. With the exceptions noted above, accuracy was acceptable, as demonstrated by the labeled compound, OPR, and MS/MSD recoveries. With the exceptions noted above, precision was also acceptable as indicated by the MS/MSD and field duplicate RPD values.

Data were qualified as not detected at the reported concentrations due to method blank contamination. Results were estimated due to MS/MSD recovery and precision outliers. Data were qualified as not detected or estimated to indicate that EMPC values represent elevated detection limits.

Data were flagged as do-not-report due to indicate which result from multiple reported results not to use. Data flagged as do-not-report should not be used for any reason.

All other data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
Pacific Groundwater Group: PH Head of Swan Island Sediments
PCB Congeners by EPA 1668A

This report documents the review of analytical data from the analysis of sediment samples and the associated field and laboratory quality control (QC) samples. Samples were analyzed by Eurofins TestAmerica Laboratories, Inc., Knoxville, Tennessee. Refer to the Sample Index for a complete list of samples.

SDG	Number of Samples	Validation Level
J88125-2	21 Sediment	EPA Stage 2A & EPA Stage 4 (batch 140-32775)
J88908-1	11 Sediment & 1 Field Blank	EPA Stage 2A

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Ten percent (10%) of the laboratory QC results were also verified.

TECHNICAL DATA VALIDATION

This report documents the review of analytical QC requirements as listed in the following table.

1	Sample Receipt, Preservation, and Holding Times	1	Certified Reference Material
✓	Initial Calibration (ICAL)	1	Field Duplicates
✓	Calibration Verification (CVER)	✓	Target Analyte List
2	Laboratory Blanks	✓	Reporting Limits
1	Field Blanks	2	Compound Identification
✓	Labeled Compound Recovery	2	Compound Quantitation
1	Matrix Spike/Matrix Spike Duplicates (MS/MSD)	2	Reported Results
✓	Ongoing Precision and Recovery (OPR)	1	Calculation Verification (Full Validation Only)

1 Quality control results are discussed below, but no data were qualified.
2 Quality control outliers that impact the reported data were noted.
Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of ≤6°C. The laboratory received the sample coolers within the advisory temperature range.

SDG J88125-1: All samples were archived and kept frozen until client requested analyses within 1 year.

Laboratory Blanks

To assess the impact of any blank contaminant on the reported sample results, an action level is established at five times (5x) the concentration reported in the blank. If a contaminant is reported in an associated field sample and the concentration is less than the action level, the result is qualified as not detected (U-7). No action is taken if the sample result is greater than the action level, or for non-detected results. The laboratory assigned EMPC-flags to values when a peak was detected but did not meet identification criteria. These values cannot be considered as positive identifications but are "estimated maximum possible concentrations". When these occurred in the method blank the results were considered as false positives. No action levels were established for these analytes.

SDG J88125-2: For extraction batch, 140-32775, although fifty-one (51) compounds were detected (excluding homologs and EMPC qualified results) in the laboratory method blank, only nineteen (19) results in the associated samples were less than the action levels and were qualified as not detected (U-7) at the reported concentrations.

For extraction batch, 140-32817, fifty-six (56) compounds were detected (excluding homologs and EMPC qualified results) in the laboratory method blank; seven (7) results in the associated samples less than the action levels were qualified as not detected (U-7) at the reported concentrations.

SDG J88908-1: For extraction batch, 140-33603, although sixty-five (65) compounds were detected (excluding homologs and EMPC qualified results) in the laboratory method blank, only thirty-three (33) results in the associated samples were less than the action levels and were qualified as not detected (U-7) at the reported concentrations.

For extraction batch, 140-34150, although forty-four (44) compounds were detected (excluding homologs and EMPC qualified results) in the laboratory method blank, only one (1) result in the associated samples was less than the action level and was qualified as not detected (U-7) at the reported concentration.

For extraction batch, 140-33628, although thirteen (13) compounds were detected (excluding homologs and EMPC qualified results) in the laboratory method blank, no results in the associated samples were less than the action levels; no data were qualified.

Field Blanks

Field blank action levels were established at five times (5x) the concentration reported in the field blank. Following evaluation for laboratory blank contamination, if a contaminant is reported in an associated field sample and the concentration is less than the action level, the result is qualified as not detected (U-6). No action is taken if the sample result is greater than the action level, or for non-detected results.

SDG J88908-1: Sample 711-82719 was submitted as a field blank. Forty-eight (48) compounds were detected (excluding homologs and EMPC qualified results). After evaluation of method blank contamination, twelve (12) results in the associated samples were less than the action levels and were qualified as not detected (U-6) at the reported concentrations.

Matrix Spikes/Matrix Spike Duplicates

Matrix spike/matrix spike duplicates (MS/MSD) were not analyzed. Accuracy was assessed using labeled compound recoveries and the ongoing precision and recovery (OPR) sample.

Certified Reference Material

No certified reference materials were submitted.

Field Duplicates

For sediment samples, the project workplan RPD control limit is 50% for results greater than 5x the reporting limit (RL). For results less than 5x the RL, the absolute difference between the sample and replicate must be less than 2x the RL. No data were qualified based on field duplicate precision outliers. Users of the data should consider the impact of field precision outliers on the reported results.

With the following exceptions, the field duplicates were within the control limits:

SDG	Parent Sample	Duplicate Sample	Compound	Evaluation
J88125-2	M4-0to26-101918	515-0to26-101918	PCB-5	75% RPD
			PCB-6	59% RPD
			PCB-7	67% RPD
			PCB-8	77% RPD
			PCB-9	68% RPD
			PCB-11	80% RPD
			PCB-12	53% RPD
			PCB-13	53% RPD
			PCB-15	59% RPD
			PCB-16	67% RPD
			PCB-18	71% RPD
			PCB-22	54% RPD
			PCB-24	154% RPD

SDG	Parent Sample	Duplicate Sample	Compound	Evaluation
J88125-2	M4-0to26-101918	515-0to26-101918	PCB-30	71% RPD
			PCB-35	Diff > 2X RL
			PCB-52	77% RPD
			PCB-56	53% RPD
			PCB-58	141% RPD
			PCB-60	93% RPD
			PCB-61	76% RPD
			PCB-64	63% RPD
			PCB-70	76% RPD
			PCB-74	76% RPD
			PCB-76	76% RPD
			PCB-77	67% RPD
			PCB-79	58% RPD
			PCB-82	69% RPD
			PCB-84	63% RPD
			PCB-85	65% RPD
			PCB-86	70% RPD
			PCB-87	70% RPD
			PCB-89	58% RPD
			PCB-90	53% RPD
			PCB-95	62% RPD
			PCB-97	70% RPD
			PCB-101	53% RPD
			PCB-104	191% RPD
			PCB-105	91% RPD
			PCB-108	81% RPD
			PCB-109	70% RPD
			PCB-110	63% RPD
			PCB-111	189% RPD
			PCB-113	53% RPD
			PCB-114	92% RPD
			PCB-115	63% RPD
			PCB-116	65% RPD
			PCB-117	65% RPD
			PCB-118	72% RPD
			PCB-119	70% RPD
			PCB-121	186% RPD
			PCB-122	71% RPD
			PCB-123	82% RPD
			PCB-124	81% RPD

SDG	Parent Sample	Duplicate Sample	Compound	Evaluation
J88125-2	M4-0to26-101918	515-0to26-101918	PCB-125	70% RPD
			PCB-126	Diff > 2X RL
			PCB-127	Diff > 2X RL
			PCB-128	60% RPD
			PCB-131	62% RPD
			PCB-137	63% RPD
			PCB-145	148% RPD
			PCB-156	65% RPD
			PCB-157	65% RPD
			PCB-158	58% RPD
			PCB-166	60% RPD
			PCB-167	63% RPD
			Total Dichlorobiphenyls	58% RPD
			Total Pentachlorobiphenyls	55% RPD

Compound Identification

For several samples, the laboratory reported EMPC or "estimated maximum possible concentration" values for one or more of the target analytes. An EMPC value is reported when a peak was detected but did not meet identification criteria, as required by the method; therefore, the result cannot be considered as a positive identification for the analyte. To indicate that the reported result for an individual analyte is in effect an elevated detection limit, the EMPC values were qualified as not detected (U-25) for all compound results below the reporting limit and were estimated (J-25) for all compound results greater than the reporting limit.

Compound Quantitation

All SDGs: The laboratory case narrative indicated that several results were flagged "G" to indicate elevated instrument noise and/or matrix interferences; associated "G" flagged results were estimated (J/UJ-14) to indicate a potential bias and an elevated reporting limit.

SDG J88125-2: Several results for Sample A6-0to23-100818 were flagged "S" to indicate ion suppression. Ion abundance ratios and retention times were within acceptance criteria; therefore, no qualification was applied.

Reported Results

SDG J88908-1: The laboratory re-extracted and re-analyzed all the samples in batch 140-33628 because the method blank and laboratory control sample were analyzed at a 5x dilution due to matrix interferences which prevented the instrumentation from locking. All samples in this batch have been flagged as do-not-report (DNR-11) to indicate which result of multiple reported results not to use.

Calculation Verification

SDG J88125-2: Several results were recalculated for batch 140-32775 in this SDG. No transcription or calculation errors were found.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory performed the specified analytical method. With the exceptions noted above, accuracy was acceptable as demonstrated by the labeled compound and laboratory control sample recoveries and precision was acceptable as demonstrated by the field duplicate RPD values.

Results were flagged as not detected at the reported concentrations based on method blank and field blank contamination. Data were estimated or flagged as not detected to indicate that EMPC values represent elevated detection limits. Results were estimated due to matrix interferences and elevated instrument noise.

Results have been flagged as do-not-report (DNR) to indicate which result of multiple reported results not to use. Results flagged as DNR should not be used for any purpose.

All other data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
Pacific Groundwater Group: PH Head of Swan Island Sediments
Metals by SW6020B and Mercury by SW7471A

This report documents the review of analytical data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Eurofins TestAmerica Laboratories, Inc., Tacoma, Washington. Refer to the Sample Index for a complete list of samples.

SDG	Number of Samples and Matrix	Validation Level
J88125-1	21 Sediment	EPA Stage 3 & EPA Stage 2A

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Ten percent (10%) of the laboratory QC results were also verified.

TECHNICAL DATA VALIDATION

This report documents the review of analytical QC requirements as listed in the following table.

2	Sample Receipt, Preservation, and Holding Times	2	Matrix Spikes (MS) and Matrix Spike Duplicates (MSD)
✓	Initial Calibration	✓	Laboratory Duplicates
✓	Calibration Verification	1	Field Duplicates
2	Laboratory Blanks	✓	Reporting Limits
1	Field Blanks	✓	Reported Results
1	Reference Materials	1	Calculation Verification (Full validation only)
✓	Laboratory Control Samples (LCS)		

✓Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.
1 Quality control results are discussed below, but no data were qualified.
2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of ≤6°C. With the following exception noted below, the laboratory received the sample coolers within the advisory temperature range.

All samples were archived and kept frozen until client requested analyses within 1 year. The holding time for mercury is 28 days for frozen samples, all samples in this SDG were analyzed past the holding at 298 to 310 days; all results were estimated (J-1).

Laboratory Blanks

To assess the impact of any blank contaminant on the reported sample results, an action level is established at five times (5x) the concentration reported in the blank. If a contaminant is reported in an associated field sample and the concentration is less than the action level, the result is qualified as not detected (U-7). No action is taken if the sample result is greater than the action level, or for non-detected results.

Laboratory blanks were analyzed at the appropriate frequency. Contaminant levels, associated samples, and action levels are documented in the data validation worksheets.

For digestion batch, 580-308354, the method blank had a detected value for lead. The associated sample results were greater than the 5x action level; no data were qualified.

For the analyses on 8/13/19 and 8/14/19, instrument blanks had detected value for copper and lead, respectively. The associated sample results were greater than the 5x action level; no data were qualified.

Field Blanks

Field blanks were not submitted with this dataset.

Reference Materials

No certified reference materials were submitted.

Matrix Spike/Matrix Spike Duplicate

Matrix spike/matrix spike duplicate samples (MS/MSD) were analyzed at the proper frequency of one per 20 samples or one per batch for soil samples. Where analyte concentrations were less than 4x the spike amount, the percent recovery (%R) and relative percent difference (RPD) values were evaluated. If the percent recovery values indicate a potential low bias, associated results are estimated (J/UJ-8). If the %R values indicate a potential high bias, only the associated positive results are estimated (J-8).

For %R values less than 30%, indicating an extreme low bias, the results for the post digestion spike (PDS) were also evaluated. If the post spike %R values were acceptable, then associated results were estimated (J/UJ-8). If the post spike %R value was also less than the control limits of 75%-125%, the positive results were estimated (J/UJ-8) and the non-detects were rejected (R-8). If the PDS %R values were greater than the control limit, then associated positive results were estimated (J-8) and if the PDS %R was less than the control limit, associated results were estimated (J-8) without an indication of bias. For cases indicating conflicting bias because multiple matrix spike samples were included in a batch, only the parent sample was qualified with a bias indication.

Precision is indicated by the relative percent difference (RPD) between the MS and MSD values. RPD values outside the control limits indicate uncertainty in the measured results for the sample and positive results are estimated (J-9). Qualifiers were issued to all samples associated with a QC batch.

Sample A1-0to30-102018 was analyzed as the matrix spike for the mercury analyses. The MS/MSD recoveries were greater than the upper control limit at 124% and 121%; associated mercury results were estimated (J-8H) to indicate a potential high bias.

Field Duplicate

For sediment samples, the RPD control limit is 50% for results greater than 5x the reporting limit (RL). For results less than 5x the RL, the absolute difference between the sample and replicate must be less than 2x the RL. No data were qualified based on field duplicate precision outliers. Users of the data should consider the impact of field precision outliers on the reported results.

Samples M4-0to26-101918 and 515-0to26-101918 were submitted as field duplicates. The RPD value for mercury was greater than the control limit at 104%.

Calculation Verification

Several results were verified by recalculation from the raw data. No calculation or transcription errors were found.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical methods. Accuracy was acceptable, as demonstrated by the laboratory control sample and matrix spike recoveries. Precision was also acceptable as demonstrated by the laboratory and field duplicate RPD values.

Results were estimated based on holding time outliers and matrix spike recovery outliers.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
Pacific Groundwater Group: PH Head of Swan Island Sediments
Conventional Tests

This report documents the review of analytical data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by TestAmerica Laboratories, Inc., Tacoma, Washington. Refer to the Sample Index for a complete list of samples.

SDG	Number of Samples and Matrix	Validation Level
J88125-1	21 Sediment	EPA Stage 2A & EPA Stage 3 (batches 580-308264, 580-307638, 140-32648, 580-308680)

The analytical tests that were performed are summarized below:

Parameter	Method
Total Solids	ASTM D2216
Grainsize	ASTM D422
Total Organic Carbon (TOC)	EPA 9060
Density/Specific Gravity	D854

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Ten percent (10%) of the laboratory QC results were also verified.

TECHNICAL DATA VALIDATION

This report documents the review of analytical QC requirements as listed in the following table.

1	Sample Receipt, Preservation, and Holding Times	✓	Matrix Spikes (MS) and Matrix Spike Duplicates (MSD)
✓	Initial Calibration	✓	Laboratory Duplicates
✓	Calibration Verification	1	Field Duplicates
1	Laboratory Blanks	✓	Reporting Limits
1	Field Blanks	✓	Reported Results
1	Reference Materials	1	Calculation Verification (Full validation only)
✓	Laboratory Control Samples (LCS)		

✓Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.
1 Quality control results are discussed below, but no data were qualified.
2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of ≤6°C. With the following exception noted below, the laboratory received the sample coolers within the advisory temperature range.

All samples were archived and kept frozen until client requested analyses within 1 year.

Laboratory Blanks

To assess the impact of any blank contaminant on the reported sample results, an action level is established at five times (5x) the concentration reported in the blank. If a contaminant is reported in an associated field sample and the concentration is less than the action level, the result is qualified as not detected (U-7). No action is taken if the sample result is greater than the action level, or for non-detected results.

Laboratory blanks were analyzed at the appropriate frequency. Contaminant levels, associated samples, and action levels are documented in the data validation worksheets.

The method blank for batch 580-308680, had a detected value for total organic carbon; the associated sample results were greater than the 5x action level; no data were qualified.

Several instrument blanks analyzed on 8/18/19 had detected values for total organic carbon, however, all associated sample results were greater than the 5x action level; no data were qualified.

Field Blanks

Field blanks were not submitted with this dataset.

Reference Materials

No certified reference materials were submitted.

Field Duplicate

For sediment samples, the RPD control limit is 50% for results greater than 5x the reporting limit (RL) for TOC and solids and particle size percentages greater than 5% for grain size. For results less than 5x the RL, the absolute difference between the sample and replicate must be less than 2x the RL. No data were qualified based on field duplicate precision outliers. Users of the data should consider the impact of field precision outliers on the reported results.

Samples M4-0to26-101918 and 515-0to26-101918 were submitted as field duplicates. Field precision was acceptable.

Calculation Verification

Several results were verified by recalculation from the raw data. No calculation or transcription errors were found.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical methods. Accuracy was acceptable, as demonstrated by the laboratory control sample and matrix spike recoveries. Precision was also acceptable as demonstrated by the laboratory and field duplicate RPD values.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

ECOCHEM
Data Quality

APPENDIX A

DATA QUALIFIER DEFINITIONS
REASON CODES
AND CRITERIA TABLES

DATA VALIDATION QUALIFIER CODES
Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

The following is an EcoChem qualifier that may also be assigned during the data review process:

DNR	Do not report; a more appropriate result is reported from another analysis or dilution.

DATA QUALIFIER REASON CODES

Group	Code	Reason for Qualification
Sample Handling	1	Improper Sample Handling or Sample Preservation (i.e., headspace, cooler temperature, pH, summa canister pressure); Exceeded Holding Times
Instrument Performance	24	Instrument Performance (i.e., tune, resolution, retention time window, endrin breakdown, lock-mass)
	5A	Initial Calibration (RF, %RSD, r^2)
	5B	Calibration Verification (CCV, CCAL; RF, %D, %R) Use bias flags (H,L)[1] where appropriate
	5C	Initial Calibration Verification (ICV %D, %R) Use bias flags (H,L)[1] where appropriate
Blank Contamination	6	Field Blank Contamination (Equipment Rinsate, Trip Blank, etc.)
	7	Lab Blank Contamination (i.e., method blank, instrument blank, etc.) Use low bias flag (L)[1] for negative instrument blanks
Precision and Accuracy	8	Matrix Spike (MS and/or MSD) Recoveries Use bias flags (H,L)[1] where appropriate
	9	Precision (all replicates: LCS/LCSD, MS/MSD, Lab Replicate, Field Replicate)
	10	Laboratory Control Sample Recoveries (a.k.a. Blank Spikes) Use bias flags (H,L)[1] where appropriate
	12	Reference Material Use bias flags (H,L)[1] where appropriate
	13	Surrogate Spike Recoveries (a.k.a. labeled compounds, recovery standards) Use bias flags (H,L)[1] where appropriate
Interferences	16	ICP/ICP-MS Serial Dilution Percent Difference
	17	ICP/ICP-MS Interference Check Standard Recovery Use bias flags (H,L)[1] where appropriate
	19	Internal Standard Performance (i.e., area, retention time, recovery)
	22	Elevated Detection Limit due to Interference (i.e., chemical and/or matrix)
	23	Bias from Matrix Interference (i.e. diphenyl ether, PCB/pesticides)
Identification and Quantitation	2	Chromatographic pattern in sample does not match pattern of calibration standard
	3	2nd column confirmation (RPD or %D)
	4	Tentatively Identified Compound (TIC) (associated with NJ only)
	20	Calibration Range or Linear Range Exceeded
	25	Compound Identification (i.e., ion ratio, retention time, relative abundance, etc.)
Miscellaneous	11	A more appropriate result is reported (multiple reported analyses i.e., dilutions, re-extractions, etc. Associated with "R" and "DNR" only)
	14	Other (See DV report for details)
	26	Method QC information not provided

[1] H = high bias indicated
L = low bias indicated

Semivolatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
(Based on NFG 1999 & 2008 and SW-846 Method 8270D)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler/Storage Temperature Preservation	4°C±2°C sediment/tissues may require storage at -20°C	NFG (1) Method (3)	**If required by project:** J (pos)/UJ (ND) if greater than 6° C	1	Use **PJ** for temp outliers; see **TM20** Current SW846 criterion is ≤ 6° C (3)
Holding Time	**Extraction Aqueous:** 7 days from collection **Extraction Solid:** 14 days from collection **Analysis (all matrices)**: 40 days from extraction Holding time may be extended to 1 year for frozen sediments/tissues	NFG (1) Method (3)	J (pos)/UJ (ND) if HT exceeded J (pos)/R (ND) if gross exceedance (> 2x HT)	1	Gross exceedance = > 2x HT, as per 1999 NFG
Instrument Performance					
Tuning	DFTPP Beginning of each 12 hour period Use method or project acceptance criteria	NFG (1) Method (3)	R (pos/ND) all analytes in all samples associated with the tune	24	
Initial Calibration **Sensitivity**	RRF ≥ 0.05 except: RRF ≥ 0.01 poor responders *	NFG (1) Method (3)	Use **PJ** to qualify J (pos)/UJ (ND)	5A	**TM-06** EcoChem Policy for the Evaluation and Qualification of GCMS Instrument Performance **PJ** - no action if response is stable (ICAL RSD and CCAL %D acceptable)
Initial Calibration **Stability**	Minimum 5 standards %RSD ≤ 20.0% except: %RSD ≤ 40.0% poor responders * **or** co-efficient of determination (r^2) > 0.99	NFG (1) Method (3)	J (pos) if %RSD > limit **or** r^2 value <0.99	5A	
Initial Calibration Verification Check	Prepared from second source; analyze after each ICAL Percent recovery limits = 70-130%	Method (3)	J (pos) %R > UCL J (pos)/UJ (ND) %R < LCL	5A (H,L)[4]	QAPP may have overriding accuracy limits.

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Semivolatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
(Based on NFG 1999 & 2008 and SW-846 Method 8270D)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Instrument Performance (continued)					
Continuing Calibration **Sensitivity**	RRF ≥ 0.05 except: RRF ≥ 0.01 poor responders *	NFG [1] Method [3]	Use **PJ** to qualify J (pos)/UJ (ND)	5B	see ICAL RRF guidance
Continuing Calibration **Stability**	Prior to sample analysis and every 12 hours %D ≤ 25% except: %D ≤ 40.0% poor responders *	NFG [1] Method [3]	J (pos) - %D > control limit (high bias) J (pos)/UJ (ND) - %D < -control limit (low bias)	5B (H,L)[4]	
Blank Contamination					
Method Blank (MB)	MB: One per matrix per batch of (of ≤ 20 samples) No detected compounds > MDL	NFG [2] Method [3]	U(pos) if result is < 5X or 10X action level	7	10X action level applies to phthalates only. 5X for all other target analytes **Hierarchy of blank review:** **#1 - Review MB, qualify as needed** **#2 - Review FB , qualify as needed** **Note: Actions as per 1999 NFG**
	No TICs present		R (pos) TICs using 10X rule	7	
Field Blank (FB)	No detected compounds > MDL	NFG [2] Method [3]	U (pos) if result is < 5X or 10X action level	6	
Precision and Accuracy					
LCS/LCSD (recovery)	One per matrix per batch (of ≤ 20 samples) LCSD not required by NFG or method Use method acceptance criteria/laboratory limits	Method [3]	J (pos) if %R > UCL J (pos)/UJ (ND) if %R < LCL J (pos)/R (ND)%R < 10%	10 (H,L)[4]	No action if only one spike %R is outside criteria when LCSD is analyzed, unless one recovery is <10%. QAPP may have overriding accuracy limits. Qualify all associated samples.
LCS/LCSD (RPD)	If LCSD analyzed RPD < lab limits	Method [3]	J (pos)	9	Qualify all associated samples. QAPP may have overriding precision limits.

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Semivolatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
(Based on NFG 1999 & 2008 and SW-846 Method 8270D)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy (continued)					
Reference Material (RM, SRM, or CRM)	Result ±20% of the 95% confidence interval of the true value for analytes	EcoChem standard policy	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L)[4]	QAPP may have overriding accuracy limits. Some manufacturers have different RM control limits
MS/MSD (recovery)	One per matrix per batch (of ≤ 20 samples) Use method acceptance criteria/laboratory limits	NFG [(1)] Method [(3)]	J (pos) %R > UCL J (pos)/UJ (ND) if both %R < LCL J (pos)/R (ND) if both %R < 10% J (pos)/UJ (ND) if one > UCL & one < LCL, with no bias	8 (H,L)[4]	No action if only one spike %R is outside criteria. No action if parent concentration is >4x the amount spiked. Qualify parent sample only.
MS/MSD (RPD)	One per matrix per batch (of ≤ 20 samples) Use method acceptance criteria/laboratory limits	NFG [(1)] Method [(2)]	J (pos) in parent sample if RPD > CL	9	Qualify parent sample only
Surrogates	Minimum of 3 acid & 3 base/neutral (B/N) compounds added to all samples Within method control limits	NFG [(1)] Method [(3)]	J (pos) if %R > UCL J (pos)/UJ (ND) if %R < LCL J (pos)/R (ND) if %R < 10%	13 (H,L)[4]	Qualify all compounds in associated fraction. Do not qualify if only 1 acid and/or 1 B/N surrogate is out, unless <10%. If 1 surrogate outlier < 10% then J (pos)/R (ND)
Internal Standards	Added to all samples Acceptable Range: IS area 50% to 200% of CCAL area RT within 30 seconds of CC RT	NFG [(1)] Method [(3)]	J (pos) if > 200% J (pos)/UJ (ND) if < 50% J (pos)/R (ND) if < 25% if RT >30 seconds use **PJ**	19	Qualify compounds quantified using particular internal standard
Field Duplicates	**Solids:** RPD < 50% OR difference < 2X RL (for results < 5X RL) **Aqueous:** RPD < 35% OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	J (pos)/UJ (ND) Qualify only parent and field duplicate samples	9	Use project limits if specified

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Semivolatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
(Based on NFG 1999 & 2008 and SW-846 Method 8270D)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Compound Identification and Quantitation and Calculation					
Retention times and relative ion intensities	RRT within 0.06 of standard RRT Ion relative intensity within 20% of standard All ions in std. at > 10% intensity must be present in sample	NFG [(1)] Method [(3)]	U (pos) if identification criteria not met	25	
TICs	Major ions (>10%) in reference must be present in sample; intensities agree within 20%; check identification	NFG [(1)] Method [(3)]	NJ the TIC unless: R (pos) common laboratory contaminants	4	
Calibration Range	Results greater than highest calibration standard	EcoChem standard policy	Qualify J (pos)	20	If result from dilution analysis is not reported.
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	**TM-04** EcoChem Policy for Rejection/Selection Process for Multiple Results

[1] National Functional Guidelines for Organic Data Review, June, 2008
[2] National Functional Guidelines for Organic Data Review, October, 1999
[3] Method SW846 8270D Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS), Revision 4, February 2007.
[4] NFG 2013 suggests using "+ / -" to indicate bias; EcoChem has chosen "H" = high bias indicated; "L" = low bias indicated.

(pos): Positive Result(s)
(ND): Non-detects

* "Poor responder" compounds: acetophenone, atrazine, benzaldehyde, 1,1'-biphenyl, bis(2-ethylhexyl)phthalate, butylbenzylphthalate, caprolactam, carbazole, 4-chloroaniline, diethylphthalate, di-n-butylphthalate, 3-3'-dichlorobenzidine, dimethylphthalate, 2,4-dinitrophenol, 4,6-dinitro-2-methylphenol, di-n-octylphthalate, hexachlorobutadiene, hexachlorocyclopentadiene, 2-nitroaniline, 3-nitroaniline, 4-nitroaniline, 4-nitrophenol, N-nitrosodiphenylamine, 2,2'-oxybis-(1-chloropropane), 1,2,4,5-tetrachlorobenzene use a 0.010 RRF criterion.

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Pesticides by GC
(Based on Organic NFG 1999 & 2008 and SW-846 Method 8081B)

QC Element	Acceptance Criteria (NFG)	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler/Storage Temperature Preservation	4°C ± 2°C Tissue/sediments (may be frozen -20°C)	NFG (2) Method (3)	J (pos)/UJ (ND) if greater than 6° C	1	Use Professional Judgment (PJ) to qualify for temperature outlier. Current SW846 criterion is ≤ 6° C(3)
Holding Time	*Extraction Aqueous:* 7 days from collection *Extraction Solid:* 14 days from collection *Exraction Tissue/Sediment (frozen):* 1 year *Analysis (all matrices):* 40 days from extraction	NFG (2) Method (3)	J (pos)/UJ (ND) if ext/analyzed > HT J (pos)/R (ND) if gross exceedance (> 2x HT)	1	Gross exceedance > 2x HT, as per NFG 1999
Instrument Performance					
Resolution Check	Beginning of ICAL sequence Within RTW and resolution > 60%	NFG (2)	NJ (pos)/R (ND) results	14	CLP criterion; might not be submitted with SW846 data package
Retention Times	Surrogates: TCMX (± 0.05); DCB (± 0.10) Target analytes: within RTW	NFG (2) Method (3)	NJ (pos)/R (ND) results for analytes with RT shifts	24	Use PJ based on examination of raw data
Breakdown	DDT Breakdown: ≤ 20% Endrin Breakdown: ≤ 20% Combined Breakdown: ≤ 30% Compounds within RTW	NFG (2) Method (3)	If 4,4'-DDT is detected: J (pos) 4,4'-DDT, 4,4'-DDD and 4,4'-DDE If 4,4'-DDT is ND and either 4,4'-DDD or 4,4'-DDE are detected: R (ND) 4,4'-DDT, NJ (pos) DDD and DDE If Endrin is detected: J (pos) Endrin, Endrin Aldehyde and Endrin Ketone If Endrin is ND and either EA or EK are detected: R (ND) Endrin, NJ (pos) EA and EK	5A	Method 8081B breakdown criterion: ≤ 15%. For combined breakdown outliers, apply qualifiers considering the degree of individual breakdown.

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Pesticides by GC
(Based on Organic NFG 1999 & 2008 and SW-846 Method 8081B)

QC Element	Acceptance Criteria (NFG)	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Instrument Performance (continued)					
Initial Calibration	Single Component Compounds: RSD ≤ 20% alpha-BHC and delta-BHC: RSD ≤ 25% toxaphene and surrogates: RSD ≤ 30% **or** correlation coefficient (r-value) ≥ 0.995 OR Minimum 6-point with coefficient of determination (r^2-value) ≥ 0.99	NFG (2) Method (4)	J (pos) if %RSD greater than control limit **or** r-value < 0.995 **or** r^2-value < 0.99	5A	Refer to TM-01 for additional information. Use bias flags (H,L) (6) where appropriate
Initial Calibration Verification (ICV)	No NFG criteria Project specific	Project QAPP	J (pos) if > UCL J (pos)/UJ (ND) if < LCL	5B	Use bias flags (H,L) (6) where appropriate
Continuing Calibration	%D ± 20% Analyzed prior to each 12 hour shift	Method (3)	If > 20% (high bias): J (pos) If <20% (low bias: J (pos)/UJ (ND)	5B	Refer to TM-01 for additional information. Use bias flags (H,L)(6) where appropriate
Blank Contamination					
Method Blank (MB)	One per matrix per batch (of ≤ 20 samples) No detected compounds > RL	NFG (1) Method (3)	U (pos) if result is less than appropriate 5X action level.	7	**Hierarchy of blank review:** #1 - Review MB and IB, qualify as needed #2 - Review FB , qualify as needed **Note: Actions as per NFG 1999** Note: IB not required by method
Field Blank (FB)	FB: frequency as per QAPP No detected compounds > RL	NFG (1) Method (3)	U (pos) if result is less than appropriate 5X action level.	6	
Instrument Blanks (IB)	Analyzed at the beginning and end of every 12 hour sequence No analyte > CRQL	NFG (1)	U (pos) if result is less than appropriate 5X action level.	7	

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Pesticides by GC
(Based on Organic NFG 1999 & 2008 and SW-846 Method 8081B)

QC Element	Acceptance Criteria (NFG)	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy					
MS/MSD (recovery)	One set per matrix per batch (of ≤ 20 samples) Method or project acceptance limits	NFG (2) Method (3)	Qualify parent only unless other QC indicates systematic problems. J (pos) if both %R > upper control limit (UCL) J (pos)/UJ (ND) if both %R < lower control limit (LCL) J (pos)/R (ND) if both %R < 10%	8	No action if only one spike %R is outside criteria No action if native analyte conc. > 5x the amount spiked Use bias flags (H,L) (6) where appropriate
MS/MSD (RPD)	One set per matrix per batch (of ≤ 20 samples) Method or project acceptance limits	NFG (2) Method (3)	Qualify parent only unless other QC indicates systematic problems. J (pos) if RPD > control limit	9	No action if parent is ND
LCS	One per lab batch (of ≤ 20 samples) Method or project acceptance limits	NFG (2)	J (pos) if %R > UCL J (pos)/UJ (ND) if %R < LCL J (pos)/R (ND) if %R < 10%	10	Qualify all associated samples. Use bias flags (H,L) (6) where appropriate
LCS/LCSD (RPD)	if analyzed use MS/MSD RPD criteria	NFG (2)	J (pos) assoc. compound in all samples	9	LCSD not required by method or NFG
Surrogates	TCMX and DCBP added to every sample %R = 30% - 150% **or** project limits	NFG (2) Method (3)	J (pos) if either %R > UCL J (pos)/UJ (ND) if either %R < LCL J (pos)/R (ND) if either %R < 10%	13	If %R < 10% (dilution is a factor), use PJ Use bias flags (H,L) (6) where appropriate
Internal Standards (if used)	Acceptable Range: IS area = 50% to 200% of CCAL area RT within 30 seconds of CC RT	Method (3)	J (pos) if area > 200% J (pos)/UJ (ND) if area < 50% J (pos)/R (ND) if area < 25% RT > 30 seconds, narrate	19	

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Pesticides by GC
(Based on Organic NFG 1999 & 2008 and SW-846 Method 8081B)

QC Element	Acceptance Criteria (NFG)	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy (continued)					
Field Duplicates	**Solids:** RPD < 50% **or** difference < 2X RL (for results < 5X RL) **Aqueous:** RPD < 35% **or** difference < 1X RL (for results < 5X RL)	EcoChem standard practice	J (pos)/UJ (ND) Qualify only parent and field duplicate samples	9	Use project limits if specified
Compound Identification/Quantification					
Quantitation/ Identification	Between two columns: RPD < 40% or %D < 25% Within Retention Time Windows on both columns.	NFG [2] Method [3]	J (pos) if RPD = 40% - 60% (25% - 60% for %D) NJ (pos) if > 60% R (pos) if RTW criterion not met	3	See TM-08 for additional info
Calibration Range	On-column concentration < high calibration standard	NFG [2] Method [3]	J (pos) if conc > high standard and sample was not diluted	20	
Dilutions Re-extractions and/or Reanalyses	Report only one result per analyte	Standard reporting policy	Use "DNR" to flag results that will not be reported.	11	TM-04 for additional info
Sample Clean-up					
GPC/Sulfur/ Florisil	GPC or Florisil cleanup stndards 80% - 120%	NFG [2]	J (pos) if %R > UCL J (pos)/UJ (ND) if %R < LCL J (pos)/R (ND) if %R < 10%	14	Cleanups are optional under SW846 Use bias flags (H,L) [6] where appropriate

[1] National Functional Guidelines for Organic Data Review, October 1999
[2] National Functional Guidelines for Organic Data Review, June, 2008
[3] Organochlorine Pesticides by Gas Chromatography USEPA Method SW846 8081B, Feb 2007, Rev. 2
[4] SW846, Chapter 4, Organic Analytes
[5] Determinative Chromatographic Separations , Method 8000C , March 2003, Rev.3
[6] NFG 2013 suggests using "+ / -" to indicate bias; EcoChem has chosen "H" = high bias indicated; "L" = low bias indicated.

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PCB Aroclors by GC
(Based on Organic NFG 2008 and SW-846 Method 8082A)

QC Element	Acceptance Criteria (NFG)	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample					
Cooler/Storage Temperature Preservation	4°C ± 2°C Tissue/sediments (may be frozen -20°C)	NFG [1] Method [2]	**If required by project:** J (pos)/UJ (ND) if greater than 6° C	1	Use Professional Judgment (PJ) to qualify for temperature outlier. Current SW846 criterion is ≤ 6° C [3]
Holding Time	**Extraction Aqueous:** 7 days from collection **Extraction Solid:** 14 days from collection **Exraction Tissue/Sediment (frozen):** 1 year **Analysis (all matrices)**: 40 days from extraction	NFG [1] Method [2]	**If required by project:** J (pos)/UJ (ND) if ext/analyzed > HT J (pos)/R (ND) if gross exceedance (> 2x HT)	1	Use PJ to qualify for holding time outlier. ***Current SW846 does not have an extraction holding time limit.*** [3] Gross exceedance > 2x HT, as per NFG 1999
Instrument Performance					
Retention Times	Surrogates: TCMX (± 0.05); DCB (± 0.10) Aroclors (± 0.07)	NFG [1]	NJ (pos)/R (ND) results for analytes with RT shifts	24	
Initial Calibration	Minimum 5 point with RSD ≤ 20% OR correlation coefficient (r-value) ≥ 0.995 OR Minimum 6-point with co-efficient of determination (r2-value) ≥ 0.99	NFG [1] Method [4]	J (pos) if %RSD greater than 20% OR r-value < 0.995 OR r^2-value < 0.99	5A	Refer to TM-01 for additional information. Use bias flags (H,L)[5] where appropriate
Initial Calibration Verification (ICV)	No NFG criteria. Project specific.	Project	J (pos) if > UCL J (pos)/UJ (ND) if < LCL	5B	Use bias flags (H,L) where appropriate
Continuing Calibration (Prior to each 12 hr. shift)	%D ± 20%	Method [2]	If > 20% (high bias): J (pos) If <20% (low bias: J (pos)/UJ (ND)	5B	Refer to TM-01 for additional information. Use bias flags (H,L) where appropriate
Blank Contamination					
Method Blank (MB)	MB: One per matrix per batch of (of ≤ 20 samples) No detected compounds > RL	NFG [1] Method [2]	U (pos) if result is less than appropriate 5X action level.	7	**Hierarchy of blank review:** **#1 - Review MB and IB, qualify as needed** **#2 - Review FB , qualify as needed** Note: Actions as per NFG 1999 Note: IB not required by method
Field Blank (FB)	FB: frequency as per QAPP No detected compounds > RL	NFG [1] Method [2]	U (pos) if result is less than appropriate 5X action level.	6	
Instrument Blanks (IB)	Analyzed at the beginning and end of every 12 hour sequence No analyte > CRQL	NFG [1]	U (pos) if result is less than appropriate 5X action level.	7	

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PCB Aroclors by GC
(Based on Organic NFG 2008 and SW-846 Method 8082A)

QC Element	Acceptance Criteria (NFG)	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy					
MS/MSD (recovery)	One set per matrix per batch (of ≤ 20 samples) AR1016 and AR1260: %R = 29% - 135%, or project limits	NFG [1] Method [2]	Qualify parent only unless other QC indicates systematic problems. J (pos) if both %R > upper control limit (UCL) J (pos)/UJ (ND) if both %R < lower control limit (LCL) J (pos)/R (ND) if both %R < 10%	8	No action if only one spike %R is outside criteria. No action if native analyte conc. > 5x the amount spiked. Use bias flags (H,L) where appropriate. Actions apply to all Aroclors in parent sample.
MS/MSD (RPD)	One set per matrix per batch (of ≤ 20 samples) AR1016: RPD < 15%, AR1260: RPD < 20% or project limits	NFG [1] Method [2]	Qualify parent only unless other QC indicates systematic problems. J (pos) if RPD > control limit	9	No action if parent is ND.
LCS	One per lab batch (of ≤ 20 samples) AR1016 and AR1260: %R = 50% - 150%, or project limits	NFG [1]	J (pos) if %R > UCL J (pos)/UJ (ND) if %R < LCL J (pos)/R (ND) if %R < 10%	10	Use bias flags (H,L) where appropriate. Actions apply to all Aroclors in associated samples.
LCS/LCSD (RPD)	if analyzed use MS/MSD RPD criteria	NFG [1]	J (pos) assoc. compound in all samples	9	LCSD not required by method or NFG
Precision and Accuracy					
Surrogates	TCMX and DCBP added to every sample %R = 30% - 150% or project limits	NFG [1] Method [2]	J (pos) if either %R > UCL J (pos)/UJ (ND) if either %R < LCL J (pos)/R (ND) if either %R < 10%	13	If %R < 10% (sample dilution is a factor), use PJ Use bias flags (H,L) where appropriate
Internal Standards (if used)	Acceptable Range: IS area = 50% to 200% of CCAL area RT within 30 seconds of CC RT	Method [2]	J (pos) if area > 200% J (pos)/UJ (ND) if area < 50% J (pos)/R (ND) if area < 25% RT > 30 seconds, narrate	19	
Field Duplicates	**Solids:** RPD < 50% OR difference < 2X RL (for results < 5X RL) **Aqueous:** RPD < 35% OR difference < 1X RL (for results < 5X RL)	EcoChem	J (pos)/UJ (ND) Qualify only parent and field duplicate samples	9	use project limits if specified

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PCB Aroclors by GC
(Based on Organic NFG 2008 and SW-846 Method 8082A)

QC Element	Acceptance Criteria (NFG)	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Compound Identification/Quantification					
Quantitation/ Identification	Between two columns: RPD < 40% or %D < 25% Within Retention Time Windows on both columns.	NFG [1] Method [2]	J (pos) if RPD = 40% - 60% (25% - 60% for %D) NJ (pos) if > 60% R (pos) if RTW criterion not met	3	See TM-08 for additional info.
Calibration Range	on column concentration < high calibration standard	NFG [1] Method [2]	J (pos) if conc > high standard and sample was not diluted	20	
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	Standard reporting policy	Use "DNR" to flag results that will not be reported.	11	TM-04 Rev. 1 for additional info.
Sample Clean-up					
GPC/Sulfur/ Florisil/Acid	No criteria - cleanups are optional	NFG [1] Method [2]	Use Professional Judgment	14	special cleanups may be required for project cleanup standards may be associated with GPC/florisil cleanups

[1] National Functional Guidelines for Organic Data Review, June, 2008
[2] Polychlorinated Biphenyls (PCBs) by Gas Chromatography USEPA Method SW846 8082A, Feb 2007, Rev. 1
[3] SW846, Chapter 4, Organic Analytes
[4] Determinative Chromatographic Separations , Method 8000C , March 2003, Rev.3
[5] "H" = high bias indicated; "L" = low bias indicated

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EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Diesel & Residual Range

(Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Dx, June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling				
Cooler Temperature & Preservation	4°C±2°C Water: HCl to pH < 2	J(+)/UJ(-) if greater than 6 deg. C	1	
Holding Time	Ext. Waters: 14 days preserved 7 days unpreserved Ext. Solids: 14 Days Analysis: 40 days from extraction	J(+)/UJ(-) if hold times exceeded J(+)/R(-) if exceeded > 3X	1	Professional Judgement
Instrument Performance				
Initial Calibration	5 calibration points (All within 15% of true value) Linear Regression: $r^2 \geq 0.990$ If used, RSD of response factors ≤20%	Narrate if fewer than 5 calibration levels or if %R >15% J(+)/UJ(-) if r^2 <0.990 J(+)/UJ(-) if %RSD > 20%	5A	
Mid-range Calibration Check Std.	Analyzed before and after each analysis shift & every 20 samples. Recovery range 85% to 115%	Narrate if frequency not met. J(+)/UJ(-) if %R < 85% J(+) if %R >115%	5B	
Blank Contamination				
Method Blank	At least one per batch (≤20 samples) No results >RL	U (at the RL) if sample result is < RL & < 5X blank result.	7	
		U (at reported sample value) if sample result is ≥ RL and < 5X blank result	7	
Field Blanks (if required by project)	No results > RL	Action is same as method blank for positive results remaining in the field blank after method blank qualifiers are assigned.	6	

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EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Diesel & Residual Range

(Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Dx, June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy				
MS samples (accuracy) (if required by project)	%R within lab control limits	Qualify parent only, unless other QC indicates systematic problems. J(+) if both %R > upper control limit (UCL) J(+)/UJ(-) if both %R < lower control limit (LCL) No action if parent conc. >5X the amount spiked.	8	Use Professional Judgement if only one %R outlier
Precision: MS/MSD or LCS/LCSD or sample/dup	At least one set per batch (≤10 samples) RPD ≤ lab control limit	J(+) if RPD > lab control limits	9	
LCS (not required by method)	%R within lab control limits	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL J(+)/R(-) if any %R <10%	10	Professional Judgement
Surrogates	2-fluorobiphenyl, p-terphenyl, o-terphenyl, and/or pentacosane added to all samples (inc. QC samples). %R = 50-150%	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL J(+)/R(-) if any %R <10% No action if 2 or more surrogates are used, and only one is outside control limits.	13	Professional Judgement
Pattern Identification	Compare sample chromatogram to standard chromatogram to ensure range and pattern are reasonable match. Laboratory may flag results which have poor match.	J(+)	2	
Field Duplicates	Use project control limits, if stated in QAPP **EcoChem default:** water: RPD < 35% solids: RPD < 50%	Narrate (Use Professional Judgement to qualify)	9	

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EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Diesel & Residual Range

(Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Dx, June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Compound ID and Calculation				
Two analyses for one sample (dilution)	Report only one result per analyte	"DNR" (or client requested qualifier) all results that should not be reported.	11	See EcoChem TM-04

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Dioxin/Furan Analysis by HRMS
(Based on Dioxin NFG 2011 and Methods EPA 1613B and SW-846 8290)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler/Storage Temperature Preservation	Waters/Solids ≤ 6°C & in the dark Tissues <-10°C & in the dark **Preservation Aqueous:** If Cl_2 is present Thiosulfate must be added and if pH > 9 it must be adjusted to 7 - 9	NFG [1] Method[2]	J(pos)/R(ND) if thiosulfate not added if Cl_2 present; J(pos)/UJ(ND) if pH not adjusted J(pos)/UJ(ND) if temp > 20°C	1	**EcoChem PJ, see TM-05**
Holding Time	**If properly stored, 1 year or:** **Extraction (all matrices):** 30 days from collection **Analysis (all matrices)**: 45 days from extraction	NFG [1] Method[2]	If not properly stored or HT exceedance: J(pos)/UJ(ND)	1	**EcoChem PJ, see TM-05** Gross exceedance = > 1 year 2011 NFG **Note:** Under CWA, SDWA, and RCRA the HT for H2O is 7 days.
Instrument Performance					
Mass Resolution (Tuning)	PFK (Perfluorokerosene) ≥10,000 resolving power at m/z 304.9824. Exact mass of m/z 380.9760 w/in 5 ppm of theoretical value (380.97410 to 380.97790) . Analyzed prior to ICAL and at the start and end of each 12 hr. shift.	NFG [1] Method [2]	R(pos/ND) all analytes in all samples associated with the tune	24	Notify PM
Windows Defining Mix	Peaks for first and last eluters must be within established retention time windows for each selector group (chlorination level)	NFG [1] Method [2]	If peaks are not completely within windows (clipped): If natives are ok, J(pos)/UJ(ND) homologs (Totals) If natives are affected, R all results for that selector group	24	Notify PM
Column Performance Mix	Both mixes must be analyzed before ICAL and CCAL Valley < 25% (valley = (x/y)*100%) where x = ht. of TCDD (or TCDF) & y = baseline to bottom of valley For all isomers eluting near the 2378-TCDD (TCDF) peak (TCDD only for 8290)	NFG [1] Method [2]	J(pos) if valley > 25%	24	**EcoChem PJ, see TM-05, Rev. 2**; Note: TCDF is evaluated only if second column confirmation is performed
Initial Calibration **Sensitivity**	S/N ratio > 10 for all native and labeled compounds in CS1 std.	NFG [1] Method [2]	If <10, elevate Det. Limit or R(ND)	5A	
Initial Calibration **Selectivity**	Ion Abundance ratios within QC limits (Table 8 of method 8290) (Table 9 of method 1613B)	NFG [1] Method [2]	If 2 or more ion ratios are out for one compound in ICAL, J(pos)	5A	**EcoChem PJ, see TM-05, Rev. 2**

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Dioxin/Furan Analysis by HRMS
(Based on Dioxin NFG 2011 and Methods EPA 1613B and SW-846 8290)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Instrument Performance (continued)					
Initial Calibration (Minimum 5 stds.) **Stability**	%RSD < 20% for native compounds %RSD <30% for labeled compounds (%RSD < 35% for labeled compounds under 1613b)	NFG [1] Method [2]	J(pos) natives if %RSD > 20%	5A	
	Absolute RT of $^{13}C_{12}$-1234-TCDD >25 min on DB5 & >15 min on DB-225	NFG [1] Method [2]	Narrate, no action		**EcoChem PJ, see TM-05, Rev. 2**
Continuing Calibration (Prior to each 12 hr. shift) **Sensitivity**	S/N ratio for CS3 standard > 10	NFG [1] Method [2]	If <10, elevate Det. Limit or R(ND)	5B	
Continuing Calibration (Prior to each 12 hr. shift) **Selectivity**	Ion Abundance ratios within QC limits (Table 8 of method 8290) (Table 9 of method 1613B)	NFG [1] Method [2]	For congener with ion ratio outlier, J(pos) natives in all samples associated with CCAL. No action for labeled congener ion ratio outliers.	25	**EcoChem PJ, see TM-05**
Continuing Calibration (Prior to each 12 hr. shift) **Stability**	%D+/-20% for native compounds %D +/-30% for labeled compounds **(Must meet limits in Table 6, Method 1613B)** If %D in the closing CCAL are within 25%/35%, the mean RF from the two CCAL may be used to calculate samples **(Section 8.3.2.4 of 8290)**.	NFG [1] Method [2]	**Labeled compounds:** Narrate, no action. **Native compounds:** 1613: J(pos)/UJ(ND)if %D is outside Table 6 limits J(pos)/R(ND) if %D is +/-75% of Table 6 limits 8290: J(pos)/UJ(ND) if %D = 20% - 75% J(pos)/R(ND) if %D > 75%	5B (H,L)[3]	
	Absolute RT of $^{13}C_{12}$-1234-TCDD and $^{13}C_{12}$-123789-HxCDD should be ± 15 seconds of ICAL RRT for all other compounds must meet criteria listed in Table 2 Method 1316.	NFG [1] Method [2]	Narrate, no action	5B	**EcoChem PJ, see TM-05**
Blank Contamination					
Method Blank (MB)	MB: One per matrix per batch of (of ≤ 20 samples) No detected compounds > RL	NFG [1] Method [2]	U(pos) if result is < 5X action level.	7	**Hierarchy of blank review:** **#1 - Review MB, qualify as needed** **#2 - Review FB , qualify as needed**
Field Blank (FB)	FB: frequency as per QAPP No detected compounds > RL		U(pos) if result is < 5X action level.	6	

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Dioxin/Furan Analysis by HRMS
(Based on Dioxin NFG 2011 and Methods EPA 1613B and SW-846 8290)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy					
MS/MSD (recovery)	**MS/MSD not typically required for HRMS analyses.** If lab analyzes MS/MSD then one set per matrix per batch (of ≤ 20 samples) Use most current laboratory control limits	EcoChem standard policy	J(pos) if both %R > UCL - high bias J(pos)/UJ(ND) if both %R < LCL - low bias J(pos)/R(ND) if both %R < 10% - very low bias J(pos)/UJ(ND) if one > UCL & one < LCL, with no bias **PJ if only one %R outlier**	8 (H,L)[3]	No action if only one spike %R is outside criteria. No action if parent concentration is >4x the amount spiked. Qualify parent sample only unless other QC indicates systematic problems.
MS/MSD (RPD)	**MS/MSD not typically required for HRMS analyses.** If lab analyzes MS/MSD then one set per matrix per batch (of ≤ 20 samples) Use most current laboratory control limits	EcoChem standard policy	J(pos) in parent sample if RPD > CL	9	Qualify parent sample only.
LCS (or OPR)	One per lab batch (of ≤ 20 samples) Use most current laboratory control limits **or** Limits from Table 6 of 1613B	NFG (1) Method (2)	J(pos) if %R > UCL - high bias J(pos)/UJ(ND) if %R < LCL - low bias J(pos)/R(ND) if %R < 10% - very low bias	10 (H,L)[3]	No action if only one spike %R is outside criteria, when LCSD is analyzed. Qualify all associated samples.
LCS/LCSD (RPD)	**LCSD not typically required for HRMS analyses.** One set per matrix and batch of 20 samples RPD < 35%	Method (2) Ecochem standard policy	J(pos) assoc. compound in all samples if RPD > CL	9	Qualify all associated samples.
Lab Duplicate (RPD)	**Lab Dup not typically required for HRMS analyses.** One per lab batch (of ≤ 20 samples) Use most current laboratory control limits	EcoChem standard policy	J(pos)/UJ(ND) if RPD > CL	9	
Labeled Compounds (Internal Standards)	Added to all samples %R = 40% - 135% in all samples 8290 %R must meet limits in Table 7 Method 1613B	NFG (1) Method (2)	J(pos) if %R > UCL - high bias J(pos)/UJ(ND) if %R < LCL - low bias J(pos)/R(ND) if %R < 10% - very low bias	13 (H,L)[3]	
Field Duplicates	Solids: RPD <50% OR difference < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	Narrate and qualify if required by project	9	**Use professional judgment**

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Dioxin/Furan Analysis by HRMS
(Based on Dioxin NFG 2011 and Methods EPA 1613B and SW-846 8290)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Compound ID and Calculation					
Quantitation/ Identification	All ions for each isomer must maximize within ± 2 seconds. S/N ratio >2.5 Ion ratios must meet criteria listed in Table 8 Method 8290, or Table 9 of 1613B; RRTs w/in limits in Table 2 of 1613B	NFG [1] Method [2]	Narrate in report; qualify if necessary NJ(pos) for retention time outliers. U(pos) for ion ratio outliers.	25	**EcoChem PJ, see TM-05**
EMPC (estimated maximum possible concentration)	If quantitation identification criteria are not met, laboratory should report an EMPC value.	NFG [1] Method [2]	If laboratory correctly reported an EMPC value, qualify the native compound U(pos) to indicate that the value is a detection limit and qualify total homolog groups J (pos)	25	**Use professional judgment See TM-18**
Interferences	Interferences from chlorodiphenyl ether compounds	NFG [1] Method [2]	J(pos)/UJ(ND) if present	23	**See TM-16**
	Lock masses must not deviate ± 20% from values in Table 8 of 1613B	Method [2]	J(pos)/UJ(ND) if present	24	**See TM-17**
Second Column Confirmation	All 2,3,7,8-TCDF hits must be confirmed on a DB-225 (or equiv) column. All QC criteria must also be met for the confirmation analysis.	NFG [1] Method [2]	Report the DB-225 value. If not performed use PJ.	3	DNR-11 DB5 result if both results from both columns are reported. **EcoChem PJ, see TM-05**
Calculation Check	Check 10% of field & QC sample results	EcoChem standard policy	Contact laboratory for resolution and/or corrective action	na	Full data validation only.
Electronic Data Deliverable (EDD)					
Verification of EDD to hardcopy data	EcoChem verify @ 10% unless problems noted; then increase level up to 100% for next several packages.		Depending on scope of problem, correct at EcoChem (minor issues) to resubmittal by laboratory (major issues).	na	EcoChem Project Manager and/or Database Administrator will work with lab to provide long-term corrective action.
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	Standard reporting policy	Use "DNR" to flag results that will not be reported.	11	

(pos) - positive (detected) results; (ND) - not detected results

[1] National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) & Chlorinated Dibenzofurans (CDFs) Data Review, September 2011

[2] Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by High-Resolution Gas Chromatography/High-Resolution Mass Spectrometry (HRGC/HRMS), USEPA SW-846, Method 8290

[2] EPA Method 1613, Rev.B, Tetra-through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGS/HRMS, October 1994

[3] NFG 2013 suggests using "+ / -" to indicate bias; EcoChem has chosen "H" = high bias indicated; "L" = low bias indicated.

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PCB Congener Analysis by HRMS
(Based on EPA DV Guidance[1] and Method EPA 1668C)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler/Storage Temperature Preservation	Waters/Solids ≤ 6°C & in the dark Tissues <-10°C & in the dark **Preservation Aqueous:** If Cl_2 is present Thiosulfate must be added and if needed adjust pH to 2 - 3 (drinking water requirement)	EPA (1) Method (2)	J(pos)/R(ND) if thiosulfate not added if Cl_2 present and J(pos)/UJ(ND) if pH not adjusted; J(pos)/UJ(ND) if temp > 20°C	1	Note: EPA DV guidance documents use < 4°C, method uses ≤ 6°C. Info in EcoChem TM-05 also generally applies.
Holding Time	If properly stored, 1 year prior to extraction. If extracts properly stored (< -10°C & in dark), 1 year from extraction to analysis.	EPA (1) Method (2)	If not properly stored or HT exceeded: J(pos)/UJ(ND)	1	May **be dictated by QAPP** Info in EcoChem TM-05 also generally applies
Instrument Performance					
Mass Resolution (Tuning)	≥10,000 resolving power at m/z 330.9792 <5 ppm deviation from each m/z listed in **Table 7** of method. Analyzed prior to ICAL and at the beginning and end of each 12 hr. shift	EPA (1) Method (2)	R all analytes in all samples associated with a failed tune	24	PFK (Perfluorokerosene) tuning compound
Column Resolution	Mix of all 209 PCBs run prior to each ICAL/12 hours RT of PCB209 must be > 55 min PCB156 & 157 must coelute w/in 2 sec PCB34 & 23 and PCB187 & 182 must be resolved where ((x/y)*100%) < 40% x = ht of valley and y = ht of shortest peak RRT of all congeners must fall within the range in **Table 2** of the method	EPA (1) Method (2)	If criteria are not met, review sample chromatograms to determine if sample results are negatively impacted. If so, discuss with client for possible reanalyses, or J(pos) all data.	24	Criteria are for SPB-octyl column. If different column used, see Section 6.9.1.2 of method. Appendix A provides info for DB-1 column
Initial Calibration **Sensitivity**	S/N ratio > 10 for all native and labeled congeners in CS1 std.	EPA (1) Method (2)	If <10, elevate Det. Limit or R(ND)	5A	
Initial Calibration **Selectivity**	Ion Abundance ratios within QC limits (**Table 8** of Method 1668C)	EPA (1) Method (2)	If ion ratios are out for a given congener in 2 or more standards in ICAL, J(pos) results for that congener in all samples	5A	Professional judgement. The info in EcoChem TM-05 also generally applies
Initial Calibration (Minimum 5 stds.) **Stability**	%RSD < 20% for congeners listed in **Table 3** of method RRT of all congeners must meet **Table 2** of method	EPA (1) Method (2)	J(pos) natives if %RSD > 20% RRT outliers: narrate, no action	5A	RRT outliers: professional judgement. The info in EcoChem TM-05 also generally applies
Continuing Calibration (Prior to each 12 hr. shift) **Sensitivity**	S/N ratio for CS3 standard > 10	EPA (1) Method (2)	If <10, elevate Det. Limit to lowest calibration or R(ND)	5B	
Continuing Calibration (Prior to each 12 hr. shift) **Selectivity**	Ion Abundance ratios within QC limits (**Table 8** of Method 1668C)	EPA (1) Method (2)	No action if %D acceptable, review sample ion ratios, U(pos) if ion ratio outside limits	5B	Professional judgement. The info in EcoChem TM-05 also generally applies.

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PCB Congener Analysis by HRMS
(Based on EPA DV Guidance[1] and Method EPA 1668C)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Continuing Calibration (Prior to each 12 hr. shift) **Stability**	Recoveries must meet VER% limits in **Table 6,** Method 1668C	EPA [(1)] Method [(2)]	**Labeled congeners:** Narrate, no action. **Native congeners:** J(pos)/UJ(ND) for low bias J(pos) for high bias	5B (H,L)[3]	
	Absolute RT of all Labeled congeners and Window Defining Congeners must be +/- 15 sec of RT in ICAL RRT of all congeners must be within range in **Table 2** of method	EPA [(1)] Method [(2)]	Narrate, no action	5B	Professional judgement. The info in EcoChem TM-05 also generally applies
Blank Contamination					
Method Blank (MB)	MB: One per matrix per batch of (of ≤ 20 samples) No detected congeners	EPA [(1)] Method [(2)]	U(pos) if sample result is < 5X blank concentration	7	**Heirarchy of blank review:** **#1 - Review MB, quaify as needed** **#2 - Review FB , qualify as needed** EMPC values in blanks as considered to be non-detects
Field Blank (FB)	FB: frequency as per QAPP No detected congeners		U(pos) if sample result is < 5X blank concentration	6	
Precision and Accuracy					
MS/MSD (recovery)	**MS/MSD not typically required for HRMS analyses.** If lab analyzes MS/MSD then one set per matrix per batch (of ≤ 20 samples) Use most current laboratory control limits	EcoChem standard policy	J(pos) if both %R > UCL - high bias J(pos)/UJ(ND) if both %R < LCL - low bias J(pos)/R(ND) if both %R < 10% - very low bias J(pos)/UJ(ND) if one > UCL & one < LCL, with no bias **PJ if only one %R outlier**	8 (H,L)[3]	No action if only one spike %R is outside criteria. No action if parent concentration is >4x the amount spiked. Qualify parent sample only unless other QC indicates systematic problems.
MS/MSD (RPD)	**MS/MSD not typically required for HRMS analyses.** If lab analyzes MS/MSD then one set per matrix per batch (of ≤ 20 samples) Use most current laboratory control limits	EcoChem standard policy	J(pos) in parent sample if RPD > CL	9	Qualify parent sample only.
LCS (or OPR)	One per lab batch (of ≤ 20 samples) %R must meet limits in **Table 6** Method 1668C	EPA [(1)] Method [(2)]	J(pos) if %R > UCL - high bias J(pos)/UJ(ND) if %R < LCL - low bias J(pos)/R(ND) if %R < 10% - very low bias	10 (H,L)[3]	No action if only one spike %R is outside criteria, when LCSD is analyzed. Qualify all associated samples.
LCS/LCSD (RPD)	**LCS/LCSD not typically required for HRMS analyses.** If lab analyzes LCS/LCSD then one set per matrix and batch of 20 samples RPD < 35%	EcoChem standard policy	J(pos) assoc. congener in all samples if RPD > CL	9	Qualify all associated samples.
Lab Duplicate (RPD) (if required)	**Lab Dup not typically required for HRMS analyses.** One per lab batch (of ≤ 20 samples) Use most current laboratory control limits	EcoChem standard policy	J(pos)/UJ(ND) if RPD > CL	9	Optional element. Qualify parent sample only.

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PCB Congener Analysis by HRMS
(Based on EPA DV Guidance[1] and Method EPA 1668C)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Labeled congeners (Internal Standards)	Added to all samples %R must meet limits in **Table 6** Method 1668C	EPA [(1)] Method [(2)]	J(pos) if %R > UCL - high bias J(pos)/UJ(ND) if %R < LCL - low bias J(pos)/R(ND) if %R <5% - very low bias J(pos)/UJ(ND) if %R between 5-10% for two or more labeled compounds in a substitution group (ie, mono, -di-, trichlorinated)- very low bias	13 (H,L)[3]	See next tab for labled congener associations as per **Table 2** Method 1668
Field Duplicates	Solids: RPD <50% OR difference < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	Narrate and qualify if required by project **(EcoChem PJ)**	9	**RPD values may be dictated by QAPP** 35% and 50% are EcoChem defaults
Compound ID and Calculation					
Quantitation/ Identification	All ions for each isomer must maximize within +/- 2 seconds. S/N ratio >2.5 Ion ratios must meet criteria listed in **Table 8** of 1668C; RRTs w/in limits in **Table 2** of 1668C	EPA [(1)] Method [(2)]	Narrate in report; qualify if necessary NJ(pos) for retention time outliers. U(pos) for ion ratio outliers.	25	The info in EcoChem TM-05 also generally applies
EMPC (estimated maximum possible concentration)	If quantitation identification criteria are not met, laboratory should report an EMPC value.	EPA [(1)] Method [(2)]	If laboratory correctly reported an EMPC value, qualify the native congener U to indicate that the value is an elevated detection limit and qualify total homolog groups J(+)	25	**Use professional judgment.** **See TM-18**
Interferences	Lock masses must not deviate +/- 20% from values in **Table 7** of 1668C	Method [(2)]	J(pos)/UJ(ND) if present	24	**Use professional judgment.** **See TM-17**
Calibration Range	Results greater than highest calibration standard	EcoChem standard policy	Qualify J (pos)	20	If result from dilution analysis is not reported.
Calculation Check	Check 10% of field & QC sample results	EcoChem standard policy	Contact laboratory for resolution and/or corrective action	na	Full data validation only.
Electronic Data Deliverable (EDD)					
Verification of EDD to hardcopy data	EcoChem verify @ 10% unless problems noted; then increase level up to 100% for next several packages.		Depending on scope of problem, correct at EcoChem (minor issues) to resubmittal by laboratory (major issues).	na	EcoChem Project Manager and/or Database Administrator will work with lab to provide long-term corrective action.
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	Standard reporting policy	Use "DNR" to flag results that will not be reported.	11	

[1] USEPA Region 2 Data Validation, Standard Operating Procedure for EPA Method 1668A, Revision 1, September 2008
USEPA Region 3 Interim Guidelines for the Validation of Data Generated Using Method 1668 PCB Congener Data, Revision 0, April 2004
USEPA Region 10 SOP For the Validation of Method 1668 Toxic, Dioxin-like, PCB Data, Revision 1, December 1995
[2] EPA Method 1668, Rev.C, Chlorinated Biphenyl Congeners in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS, April 2010
[3] "H" = high bias indicated; "L" = low bias indicated

(pos): Positive Result(s)
(ND): Non-detects

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Metals by ICP-MS
(Based on Inorganic NFG 2010 and SW-846 6020A)

QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler / Storage Temperature Preservation	**Solid:** Cooler temperature 4°C±2°C **Aqueous:** Nitric Acid to pH < 2 **Dissolved Metals:** 0.45 µm filter, preserve to pH < 2 after filtration	NFG [(1)] Method [(2)]	Cooler Temps: **If required by project** J (pos)/UJ (ND) if greater than 6° C Aqueous: J (pos)/UJ (ND) if pH > 2	1	Use **PJ** to qualify for temperature outlier. Current SW846 criterion is ≤ 6° C [(4)] No quals for pH if samples preserved by lab immediately upon receipt and within 1 day of collection.
Holding Time	All matrices: 180 days from date sampled Frozen soils, sediments, tissues (-20°C) - HT extended to 1 year	NFG [(1)] Method [(2)] EcoChem standard policy	J (pos)/UJ (ND) if holding time exceeded	1	
Instrument Performance					
Tune	Analyzed prior to ICAL tunignsolution analyzed 5 times with Std. Dev. ≤ 5% Mass calibration < 0.1 amu difference from target mass Resolution < 0.9 amu @ 10% peak height	NFG [(1)] Method [(2)]	J(pos)/UJ(ND) if tune criteria not met	5A	Use **PJ** to evaluate tune. Alternate Resolution critteria may apply based on instrument specs (i.e <0.75 amu at 5% peak height)
Initial Calibration (ICAL)	Based on instrument requirements, blank + 1 standard minimum requirement for calibration If more than 1 standard used, r ≥ 0.995	NFG [(1)] Method [(2)]	J (pos)/UJ (ND) if r < 0.995	5A	
Initial Calibration Verification (ICV)	Independent source analyzed immediately after calibration %R within ± 10% of true value	NFG [(1)] Method [(2)]	R (pos/ND) if %R < 75% J (pos)/UJ (ND) if %R 75% - 89% J (pos) if %R >111%	5A (H,L)[3]	Qualify all samples in run
Reporting Limit (RL) Standard Low Level ICV/CCV	concentration at RL %R = 70%-130%	Method [(2)]	J (pos) < 2x RL / R (ND) if %R <50% J (pos) < 2x RL / UJ (ND) if %R 50 - 69% J (pos) < 2x RL if %R > 130%	5A (H,L)[3]	Qualify all samples in run

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Metals by ICP-MS
(Based on Inorganic NFG 2010 and SW-846 6020A)

QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-Conformance	Reason Code	Discussion and Comments
Instrument Performance cont'd					
Continuing Calibration Verification (CCV)	Immediately following ICV/ICB, then every two hours or ten samples, and at end of run. %R within ± 10% of true value	NFG [1] Method [2]	R (pos/ND) if %R < 75% J (pos)/UJ (ND) if %R 75% - 89% J (pos) if %R >111%	5B (H,L)[3]	Qualify samples bracketed by CCV outliers
Interference Check Samples (ICSA / ICSAB)	ICSAB %R 80% - 120% for all spiked elements | ICSA | < MDL for all unspiked elements	NFG [1] Method [2]	For samples with Al, Ca, Fe, Mg > ICS levels: **ICSAB**: J(pos)/R (ND) if %R < 50% J (pos)/UJ (ND) if %R = 50% - 79% J (pos) if %R > 120% **ICSA:** J (pos)< 2x ICSA/UJ (ND) for ICSA <Neg MDL J (pos) < 2x ICSA for ICSA > MDL	17 (H,L)[3]	Use **PJ** and molecular interferences to evaluate ICSA to determine if bias is present. Refer to **TM-14** for additional information.
Blank Contamination					
Method Blank (MB)	One per matrix per batch of (of ≤ 20 samples) Blank conc < MDL	NFG [1] Method [2]	U (pos) if result is < 5X method blank concentration	7	Refer to **TM-02** for additional information. Blank Evaluation based on NFG 1994
Instrument Blanks (ICB/CCB)	After each ICV & CCV | blank concentration | < MDL	NFG [1] Method [2]	Action level is 5x absolute value of blank conc. For positive blanks: U (pos) results < action level For negative blanks: J (pos)/UJ (ND) results < action level	Pos Blks: 7 Neg Blks: 7L[3]	Use blanks bracketing samples for Qualification Refer to **TM-02** for additional information. **Hierarchy of blank review: #1 - Review MB, quaify as needed #2 - Review IB , qualify as needed #3 - Review FB , qualify as needed**
Field Blank (FB)	Blank conc < MDL	EcoChem standard policy	U (pos) if result is < 5x action level, as per analyte.	6	Qualify in associated field samples only. Refer to **TM-02** for additional information.

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Metals by ICP-MS
(Based on Inorganic NFG 2010 and SW-846 6020A)

QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy					
Internal Standards (IS)	Added to all samples. All analytes must be associated with an internal standard 60-125% of cal blank IS	NFG [1] Method [2]	J(pos)/UJ(ND) all analytes associated with IS outlier	19	6020A criteria - IS >70% of ICAL std
LCS (recovery)	One per matrix per batch (of ≤ 20 samples); LCSD not required %R between 80-120%	Method [2]	J (pos)/R (ND) if %R <50% J (pos)/UJ (ND) if %R 50% - 79% J (pos) if %R > 120%	10 (H,L)[3]	Qualify all samples in batch QAPP may have overriding accuracy limits. NFG Limits 70% -130%
LCS/LCSD (RPD)	LCSD not required, if analyzed: RPD ≤ 20%	Method [2]	J (pos)/UJ (ND) if RPD > 20%	9	Qualify all samples in batch QAPP may have overriding precision limits.
MS/MSD (recovery)	One per matrix per batch (of ≤ 20 samples); MSD not required %R between 75-125%	NFG [1] Method [2]	J (pos) if %R > 125% J (pos)/UJ (ND) if %R <75% J (pos)/R (ND) if %R < 30%, unless post digestion spike analyzed, J (pos)/UJ (ND) if post digestion spike %R OK	8 (H,L)[3]	No action if only one spike %R is outside criteria. NA if parent concentration >4x the amount spiked. Qualify all samples in batch. QAPP may have overriding accuracy limits.
Post Digestion Spikes	If MS is outside 75-125%, post-spike should be analyzed %R 80%-120% (method); 75%-125% (NFG)	NFG [1] Method [2]	Only used to support MS qualification decisions	NA	No qualifiers assigned based solely on this element.
MS/MSD (RPD)	MSD not required, if analyzed: RPD ≤ 20%	NFG [1] Method [2]	J (pos)/UJ (ND) if RPD > 20%	9	QAPP may have overriding precision limits.
Laboratory Duplicate	One per matrix per batch (of ≤ 20 samples) RPD ≤ 20% for results ≥ 5x RL Solids: difference < 2X RL for results < 5X RL Aqueous: difference < 1X RL for results < 5X RL	NFG [1] Method [2]	J (pos)/UJ (ND) if RPD > 20% or if difference > control limit	9	Qualify all samples in batch. QAPP may have overriding precision limits.

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Metals by ICP-MS
(Based on Inorganic NFG 2010 and SW-846 6020A)

QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy cont'd					
Reference Material (RM, SRM, or CRM)	Result ±20% of the 95% confidence interval of the true value for analytes	EcoChem standard policy	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L)[3]	QAPP may have overriding accuracy limits. Some manufacturers may have different RM control limits
Serial Dilution	Analyze one sample per matrix at a 5x dilution %D <10% for original sample conc. > 50x MDL	NFG [(1)]	J(pos)/UJ(ND) if %D > 10% and native sample concentration > 50x MDL	16	Note serial dilutions for soil are reported in ug/L, but the MDL is in mg/kg. The units need to be adjusted. Qualify all samples in batch.
Field Duplicate	Solids: RPD <50% OR difference < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	Narrate and qualify if required by project **(EcoChem PJ)** Qualify only field duplicate samples J(pos)/UJ(ND)	9	QAPP may have overriding precision limits.
Compound Quantitation					
Total and Dissolved Comparison	Total > Dissolved	EcoChem standard policy	J (pos)/UJ (ND) if Dissolved > Total and results fall outside of standard duplicate precision criteria	14	
Calibration Range	Results < instrument linear range	NFG [(1)] Method [(2)]	if result exceeds linear range and sample was not diluted J (pos)	20	
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	**TM-04** EcoChem Policy for Rejection/Selection Process for Multiple Results

[1] National Functional Guidelines for Inorganic Superfund Data Review, January 2010.
[2] Method SW846 6020A Inductively Coupled Plasma-Mass Spectrometry (ICP-MS), Revision 1, February 2007.
[3] "H" = high bias indicated; "L" = low bias indicated
[4] SW846, Chapter 3, Inorganic Analytes

(pos): Positive Result
(ND): Not detected

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Mercury by CVAA
(Based on Inorganic NFG 2010 and SW846 7470A & 7471B)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler / Storage Temperature Preservation	**Solid:** Cooler temperature 4°C±2°C **Aqueous:** Nitric Acid to pH < 2 **Dissolved Metals:** 0.45 µm filter, preserve to pH < 2 after filtration	NFG (1) Method (2)	Cooler Temps: **If required by project** J (pos)/UJ (ND) if greater than 6° C Aqueous: J (pos)/UJ (ND) if pH > 2	1	Use **PJ** to qualify for temperature outlier. Current SW846 criterion is ≤ 6° C (4) No quals for pH if samples preserved by lab immediately upon receipt and within 1 day of collection.
Holding Time	28 days from date sampled Frozen solids and tissues HT extended to 6 months	NFG (1) Method (2) EcoChem standard policy	J (pos)/UJ (ND) if HT exceeded	1	
Instrument Performance					
Initial Calibration (ICAL)	Daily Calibration Blank + 5 standards, one ≤ RL Correlation coefficient (r) ≥ 0.995	NFG (1) Method (2)	J (pos)/UJ (ND) if r < 0.995	5A (H,L)[3]	
Initial Calibration Verification (ICV)	Independent source analyzed immediately after ICAL %R within ± 15% of true value	NFG (1) Method (2)	R(pos/ND) if %R <70% J(pos)/UJ(ND) if %R = 70-84% J(pos) if %R = > 116%	5A (H,L)[3]	Qualify all samples in run
Reporting Limit (RL) Standard	Conc = RL %R = 70-130%	Method (2)	J (pos) < 2x RL / R (ND) if %R <50% J (pos) < 2x RL / UJ (ND) if %R 50 - 69% J (pos) < 2x RL if %R > 130%	5A (H,L)[3]	Qualify all samples in run
Continuing Calibration Verification (CCV)	At beginning of run, every ten samples, and again after last sample. %R within ± 15% of true value	NFG (1) Method (2)	R(pos/ND) if %R <70% J(pos)/UJ(ND) if %R = 70-84% J(pos) if %R = > 116%	5B (H,L)[3]	Qualify samples bracketed by CCV outliers
Blank Contamination					
Method Blank (MB)	One per matrix per batch of (of ≤ 20 samples) Blank conc < MDL	NFG (1) Method (2)	U (pos) if result is < 5X method blank concentration	7	Refer to **TM-02** for additional information. Blank Evaluation based on NFG 1994

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Mercury by CVAA
(Based on Inorganic NFG 2010 and SW846 7470A & 7471B)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Instrument Blanks (ICB/CCB)	After each ICV & CCV | blank concentration | < MDL	NFG (1) Method (2)	Action level is 5x absolute value of blank conc. For positive blanks: U (pos) results < action level For negative blanks: J (pos)/UJ (ND) results < action level	Pos Blanks: 7 Neg Blanks: 7L[3]	Use blanks bracketing samples for Qualification Refer to **TM-02** for additional information. **Hierarchy of blank review:** **#1 - Review MB, quaify as needed** **#2 - Review IB , qualify as needed** **#3 - Review FB , qualify as needed**
Field Blank (FB)	Blank conc < MDL	EcoChem standard policy	U (pos) if result is < 5x action level, as per analyte.	6	Qualify in associated field samples only. Refer to **TM-02** for additional information.
Precision and Accuracy					
Laboratroy Control Sample (recovery)	One per matrix per batch (of ≤ 20 samples); LCSD not required %R between 80-120%	Method (2)	J (pos)/R (ND) if %R <50% J (pos)/UJ (ND) if %R 50% - 79% J (pos) if %R > 120%	10 (H,L)[3]	Qualify all samples in batch QAPP may have overriding accuracy limits. NFG does not address LCS
LCS/LCSD (RPD)	LCSD not required, if analyzed: RPD ≤ 20%	Method (2)	J (pos)/UJ (ND) if RPD > 20%	9	Qualify all samples in batch QAPP may have overriding precision limits.
Matris Spike/Matrix Spike Duplicate MS/MSD (recovery)	One per matrix per batch (of ≤ 20 samples); MSD not required %R between 75-125%	NFG (1) Method (2)	J (pos) if %R > 125% J (pos)/UJ (ND) if %R <75% J (pos)/R (ND) if %R < 30%	8 (H,L)[3]	No action if only one spike %R is outside criteria. NA if parent concentration >4x the amount spiked. Qualify all samples in batch. QAPP may have overriding accuracy limits.
MS/MSD (RPD)	MSD not required, if analyzed: RPD ≤ 20%	NFG (1) Method (2)	J (pos)/UJ (ND) if RPD > 20%	9	QAPP may have overriding precision limits.
Laboratory Duplicate	One per matrix per batch (of ≤ 20 samples) RPD ≤ 20% for results ≥ 5x RL Solids: difference < 2X RL for results < 5X RL Aqueous: difference < 1X RL for results < 5X RL	NFG (1) Method (2)	J (pos)/UJ (ND) if RPD > 20% or if difference > control limit	9	Qualify all samples in batch. QAPP may have overriding precision limits.

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Mercury by CVAA
(Based on Inorganic NFG 2010 and SW846 7470A & 7471B)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Reference Material (RM, SRM, or CRM)	Result ±20% of the 95% confidence interval of the true value for analytes	EcoChem standard policy	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L)[3]	QAPP may have overriding accuracy limits. Some manufacturers may have different RM control limits
Field Duplicate	Solids: RPD <50% (for results ≥ 5x RL) OR difference < 2X RL (for results < 5X RL) Aqueous: RPD <35% (for results ≥ 5x RL) OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	Qualify only parent and field duplicate samples J (pos)/UJ (ND)	9	QAPP may have overriding precision limits. Client/QAPP may not require qualification based on field precision.
Compound Quantitation					
Total and Dissolved Comparison	Total > Dissolved	EcoChem standard policy	J (pos)/UJ (ND) if Dissolved > Total and results fall outside of standard duplicate precision criteria	14	
Calibration Range	Results < instrument linear range	NFG [(1)] Method [(2)]	if result exceeds linear range and sample was not diluted J (pos)	20	
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	**TM-04** EcoChem Policy for Rejection/Selection Process for Multiple Results

[1] National Functional Guidelines for Inorganic Superfund Data Review, January 2010.

[2] Method SW846 7470A Mercury in Liquid Waste (Manual Cold-Vapor Technique), Revision 1, September 1994.
Method SW846 7471B Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique), Revision 2, February 2007.

[3] "H" = high bias indicated; "L" = low bias indicated

[4] SW846, Chapter 3, Inorganic Analytes

(pos): Positive Result
(ND): Not Detected

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Conventional Methods with Instrument Calibrations (i.e., Ion Chromatography, Total Organic Carbon)
(Based on Inorganic NFG 2010 and EPA methods)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler/Storage Temperature Preservation	Cooler temperature: 4°C±2°C Preservation: Analyte/Method Specific	NFG [(1)] Method [(2)]	J (pos)/UJ (ND) if preservation requirements not met	1	Use **PJ** to qualify for cooler temp outliers.
Holding Time	Analyte/Method Specific	NFG [(1)] Method [(2)]	J (pos)/UJ (ND) if holding time exceeded	1	
Instrument Performance					
Initial Calibration (ICAL)	blank + multiple standards as per method requirements r ≥ 0.995	NFG [(1)] Method [(2)]	J (pos)/UJ (ND) for r < 0.995	5A	
Initial Calibration Verification (ICV)	Independent source analyzed immediately after calibration %R method specific	NFG [(1)] Method [(2)]	J (pos)/UJ (ND) if %R < lower control limit (LCL) J (pos) if %R > upper control limit (UCL)	5A (H,L)[3]	Qualify all samples in run
Continuing Calibration Verification (CCV)	Immediately following ICV, every 10 samples, and end of run %R method specific	NFG [(1)] Method [(2)]	J(pos)/UJ(ND) if %R < LCL J(pos) if %R > UCL	5B (H,L)[3]	Qualify samples bracketed by CCV outliers
Blank Contamination					
Method Blank (MB)	One per matrix per batch of (of ≤ 20 samples) Blank conc < MDL	NFG [(1)] Method [(2)]	U (pos) if result is < 5X method blank concentration	7	Refer to **TM-02** for additional information. Blank Evaluation based on NFG 1994

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Conventional Methods with Instrument Calibrations (i.e., Ion Chromatography, Total Organic Carbon)
(Based on Inorganic NFG 2010 and EPA methods)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Instrument Blanks (ICB/CCB)	After each ICV & CCV | blank concentration | < MDL	NFG [(1)] Method [(2)]	Action level is 5x absolute value of blank conc. For positive blanks: U (pos) results < action level For negative blanks: J (pos)/UJ (ND) results < action level	Pos Blanks: 7 Neg Blanks: 7L[3]	Use blanks bracketing samples for Qualification Refer to **TM-02** for additional information. **Hierarchy of blank review:** **#1 - Review MB, quaify as needed** **#2 - Review IB , qualify as needed** **#3 - Review FB , qualify as needed**
Field Blank (FB)	Blank conc < MDL	EcoChem standard policy	U (pos) if result is < 5x action level, as per analyte.	6	Qualify in associated field samples only. Refer to **TM-02** for additional information.
Precision and Accuracy					
Laboratory Control Sample (LCS)	One per matrix per batch (of ≤ 20 samples) %R within Method control limits (or Laboratory control limtis if none specified in method)	NFG [(1)] Method [(2)]	J (pos)/UJ (ND) if %R < LCL J (pos) if %R > UCL	10 (H,L)[3]	Qualify all samples in batch QAPP may have overriding accuracy limits.
Reference Materials (RM, CRM, SRM)	Result ±20% of the 95% confidence interval of the true value for analytes	EcoChem standard policy	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L)[3]	QAPP may have overriding accuracy limits. Some manufacturers may have different RM control limits

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Conventional Methods with Instrument Calibrations (i.e., Ion Chromatography, Total Organic Carbon)
(Based on Inorganic NFG 2010 and EPA methods)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Matrix Spike/ Matrix Spike Duplicate (MS/MSD)	Where applicable to method; MSD may not be required One per matrix per batch (of ≤ 20 samples) For samples <4x spike level, %R within method control limits (or Laboratory control limtis if none specified in method)	NFG [1] Method [2]	J (pos)/UJ (ND) if %R < LCL J (pos) if %R > UCL	8 (H,L)3	Qualify all samples in batch No action if native analyte concentration ≥ 4x spike added. Qualify all samples in batch. QAPP may have overriding accuracy limits.
Laboratory Duplicate (or MS/MSD)	One per matrix per batch (of ≤ 20 samples) RPD ≤ 20% for results ≥ 5x RL Solids: difference < 2X RL for results < 5X RL Aqueous: difference < 1X RL for results < 5X RL	NFG [1] Method [2]	J (pos)/UJ (ND) if RPD > 20% or if difference > control limit	9	Qualify all samples in batch. QAPP may have overriding precision limits.
Field Duplicate	Solids: RPD <50% (for results ≥ 5x RL) OR difference < 2X RL (for results < 5X RL) Aqueous: RPD <35% (for results ≥ 5x RL) OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	Qualify only parent and field duplicate samples J (pos)/UJ (ND)	9	QAPP may have overriding precision limits. Client/QAPP may not require qualification based on field precision.
Compound Quantitation					
Linear Range	Sample concentrations less than highest calibration standard	NFG [1] Method [2]	If result exceeds linear range & sample was not diluted J (pos)	20	
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	**TM-04** EcoChem Policy for Rejection/Selection Process for Multiple Results

[1] National Functional Guidelines for Inorganic Superfund Data Review, January 2010.
[2] SW846 or EPA Standard Methods
[3] "H" = high bias indicated; "L" = low bias indicated

(pos): Positive Result
(ND): Not Detected

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Conventional Methods by Gravimetric Analysis
(i.e., Total Solids, Total Dissolved Solids, Total Suspended Solids, Grain Size)
(Based on Inorganic NFG 2010 and EPA methods)

QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler/Storage Temperature Preservation	Cooler temperature: 4°C±2°C Preservation: Analyte/Method Specific	Method [1] NFG[2]	J (pos)/UJ (ND) if preservation requirements not met	1	Use **PJ** to qualify for cooler temp outliers.
Holding Time	Analyte/Method Specific	Method NFG[2]	J (pos)/UJ (ND) if holding time exceeded	1	
Blank Contamination					
Method Blank (MB)	If required by method,one per matrix per batch of (of ≤ 20 samples) Blank conc < MDL	NFG [1] Method [2]	U (pos) if result is < 5X method blank concentration	7	Refer to **TM-02** for additional information. Blank Evaluation based on NFG 1994
Precision and Accuracy					
LCS (If appropriate to method)	One per matrix per batch (of ≤ 20 samples) %R between 80-120%	Method [2]	J (pos)/R (ND) if %R <50% J (pos)/UJ (ND) if %R 50% - 79% J (pos) if %R > 120%	10 (H,L)[3]	Qualify all samples in batch QAPP may have overriding accuracy limits.
Reference Material (RM, SRM, or CRM)	Result ±20% of the 95% confidence interval of the true value for analytes	EcoChem standard policy	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L)[3]	QAPP may have overriding accuracy limits. Some manufacturers may have different RM control limits

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Conventional Methods by Gravimetric Analysis
(i.e., Total Solids, Total Dissolved Solids, Total Suspended Solids, Grain Size)
(Based on Inorganic NFG 2010 and EPA methods)

QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-Conformance	Reason Code	Discussion and Comments
Laboratory Duplicate	One per matrix per batch (of ≤ 20 samples) RPD ≤ 20% for results ≥ 5x RL Solids: difference < 2X RL for results < 5X RL Aqueous: difference < 1X RL for results < 5X RL	NFG [1] Method [2]	J (pos)/UJ (ND) if RPD > 20% For Grain Size, no action if results for fraction are less than 5%	9	Qualify all samples in batch, except Grain Size - qualify parent only. QAPP may have overriding precision limits.
Field Duplicate	Solids: RPD <50% (for results ≥ 5x RL) OR difference < 2X RL (for results < 5X RL) Aqueous: RPD <35% (for results ≥ 5x RL) OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	Qualify only parent and field duplicate samples J (pos)/UJ (ND)	9	QAPP may have overriding precision limits. Client/QAPP may not require qualification based on field precision.
Compound Quantitation					
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte per sample	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	

[1] National Functional Guidelines for Inorganic Superfund Data Review, January 2010.
[2] SW846 or EPA Standard Methods
[3] "H" = high bias indicated; "L" = low bias indicated

(pos): Positive Result
(ND): Not Detected

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ECOCHEM
Data Quality

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Pacific Groundwater Group - Portland Harbor SIL Phases 1b and 2

SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88125-1	A1-0to30-102018	580-88125-1	SW7471A	Mercury	0.059	mg/kg	HF1	J	1,8H
580-88125-1	A1-0to30-102018	580-88125-1	CWA161	1,2,3,4,7,8,9-HpCDF		ug/kg	U*	UJ	12L
580-88125-1	A1-0to30-102018	580-88125-1	CWA161	1,2,3,4,6,7,8-HpCDF		ug/kg	U*	UJ	12L
580-88125-1	A1-0to30-102018	580-88125-1	CWA161	1,2,3,6,7,8-HxCDD		ug/kg	U*	UJ	12L
580-88125-1	F2-0to19-101018	580-88125-10	SW7471A	Mercury	0.07	mg/kg	H	J	1,8H
580-88125-1	F2-0to19-101018	580-88125-10	SW8082A	PCB-1242		ug/kg	U	UJ	13L
580-88125-1	F2-0to19-101018	580-88125-10	SW8082A	PCB-1248		ug/kg	U	UJ	13L
580-88125-1	F2-0to19-101018	580-88125-10	SW8082A	PCB-1260		ug/kg	U	UJ	13L
580-88125-1	F2-0to19-101018	580-88125-10	SW8082A	PCB-1016		ug/kg	U	UJ	13L
580-88125-1	F2-0to19-101018	580-88125-10	SW8082A	PCB-1221		ug/kg	U	UJ	13L
580-88125-1	F2-0to19-101018	580-88125-10	SW8082A	PCB-1232		ug/kg	U	UJ	13L
580-88125-1	F2-0to19-101018	580-88125-10	SW8082A	PCB-1254	18	ug/kg	p	J	3,13L
580-88125-1	F2-0to19-101018	580-88125-10	CWA161	Total HxCDD	0.037	ug/kg	q	J	25
580-88125-1	F2-0to19-101018	580-88125-10	CWA161	Total PeCDD	0.0013	ug/kg	J*q	U	25
580-88125-1	F2-0to19-101018	580-88125-10	CWA161	Total TCDD	0.0022	ug/kg	q	J	25
580-88125-1	F2-0to19-101018	580-88125-10	CWA161	Total PeCDF	0.0066	ug/kg	q	J	25
580-88125-1	F2-0to19-101018	580-88125-10	CWA161	1,2,3,7,8-PeCDF	0.00031	ug/kg	J*q	U	25
580-88125-1	F2-0to19-101018	580-88125-10	CWA161	1,2,3,4,7,8,9-HpCDF	0.0012	ug/kg	J	J	12L
580-88125-1	F2-0to19-101018	580-88125-10	CWA161	1,2,3,4,7,8-HxCDD	0.00049	ug/kg	Jq	U	25
580-88125-1	F2-0to19-101018	580-88125-10	CWA161	1,2,3,4,6,7,8-HpCDF	0.022	ug/kg	*	J	12L
580-88125-1	F2-0to19-101018	580-88125-10	CWA161	1,2,3,6,7,8-HxCDD	0.003	ug/kg	J*	J	12L
580-88125-1	G6-0to27-101818	580-88125-11	SW7471A	Mercury	0.3	mg/kg	H	J	1,8H
580-88125-1	G6-0to27-101818	580-88125-11	SW8082A	PCB-1260	86	ug/kg	F2F1p	J	3,8,9
580-88125-1	G6-0to27-101818	580-88125-11	CWA161	Total HxCDD	0.24	ug/kg	q	J	25
580-88125-1	G6-0to27-101818	580-88125-11	CWA161	Total PeCDD	0.01	ug/kg	*q	J	25
580-88125-1	G6-0to27-101818	580-88125-11	CWA161	Total TCDD	0.012	ug/kg	q	J	25
580-88125-1	G6-0to27-101818	580-88125-11	CWA161	1,2,3,4,7,8,9-HpCDF	0.019	ug/kg		J	12L
580-88125-1	G6-0to27-101818	580-88125-11	CWA161	1,2,3,4,6,7,8-HpCDF	0.3	ug/kg	*	J	12L
580-88125-1	G6-0to27-101818	580-88125-11	CWA161	1,2,3,6,7,8-HxCDD	0.036	ug/kg	*	J	12L
580-88125-1	G6-0to27-101818	580-88125-11	CWA161	2,3,7,8-TCDD	0.00053	ug/kg	J*q	U	25
580-88125-1	G6-0to27-101818	580-88125-11	CWA161	OCDD	9.2	ug/kg	EB	J	20
580-88125-1	H2-0to30-101218	580-88125-12	SW7471A	Mercury	0.16	mg/kg	H	J	1,8H
580-88125-1	H2-0to30-101218	580-88125-12	SW8082A	PCB-1260	20	ug/kg	p	J	3
580-88125-1	H2-0to30-101218	580-88125-12	CWA161	Total HxCDD	0.084	ug/kg	q	J	25
580-88125-1	H2-0to30-101218	580-88125-12	CWA161	Total PeCDD	0.0055	ug/kg	J*q	U	25
580-88125-1	H2-0to30-101218	580-88125-12	CWA161	Total TCDF	0.011	ug/kg	q	J	25

Qualified Data Summary Table
Pacific Groundwater Group - Portland Harbor SIL Phases 1b and 2

SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88125-1	H2-0to30-101218	580-88125-12	CWA161	Total TCDD	0.0064	ug/kg	q	J	25
580-88125-1	H2-0to30-101218	580-88125-12	CWA161	Total PeCDF	0.016	ug/kg	q	J	25
580-88125-1	H2-0to30-101218	580-88125-12	CWA161	1,2,3,7,8-PeCDD	0.00071	ug/kg	J*q	U	25
580-88125-1	H2-0to30-101218	580-88125-12	CWA161	1,2,3,4,7,8,9-HpCDF	0.0045	ug/kg	J	J	12L
580-88125-1	H2-0to30-101218	580-88125-12	CWA161	1,2,3,4,6,7,8-HpCDF	0.088	ug/kg	*	J	12L
580-88125-1	H2-0to30-101218	580-88125-12	CWA161	1,2,3,6,7,8-HxCDD	0.01	ug/kg	*	J	12L
580-88125-1	H2-0to30-101218	580-88125-12	CWA161	2,3,7,8-TCDD	0.00043	ug/kg	J*q	U	25
580-88125-1	J2A3-0to18-101218	580-88125-13	SW7471A	Mercury	0.024	mg/kg	H	J	1,8H
580-88125-1	J2A3-0to18-101218	580-88125-13	NWTPH-	#2 Diesel (C10-C24)	16	mg/kg	J	J	13L
580-88125-1	J2A3-0to18-101218	580-88125-13	NWTPH-	Motor Oil (>C24-C36)	130	mg/kg		J	13L
580-88125-1	J2A3-0to18-101218	580-88125-13	CWA161	Total TCDF	0.0027	ug/kg	q	J	25
580-88125-1	J2A3-0to18-101218	580-88125-13	CWA161	1,2,3,6,7,8-HxCDD	0.0015	ug/kg	J*q	UJ	12L,25
580-88125-1	J2A3-0to18-101218	580-88125-13	CWA161	Total TCDD	0.00078	ug/kg	q	J	25
580-88125-1	J2A3-0to18-101218	580-88125-13	CWA161	Total PeCDD	0.0015	ug/kg	Jq	U	25
580-88125-1	J2A3-0to18-101218	580-88125-13	CWA161	Total PeCDF	0.0028	ug/kg	Jq	U	25
580-88125-1	J2A3-0to18-101218	580-88125-13	CWA161	1,2,3,4,7,8-HxCDF	0.0011	ug/kg	Jq	U	25
580-88125-1	J2A3-0to18-101218	580-88125-13	CWA161	1,2,3,4,6,7,8-HpCDF	0.0093	ug/kg	*q	J	12L,25
580-88125-1	J2A3-0to18-101218	580-88125-13	CWA161	1,2,3,4,7,8,9-HpCDF		ug/kg	U	UJ	12L
580-88125-1	J2A3-0to18-101218	580-88125-13	CWA161	1,2,3,7,8-PeCDD	0.00031	ug/kg	J*q	U	25
580-88125-1	J2A3-0to18-101218	580-88125-13	CWA161	Total HxCDF	0.016	ug/kg	q	J	25
580-88125-1	J2A3-0to18-101218	580-88125-13	CWA161	Total HxCDD	0.013	ug/kg	q	J	25
580-88125-1	J2A3-0to18-101218	580-88125-13	CWA161	Total HpCDF	0.038	ug/kg	*q	J	25
580-88125-1	M4-0to26-101918	580-88125-14	SW7471A	Mercury	0.29	mg/kg	H	J	1,8H
580-88125-1	M4-0to26-101918	580-88125-14	SW8082A	PCB-1260	32	ug/kg	p	NJ	3
580-88125-1	M4-0to26-101918	580-88125-14	CWA161	Total PeCDD	0.015	ug/kg	q	J	25
580-88125-1	M4-0to26-101918	580-88125-14	CWA161	Total TCDD	0.012	ug/kg	q	J	25
580-88125-1	M4-0to26-101918	580-88125-14	CWA161	1,2,3,6,7,8-HxCDD	0.027	ug/kg	*	J	12L
580-88125-1	M4-0to26-101918	580-88125-14	CWA161	OCDD	6.3	ug/kg	EB	J	20
580-88125-1	M4-0to26-101918	580-88125-14	CWA161	2,3,7,8-TCDD	0.00077	ug/kg	Jq	U	25
580-88125-1	515-0to26-101918	580-88125-15	SW7471A	Mercury	0.92	mg/kg	H	J	1,8H
580-88125-1	515-0to26-101918	580-88125-15	CWA161	Total HxCDD	0.2	ug/kg	qB	J	25
580-88125-1	515-0to26-101918	580-88125-15	CWA161	Total PeCDD	0.011	ug/kg	q	J	25
580-88125-1	515-0to26-101918	580-88125-15	CWA161	Total TCDD	0.011	ug/kg	q	J	25
580-88125-1	515-0to26-101918	580-88125-15	CWA161	Total PeCDF	0.049	ug/kg	q	J	25
580-88125-1	515-0to26-101918	580-88125-15	CWA161	1,2,3,6,7,8-HxCDD	0.026	ug/kg	*	J	12L
580-88125-1	515-0to26-101918	580-88125-15	CWA161	OCDD	6.1	ug/kg	EB	J	20

Qualified Data Summary Table
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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88125-1	515-0to26-101918	580-88125-15	CWA161	2,3,7,8-TCDD	0.00054	ug/kg	Jq	U	25
580-88125-1	N5-0to28-101418	580-88125-16	SW7471A	Mercury	0.22	mg/kg	H	J	1,8H
580-88125-1	N5-0to28-101418	580-88125-16	CWA161	Total HxCDF	0.22	ug/kg	q	J	25
580-88125-1	N5-0to28-101418	580-88125-16	CWA161	Total HxCDD	0.098	ug/kg	qB	J	25
580-88125-1	N5-0to28-101418	580-88125-16	CWA161	Total PeCDD	0.0067	ug/kg	Jq	U	25
580-88125-1	N5-0to28-101418	580-88125-16	CWA161	Total TCDF	0.0089	ug/kg	q	J	25
580-88125-1	N5-0to28-101418	580-88125-16	CWA161	Total PeCDF	0.024	ug/kg	q	J	25
580-88125-1	N5-0to28-101418	580-88125-16	CWA161	1,2,3,7,8-PeCDD	0.00099	ug/kg	Jq	U	25
580-88125-1	N5-0to28-101418	580-88125-16	CWA161	1,2,3,6,7,8-HxCDD	0.018	ug/kg	*	J	12L
580-88125-1	N5-0to28-101418	580-88125-16	CWA161	2,3,4,6,7,8-HxCDF	0.0018	ug/kg	Jq	U	25
580-88125-1	N7-0to27-101418	580-88125-17	SW7471A	Mercury	0.18	mg/kg	H	J	1,8H
580-88125-1	N7-0to27-101418	580-88125-17	SW8082A	PCB-1260	37	ug/kg	p	NJ	3
580-88125-1	N7-0to27-101418	580-88125-17	CWA161	Total HxCDD	0.17	ug/kg	qB	J	25
580-88125-1	N7-0to27-101418	580-88125-17	CWA161	Total PeCDD	0.011	ug/kg	q	J	25
580-88125-1	N7-0to27-101418	580-88125-17	CWA161	Total TCDF	0.0083	ug/kg	q	J	25
580-88125-1	N7-0to27-101418	580-88125-17	CWA161	Total PeCDF	0.056	ug/kg	q	J	25
580-88125-1	N7-0to27-101418	580-88125-17	CWA161	1,2,3,7,8-PeCDF	0.002	ug/kg	Jq	U	25
580-88125-1	N7-0to27-101418	580-88125-17	CWA161	1,2,3,6,7,8-HxCDD	0.025	ug/kg	*	J	12L
580-88125-1	N7-0to27-101418	580-88125-17	CWA161	OCDD	7	ug/kg	EB	J	20
580-88125-1	O7-0to27-101918	580-88125-18	SW7471A	Mercury	0.2	mg/kg	H	J	1,8H
580-88125-1	O7-0to27-101918	580-88125-18	SW8082A	PCB-1254	39	ug/kg	p	J	3
580-88125-1	O7-0to27-101918	580-88125-18	CWA161	Total HxCDD	0.2	ug/kg	qB	J	25
580-88125-1	O7-0to27-101918	580-88125-18	CWA161	Total PeCDD	0.016	ug/kg	q	J	25
580-88125-1	O7-0to27-101918	580-88125-18	CWA161	Total TCDD	0.0099	ug/kg	q	J	25
580-88125-1	O7-0to27-101918	580-88125-18	CWA161	1,2,3,6,7,8-HxCDD	0.031	ug/kg	*	J	12L
580-88125-1	O7-0to27-101918	580-88125-18	CWA161	OCDD	7.6	ug/kg	EB	J	20
580-88125-1	O7-0to27-101918	580-88125-18	CWA161	2,3,7,8-TCDD	0.00066	ug/kg	Jq	U	25
580-88125-1	Q2-0to13-101818	580-88125-19	SW7471A	Mercury	0.043	mg/kg	H	J	1,8H
580-88125-1	Q2-0to13-101818	580-88125-19	CWA161	Total HxCDF	0.0019	ug/kg	Jq	U	25
580-88125-1	Q2-0to13-101818	580-88125-19	CWA161	Total HxCDD	0.0018	ug/kg	JqB	U	25
580-88125-1	Q2-0to13-101818	580-88125-19	CWA161	Total HpCDF	0.0063	ug/kg	q	J	25
580-88125-1	Q2-0to13-101818	580-88125-19	CWA161	Total PeCDF	0.00032	ug/kg	Jq	U	25
580-88125-1	Q2-0to13-101818	580-88125-19	CWA161	1,2,3,4,6,7,8-HpCDF	0.0015	ug/kg	Jq	U	25
580-88125-1	Q2-0to13-101818	580-88125-19	CWA161	1,2,3,4,7,8-HxCDF	0.00014	ug/kg	Jq	U	25
580-88125-1	Q2-0to13-101818	580-88125-19	CWA161	1,2,3,6,7,8-HxCDD	0.00025	ug/kg	Jq*	UJ	12L,25
580-88125-1	A2-0to26-100818	580-88125-2	SW7471A	Mercury	0.14	mg/kg	H	J	1,8H

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88125-1	A2-0to26-100818	580-88125-2	SW8082A	PCB-1221		ug/kg	U	UJ	13L
580-88125-1	A2-0to26-100818	580-88125-2	SW8082A	PCB-1016		ug/kg	U	UJ	13L
580-88125-1	A2-0to26-100818	580-88125-2	SW8082A	PCB-1232		ug/kg	U	UJ	13L
580-88125-1	A2-0to26-100818	580-88125-2	SW8082A	PCB-1248		ug/kg	U	UJ	13L
580-88125-1	A2-0to26-100818	580-88125-2	SW8082A	PCB-1254		ug/kg	U	UJ	13L
580-88125-1	A2-0to26-100818	580-88125-2	SW8082A	PCB-1242		ug/kg	U	UJ	13L
580-88125-1	A2-0to26-100818	580-88125-2	SW8082A	PCB-1260	6	ug/kg	p	J	3,13L
580-88125-1	A2-0to26-100818	580-88125-2	CWA161	Total TCDF	0.008	ug/kg	q	J	25
580-88125-1	A2-0to26-100818	580-88125-2	CWA161	1,2,3,6,7,8-HxCDD	0.022	ug/kg	*	J	12L
580-88125-1	A2-0to26-100818	580-88125-2	CWA161	1,2,3,4,6,7,8-HpCDF	0.13	ug/kg	*	J	12L
580-88125-1	A2-0to26-100818	580-88125-2	CWA161	1,2,3,4,7,8,9-HpCDF	0.006	ug/kg	J*	J	12L
580-88125-1	A2-0to26-100818	580-88125-2	CWA161	Total TCDD	0.0079	ug/kg	q	J	25
580-88125-1	A2-0to26-100818	580-88125-2	CWA161	Total PeCDD	0.0081	ug/kg	*q	J	25
580-88125-1	A2-0to26-100818	580-88125-2	CWA161	2,3,7,8-TCDD	0.00058	ug/kg	J*q	U	25
580-88125-1	A2-0to26-100818	580-88125-2	CWA161	OCDD	8.5	ug/kg	EB	J	20
580-88125-1	Q6-0to27-102018	580-88125-20	SW7471A	Mercury	0.16	mg/kg	H	J	1,8H
580-88125-1	Q6-0to27-102018	580-88125-20	CWA161	Total HxCDD	0.25	ug/kg	qB	J	25
580-88125-1	Q6-0to27-102018	580-88125-20	CWA161	Total PeCDD	0.012	ug/kg	q	J	25
580-88125-1	Q6-0to27-102018	580-88125-20	CWA161	Total TCDF	0.015	ug/kg	q	J	25
580-88125-1	Q6-0to27-102018	580-88125-20	CWA161	Total TCDD	0.012	ug/kg	q	J	25
580-88125-1	Q6-0to27-102018	580-88125-20	CWA161	Total PeCDF	0.059	ug/kg	q	J	25
580-88125-1	Q6-0to27-102018	580-88125-20	CWA161	1,2,3,7,8-PeCDF	0.0016	ug/kg	Jq	U	25
580-88125-1	Q6-0to27-102018	580-88125-20	CWA161	1,2,3,4,7,8-HxCDD	0.0052	ug/kg	JqB	U	25
580-88125-1	Q6-0to27-102018	580-88125-20	CWA161	1,2,3,6,7,8-HxCDD	0.033	ug/kg	*	J	12L
580-88125-1	Q6-0to27-102018	580-88125-20	CWA161	OCDD	7.9	ug/kg	EB	J	20
580-88125-1	Q6-0to27-102018	580-88125-20	CWA161	2,3,7,8-TCDD	0.001	ug/kg	Jq	U	25
580-88125-1	T6-0to29-101618	580-88125-21	SW7471A	Mercury	0.25	mg/kg	H	J	1,8H
580-88125-1	T6-0to29-101618	580-88125-21	CWA161	Total HxCDF	0.17	ug/kg	q	J	25
580-88125-1	T6-0to29-101618	580-88125-21	CWA161	Total PeCDD	0.011	ug/kg	q	J	25
580-88125-1	T6-0to29-101618	580-88125-21	CWA161	Total TCDF	0.014	ug/kg	q	J	25
580-88125-1	T6-0to29-101618	580-88125-21	CWA161	Total TCDD	0.0072	ug/kg	q	J	25
580-88125-1	T6-0to29-101618	580-88125-21	CWA161	1,2,3,6,7,8-HxCDD	0.013	ug/kg	*	J	12L
580-88125-1	T6-0to29-101618	580-88125-21	CWA161	2,3,7,8-TCDD	0.0004	ug/kg	Jq	U	25
580-88125-1	A3-0to31-100818	580-88125-3	SW7471A	Mercury	0.16	mg/kg	H	J	1,8H
580-88125-1	A3-0to31-100818	580-88125-3	CWA161	1,2,3,4,7,8,9-HpCDF	0.0068	ug/kg	J*	J	12L
580-88125-1	A3-0to31-100818	580-88125-3	CWA161	1,2,3,4,6,7,8-HpCDF	0.17	ug/kg	*	J	12L

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88125-1	A3-0to31-100818	580-88125-3	CWA161	1,2,3,6,7,8-HxCDD	0.022	ug/kg	*	J	12L
580-88125-1	A3-0to31-100818	580-88125-3	CWA161	OCDD	7.4	ug/kg	EB	J	20
580-88125-1	A3-0to31-100818	580-88125-3	CWA161	Total HxCDD	0.18	ug/kg	q	J	25
580-88125-1	A3-0to31-100818	580-88125-3	CWA161	Total TCDF	0.012	ug/kg	q	J	25
580-88125-1	A3-0to31-100818	580-88125-3	CWA161	Total PeCDF	0.02	ug/kg	q	J	25
580-88125-1	A3-0to31-100818	580-88125-3	CWA161	Total PeCDD	0.011	ug/kg	*q	J	25
580-88125-1	A3-0to31-100818	580-88125-3	CWA161	Total TCDD	0.0094	ug/kg	q	J	25
580-88125-1	A4-0to25-100818	580-88125-4	SW7471A	Mercury	0.28	mg/kg	H	J	1,8H
580-88125-1	A4-0to25-100818	580-88125-4	SW8082A	PCB-1260		ug/kg	U	UJ	13L
580-88125-1	A4-0to25-100818	580-88125-4	SW8082A	PCB-1221		ug/kg	U	UJ	13L
580-88125-1	A4-0to25-100818	580-88125-4	SW8082A	PCB-1232		ug/kg	U	UJ	13L
580-88125-1	A4-0to25-100818	580-88125-4	SW8082A	PCB-1016		ug/kg	U	UJ	13L
580-88125-1	A4-0to25-100818	580-88125-4	SW8082A	PCB-1248		ug/kg	U	UJ	13L
580-88125-1	A4-0to25-100818	580-88125-4	SW8082A	PCB-1242		ug/kg	U	UJ	13L
580-88125-1	A4-0to25-100818	580-88125-4	SW8082A	PCB-1254	85	ug/kg	p	J	3
580-88125-1	A4-0to25-100818	580-88125-4	CWA161	Total PeCDD	0.016	ug/kg	*q	J	25
580-88125-1	A4-0to25-100818	580-88125-4	CWA161	Total HxCDF	0.25	ug/kg	q	J	25
580-88125-1	A4-0to25-100818	580-88125-4	CWA161	Total HxCDD	0.22	ug/kg	q	J	25
580-88125-1	A4-0to25-100818	580-88125-4	CWA161	Total TCDF	0.023	ug/kg	q	J	25
580-88125-1	A4-0to25-100818	580-88125-4	CWA161	Total TCDD	0.01	ug/kg	q	J	25
580-88125-1	A4-0to25-100818	580-88125-4	CWA161	1,2,3,7,8-PeCDD	0.0017	ug/kg	J*q	U	25
580-88125-1	A4-0to25-100818	580-88125-4	CWA161	1,2,3,4,7,8,9-HpCDF	0.0094	ug/kg	*	J	12L
580-88125-1	A4-0to25-100818	580-88125-4	CWA161	1,2,3,4,6,7,8-HpCDF	0.14	ug/kg	*	J	12L
580-88125-1	A4-0to25-100818	580-88125-4	CWA161	1,2,3,6,7,8-HxCDD	0.027	ug/kg	*	J	12L
580-88125-1	A4-0to25-100818	580-88125-4	CWA161	1,2,3,6,7,8-HxCDF	0.0054	ug/kg	Jq	U	25
580-88125-1	A4-0to25-100818	580-88125-4	CWA161	2,3,7,8-TCDD	0.00086	ug/kg	J*q	U	25
580-88125-1	A4-0to25-100818	580-88125-4	CWA161	2,3,4,6,7,8-HxCDF	0.0025	ug/kg	Jq	U	25
580-88125-1	A4-0to25-100818	580-88125-4	CWA161	OCDD	5.3	ug/kg	EB	J	20
580-88125-1	A5-0to25-100818	580-88125-5	SW7471A	Mercury	0.18	mg/kg	H	J	1,8H
580-88125-1	A5-0to25-100818	580-88125-5	CWA161	1,2,3,4,7,8,9-HpCDF	0.011	ug/kg		J	12L
580-88125-1	A5-0to25-100818	580-88125-5	CWA161	1,2,3,4,6,7,8-HpCDF	0.18	ug/kg	*	J	12L
580-88125-1	A5-0to25-100818	580-88125-5	CWA161	1,2,3,7,8,9-HxCDD	0.0052	ug/kg	Jq	U	25
580-88125-1	A5-0to25-100818	580-88125-5	CWA161	1,2,3,6,7,8-HxCDD	0.025	ug/kg	*	J	12L
580-88125-1	A5-0to25-100818	580-88125-5	CWA161	Total HxCDD	0.21	ug/kg	q	J	25
580-88125-1	A5-0to25-100818	580-88125-5	CWA161	OCDD	7.1	ug/kg	EB	J	20
580-88125-1	A5-0to25-100818	580-88125-5	CWA161	Total TCDF	0.022	ug/kg	q	J	25

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88125-1	A5-0to25-100818	580-88125-5	CWA161	Total TCDD	0.013	ug/kg	q	J	25
580-88125-1	A5-0to25-100818	580-88125-5	CWA161	Total PeCDF	0.028	ug/kg	q	J	25
580-88125-1	A5-0to25-100818	580-88125-5	CWA161	Total PeCDD	0.011	ug/kg	*q	J	25
580-88125-1	A6-0to23-100818	580-88125-6	SW7471A	Mercury	0.16	mg/kg	H	J	1,8H
580-88125-1	A6-0to23-100818	580-88125-6	NWTPH-	Motor Oil (>C24-C36)	51	mg/kg	J	J	13L
580-88125-1	A6-0to23-100818	580-88125-6	NWTPH-	#2 Diesel (C10-C24)		mg/kg	U	UJ	13L
580-88125-1	A6-0to23-100818	580-88125-6	SW8082A	PCB-1248		ug/kg	U	UJ	13L
580-88125-1	A6-0to23-100818	580-88125-6	SW8082A	PCB-1254	52	ug/kg		J	13L
580-88125-1	A6-0to23-100818	580-88125-6	SW8082A	PCB-1260		ug/kg	U	UJ	13L
580-88125-1	A6-0to23-100818	580-88125-6	SW8082A	PCB-1242		ug/kg	U	UJ	13L
580-88125-1	A6-0to23-100818	580-88125-6	SW8082A	PCB-1016		ug/kg	U	UJ	13L
580-88125-1	A6-0to23-100818	580-88125-6	SW8082A	PCB-1221		ug/kg	U	UJ	13L
580-88125-1	A6-0to23-100818	580-88125-6	SW8082A	PCB-1232		ug/kg	U	UJ	13L
580-88125-1	A6-0to23-100818	580-88125-6	CWA161	Total HxCDD	0.14	ug/kg	q	J	25
580-88125-1	A6-0to23-100818	580-88125-6	CWA161	Total PeCDD	0.01	ug/kg	*q	J	25
580-88125-1	A6-0to23-100818	580-88125-6	CWA161	Total TCDF	0.011	ug/kg	q	J	25
580-88125-1	A6-0to23-100818	580-88125-6	CWA161	Total TCDD	0.0078	ug/kg	q	J	25
580-88125-1	A6-0to23-100818	580-88125-6	CWA161	Total PeCDF	0.019	ug/kg	q	J	25
580-88125-1	A6-0to23-100818	580-88125-6	CWA161	1,2,3,7,8-PeCDD	0.00096	ug/kg	J*q	U	25
580-88125-1	A6-0to23-100818	580-88125-6	CWA161	1,2,3,7,8-PeCDF	0.00098	ug/kg	J*q	U	25
580-88125-1	A6-0to23-100818	580-88125-6	CWA161	1,2,3,4,7,8,9-HpCDF	0.0056	ug/kg	J	J	12L
580-88125-1	A6-0to23-100818	580-88125-6	CWA161	1,2,3,4,6,7,8-HpCDF	0.12	ug/kg	*	J	12L
580-88125-1	A6-0to23-100818	580-88125-6	CWA161	1,2,3,6,7,8-HxCDD	0.018	ug/kg	*	J	12L
580-88125-1	A6-0to23-100818	580-88125-6	CWA161	OCDD	5.2	ug/kg	EB	J	20
580-88125-1	A6-0to23-100818	580-88125-6	CWA161	2,3,7,8-TCDD	0.00045	ug/kg	J*q	U	25
580-88125-1	A7-0to26-100918	580-88125-7	SW7471A	Mercury	0.14	mg/kg	H	J	1,8H
580-88125-1	A7-0to26-100918	580-88125-7	SW8082A	PCB-1242		ug/kg	U	UJ	13L
580-88125-1	A7-0to26-100918	580-88125-7	SW8082A	PCB-1248		ug/kg	U	UJ	13L
580-88125-1	A7-0to26-100918	580-88125-7	SW8082A	PCB-1260		ug/kg	U	UJ	13L
580-88125-1	A7-0to26-100918	580-88125-7	SW8082A	PCB-1232		ug/kg	U	UJ	13L
580-88125-1	A7-0to26-100918	580-88125-7	SW8082A	PCB-1221		ug/kg	U	UJ	13L
580-88125-1	A7-0to26-100918	580-88125-7	SW8082A	PCB-1016		ug/kg	U	UJ	13L
580-88125-1	A7-0to26-100918	580-88125-7	SW8082A	PCB-1254	57	ug/kg		J	13L
580-88125-1	A7-0to26-100918	580-88125-7	CWA161	Total PeCDD	0.016	ug/kg	*q	J	25
580-88125-1	A7-0to26-100918	580-88125-7	CWA161	Total TCDF	0.019	ug/kg	q	J	25
580-88125-1	A7-0to26-100918	580-88125-7	CWA161	Total TCDD	0.0085	ug/kg	q	J	25

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88125-1	A7-0to26-100918	580-88125-7	CWA161	Total PeCDF	0.031	ug/kg	q	J	25
580-88125-1	A7-0to26-100918	580-88125-7	CWA161	1,2,3,4,7,8,9-HpCDF	0.011	ug/kg		J	12L
580-88125-1	A7-0to26-100918	580-88125-7	CWA161	1,2,3,4,6,7,8-HpCDF	0.2	ug/kg	*	J	12L
580-88125-1	A7-0to26-100918	580-88125-7	CWA161	1,2,3,6,7,8-HxCDD	0.021	ug/kg	*	J	12L
580-88125-1	A7-0to26-100918	580-88125-7	CWA161	OCDD	6	ug/kg	EB	J	20
580-88125-1	A7-0to26-100918	580-88125-7	CWA161	2,3,7,8-TCDD	0.00047	ug/kg	J*q	U	25
580-88125-1	C4-0to27-100918	580-88125-8	SW7471A	Mercury	0.23	mg/kg	H	J	1,8H
580-88125-1	C4-0to27-100918	580-88125-8	SW8082A	PCB-1242		ug/kg	U	UJ	13L
580-88125-1	C4-0to27-100918	580-88125-8	SW8082A	PCB-1248		ug/kg	U	UJ	13L
580-88125-1	C4-0to27-100918	580-88125-8	SW8082A	PCB-1260		ug/kg	U	UJ	13L
580-88125-1	C4-0to27-100918	580-88125-8	SW8082A	PCB-1232		ug/kg	U	UJ	13L
580-88125-1	C4-0to27-100918	580-88125-8	SW8082A	PCB-1221		ug/kg	U	UJ	13L
580-88125-1	C4-0to27-100918	580-88125-8	SW8082A	PCB-1016		ug/kg	U	UJ	13L
580-88125-1	C4-0to27-100918	580-88125-8	SW8082A	PCB-1254	130	ug/kg		J	13L
580-88125-1	C4-0to27-100918	580-88125-8	CWA161	Total PeCDD	0.0079	ug/kg	*q	J	25
580-88125-1	C4-0to27-100918	580-88125-8	CWA161	Total TCDF	0.012	ug/kg	q	J	25
580-88125-1	C4-0to27-100918	580-88125-8	CWA161	Total TCDD	0.0081	ug/kg	q	J	25
580-88125-1	C4-0to27-100918	580-88125-8	CWA161	1,2,3,4,7,8,9-HpCDF	0.0064	ug/kg	J	J	12L
580-88125-1	C4-0to27-100918	580-88125-8	CWA161	1,2,3,4,6,7,8-HpCDF	0.14	ug/kg	*	J	12L
580-88125-1	C4-0to27-100918	580-88125-8	CWA161	1,2,3,6,7,8-HxCDD	0.018	ug/kg	*	J	12L
580-88125-1	C4-0to27-100918	580-88125-8	CWA161	OCDD	5.4	ug/kg	EB	J	20
580-88125-1	C4-0to27-100918	580-88125-8	CWA161	2,3,7,8-TCDD	0.00047	ug/kg	J*q	U	25
580-88125-1	D2-0to19-101018	580-88125-9	SW7471A	Mercury	0.028	mg/kg	H	J	1,8H
580-88125-1	D2-0to19-101018	580-88125-9	SW8082A	PCB-1242		ug/kg	U	UJ	13L
580-88125-1	D2-0to19-101018	580-88125-9	SW8082A	PCB-1248		ug/kg	U	UJ	13L
580-88125-1	D2-0to19-101018	580-88125-9	SW8082A	PCB-1254		ug/kg	U	UJ	13L
580-88125-1	D2-0to19-101018	580-88125-9	SW8082A	PCB-1232		ug/kg	U	UJ	13L
580-88125-1	D2-0to19-101018	580-88125-9	SW8082A	PCB-1221		ug/kg	U	UJ	13L
580-88125-1	D2-0to19-101018	580-88125-9	SW8082A	PCB-1016		ug/kg	U	UJ	13L
580-88125-1	D2-0to19-101018	580-88125-9	SW8082A	PCB-1260	8.1	ug/kg	p	J	3,13L
580-88125-1	D2-0to19-101018	580-88125-9	CWA161	Total HxCDD	0.026	ug/kg	q	J	25
580-88125-1	D2-0to19-101018	580-88125-9	CWA161	Total PeCDD	0.00087	ug/kg	J*q	U	25
580-88125-1	D2-0to19-101018	580-88125-9	CWA161	Total TCDF	0.0042	ug/kg	q	J	25
580-88125-1	D2-0to19-101018	580-88125-9	CWA161	Total TCDD	0.00083	ug/kg	q	J	25
580-88125-1	D2-0to19-101018	580-88125-9	CWA161	1,2,3,4,7,8,9-HpCDF	0.0015	ug/kg	J	J	12L
580-88125-1	D2-0to19-101018	580-88125-9	CWA161	1,2,3,4,7,8-HxCDD	0.0005	ug/kg	Jq	U	25

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88125-1	D2-0to19-101018	580-88125-9	CWA161	1,2,3,4,6,7,8-HpCDF	0.034	ug/kg	*	J	12L
580-88125-1	D2-0to19-101018	580-88125-9	CWA161	1,2,3,6,7,8-HxCDD	0.0034	ug/kg	J*	J	12L
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-33	0.00039	ng/g	JqC21B	U	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-40	0.00071	ng/g	JqC	U	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-52	0.0037	ng/g	JqB	U	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-41	0.00071	ng/g	JqC40	U	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-44	0.012	ng/g	JCB	U	7
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-47	0.012	ng/g	JC44B	U	7
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-203	0.0026	ng/g	Jq	U	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-199	0.0043	ng/g	JqC198B	U	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-198	0.0043	ng/g	JqCB	U	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-20	0.0012	ng/g	JCB	U	7
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-2	0.0005	ng/g	JqB	U	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-206	0.45	ng/g	q	J	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-28	0.0012	ng/g	JC20B	U	7
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-21	0.00039	ng/g	JqCB	U	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-209	0.00046	ng/g	JB	U	7
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-83	0.0053	ng/g	JCB	U	7
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-84	0.0018	ng/g	Jq	U	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	Total Nonachlorobiphenyls	0.45	ng/g	q	J	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	Total Monochlorobiphenyls	0.0011	ng/g	JqB	J	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	Total Hexachlorobiphenyls	0.085	ng/g	qB	J	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	Total Octachlorobiphenyls	0.012	ng/g	JqB	J	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	Total Trichlorobiphenyls	0.0042	ng/g	JqB	J	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	Total Tetrachlorobiphenyls	0.029	ng/g	JqB	J	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	Total Pentachlorobiphenyls	0.06	ng/g	qB	J	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	Total Heptachlorobiphenyls	0.069	ng/g	qB	J	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-95	0.0076	ng/g	JB	U	7
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	Total Dichlorobiphenyls	0.0051	ng/g	JqB	J	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	Polychlorinated biphenyls, Total	0.72	ng/g	qB	J	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-99	0.0053	ng/g	JC83B	U	7
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-61	0.003	ng/g	JCB	U	7
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-65	0.012	ng/g	JC44B	U	7
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-56	0.0006	ng/g	Jq	U	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-76	0.003	ng/g	JC61B	U	7
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-8	0.00047	ng/g	JqB	U	25

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-70	0.003	ng/g	JC61B	U	7
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-71	0.00071	ng/g	JqC40	U	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-74	0.003	ng/g	JC61B	U	7
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-123	0.00058	ng/g	Jq	U	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-126	0.00074	ng/g	JqB	U	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-144	0.0008	ng/g	Jq	U	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-146	0.0024	ng/g	JB	U	7
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-137	0.00059	ng/g	Jq	U	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-135	0.0057	ng/g	JqCB	U	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-105	0.0022	ng/g	JB	U	7
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-11	0.0024	ng/g	JqB	U	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-118	0.0062	ng/g	JB	U	7
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-172	0.0019	ng/g	JqB	U	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-177	0.0041	ng/g	JqB	U	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-190	0.0022	ng/g	Jq	U	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-195	0.0012	ng/g	Jq	U	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-194	0.0033	ng/g	JqB	U	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-19	0.0006	ng/g	Jq	U	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-189	0.00066	ng/g	JB	U	7
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-157	0.0032	ng/g	JqC156B	U	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-156	0.0032	ng/g	JqCB	U	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-151	0.0057	ng/g	JqC135B	U	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-15	0.00047	ng/g	JqB	U	25
580-88125-2	A1-0to30-102018	580-88125-1	E1668A	PCB-164	0.0012	ng/g	Jq	U	25
580-88125-2	F2-0to19-101018	580-88125-10	E1668A	PCB-5	0.0011	ng/g	Jq	U	25
580-88125-2	F2-0to19-101018	580-88125-10	E1668A	PCB-2	0.0042	ng/g	JqB	U	25
580-88125-2	F2-0to19-101018	580-88125-10	E1668A	PCB-24	0.003	ng/g	Jq	U	25
580-88125-2	F2-0to19-101018	580-88125-10	E1668A	PCB-89	0.019	ng/g	q	J	25
580-88125-2	F2-0to19-101018	580-88125-10	E1668A	Total Monochlorobiphenyls	0.028	ng/g	qB	J	25
580-88125-2	F2-0to19-101018	580-88125-10	E1668A	Total Hexachlorobiphenyls	10	ng/g	qB	J	25
580-88125-2	F2-0to19-101018	580-88125-10	E1668A	Total Trichlorobiphenyls	1.3	ng/g	qB	J	25
580-88125-2	F2-0to19-101018	580-88125-10	E1668A	Total Tetrachlorobiphenyls	8.1	ng/g	qB	J	25
580-88125-2	F2-0to19-101018	580-88125-10	E1668A	Total Pentachlorobiphenyls	15	ng/g	qB	J	25
580-88125-2	F2-0to19-101018	580-88125-10	E1668A	Total Dichlorobiphenyls	0.16	ng/g	qB	J	25
580-88125-2	F2-0to19-101018	580-88125-10	E1668A	Polychlorinated biphenyls, Total	42	ng/g	qB	J	25
580-88125-2	F2-0to19-101018	580-88125-10	E1668A	PCB-55	0.0042	ng/g	Jq	U	25

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580-88125-2	F2-0to19-101018	580-88125-10	E1668A	PCB-13	0.0071	ng/g	JqC12	U	25
580-88125-2	F2-0to19-101018	580-88125-10	E1668A	PCB-145	0.0018	ng/g	Jq	U	25
580-88125-2	F2-0to19-101018	580-88125-10	E1668A	PCB-148	0.011	ng/g	q	J	25
580-88125-2	F2-0to19-101018	580-88125-10	E1668A	PCB-11	0.018	ng/g	JB	U	7
580-88125-2	F2-0to19-101018	580-88125-10	E1668A	PCB-12	0.0071	ng/g	JqC	U	25
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-40	3.9	ng/g	GC	J	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-49	13	ng/g	GC	J	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-50	9.4	ng/g	GC	J	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-53	9.4	ng/g	GC50	J	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-52	11	ng/g	GB	J	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-51	19	ng/g	GC45	J	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-48	0.18	ng/g	Gq	J	14,25
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-43	0.9	ng/g	GC	J	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-42	0.85	ng/g	G	J	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-41	3.9	ng/g	GC40	J	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-44	32	ng/g	GCB	J	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-47	32	ng/g	GC44B	J	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-46	0.58	ng/g	G	J	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-45	19	ng/g	GC	J	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-206	1.7	ng/g	q	J	25
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-24	0.0098	ng/g	Jq	U	25
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-81		ng/g	UG	UJ	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-85	2.4	ng/g	qC	J	25
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	Total Nonachlorobiphenyls	2.2	ng/g	q	J	25
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	Total Trichlorobiphenyls	16	ng/g	qB	J	25
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	Total Tetrachlorobiphenyls	110	ng/g	GqB	J	14,25
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	Total Pentachlorobiphenyls	140	ng/g	qB	J	25
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	Polychlorinated biphenyls, Total	490	ng/g	qB	J	25
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-63	0.21	ng/g	G	J	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-62	0.95	ng/g	GC59	J	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-61	5.3	ng/g	GCB	J	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-64	0.86	ng/g	G	J	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-67		ng/g	UG	UJ	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-66	3.1	ng/g	G	J	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-65	32	ng/g	GC44B	J	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-60		ng/g	UG	UJ	14

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-56	0.64	ng/g	G	J	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-55		ng/g	UG	UJ	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-57		ng/g	UG	UJ	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-59	0.95	ng/g	GC	J	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-58		ng/g	UG	UJ	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-68	0.39	ng/g	G	J	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-77	0.23	ng/g	G	J	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-76	5.3	ng/g	GC61B	J	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-78		ng/g	UG	UJ	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-80		ng/g	UG	UJ	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-79	0.15	ng/g	G	J	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-75	0.95	ng/g	GC59	J	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-70	5.3	ng/g	GC61B	J	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-69	13	ng/g	GC49	J	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-71	3.9	ng/g	GC40	J	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-74	5.3	ng/g	GC61B	J	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-73	0.9	ng/g	GC43	J	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-72	0.23	ng/g	G	J	14
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-117	2.4	ng/g	qC85	J	25
580-88125-2	G6-0to27-101818	580-88125-11	E1668A	PCB-116	2.4	ng/g	qC85	J	25
580-88125-2	H2-0to30-101218	580-88125-12	E1668A	PCB-5	0.0053	ng/g	Jq	U	25
580-88125-2	H2-0to30-101218	580-88125-12	E1668A	PCB-206	2.1	ng/g	q	J	25
580-88125-2	H2-0to30-101218	580-88125-12	E1668A	Total Nonachlorobiphenyls	2.7	ng/g	q	J	25
580-88125-2	H2-0to30-101218	580-88125-12	E1668A	Total Tetrachlorobiphenyls	24	ng/g	qB	J	25
580-88125-2	H2-0to30-101218	580-88125-12	E1668A	Total Pentachlorobiphenyls	53	ng/g	qB	J	25
580-88125-2	H2-0to30-101218	580-88125-12	E1668A	Total Dichlorobiphenyls	0.62	ng/g	qB	J	25
580-88125-2	H2-0to30-101218	580-88125-12	E1668A	Polychlorinated biphenyls, Total	300	ng/g	qB	J	25
580-88125-2	H2-0to30-101218	580-88125-12	E1668A	PCB-67	0.055	ng/g	Jq	U	25
580-88125-2	H2-0to30-101218	580-88125-12	E1668A	PCB-7	0.011	ng/g	Jq	U	25
580-88125-2	H2-0to30-101218	580-88125-12	E1668A	PCB-13	0.025	ng/g	JqC12	U	25
580-88125-2	H2-0to30-101218	580-88125-12	E1668A	PCB-123	0.044	ng/g	Jq	U	25
580-88125-2	H2-0to30-101218	580-88125-12	E1668A	PCB-122	0.041	ng/g	Jq	U	25
580-88125-2	H2-0to30-101218	580-88125-12	E1668A	PCB-10	0.0078	ng/g	Jq	U	25
580-88125-2	H2-0to30-101218	580-88125-12	E1668A	PCB-12	0.025	ng/g	JqC	U	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	PCB-3	0.0057	ng/g	JqB	U	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	PCB-5	0.00068	ng/g	Jq	U	25

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	PCB-200	0.026	ng/g	q	J	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	PCB-197	0.0057	ng/g	Jq	U	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	PCB-206	0.19	ng/g	q	J	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	PCB-89	0.0071	ng/g	Jq	U	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	PCB-92	0.006	ng/g	Jq	U	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	PCB-81	0.0015	ng/g	Jq	U	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	PCB-85	0.089	ng/g	qC	J	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	Total Nonachlorobiphenyls	0.24	ng/g	q	J	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	Total Monochlorobiphenyls	0.028	ng/g	qB	J	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	Total Hexachlorobiphenyls	8.7	ng/g	qB	J	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	Total Octachlorobiphenyls	0.95	ng/g	qB	J	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	Total Trichlorobiphenyls	0.95	ng/g	qB	J	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	Total Tetrachlorobiphenyls	3.2	ng/g	qB	J	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	Total Pentachlorobiphenyls	5.6	ng/g	qB	J	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	Total Heptachlorobiphenyls	4.6	ng/g	qB	J	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	Total Dichlorobiphenyls	0.36	ng/g	qB	J	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	Polychlorinated biphenyls, Total	25	ng/g	qB	J	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	PCB-67	0.0055	ng/g	Jq	U	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	PCB-60	0.017	ng/g	q	J	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	PCB-55	0.00097	ng/g	Jq	U	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	PCB-58	0.0013	ng/g	Jq	U	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	PCB-68	0.01	ng/g	q	J	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	PCB-79	0.0043	ng/g	Jq	U	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	PCB-72	0.0066	ng/g	Jq	U	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	PCB-123	0.0055	ng/g	Jq	U	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	PCB-122	0.0048	ng/g	Jq	U	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	PCB-126	0.003	ng/g	JqB	U	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	PCB-145	0.001	ng/g	Jq	U	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	PCB-117	0.089	ng/g	qC85	J	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	PCB-116	0.089	ng/g	qC85	J	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	PCB-181	0.0061	ng/g	Jq	U	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	PCB-155	0.00098	ng/g	Jq	U	25
580-88125-2	J2A3-0to18-101218	580-88125-13	E1668A	PCB-16	0.02	ng/g	q	J	25
580-88125-2	M4-0to26-101918	580-88125-14	E1668A	PCB-34	0.015	ng/g	Jq	U	25
580-88125-2	M4-0to26-101918	580-88125-14	E1668A	PCB-206	2	ng/g	q	J	25
580-88125-2	M4-0to26-101918	580-88125-14	E1668A	Total Nonachlorobiphenyls	2.6	ng/g	q	J	25

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88125-2	M4-0to26-101918	580-88125-14	E1668A	Total Hexachlorobiphenyls	130	ng/g	qB	J	25
580-88125-2	M4-0to26-101918	580-88125-14	E1668A	Total Trichlorobiphenyls	10	ng/g	qB	J	25
580-88125-2	M4-0to26-101918	580-88125-14	E1668A	Polychlorinated biphenyls, Total	470	ng/g	qB	J	25
580-88125-2	M4-0to26-101918	580-88125-14	E1668A	PCB-145	0.01	ng/g	Jq	U	25
580-88125-2	515-0to26-101918	580-88125-15	E1668A	PCB-9	0.12	ng/g	q	J	25
580-88125-2	515-0to26-101918	580-88125-15	E1668A	PCB-81	0.027	ng/g	JqB	U	25
580-88125-2	515-0to26-101918	580-88125-15	E1668A	Total Trichlorobiphenyls	13	ng/g	qB	J	25
580-88125-2	515-0to26-101918	580-88125-15	E1668A	Total Tetrachlorobiphenyls	100	ng/g	qB	J	25
580-88125-2	515-0to26-101918	580-88125-15	E1668A	Total Dichlorobiphenyls	4.5	ng/g	qB	J	25
580-88125-2	515-0to26-101918	580-88125-15	E1668A	Polychlorinated biphenyls, Total	710	ng/g	qB	J	25
580-88125-2	N5-0to28-101418	580-88125-16	E1668A	PCB-35	0.02	ng/g	Jq	U	25
580-88125-2	N5-0to28-101418	580-88125-16	E1668A	PCB-24	0.014	ng/g	JqB	U	25
580-88125-2	N5-0to28-101418	580-88125-16	E1668A	Total Trichlorobiphenyls	10	ng/g	qB	J	25
580-88125-2	N5-0to28-101418	580-88125-16	E1668A	Total Tetrachlorobiphenyls	72	ng/g	qB	J	25
580-88125-2	N5-0to28-101418	580-88125-16	E1668A	Total Dichlorobiphenyls	1.6	ng/g	qB	J	25
580-88125-2	N5-0to28-101418	580-88125-16	E1668A	Polychlorinated biphenyls, Total	590	ng/g	qB	J	25
580-88125-2	N5-0to28-101418	580-88125-16	E1668A	PCB-55	0.037	ng/g	q	J	25
580-88125-2	N5-0to28-101418	580-88125-16	E1668A	PCB-10	0.015	ng/g	Jq	U	25
580-88125-2	N7-0to27-101418	580-88125-17	E1668A	PCB-205	0.2	ng/g	GB	J	14
580-88125-2	N7-0to27-101418	580-88125-17	E1668A	PCB-197	0.1	ng/g	qB	J	25
580-88125-2	N7-0to27-101418	580-88125-17	E1668A	PCB-206	1.7	ng/g	qB	J	25
580-88125-2	N7-0to27-101418	580-88125-17	E1668A	PCB-9	0.0067	ng/g	Jq	U	25
580-88125-2	N7-0to27-101418	580-88125-17	E1668A	PCB-81	0.0084	ng/g	JqB	U	25
580-88125-2	N7-0to27-101418	580-88125-17	E1668A	Total Nonachlorobiphenyls	2.2	ng/g	qB	J	25
580-88125-2	N7-0to27-101418	580-88125-17	E1668A	Total Octachlorobiphenyls	15	ng/g	qB	J	25
580-88125-2	N7-0to27-101418	580-88125-17	E1668A	Total Trichlorobiphenyls	3.8	ng/g	qB	J	25
580-88125-2	N7-0to27-101418	580-88125-17	E1668A	Total Tetrachlorobiphenyls	28	ng/g	qB	J	25
580-88125-2	N7-0to27-101418	580-88125-17	E1668A	Total Dichlorobiphenyls	0.56	ng/g	qB	J	25
580-88125-2	N7-0to27-101418	580-88125-17	E1668A	Polychlorinated biphenyls, Total	270	ng/g	qB	J	25
580-88125-2	N7-0to27-101418	580-88125-17	E1668A	PCB-80	0.0035	ng/g	Jq	U	25
580-88125-2	N7-0to27-101418	580-88125-17	E1668A	PCB-7	0.0055	ng/g	JqB	U	25
580-88125-2	N7-0to27-101418	580-88125-17	E1668A	PCB-122	0.071	ng/g	G	J	14
580-88125-2	N7-0to27-101418	580-88125-17	E1668A	PCB-195	1.8	ng/g	G	J	14
580-88125-2	N7-0to27-101418	580-88125-17	E1668A	PCB-194	3.7	ng/g	GB	J	14
580-88125-2	O7-0to27-101918	580-88125-18	E1668A	PCB-36	0.0089	ng/g	Jq	U	25
580-88125-2	O7-0to27-101918	580-88125-18	E1668A	PCB-5	0.0024	ng/g	Jq	U	25

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88125-2	O7-0to27-101918	580-88125-18	E1668A	PCB-43	0.11	ng/g	Cq	J	25
580-88125-2	O7-0to27-101918	580-88125-18	E1668A	PCB-197	0.09	ng/g	Bq	J	25
580-88125-2	O7-0to27-101918	580-88125-18	E1668A	PCB-206	1.5	ng/g	Bq	J	25
580-88125-2	O7-0to27-101918	580-88125-18	E1668A	PCB-24	0.0022	ng/g	JBq	U	25
580-88125-2	O7-0to27-101918	580-88125-18	E1668A	PCB-81	0.004	ng/g	JBq	U	25
580-88125-2	O7-0to27-101918	580-88125-18	E1668A	Total Nonachlorobiphenyls	2	ng/g	Bq	J	25
580-88125-2	O7-0to27-101918	580-88125-18	E1668A	Total Hexachlorobiphenyls	69	ng/g	Bq	J	25
580-88125-2	O7-0to27-101918	580-88125-18	E1668A	Total Octachlorobiphenyls	13	ng/g	Bq	J	25
580-88125-2	O7-0to27-101918	580-88125-18	E1668A	Total Trichlorobiphenyls	2.4	ng/g	Bq	J	25
580-88125-2	O7-0to27-101918	580-88125-18	E1668A	Total Tetrachlorobiphenyls	20	ng/g	Bq	J	25
580-88125-2	O7-0to27-101918	580-88125-18	E1668A	Total Dichlorobiphenyls	0.58	ng/g	Bq	J	25
580-88125-2	O7-0to27-101918	580-88125-18	E1668A	Polychlorinated biphenyls, Total	210	ng/g	Bq	J	25
580-88125-2	O7-0to27-101918	580-88125-18	E1668A	PCB-7	0.0059	ng/g	JBq	U	25
580-88125-2	O7-0to27-101918	580-88125-18	E1668A	PCB-73	0.11	ng/g	C43q	J	25
580-88125-2	O7-0to27-101918	580-88125-18	E1668A	PCB-126	0.018	ng/g	B	U	7
580-88125-2	O7-0to27-101918	580-88125-18	E1668A	PCB-145	0.0095	ng/g	Jq	U	25
580-88125-2	O7-0to27-101918	580-88125-18	E1668A	PCB-14	0.00068	ng/g	Jq	U	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-29	0.0021	ng/g	JC26Bq	U	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-33	0.0057	ng/g	JBC21q	U	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-201	0.0057	ng/g	JBq	U	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-20	0.015	ng/g	JCB	U	7
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-206	0.16	ng/g	Bq	J	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-26	0.0021	ng/g	JCBq	U	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-28	0.015	ng/g	JBC20	U	7
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-27	0.0068	ng/g	JBq	U	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-22	0.0021	ng/g	JBq	U	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-21	0.0057	ng/g	JCBq	U	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-94	0.0085	ng/g	Jq	U	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	Total Nonachlorobiphenyls	0.16	ng/g	Bq	J	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	Total Hexachlorobiphenyls	1.4	ng/g	Bq	J	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	Total Octachlorobiphenyls	0.16	ng/g	Bq	J	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	Total Trichlorobiphenyls	0.15	ng/g	Bq	J	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	Total Tetrachlorobiphenyls	0.67	ng/g	Bq	J	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	Total Pentachlorobiphenyls	1.1	ng/g	Bq	J	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	Total Heptachlorobiphenyls	0.81	ng/g	Bq	J	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-96	0.0041	ng/g	Jq	U	25

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-98	0.013	ng/g	JCq	U	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	Total Dichlorobiphenyls	0.033	ng/g	Bq	J	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	Polychlorinated biphenyls, Total	4.5	ng/g	Bq	J	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-68	0.0022	ng/g	JBq	U	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-77	0.0041	ng/g	JB	U	7
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-8	0.0037	ng/g	JBq	U	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-131	0.0042	ng/g	Jq	U	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-123	0.0017	ng/g	JBq	U	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-122	0.0026	ng/g	Jq	U	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-134	0.016	ng/g	JCq	U	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-143	0.016	ng/g	JC134q	U	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-137	0.0074	ng/g	Jq	U	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-140	0.0049	ng/g	JBC139q	U	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-139	0.0049	ng/g	JCBq	U	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-102	0.013	ng/g	JC98q	U	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-121	0.0024	ng/g	Jq	U	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-114	0.0032	ng/g	JB	U	7
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-181	0.0022	ng/g	Jq	U	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-190	0.019	ng/g	Bq	J	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-195	0.015	ng/g	q	J	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-19	0.048	ng/g	Bq	J	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-157	0.023	ng/g	C156Bq	J	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-156	0.023	ng/g	CBq	J	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-155	0.0024	ng/g	JBq	U	25
580-88125-2	Q2-0to13-101818	580-88125-19	E1668A	PCB-167	0.011	ng/g	B	U	7
580-88125-2	A2-0to26-100818	580-88125-2	E1668A	PCB-5	0.0013	ng/g	Jq	U	25
580-88125-2	A2-0to26-100818	580-88125-2	E1668A	PCB-9	0.0075	ng/g	Jq	U	25
580-88125-2	A2-0to26-100818	580-88125-2	E1668A	Total Hexachlorobiphenyls	33	ng/g	Bq	J	25
580-88125-2	A2-0to26-100818	580-88125-2	E1668A	Total Tetrachlorobiphenyls	11	ng/g	Bq	J	25
580-88125-2	A2-0to26-100818	580-88125-2	E1668A	Total Dichlorobiphenyls	0.39	ng/g	Bq	J	25
580-88125-2	A2-0to26-100818	580-88125-2	E1668A	Polychlorinated biphenyls, Total	110	ng/g	Bq	J	25
580-88125-2	A2-0to26-100818	580-88125-2	E1668A	PCB-67	0.02	ng/g	q	J	25
580-88125-2	A2-0to26-100818	580-88125-2	E1668A	PCB-13	0.016	ng/g	JC12q	U	25
580-88125-2	A2-0to26-100818	580-88125-2	E1668A	PCB-145	0.0062	ng/g	Jq	U	25
580-88125-2	A2-0to26-100818	580-88125-2	E1668A	PCB-12	0.016	ng/g	JCq	U	25
580-88125-2	Q6-0to27-102018	580-88125-20	E1668A	PCB-43	0.088	ng/g	JqC	U	25

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88125-2	Q6-0to27-102018	580-88125-20	E1668A	PCB-206	15	ng/g	qB	J	25
580-88125-2	Q6-0to27-102018	580-88125-20	E1668A	PCB-9	0.0073	ng/g	Jq	U	25
580-88125-2	Q6-0to27-102018	580-88125-20	E1668A	PCB-81	0.0087	ng/g	JqB	U	25
580-88125-2	Q6-0to27-102018	580-88125-20	E1668A	Total Nonachlorobiphenyls	15	ng/g	qB	J	25
580-88125-2	Q6-0to27-102018	580-88125-20	E1668A	Total Tetrachlorobiphenyls	15	ng/g	qB	J	25
580-88125-2	Q6-0to27-102018	580-88125-20	E1668A	Total Pentachlorobiphenyls	32	ng/g	qB	J	25
580-88125-2	Q6-0to27-102018	580-88125-20	E1668A	Total Dichlorobiphenyls	0.48	ng/g	qB	J	25
580-88125-2	Q6-0to27-102018	580-88125-20	E1668A	Polychlorinated biphenyls, Total	160	ng/g	qB	J	25
580-88125-2	Q6-0to27-102018	580-88125-20	E1668A	PCB-67	0.024	ng/g	Jq	U	25
580-88125-2	Q6-0to27-102018	580-88125-20	E1668A	PCB-68	0.063	ng/g	JqB	U	25
580-88125-2	Q6-0to27-102018	580-88125-20	E1668A	PCB-79	0.026	ng/g	Jq	U	25
580-88125-2	Q6-0to27-102018	580-88125-20	E1668A	PCB-7	0.0076	ng/g	JqB	U	25
580-88125-2	Q6-0to27-102018	580-88125-20	E1668A	PCB-73	0.088	ng/g	JqC43	U	25
580-88125-2	Q6-0to27-102018	580-88125-20	E1668A	PCB-13	0.021	ng/g	JqC12B	U	25
580-88125-2	Q6-0to27-102018	580-88125-20	E1668A	PCB-124	0.083	ng/g	JqC108	U	25
580-88125-2	Q6-0to27-102018	580-88125-20	E1668A	PCB-108	0.083	ng/g	JqC	U	25
580-88125-2	Q6-0to27-102018	580-88125-20	E1668A	PCB-120	0.076	ng/g	Jq	U	25
580-88125-2	Q6-0to27-102018	580-88125-20	E1668A	PCB-12	0.021	ng/g	JqCB	U	25
580-88125-2	T6-0to29-101618	580-88125-21	E1668A	PCB-197	0.051	ng/g	qB	J	25
580-88125-2	T6-0to29-101618	580-88125-21	E1668A	Total Hexachlorobiphenyls	51	ng/g	qB	J	25
580-88125-2	T6-0to29-101618	580-88125-21	E1668A	Total Octachlorobiphenyls	8.3	ng/g	qB	J	25
580-88125-2	T6-0to29-101618	580-88125-21	E1668A	Total Trichlorobiphenyls	2.2	ng/g	qB	J	25
580-88125-2	T6-0to29-101618	580-88125-21	E1668A	Total Pentachlorobiphenyls	35	ng/g	qB	J	25
580-88125-2	T6-0to29-101618	580-88125-21	E1668A	Total Dichlorobiphenyls	0.72	ng/g	qB	J	25
580-88125-2	T6-0to29-101618	580-88125-21	E1668A	Polychlorinated biphenyls, Total	150	ng/g	qB	J	25
580-88125-2	T6-0to29-101618	580-88125-21	E1668A	PCB-126	0.013	ng/g	JB	U	7
580-88125-2	T6-0to29-101618	580-88125-21	E1668A	PCB-145	0.0033	ng/g	Jq	U	25
580-88125-2	T6-0to29-101618	580-88125-21	E1668A	PCB-10	0.006	ng/g	Jq	U	25
580-88125-2	T6-0to29-101618	580-88125-21	E1668A	PCB-111	0.024	ng/g	q	J	25
580-88125-2	T6-0to29-101618	580-88125-21	E1668A	PCB-16	0.069	ng/g	q	J	25
580-88125-2	A3-0to31-100818	580-88125-3	E1668A	PCB-50	0.68	ng/g	CG	J	14
580-88125-2	A3-0to31-100818	580-88125-3	E1668A	PCB-53	0.68	ng/g	C50G	J	14
580-88125-2	A3-0to31-100818	580-88125-3	E1668A	PCB-52	12	ng/g	BG	J	14
580-88125-2	A3-0to31-100818	580-88125-3	E1668A	PCB-51	0.95	ng/g	C45G	J	14
580-88125-2	A3-0to31-100818	580-88125-3	E1668A	PCB-48	0.18	ng/g	G	J	14
580-88125-2	A3-0to31-100818	580-88125-3	E1668A	PCB-42	0.42	ng/g	G	J	14

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88125-2	A3-0to31-100818	580-88125-3	E1668A	PCB-46		ng/g	UG	UJ	14
580-88125-2	A3-0to31-100818	580-88125-3	E1668A	PCB-45	0.95	ng/g	CG	J	14
580-88125-2	A3-0to31-100818	580-88125-3	E1668A	PCB-206	0.91	ng/g	q	J	25
580-88125-2	A3-0to31-100818	580-88125-3	E1668A	PCB-9	0.013	ng/g	Jq	U	25
580-88125-2	A3-0to31-100818	580-88125-3	E1668A	PCB-81		ng/g	UG	UJ	14
580-88125-2	A3-0to31-100818	580-88125-3	E1668A	Total Nonachlorobiphenyls	1.2	ng/g	q	J	25
580-88125-2	A3-0to31-100818	580-88125-3	E1668A	Total Hexachlorobiphenyls	120	ng/g	Bq	J	25
580-88125-2	A3-0to31-100818	580-88125-3	E1668A	Total Dichlorobiphenyls	0.59	ng/g	Bq	J	25
580-88125-2	A3-0to31-100818	580-88125-3	E1668A	Polychlorinated biphenyls, Total	390	ng/g	Bq	J	25
580-88125-2	A3-0to31-100818	580-88125-3	E1668A	PCB-63	0.097	ng/g	G	J	14
580-88125-2	A3-0to31-100818	580-88125-3	E1668A	PCB-64	1.2	ng/g	G	J	14
580-88125-2	A3-0to31-100818	580-88125-3	E1668A	PCB-67		ng/g	UG	UJ	14
580-88125-2	A3-0to31-100818	580-88125-3	E1668A	PCB-66	2.5	ng/g	G	J	14
580-88125-2	A3-0to31-100818	580-88125-3	E1668A	PCB-60	0.32	ng/g	G	J	14
580-88125-2	A3-0to31-100818	580-88125-3	E1668A	PCB-56	0.92	ng/g	G	J	14
580-88125-2	A3-0to31-100818	580-88125-3	E1668A	PCB-55		ng/g	UG	UJ	14
580-88125-2	A3-0to31-100818	580-88125-3	E1668A	PCB-57		ng/g	UG	UJ	14
580-88125-2	A3-0to31-100818	580-88125-3	E1668A	PCB-58		ng/g	UG	UJ	14
580-88125-2	A3-0to31-100818	580-88125-3	E1668A	PCB-68		ng/g	UG	UJ	14
580-88125-2	A3-0to31-100818	580-88125-3	E1668A	PCB-77	0.14	ng/g	G	J	14
580-88125-2	A3-0to31-100818	580-88125-3	E1668A	PCB-78		ng/g	UG	UJ	14
580-88125-2	A3-0to31-100818	580-88125-3	E1668A	PCB-80		ng/g	UG	UJ	14
580-88125-2	A3-0to31-100818	580-88125-3	E1668A	PCB-79	0.15	ng/g	G	J	14
580-88125-2	A3-0to31-100818	580-88125-3	E1668A	PCB-72		ng/g	UG	UJ	14
580-88125-2	A3-0to31-100818	580-88125-3	E1668A	PCB-145	0.014	ng/g	Jq	U	25
580-88125-2	A4-0to25-100818	580-88125-4	E1668A	PCB-197	0.14	ng/g	q	J	25
580-88125-2	A4-0to25-100818	580-88125-4	E1668A	Total Hexachlorobiphenyls	390	ng/g	qB	J	25
580-88125-2	A4-0to25-100818	580-88125-4	E1668A	Total Octachlorobiphenyls	19	ng/g	qB	J	25
580-88125-2	A4-0to25-100818	580-88125-4	E1668A	Total Trichlorobiphenyls	16	ng/g	IB	J	25
580-88125-2	A4-0to25-100818	580-88125-4	E1668A	Polychlorinated biphenyls, Total	1400	ng/g	qB	J	25
580-88125-2	A4-0to25-100818	580-88125-4	E1668A	PCB-127		ng/g	UG	UJ	14
580-88125-2	A4-0to25-100818	580-88125-4	E1668A	PCB-123	1.2	ng/g	G	J	14
580-88125-2	A4-0to25-100818	580-88125-4	E1668A	PCB-122	1.1	ng/g	G	J	14
580-88125-2	A4-0to25-100818	580-88125-4	E1668A	PCB-126	0.23	ng/g	GB	J	14
580-88125-2	A4-0to25-100818	580-88125-4	E1668A	PCB-145	0.067	ng/g	q	J	25
580-88125-2	A4-0to25-100818	580-88125-4	E1668A	PCB-106		ng/g	UG	UJ	14

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88125-2	A4-0to25-100818	580-88125-4	E1668A	PCB-105	30	ng/g	GB	J	14
580-88125-2	A4-0to25-100818	580-88125-4	E1668A	PCB-107	6	ng/g	G	J	14
580-88125-2	A4-0to25-100818	580-88125-4	E1668A	PCB-118	80	ng/g	GB	J	14
580-88125-2	A4-0to25-100818	580-88125-4	E1668A	PCB-114	1.7	ng/g	GB	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-49	8.6	ng/g	GC	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-50	3.5	ng/g	GC	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-53	3.5	ng/g	GC50	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-52	7.7	ng/g	GB	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-51	16	ng/g	GC45	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-48	0.2	ng/g	G	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-43	1.2	ng/g	GC	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-42	0.58	ng/g	G	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-46	0.31	ng/g	G	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-45	16	ng/g	GC	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-206	17	ng/g	G	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-81		ng/g	UG	UJ	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	Total Dichlorobiphenyls	1.7	ng/g	qB	J	25
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	Polychlorinated biphenyls, Total	820	ng/g	qB	J	25
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-63	0.53	ng/g	G	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-64	0.79	ng/g	G	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-67		ng/g	UG	UJ	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-66	2.3	ng/g	G	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-60	0.21	ng/g	G	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-56	0.63	ng/g	G	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-55		ng/g	UG	UJ	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-57		ng/g	UG	UJ	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-58		ng/g	UG	UJ	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-68	0.82	ng/g	G	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-77	0.21	ng/g	G	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-78		ng/g	UG	UJ	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-80		ng/g	UG	UJ	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-79	0.12	ng/g	G	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-7	0.028	ng/g	Jq	U	25
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-69	8.6	ng/g	GC49	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-73	1.2	ng/g	GC43	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-72	0.13	ng/g	G	J	14

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-130	1.5	ng/g	G	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-133	1.9	ng/g	G	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-132	7	ng/g	GB	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-131	0.27	ng/g	G	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-127		ng/g	UG	UJ	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-123	0.14	ng/g	G	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-122	0.096	ng/g	G	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-126		ng/g	UG	UJ	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-142		ng/g	UG	UJ	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-146	7.4	ng/g	GB	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-141	4.6	ng/g	G	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-137	1.6	ng/g	G	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-106		ng/g	UG	UJ	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-105	3	ng/g	GB	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-107	1	ng/g	G	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-10	0.023	ng/g	Jq	U	25
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-118	8.8	ng/g	GB	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-114	0.15	ng/g	GB	J	14
580-88125-2	A5-0to25-100818	580-88125-5	E1668A	PCB-195	12	ng/g	G	J	14
580-88125-2	A6-0to23-100818	580-88125-6	E1668A	PCB-197	0.072	ng/g	q	J	25
580-88125-2	A6-0to23-100818	580-88125-6	E1668A	PCB-206	2.3	ng/g	q	J	25
580-88125-2	A6-0to23-100818	580-88125-6	E1668A	PCB-81	0.016	ng/g	q	J	25
580-88125-2	A6-0to23-100818	580-88125-6	E1668A	Total Nonachlorobiphenyls	2.6	ng/g	q	J	25
580-88125-2	A6-0to23-100818	580-88125-6	E1668A	Total Hexachlorobiphenyls	130	ng/g	Bq	J	25
580-88125-2	A6-0to23-100818	580-88125-6	E1668A	Total Octachlorobiphenyls	9.6	ng/g	Bq	J	25
580-88125-2	A6-0to23-100818	580-88125-6	E1668A	Total Tetrachlorobiphenyls	52	ng/g	Bq	J	25
580-88125-2	A6-0to23-100818	580-88125-6	E1668A	Polychlorinated biphenyls, Total	430	ng/g	Bq	J	25
580-88125-2	A6-0to23-100818	580-88125-6	E1668A	PCB-127	0.043	ng/g	G	J	14
580-88125-2	A6-0to23-100818	580-88125-6	E1668A	PCB-123	0.26	ng/g	G	J	14
580-88125-2	A6-0to23-100818	580-88125-6	E1668A	PCB-122	0.26	ng/g	G	J	14
580-88125-2	A6-0to23-100818	580-88125-6	E1668A	PCB-126	0.096	ng/g	BG	J	14
580-88125-2	A6-0to23-100818	580-88125-6	E1668A	PCB-145	0.02	ng/g	q	J	25
580-88125-2	A6-0to23-100818	580-88125-6	E1668A	PCB-106		ng/g	UG	UJ	14
580-88125-2	A6-0to23-100818	580-88125-6	E1668A	PCB-105	7	ng/g	BG	J	14
580-88125-2	A6-0to23-100818	580-88125-6	E1668A	PCB-107	1.6	ng/g	G	J	14
580-88125-2	A6-0to23-100818	580-88125-6	E1668A	PCB-118	18	ng/g	BG	J	14

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88125-2	A6-0to23-100818	580-88125-6	E1668A	PCB-114	0.41	ng/g	BG	J	14
580-88125-2	A7-0to26-100918	580-88125-7	E1668A	PCB-52	4.1	ng/g	GB	J	14
580-88125-2	A7-0to26-100918	580-88125-7	E1668A	PCB-48		ng/g	UG	UJ	14
580-88125-2	A7-0to26-100918	580-88125-7	E1668A	PCB-42	0.49	ng/g	G	J	14
580-88125-2	A7-0to26-100918	580-88125-7	E1668A	PCB-46	0.4	ng/g	G	J	14
580-88125-2	A7-0to26-100918	580-88125-7	E1668A	PCB-2	0.039	ng/g	JqB	U	25
580-88125-2	A7-0to26-100918	580-88125-7	E1668A	Total Monochlorobiphenyls	0.19	ng/g	qB	J	25
580-88125-2	A7-0to26-100918	580-88125-7	E1668A	Total Hexachlorobiphenyls	420	ng/g	qB	J	25
580-88125-2	A7-0to26-100918	580-88125-7	E1668A	Total Trichlorobiphenyls	6	ng/g	qB	J	25
580-88125-2	A7-0to26-100918	580-88125-7	E1668A	Total Pentachlorobiphenyls	130	ng/g	qB	J	25
580-88125-2	A7-0to26-100918	580-88125-7	E1668A	Polychlorinated biphenyls, Total	1200	ng/g	qB	J	25
580-88125-2	A7-0to26-100918	580-88125-7	E1668A	PCB-123	0.099	ng/g	q	J	25
580-88125-2	A7-0to26-100918	580-88125-7	E1668A	PCB-124	0.25	ng/g	qC108	J	25
580-88125-2	A7-0to26-100918	580-88125-7	E1668A	PCB-137	1	ng/g	q	J	25
580-88125-2	A7-0to26-100918	580-88125-7	E1668A	PCB-108	0.25	ng/g	qC	J	25
580-88125-2	A7-0to26-100918	580-88125-7	E1668A	PCB-195	13	ng/g	G	J	14
580-88125-2	A7-0to26-100918	580-88125-7	E1668A	PCB-194	26	ng/g	GB	J	14
580-88125-2	A7-0to26-100918	580-88125-7	E1668A	PCB-16	0.052	ng/g	Jq	U	25
580-88125-2	C4-0to27-100918	580-88125-8	E1668A	PCB-39	0.0046	ng/g	Jq	U	25
580-88125-2	C4-0to27-100918	580-88125-8	E1668A	PCB-206	2.8	ng/g	q	J	25
580-88125-2	C4-0to27-100918	580-88125-8	E1668A	PCB-89	0.095	ng/g	q	J	25
580-88125-2	C4-0to27-100918	580-88125-8	E1668A	Total Nonachlorobiphenyls	3.2	ng/g	q	J	25
580-88125-2	C4-0to27-100918	580-88125-8	E1668A	Total Trichlorobiphenyls	7.1	ng/g	Bq	J	25
580-88125-2	C4-0to27-100918	580-88125-8	E1668A	Total Tetrachlorobiphenyls	42	ng/g	Bq	J	25
580-88125-2	C4-0to27-100918	580-88125-8	E1668A	Total Pentachlorobiphenyls	99	ng/g	Bq	J	25
580-88125-2	C4-0to27-100918	580-88125-8	E1668A	Polychlorinated biphenyls, Total	350	ng/g	Bq	J	25
580-88125-2	C4-0to27-100918	580-88125-8	E1668A	PCB-58	0.016	ng/g	q	J	25
580-88125-2	C4-0to27-100918	580-88125-8	E1668A	PCB-195	1.8	ng/g	G	J	14
580-88125-2	D2-0to19-101018	580-88125-9	E1668A	PCB-43	0.018	ng/g	JqC	U	25
580-88125-2	D2-0to19-101018	580-88125-9	E1668A	PCB-46	0.015	ng/g	Jq	U	25
580-88125-2	D2-0to19-101018	580-88125-9	E1668A	PCB-205	0.011	ng/g	Jq	U	25
580-88125-2	D2-0to19-101018	580-88125-9	E1668A	PCB-197	0.0091	ng/g	Jq	U	25
580-88125-2	D2-0to19-101018	580-88125-9	E1668A	PCB-2	0.0081	ng/g	JqB	U	25
580-88125-2	D2-0to19-101018	580-88125-9	E1668A	PCB-206	1.4	ng/g	q	J	25
580-88125-2	D2-0to19-101018	580-88125-9	E1668A	PCB-9	0.0032	ng/g	Jq	U	25
580-88125-2	D2-0to19-101018	580-88125-9	E1668A	Total Nonachlorobiphenyls	1.5	ng/g	q	J	25

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88125-2	D2-0to19-101018	580-88125-9	E1668A	Total Monochlorobiphenyls	0.057	ng/g	qB	J	25
580-88125-2	D2-0to19-101018	580-88125-9	E1668A	Total Hexachlorobiphenyls	7.2	ng/g	qB	J	25
580-88125-2	D2-0to19-101018	580-88125-9	E1668A	Total Octachlorobiphenyls	1.3	ng/g	qB	J	25
580-88125-2	D2-0to19-101018	580-88125-9	E1668A	Total Trichlorobiphenyls	0.54	ng/g	qB	J	25
580-88125-2	D2-0to19-101018	580-88125-9	E1668A	Total Tetrachlorobiphenyls	3.1	ng/g	qB	J	25
580-88125-2	D2-0to19-101018	580-88125-9	E1668A	Total Pentachlorobiphenyls	7	ng/g	qB	J	25
580-88125-2	D2-0to19-101018	580-88125-9	E1668A	Total Heptachlorobiphenyls	4.3	ng/g	qB	J	25
580-88125-2	D2-0to19-101018	580-88125-9	E1668A	Total Dichlorobiphenyls	0.14	ng/g	qB	J	25
580-88125-2	D2-0to19-101018	580-88125-9	E1668A	Polychlorinated biphenyls, Total	25	ng/g	qB	J	25
580-88125-2	D2-0to19-101018	580-88125-9	E1668A	PCB-55	0.002	ng/g	Jq	U	25
580-88125-2	D2-0to19-101018	580-88125-9	E1668A	PCB-6	0.013	ng/g	Jq	U	25
580-88125-2	D2-0to19-101018	580-88125-9	E1668A	PCB-79	0.0085	ng/g	Jq	U	25
580-88125-2	D2-0to19-101018	580-88125-9	E1668A	PCB-7	0.0032	ng/g	Jq	U	25
580-88125-2	D2-0to19-101018	580-88125-9	E1668A	PCB-73	0.018	ng/g	JqC43	U	25
580-88125-2	D2-0to19-101018	580-88125-9	E1668A	PCB-123	0.0094	ng/g	Jq	U	25
580-88125-2	D2-0to19-101018	580-88125-9	E1668A	PCB-122	0.0073	ng/g	Jq	U	25
580-88125-2	D2-0to19-101018	580-88125-9	E1668A	PCB-11	0.02	ng/g	JB	U	7
580-88125-2	D2-0to19-101018	580-88125-9	E1668A	PCB-120	0.01	ng/g	Jq	U	25
580-88125-2	D2-0to19-101018	580-88125-9	E1668A	PCB-182	0.0064	ng/g	Jq	U	25
580-88125-2	D2-0to19-101018	580-88125-9	E1668A	PCB-150	0.01	ng/g	Jq	U	25
580-88125-2	D2-0to19-101018	580-88125-9	E1668A	PCB-155	0.0019	ng/g	Jq	U	25
580-88125-2	D2-0to19-101018	580-88125-9	E1668A	PCB-16	0.016	ng/g	Jq	U	25
580-88125-2	D2-0to19-101018	580-88125-9	E1668A	PCB-169	0.0037	ng/g	Jq	U	25
K1906902	O7-0TO27-101918	K1906902-001	SW8270D	2-METHYLNAPHTHALENE	0.22	ug/kg	J	J	10L
K1906902	O7-0TO27-101918	K1906902-001	SW8270D	ACENAPHTHENE	0.77	ug/kg		J	10L
K1906902	O7-0TO27-101918	K1906902-001	SW8270D	ACENAPHTHYLENE	0.78	ug/kg		J	10L
K1906902	O7-0TO27-101918	K1906902-001	SW8270D	ANTHRACENE	2.3	ug/kg		J	10L
K1906902	O7-0TO27-101918	K1906902-001	SW8270D	Benzo(a)anthracene	10	ug/kg		J	10L
K1906902	O7-0TO27-101918	K1906902-001	SW8270D	Benzo(a)pyrene	19	ug/kg		J	10L
K1906902	O7-0TO27-101918	K1906902-001	SW8270D	Benzo(g,h,i)perylene	16	ug/kg		J	10L
K1906902	O7-0TO27-101918	K1906902-001	SW8270D	BENZO(k)FLUORANTHENE	8.4	ug/kg		J	10L
K1906902	O7-0TO27-101918	K1906902-001	SW8270D	Chrysene	14	ug/kg		J	10L
K1906902	O7-0TO27-101918	K1906902-001	SW8270D	Dibenzo(a,h)anthracene	3.4	ug/kg		J	10L
K1906902	O7-0TO27-101918	K1906902-001	SW8270D	DIBENZOFURAN	0.37	ug/kg	J	J	10L
K1906902	O7-0TO27-101918	K1906902-001	SW8270D	FLUORANTHENE	17	ug/kg		J	10L
K1906902	O7-0TO27-101918	K1906902-001	SW8270D	FLUORENE	0.98	ug/kg		J	10L

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
K1906902	O7-0TO27-101918	K1906902-001	SW8270D	Indeno(1,2,3-cd)pyrene	16	ug/kg		J	10L
K1906902	O7-0TO27-101918	K1906902-001	SW8270D	NAPHTHALENE	0.44	ug/kg	J	J	10L
K1906902	O7-0TO27-101918	K1906902-001	SW8270D	PHENANTHRENE	6.1	ug/kg		J	10L
K1906902	515-0TO26-101918	K1906902-002	SW8270D	2-METHYLNAPHTHALENE	12	ug/kg		J	10L
K1906902	515-0TO26-101918	K1906902-002	SW8270D	ACENAPHTHENE	65	ug/kg		J	10L
K1906902	515-0TO26-101918	K1906902-002	SW8270D	ACENAPHTHYLENE	7	ug/kg		J	10L
K1906902	515-0TO26-101918	K1906902-002	SW8270D	ANTHRACENE	190	ug/kg		J	10L
K1906902	515-0TO26-101918	K1906902-002	SW8270D	Benzo(a)anthracene	420	ug/kg		J	10L
K1906902	515-0TO26-101918	K1906902-002	SW8270D	Benzo(a)pyrene	410	ug/kg		J	10L
K1906902	515-0TO26-101918	K1906902-002	SW8270D	Benzo(g,h,i)perylene	220	ug/kg		J	10L
K1906902	515-0TO26-101918	K1906902-002	SW8270D	BENZO(k)FLUORANTHENE	190	ug/kg		J	10L
K1906902	515-0TO26-101918	K1906902-002	SW8270D	Chrysene	440	ug/kg		J	10L
K1906902	515-0TO26-101918	K1906902-002	SW8270D	Dibenzo(a,h)anthracene	67	ug/kg		J	10L
K1906902	515-0TO26-101918	K1906902-002	SW8270D	DIBENZOFURAN	30	ug/kg		J	10L
K1906902	515-0TO26-101918	K1906902-002	SW8270D	FLUORANTHENE	730	ug/kg		J	10L
K1906902	515-0TO26-101918	K1906902-002	SW8270D	FLUORENE	78	ug/kg		J	10L
K1906902	515-0TO26-101918	K1906902-002	SW8270D	Indeno(1,2,3-cd)pyrene	260	ug/kg		J	10L
K1906902	515-0TO26-101918	K1906902-002	SW8270D	NAPHTHALENE	16	ug/kg		J	10L
K1906902	515-0TO26-101918	K1906902-002	SW8270D	PHENANTHRENE	620	ug/kg		J	10L
K1906902	515-0TO26-101918	K1906902-002	SW8270D	bis(2-ETHYLHEXYL) PHTHALATE	550	ug/kg		J	8,9
K1906902	M4-0TO26-101918	K1906902-003	SW8270D	2-METHYLNAPHTHALENE	3.4	ug/kg		J	8L,10L
K1906902	M4-0TO26-101918	K1906902-003	SW8270D	ACENAPHTHENE	13	ug/kg		J	10L
K1906902	M4-0TO26-101918	K1906902-003	ALS SOP	o,p'-DDE	0.17	ug/kg		J	19
K1906902	M4-0TO26-101918	K1906902-003	SW8270D	ACENAPHTHYLENE	8.9	ug/kg		J	10L
K1906902	M4-0TO26-101918	K1906902-003	ALS SOP	4,4'-DDD	1.9	ug/kg		J	19
K1906902	M4-0TO26-101918	K1906902-003	SW8270D	ANTHRACENE	19	ug/kg		J	8L,10L
K1906902	M4-0TO26-101918	K1906902-003	SW8270D	Benzo(a)anthracene	81	ug/kg		J	8L,9,10L
K1906902	M4-0TO26-101918	K1906902-003	ALS SOP	4,4'-DDE	2.8	ug/kg		J	19
K1906902	M4-0TO26-101918	K1906902-003	SW8270D	Benzo(a)pyrene	93	ug/kg		J	8L,10L
K1906902	M4-0TO26-101918	K1906902-003	SW8270D	Benzo(b)fluoranthene	130	ug/kg		J	8L,9
K1906902	M4-0TO26-101918	K1906902-003	SW8270D	Benzo(g,h,i)perylene	68	ug/kg		J	8L,10L
K1906902	M4-0TO26-101918	K1906902-003	SW8270D	BENZO(k)FLUORANTHENE	47	ug/kg		J	8L,10L
K1906902	M4-0TO26-101918	K1906902-003	SW8270D	Chrysene	120	ug/kg		J	9,10L
K1906902	M4-0TO26-101918	K1906902-003	SW8270D	Dibenzo(a,h)anthracene	16	ug/kg		J	8L,10L
K1906902	M4-0TO26-101918	K1906902-003	SW8270D	DIBENZOFURAN	3.6	ug/kg		J	8L,10L
K1906902	M4-0TO26-101918	K1906902-003	SW8270D	FLUORANTHENE	140	ug/kg		J	8L,10L

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
K1906902	M4-0TO26-101918	K1906902-003	SW8270D	FLUORENE	6.6	ug/kg		J	10L
K1906902	M4-0TO26-101918	K1906902-003	SW8270D	Indeno(1,2,3-cd)pyrene	71	ug/kg		J	8L,10L
K1906902	M4-0TO26-101918	K1906902-003	SW8270D	NAPHTHALENE	6.9	ug/kg		J	8L,10L
K1906902	M4-0TO26-101918	K1906902-003	SW8270D	PHENANTHRENE	73	ug/kg		J	8L,10L
K1906902	M4-0TO26-101918	K1906902-003	SW8270D	PYRENE	170	ug/kg		J	8L
K1906902	A1-0TO30-102018	K1906902-004	SW8270D	2-METHYLNAPHTHALENE		ug/kg	U	UJ	10L
K1906902	A1-0TO30-102018	K1906902-004	SW8270D	ACENAPHTHENE		ug/kg	U	UJ	10L
K1906902	A1-0TO30-102018	K1906902-004	SW8270D	ACENAPHTHYLENE		ug/kg	U	UJ	10L
K1906902	A1-0TO30-102018	K1906902-004	SW8270D	ANTHRACENE		ug/kg	U	UJ	10L
K1906902	A1-0TO30-102018	K1906902-004	SW8270D	Benzo(a)anthracene	0.056	ug/kg	J	UJ	7,10L
K1906902	A1-0TO30-102018	K1906902-004	SW8270D	Benzo(a)pyrene		ug/kg	UI,Ui	UJ	10L
K1906902	A1-0TO30-102018	K1906902-004	SW8270D	Benzo(g,h,i)perylene		ug/kg	U	UJ	10L
K1906902	A1-0TO30-102018	K1906902-004	SW8270D	BENZO(k)FLUORANTHENE		ug/kg	U	UJ	10L
K1906902	A1-0TO30-102018	K1906902-004	SW8270D	Chrysene		ug/kg	U	UJ	10L
K1906902	A1-0TO30-102018	K1906902-004	SW8270D	Dibenzo(a,h)anthracene		ug/kg	U	UJ	10L
K1906902	A1-0TO30-102018	K1906902-004	SW8270D	DIBENZOFURAN		ug/kg	U	UJ	10L
K1906902	A1-0TO30-102018	K1906902-004	SW8270D	FLUORANTHENE	0.053	ug/kg	J	UJ	7,10L
K1906902	A1-0TO30-102018	K1906902-004	SW8270D	FLUORENE		ug/kg	U	UJ	10L
K1906902	A1-0TO30-102018	K1906902-004	SW8270D	Indeno(1,2,3-cd)pyrene		ug/kg	U	UJ	10L
K1906902	A1-0TO30-102018	K1906902-004	SW8270D	NAPHTHALENE		ug/kg	U	UJ	10L
K1906902	A1-0TO30-102018	K1906902-004	SW8270D	PHENANTHRENE	0.11	ug/kg	J	UJ	7,10L
K1906902	A1-0TO30-102018	K1906902-004	SW8270D	PYRENE	0.061	ug/kg	J	U	7
K1906902	Q6-0TO27-102018	K1906902-005	SW8270D	2-METHYLNAPHTHALENE		ug/kg	U	UJ	10L
K1906902	Q6-0TO27-102018	K1906902-005	SW8270D	ACENAPHTHENE	0.29	ug/kg	J	J	10L
K1906902	Q6-0TO27-102018	K1906902-005	SW8270D	ACENAPHTHYLENE	0.6	ug/kg	J	J	10L
K1906902	Q6-0TO27-102018	K1906902-005	SW8270D	ANTHRACENE	1.3	ug/kg		J	10L
K1906902	Q6-0TO27-102018	K1906902-005	SW8270D	Benzo(a)anthracene	4.8	ug/kg		J	10L
K1906902	Q6-0TO27-102018	K1906902-005	SW8270D	Benzo(a)pyrene	5.4	ug/kg		J	10L
K1906902	Q6-0TO27-102018	K1906902-005	SW8270D	Benzo(g,h,i)perylene	4.2	ug/kg		J	10L
K1906902	Q6-0TO27-102018	K1906902-005	SW8270D	BENZO(k)FLUORANTHENE	3.5	ug/kg		J	10L
K1906902	Q6-0TO27-102018	K1906902-005	SW8270D	Chrysene	9.3	ug/kg		J	10L
K1906902	Q6-0TO27-102018	K1906902-005	SW8270D	Dibenzo(a,h)anthracene	0.95	ug/kg		J	10L
K1906902	Q6-0TO27-102018	K1906902-005	SW8270D	DIBENZOFURAN	0.24	ug/kg	J	UJ	7,10L
K1906902	Q6-0TO27-102018	K1906902-005	SW8270D	FLUORANTHENE	8.1	ug/kg		J	10L
K1906902	Q6-0TO27-102018	K1906902-005	SW8270D	FLUORENE	0.48	ug/kg	J	J	10L
K1906902	Q6-0TO27-102018	K1906902-005	SW8270D	Indeno(1,2,3-cd)pyrene	4.2	ug/kg		J	10L

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
K1906902	Q6-0TO27-102018	K1906902-005	SW8270D	NAPHTHALENE	0.33	ug/kg	J	J	10L
K1906902	Q6-0TO27-102018	K1906902-005	SW8270D	PHENANTHRENE	3.3	ug/kg		J	10L
K1906902	A5-0TO25-100818	K1906902-006	SW8270D	2-METHYLNAPHTHALENE	1.8	ug/kg		J	10L
K1906902	A5-0TO25-100818	K1906902-006	ALS SOP	o,p'-DDD	0.54	ug/kg		J	19
K1906902	A5-0TO25-100818	K1906902-006	SW8270D	ACENAPHTHENE	3.7	ug/kg		J	10L
K1906902	A5-0TO25-100818	K1906902-006	ALS SOP	o,p'-DDE	0.088	ug/kg	J	J	19
K1906902	A5-0TO25-100818	K1906902-006	SW8270D	ACENAPHTHYLENE	4.1	ug/kg		J	10L
K1906902	A5-0TO25-100818	K1906902-006	ALS SOP	4,4'-DDD	2.3	ug/kg		J	19
K1906902	A5-0TO25-100818	K1906902-006	SW8270D	ANTHRACENE	7.8	ug/kg		J	10L
K1906902	A5-0TO25-100818	K1906902-006	ALS SOP	4,4'-DDE	2.5	ug/kg		J	19
K1906902	A5-0TO25-100818	K1906902-006	SW8270D	Benzo(a)anthracene	36	ug/kg		J	10L
K1906902	A5-0TO25-100818	K1906902-006	ALS SOP	4,4'-DDT	0.73	ug/kg		J	19
K1906902	A5-0TO25-100818	K1906902-006	SW8270D	Benzo(a)pyrene	43	ug/kg		J	10L
K1906902	A5-0TO25-100818	K1906902-006	SW8270D	Benzo(g,h,i)perylene	33	ug/kg		J	10L
K1906902	A5-0TO25-100818	K1906902-006	SW8270D	BENZO(k)FLUORANTHENE	24	ug/kg		J	10L
K1906902	A5-0TO25-100818	K1906902-006	SW8270D	Chrysene	68	ug/kg		J	10L
K1906902	A5-0TO25-100818	K1906902-006	SW8270D	Dibenzo(a,h)anthracene	7	ug/kg		J	10L
K1906902	A5-0TO25-100818	K1906902-006	SW8270D	DIBENZOFURAN	1.8	ug/kg		J	10L
K1906902	A5-0TO25-100818	K1906902-006	SW8270D	FLUORANTHENE	74	ug/kg		J	10L
K1906902	A5-0TO25-100818	K1906902-006	SW8270D	FLUORENE	3.7	ug/kg		J	10L
K1906902	A5-0TO25-100818	K1906902-006	SW8270D	Indeno(1,2,3-cd)pyrene	34	ug/kg		J	10L
K1906902	A5-0TO25-100818	K1906902-006	SW8270D	NAPHTHALENE	4.2	ug/kg		J	10L
K1906902	A5-0TO25-100818	K1906902-006	SW8270D	PHENANTHRENE	35	ug/kg		J	10L
K1906902	A4-0TO25-100818	K1906902-007	SW8270D	2-METHYLNAPHTHALENE	16	ug/kg		J	10L
K1906902	A4-0TO25-100818	K1906902-007	SW8270D	ACENAPHTHENE	23	ug/kg		J	10L
K1906902	A4-0TO25-100818	K1906902-007	ALS SOP	o,p'-DDE	0.14	ug/kg		J	19
K1906902	A4-0TO25-100818	K1906902-007	SW8270D	ACENAPHTHYLENE	20	ug/kg		J	10L
K1906902	A4-0TO25-100818	K1906902-007	ALS SOP	4,4'-DDD	1.7	ug/kg		J	19
K1906902	A4-0TO25-100818	K1906902-007	SW8270D	ANTHRACENE	41	ug/kg		J	10L
K1906902	A4-0TO25-100818	K1906902-007	ALS SOP	4,4'-DDE	2.8	ug/kg		J	19
K1906902	A4-0TO25-100818	K1906902-007	SW8270D	Benzo(a)anthracene	150	ug/kg		J	10L
K1906902	A4-0TO25-100818	K1906902-007	SW8270D	Benzo(a)pyrene	190	ug/kg		J	10L
K1906902	A4-0TO25-100818	K1906902-007	SW8270D	Benzo(g,h,i)perylene	150	ug/kg		J	10L
K1906902	A4-0TO25-100818	K1906902-007	SW8270D	BENZO(k)FLUORANTHENE	89	ug/kg		J	10L
K1906902	A4-0TO25-100818	K1906902-007	SW8270D	Chrysene	230	ug/kg		J	10L
K1906902	A4-0TO25-100818	K1906902-007	SW8270D	Dibenzo(a,h)anthracene	29	ug/kg		J	10L

Qualified Data Summary Table
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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
K1906902	A4-0TO25-100818	K1906902-007	SW8270D	DIBENZOFURAN	13	ug/kg		J	10L
K1906902	A4-0TO25-100818	K1906902-007	SW8270D	FLUORANTHENE	310	ug/kg		J	10L
K1906902	A4-0TO25-100818	K1906902-007	SW8270D	FLUORENE	20	ug/kg		J	10L
K1906902	A4-0TO25-100818	K1906902-007	SW8270D	Indeno(1,2,3-cd)pyrene	150	ug/kg		J	10L
K1906902	A4-0TO25-100818	K1906902-007	SW8270D	NAPHTHALENE	29	ug/kg		J	10L
K1906902	A4-0TO25-100818	K1906902-007	SW8270D	PHENANTHRENE	190	ug/kg		J	10L
K1906902	A3-0TO31-100818	K1906902-008	SW8270D	2-METHYLNAPHTHALENE	1.4	ug/kg		J	10L
K1906902	A3-0TO31-100818	K1906902-008	SW8270D	ACENAPHTHENE	1.8	ug/kg		J	10L
K1906902	A3-0TO31-100818	K1906902-008	SW8270D	ACENAPHTHYLENE	8	ug/kg		J	10L
K1906902	A3-0TO31-100818	K1906902-008	ALS SOP	4,4'-DDD	1.3	ug/kg		J	19
K1906902	A3-0TO31-100818	K1906902-008	SW8270D	ANTHRACENE	12	ug/kg		J	10L
K1906902	A3-0TO31-100818	K1906902-008	ALS SOP	4,4'-DDE	1.8	ug/kg		J	19
K1906902	A3-0TO31-100818	K1906902-008	SW8270D	Benzo(a)anthracene	170	ug/kg		J	10L
K1906902	A3-0TO31-100818	K1906902-008	SW8270D	Benzo(a)pyrene	93	ug/kg		J	10L
K1906902	A3-0TO31-100818	K1906902-008	SW8270D	Benzo(g,h,i)perylene	34	ug/kg		J	10L
K1906902	A3-0TO31-100818	K1906902-008	SW8270D	BENZO(k)FLUORANTHENE	70	ug/kg		J	10L
K1906902	A3-0TO31-100818	K1906902-008	SW8270D	Chrysene	250	ug/kg		J	10L
K1906902	A3-0TO31-100818	K1906902-008	SW8270D	Dibenzo(a,h)anthracene	11	ug/kg		J	10L
K1906902	A3-0TO31-100818	K1906902-008	SW8270D	DIBENZOFURAN	1.1	ug/kg		J	10L
K1906902	A3-0TO31-100818	K1906902-008	SW8270D	FLUORANTHENE	170	ug/kg		J	10L
K1906902	A3-0TO31-100818	K1906902-008	SW8270D	FLUORENE	2.9	ug/kg		J	10L
K1906902	A3-0TO31-100818	K1906902-008	SW8270D	Indeno(1,2,3-cd)pyrene	46	ug/kg		J	10L
K1906902	A3-0TO31-100818	K1906902-008	SW8270D	NAPHTHALENE	2	ug/kg		J	10L
K1906902	A3-0TO31-100818	K1906902-008	SW8270D	PHENANTHRENE	22	ug/kg		J	10L
K1906902	A2-0TO26-100818	K1906902-009	SW8270D	2-METHYLNAPHTHALENE	7	ug/kg		J	10L
K1906902	A2-0TO26-100818	K1906902-009	SW8270D	ACENAPHTHENE	13	ug/kg		J	10L
K1906902	A2-0TO26-100818	K1906902-009	SW8270D	ACENAPHTHYLENE	23	ug/kg		J	10L
K1906902	A2-0TO26-100818	K1906902-009	ALS SOP	4,4'-DDD	1	ug/kg		J	19
K1906902	A2-0TO26-100818	K1906902-009	SW8270D	ANTHRACENE	51	ug/kg		J	10L
K1906902	A2-0TO26-100818	K1906902-009	ALS SOP	4,4'-DDE	1.3	ug/kg		J	19
K1906902	A2-0TO26-100818	K1906902-009	SW8270D	Benzo(a)anthracene	210	ug/kg		J	10L
K1906902	A2-0TO26-100818	K1906902-009	SW8270D	Benzo(a)pyrene	230	ug/kg		J	10L
K1906902	A2-0TO26-100818	K1906902-009	SW8270D	Benzo(g,h,i)perylene	170	ug/kg		J	10L
K1906902	A2-0TO26-100818	K1906902-009	SW8270D	BENZO(k)FLUORANTHENE	110	ug/kg		J	10L
K1906902	A2-0TO26-100818	K1906902-009	SW8270D	Chrysene	380	ug/kg		J	10L
K1906902	A2-0TO26-100818	K1906902-009	SW8270D	Dibenzo(a,h)anthracene	37	ug/kg		J	10L

Qualified Data Summary Table
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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
K1906902	A2-0TO26-100818	K1906902-009	SW8270D	DIBENZOFURAN	8.3	ug/kg		J	10L
K1906902	A2-0TO26-100818	K1906902-009	SW8270D	FLUORANTHENE	530	ug/kg		J	10L
K1906902	A2-0TO26-100818	K1906902-009	SW8270D	FLUORENE	19	ug/kg		J	10L
K1906902	A2-0TO26-100818	K1906902-009	SW8270D	Indeno(1,2,3-cd)pyrene	180	ug/kg		J	10L
K1906902	A2-0TO26-100818	K1906902-009	SW8270D	NAPHTHALENE	17	ug/kg		J	10L
K1906902	A2-0TO26-100818	K1906902-009	SW8270D	PHENANTHRENE	140	ug/kg		J	10L
K1906902	A6-0TO23-100818	K1906902-010	SW8270D	2-METHYLNAPHTHALENE	0.8	ug/kg	J	J	10L
K1906902	A6-0TO23-100818	K1906902-010	ALS SOP	o,p'-DDD	0.69	ug/kg		J	19
K1906902	A6-0TO23-100818	K1906902-010	SW8270D	ACENAPHTHENE	1.6	ug/kg		J	10L
K1906902	A6-0TO23-100818	K1906902-010	SW8270D	ACENAPHTHYLENE	1.6	ug/kg		J	10L
K1906902	A6-0TO23-100818	K1906902-010	ALS SOP	4,4'-DDD	3	ug/kg		J	19
K1906902	A6-0TO23-100818	K1906902-010	SW8270D	ANTHRACENE	3.3	ug/kg		J	10L
K1906902	A6-0TO23-100818	K1906902-010	ALS SOP	4,4'-DDE	0.97	ug/kg		J	19
K1906902	A6-0TO23-100818	K1906902-010	SW8270D	Benzo(a)anthracene	21	ug/kg		J	10L
K1906902	A6-0TO23-100818	K1906902-010	SW8270D	Benzo(a)pyrene	22	ug/kg		J	10L
K1906902	A6-0TO23-100818	K1906902-010	SW8270D	Benzo(g,h,i)perylene	15	ug/kg		J	10L
K1906902	A6-0TO23-100818	K1906902-010	SW8270D	BENZO(k)FLUORANTHENE	13	ug/kg		J	10L
K1906902	A6-0TO23-100818	K1906902-010	SW8270D	Chrysene	32	ug/kg		J	10L
K1906902	A6-0TO23-100818	K1906902-010	SW8270D	Dibenzo(a,h)anthracene	3.7	ug/kg		J	10L
K1906902	A6-0TO23-100818	K1906902-010	SW8270D	DIBENZOFURAN	0.8	ug/kg		J	10L
K1906902	A6-0TO23-100818	K1906902-010	SW8270D	FLUORANTHENE	33	ug/kg		J	10L
K1906902	A6-0TO23-100818	K1906902-010	SW8270D	FLUORENE	1.5	ug/kg		J	10L
K1906902	A6-0TO23-100818	K1906902-010	SW8270D	Indeno(1,2,3-cd)pyrene	17	ug/kg		J	10L
K1906902	A6-0TO23-100818	K1906902-010	SW8270D	NAPHTHALENE	1.8	ug/kg		J	10L
K1906902	A6-0TO23-100818	K1906902-010	SW8270D	PHENANTHRENE	13	ug/kg		J	10L
K1906902	C4-0TO27-100918	K1906902-011	SW8270D	2-METHYLNAPHTHALENE	2.4	ug/kg	J	J	10L
K1906902	C4-0TO27-100918	K1906902-011	ALS SOP	o,p'-DDD	0.92	ug/kg		J	19
K1906902	C4-0TO27-100918	K1906902-011	SW8270D	ACENAPHTHENE	9.8	ug/kg		J	10L
K1906902	C4-0TO27-100918	K1906902-011	SW8270D	ACENAPHTHYLENE	8.2	ug/kg		J	10L
K1906902	C4-0TO27-100918	K1906902-011	ALS SOP	4,4'-DDD	2.3	ug/kg		J	19
K1906902	C4-0TO27-100918	K1906902-011	SW8270D	ANTHRACENE	170	ug/kg		J	10L
K1906902	C4-0TO27-100918	K1906902-011	ALS SOP	4,4'-DDE	1.6	ug/kg		J	19
K1906902	C4-0TO27-100918	K1906902-011	SW8270D	Benzo(a)anthracene	1100	ug/kg		J	10L
K1906902	C4-0TO27-100918	K1906902-011	SW8270D	Benzo(a)pyrene	800	ug/kg		J	10L
K1906902	C4-0TO27-100918	K1906902-011	SW8270D	Benzo(g,h,i)perylene	400	ug/kg		J	10L
K1906902	C4-0TO27-100918	K1906902-011	SW8270D	BENZO(k)FLUORANTHENE	370	ug/kg		J	10L

Qualified Data Summary Table
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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
K1906902	C4-0TO27-100918	K1906902-011	SW8270D	Chrysene	1500	ug/kg		J	10L
K1906902	C4-0TO27-100918	K1906902-011	SW8270D	Dibenzo(a,h)anthracene	150	ug/kg		J	10L
K1906902	C4-0TO27-100918	K1906902-011	SW8270D	DIBENZOFURAN	2.9	ug/kg	J	J	10L
K1906902	C4-0TO27-100918	K1906902-011	SW8270D	FLUORANTHENE	1100	ug/kg		J	10L
K1906902	C4-0TO27-100918	K1906902-011	SW8270D	FLUORENE	27	ug/kg		J	10L
K1906902	C4-0TO27-100918	K1906902-011	SW8270D	Indeno(1,2,3-cd)pyrene	470	ug/kg		J	10L
K1906902	C4-0TO27-100918	K1906902-011	SW8270D	NAPHTHALENE	4.3	ug/kg	J	J	10L
K1906902	C4-0TO27-100918	K1906902-011	SW8270D	PHENANTHRENE	240	ug/kg		J	10L
K1906902	A7-0TO26-100918	K1906902-012	SW8270D	2-METHYLNAPHTHALENE	0.83	ug/kg	J	J	10L
K1906902	A7-0TO26-100918	K1906902-012	ALS SOP	o,p'-DDD	0.47	ug/kg		J	19
K1906902	A7-0TO26-100918	K1906902-012	SW8270D	ACENAPHTHENE	1.4	ug/kg		J	10L
K1906902	A7-0TO26-100918	K1906902-012	SW8270D	ACENAPHTHYLENE	1.7	ug/kg		J	10L
K1906902	A7-0TO26-100918	K1906902-012	ALS SOP	4,4'-DDD	2.5	ug/kg		J	19
K1906902	A7-0TO26-100918	K1906902-012	SW8270D	ANTHRACENE	3.5	ug/kg		J	10L
K1906902	A7-0TO26-100918	K1906902-012	ALS SOP	4,4'-DDE	1.8	ug/kg		J	19
K1906902	A7-0TO26-100918	K1906902-012	SW8270D	Benzo(a)anthracene	15	ug/kg		J	10L
K1906902	A7-0TO26-100918	K1906902-012	SW8270D	Benzo(a)pyrene	18	ug/kg		J	10L
K1906902	A7-0TO26-100918	K1906902-012	SW8270D	Benzo(g,h,i)perylene	15	ug/kg		J	10L
K1906902	A7-0TO26-100918	K1906902-012	SW8270D	BENZO(k)FLUORANTHENE	11	ug/kg		J	10L
K1906902	A7-0TO26-100918	K1906902-012	SW8270D	Chrysene	33	ug/kg		J	10L
K1906902	A7-0TO26-100918	K1906902-012	SW8270D	Dibenzo(a,h)anthracene	3.4	ug/kg		J	10L
K1906902	A7-0TO26-100918	K1906902-012	SW8270D	DIBENZOFURAN	0.9	ug/kg		J	10L
K1906902	A7-0TO26-100918	K1906902-012	SW8270D	FLUORANTHENE	26	ug/kg		J	10L
K1906902	A7-0TO26-100918	K1906902-012	SW8270D	FLUORENE	1.6	ug/kg		J	10L
K1906902	A7-0TO26-100918	K1906902-012	SW8270D	Indeno(1,2,3-cd)pyrene	15	ug/kg		J	10L
K1906902	A7-0TO26-100918	K1906902-012	SW8270D	NAPHTHALENE	2.2	ug/kg		J	10L
K1906902	A7-0TO26-100918	K1906902-012	SW8270D	PHENANTHRENE	12	ug/kg		J	10L
K1906902	D2-0TO19-101018	K1906902-013	SW8270D	2-METHYLNAPHTHALENE	4.2	ug/kg		J	10L
K1906902	D2-0TO19-101018	K1906902-013	ALS SOP	o,p'-DDD	0.61	ug/kg		J	19
K1906902	D2-0TO19-101018	K1906902-013	SW8270D	ACENAPHTHENE	9.8	ug/kg		J	10L
K1906902	D2-0TO19-101018	K1906902-013	SW8270D	ACENAPHTHYLENE	11	ug/kg		J	10L
K1906902	D2-0TO19-101018	K1906902-013	ALS SOP	4,4'-DDD	2.1	ug/kg		J	19
K1906902	D2-0TO19-101018	K1906902-013	SW8270D	ANTHRACENE	20	ug/kg		J	10L
K1906902	D2-0TO19-101018	K1906902-013	ALS SOP	4,4'-DDE	0.44	ug/kg		J	19
K1906902	D2-0TO19-101018	K1906902-013	SW8270D	Benzo(a)anthracene	110	ug/kg		J	10L
K1906902	D2-0TO19-101018	K1906902-013	SW8270D	Benzo(a)pyrene	90	ug/kg		J	10L

Qualified Data Summary Table
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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
K1906902	D2-0TO19-101018	K1906902-013	SW8270D	Benzo(g,h,i)perylene	55	ug/kg		J	10L
K1906902	D2-0TO19-101018	K1906902-013	SW8270D	BENZO(k)FLUORANTHENE	55	ug/kg		J	10L
K1906902	D2-0TO19-101018	K1906902-013	SW8270D	Chrysene	170	ug/kg		J	10L
K1906902	D2-0TO19-101018	K1906902-013	SW8270D	Dibenzo(a,h)anthracene	12	ug/kg		J	10L
K1906902	D2-0TO19-101018	K1906902-013	SW8270D	DIBENZOFURAN	4	ug/kg		J	10L
K1906902	D2-0TO19-101018	K1906902-013	SW8270D	FLUORANTHENE	320	ug/kg		J	10L
K1906902	D2-0TO19-101018	K1906902-013	SW8270D	FLUORENE	12	ug/kg		J	10L
K1906902	D2-0TO19-101018	K1906902-013	SW8270D	Indeno(1,2,3-cd)pyrene	61	ug/kg		J	10L
K1906902	D2-0TO19-101018	K1906902-013	SW8270D	NAPHTHALENE	5.4	ug/kg		J	10L
K1906902	D2-0TO19-101018	K1906902-013	SW8270D	PHENANTHRENE	76	ug/kg		J	10L
K1906902	F2-0TO19-101018	K1906902-014	SW8270D	2-METHYLNAPHTHALENE	5.6	ug/kg		J	10L
K1906902	F2-0TO19-101018	K1906902-014	ALS SOP	o,p'-DDD	0.84	ug/kg		J	19
K1906902	F2-0TO19-101018	K1906902-014	SW8270D	ACENAPHTHENE	9.7	ug/kg		J	10L
K1906902	F2-0TO19-101018	K1906902-014	ALS SOP	o,p'-DDE	0.12	ug/kg		J	19
K1906902	F2-0TO19-101018	K1906902-014	SW8270D	ACENAPHTHYLENE	6.2	ug/kg		J	10L
K1906902	F2-0TO19-101018	K1906902-014	ALS SOP	4,4'-DDD	3.4	ug/kg		J	19
K1906902	F2-0TO19-101018	K1906902-014	SW8270D	ANTHRACENE	7.4	ug/kg		J	10L
K1906902	F2-0TO19-101018	K1906902-014	SW8270D	Benzo(a)anthracene	27	ug/kg		J	10L
K1906902	F2-0TO19-101018	K1906902-014	ALS SOP	4,4'-DDE	1.1	ug/kg		J	19
K1906902	F2-0TO19-101018	K1906902-014	SW8270D	Benzo(a)pyrene	38	ug/kg		J	10L
K1906902	F2-0TO19-101018	K1906902-014	SW8270D	Benzo(g,h,i)perylene	23	ug/kg		J	10L
K1906902	F2-0TO19-101018	K1906902-014	SW8270D	BENZO(k)FLUORANTHENE	21	ug/kg		J	10L
K1906902	F2-0TO19-101018	K1906902-014	SW8270D	Chrysene	46	ug/kg		J	10L
K1906902	F2-0TO19-101018	K1906902-014	SW8270D	Dibenzo(a,h)anthracene	5.3	ug/kg		J	10L
K1906902	F2-0TO19-101018	K1906902-014	SW8270D	DIBENZOFURAN	5.3	ug/kg		J	10L
K1906902	F2-0TO19-101018	K1906902-014	SW8270D	FLUORANTHENE	72	ug/kg		J	10L
K1906902	F2-0TO19-101018	K1906902-014	SW8270D	FLUORENE	9.4	ug/kg		J	10L
K1906902	F2-0TO19-101018	K1906902-014	SW8270D	Indeno(1,2,3-cd)pyrene	27	ug/kg		J	10L
K1906902	F2-0TO19-101018	K1906902-014	SW8270D	NAPHTHALENE	6.8	ug/kg		J	10L
K1906902	F2-0TO19-101018	K1906902-014	SW8270D	PHENANTHRENE	33	ug/kg		J	10L
K1906902	H2-0TO30-101218	K1906902-015	SW8270D	2-METHYLNAPHTHALENE	10	ug/kg		J	10L
K1906902	H2-0TO30-101218	K1906902-015	SW8270D	ACENAPHTHENE	35	ug/kg		J	10L
K1906902	H2-0TO30-101218	K1906902-015	SW8270D	ACENAPHTHYLENE	37	ug/kg		J	10L
K1906902	H2-0TO30-101218	K1906902-015	ALS SOP	4,4'-DDD	1.3	ug/kg		J	19
K1906902	H2-0TO30-101218	K1906902-015	SW8270D	ANTHRACENE	84	ug/kg		J	10L
K1906902	H2-0TO30-101218	K1906902-015	ALS SOP	4,4'-DDE	1.1	ug/kg		J	19

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
K1906902	H2-0TO30-101218	K1906902-015	SW8270D	Benzo(a)anthracene	250	ug/kg		J	10L
K1906902	H2-0TO30-101218	K1906902-015	SW8270D	Benzo(a)pyrene	270	ug/kg		J	10L
K1906902	H2-0TO30-101218	K1906902-015	SW8270D	Benzo(g,h,i)perylene	190	ug/kg		J	10L
K1906902	H2-0TO30-101218	K1906902-015	SW8270D	BENZO(k)FLUORANTHENE	140	ug/kg		J	10L
K1906902	H2-0TO30-101218	K1906902-015	SW8270D	Chrysene	360	ug/kg		J	10L
K1906902	H2-0TO30-101218	K1906902-015	SW8270D	Dibenzo(a,h)anthracene	42	ug/kg		J	10L
K1906902	H2-0TO30-101218	K1906902-015	SW8270D	DIBENZOFURAN	11	ug/kg		J	10L
K1906902	H2-0TO30-101218	K1906902-015	SW8270D	FLUORANTHENE	570	ug/kg		J	10L
K1906902	H2-0TO30-101218	K1906902-015	SW8270D	FLUORENE	38	ug/kg		J	10L
K1906902	H2-0TO30-101218	K1906902-015	SW8270D	Indeno(1,2,3-cd)pyrene	200	ug/kg		J	10L
K1906902	H2-0TO30-101218	K1906902-015	SW8270D	NAPHTHALENE	28	ug/kg		J	10L
K1906902	H2-0TO30-101218	K1906902-015	SW8270D	PHENANTHRENE	300	ug/kg		J	10L
K1906902	J2A3-0TO18-101218	K1906902-016	SW8270D	2-METHYLNAPHTHALENE	3.1	ug/kg	J	J	10L
K1906902	J2A3-0TO18-101218	K1906902-016	SW8270D	ACENAPHTHENE	5.9	ug/kg		J	10L
K1906902	J2A3-0TO18-101218	K1906902-016	SW8270D	ACENAPHTHYLENE	4.1	ug/kg		J	10L
K1906902	J2A3-0TO18-101218	K1906902-016	ALS SOP	4,4'-DDD	0.98	ug/kg		J	19
K1906902	J2A3-0TO18-101218	K1906902-016	SW8270D	ANTHRACENE	22	ug/kg		J	10L
K1906902	J2A3-0TO18-101218	K1906902-016	SW8270D	Benzo(a)anthracene	93	ug/kg		J	10L
K1906902	J2A3-0TO18-101218	K1906902-016	ALS SOP	4,4'-DDE	0.38	ug/kg		J	19
K1906902	J2A3-0TO18-101218	K1906902-016	SW8270D	Benzo(a)pyrene	110	ug/kg		J	10L
K1906902	J2A3-0TO18-101218	K1906902-016	SW8270D	Benzo(g,h,i)perylene	89	ug/kg		J	10L
K1906902	J2A3-0TO18-101218	K1906902-016	SW8270D	BENZO(k)FLUORANTHENE	62	ug/kg		J	10L
K1906902	J2A3-0TO18-101218	K1906902-016	SW8270D	Chrysene	120	ug/kg		J	10L
K1906902	J2A3-0TO18-101218	K1906902-016	SW8270D	Dibenzo(a,h)anthracene	20	ug/kg		J	10L
K1906902	J2A3-0TO18-101218	K1906902-016	SW8270D	DIBENZOFURAN	5.4	ug/kg		J	10L
K1906902	J2A3-0TO18-101218	K1906902-016	SW8270D	FLUORANTHENE	190	ug/kg		J	10L
K1906902	J2A3-0TO18-101218	K1906902-016	SW8270D	FLUORENE	12	ug/kg		J	10L
K1906902	J2A3-0TO18-101218	K1906902-016	SW8270D	Indeno(1,2,3-cd)pyrene	91	ug/kg		J	10L
K1906902	J2A3-0TO18-101218	K1906902-016	SW8270D	NAPHTHALENE	4.3	ug/kg		J	10L
K1906902	J2A3-0TO18-101218	K1906902-016	SW8270D	PHENANTHRENE	98	ug/kg		J	10L
K1906902	Q2-0TO13-101818	K1906902-017	SW8270D	2-METHYLNAPHTHALENE		ug/kg	U	UJ	10L
K1906902	Q2-0TO13-101818	K1906902-017	SW8270D	ACENAPHTHENE	0.3	ug/kg	J	J	10L
K1906902	Q2-0TO13-101818	K1906902-017	ALS SOP	o,p'-DDT	0.53	ug/kg		J	19
K1906902	Q2-0TO13-101818	K1906902-017	SW8270D	ACENAPHTHYLENE	0.97	ug/kg		J	10L
K1906902	Q2-0TO13-101818	K1906902-017	ALS SOP	4,4'-DDD	0.61	ug/kg		J	19
K1906902	Q2-0TO13-101818	K1906902-017	SW8270D	ANTHRACENE	1.2	ug/kg		J	10L

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K1906902	Q2-0TO13-101818	K1906902-017	ALS SOP	4,4'-DDE	0.22	ug/kg		J	19
K1906902	Q2-0TO13-101818	K1906902-017	SW8270D	Benzo(a)anthracene	5.4	ug/kg		J	10L
K1906902	Q2-0TO13-101818	K1906902-017	ALS SOP	4,4'-DDT	3	ug/kg		J	19
K1906902	Q2-0TO13-101818	K1906902-017	SW8270D	Benzo(a)pyrene	8.3	ug/kg		J	10L
K1906902	Q2-0TO13-101818	K1906902-017	SW8270D	Benzo(g,h,i)perylene	9	ug/kg		J	10L
K1906902	Q2-0TO13-101818	K1906902-017	SW8270D	BENZO(k)FLUORANTHENE	4	ug/kg		J	10L
K1906902	Q2-0TO13-101818	K1906902-017	SW8270D	Chrysene	8.7	ug/kg		J	10L
K1906902	Q2-0TO13-101818	K1906902-017	SW8270D	Dibenzo(a,h)anthracene	1.4	ug/kg		J	10L
K1906902	Q2-0TO13-101818	K1906902-017	SW8270D	DIBENZOFURAN	0.25	ug/kg	J	UJ	7,10L
K1906902	Q2-0TO13-101818	K1906902-017	SW8270D	FLUORANTHENE	15	ug/kg		J	10L
K1906902	Q2-0TO13-101818	K1906902-017	SW8270D	FLUORENE	0.27	ug/kg	J	J	10L
K1906902	Q2-0TO13-101818	K1906902-017	SW8270D	Indeno(1,2,3-cd)pyrene	8.8	ug/kg		J	10L
K1906902	Q2-0TO13-101818	K1906902-017	SW8270D	NAPHTHALENE	0.23	ug/kg	J	J	10L
K1906902	Q2-0TO13-101818	K1906902-017	SW8270D	PHENANTHRENE	8.7	ug/kg		J	10L
K1906902	G6-0TO27-101818	K1906902-018	SW8270D	2-METHYLNAPHTHALENE	3.7	ug/kg		J	10L
K1906902	G6-0TO27-101818	K1906902-018	SW8270D	ACENAPHTHENE	6.5	ug/kg		J	10L
K1906902	G6-0TO27-101818	K1906902-018	SW8270D	ACENAPHTHYLENE	7.3	ug/kg		J	10L
K1906902	G6-0TO27-101818	K1906902-018	ALS SOP	4,4'-DDD	1.1	ug/kg		J	19
K1906902	G6-0TO27-101818	K1906902-018	SW8270D	ANTHRACENE	15	ug/kg		J	10L
K1906902	G6-0TO27-101818	K1906902-018	SW8270D	Benzo(a)anthracene	60	ug/kg		J	10L
K1906902	G6-0TO27-101818	K1906902-018	ALS SOP	4,4'-DDE	1.5	ug/kg		J	19
K1906902	G6-0TO27-101818	K1906902-018	SW8270D	Benzo(a)pyrene	65	ug/kg		J	10L
K1906902	G6-0TO27-101818	K1906902-018	SW8270D	Benzo(g,h,i)perylene	51	ug/kg		J	10L
K1906902	G6-0TO27-101818	K1906902-018	SW8270D	BENZO(k)FLUORANTHENE	32	ug/kg		J	10L
K1906902	G6-0TO27-101818	K1906902-018	SW8270D	Chrysene	100	ug/kg		J	10L
K1906902	G6-0TO27-101818	K1906902-018	SW8270D	Dibenzo(a,h)anthracene	11	ug/kg		J	10L
K1906902	G6-0TO27-101818	K1906902-018	SW8270D	DIBENZOFURAN	3.7	ug/kg		J	10L
K1906902	G6-0TO27-101818	K1906902-018	SW8270D	FLUORANTHENE	140	ug/kg		J	10L
K1906902	G6-0TO27-101818	K1906902-018	SW8270D	FLUORENE	6.6	ug/kg		J	10L
K1906902	G6-0TO27-101818	K1906902-018	SW8270D	Indeno(1,2,3-cd)pyrene	51	ug/kg		J	10L
K1906902	G6-0TO27-101818	K1906902-018	SW8270D	NAPHTHALENE	5.9	ug/kg		J	10L
K1906902	G6-0TO27-101818	K1906902-018	SW8270D	PHENANTHRENE	56	ug/kg		J	10L
K1906902	T6-0TO29-101618	K1906902-019	SW8270D	2-METHYLNAPHTHALENE	0.16	ug/kg	J	J	10L
K1906902	T6-0TO29-101618	K1906902-019	SW8270D	ACENAPHTHENE	0.6	ug/kg	J	J	10L
K1906902	T6-0TO29-101618	K1906902-019	SW8270D	ACENAPHTHYLENE	0.68	ug/kg		J	10L
K1906902	T6-0TO29-101618	K1906902-019	ALS SOP	4,4'-DDD	0.6	ug/kg		J	19

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K1906902	T6-0TO29-101618	K1906902-019	SW8270D	ANTHRACENE	0.85	ug/kg		J	10L
K1906902	T6-0TO29-101618	K1906902-019	ALS SOP	4,4'-DDE	0.99	ug/kg		J	19
K1906902	T6-0TO29-101618	K1906902-019	SW8270D	Benzo(a)anthracene	4.3	ug/kg		J	10L
K1906902	T6-0TO29-101618	K1906902-019	SW8270D	Benzo(a)pyrene	6.4	ug/kg		J	10L
K1906902	T6-0TO29-101618	K1906902-019	SW8270D	Benzo(g,h,i)perylene	6.2	ug/kg		J	10L
K1906902	T6-0TO29-101618	K1906902-019	SW8270D	BENZO(k)FLUORANTHENE	3	ug/kg		J	10L
K1906902	T6-0TO29-101618	K1906902-019	SW8270D	Chrysene	6.5	ug/kg		J	10L
K1906902	T6-0TO29-101618	K1906902-019	SW8270D	Dibenzo(a,h)anthracene	0.94	ug/kg		J	10L
K1906902	T6-0TO29-101618	K1906902-019	SW8270D	DIBENZOFURAN	0.19	ug/kg	J	UJ	7,10L
K1906902	T6-0TO29-101618	K1906902-019	SW8270D	FLUORANTHENE	12	ug/kg		J	10L
K1906902	T6-0TO29-101618	K1906902-019	SW8270D	FLUORENE	0.44	ug/kg	J	J	10L
K1906902	T6-0TO29-101618	K1906902-019	SW8270D	Indeno(1,2,3-cd)pyrene	5.7	ug/kg		J	10L
K1906902	T6-0TO29-101618	K1906902-019	SW8270D	NAPHTHALENE	0.3	ug/kg	J	J	10L
K1906902	T6-0TO29-101618	K1906902-019	SW8270D	PHENANTHRENE	5	ug/kg		J	10L
2006-00115_1	413-SC1b-40to50-82819	15468013	1613B	1,2,3,7,8-PeCDD	0.251	pg/g	JK	U	25
2006-00115_1	413-SC1b-40to50-82819	15468013	1613B	1,2,3,7,8,9-HxCDD	0.866	pg/g	JK	U	25
2006-00115_1	413-SC1b-40to50-82819	15468013	1613B	1,2,3,7,8-PeCDF	0.269	pg/g	BJK	U	25
2006-00115_1	413-SC1b-40to50-82819	15468013	1613B	2,3,4,6,7,8-HxCDF	0.555	pg/g	JK	U	25
2006-00115_1	413-SC1b-40to50-82819	15468013	1613B	1,2,3,4,7,8,9-HpCDF	0.583	pg/g	JK	U	25
2006-00115_1	413-SC1b-40to50-82819	15468013	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	0.642	pg/g	JK	U	25
2006-00115_1	413-SC1b-40to50-82819	15468013	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	1.59	pg/g	JK	U	25
2006-00115_1	413-SC1b-40to50-82819	15468013	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	11	pg/g	JK	U	25
2006-00115_1	413-SC1b-40to50-82819	15468013	1613B	Total Tetrachlorodibenzofuran with EMPCs	3.63	pg/g	BJK	U	25
2006-00115_1	413-SC1b-40to50-82819	15468013	1613B	Total Pentachlorodibenzofuran with EMPCs	5.86	pg/g	JK	U	25
2006-00115_1	413-SC1b-40to50-82819	15468013	1613B	Total Hexachlorodibenzofuran with EMPCs	12.4	pg/g	JK	U	25
2006-00115_1	413-SC1b-40to50-82819	15468013	1613B	Total Heptachlorodibenzofuran with EMPCs	29.4	pg/g	JK	U	25
2006-00115_1	R4-SC1b-100to110-82819	15468010	1613B	1,2,3,7,8,9-HxCDD	0.208	pg/g	JK	U	25
2006-00115_1	R4-SC1b-100to110-82819	15468010	1613B	1,2,3,7,8-PeCDF	0.19	pg/g	BJK	U	25
2006-00115_1	R4-SC1b-100to110-82819	15468010	1613B	1,2,3,4,7,8,9-HpCDF	0.246	pg/g	JK	U	25
2006-00115_1	R4-SC1b-100to110-82819	15468010	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	0.49	pg/g	JK	U	25
2006-00115_1	R4-SC1b-100to110-82819	15468010	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	0.706	pg/g	JK	U	25
2006-00115_1	R4-SC1b-100to110-82819	15468010	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	4.23	pg/g	JK	U	25
2006-00115_1	R4-SC1b-100to110-82819	15468010	1613B	Total Tetrachlorodibenzofuran with EMPCs	3.18	pg/g	BJK	U	25
2006-00115_1	R4-SC1b-100to110-82819	15468010	1613B	Total Pentachlorodibenzofuran with EMPCs	7.84	pg/g	JK	U	25
2006-00115_1	R4-SC1b-100to110-82819	15468010	1613B	Total Heptachlorodibenzofuran with EMPCs	16.8	pg/g	JK	U	25

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
2006-00115_1	R4-SC1b-110to120-82819	15468011	1613B	1,2,3,7,8,9-HxCDD	0.182	pg/g	JK	U	25
2006-00115_1	R4-SC1b-110to120-82819	15468011	1613B	1,2,3,7,8-PeCDF	0.186	pg/g	BJ	U	7
2006-00115_1	R4-SC1b-110to120-82819	15468011	1613B	2,3,4,6,7,8-HxCDF	0.46	pg/g	JK	U	25
2006-00115_1	R4-SC1b-110to120-82819	15468011	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	0.618	pg/g	JK	U	25
2006-00115_1	R4-SC1b-110to120-82819	15468011	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	1.11	pg/g	JK	U	25
2006-00115_1	R4-SC1b-110to120-82819	15468011	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	4	pg/g	JK	U	25
2006-00115_1	R4-SC1b-110to120-82819	15468011	1613B	Total Tetrachlorodibenzofuran with EMPCs	3.92	pg/g	BJK	U	25
2006-00115_1	R4-SC1b-110to120-82819	15468011	1613B	Total Pentachlorodibenzofuran with EMPCs	9.62	pg/g	JK	U	25
2006-00115_1	R4-SC1b-110to120-82819	15468011	1613B	Total Hexachlorodibenzofuran with EMPCs	11.3	pg/g	JK	U	25
2006-00115_1	R4-SC1b-120to130-82819	15468012	1613B	1,2,3,7,8-PeCDF	0.315	pg/g	BJK	U	25
2006-00115_1	R4-SC1b-120to130-82819	15468012	1613B	2,3,4,7,8-PeCDF	0.533	pg/g	JK	U	25
2006-00115_1	R4-SC1b-120to130-82819	15468012	1613B	1,2,3,7,8,9-HxCDF	0.199	pg/g	JK	U	25
2006-00115_1	R4-SC1b-120to130-82819	15468012	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	1.12	pg/g	JK	U	25
2006-00115_1	R4-SC1b-120to130-82819	15468012	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	1.26	pg/g	JK	U	25
2006-00115_1	R4-SC1b-120to130-82819	15468012	1613B	Total Tetrachlorodibenzofuran with EMPCs	3.89	pg/g	BJK	U	25
2006-00115_1	R4-SC1b-120to130-82819	15468012	1613B	Total Pentachlorodibenzofuran with EMPCs	8.28	pg/g	JK	U	25
2006-00115_1	R4-SC1b-120to130-82819	15468012	1613B	Total Hexachlorodibenzofuran with EMPCs	10.2	pg/g	JK	U	25
2006-00115_1	R4-SC1b-130to140-82819	15468014	1613B	1,2,3,4,7,8-HxCDF	0.174	pg/g	BJK	U	25
2006-00115_1	R4-SC1b-130to140-82819	15468014	1613B	1,2,3,6,7,8-HxCDF	0.233	pg/g	JK	U	25
2006-00115_1	R4-SC1b-130to140-82819	15468014	1613B	2,3,4,6,7,8-HxCDF	0.178	pg/g	JK	U	25
2006-00115_1	R4-SC1b-130to140-82819	15468014	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	0.257	pg/g	JK	U	25
2006-00115_1	R4-SC1b-130to140-82819	15468014	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	0.314	pg/g	JK	U	25
2006-00115_1	R4-SC1b-130to140-82819	15468014	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	1.37	pg/g	JK	U	25
2006-00115_1	R4-SC1b-130to140-82819	15468014	1613B	Total Tetrachlorodibenzofuran with EMPCs	1.46	pg/g	BJK	U	25
2006-00115_1	R4-SC1b-130to140-82819	15468014	1613B	Total Pentachlorodibenzofuran with EMPCs	2.02	pg/g	JK	U	25
2006-00115_1	R4-SC1b-130to140-82819	15468014	1613B	Total Hexachlorodibenzofuran with EMPCs	3.23	pg/g	JK	U	25
2006-00115_1	R4-SC1b-140to150-82819	15468015	1613B	1,2,3,6,7,8-HxCDD	0.562	pg/g	JK	U	25
2006-00115_1	R4-SC1b-140to150-82819	15468015	1613B	1,2,3,7,8,9-HxCDD	0.196	pg/g	JK	U	25
2006-00115_1	R4-SC1b-140to150-82819	15468015	1613B	1,2,3,7,8-PeCDF	0.141	pg/g	BJK	U	25
2006-00115_1	R4-SC1b-140to150-82819	15468015	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	0.39	pg/g	JK	U	25
2006-00115_1	R4-SC1b-140to150-82819	15468015	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	0.496	pg/g	JK	U	25
2006-00115_1	R4-SC1b-140to150-82819	15468015	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	3.73	pg/g	JK	U	25
2006-00115_1	R4-SC1b-140to150-82819	15468015	1613B	Total Tetrachlorodibenzofuran with EMPCs	1.78	pg/g	BJK	U	25
2006-00115_1	R4-SC1b-140to150-82819	15468015	1613B	Total Pentachlorodibenzofuran with EMPCs	3.68	pg/g	JK	U	25
2006-00115_1	R4-SC1b-20to30-82819	15468001	1613B	2,3,7,8-TCDD	0.157	pg/g	JK	U	25
2006-00115_1	R4-SC1b-20to30-82819	15468001	1613B	1,2,3,7,8-PeCDD	0.358	pg/g	JK	U	25

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
2006-00115_1	R4-SC1b-20to30-82819	15468001	1613B	1,2,3,4,6,7,8-HpCDD	39.8	pg/g		J	9
2006-00115_1	R4-SC1b-20to30-82819	15468001	1613B	1,2,3,4,6,7,8,9-OCDD	586	pg/g		J	8,9
2006-00115_1	R4-SC1b-20to30-82819	15468001	1613B	1,2,3,7,8-PeCDF	0.209	pg/g	BJ	U	7
2006-00115_1	R4-SC1b-20to30-82819	15468001	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	1.12	pg/g	JK	U	25
2006-00115_1	R4-SC1b-20to30-82819	15468001	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	3.04	pg/g	JK	U	25
2006-00115_1	R4-SC1b-20to30-82819	15468001	1613B	Total Tetrachlorodibenzofuran with EMPCs	3.35	pg/g	BJK	U	25
2006-00115_1	R4-SC1b-20to30-82819	15468001	1613B	Total Pentachlorodibenzofuran with EMPCs	5.95	pg/g	JK	U	25
2006-00115_1	R4-SC1b-30to40-82819	15468002	1613B	2,3,7,8-TCDD	0.107	pg/g	JK	U	25
2006-00115_1	R4-SC1b-30to40-82819	15468002	1613B	2,3,7,8-TCDF	0.324	pg/g	BJK	U	25
2006-00115_1	R4-SC1b-30to40-82819	15468002	1613B	1,2,3,7,8-PeCDF	0.255	pg/g	BJK	U	25
2006-00115_1	R4-SC1b-30to40-82819	15468002	1613B	2,3,4,6,7,8-HxCDF	0.351	pg/g	JK	U	25
2006-00115_1	R4-SC1b-30to40-82819	15468002	1613B	1,2,3,7,8,9-HxCDF	0.288	pg/g	JK	U	25
2006-00115_1	R4-SC1b-30to40-82819	15468002	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	0.521	pg/g	JK	U	25
2006-00115_1	R4-SC1b-30to40-82819	15468002	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	1.36	pg/g	JK	U	25
2006-00115_1	R4-SC1b-30to40-82819	15468002	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	7.59	pg/g	JK	U	25
2006-00115_1	R4-SC1b-30to40-82819	15468002	1613B	Total Tetrachlorodibenzofuran with EMPCs	2.12	pg/g	BJK	U	25
2006-00115_1	R4-SC1b-30to40-82819	15468002	1613B	Total Pentachlorodibenzofuran with EMPCs	3.79	pg/g	JK	U	25
2006-00115_1	R4-SC1b-30to40-82819	15468002	1613B	Total Hexachlorodibenzofuran with EMPCs	8.28	pg/g	JK	U	25
2006-00115_1	R4-SC1b-40to50-82819	15468003	1613B	2,3,7,8-TCDF	1.16	pg/g	B	DNR	11
2006-00115_1	R4-SC1b-40to50-82819	15468003	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	5.07	pg/g	JK	U	25
2006-00115_1	R4-SC1b-40to50-82819	15468003	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	10.9	pg/g	JKQ	U	25
2006-00115_1	R4-SC1b-40to50-82819	15468003	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	56.7	pg/g	JK	U	25
2006-00115_1	R4-SC1b-40to50-82819	15468003	1613B	Total Tetrachlorodibenzofuran with EMPCs	16.2	pg/g	JK	U	25
2006-00115_1	R4-SC1b-40to50-82819	15468003	1613B	Total Pentachlorodibenzofuran with EMPCs	30.2	pg/g	JKQ	U	25
2006-00115_1	R4-SC1b-40to50-82819	15468003	1613B	Total Hexachlorodibenzofuran with EMPCs	69.2	pg/g	JK	U	25
2006-00115_1	R4-SC1b-50to60-82819	15468004	1613B	2,3,7,8-TCDD	0.201	pg/g	JK	U	25
2006-00115_1	R4-SC1b-50to60-82819	15468004	1613B	1,2,3,4,7,8-HxCDD	0.542	pg/g	JK	U	25
2006-00115_1	R4-SC1b-50to60-82819	15468004	1613B	1,2,3,7,8-PeCDF	0.377	pg/g	BJ	U	7
2006-00115_1	R4-SC1b-50to60-82819	15468004	1613B	2,3,4,7,8-PeCDF	0.634	pg/g	JK	U	25
2006-00115_1	R4-SC1b-50to60-82819	15468004	1613B	2,3,4,6,7,8-HxCDF	1.07	pg/g	JK	U	25
2006-00115_1	R4-SC1b-50to60-82819	15468004	1613B	1,2,3,7,8,9-HxCDF	0.473	pg/g	JK	U	25
2006-00115_1	R4-SC1b-50to60-82819	15468004	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	1.67	pg/g	JK	U	25
2006-00115_1	R4-SC1b-50to60-82819	15468004	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	4.13	pg/g	JK	U	25
2006-00115_1	R4-SC1b-50to60-82819	15468004	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	20.1	pg/g	JK	U	25
2006-00115_1	R4-SC1b-50to60-82819	15468004	1613B	Total Tetrachlorodibenzofuran with EMPCs	4.59	pg/g	BJK	U	25
2006-00115_1	R4-SC1b-50to60-82819	15468004	1613B	Total Pentachlorodibenzofuran with EMPCs	11.1	pg/g	JK	U	25

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2006-00115_1	R4-SC1b-50to60-82819	15468004	1613B	Total Hexachlorodibenzofuran with EMPCs	28.5	pg/g	JK	U	25
2006-00115_1	R4-SC1b-60to70-82819	15468005	1613B	2,3,7,8-TCDF	0.575	pg/g	BJK	U	25
2006-00115_1	R4-SC1b-60to70-82819	15468005	1613B	1,2,3,7,8-PeCDF	0.278	pg/g	BJK	U	25
2006-00115_1	R4-SC1b-60to70-82819	15468005	1613B	1,2,3,6,7,8-HxCDF	0.949	pg/g	JK	U	25
2006-00115_1	R4-SC1b-60to70-82819	15468005	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	0.831	pg/g	JK	U	25
2006-00115_1	R4-SC1b-60to70-82819	15468005	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	2.07	pg/g	JK	U	25
2006-00115_1	R4-SC1b-60to70-82819	15468005	1613B	Total Tetrachlorodibenzofuran with EMPCs	4.39	pg/g	BJK	U	25
2006-00115_1	R4-SC1b-60to70-82819	15468005	1613B	Total Pentachlorodibenzofuran with EMPCs	8.28	pg/g	JK	U	25
2006-00115_1	R4-SC1b-60to70-82819	15468005	1613B	Total Hexachlorodibenzofuran with EMPCs	17.6	pg/g	JK	U	25
2006-00115_1	R4-SC1b-70to80-82819	15468006	1613B	1,2,3,6,7,8-HxCDD	0.84	pg/g	JK	U	25
2006-00115_1	R4-SC1b-70to80-82819	15468006	1613B	1,2,3,7,8-PeCDF	0.259	pg/g	BJ	U	7
2006-00115_1	R4-SC1b-70to80-82819	15468006	1613B	1,2,3,4,7,8,9-HpCDF	0.599	pg/g	JK	U	25
2006-00115_1	R4-SC1b-70to80-82819	15468006	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	1.08	pg/g	JK	U	25
2006-00115_1	R4-SC1b-70to80-82819	15468006	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	1.69	pg/g	JK	U	25
2006-00115_1	R4-SC1b-70to80-82819	15468006	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	7.1	pg/g	JK	U	25
2006-00115_1	R4-SC1b-70to80-82819	15468006	1613B	Total Tetrachlorodibenzofuran with EMPCs	4.03	pg/g	BJK	U	25
2006-00115_1	R4-SC1b-70to80-82819	15468006	1613B	Total Pentachlorodibenzofuran with EMPCs	9.35	pg/g	JK	U	25
2006-00115_1	R4-SC1b-70to80-82819	15468006	1613B	Total Heptachlorodibenzofuran with EMPCs	26.6	pg/g	JK	U	25
2006-00115_1	R4-SC1b-80to90-82819	15468007	1613B	2,3,7,8-TCDD	0.0776	pg/g	JK	U	25
2006-00115_1	R4-SC1b-80to90-82819	15468007	1613B	1,2,3,6,7,8-HxCDD	0.537	pg/g	JK	U	25
2006-00115_1	R4-SC1b-80to90-82819	15468007	1613B	2,3,7,8-TCDF	0.533	pg/g	BJK	U	25
2006-00115_1	R4-SC1b-80to90-82819	15468007	1613B	1,2,3,7,8-PeCDF	0.255	pg/g	BJ	U	7
2006-00115_1	R4-SC1b-80to90-82819	15468007	1613B	2,3,4,7,8-PeCDF	0.517	pg/g	JK	U	25
2006-00115_1	R4-SC1b-80to90-82819	15468007	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	0.65	pg/g	JK	U	25
2006-00115_1	R4-SC1b-80to90-82819	15468007	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	4.01	pg/g	JK	U	25
2006-00115_1	R4-SC1b-80to90-82819	15468007	1613B	Total Tetrachlorodibenzofuran with EMPCs	4.17	pg/g	BJK	U	25
2006-00115_1	R4-SC1b-80to90-82819	15468007	1613B	Total Pentachlorodibenzofuran with EMPCs	7.33	pg/g	JK	U	25
2006-00115_1	R4-SC1b-80to90-82819	15468007	1613B	Total Hexachlorodibenzofuran with EMPCs	9.23	pg/g	JK	U	25
2006-00115_1	R4-SC1b-90to100-82819	15468008	1613B	1,2,3,4,7,8-HxCDF	0.248	pg/g	BJK	U	25
2006-00115_1	R4-SC1b-90to100-82819	15468008	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	0.52	pg/g	JK	U	25
2006-00115_1	R4-SC1b-90to100-82819	15468008	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	0.481	pg/g	JK	U	25
2006-00115_1	R4-SC1b-90to100-82819	15468008	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	2.4	pg/g	JK	U	25
2006-00115_1	R4-SC1b-90to100-82819	15468008	1613B	Total Tetrachlorodibenzofuran with EMPCs	1.76	pg/g	BJK	U	25
2006-00115_1	R4-SC1b-90to100-82819	15468008	1613B	Total Hexachlorodibenzofuran with EMPCs	5.09	pg/g	JK	U	25
K1907934	711-82719	K1907934-001	SW8270D	Benzo(a)anthracene	0.0019	ug/l	J	U	7
K1907934	711-82719	K1907934-001	SW8270D	NAPHTHALENE	0.0019	ug/l	J	U	7

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K1907934	711-82719	K1907934-001	SW8270D	PHENANTHRENE	0.0015	ug/l	J	U	7
K1907934	712-82819	K1907934-002	SW8270D	Benzo(a)anthracene	0.0016	ug/l	J	U	7
K1907934	712-82819	K1907934-002	SW8270D	NAPHTHALENE	0.002	ug/l	J	U	7
K1907934	712-82819	K1907934-002	SW8270D	PHENANTHRENE	0.0013	ug/l	J	U	7
K1907934	R4-SC1B-20TO30-82819	K1907934-003	SW8270D	2-METHYLNAPHTHALENE	11	ug/kg		J	10L
K1907934	R4-SC1B-20TO30-82819	K1907934-003	SW8270D	ACENAPHTHENE	7.4	ug/kg		J	10L
K1907934	R4-SC1B-20TO30-82819	K1907934-003	SW8270D	ACENAPHTHYLENE	9.3	ug/kg		J	10L
K1907934	R4-SC1B-20TO30-82819	K1907934-003	SW8270D	DIBENZOFURAN	3.6	ug/kg		J	10L
K1907934	R4-SC1B-20TO30-82819	K1907934-003	SW8270D	FLUORANTHENE	83	ug/kg		J	10L
K1907934	R4-SC1B-20TO30-82819	K1907934-003	SW8270D	FLUORENE	8	ug/kg		J	10L
K1907934	R4-SC1B-20TO30-82819	K1907934-003	SW8270D	NAPHTHALENE	14	ug/kg		J	10L
K1907934	R4-SC1B-20TO30-82819	K1907934-003	SW8270D	PHENANTHRENE	51	ug/kg		J	10L
K1907934	R4-SC1B-30TO40-82819	K1907934-004	SW8270D	2-METHYLNAPHTHALENE	4.4	ug/kg		J	10L
K1907934	R4-SC1B-30TO40-82819	K1907934-004	SW8270D	ACENAPHTHENE	6	ug/kg		J	10L
K1907934	R4-SC1B-30TO40-82819	K1907934-004	SW8270D	ACENAPHTHYLENE	3.6	ug/kg		J	10L
K1907934	R4-SC1B-30TO40-82819	K1907934-004	SW8270D	DIBENZOFURAN	2.4	ug/kg		J	10L
K1907934	R4-SC1B-30TO40-82819	K1907934-004	SW8270D	FLUORANTHENE	53	ug/kg		J	10L
K1907934	R4-SC1B-30TO40-82819	K1907934-004	SW8270D	FLUORENE	5.2	ug/kg		J	10L
K1907934	R4-SC1B-30TO40-82819	K1907934-004	SW8270D	NAPHTHALENE	8.5	ug/kg		J	10L
K1907934	R4-SC1B-30TO40-82819	K1907934-004	SW8270D	PHENANTHRENE	35	ug/kg		J	10L
K1907934	R4-SC1B-40TO50-82819	K1907934-005	SW8270D	2-METHYLNAPHTHALENE	5.1	ug/kg		J	10L
K1907934	R4-SC1B-40TO50-82819	K1907934-005	SW8270D	ACENAPHTHENE	13	ug/kg		J	10L
K1907934	R4-SC1B-40TO50-82819	K1907934-005	SW8270D	ACENAPHTHYLENE	5.5	ug/kg		J	10L
K1907934	R4-SC1B-40TO50-82819	K1907934-005	SW8270D	DIBENZOFURAN	3.9	ug/kg		J	10L
K1907934	R4-SC1B-40TO50-82819	K1907934-005	SW8270D	FLUORANTHENE	91	ug/kg		J	10L
K1907934	R4-SC1B-40TO50-82819	K1907934-005	SW8270D	FLUORENE	11	ug/kg		J	10L
K1907934	R4-SC1B-40TO50-82819	K1907934-005	SW8270D	NAPHTHALENE	8.3	ug/kg		J	10L
K1907934	R4-SC1B-40TO50-82819	K1907934-005	SW8270D	PHENANTHRENE	59	ug/kg		J	10L
K1907934	R4-SC1B-50TO60-82819	K1907934-006	SW8270D	2-METHYLNAPHTHALENE	2.8	ug/kg		J	10L
K1907934	R4-SC1B-50TO60-82819	K1907934-006	SW8270D	ACENAPHTHENE	3.8	ug/kg		J	10L
K1907934	R4-SC1B-50TO60-82819	K1907934-006	SW8270D	ACENAPHTHYLENE	3.3	ug/kg		J	10L
K1907934	R4-SC1B-50TO60-82819	K1907934-006	SW8270D	DIBENZOFURAN	1.5	ug/kg		J	10L
K1907934	R4-SC1B-50TO60-82819	K1907934-006	SW8270D	FLUORANTHENE	35	ug/kg		J	10L
K1907934	R4-SC1B-50TO60-82819	K1907934-006	SW8270D	FLUORENE	3.3	ug/kg		J	10L
K1907934	R4-SC1B-50TO60-82819	K1907934-006	SW8270D	NAPHTHALENE	5.9	ug/kg		J	10L
K1907934	R4-SC1B-50TO60-82819	K1907934-006	SW8270D	PHENANTHRENE	22	ug/kg		J	10L

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K1907934	R4-SC1B-60TO70-82819	K1907934-007	SW8270D	2-METHYLNAPHTHALENE	6.8	ug/kg		J	10L
K1907934	R4-SC1B-60TO70-82819	K1907934-007	SW8270D	ACENAPHTHENE	9.4	ug/kg		J	10L
K1907934	R4-SC1B-60TO70-82819	K1907934-007	SW8270D	ACENAPHTHYLENE	7.9	ug/kg		J	10L
K1907934	R4-SC1B-60TO70-82819	K1907934-007	SW8270D	DIBENZOFURAN	4.5	ug/kg		J	10L
K1907934	R4-SC1B-60TO70-82819	K1907934-007	SW8270D	FLUORANTHENE	110	ug/kg		J	10L
K1907934	R4-SC1B-60TO70-82819	K1907934-007	SW8270D	FLUORENE	9.8	ug/kg		J	10L
K1907934	R4-SC1B-60TO70-82819	K1907934-007	SW8270D	NAPHTHALENE	14	ug/kg		J	10L
K1907934	R4-SC1B-60TO70-82819	K1907934-007	SW8270D	PHENANTHRENE	71	ug/kg		J	10L
K1907934	R4-SC1B-70TO80-82819	K1907934-008	SW8270D	2-METHYLNAPHTHALENE	9.3	ug/kg		J	10L
K1907934	R4-SC1B-70TO80-82819	K1907934-008	SW8270D	ACENAPHTHENE	7.7	ug/kg		J	10L
K1907934	R4-SC1B-70TO80-82819	K1907934-008	SW8270D	ACENAPHTHYLENE	8.7	ug/kg		J	10L
K1907934	R4-SC1B-70TO80-82819	K1907934-008	SW8270D	DIBENZOFURAN	4	ug/kg		J	10L
K1907934	R4-SC1B-70TO80-82819	K1907934-008	SW8270D	FLUORANTHENE	87	ug/kg		J	10L
K1907934	R4-SC1B-70TO80-82819	K1907934-008	SW8270D	FLUORENE	8.6	ug/kg		J	10L
K1907934	R4-SC1B-70TO80-82819	K1907934-008	SW8270D	NAPHTHALENE	17	ug/kg		J	10L
K1907934	R4-SC1B-70TO80-82819	K1907934-008	SW8270D	PHENANTHRENE	59	ug/kg		J	10L
K1907934	R4-SC1B-80TO90-82819	K1907934-009	SW8270D	2-METHYLNAPHTHALENE	14	ug/kg		J	10L
K1907934	R4-SC1B-80TO90-82819	K1907934-009	SW8270D	ACENAPHTHENE	10	ug/kg		J	10L
K1907934	R4-SC1B-80TO90-82819	K1907934-009	SW8270D	ACENAPHTHYLENE	15	ug/kg		J	10L
K1907934	R4-SC1B-80TO90-82819	K1907934-009	SW8270D	DIBENZOFURAN	5.7	ug/kg		J	10L
K1907934	R4-SC1B-80TO90-82819	K1907934-009	SW8270D	FLUORANTHENE	96	ug/kg		J	10L
K1907934	R4-SC1B-80TO90-82819	K1907934-009	SW8270D	FLUORENE	11	ug/kg		J	10L
K1907934	R4-SC1B-80TO90-82819	K1907934-009	SW8270D	NAPHTHALENE	30	ug/kg		J	10L
K1907934	R4-SC1B-80TO90-82819	K1907934-009	SW8270D	PHENANTHRENE	75	ug/kg		J	10L
K1907934	R4-SC1B-90TO100-82819	K1907934-010	SW8270D	2-METHYLNAPHTHALENE	15	ug/kg		J	10L
K1907934	R4-SC1B-90TO100-82819	K1907934-010	SW8270D	ACENAPHTHENE	9.6	ug/kg		J	10L
K1907934	R4-SC1B-90TO100-82819	K1907934-010	SW8270D	ACENAPHTHYLENE	13	ug/kg		J	10L
K1907934	R4-SC1B-90TO100-82819	K1907934-010	SW8270D	DIBENZOFURAN	5.5	ug/kg		J	10L
K1907934	R4-SC1B-90TO100-82819	K1907934-010	SW8270D	FLUORANTHENE	80	ug/kg		J	10L
K1907934	R4-SC1B-90TO100-82819	K1907934-010	SW8270D	FLUORENE	11	ug/kg		J	10L
K1907934	R4-SC1B-90TO100-82819	K1907934-010	SW8270D	NAPHTHALENE	25	ug/kg		J	10L
K1907934	R4-SC1B-90TO100-82819	K1907934-010	SW8270D	PHENANTHRENE	72	ug/kg		J	10L
K1907934	R4-SC1B-100TO110-82819	K1907934-012	SW8270D	2-METHYLNAPHTHALENE	18	ug/kg		J	10L
K1907934	R4-SC1B-100TO110-82819	K1907934-012	SW8270D	ACENAPHTHENE	11	ug/kg		J	10L
K1907934	R4-SC1B-100TO110-82819	K1907934-012	SW8270D	ACENAPHTHYLENE	18	ug/kg		J	10L
K1907934	R4-SC1B-100TO110-82819	K1907934-012	SW8270D	DIBENZOFURAN	6.4	ug/kg		J	10L

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
K1907934	R4-SC1B-100TO110-82819	K1907934-012	SW8270D	FLUORANTHENE	100	ug/kg		J	10L
K1907934	R4-SC1B-100TO110-82819	K1907934-012	SW8270D	FLUORENE	13	ug/kg		J	10L
K1907934	R4-SC1B-100TO110-82819	K1907934-012	SW8270D	NAPHTHALENE	34	ug/kg		J	10L
K1907934	R4-SC1B-100TO110-82819	K1907934-012	SW8270D	PHENANTHRENE	83	ug/kg		J	10L
K1907934	R4-SC1B-110TO120-82819	K1907934-013	SW8270D	2-METHYLNAPHTHALENE	15	ug/kg		J	10L
K1907934	R4-SC1B-110TO120-82819	K1907934-013	SW8270D	ACENAPHTHENE	9.3	ug/kg		J	10L
K1907934	R4-SC1B-110TO120-82819	K1907934-013	SW8270D	ACENAPHTHYLENE	15	ug/kg		J	10L
K1907934	R4-SC1B-110TO120-82819	K1907934-013	SW8270D	DIBENZOFURAN	5.6	ug/kg		J	10L
K1907934	R4-SC1B-110TO120-82819	K1907934-013	SW8270D	FLUORANTHENE	77	ug/kg		J	10L
K1907934	R4-SC1B-110TO120-82819	K1907934-013	SW8270D	FLUORENE	11	ug/kg		J	10L
K1907934	R4-SC1B-110TO120-82819	K1907934-013	SW8270D	NAPHTHALENE	38	ug/kg		J	10L
K1907934	R4-SC1B-110TO120-82819	K1907934-013	SW8270D	PHENANTHRENE	67	ug/kg		J	10L
K1907934	R4-SC1B-120TO130-82819	K1907934-014	SW8270D	2-METHYLNAPHTHALENE	6.8	ug/kg		J	10L
K1907934	R4-SC1B-120TO130-82819	K1907934-014	SW8270D	ACENAPHTHENE	4.8	ug/kg		J	10L
K1907934	R4-SC1B-120TO130-82819	K1907934-014	SW8270D	ACENAPHTHYLENE	8.8	ug/kg		J	10L
K1907934	R4-SC1B-120TO130-82819	K1907934-014	SW8270D	DIBENZOFURAN	3.3	ug/kg		J	10L
K1907934	R4-SC1B-120TO130-82819	K1907934-014	SW8270D	FLUORANTHENE	55	ug/kg		J	10L
K1907934	R4-SC1B-120TO130-82819	K1907934-014	SW8270D	FLUORENE	5.7	ug/kg		J	10L
K1907934	R4-SC1B-120TO130-82819	K1907934-014	SW8270D	NAPHTHALENE	17	ug/kg		J	10L
K1907934	R4-SC1B-120TO130-82819	K1907934-014	SW8270D	PHENANTHRENE	42	ug/kg		J	10L
K1907934	413-SC1B-40TO50-82819	K1907934-015	SW8270D	2-METHYLNAPHTHALENE	2.8	ug/kg		J	10L
K1907934	413-SC1B-40TO50-82819	K1907934-015	SW8270D	ACENAPHTHENE	3.9	ug/kg		J	10L
K1907934	413-SC1B-40TO50-82819	K1907934-015	SW8270D	ACENAPHTHYLENE	2.5	ug/kg		J	10L
K1907934	413-SC1B-40TO50-82819	K1907934-015	SW8270D	DIBENZOFURAN	1.5	ug/kg		J	10L
K1907934	413-SC1B-40TO50-82819	K1907934-015	SW8270D	FLUORANTHENE	41	ug/kg		J	10L
K1907934	413-SC1B-40TO50-82819	K1907934-015	SW8270D	FLUORENE	3.5	ug/kg		J	10L
K1907934	413-SC1B-40TO50-82819	K1907934-015	SW8270D	NAPHTHALENE	4.1	ug/kg		J	10L
K1907934	413-SC1B-40TO50-82819	K1907934-015	SW8270D	PHENANTHRENE	21	ug/kg		J	10L
K1907934	R4-SC1B-130TO140-82819	K1907934-016	SW8270D	2-METHYLNAPHTHALENE	1.6	ug/kg		J	10L
K1907934	R4-SC1B-130TO140-82819	K1907934-016	SW8270D	ACENAPHTHENE	0.7	ug/kg		J	10L
K1907934	R4-SC1B-130TO140-82819	K1907934-016	SW8270D	ACENAPHTHYLENE	3	ug/kg		J	10L
K1907934	R4-SC1B-130TO140-82819	K1907934-016	SW8270D	DIBENZOFURAN	0.57	ug/kg		J	10L
K1907934	R4-SC1B-130TO140-82819	K1907934-016	SW8270D	FLUORANTHENE	15	ug/kg		J	10L
K1907934	R4-SC1B-130TO140-82819	K1907934-016	SW8270D	FLUORENE	0.89	ug/kg		J	10L
K1907934	R4-SC1B-130TO140-82819	K1907934-016	SW8270D	NAPHTHALENE	3.3	ug/kg		J	10L
K1907934	R4-SC1B-130TO140-82819	K1907934-016	SW8270D	PHENANTHRENE	8.3	ug/kg		J	10L

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K1907934	R4-SC1B-140TO150-82819	K1907934-017	SW8270D	2-METHYLNAPHTHALENE	0.73	ug/kg		J	10L
K1907934	R4-SC1B-140TO150-82819	K1907934-017	SW8270D	ACENAPHTHENE	0.56	ug/kg		J	10L
K1907934	R4-SC1B-140TO150-82819	K1907934-017	SW8270D	ACENAPHTHYLENE	0.94	ug/kg		J	10L
K1907934	R4-SC1B-140TO150-82819	K1907934-017	SW8270D	DIBENZOFURAN	0.33	ug/kg		J	10L
K1907934	R4-SC1B-140TO150-82819	K1907934-017	SW8270D	FLUORANTHENE	4.8	ug/kg		J	10L
K1907934	R4-SC1B-140TO150-82819	K1907934-017	SW8270D	FLUORENE	0.53	ug/kg		J	10L
K1907934	R4-SC1B-140TO150-82819	K1907934-017	SW8270D	NAPHTHALENE	1.6	ug/kg		J	10L
K1907934	R4-SC1B-140TO150-82819	K1907934-017	SW8270D	PHENANTHRENE	3.7	ug/kg		J	10L
K1907934	J6-SC1B-20TO30-82819	K1907934-018	SW8270D	2-METHYLNAPHTHALENE	7.1	ug/kg		J	10L
K1907934	J6-SC1B-20TO30-82819	K1907934-018	SW8270D	ACENAPHTHENE	7.8	ug/kg		J	10L
K1907934	J6-SC1B-20TO30-82819	K1907934-018	SW8270D	ACENAPHTHYLENE	6.2	ug/kg		J	10L
K1907934	J6-SC1B-20TO30-82819	K1907934-018	SW8270D	DIBENZOFURAN	3.2	ug/kg		J	10L
K1907934	J6-SC1B-20TO30-82819	K1907934-018	SW8270D	FLUORANTHENE	52	ug/kg		J	10L
K1907934	J6-SC1B-20TO30-82819	K1907934-018	SW8270D	FLUORENE	6.1	ug/kg		J	10L
K1907934	J6-SC1B-20TO30-82819	K1907934-018	SW8270D	NAPHTHALENE	14	ug/kg		J	10L
K1907934	J6-SC1B-20TO30-82819	K1907934-018	SW8270D	PHENANTHRENE	33	ug/kg		J	10L
K1907934	J6-SC1B-30TO40-82819	K1907934-019	SW8270D	2-METHYLNAPHTHALENE	4.5	ug/kg		J	10L
K1907934	J6-SC1B-30TO40-82819	K1907934-019	SW8270D	ACENAPHTHENE	5.5	ug/kg		J	10L
K1907934	J6-SC1B-30TO40-82819	K1907934-019	SW8270D	ACENAPHTHYLENE	3.6	ug/kg		J	10L
K1907934	J6-SC1B-30TO40-82819	K1907934-019	SW8270D	DIBENZOFURAN	2.4	ug/kg		J	10L
K1907934	J6-SC1B-30TO40-82819	K1907934-019	SW8270D	FLUORANTHENE	60	ug/kg		J	10L
K1907934	J6-SC1B-30TO40-82819	K1907934-019	SW8270D	FLUORENE	5.1	ug/kg		J	10L
K1907934	J6-SC1B-30TO40-82819	K1907934-019	SW8270D	NAPHTHALENE	8.3	ug/kg		J	10L
K1907934	J6-SC1B-30TO40-82819	K1907934-019	SW8270D	PHENANTHRENE	33	ug/kg		J	10L
K1907934	J6-SC1B-40TO50-82819	K1907934-020	SW8270D	2-METHYLNAPHTHALENE	4.2	ug/kg		J	10L
K1907934	J6-SC1B-40TO50-82819	K1907934-020	SW8270D	ACENAPHTHENE	5.5	ug/kg		J	10L
K1907934	J6-SC1B-40TO50-82819	K1907934-020	SW8270D	ACENAPHTHYLENE	3.1	ug/kg		J	10L
K1907934	J6-SC1B-40TO50-82819	K1907934-020	SW8270D	DIBENZOFURAN	2.2	ug/kg		J	10L
K1907934	J6-SC1B-40TO50-82819	K1907934-020	SW8270D	FLUORANTHENE	63	ug/kg		J	10L
K1907934	J6-SC1B-40TO50-82819	K1907934-020	SW8270D	FLUORENE	4.9	ug/kg		J	10L
K1907934	J6-SC1B-40TO50-82819	K1907934-020	SW8270D	NAPHTHALENE	6.2	ug/kg		J	10L
K1907934	J6-SC1B-40TO50-82819	K1907934-020	SW8270D	PHENANTHRENE	32	ug/kg		J	10L
K1907934	J6-SC1B-50TO60-82819	K1907934-021	SW8270D	2-METHYLNAPHTHALENE	3.9	ug/kg		J	10L
K1907934	J6-SC1B-50TO60-82819	K1907934-021	SW8270D	ACENAPHTHENE	6.9	ug/kg		J	10L
K1907934	J6-SC1B-50TO60-82819	K1907934-021	SW8270D	ACENAPHTHYLENE	4.6	ug/kg		J	10L
K1907934	J6-SC1B-50TO60-82819	K1907934-021	SW8270D	DIBENZOFURAN	2.1	ug/kg		J	10L

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K1907934	J6-SC1B-50TO60-82819	K1907934-021	SW8270D	FLUORANTHENE	73	ug/kg		J	10L
K1907934	J6-SC1B-50TO60-82819	K1907934-021	SW8270D	FLUORENE	4.3	ug/kg		J	10L
K1907934	J6-SC1B-50TO60-82819	K1907934-021	SW8270D	NAPHTHALENE	5.1	ug/kg		J	10L
K1907934	J6-SC1B-50TO60-82819	K1907934-021	SW8270D	PHENANTHRENE	48	ug/kg		J	10L
K1907934	J6-SC1B-60TO70-82819	K1907934-022	SW8270D	2-METHYLNAPHTHALENE	5.5	ug/kg		J	10L
K1907934	J6-SC1B-60TO70-82819	K1907934-022	SW8270D	ACENAPHTHENE	7.3	ug/kg		J	10L
K1907934	J6-SC1B-60TO70-82819	K1907934-022	SW8270D	ACENAPHTHYLENE	4.1	ug/kg		J	10L
K1907934	J6-SC1B-60TO70-82819	K1907934-022	SW8270D	DIBENZOFURAN	2.4	ug/kg		J	10L
K1907934	J6-SC1B-60TO70-82819	K1907934-022	SW8270D	FLUORANTHENE	67	ug/kg		J	10L
K1907934	J6-SC1B-60TO70-82819	K1907934-022	SW8270D	FLUORENE	4	ug/kg		J	10L
K1907934	J6-SC1B-60TO70-82819	K1907934-022	SW8270D	NAPHTHALENE	9	ug/kg		J	10L
K1907934	J6-SC1B-60TO70-82819	K1907934-022	SW8270D	PHENANTHRENE	53	ug/kg		J	10L
K1907934	J6-SC1B-70TO80-82819	K1907934-023	SW8270D	2-METHYLNAPHTHALENE	1.1	ug/kg		J	10L
K1907934	J6-SC1B-70TO80-82819	K1907934-023	SW8270D	ACENAPHTHENE	1.1	ug/kg		J	10L
K1907934	J6-SC1B-70TO80-82819	K1907934-023	SW8270D	ACENAPHTHYLENE	0.87	ug/kg		J	10L
K1907934	J6-SC1B-70TO80-82819	K1907934-023	SW8270D	DIBENZOFURAN	0.51	ug/kg		J	10L
K1907934	J6-SC1B-70TO80-82819	K1907934-023	SW8270D	FLUORANTHENE	9.5	ug/kg		J	10L
K1907934	J6-SC1B-70TO80-82819	K1907934-023	SW8270D	FLUORENE	0.83	ug/kg		J	10L
K1907934	J6-SC1B-70TO80-82819	K1907934-023	SW8270D	NAPHTHALENE	2.1	ug/kg		J	10L
K1907934	J6-SC1B-70TO80-82819	K1907934-023	SW8270D	PHENANTHRENE	9.7	ug/kg		J	10L
K1907934	J6-SC1B-80TO90-82819	K1907934-024	SW8270D	2-METHYLNAPHTHALENE	0.23	ug/kg	J	J	10L
K1907934	J6-SC1B-80TO90-82819	K1907934-024	SW8270D	ACENAPHTHENE	0.18	ug/kg	J	J	10L
K1907934	J6-SC1B-80TO90-82819	K1907934-024	SW8270D	ACENAPHTHYLENE	0.12	ug/kg	J	J	10L
K1907934	J6-SC1B-80TO90-82819	K1907934-024	SW8270D	DIBENZOFURAN	0.11	ug/kg	J	J	10L
K1907934	J6-SC1B-80TO90-82819	K1907934-024	SW8270D	FLUORENE	0.19	ug/kg	J	J	10L
K1907934	J6-SC1B-80TO90-82819	K1907934-024	SW8270D	NAPHTHALENE	0.39	ug/kg	J	J	10L
K1907934	J6-SC1B-80TO90-82819	K1907934-024	SW8270D	PHENANTHRENE	2.2	ug/kg		J	10L
K1907934	J6-SC1B-90TO100-82819	K1907934-025	SW8270D	2-METHYLNAPHTHALENE		ug/kg	U	UJ	10L
K1907934	J6-SC1B-90TO100-82819	K1907934-025	SW8270D	ACENAPHTHENE		ug/kg	U	UJ	10L
K1907934	J6-SC1B-90TO100-82819	K1907934-025	SW8270D	ACENAPHTHYLENE		ug/kg	U	UJ	10L
K1907934	J6-SC1B-90TO100-82819	K1907934-025	SW8270D	DIBENZOFURAN	0.056	ug/kg	J	J	10L
K1907934	J6-SC1B-90TO100-82819	K1907934-025	SW8270D	FLUORENE	0.058	ug/kg	J	J	10L
K1907934	J6-SC1B-90TO100-82819	K1907934-025	SW8270D	NAPHTHALENE		ug/kg	U	UJ	10L
K1907934	J6-SC1B-90TO100-82819	K1907934-025	SW8270D	PHENANTHRENE	0.22	ug/kg	J	J	10L
K1907934	J6-SC1B-100TO110-82819	K1907934-026	SW8270D	2-METHYLNAPHTHALENE		ug/kg	U	UJ	10L
K1907934	J6-SC1B-100TO110-82819	K1907934-026	SW8270D	ACENAPHTHENE		ug/kg	U	UJ	10L

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
K1907934	J6-SC1B-100TO110-82819	K1907934-026	SW8270D	ACENAPHTHYLENE		ug/kg	U	UJ	10L
K1907934	J6-SC1B-100TO110-82819	K1907934-026	SW8270D	DIBENZOFURAN		ug/kg	U	UJ	10L
K1907934	J6-SC1B-100TO110-82819	K1907934-026	SW8270D	FLUORENE		ug/kg	U	UJ	10L
K1907934	J6-SC1B-100TO110-82819	K1907934-026	SW8270D	NAPHTHALENE		ug/kg	U	UJ	10L
K1907934	J6-SC1B-100TO110-82819	K1907934-026	SW8270D	PHENANTHRENE	0.16	ug/kg	J	J	10L
K1907934	J6-SC1B-110TO120-82819	K1907934-027	SW8270D	2-METHYLNAPHTHALENE		ug/kg	U	UJ	10L
K1907934	J6-SC1B-110TO120-82819	K1907934-027	SW8270D	ACENAPHTHENE		ug/kg	U	UJ	10L
K1907934	J6-SC1B-110TO120-82819	K1907934-027	SW8270D	ACENAPHTHYLENE		ug/kg	U	UJ	10L
K1907934	J6-SC1B-110TO120-82819	K1907934-027	SW8270D	DIBENZOFURAN		ug/kg	U	UJ	10L
K1907934	J6-SC1B-110TO120-82819	K1907934-027	SW8270D	FLUORENE		ug/kg	U	UJ	10L
K1907934	J6-SC1B-110TO120-82819	K1907934-027	SW8270D	NAPHTHALENE		ug/kg	U	UJ	10L
K1907934	J6-SC1B-110TO120-82819	K1907934-027	SW8270D	PHENANTHRENE	0.14	ug/kg	J	J	10L
K1907934	H3-SC1B-20TO30-82819	K1907934-030	SW8270D	2-METHYLNAPHTHALENE	36	ug/kg		J	10L
K1907934	H3-SC1B-20TO30-82819	K1907934-030	SW8270D	ACENAPHTHENE	39	ug/kg		J	10L
K1907934	H3-SC1B-20TO30-82819	K1907934-030	SW8270D	ACENAPHTHYLENE	26	ug/kg		J	10L
K1907934	H3-SC1B-20TO30-82819	K1907934-030	SW8270D	DIBENZOFURAN	18	ug/kg		J	10L
K1907934	H3-SC1B-20TO30-82819	K1907934-030	SW8270D	FLUORENE	43	ug/kg		J	10L
K1907934	H3-SC1B-20TO30-82819	K1907934-030	SW8270D	NAPHTHALENE	38	ug/kg		J	10L
K1907934	H3-SC1B-20TO30-82819	K1907934-030	SW8270D	PHENANTHRENE	250	ug/kg		J	10L
K1907934	H3-SC1B-30TO40-82919	K1907934-031	SW8270D	2-METHYLNAPHTHALENE	11	ug/kg		J	10L
K1907934	H3-SC1B-30TO40-82919	K1907934-031	SW8270D	ACENAPHTHENE	7.4	ug/kg		J	10L
K1907934	H3-SC1B-30TO40-82919	K1907934-031	SW8270D	ACENAPHTHYLENE	8.4	ug/kg		J	10L
K1907934	H3-SC1B-30TO40-82919	K1907934-031	SW8270D	DIBENZOFURAN	4	ug/kg		J	10L
K1907934	H3-SC1B-30TO40-82919	K1907934-031	SW8270D	FLUORENE	10	ug/kg		J	10L
K1907934	H3-SC1B-30TO40-82919	K1907934-031	SW8270D	NAPHTHALENE	15	ug/kg		J	10L
K1907934	H3-SC1B-30TO40-82919	K1907934-031	SW8270D	PHENANTHRENE	55	ug/kg		J	10L
K1907934	H3-SC1B-40TO50-82919	K1907934-032	SW8270D	2-METHYLNAPHTHALENE	7.6	ug/kg		J	10L
K1907934	H3-SC1B-40TO50-82919	K1907934-032	SW8270D	ACENAPHTHENE	7.2	ug/kg		J	10L
K1907934	H3-SC1B-40TO50-82919	K1907934-032	SW8270D	ACENAPHTHYLENE	9.8	ug/kg		J	10L
K1907934	H3-SC1B-40TO50-82919	K1907934-032	SW8270D	DIBENZOFURAN	3.1	ug/kg		J	10L
K1907934	H3-SC1B-40TO50-82919	K1907934-032	SW8270D	FLUORENE	11	ug/kg		J	10L
K1907934	H3-SC1B-40TO50-82919	K1907934-032	SW8270D	NAPHTHALENE	16	ug/kg		J	10L
K1907934	H3-SC1B-40TO50-82919	K1907934-032	SW8270D	PHENANTHRENE	64	ug/kg		J	10L
K1907934	H3-SC1B-50TO60-82919	K1907934-033	SW8270D	2-METHYLNAPHTHALENE	8.3	ug/kg		J	10L
K1907934	H3-SC1B-50TO60-82919	K1907934-033	SW8270D	ACENAPHTHENE	4.9	ug/kg		J	10L
K1907934	H3-SC1B-50TO60-82919	K1907934-033	SW8270D	ACENAPHTHYLENE	12	ug/kg		J	10L

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
K1907934	H3-SC1B-50TO60-82919	K1907934-033	SW8270D	DIBENZOFURAN	2.5	ug/kg		J	10L
K1907934	H3-SC1B-50TO60-82919	K1907934-033	SW8270D	FLUORENE	6	ug/kg		J	10L
K1907934	H3-SC1B-50TO60-82919	K1907934-033	SW8270D	NAPHTHALENE	13	ug/kg		J	10L
K1907934	H3-SC1B-50TO60-82919	K1907934-033	SW8270D	PHENANTHRENE	53	ug/kg		J	10L
K1907934	H3-SC1B-60TO70-82919	K1907934-034	SW8270D	2-METHYLNAPHTHALENE	11	ug/kg		J	10L
K1907934	H3-SC1B-60TO70-82919	K1907934-034	SW8270D	ACENAPHTHENE	14	ug/kg		J	10L
K1907934	H3-SC1B-60TO70-82919	K1907934-034	SW8270D	ACENAPHTHYLENE	18	ug/kg		J	10L
K1907934	H3-SC1B-60TO70-82919	K1907934-034	SW8270D	DIBENZOFURAN	4.9	ug/kg		J	10L
K1907934	H3-SC1B-60TO70-82919	K1907934-034	SW8270D	FLUORENE	11	ug/kg		J	10L
K1907934	H3-SC1B-60TO70-82919	K1907934-034	SW8270D	NAPHTHALENE	32	ug/kg		J	10L
K1907934	H3-SC1B-60TO70-82919	K1907934-034	SW8270D	PHENANTHRENE	120	ug/kg		J	10L
K1907934	H3-SC1B-70TO80-82919	K1907934-035	SW8270D	2-METHYLNAPHTHALENE	4.9	ug/kg		J	10L
K1907934	H3-SC1B-70TO80-82919	K1907934-035	SW8270D	ACENAPHTHENE	3	ug/kg		J	10L
K1907934	H3-SC1B-70TO80-82919	K1907934-035	SW8270D	ACENAPHTHYLENE	5.3	ug/kg		J	10L
K1907934	H3-SC1B-70TO80-82919	K1907934-035	SW8270D	DIBENZOFURAN	1.5	ug/kg		J	10L
K1907934	H3-SC1B-70TO80-82919	K1907934-035	SW8270D	FLUORENE	3.3	ug/kg		J	10L
K1907934	H3-SC1B-70TO80-82919	K1907934-035	SW8270D	NAPHTHALENE	10	ug/kg		J	10L
K1907934	H3-SC1B-70TO80-82919	K1907934-035	SW8270D	PHENANTHRENE	27	ug/kg		J	10L
K1907934	H3-SC1B-80TO90-82919	K1907934-036	SW8270D	2-METHYLNAPHTHALENE	2.5	ug/kg		J	10L
K1907934	H3-SC1B-80TO90-82919	K1907934-036	SW8270D	ACENAPHTHENE	2.9	ug/kg		J	10L
K1907934	H3-SC1B-80TO90-82919	K1907934-036	SW8270D	ACENAPHTHYLENE	7	ug/kg		J	10L
K1907934	H3-SC1B-80TO90-82919	K1907934-036	SW8270D	DIBENZOFURAN	1.5	ug/kg		J	10L
K1907934	H3-SC1B-80TO90-82919	K1907934-036	SW8270D	FLUORENE	2.9	ug/kg		J	10L
K1907934	H3-SC1B-80TO90-82919	K1907934-036	SW8270D	NAPHTHALENE	9.6	ug/kg		J	10L
K1907934	H3-SC1B-80TO90-82919	K1907934-036	SW8270D	PHENANTHRENE	24	ug/kg		J	10L
K1907934	H3-SC1B-90TO100-82919	K1907934-037	SW8270D	2-METHYLNAPHTHALENE	2.3	ug/kg		J	10L
K1907934	H3-SC1B-90TO100-82919	K1907934-037	SW8270D	ACENAPHTHENE	1.6	ug/kg		J	10L
K1907934	H3-SC1B-90TO100-82919	K1907934-037	SW8270D	ACENAPHTHYLENE	4.9	ug/kg		J	10L
K1907934	H3-SC1B-90TO100-82919	K1907934-037	SW8270D	DIBENZOFURAN	1	ug/kg		J	10L
K1907934	H3-SC1B-90TO100-82919	K1907934-037	SW8270D	FLUORENE	1.8	ug/kg		J	10L
K1907934	H3-SC1B-90TO100-82919	K1907934-037	SW8270D	NAPHTHALENE	8.4	ug/kg		J	10L
K1907934	H3-SC1B-90TO100-82919	K1907934-037	SW8270D	PHENANTHRENE	16	ug/kg		J	10L
K1907934	H3-SC1B-100TO110-82919	K1907934-038	SW8270D	2-METHYLNAPHTHALENE	0.62	ug/kg	J	J	10L
K1907934	H3-SC1B-100TO110-82919	K1907934-038	SW8270D	ACENAPHTHENE	0.26	ug/kg	J	J	10L
K1907934	H3-SC1B-100TO110-82919	K1907934-038	SW8270D	ACENAPHTHYLENE	0.55	ug/kg	J	J	10L
K1907934	H3-SC1B-100TO110-82919	K1907934-038	SW8270D	DIBENZOFURAN	0.19	ug/kg	J	J	10L

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K1907934	H3-SC1B-100TO110-82919	K1907934-038	SW8270D	FLUORENE	0.39	ug/kg	J	J	10L
K1907934	H3-SC1B-100TO110-82919	K1907934-038	SW8270D	NAPHTHALENE	1	ug/kg	J	J	10L
K1907934	H3-SC1B-100TO110-82919	K1907934-038	SW8270D	PHENANTHRENE	2.6	ug/kg		J	10L
K1907934	D6-SC1B-20TO30-82619	K1907934-041	SW8270D	2-METHYLNAPHTHALENE	5.9	ug/kg		J	10L
K1907934	D6-SC1B-20TO30-82619	K1907934-041	SW8270D	ACENAPHTHENE	9.2	ug/kg		J	10L
K1907934	D6-SC1B-20TO30-82619	K1907934-041	SW8270D	ACENAPHTHYLENE	5.4	ug/kg		J	10L
K1907934	D6-SC1B-20TO30-82619	K1907934-041	SW8270D	DIBENZOFURAN	3	ug/kg		J	10L
K1907934	D6-SC1B-20TO30-82619	K1907934-041	SW8270D	FLUORENE	6.4	ug/kg		J	10L
K1907934	D6-SC1B-20TO30-82619	K1907934-041	SW8270D	NAPHTHALENE	7.3	ug/kg		J	10L
K1907934	D6-SC1B-20TO30-82619	K1907934-041	SW8270D	PHENANTHRENE	62	ug/kg		J	10L
K1907934	D6-SC1B-30TO40-82619	K1907934-042	SW8270D	2-METHYLNAPHTHALENE	5	ug/kg		J	10L
K1907934	D6-SC1B-30TO40-82619	K1907934-042	SW8270D	ACENAPHTHENE	9.8	ug/kg		J	10L
K1907934	D6-SC1B-30TO40-82619	K1907934-042	SW8270D	ACENAPHTHYLENE	5.7	ug/kg		J	10L
K1907934	D6-SC1B-30TO40-82619	K1907934-042	SW8270D	DIBENZOFURAN	2.8	ug/kg		J	10L
K1907934	D6-SC1B-30TO40-82619	K1907934-042	SW8270D	FLUORENE	6.2	ug/kg		J	10L
K1907934	D6-SC1B-30TO40-82619	K1907934-042	SW8270D	NAPHTHALENE	6.1	ug/kg		J	10L
K1907934	D6-SC1B-30TO40-82619	K1907934-042	SW8270D	PHENANTHRENE	74	ug/kg		J	10L
K1907934	D6-SC1B-40TO50-82619	K1907934-043	SW8270D	2-METHYLNAPHTHALENE	8.6	ug/kg		J	10L
K1907934	D6-SC1B-40TO50-82619	K1907934-043	SW8270D	ACENAPHTHENE	15	ug/kg		J	10L
K1907934	D6-SC1B-40TO50-82619	K1907934-043	SW8270D	ACENAPHTHYLENE	8.4	ug/kg		J	10L
K1907934	D6-SC1B-40TO50-82619	K1907934-043	SW8270D	DIBENZOFURAN	4.4	ug/kg		J	10L
K1907934	D6-SC1B-40TO50-82619	K1907934-043	SW8270D	FLUORENE	12	ug/kg		J	10L
K1907934	D6-SC1B-40TO50-82619	K1907934-043	SW8270D	NAPHTHALENE	11	ug/kg		J	10L
K1907934	D6-SC1B-40TO50-82619	K1907934-043	SW8270D	PHENANTHRENE	120	ug/kg		J	10L
K1907934	D6-SC1B-50TO60-82619	K1907934-044	SW8270D	2-METHYLNAPHTHALENE	16	ug/kg		J	10L
K1907934	D6-SC1B-50TO60-82619	K1907934-044	SW8270D	ACENAPHTHENE	18	ug/kg		J	10L
K1907934	D6-SC1B-50TO60-82619	K1907934-044	SW8270D	ACENAPHTHYLENE	16	ug/kg		J	10L
K1907934	D6-SC1B-50TO60-82619	K1907934-044	SW8270D	DIBENZOFURAN	7.2	ug/kg		J	10L
K1907934	D6-SC1B-50TO60-82619	K1907934-044	SW8270D	FLUORENE	12	ug/kg		J	10L
K1907934	D6-SC1B-50TO60-82619	K1907934-044	SW8270D	NAPHTHALENE	25	ug/kg		J	10L
K1907934	D6-SC1B-50TO60-82619	K1907934-044	SW8270D	PHENANTHRENE	130	ug/kg		J	10L
K1907934	D6-SC1B-60TO70-82619	K1907934-045	SW8270D	2-METHYLNAPHTHALENE	7.7	ug/kg		J	10L
K1907934	D6-SC1B-60TO70-82619	K1907934-045	SW8270D	ACENAPHTHENE	7.6	ug/kg		J	10L
K1907934	D6-SC1B-60TO70-82619	K1907934-045	SW8270D	ACENAPHTHYLENE	7.7	ug/kg		J	10L
K1907934	D6-SC1B-60TO70-82619	K1907934-045	SW8270D	DIBENZOFURAN	2.9	ug/kg		J	10L
K1907934	D6-SC1B-60TO70-82619	K1907934-045	SW8270D	FLUORENE	5.5	ug/kg		J	10L

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
K1907934	D6-SC1B-60TO70-82619	K1907934-045	SW8270D	NAPHTHALENE	11	ug/kg		J	10L
K1907934	D6-SC1B-60TO70-82619	K1907934-045	SW8270D	PHENANTHRENE	69	ug/kg		J	10L
K1907934	D6-SC1B-70TO80-82619	K1907934-046	SW8270D	2-METHYLNAPHTHALENE	1	ug/kg		J	10L
K1907934	D6-SC1B-70TO80-82619	K1907934-046	SW8270D	ACENAPHTHENE	1	ug/kg		J	10L
K1907934	D6-SC1B-70TO80-82619	K1907934-046	SW8270D	ACENAPHTHYLENE	0.9	ug/kg		J	10L
K1907934	D6-SC1B-70TO80-82619	K1907934-046	SW8270D	DIBENZOFURAN	0.45	ug/kg		J	10L
K1907934	D6-SC1B-70TO80-82619	K1907934-046	SW8270D	FLUORENE	0.76	ug/kg		J	10L
K1907934	D6-SC1B-70TO80-82619	K1907934-046	SW8270D	NAPHTHALENE	1.6	ug/kg		J	10L
K1907934	D6-SC1B-70TO80-82619	K1907934-046	SW8270D	PHENANTHRENE	8.6	ug/kg		J	10L
K1907934	D6-SC1B-80TO90-82619	K1907934-047	SW8270D	2-METHYLNAPHTHALENE	1	ug/kg		J	10L
K1907934	D6-SC1B-80TO90-82619	K1907934-047	SW8270D	ACENAPHTHENE	0.82	ug/kg		J	10L
K1907934	D6-SC1B-80TO90-82619	K1907934-047	SW8270D	ACENAPHTHYLENE	0.69	ug/kg		J	10L
K1907934	D6-SC1B-80TO90-82619	K1907934-047	SW8270D	DIBENZOFURAN	0.42	ug/kg		J	10L
K1907934	D6-SC1B-80TO90-82619	K1907934-047	SW8270D	FLUORENE	0.69	ug/kg		J	10L
K1907934	D6-SC1B-80TO90-82619	K1907934-047	SW8270D	NAPHTHALENE	1.6	ug/kg		J	10L
K1907934	D6-SC1B-80TO90-82619	K1907934-047	SW8270D	PHENANTHRENE	7.5	ug/kg		J	10L
K1907934	D6-SC1B-90TO100-82619	K1907934-048	SW8270D	2-METHYLNAPHTHALENE	0.3	ug/kg	J	J	10L
K1907934	D6-SC1B-90TO100-82619	K1907934-048	SW8270D	NAPHTHALENE	0.35	ug/kg	J	J	10L
K1907934	D6-SC1B-100TO110-82619	K1907934-049	SW8270D	2-METHYLNAPHTHALENE	0.18	ug/kg	J	J	10L
K1907934	D6-SC1B-100TO110-82619	K1907934-049	SW8270D	NAPHTHALENE	0.23	ug/kg	J	J	10L
K1907934	D6-SC1B-110TO120-82619	K1907934-050	SW8270D	2-METHYLNAPHTHALENE	0.14	ug/kg	J	J	10L
K1907934	D6-SC1B-110TO120-82619	K1907934-050	SW8270D	NAPHTHALENE		ug/kg	U	UJ	10L
K1907934	D6-SC1B-110TO120-82619	K1907934-050	SW8270D	PHENANTHRENE	0.31	ug/kg	J	U	7
K1907934	411-SC1B-50TO60-82619	K1907934-052	SW8270D	2-METHYLNAPHTHALENE	19	ug/kg		J	10L
K1907934	411-SC1B-50TO60-82619	K1907934-052	SW8270D	NAPHTHALENE	33	ug/kg		J	10L
K1907934	J5-SC1B-20TO30-82719	K1907934-053	SW8270D	2-METHYLNAPHTHALENE	20	ug/kg		J	10L
K1907934	J5-SC1B-20TO30-82719	K1907934-053	SW8270D	NAPHTHALENE	36	ug/kg		J	10L
K1907934	J5-SC1B-30TO40-82719	K1907934-054	SW8270D	2-METHYLNAPHTHALENE	10	ug/kg		J	10L
K1907934	J5-SC1B-30TO40-82719	K1907934-054	SW8270D	NAPHTHALENE	20	ug/kg		J	10L
K1907934	J5-SC1B-40TO50-82719	K1907934-055	SW8270D	2-METHYLNAPHTHALENE	18	ug/kg		J	10L
K1907934	J5-SC1B-40TO50-82719	K1907934-055	SW8270D	ACENAPHTHENE	21	ug/kg		J	10L
K1907934	J5-SC1B-40TO50-82719	K1907934-055	SW8270D	ACENAPHTHYLENE	14	ug/kg		J	10L
K1907934	J5-SC1B-40TO50-82719	K1907934-055	SW8270D	ANTHRACENE	27	ug/kg		J	10L
K1907934	J5-SC1B-40TO50-82719	K1907934-055	SW8270D	Benzo(a)anthracene	77	ug/kg		J	10L
K1907934	J5-SC1B-40TO50-82719	K1907934-055	SW8270D	Benzo(g,h,i)perylene	87	ug/kg		J	10L
K1907934	J5-SC1B-40TO50-82719	K1907934-055	SW8270D	Chrysene	110	ug/kg		J	10L

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
K1907934	J5-SC1B-40TO50-82719	K1907934-055	SW8270D	Dibenzo(a,h)anthracene	15	ug/kg		J	10L
K1907934	J5-SC1B-40TO50-82719	K1907934-055	SW8270D	DIBENZOFURAN	12	ug/kg		J	10L
K1907934	J5-SC1B-40TO50-82719	K1907934-055	SW8270D	FLUORANTHENE	190	ug/kg		J	10L
K1907934	J5-SC1B-40TO50-82719	K1907934-055	SW8270D	FLUORENE	24	ug/kg		J	10L
K1907934	J5-SC1B-40TO50-82719	K1907934-055	SW8270D	Indeno(1,2,3-cd)pyrene	82	ug/kg		J	10L
K1907934	J5-SC1B-40TO50-82719	K1907934-055	SW8270D	NAPHTHALENE	31	ug/kg		J	10L
K1907934	J5-SC1B-40TO50-82719	K1907934-055	SW8270D	PHENANTHRENE	150	ug/kg		J	10L
K1907934	J5-SC1B-50TO60-82719	K1907934-056	SW8270D	2-METHYLNAPHTHALENE	14	ug/kg		J	10L
K1907934	J5-SC1B-50TO60-82719	K1907934-056	SW8270D	NAPHTHALENE	21	ug/kg		J	10L
K1907934	J5-SC1B-60TO70-82719	K1907934-057	SW8270D	2-METHYLNAPHTHALENE	6.3	ug/kg		J	10L
K1907934	J5-SC1B-60TO70-82719	K1907934-057	SW8270D	NAPHTHALENE	11	ug/kg		J	10L
K1907934	J5-SC1B-70TO80-82719	K1907934-058	SW8270D	2-METHYLNAPHTHALENE	10	ug/kg		J	10L
K1907934	J5-SC1B-70TO80-82719	K1907934-058	SW8270D	NAPHTHALENE	17	ug/kg		J	10L
K1907934	J5-SC1B-80TO90-82719	K1907934-059	SW8270D	2-METHYLNAPHTHALENE	0.2	ug/kg	J	J	10L
K1907934	J5-SC1B-80TO90-82719	K1907934-059	SW8270D	NAPHTHALENE	0.23	ug/kg	J	J	10L
K1907934	J5-SC1B-90TO100-82719	K1907934-060	SW8270D	2-METHYLNAPHTHALENE	0.22	ug/kg	J	J	10L
K1907934	J5-SC1B-90TO100-82719	K1907934-060	SW8270D	NAPHTHALENE	0.29	ug/kg	J	J	10L
K1907934	J5-SC1B-100TO110-82719	K1907934-061	SW8270D	2-METHYLNAPHTHALENE	0.12	ug/kg	J	J	10L
K1907934	J5-SC1B-100TO110-82719	K1907934-061	SW8270D	NAPHTHALENE		ug/kg	U	UJ	10L
K1907934	J5-SC1B-100TO110-82719	K1907934-061	SW8270D	PHENANTHRENE	0.29	ug/kg	J	U	7
K1907934	J3-SC1B-20TO30-82719	K1907934-064	SW8270D	2-METHYLNAPHTHALENE	9.8	ug/kg		J	10L
K1907934	J3-SC1B-20TO30-82719	K1907934-064	SW8270D	NAPHTHALENE	19	ug/kg		J	10L
K1907934	J3-SC1B-30TO40-82719	K1907934-065	SW8270D	2-METHYLNAPHTHALENE	20	ug/kg		J	10L
K1907934	J3-SC1B-30TO40-82719	K1907934-065	SW8270D	NAPHTHALENE	32	ug/kg		J	10L
K1907934	J3-SC1B-40TO50-82719	K1907934-066	SW8270D	2-METHYLNAPHTHALENE	12	ug/kg		J	10L
K1907934	J3-SC1B-40TO50-82719	K1907934-066	SW8270D	NAPHTHALENE	19	ug/kg		J	10L
K1907934	J3-SC1B-50TO60-82719	K1907934-067	SW8270D	2-METHYLNAPHTHALENE	6.2	ug/kg		J	10L
K1907934	J3-SC1B-50TO60-82719	K1907934-067	SW8270D	NAPHTHALENE	16	ug/kg		J	10L
K1907934	J3-SC1B-60TO70-82719	K1907934-068	SW8270D	2-METHYLNAPHTHALENE	2.9	ug/kg		J	10L
K1907934	J3-SC1B-60TO70-82719	K1907934-068	SW8270D	NAPHTHALENE	7.7	ug/kg		J	10L
K1907934	J3-SC1B-70TO80-82719	K1907934-069	SW8270D	2-METHYLNAPHTHALENE	2.2	ug/kg		J	10L
K1907934	J3-SC1B-70TO80-82719	K1907934-069	SW8270D	NAPHTHALENE	1.2	ug/kg		J	10L
K1907934	J3-SC1B-80TO90-82719	K1907934-070	SW8270D	2-METHYLNAPHTHALENE	8.6	ug/kg		J	10L
K1907934	J3-SC1B-80TO90-82719	K1907934-070	SW8270D	NAPHTHALENE	7.7	ug/kg		J	10L
K1907934	J3-SC1B-90TO100-82719	K1907934-071	SW8270D	2-METHYLNAPHTHALENE	2.1	ug/kg		J	10L
K1907934	J3-SC1B-90TO100-82719	K1907934-071	SW8270D	ACENAPHTHENE	1.9	ug/kg		J	10L

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
K1907934	J3-SC1B-90TO100-82719	K1907934-071	SW8270D	ACENAPHTHYLENE	5.4	ug/kg		J	10L
K1907934	J3-SC1B-90TO100-82719	K1907934-071	SW8270D	ANTHRACENE	6.8	ug/kg		J	10L
K1907934	J3-SC1B-90TO100-82719	K1907934-071	SW8270D	Benzo(g,h,i)perylene	23	ug/kg		J	10L
K1907934	J3-SC1B-90TO100-82719	K1907934-071	SW8270D	DIBENZOFURAN	0.87	ug/kg		J	10L
K1907934	J3-SC1B-90TO100-82719	K1907934-071	SW8270D	FLUORANTHENE	45	ug/kg		J	10L
K1907934	J3-SC1B-90TO100-82719	K1907934-071	SW8270D	FLUORENE	2	ug/kg		J	10L
K1907934	J3-SC1B-90TO100-82719	K1907934-071	SW8270D	NAPHTHALENE	6.1	ug/kg		J	10L
K1907934	J3-SC1B-90TO100-82719	K1907934-071	SW8270D	PHENANTHRENE	26	ug/kg		J	10L
K1907934	J3-SC1B-10TO20-82719	K1907934-072	SW8270D	2-METHYLNAPHTHALENE	0.47	ug/kg	J	J	10L
K1907934	J3-SC1B-10TO20-82719	K1907934-072	SW8270D	ACENAPHTHENE	0.58	ug/kg		J	10L
K1907934	J3-SC1B-10TO20-82719	K1907934-072	SW8270D	ACENAPHTHYLENE	0.53	ug/kg		J	10L
K1907934	J3-SC1B-10TO20-82719	K1907934-072	SW8270D	ANTHRACENE	0.98	ug/kg		J	10L
K1907934	J3-SC1B-10TO20-82719	K1907934-072	SW8270D	Benzo(g,h,i)perylene	4.5	ug/kg		J	10L
K1907934	J3-SC1B-10TO20-82719	K1907934-072	SW8270D	DIBENZOFURAN	0.35	ug/kg		J	10L
K1907934	J3-SC1B-10TO20-82719	K1907934-072	SW8270D	FLUORANTHENE	7.8	ug/kg		J	10L
K1907934	J3-SC1B-10TO20-82719	K1907934-072	SW8270D	FLUORENE	0.59	ug/kg		J	10L
K1907934	J3-SC1B-10TO20-82719	K1907934-072	SW8270D	NAPHTHALENE	0.95	ug/kg		J	10L
K1907934	J3-SC1B-10TO20-82719	K1907934-072	SW8270D	PHENANTHRENE	6.2	ug/kg		J	10L
K1907934	412-SC1B-80TO90-82719	K1907934-073	SW8270D	2-METHYLNAPHTHALENE	10	ug/kg		J	10L
K1907934	412-SC1B-80TO90-82719	K1907934-073	SW8270D	ACENAPHTHENE	4.4	ug/kg		J	10L
K1907934	412-SC1B-80TO90-82719	K1907934-073	SW8270D	ACENAPHTHYLENE	8.3	ug/kg		J	10L
K1907934	412-SC1B-80TO90-82719	K1907934-073	SW8270D	ANTHRACENE	16	ug/kg		J	10L
K1907934	412-SC1B-80TO90-82719	K1907934-073	SW8270D	Benzo(g,h,i)perylene	37	ug/kg		J	10L
K1907934	412-SC1B-80TO90-82719	K1907934-073	SW8270D	DIBENZOFURAN	1.3	ug/kg		J	10L
K1907934	412-SC1B-80TO90-82719	K1907934-073	SW8270D	FLUORANTHENE	71	ug/kg		J	10L
K1907934	412-SC1B-80TO90-82719	K1907934-073	SW8270D	FLUORENE	2.7	ug/kg		J	10L
K1907934	412-SC1B-80TO90-82719	K1907934-073	SW8270D	NAPHTHALENE	8.4	ug/kg		J	10L
K1907934	412-SC1B-80TO90-82719	K1907934-073	SW8270D	PHENANTHRENE	40	ug/kg		J	10L
K1907934	L3-SC1B-20TO30-82619	K1907934-074	SW8270D	2-METHYLNAPHTHALENE	0.64	ug/kg		J	10L
K1907934	L3-SC1B-20TO30-82619	K1907934-074	SW8270D	ACENAPHTHENE	0.67	ug/kg		J	10L
K1907934	L3-SC1B-20TO30-82619	K1907934-074	SW8270D	ACENAPHTHYLENE	2.3	ug/kg		J	10L
K1907934	L3-SC1B-20TO30-82619	K1907934-074	SW8270D	ANTHRACENE	2	ug/kg		J	10L
K1907934	L3-SC1B-20TO30-82619	K1907934-074	SW8270D	Benzo(g,h,i)perylene	13	ug/kg		J	10L
K1907934	L3-SC1B-20TO30-82619	K1907934-074	SW8270D	DIBENZOFURAN	0.44	ug/kg		J	10L
K1907934	L3-SC1B-20TO30-82619	K1907934-074	SW8270D	FLUORANTHENE	18	ug/kg		J	10L
K1907934	L3-SC1B-20TO30-82619	K1907934-074	SW8270D	FLUORENE	0.66	ug/kg		J	10L

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K1907934	L3-SC1B-20TO30-82619	K1907934-074	SW8270D	NAPHTHALENE	1.4	ug/kg		J	10L
K1907934	L3-SC1B-20TO30-82619	K1907934-074	SW8270D	PHENANTHRENE	13	ug/kg		J	10L
K1907934	L3-SC1B-30TO40-82619	K1907934-075	SW8270D	2-METHYLNAPHTHALENE	0.7	ug/kg		J	10L
K1907934	L3-SC1B-30TO40-82619	K1907934-075	SW8270D	ACENAPHTHENE	0.35	ug/kg		J	10L
K1907934	L3-SC1B-30TO40-82619	K1907934-075	SW8270D	ACENAPHTHYLENE	1.1	ug/kg		J	10L
K1907934	L3-SC1B-30TO40-82619	K1907934-075	SW8270D	ANTHRACENE	0.96	ug/kg		J	10L
K1907934	L3-SC1B-30TO40-82619	K1907934-075	SW8270D	Benzo(g,h,i)perylene	8.2	ug/kg		J	10L
K1907934	L3-SC1B-30TO40-82619	K1907934-075	SW8270D	DIBENZOFURAN	0.29	ug/kg	J	J	10L
K1907934	L3-SC1B-30TO40-82619	K1907934-075	SW8270D	FLUORANTHENE	8.3	ug/kg		J	10L
K1907934	L3-SC1B-30TO40-82619	K1907934-075	SW8270D	FLUORENE	0.38	ug/kg		J	10L
K1907934	L3-SC1B-30TO40-82619	K1907934-075	SW8270D	NAPHTHALENE	1.1	ug/kg		J	10L
K1907934	L3-SC1B-30TO40-82619	K1907934-075	SW8270D	PHENANTHRENE	7.8	ug/kg		J	10L
2006-00115_2	H3-SC1b-100to110-82919	15469021	1613B	2,3,7,8-TCDF	0.352	pg/g	BJ	U	7
2006-00115_2	H3-SC1b-100to110-82919	15469021	1613B	1,2,3,7,8-PeCDF	0.0545	pg/g	BJK	U	25
2006-00115_2	H3-SC1b-100to110-82919	15469021	1613B	1,2,3,6,7,8-HxCDF	0.047	pg/g	BJ	U	7
2006-00115_2	H3-SC1b-100to110-82919	15469021	1613B	1,2,3,4,6,7,8-HpCDF	0.416	pg/g	BJ	U	7
2006-00115_2	H3-SC1b-100to110-82919	15469021	1613B	1,2,3,4,6,7,8,9-OCDF	0.323	pg/g	BJ	U	7
2006-00115_2	H3-SC1b-100to110-82919	15469021	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	0.299	pg/g	JK	J	25
2006-00115_2	H3-SC1b-100to110-82919	15469021	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	0.98	pg/g	BJK	J	25
2006-00115_2	H3-SC1b-100to110-82919	15469021	1613B	Total Tetrachlorodibenzofuran with EMPCs	0.893	pg/g	BJK	J	25
2006-00115_2	H3-SC1b-100to110-82919	15469021	1613B	Total Pentachlorodibenzofuran with EMPCs	0.367	pg/g	BJK	J	25
2006-00115_2	H3-SC1b-100to110-82919	15469021	1613B	Total Hexachlorodibenzofuran with EMPCs	0.451	pg/g	BJK	J	25
2006-00115_2	H3-SC1b-20to30-82819	15469013	1613B	1,2,3,7,8-PeCDD	1.84	pg/g	JK	U	25
2006-00115_2	H3-SC1b-20to30-82819	15469013	1613B	1,2,3,4,6,7,8,9-OCDD	3870	pg/g	E	J	20
2006-00115_2	H3-SC1b-20to30-82819	15469013	1613B	2,3,7,8-TCDF	1.66	pg/g	B	DNR	11
2006-00115_2	H3-SC1b-20to30-82819	15469013	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	24.5	pg/g	JK	J	25
2006-00115_2	H3-SC1b-20to30-82819	15469013	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	31.3	pg/g	JKQ	J	25
2006-00115_2	H3-SC1b-20to30-82819	15469013	1613B	Total Tetrachlorodibenzofuran with EMPCs	69.5	pg/g	JK	J	25
2006-00115_2	H3-SC1b-20to30-82819	15469013	1613B	Total Pentachlorodibenzofuran with EMPCs	210	pg/g	JKQ	J	25
2006-00115_2	H3-SC1b-20to30-82819	15469013	1613B	Total Heptachlorodibenzofuran with EMPCs	621	pg/g	JK	J	25
2006-00115_2	H3-SC1b-30to40-82919	15469014	1613B	2,3,7,8-TCDF	0.475	pg/g	BJ	U	7
2006-00115_2	H3-SC1b-30to40-82919	15469014	1613B	2,3,4,7,8-PeCDF	0.378	pg/g	BJK	U	25
2006-00115_2	H3-SC1b-30to40-82919	15469014	1613B	1,2,3,4,7,8-HxCDF	0.316	pg/g	BJK	U	25
2006-00115_2	H3-SC1b-30to40-82919	15469014	1613B	2,3,4,6,7,8-HxCDF	0.382	pg/g	BJ	U	7
2006-00115_2	H3-SC1b-30to40-82919	15469014	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	0.262	pg/g	BJK	J	25
2006-00115_2	H3-SC1b-30to40-82919	15469014	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	0.469	pg/g	JK	J	25

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
2006-00115_2	H3-SC1b-30to40-82919	15469014	1613B	Total Tetrachlorodibenzofuran with EMPCs	2.51	pg/g	JK	J	25
2006-00115_2	H3-SC1b-30to40-82919	15469014	1613B	Total Pentachlorodibenzofuran with EMPCs	5.94	pg/g	JK	J	25
2006-00115_2	H3-SC1b-30to40-82919	15469014	1613B	Total Hexachlorodibenzofuran with EMPCs	8.96	pg/g	JK	J	25
2006-00115_2	H3-SC1b-40to50-82919	15469015	1613B	1,2,3,7,8-PeCDD	0.325	pg/g	JK	U	25
2006-00115_2	H3-SC1b-40to50-82919	15469015	1613B	2,3,7,8-TCDF	0.803	pg/g	BJ	U	7
2006-00115_2	H3-SC1b-40to50-82919	15469015	1613B	1,2,3,7,8,9-HxCDF	0.527	pg/g	BJ	U	7
2006-00115_2	H3-SC1b-40to50-82919	15469015	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	1.61	pg/g	JK	J	25
2006-00115_2	H3-SC1b-40to50-82919	15469015	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	4.9	pg/g	JKQ	J	25
2006-00115_2	H3-SC1b-40to50-82919	15469015	1613B	Total Tetrachlorodibenzofuran with EMPCs	14.9	pg/g	JK	J	25
2006-00115_2	H3-SC1b-40to50-82919	15469015	1613B	Total Pentachlorodibenzofuran with EMPCs	50.2	pg/g	JKQ	J	25
2006-00115_2	H3-SC1b-50to60-82919	15469016	1613B	1,2,3,6,7,8-HxCDD	0.217	pg/g	BJK	U	25
2006-00115_2	H3-SC1b-50to60-82919	15469016	1613B	2,3,7,8-TCDF	0.282	pg/g	BJ	U	7
2006-00115_2	H3-SC1b-50to60-82919	15469016	1613B	2,3,4,7,8-PeCDF	0.213	pg/g	BJ	U	7
2006-00115_2	H3-SC1b-50to60-82919	15469016	1613B	2,3,4,6,7,8-HxCDF	0.319	pg/g	BJ	U	7
2006-00115_2	H3-SC1b-50to60-82919	15469016	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	0.167	pg/g	BJK	J	25
2006-00115_2	H3-SC1b-50to60-82919	15469016	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	0.395	pg/g	JK	J	25
2006-00115_2	H3-SC1b-50to60-82919	15469016	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	1.6	pg/g	BJK	J	25
2006-00115_2	H3-SC1b-50to60-82919	15469016	1613B	Total Tetrachlorodibenzofuran with EMPCs	2.07	pg/g	JK	J	25
2006-00115_2	H3-SC1b-50to60-82919	15469016	1613B	Total Pentachlorodibenzofuran with EMPCs	6.06	pg/g	JK	J	25
2006-00115_2	H3-SC1b-60to70-82919	15469017	1613B	1,2,3,4,7,8-HxCDD	0.178	pg/g	JK	U	25
2006-00115_2	H3-SC1b-60to70-82919	15469017	1613B	1,2,3,7,8,9-HxCDD	0.509	pg/g	BJK	U	25
2006-00115_2	H3-SC1b-60to70-82919	15469017	1613B	2,3,7,8-TCDF	0.389	pg/g	BJK	U	25
2006-00115_2	H3-SC1b-60to70-82919	15469017	1613B	1,2,3,7,8-PeCDF	0.253	pg/g	BJK	U	25
2006-00115_2	H3-SC1b-60to70-82919	15469017	1613B	1,2,3,7,8,9-HxCDF	0.247	pg/g	BJK	U	25
2006-00115_2	H3-SC1b-60to70-82919	15469017	1613B	1,2,3,4,7,8,9-HpCDF	0.592	pg/g	BJ	U	7
2006-00115_2	H3-SC1b-60to70-82919	15469017	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	0.625	pg/g	BJK	J	25
2006-00115_2	H3-SC1b-60to70-82919	15469017	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	2.73	pg/g	JKQ	J	25
2006-00115_2	H3-SC1b-60to70-82919	15469017	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	11.3	pg/g	JK	J	25
2006-00115_2	H3-SC1b-60to70-82919	15469017	1613B	Total Tetrachlorodibenzofuran with EMPCs	8.61	pg/g	JK	J	25
2006-00115_2	H3-SC1b-60to70-82919	15469017	1613B	Total Pentachlorodibenzofuran with EMPCs	28.7	pg/g	JKQ	J	25
2006-00115_2	H3-SC1b-60to70-82919	15469017	1613B	Total Hexachlorodibenzofuran with EMPCs	35.8	pg/g	JK	J	25
2006-00115_2	H3-SC1b-70to80-82919	15469018	1613B	1,2,3,7,8-PeCDD	0.234	pg/g	JK	U	25
2006-00115_2	H3-SC1b-70to80-82919	15469018	1613B	1,2,3,6,7,8-HxCDD	0.386	pg/g	BJK	U	25
2006-00115_2	H3-SC1b-70to80-82919	15469018	1613B	1,2,3,7,8,9-HxCDD	0.456	pg/g	BJK	U	25
2006-00115_2	H3-SC1b-70to80-82919	15469018	1613B	2,3,7,8-TCDF	0.732	pg/g	BJK	U	25
2006-00115_2	H3-SC1b-70to80-82919	15469018	1613B	1,2,3,7,8-PeCDF	0.335	pg/g	BJK	U	25

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2006-00115_2	H3-SC1b-70to80-82919	15469018	1613B	2,3,4,7,8-PeCDF	0.614	pg/g	BJK	U	25
2006-00115_2	H3-SC1b-70to80-82919	15469018	1613B	1,2,3,4,7,8-HxCDF	0.563	pg/g	BJK	U	25
2006-00115_2	H3-SC1b-70to80-82919	15469018	1613B	2,3,4,6,7,8-HxCDF	0.54	pg/g	BJ	U	7
2006-00115_2	H3-SC1b-70to80-82919	15469018	1613B	1,2,3,4,7,8,9-HpCDF	0.356	pg/g	BJ	U	7
2006-00115_2	H3-SC1b-70to80-82919	15469018	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	2.35	pg/g	JK	J	25
2006-00115_2	H3-SC1b-70to80-82919	15469018	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	2.47	pg/g	JKQ	J	25
2006-00115_2	H3-SC1b-70to80-82919	15469018	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	5.2	pg/g	JK	J	25
2006-00115_2	H3-SC1b-70to80-82919	15469018	1613B	Total Tetrachlorodibenzofuran with EMPCs	9.53	pg/g	JK	J	25
2006-00115_2	H3-SC1b-70to80-82919	15469018	1613B	Total Pentachlorodibenzofuran with EMPCs	9.93	pg/g	JKQ	J	25
2006-00115_2	H3-SC1b-70to80-82919	15469018	1613B	Total Hexachlorodibenzofuran with EMPCs	9.91	pg/g	JKQ	J	25
2006-00115_2	H3-SC1b-80to90-82919	15469019	1613B	2,3,7,8-TCDF	0.413	pg/g	BJ	U	7
2006-00115_2	H3-SC1b-80to90-82919	15469019	1613B	2,3,4,7,8-PeCDF	0.111	pg/g	BJK	U	25
2006-00115_2	H3-SC1b-80to90-82919	15469019	1613B	1,2,3,4,7,8-HxCDF	0.141	pg/g	BJK	U	25
2006-00115_2	H3-SC1b-80to90-82919	15469019	1613B	1,2,3,6,7,8-HxCDF	0.1	pg/g	BJK	U	25
2006-00115_2	H3-SC1b-80to90-82919	15469019	1613B	2,3,4,6,7,8-HxCDF	0.083	pg/g	BJK	U	25
2006-00115_2	H3-SC1b-80to90-82919	15469019	1613B	1,2,3,4,6,7,8-HpCDF	0.685	pg/g	BJ	U	7
2006-00115_2	H3-SC1b-80to90-82919	15469019	1613B	1,2,3,4,6,7,8,9-OCDF	0.368	pg/g	BJ	U	7
2006-00115_2	H3-SC1b-80to90-82919	15469019	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	0.287	pg/g	JK	J	25
2006-00115_2	H3-SC1b-80to90-82919	15469019	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	1	pg/g	BJK	J	25
2006-00115_2	H3-SC1b-80to90-82919	15469019	1613B	Total Tetrachlorodibenzofuran with EMPCs	1.9	pg/g	JK	J	25
2006-00115_2	H3-SC1b-80to90-82919	15469019	1613B	Total Pentachlorodibenzofuran with EMPCs	0.824	pg/g	BJK	J	25
2006-00115_2	H3-SC1b-80to90-82919	15469019	1613B	Total Hexachlorodibenzofuran with EMPCs	0.892	pg/g	BJK	J	25
2006-00115_2	H3-SC1b-90to100-82919	15469020	1613B	1,2,3,4,6,7,8-HpCDD	0.496	pg/g	BJK	U	25
2006-00115_2	H3-SC1b-90to100-82919	15469020	1613B	2,3,7,8-TCDF	0.405	pg/g	BJ	U	7
2006-00115_2	H3-SC1b-90to100-82919	15469020	1613B	1,2,3,7,8,9-HxCDF	0.0653	pg/g	BJ	U	7
2006-00115_2	H3-SC1b-90to100-82919	15469020	1613B	1,2,3,4,6,7,8-HpCDF	0.127	pg/g	BJ	U	7
2006-00115_2	H3-SC1b-90to100-82919	15469020	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	0.367	pg/g	BJK	J	25
2006-00115_2	H3-SC1b-90to100-82919	15469020	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	0.0746	pg/g	JK	J	25
2006-00115_2	H3-SC1b-90to100-82919	15469020	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	0.636	pg/g	BJK	J	25
2006-00115_2	H3-SC1b-90to100-82919	15469020	1613B	Total Heptachlorodibenzo-p-dioxin with EMPCs	1.23	pg/g	BJK	J	25
2006-00115_2	H3-SC1b-90to100-82919	15469020	1613B	Total Tetrachlorodibenzofuran with EMPCs	0.854	pg/g	BJK	J	25
2006-00115_2	H3-SC1b-90to100-82919	15469020	1613B	Total Pentachlorodibenzofuran with EMPCs	0.356	pg/g	BJK	J	25
2006-00115_2	J6-SC1b-100to110-82819	15469009	1613B	1,2,3,4,6,7,8,9-OCDD	0.722	pg/g	BJ	U	7
2006-00115_2	J6-SC1b-100to110-82819	15469009	1613B	2,3,7,8-TCDF	0.301	pg/g	BJ	U	7
2006-00115_2	J6-SC1b-100to110-82819	15469009	1613B	1,2,3,4,6,7,8-HpCDF	0.111	pg/g	BJ	U	7
2006-00115_2	J6-SC1b-110to120-82819	15469010	1613B	1,2,3,4,6,7,8,9-OCDD	0.731	pg/g	BJ	U	7

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
2006-00115_2	J6-SC1b-110to120-82819	15469010	1613B	2,3,7,8-TCDF	0.245	pg/g	BJ	U	7
2006-00115_2	J6-SC1b-110to120-82819	15469010	1613B	1,2,3,4,6,7,8-HpCDF	0.0978	pg/g	BJ	U	7
2006-00115_2	J6-SC1b-20to30-82819	15469001	1613B	1,2,3,4,6,7,8-HpCDD	171	pg/g		J	8,9
2006-00115_2	J6-SC1b-20to30-82819	15469001	1613B	1,2,3,4,6,7,8,9-OCDD	2630	pg/g		J	9
2006-00115_2	J6-SC1b-20to30-82819	15469001	1613B	2,3,7,8-TCDF	1.57	pg/g	B	DNR	11
2006-00115_2	J6-SC1b-20to30-82819	15469001	1613B	1,2,3,7,8,9-HxCDF	0.889	pg/g	BJ	U	7
2006-00115_2	J6-SC1b-20to30-82819	15469001	1613B	1,2,3,4,6,7,8-HpCDF	35.3	pg/g		J	9
2006-00115_2	J6-SC1b-20to30-82819	15469001	1613B	1,2,3,4,6,7,8,9-OCDF	109	pg/g		J	9
2006-00115_2	J6-SC1b-20to30-82819	15469001	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	4.1	pg/g	JK	J	25
2006-00115_2	J6-SC1b-20to30-82819	15469001	1613B	Total Tetrachlorodibenzofuran with EMPCs	15.9	pg/g	JK	J	25
2006-00115_2	J6-SC1b-20to30-82819	15469001	1613B	Total Hexachlorodibenzofuran with EMPCs	58	pg/g	JK	J	25
2006-00115_2	J6-SC1b-30to40-82819	15469002	1613B	1,2,3,4,7,8-HxCDD	0.585	pg/g	JK	U	25
2006-00115_2	J6-SC1b-30to40-82819	15469002	1613B	2,3,7,8-TCDF	0.894	pg/g	BJ	U	7
2006-00115_2	J6-SC1b-30to40-82819	15469002	1613B	1,2,3,7,8,9-HxCDF	0.464	pg/g	BJ	U	7
2006-00115_2	J6-SC1b-30to40-82819	15469002	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	1.9	pg/g	JK	J	25
2006-00115_2	J6-SC1b-30to40-82819	15469002	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	5.52	pg/g	JK	J	25
2006-00115_2	J6-SC1b-30to40-82819	15469002	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	32.8	pg/g	JK	J	25
2006-00115_2	J6-SC1b-30to40-82819	15469002	1613B	Total Tetrachlorodibenzofuran with EMPCs	7.69	pg/g	JK	J	25
2006-00115_2	J6-SC1b-30to40-82819	15469002	1613B	Total Pentachlorodibenzofuran with EMPCs	15.3	pg/g	JK	J	25
2006-00115_2	J6-SC1b-30to40-82819	15469002	1613B	Total Hexachlorodibenzofuran with EMPCs	36.8	pg/g	JK	J	25
2006-00115_2	J6-SC1b-40to50-82819	15469003	1613B	2,3,7,8-TCDD	0.297	pg/g	JK	U	25
2006-00115_2	J6-SC1b-40to50-82819	15469003	1613B	2,3,7,8-TCDF	0.746	pg/g	BJ	U	7
2006-00115_2	J6-SC1b-40to50-82819	15469003	1613B	1,2,3,7,8-PeCDF	0.484	pg/g	BJK	U	25
2006-00115_2	J6-SC1b-40to50-82819	15469003	1613B	2,3,4,7,8-PeCDF	1.03	pg/g	JK	U	25
2006-00115_2	J6-SC1b-40to50-82819	15469003	1613B	1,2,3,7,8,9-HxCDF	0.55	pg/g	BJ	U	7
2006-00115_2	J6-SC1b-40to50-82819	15469003	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	1.57	pg/g	JK	J	25
2006-00115_2	J6-SC1b-40to50-82819	15469003	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	4.79	pg/g	JK	J	25
2006-00115_2	J6-SC1b-40to50-82819	15469003	1613B	Total Tetrachlorodibenzofuran with EMPCs	6.2	pg/g	JK	J	25
2006-00115_2	J6-SC1b-40to50-82819	15469003	1613B	Total Pentachlorodibenzofuran with EMPCs	14.4	pg/g	JK	J	25
2006-00115_2	J6-SC1b-40to50-82819	15469003	1613B	Total Hexachlorodibenzofuran with EMPCs	30.7	pg/g	JK	J	25
2006-00115_2	J6-SC1b-50to60-82819	15469004	1613B	2,3,7,8-TCDD	0.439	pg/g	JK	U	25
2006-00115_2	J6-SC1b-50to60-82819	15469004	1613B	1,2,3,4,7,8-HxCDD	1.12	pg/g	JK	U	25
2006-00115_2	J6-SC1b-50to60-82819	15469004	1613B	2,3,7,8-TCDF	1.62	pg/g	B	DNR	11
2006-00115_2	J6-SC1b-50to60-82819	15469004	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	2.94	pg/g	JK	J	25
2006-00115_2	J6-SC1b-50to60-82819	15469004	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	7.38	pg/g	JK	J	25
2006-00115_2	J6-SC1b-50to60-82819	15469004	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	42.6	pg/g	JK	J	25

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
2006-00115_2	J6-SC1b-50to60-82819	15469004	1613B	Total Tetrachlorodibenzofuran with EMPCs	17.3	pg/g	JK	J	25
2006-00115_2	J6-SC1b-60to70-82819	15469005	1613B	2,3,7,8-TCDF	0.937	pg/g	B	DNR	11
2006-00115_2	J6-SC1b-60to70-82819	15469005	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	11.5	pg/g	JKQ	J	25
2006-00115_2	J6-SC1b-60to70-82819	15469005	1613B	Total Tetrachlorodibenzofuran with EMPCs	12.9	pg/g	JK	J	25
2006-00115_2	J6-SC1b-60to70-82819	15469005	1613B	Total Pentachlorodibenzofuran with EMPCs	34.1	pg/g	JKQ	J	25
2006-00115_2	J6-SC1b-60to70-82819	15469005	1613B	Total Hexachlorodibenzofuran with EMPCs	98.7	pg/g	JK	J	25
2006-00115_2	J6-SC1b-60to70-82819R1	15469005	1613B	2,3,7,8-TCDF	0.754	pg/g	BJ	U	7
2006-00115_2	J6-SC1b-70to80-82819	15469006	1613B	1,2,3,4,6,7,8-HpCDD	0.941	pg/g	BJ	U	7
2006-00115_2	J6-SC1b-70to80-82819	15469006	1613B	2,3,7,8-TCDF	0.367	pg/g	BJ	U	7
2006-00115_2	J6-SC1b-70to80-82819	15469006	1613B	1,2,3,4,6,7,8-HpCDF	0.478	pg/g	BJ	U	7
2006-00115_2	J6-SC1b-70to80-82819	15469006	1613B	1,2,3,4,6,7,8,9-OCDF	1.21	pg/g	BJ	U	7
2006-00115_2	J6-SC1b-70to80-82819	15469006	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	0.108	pg/g	BJK	J	25
2006-00115_2	J6-SC1b-70to80-82819	15469006	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	0.414	pg/g	BJK	J	25
2006-00115_2	J6-SC1b-70to80-82819	15469006	1613B	Total Hexachlorodibenzofuran with EMPCs	0.608	pg/g	BJK	J	25
2006-00115_2	J6-SC1b-80to90-82819	15469007	1613B	2,3,7,8-TCDF	0.293	pg/g	BJ	U	7
2006-00115_2	J6-SC1b-80to90-82819	15469007	1613B	Total Pentachlorodibenzofuran with EMPCs	0.612	pg/g	BJK	J	25
2006-00115_2	J6-SC1b-80to90-82819	15469007	1613B	Total Hexachlorodibenzofuran with EMPCs	1.45	pg/g	BJK	J	25
2006-00115_3	411-SC1b-50to60-82619	15470012	1613B	2,3,7,8-TCDF	0.501	pg/g	BJ	U	7
2006-00115_3	411-SC1b-50to60-82619	15470012	1613B	1,2,3,7,8,9-HxCDF	0.533	pg/g	BJ	U	7
2006-00115_3	411-SC1b-50to60-82619	15470012	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	4.28	pg/g	JK	J	25
2006-00115_3	411-SC1b-50to60-82619	15470012	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	23	pg/g	JK	J	25
2006-00115_3	411-SC1b-50to60-82619	15470012	1613B	Total Tetrachlorodibenzofuran with EMPCs	6.89	pg/g	JK	J	25
2006-00115_3	411-SC1b-50to60-82619	15470012	1613B	Total Pentachlorodibenzofuran with EMPCs	21.6	pg/g	JK	J	25
2006-00115_3	412-SC1b-80to90-82719	15470022	1613B	2,3,7,8-TCDF	0.289	pg/g	BJ	U	7
2006-00115_3	412-SC1b-80to90-82719	15470022	1613B	1,2,3,7,8-PeCDF	0.406	pg/g	BJ	U	7
2006-00115_3	412-SC1b-80to90-82719	15470022	1613B	1,2,3,7,8,9-HxCDF	0.479	pg/g	BJK	U	25
2006-00115_3	412-SC1b-80to90-82719	15470022	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	3.17	pg/g	JK	J	25
2006-00115_3	412-SC1b-80to90-82719	15470022	1613B	Total Tetrachlorodibenzofuran with EMPCs	10.4	pg/g	JK	J	25
2006-00115_3	412-SC1b-80to90-82719	15470022	1613B	Total Hexachlorodibenzofuran with EMPCs	63.8	pg/g	JK	J	25
2006-00115_3	411-SC1b-50to60-82619	15470012	1613B	1,2,3,4,7,8-HxCDD	0.441	pg/g	JK	U	25
2006-00115_3	D6-SC1b-100to110-82619	15470009	1613B	1,2,3,4,6,7,8-HpCDD	1.39	pg/g	JK	U	25
2006-00115_3	D6-SC1b-100to110-82619	15470009	1613B	2,3,7,8-TCDF	0.232	pg/g	BJK	U	25
2006-00115_3	D6-SC1b-100to110-82619	15470009	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	0.337	pg/g	JK	J	25
2006-00115_3	D6-SC1b-100to110-82619	15470009	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	0.657	pg/g	JK	J	25
2006-00115_3	D6-SC1b-100to110-82619	15470009	1613B	Total Heptachlorodibenzo-p-dioxin with EMPCs	3.19	pg/g	JK	J	25
2006-00115_3	D6-SC1b-100to110-82619	15470009	1613B	Total Tetrachlorodibenzofuran with EMPCs	0.446	pg/g	BJK	J	25

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
2006-00115_3	D6-SC1b-100to110-82619	15470009	1613B	TEQ WHO2005 ND=0 with EMPCs	0.0454	pg/g		U	7
2006-00115_3	D6-SC1b-100to110-82619	15470009	1613B	TEQ WHO2005 ND=0.5 with EMPCs	0.214	pg/g		U	7
2006-00115_3	D6-SC1b-110to120-82619	15470010	1613B	2,3,7,8-TCDF	0.207	pg/g	BJ	U	7
2006-00115_3	D6-SC1b-110to120-82619	15470010	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	1.21	pg/g	JK	J	25
2006-00115_3	D6-SC1b-110to120-82619	15470010	1613B	Total Pentachlorodibenzofuran with EMPCs	0.122	pg/g	BJK	J	25
2006-00115_3	D6-SC1b-110to120-82619	15470010	1613B	TEQ WHO2005 ND=0 with EMPCs	0.036	pg/g		U	7
2006-00115_3	D6-SC1b-110to120-82619	15470010	1613B	TEQ WHO2005 ND=0.5 with EMPCs	0.205	pg/g		U	7
2006-00115_3	D6-SC1b-20to30-82619	15470001	1613B	2,3,7,8-TCDD	0.451	pg/g	JK	U	25
2006-00115_3	D6-SC1b-20to30-82619	15470001	1613B	1,2,3,4,6,7,8,9-OCDD	5850	pg/g	E	J	20
2006-00115_3	D6-SC1b-20to30-82619	15470001	1613B	2,3,7,8-TCDF	1.54	pg/g	B	DNR	11
2006-00115_3	D6-SC1b-20to30-82619	15470001	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	6.11	pg/g	JK	J	25
2006-00115_3	D6-SC1b-20to30-82619	15470001	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	13.8	pg/g	JKQ	J	25
2006-00115_3	D6-SC1b-20to30-82619	15470001	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	101	pg/g	JK	J	25
2006-00115_3	D6-SC1b-20to30-82619	15470001	1613B	Total Tetrachlorodibenzofuran with EMPCs	19.8	pg/g	JK	J	25
2006-00115_3	D6-SC1b-20to30-82619	15470001	1613B	Total Pentachlorodibenzofuran with EMPCs	37.5	pg/g	JKQ	J	25
2006-00115_3	D6-SC1b-30to40-82619	15470002	1613B	1,2,3,7,8,9-HxCDD	0.467	pg/g	JK	U	25
2006-00115_3	D6-SC1b-30to40-82619	15470002	1613B	1,2,3,6,7,8-HxCDF	0.789	pg/g	JK	U	25
2006-00115_3	D6-SC1b-30to40-82619	15470002	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	0.547	pg/g	JK	J	25
2006-00115_3	D6-SC1b-30to40-82619	15470002	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	1.02	pg/g	JK	J	25
2006-00115_3	D6-SC1b-30to40-82619	15470002	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	7.46	pg/g	JK	J	25
2006-00115_3	D6-SC1b-30to40-82619	15470002	1613B	Total Tetrachlorodibenzofuran with EMPCs	3.29	pg/g	BJK	J	25
2006-00115_3	D6-SC1b-30to40-82619	15470002	1613B	Total Pentachlorodibenzofuran with EMPCs	5.05	pg/g	JK	J	25
2006-00115_3	D6-SC1b-30to40-82619	15470002	1613B	Total Hexachlorodibenzofuran with EMPCs	13.1	pg/g	JK	J	25
2006-00115_3	D6-SC1b-40to50-82619	15470003	1613B	2,3,7,8-TCDD	0.53	pg/g	JK	U	25
2006-00115_3	D6-SC1b-40to50-82619	15470003	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	5.18	pg/g	JK	J	25
2006-00115_3	D6-SC1b-40to50-82619	15470003	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	9.85	pg/g	JKQ	J	25
2006-00115_3	D6-SC1b-40to50-82619	15470003	1613B	Total Tetrachlorodibenzofuran with EMPCs	13.6	pg/g	JK	J	25
2006-00115_3	D6-SC1b-40to50-82619	15470003	1613B	Total Pentachlorodibenzofuran with EMPCs	31.5	pg/g	JKQ	J	25
2006-00115_3	D6-SC1b-40to50-82619	15470003	1613B	Total Hexachlorodibenzofuran with EMPCs	78.1	pg/g	JK	J	25
2006-00115_3	D6-SC1b-40to50-82619	15470003	1613B	Total Heptachlorodibenzofuran with EMPCs	247	pg/g	JK	J	25
2006-00115_3	D6-SC1b-50to60-82619	15470004	1613B	1,2,3,4,7,8-HxCDD	0.293	pg/g	JK	U	25
2006-00115_3	D6-SC1b-50to60-82619	15470004	1613B	2,3,7,8-TCDF	0.425	pg/g	BJ	U	7
2006-00115_3	D6-SC1b-50to60-82619	15470004	1613B	1,2,3,7,8-PeCDF	0.247	pg/g	BJK	U	25
2006-00115_3	D6-SC1b-50to60-82619	15470004	1613B	1,2,3,7,8,9-HxCDF	0.366	pg/g	BJ	U	7
2006-00115_3	D6-SC1b-50to60-82619	15470004	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	2.34	pg/g	JK	J	25
2006-00115_3	D6-SC1b-50to60-82619	15470004	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	12.1	pg/g	JK	J	25

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
2006-00115_3	D6-SC1b-50to60-82619	15470004	1613B	Total Pentachlorodibenzofuran with EMPCs	10.9	pg/g	JK	J	25
2006-00115_3	D6-SC1b-60to70-82619	15470005	1613B	1,2,3,4,7,8-HxCDD	0.189	pg/g	JK	U	25
2006-00115_3	D6-SC1b-60to70-82619	15470005	1613B	2,3,7,8-TCDF	0.26	pg/g	BJ	U	7
2006-00115_3	D6-SC1b-60to70-82619	15470005	1613B	1,2,3,7,8-PeCDF	0.17	pg/g	BJ	U	7
2006-00115_3	D6-SC1b-60to70-82619	15470005	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	1.76	pg/g	JK	J	25
2006-00115_3	D6-SC1b-60to70-82619	15470005	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	7.5	pg/g	JK	J	25
2006-00115_3	D6-SC1b-60to70-82619	15470005	1613B	Total Tetrachlorodibenzofuran with EMPCs	2.45	pg/g	BJK	J	25
2006-00115_3	D6-SC1b-70to80-82619	15470006	1613B	2,3,7,8-TCDF	0.327	pg/g	BJ	U	7
2006-00115_3	D6-SC1b-70to80-82619	15470006	1613B	1,2,3,7,8-PeCDF	0.227	pg/g	BJ	U	7
2006-00115_3	D6-SC1b-70to80-82619	15470006	1613B	1,2,3,7,8,9-HxCDF	0.21	pg/g	BJ	U	7
2006-00115_3	D6-SC1b-70to80-82619	15470006	1613B	Total Tetrachlorodibenzofuran with EMPCs	2.99	pg/g	BJK	J	25
2006-00115_3	D6-SC1b-70to80-82619	15470006	1613B	Total Pentachlorodibenzofuran with EMPCs	7.69	pg/g	JK	J	25
2006-00115_3	D6-SC1b-80to90-82619	15470007	1613B	2,3,7,8-TCDF	0.166	pg/g	BJ	U	7
2006-00115_3	D6-SC1b-80to90-82619	15470007	1613B	1,2,3,7,8-PeCDF	0.0617	pg/g	BJK	U	25
2006-00115_3	D6-SC1b-80to90-82619	15470007	1613B	2,3,4,7,8-PeCDF	0.0599	pg/g	BJK	U	25
2006-00115_3	D6-SC1b-80to90-82619	15470007	1613B	1,2,3,4,7,8-HxCDF	0.127	pg/g	BJ	U	7
2006-00115_3	D6-SC1b-80to90-82619	15470007	1613B	1,2,3,6,7,8-HxCDF	0.0804	pg/g	JK	U	25
2006-00115_3	D6-SC1b-80to90-82619	15470007	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	0.945	pg/g	JK	J	25
2006-00115_3	D6-SC1b-80to90-82619	15470007	1613B	Total Tetrachlorodibenzofuran with EMPCs	0.443	pg/g	BJK	J	25
2006-00115_3	D6-SC1b-80to90-82619	15470007	1613B	Total Pentachlorodibenzofuran with EMPCs	0.73	pg/g	BJK	J	25
2006-00115_3	D6-SC1b-80to90-82619	15470007	1613B	Total Hexachlorodibenzofuran with EMPCs	1.55	pg/g	BJK	J	25
2006-00115_3	D6-SC1b-80to90-82619	15470007	1613B	TEQ WHO2005 ND=0 with EMPCs	0.107	pg/g		U	7
2006-00115_3	D6-SC1b-80to90-82619	15470007	1613B	TEQ WHO2005 ND=0.5 with EMPCs	0.207	pg/g		U	7
2006-00115_3	D6-SC1b-90to100-82619	15470008	1613B	2,3,7,8-TCDF	0.186	pg/g	BJ	U	7
2006-00115_3	D6-SC1b-90to100-82619	15470008	1613B	1,2,3,4,7,8-HxCDF	0.0919	pg/g	BJK	U	25
2006-00115_3	D6-SC1b-90to100-82619	15470008	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	0.349	pg/g	JK	J	25
2006-00115_3	D6-SC1b-90to100-82619	15470008	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	0.199	pg/g	JK	J	25
2006-00115_3	D6-SC1b-90to100-82619	15470008	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	0.89	pg/g	JK	J	25
2006-00115_3	D6-SC1b-90to100-82619	15470008	1613B	Total Hexachlorodibenzofuran with EMPCs	0.761	pg/g	BJK	J	25
2006-00115_3	D6-SC1b-90to100-82619	15470008	1613B	TEQ WHO2005 ND=0 with EMPCs	0.0554	pg/g		U	7
2006-00115_3	D6-SC1b-90to100-82619	15470008	1613B	TEQ WHO2005 ND=0.5 with EMPCs	0.152	pg/g		U	7
2006-00115_3	J3-SC1b-10to20-82719	15470021	1613B	1,2,3,4,7,8-HxCDD	0.188	pg/g	JK	U	25
2006-00115_3	J3-SC1b-10to20-82719	15470021	1613B	1,2,3,6,7,8-HxCDD	0.927	pg/g	JK	U	25
2006-00115_3	J3-SC1b-10to20-82719	15470021	1613B	2,3,7,8-TCDF	0.251	pg/g	BJ	U	7
2006-00115_3	J3-SC1b-10to20-82719	15470021	1613B	1,2,3,7,8-PeCDF	0.153	pg/g	BJK	U	25
2006-00115_3	J3-SC1b-10to20-82719	15470021	1613B	2,3,4,6,7,8-HxCDF	0.404	pg/g	JK	U	25

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
2006-00115_3	J3-SC1b-10to20-82719	15470021	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	0.223	pg/g	JK	J	25
2006-00115_3	J3-SC1b-10to20-82719	15470021	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	0.727	pg/g	JK	J	25
2006-00115_3	J3-SC1b-10to20-82719	15470021	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	7.39	pg/g	JK	J	25
2006-00115_3	J3-SC1b-10to20-82719	15470021	1613B	Total Tetrachlorodibenzofuran with EMPCs	1.93	pg/g	BJK	J	25
2006-00115_3	J3-SC1b-10to20-82719	15470021	1613B	Total Pentachlorodibenzofuran with EMPCs	6.5	pg/g	JK	J	25
2006-00115_3	J3-SC1b-10to20-82719	15470021	1613B	Total Hexachlorodibenzofuran with EMPCs	12.3	pg/g	JK	J	25
2006-00115_3	J3-SC1b-20to30-82719	15470013	1613B	1,2,3,7,8-PeCDF	0.394	pg/g	BJK	U	25
2006-00115_3	J3-SC1b-20to30-82719	15470013	1613B	1,2,3,7,8,9-HxCDF	0.53	pg/g	BJ	U	7
2006-00115_3	J3-SC1b-20to30-82719	15470013	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	1.03	pg/g	K	J	25
2006-00115_3	J3-SC1b-20to30-82719	15470013	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	3.1	pg/g	JK	J	25
2006-00115_3	J3-SC1b-20to30-82719	15470013	1613B	Total Tetrachlorodibenzofuran with EMPCs	5.13	pg/g	JK	J	25
2006-00115_3	J3-SC1b-20to30-82719	15470013	1613B	Total Pentachlorodibenzofuran with EMPCs	13.9	pg/g	JK	J	25
2006-00115_3	J3-SC1b-30to40-82719	15470014	1613B	2,3,7,8-TCDF	0.987	pg/g	BJ	DNR	11
2006-00115_3	J3-SC1b-30to40-82719	15470014	1613B	1,2,3,7,8-PeCDF	1.34	pg/g	JK	U	25
2006-00115_3	J3-SC1b-30to40-82719	15470014	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	10.8	pg/g	JK	J	25
2006-00115_3	J3-SC1b-30to40-82719	15470014	1613B	Total Tetrachlorodibenzofuran with EMPCs	27.7	pg/g	JK	J	25
2006-00115_3	J3-SC1b-30to40-82719	15470014	1613B	Total Pentachlorodibenzofuran with EMPCs	72.1	pg/g	JKQ	J	25
2006-00115_3	J3-SC1b-40to50-82719	15470015	1613B	2,3,7,8-TCDF	0.347	pg/g	BJK	U	25
2006-00115_3	J3-SC1b-40to50-82719	15470015	1613B	1,2,3,7,8-PeCDF	0.238	pg/g	BJK	U	25
2006-00115_3	J3-SC1b-40to50-82719	15470015	1613B	1,2,3,7,8,9-HxCDF	0.338	pg/g	BJ	U	7
2006-00115_3	J3-SC1b-40to50-82719	15470015	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	3.41	pg/g	JK	J	25
2006-00115_3	J3-SC1b-40to50-82719	15470015	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	10.2	pg/g	JK	J	25
2006-00115_3	J3-SC1b-40to50-82719	15470015	1613B	Total Tetrachlorodibenzofuran with EMPCs	9.58	pg/g	JK	J	25
2006-00115_3	J3-SC1b-40to50-82719	15470015	1613B	Total Pentachlorodibenzofuran with EMPCs	27.1	pg/g	JK	J	25
2006-00115_3	J3-SC1b-40to50-82719	15470015	1613B	Total Hexachlorodibenzofuran with EMPCs	27.8	pg/g	JK	J	25
2006-00115_3	J3-SC1b-50to60-82719	15470016	1613B	1,2,3,7,8-PeCDF	0.288	pg/g	BJ	U	7
2006-00115_3	J3-SC1b-50to60-82719	15470016	1613B	1,2,3,7,8,9-HxCDF	0.364	pg/g	BJ	U	7
2006-00115_3	J3-SC1b-50to60-82719	15470016	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	0.37	pg/g	JK	J	25
2006-00115_3	J3-SC1b-50to60-82719	15470016	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	1.88	pg/g	JK	J	25
2006-00115_3	J3-SC1b-50to60-82719	15470016	1613B	Total Tetrachlorodibenzofuran with EMPCs	5.46	pg/g	JK	J	25
2006-00115_3	J3-SC1b-50to60-82719	15470016	1613B	Total Pentachlorodibenzofuran with EMPCs	21.8	pg/g	JK	J	25
2006-00115_3	J3-SC1b-60to70-82719	15470017	1613B	1,2,3,4,6,7,8-HpCDD	0.978	pg/g	JK	U	25
2006-00115_3	J3-SC1b-60to70-82719	15470017	1613B	2,3,7,8-TCDF	0.217	pg/g	BJ	U	7
2006-00115_3	J3-SC1b-60to70-82719	15470017	1613B	Total Heptachlorodibenzo-p-dioxin with EMPCs	2.33	pg/g	JK	J	25
2006-00115_3	J3-SC1b-60to70-82719	15470017	1613B	Total Hexachlorodibenzofuran with EMPCs	1.52	pg/g	BJK	J	25
2006-00115_3	J3-SC1b-60to70-82719	15470017	1613B	TEQ WHO2005 ND=0 with EMPCs	0.0668	pg/g		U	7

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
2006-00115_3	J3-SC1b-60to70-82719	15470017	1613B	TEQ WHO2005 ND=0.5 with EMPCs	0.262	pg/g		U	7
2006-00115_3	J3-SC1b-70to80-82719	15470018	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	0.67	pg/g	JK	J	25
2006-00115_3	J3-SC1b-70to80-82719	15470018	1613B	Total Pentachlorodibenzofuran with EMPCs	0.978	pg/g	BJK	J	25
2006-00115_3	J3-SC1b-70to80-82719	15470018	1613B	Total Hexachlorodibenzofuran with EMPCs	1.56	pg/g	BJK	J	25
2006-00115_3	J3-SC1b-70to80-82719	15470018	1613B	TEQ WHO2005 ND=0 with EMPCs	0.0362	pg/g		U	7
2006-00115_3	J3-SC1b-70to80-82719	15470018	1613B	TEQ WHO2005 ND=0.5 with EMPCs	0.307	pg/g		U	7
2006-00115_3	J3-SC1b-80to90-82719	15470019	1613B	1,2,3,7,8-PeCDD	0.213	pg/g	JK	U	25
2006-00115_3	J3-SC1b-80to90-82719	15470019	1613B	2,3,7,8-TCDF	0.226	pg/g	BJK	U	25
2006-00115_3	J3-SC1b-80to90-82719	15470019	1613B	1,2,3,7,8-PeCDF	0.348	pg/g	BJ	U	7
2006-00115_3	J3-SC1b-80to90-82719	15470019	1613B	1,2,3,7,8,9-HxCDF	0.287	pg/g	BJ	U	7
2006-00115_3	J3-SC1b-80to90-82719	15470019	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	0.325	pg/g	JK	J	25
2006-00115_3	J3-SC1b-80to90-82719	15470019	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	1.82	pg/g	JK	J	25
2006-00115_3	J3-SC1b-80to90-82719	15470019	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	6.98	pg/g	JK	J	25
2006-00115_3	J3-SC1b-80to90-82719	15470019	1613B	Total Tetrachlorodibenzofuran with EMPCs	7.01	pg/g	JK	J	25
2006-00115_3	J3-SC1b-90to100-82719	15470020	1613B	1,2,3,6,7,8-HxCDD	0.236	pg/g	JK	U	25
2006-00115_3	J3-SC1b-90to100-82719	15470020	1613B	2,3,7,8-TCDF	0.204	pg/g	BJK	U	25
2006-00115_3	J3-SC1b-90to100-82719	15470020	1613B	1,2,3,4,7,8-HxCDF	0.219	pg/g	BJK	U	25
2006-00115_3	J3-SC1b-90to100-82719	15470020	1613B	1,2,3,6,7,8-HxCDF	0.361	pg/g	JK	U	25
2006-00115_3	J3-SC1b-90to100-82719	15470020	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	0.161	pg/g	JK	J	25
2006-00115_3	J3-SC1b-90to100-82719	15470020	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	1.86	pg/g	JK	J	25
2006-00115_3	J3-SC1b-90to100-82719	15470020	1613B	Total Tetrachlorodibenzofuran with EMPCs	1.54	pg/g	BJK	J	25
2006-00115_3	J3-SC1b-90to100-82719	15470020	1613B	Total Hexachlorodibenzofuran with EMPCs	4.78	pg/g	JK	J	25
2006-00115_3	J3-SC1b-90to100-82719	15470020	1613B	TEQ WHO2005 ND=0.5 with EMPCs	0.459	pg/g		U	7
2006-00115_4	711-82719	15471017	1613B	1,2,3,7,8,9-HxCDF	0.951	pg/L	JK	U	25
2006-00115_4	711-82719	15471017	1613B	Total Hexachlorodibenzofuran with EMPCs	0.951	pg/L	JK	J	25
2006-00115_4	J5-SC1b-100to110-82719	15471009	1613B	1,2,3,4,6,7,8-HpCDF	0.288	pg/g	BJK	U	25
2006-00115_4	J5-SC1b-100to110-82719	15471009	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	0.377	pg/g	BJK	J	25
2006-00115_4	J5-SC1b-100to110-82719	15471009	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	0.859	pg/g	BJK	J	25
2006-00115_4	J5-SC1b-100to110-82719	15471009	1613B	Total Tetrachlorodibenzofuran with EMPCs	0.754	pg/g	BJK	J	25
2006-00115_4	J5-SC1b-100to110-82719	15471009	1613B	Total Pentachlorodibenzofuran with EMPCs	0.125	pg/g	BJK	J	25
2006-00115_4	J5-SC1b-100to110-82719	15471009	1613B	Total Heptachlorodibenzofuran with EMPCs	0.734	pg/g	BJK	J	25
2006-00115_4	J5-SC1b-20to30-82719	15471001	1613B	2,3,7,8-TCDD	0.358	pg/g	JK	U	25
2006-00115_4	J5-SC1b-20to30-82719	15471001	1613B	1,2,3,6,7,8-HxCDD	5.17	pg/g		J	9
2006-00115_4	J5-SC1b-20to30-82719	15471001	1613B	1,2,3,4,6,7,8-HpCDD	138	pg/g		J	9
2006-00115_4	J5-SC1b-20to30-82719	15471001	1613B	1,2,3,4,6,7,8,9-OCDD	1990	pg/g		J	9
2006-00115_4	J5-SC1b-20to30-82719	15471001	1613B	2,3,7,8-TCDF	1.07	pg/g	B	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
2006-00115_4	J5-SC1b-20to30-82719	15471001	1613B	1,2,3,7,8,9-HxCDF	0.789	pg/g	BJ	U	7
2006-00115_4	J5-SC1b-20to30-82719	15471001	1613B	1,2,3,4,6,7,8-HpCDF	38.4	pg/g		J	9
2006-00115_4	J5-SC1b-20to30-82719	15471001	1613B	1,2,3,4,6,7,8,9-OCDF	123	pg/g		J	9
2006-00115_4	J5-SC1b-20to30-82719	15471001	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	3.69	pg/g	JK	J	25
2006-00115_4	J5-SC1b-20to30-82719	15471001	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	8.27	pg/g	JKQ	J	25
2006-00115_4	J5-SC1b-20to30-82719	15471001	1613B	Total Tetrachlorodibenzofuran with EMPCs	12.4	pg/g	JK	J	25
2006-00115_4	J5-SC1b-20to30-82719	15471001	1613B	Total Pentachlorodibenzofuran with EMPCs	29	pg/g	JKQ	J	25
2006-00115_4	J5-SC1b-30to40-82719	15471002	1613B	2,3,7,8-TCDD	0.213	pg/g	JK	U	25
2006-00115_4	J5-SC1b-30to40-82719	15471002	1613B	1,2,3,7,8,9-HxCDF	0.46	pg/g	BJ	U	7
2006-00115_4	J5-SC1b-30to40-82719	15471002	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	1.97	pg/g	JK	J	25
2006-00115_4	J5-SC1b-30to40-82719	15471002	1613B	Total Tetrachlorodibenzofuran with EMPCs	7.3	pg/g	JK	J	25
2006-00115_4	J5-SC1b-30to40-82719	15471002	1613B	Total Heptachlorodibenzofuran with EMPCs	50.6	pg/g	JK	J	25
2006-00115_4	J5-SC1b-40to50-82719	15471003	1613B	2,3,7,8-TCDD	0.225	pg/g	JK	U	25
2006-00115_4	J5-SC1b-40to50-82719	15471003	1613B	1,2,3,7,8,9-HxCDF	0.727	pg/g	BJ	U	7
2006-00115_4	J5-SC1b-40to50-82719	15471003	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	2.29	pg/g	JK	J	25
2006-00115_4	J5-SC1b-40to50-82719	15471003	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	6.13	pg/g	JKQ	J	25
2006-00115_4	J5-SC1b-40to50-82719	15471003	1613B	Total Tetrachlorodibenzofuran with EMPCs	10.4	pg/g	JK	J	25
2006-00115_4	J5-SC1b-40to50-82719	15471003	1613B	Total Pentachlorodibenzofuran with EMPCs	21.5	pg/g	JKQ	J	25
2006-00115_4	J5-SC1b-50to60-82719	15471004	1613B	2,3,7,8-TCDF	1.1	pg/g	B	DNR	11
2006-00115_4	J5-SC1b-50to60-82719	15471004	1613B	1,2,3,7,8,9-HxCDF	0.854	pg/g	BJ	U	7
2006-00115_4	J5-SC1b-50to60-82719	15471004	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	3.56	pg/g	JK	J	25
2006-00115_4	J5-SC1b-50to60-82719	15471004	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	7.7	pg/g	JKQ	J	25
2006-00115_4	J5-SC1b-50to60-82719	15471004	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	41.9	pg/g	JK	J	25
2006-00115_4	J5-SC1b-50to60-82719	15471004	1613B	Total Tetrachlorodibenzofuran with EMPCs	14.9	pg/g	JK	J	25
2006-00115_4	J5-SC1b-60to70-82719	15471005	1613B	1,2,3,7,8-PeCDD	0.385	pg/g	BJ	U	7
2006-00115_4	J5-SC1b-60to70-82719	15471005	1613B	1,2,3,4,7,8-HxCDD	0.41	pg/g	BJK	U	25
2006-00115_4	J5-SC1b-60to70-82719	15471005	1613B	1,2,3,7,8,9-HxCDF	0.391	pg/g	BJ	U	7
2006-00115_4	J5-SC1b-60to70-82719	15471005	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	1.12	pg/g	BJK	J	25
2006-00115_4	J5-SC1b-60to70-82719	15471005	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	3.24	pg/g	JK	J	25
2006-00115_4	J5-SC1b-60to70-82719	15471005	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	17	pg/g	JK	J	25
2006-00115_4	J5-SC1b-60to70-82719	15471005	1613B	Total Tetrachlorodibenzofuran with EMPCs	4.55	pg/g	JK	J	25
2006-00115_4	J5-SC1b-60to70-82719	15471005	1613B	Total Heptachlorodibenzofuran with EMPCs	72.3	pg/g	JK	J	25
2006-00115_4	J5-SC1b-70to80-82719	15471006	1613B	1,2,3,7,8-PeCDD	0.464	pg/g	BJ	U	7
2006-00115_4	J5-SC1b-70to80-82719	15471006	1613B	1,2,3,4,7,8-HxCDD	0.52	pg/g	BJK	U	25
2006-00115_4	J5-SC1b-70to80-82719	15471006	1613B	1,2,3,7,8-PeCDF	0.53	pg/g	BJK	U	25
2006-00115_4	J5-SC1b-70to80-82719	15471006	1613B	2,3,4,7,8-PeCDF	1.41	pg/g	JK	U	25

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
2006-00115_4	J5-SC1b-70to80-82719	15471006	1613B	1,2,3,7,8,9-HxCDF	0.552	pg/g	BJ	U	7
2006-00115_4	J5-SC1b-70to80-82719	15471006	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	3.27	pg/g	JK	J	25
2006-00115_4	J5-SC1b-70to80-82719	15471006	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	23.7	pg/g	JK	J	25
2006-00115_4	J5-SC1b-70to80-82719	15471006	1613B	Total Tetrachlorodibenzofuran with EMPCs	11.7	pg/g	JK	J	25
2006-00115_4	J5-SC1b-70to80-82719	15471006	1613B	Total Pentachlorodibenzofuran with EMPCs	36.9	pg/g	JKQ	J	25
2006-00115_4	J5-SC1b-70to80-82719	15471006	1613B	Total Hexachlorodibenzofuran with EMPCs	59.1	pg/g	JK	J	25
2006-00115_4	J5-SC1b-80to90-82719	15471007	1613B	1,2,3,4,6,7,8-HpCDD	0.244	pg/g	BJ	U	7
2006-00115_4	J5-SC1b-80to90-82719	15471007	1613B	1,2,3,4,6,7,8,9-OCDD	2.31	pg/g	BJ	U	7
2006-00115_4	J5-SC1b-80to90-82719	15471007	1613B	1,2,3,4,7,8-HxCDF	0.0476	pg/g	BJK	U	25
2006-00115_4	J5-SC1b-80to90-82719	15471007	1613B	1,2,3,7,8,9-HxCDF	0.0813	pg/g	BJ	U	7
2006-00115_4	J5-SC1b-80to90-82719	15471007	1613B	1,2,3,4,6,7,8-HpCDF	0.19	pg/g	BJ	U	7
2006-00115_4	J5-SC1b-80to90-82719	15471007	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	0.18	pg/g	BJK	J	25
2006-00115_4	J5-SC1b-80to90-82719	15471007	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	0.125	pg/g	BJK	J	25
2006-00115_4	J5-SC1b-80to90-82719	15471007	1613B	Total Tetrachlorodibenzofuran with EMPCs	0.757	pg/g	BJK	J	25
2006-00115_4	J5-SC1b-80to90-82719	15471007	1613B	Total Pentachlorodibenzofuran with EMPCs	0.23	pg/g	BJK	J	25
2006-00115_4	J5-SC1b-80to90-82719	15471007	1613B	Total Hexachlorodibenzofuran with EMPCs	0.276	pg/g	BJK	J	25
2006-00115_4	J5-SC1b-80to90-82719	15471007	1613B	Total Heptachlorodibenzofuran with EMPCs	0.379	pg/g	BJK	J	25
2006-00115_4	J5-SC1b-90to100-82719	15471008	1613B	2,3,7,8-TCDD	0.0532	pg/g	JK	U	25
2006-00115_4	J5-SC1b-90to100-82719	15471008	1613B	1,2,3,4,7,8-HxCDF	0.0887	pg/g	BJ	U	7
2006-00115_4	J5-SC1b-90to100-82719	15471008	1613B	1,2,3,6,7,8-HxCDF	0.0591	pg/g	BJ	U	7
2006-00115_4	J5-SC1b-90to100-82719	15471008	1613B	1,2,3,4,6,7,8-HpCDF	0.623	pg/g	BJ	U	7
2006-00115_4	J5-SC1b-90to100-82719	15471008	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	0.365	pg/g	BJK	J	25
2006-00115_4	J5-SC1b-90to100-82719	15471008	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	0.177	pg/g	BJK	J	25
2006-00115_4	J5-SC1b-90to100-82719	15471008	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	0.77	pg/g	BJK	J	25
2006-00115_4	J5-SC1b-90to100-82719	15471008	1613B	Total Tetrachlorodibenzofuran with EMPCs	0.786	pg/g	BJK	J	25
2006-00115_4	J5-SC1b-90to100-82719	15471008	1613B	Total Pentachlorodibenzofuran with EMPCs	0.556	pg/g	BJK	J	25
2006-00115_4	J5-SC1b-90to100-82719	15471008	1613B	Total Hexachlorodibenzofuran with EMPCs	0.798	pg/g	BJK	J	25
2006-00115_4	L3-SC1b-20to30-82619	15471012	1613B	1,2,3,7,8,9-HxCDD	0.44	pg/g	BJ	U	7
2006-00115_4	L3-SC1b-20to30-82619	15471012	1613B	1,2,3,7,8-PeCDF	0.392	pg/g	BJK	U	25
2006-00115_4	L3-SC1b-20to30-82619	15471012	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	0.424	pg/g	BJK	J	25
2006-00115_4	L3-SC1b-20to30-82619	15471012	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	0.944	pg/g	BJK	J	25
2006-00115_4	L3-SC1b-20to30-82619	15471012	1613B	Total Hexachlorodibenzo-p-dioxin with EMPCs	10.5	pg/g	JK	J	25
2006-00115_4	L3-SC1b-20to30-82619	15471012	1613B	Total Pentachlorodibenzofuran with EMPCs	12.3	pg/g	JK	J	25
2006-00115_4	L3-SC1b-30to40-82619	15471013	1613B	1,2,3,7,8,9-HxCDD	0.511	pg/g	BJ	U	7
2006-00115_4	L3-SC1b-30to40-82619	15471013	1613B	2,3,4,7,8-PeCDF	0.317	pg/g	BJK	U	25
2006-00115_4	L3-SC1b-30to40-82619	15471013	1613B	1,2,3,6,7,8-HxCDF	0.532	pg/g	BJ	U	7

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2006-00115_4	L3-SC1b-30to40-82619	15471013	1613B	2,3,4,6,7,8-HxCDF	0.454	pg/g	BJ	U	7
2006-00115_4	L3-SC1b-30to40-82619	15471013	1613B	1,2,3,7,8,9-HxCDF	0.234	pg/g	BJ	U	7
2006-00115_4	L3-SC1b-30to40-82619	15471013	1613B	1,2,3,4,7,8,9-HpCDF	0.424	pg/g	BJ	U	7
2006-00115_4	L3-SC1b-30to40-82619	15471013	1613B	Total Tetrachlorodibenzo-p-dioxin with EMPCs	0.437	pg/g	BJK	J	25
2006-00115_4	L3-SC1b-30to40-82619	15471013	1613B	Total Pentachlorodibenzo-p-dioxin with EMPCs	1.57	pg/g	BJK	J	25
2006-00115_4	L3-SC1b-30to40-82619	15471013	1613B	Total Tetrachlorodibenzofuran with EMPCs	2.08	pg/g	BJK	J	25
2006-00115_4	L3-SC1b-30to40-82619	15471013	1613B	Total Pentachlorodibenzofuran with EMPCs	5.72	pg/g	JK	J	25
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-37	0.87	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-36		ng/g	U	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-38		ng/g	U	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-4	0.64	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-39	0.095	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-35	0.066	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-30	2.5	ng/g	C18	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-3	0.54	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-29	0.98	ng/g	C26	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-31	3.5	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-34	0.067	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-33	2.1	ng/g	C21	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-32	1.3	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-40	6	ng/g	C	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-5	0.12	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-49	15	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-50	2.9	ng/g	C	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-53	2.9	ng/g	C50	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-52	33	ng/g	B	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-51	5.1	ng/g	C45B	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-48	1	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-43	0.36	ng/g	qC	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-42	2.5	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-41	6	ng/g	C40	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-44	23	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-47	23	ng/g	C44B	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-46	0.46	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-45	5.1	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-202	1.5	ng/g		DNR	11

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580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-201	0.96	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-203	4.4	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-205	0.34	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-204		ng/g	U	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-200	0.98	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-199	7.6	ng/g	C198B	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-198	7.6	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-197	0.25	ng/g	q	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-20	4.8	ng/g	C	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-2	0.12	ng/g	q	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-206	2.6	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-25	0.58	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-24	0.026	ng/g	J	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-23		ng/g	U	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-26	0.98	ng/g	C	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-28	4.8	ng/g	C20	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-27	0.18	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-22	1.1	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-208	0.62	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-207	0.33	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-21	2.1	ng/g	C	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-209	1.2	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-54	0.35	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-9	0.17	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-89	0.25	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-88	8.9	ng/g	C	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-90	53	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-93	2.4	ng/g	C	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-92	15	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-91	8.9	ng/g	C88	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-87	26	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-82	3.9	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-81	0.047	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-83	34	ng/g	C	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-86	26	ng/g	C	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-85	5.7	ng/g	CB	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-84	11	ng/g	B	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-94	0.84	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	Total Nonachlorobiphenyls	3.6	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	Total Monochlorobiphenyls	1.8	ng/g	q	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	Total Hexachlorobiphenyls	270	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	Total Octachlorobiphenyls	29	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	Total Trichlorobiphenyls	21	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	Total Tetrachlorobiphenyls	130	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	Total Pentachlorobiphenyls	300	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	Total Heptachlorobiphenyls	120	ng/g	B	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-97	26	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-96	0.56	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-95	41	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-98	3.1	ng/g	C	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	Total Dichlorobiphenyls	4.4	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	Polychlorinated biphenyls, Total	890	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-99	34	ng/g	C83	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-63	0.38	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-62	0.68	ng/g	C59	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-61	21	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-64	3.3	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-67	0.35	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-66	9.9	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-65	23	ng/g	C44B	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-60	0.58	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-56	3.1	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-55	0.096	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-57	0.064	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-6	0.54	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-59	0.68	ng/g	C	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-58	0.095	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-68	0.49	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-77	0.47	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-76	21	ng/g	C61B	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-78		ng/g	U	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-80	0.071	ng/g		DNR	11

Qualified Data Summary Table
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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-8	1.9	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-79	0.57	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-75	0.68	ng/g	C59	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-70	21	ng/g	C61B	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-7	0.13	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-69	15	ng/g	C49B	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-71	6	ng/g	C40	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-74	21	ng/g	C61B	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-73	0.36	ng/g	qC43	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-72	0.78	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-13	0.18	ng/g	C12	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-129	47	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-128	6.6	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-130	3.5	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-133	2	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-132	18	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-131	0.63	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-127	0.086	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-123	0.4	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-122	0.39	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-124	1.2	ng/g	C108	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-126	0.038	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-125	26	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-134	3.5	ng/g	C	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-144	2.2	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-143	3.5	ng/g	C134	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-142	0.024	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-145	0.067	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-148	0.74	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-147	53	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-146	16	ng/g	B	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-141	7.8	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-137	1.8	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-136	11	ng/g	B	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-135	27	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-138	47	ng/g	C129B	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-140	1.6	ng/g	C139	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-14		ng/g	U	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-139	1.6	ng/g	C	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-106		ng/g	U	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-105	11	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-107	3.3	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-11	0.047	ng/g	JB	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-109	26	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-108	1.2	ng/g	C	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-100	2.4	ng/g	C93	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-10	0.033	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-1	1.1	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-101	53	ng/g	C90B	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-104	0.087	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-103	2.5	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-102	3.1	ng/g	C98	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-110	47	ng/g	C	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-118	31	ng/g	B	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-117	5.7	ng/g	C85B	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-119	26	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-121	0.1	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-120	0.83	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-12	0.18	ng/g	C	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-116	5.7	ng/g	C85B	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-112		ng/g	U	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-111	0.24	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-113	53	ng/g	C90B	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-115	47	ng/g	C110	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-114	0.67	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-149	53	ng/g	C147B	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-18	2.5	ng/g	C	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-179	7.8	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-180	29	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-183	9.1	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-182	0.24	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-181	0.14	ng/g		DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-178	3.7	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-173	4.2	ng/g	C171	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-172	2.3	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-171	4.2	ng/g	C	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-174	14	ng/g	B	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-177	9.8	ng/g	B	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-176	1.9	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-175	0.58	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-184	0.021	ng/g	J	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-192		ng/g	U	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-191	0.58	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-190	2.6	ng/g	B	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-193	29	ng/g	C180B	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-196	3.5	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-195	3	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-194	6.6	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-19	0.26	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-187	20	ng/g	B	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-186		ng/g	U	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-185	9.1	ng/g	C183B	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-188	0.11	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-189	0.46	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-157	5	ng/g	C156	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-156	5	ng/g	C	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-159	0.58	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-158	4.2	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-151	27	ng/g	C135B	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-150	0.7	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-15	0.59	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-152	0.13	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-155	0.031	ng/g	J	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-154	4.1	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-153	47	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-16	1	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-169	0.085	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-168	47	ng/g	C153B	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-170	12	ng/g	B	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-17	1.6	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-167	1.5	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-162	0.13	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-161	0.016	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-160	47	ng/g	C129B	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-163	47	ng/g	C129B	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-166	6.6	ng/g	C128B	DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-165	0.11	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-164	3.7	ng/g		DNR	11
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-43	0.36	ng/g	qC	J	25
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	Total Tetrachlorobiphenyls	120	ng/g	qB	J	25
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	Total Dichlorobiphenyls	3.7	ng/g	qB	J	25
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	Polychlorinated biphenyls, Total	870	ng/g	qB	J	25
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-73	0.36	ng/g	qC43	J	25
580-88908-1	J5-SC1b-20to30-82719	580-88908-26	E1668A	PCB-11	0.036	ng/g	JqB	U	25
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-37	0.51	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-36		ng/g	U	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-38		ng/g	U	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-4	0.15	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-39	0.04	ng/g	J	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-35	0.037	ng/g	J	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-30	1.4	ng/g	C18	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-3	0.059	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-29	0.32	ng/g	C26	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-31	1.8	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-34	0.035	ng/g	J	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-33	0.99	ng/g	C21	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-32	0.48	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-40	2	ng/g	C	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-5	0.008	ng/g	J	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-49	3.6	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-50	0.59	ng/g	C	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-53	0.59	ng/g	C50	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-52	6.1	ng/g	B	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-51	0.84	ng/g	C45B	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-48	0.63	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-43	0.088	ng/g	JC	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-42		ng/g	U	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-41	2	ng/g	C40	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-44	4.7	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-47	4.7	ng/g	C44B	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-46	0.2	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-45	0.84	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-202	0.48	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-201	0.3	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-203	1.3	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-205	0.094	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-204		ng/g	U	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-200	0.31	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-199	2.4	ng/g	C198B	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-198	2.4	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-197	0.066	ng/g	q	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-20	2.4	ng/g	C	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-2	0.025	ng/g	J	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-206	1.1	ng/g	q	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-25	0.2	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-24	0.015	ng/g	J	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-23		ng/g	U	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-26	0.32	ng/g	C	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-28	2.4	ng/g	C20	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-27	0.093	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-22	0.59	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-208	0.22	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-207	0.11	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-21	0.99	ng/g	C	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-209	0.83	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-54	0.049	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-9	0.025	ng/g	J	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-89	0.094	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-88	1.8	ng/g	C	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-90	11	ng/g	CB	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-93	0.29	ng/g	C	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-92	2.6	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-91	1.8	ng/g	C88	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-87	4.9	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-82	0.87	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-81		ng/g	U	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-83	7.2	ng/g	C	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-86	4.9	ng/g	C	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-85	1.3	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-84	2.3	ng/g	B	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-94	0.086	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	Total Nonachlorobiphenyls	1.4	ng/g	q	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	Total Monochlorobiphenyls	0.18	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	Total Hexachlorobiphenyls	54	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	Total Octachlorobiphenyls	8.8	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	Total Trichlorobiphenyls	10	ng/g	q	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	Total Tetrachlorobiphenyls	34	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	Total Pentachlorobiphenyls	60	ng/g	B	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	Total Heptachlorobiphenyls	32	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-97	4.9	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-96	0.08	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-95	8	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-98	0.52	ng/g	C	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	Total Dichlorobiphenyls	1.1	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	Polychlorinated biphenyls, Total	200	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-99	7.2	ng/g	C83	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-63	0.16	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-62	0.31	ng/g	C59	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-61	6.8	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-64	1.4	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-67	0.088	ng/g	q	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-66	4.2	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-65	4.7	ng/g	C44B	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-60	0.27	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-56	1.6	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-55	0.027	ng/g	J	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-57	0.013	ng/g	J	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-6	0.13	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-59	0.31	ng/g	C	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-58	0.048	ng/g	J	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-68	0.098	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-77	0.27	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-76	6.8	ng/g	C61B	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-78		ng/g	U	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-80		ng/g	U	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-8	0.41	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-79	0.14	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-75	0.31	ng/g	C59	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-70	6.8	ng/g	C61B	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-7	0.026	ng/g	J	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-69	3.6	ng/g	C49B	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-71	2	ng/g	C40	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-74	6.8	ng/g	C61B	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-73	0.088	ng/g	JC43	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-72	0.22	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-13	0.051	ng/g	JC12	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-129	9.9	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-128	1.2	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-130	0.83	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-133	0.33	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-132	3.6	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-131	0.11	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-127		ng/g	U	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-123	0.07	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-122	0.082	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-124	0.19	ng/g	C108	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-126	0.019	ng/g	J	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-125	4.9	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-134	0.59	ng/g	C	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-144	0.45	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-143	0.59	ng/g	C134	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-142		ng/g	U	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-145	0.004	ng/g	J	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-148	0.077	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-147	11	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-146	2.9	ng/g	B	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-141	1.6	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-137	0.28	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-136	1.8	ng/g	B	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-135	4.6	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-138	9.9	ng/g	C129B	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-140	0.23	ng/g	C139	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-14		ng/g	U	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-139	0.23	ng/g	C	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-106		ng/g	U	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-105	1.6	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-107	0.72	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-11	0.052	ng/g	JB	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-109	4.9	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-108	0.19	ng/g	C	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-100	0.29	ng/g	C93	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-10	0.0078	ng/g	J	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-1	0.1	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-101	11	ng/g	C90B	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-104		ng/g	U	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-103	0.37	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-102	0.52	ng/g	C98	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-110	9.9	ng/g	C	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-118	6	ng/g	B	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-117	1.3	ng/g	C85B	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-119	4.9	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-121		ng/g	U	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-120	0.17	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-12	0.051	ng/g	JC	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-116	1.3	ng/g	C85B	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-112		ng/g	U	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-111		ng/g	U	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-113	11	ng/g	C90B	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-115	9.9	ng/g	C110	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-114	0.082	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-149	11	ng/g	C147B	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-18	1.4	ng/g	C	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-179	2	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-180	7.8	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-183	2.6	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-182	0.044	ng/g	J	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-181		ng/g	U	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-178	0.92	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-173	1.1	ng/g	C171	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-172	0.64	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-171	1.1	ng/g	C	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-174	4.4	ng/g	B	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-177	2.6	ng/g	B	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-176	0.5	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-175	0.17	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-184		ng/g	U	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-192		ng/g	U	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-191	0.14	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-190	0.64	ng/g	B	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-193	7.8	ng/g	C180B	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-196	1	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-195	0.86	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-194	2	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-19	0.12	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-187	5.3	ng/g	B	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-186		ng/g	U	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-185	2.6	ng/g	C183B	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-188		ng/g	U	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-189	0.11	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-157	0.83	ng/g	C156	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-156	0.83	ng/g	C	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-159	0.17	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-158	0.7	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-151	4.6	ng/g	C135B	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-150	0.084	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-15	0.22	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-152	0.01	ng/g	J	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-155		ng/g	U	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-154	0.51	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-153	11	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-16	0.54	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-169		ng/g	U	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-168	11	ng/g	C153B	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-170	3.4	ng/g	B	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-17	0.87	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-167	0.28	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-162		ng/g	U	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-161		ng/g	U	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-160	9.9	ng/g	C129B	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-163	9.9	ng/g	C129B	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-166	1.2	ng/g	C128B	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-165		ng/g	U	DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-164	0.79	ng/g		DNR	11
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-37	0.63	ng/g	GB	J	14
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-36		ng/g	UG	UJ	14
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-38		ng/g	UG	UJ	14
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-39	0.04	ng/g	G	J	14
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-35	0.044	ng/g	G	J	14
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-34	0.043	ng/g	G	J	14
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-25	0.23	ng/g	G	J	14
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-23		ng/g	UG	UJ	14
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-22	0.71	ng/g	GB	J	14
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	Total Tetrachlorobiphenyls	42	ng/g	qB	J	25
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	Total Pentachlorobiphenyls	56	ng/g	qB	J	25
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	Polychlorinated biphenyls, Total	210	ng/g	qB	J	25
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-57	0.011	ng/g	q	J	25
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-123	0.072	ng/g	q	J	25
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-126	0.015	ng/g	q	J	25
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-195	0.98	ng/g	GB	J	14
580-88908-1	J5-SC1b-30to40-82719	580-88908-27	E1668A	PCB-194	2.2	ng/g	GB	J	14

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-37	0.86	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-36		ng/g	U	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-38		ng/g	U	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-4	1.6	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-39	0.097	ng/g	J	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-35	0.083	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-30	1.8	ng/g	C18	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-3	0.31	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-29	0.75	ng/g	C26	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-31	2.5	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-34	0.062	ng/g	J	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-33	1.5	ng/g	C21	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-32	0.65	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-40	3.6	ng/g	C	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-5	0.058	ng/g	J	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-49	10	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-50	1.1	ng/g	C	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-53	1.1	ng/g	C50	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-52	26	ng/g	B	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-51	1.1	ng/g	C45B	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-48	0.98	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-43	0.19	ng/g	JqC	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-42	2.6	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-41	3.6	ng/g	C40	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-44	12	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-47	12	ng/g	C44B	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-46	0.32	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-45	1.1	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-202	1.2	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-201	0.73	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-203	3.5	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-205	0.27	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-204		ng/g	U	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-200	0.73	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-199	5.8	ng/g	C198B	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-198	5.8	ng/g	CB	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-197	0.18	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-20	3.7	ng/g	C	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-2	0.051	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-206	2.6	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-25	0.45	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-24	0.025	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-23		ng/g	U	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-26	0.75	ng/g	C	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-28	3.7	ng/g	C20	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-27	0.13	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-22	0.71	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-208	0.68	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-207	0.29	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-21	1.5	ng/g	C	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-209	1.5	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-54	0.031	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-9	0.09	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-89	0.3	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-88	6.2	ng/g	C	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-90	47	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-93	0.6	ng/g	C	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-92	10	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-91	6.2	ng/g	C88	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-87	26	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-82	4.6	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-81	0.034	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-83	29	ng/g	C	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-86	26	ng/g	C	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-85	6.7	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-84	11	ng/g	B	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-94	0.2	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	Total Nonachlorobiphenyls	3.6	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	Total Monochlorobiphenyls	1.7	ng/g	q	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	Total Hexachlorobiphenyls	220	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	Total Octachlorobiphenyls	23	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	Total Trichlorobiphenyls	16	ng/g	q	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	Total Tetrachlorobiphenyls	110	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	Total Pentachlorobiphenyls	280	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	Total Heptachlorobiphenyls	98	ng/g	B	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-97	26	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-96	0.22	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-95	35	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-98	1.2	ng/g	C	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	Total Dichlorobiphenyls	4.2	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	Polychlorinated biphenyls, Total	760	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-99	29	ng/g	C83	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-63	0.47	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-62	0.73	ng/g	C59	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-61	23	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-64	3.3	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-67	0.27	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-66	14	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-65	12	ng/g	C44B	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-60	0.65	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-56	3.6	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-55	0.13	ng/g	J	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-57	0.065	ng/g	J	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-6	0.41	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-59	0.73	ng/g	C	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-58	0.16	ng/g	J	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-68	0.37	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-77	1.1	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-76	23	ng/g	C61B	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-78		ng/g	U	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-80	0.054	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-8	1.2	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-79	0.45	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-75	0.73	ng/g	C59	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-70	23	ng/g	C61B	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-7	0.061	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-69	10	ng/g	C49B	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-71	3.6	ng/g	C40	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-74	23	ng/g	C61B	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-73	0.19	ng/g	JqC43	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-72	0.68	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-13	0.19	ng/g	JC12	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-129	47	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-128	7.6	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-130	3.7	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-133	1.1	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-132	17	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-131	0.73	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-127		ng/g	U	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-123	0.54	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-122	0.51	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-124	1.3	ng/g	C108	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-126	0.12	ng/g	J	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-125	26	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-134	2.9	ng/g	C	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-144	1.7	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-143	2.9	ng/g	C134	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-142		ng/g	U	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-145	0.038	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-148	0.22	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-147	41	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-146	9.5	ng/g	B	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-141	7.4	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-137	2.1	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-136	6.1	ng/g	B	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-135	16	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-138	47	ng/g	C129B	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-140	1	ng/g	C139	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-14		ng/g	U	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-139	1	ng/g	C	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-106		ng/g	U	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-105	11	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-107	3.2	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-11	0.077	ng/g	JB	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-109	26	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-108	1.3	ng/g	C	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-100	0.6	ng/g	C93	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-10		ng/g	U	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-1	1.3	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-101	47	ng/g	C90B	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-104		ng/g	U	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-103	0.97	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-102	1.2	ng/g	C98	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-110	51	ng/g	C	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-118	36	ng/g	B	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-117	6.7	ng/g	C85B	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-119	26	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-121	0.062	ng/g	J	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-120	0.52	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-12	0.19	ng/g	JC	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-116	6.7	ng/g	C85B	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-112		ng/g	U	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-111	0.085	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-113	47	ng/g	C90B	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-115	51	ng/g	C110	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-114	0.7	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-149	41	ng/g	C147B	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-18	1.8	ng/g	C	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-179	5.5	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-180	24	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-183	7.9	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-182	0.14	ng/g	J	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-181	0.15	ng/g	J	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-178	2.7	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-173	3.7	ng/g	C171	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-172	1.9	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-171	3.7	ng/g	C	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-174	13	ng/g	B	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-177	7.4	ng/g	B	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-176	1.6	ng/g		DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-175	0.54	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-184		ng/g	U	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-192		ng/g	U	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-191	0.5	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-190	2.1	ng/g	B	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-193	24	ng/g	C180B	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-196	2.5	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-195	2.3	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-194	5.3	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-19	0.35	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-187	15	ng/g	B	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-186		ng/g	U	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-185	7.9	ng/g	C183B	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-188	0.057	ng/g	J	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-189	0.37	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-157	5.5	ng/g	C156	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-156	5.5	ng/g	C	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-159	0.43	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-158	4.4	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-151	16	ng/g	C135B	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-150	0.17	ng/g	J	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-15	0.55	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-152	0.049	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-155	0.014	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-154	1.3	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-153	40	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-16	0.81	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-169		ng/g	U	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-168	40	ng/g	C153B	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-170	11	ng/g	B	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-17	1.2	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-167	1.7	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-162	0.16	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-161		ng/g	U	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-160	47	ng/g	C129B	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-163	47	ng/g	C129B	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-166	7.6	ng/g	C128B	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-165		ng/g	U	DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-164	3.4	ng/g		DNR	11
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-43	0.12	ng/g	qC	J	25
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-24	0.017	ng/g	Jq	U	25
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	Total Hexachlorobiphenyls	130	ng/g	qB	J	25
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	Total Trichlorobiphenyls	14	ng/g	qB	J	25
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	Total Tetrachlorobiphenyls	69	ng/g	qB	J	25
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	Total Dichlorobiphenyls	2.1	ng/g	qB	J	25
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	Polychlorinated biphenyls, Total	480	ng/g	qB	J	25
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-55	0.049	ng/g	q	J	25
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-73	0.12	ng/g	qC43	J	25
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-148	0.17	ng/g	q	J	25
580-88908-1	J5-SC1b-40to50-82719	580-88908-28	E1668A	PCB-10	0.02	ng/g	Jq	U	25
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-37	1.5	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-36		ng/g	U	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-38		ng/g	U	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-4	0.44	ng/g	J	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-39	0.13	ng/g	J	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-35	0.064	ng/g	J	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-30	2.7	ng/g	C18	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-3	0.15	ng/g	J	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-29	1.4	ng/g	C26	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-31	4.1	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-34	0.085	ng/g	J	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-33	2.4	ng/g	C21	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-32	1.1	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-40	5.2	ng/g	C	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-5		ng/g	U	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-49	16	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-50	1.3	ng/g	C	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-53	1.3	ng/g	C50	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-52	35	ng/g	B	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-51	1.4	ng/g	C45B	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-48	1.6	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-43	0.23	ng/g	JC	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-42	3.8	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-41	5.2	ng/g	C40	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-44	17	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-47	17	ng/g	C44B	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-46	0.52	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-45	1.4	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-202	1.7	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-201	1.1	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-203	5	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-205	0.41	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-204		ng/g	U	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-200	1.1	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-199	8.6	ng/g	C198B	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-198	8.6	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-197	0.34	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-20	6.5	ng/g	C	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-2	0.028	ng/g	J	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-206	6	ng/g	q	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-25	0.72	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-24	0.035	ng/g	J	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-23		ng/g	U	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-26	1.4	ng/g	C	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-28	6.5	ng/g	C20	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-27	0.22	ng/g	J	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-22	1.1	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-208	0.95	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-207	0.41	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-21	2.4	ng/g	C	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-209	2.3	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-54	0.029	ng/g	J	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-9	0.11	ng/g	J	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-89	0.44	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-88	8.7	ng/g	C	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-90	63	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-93	0.99	ng/g	C	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-92	16	ng/g		DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-91	8.7	ng/g	C88	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-87	34	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-82	5.6	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-81	0.067	ng/g	J	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-83	40	ng/g	C	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-86	34	ng/g	C	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-85	7.9	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-84	14	ng/g	B	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-94		ng/g	U	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	Total Nonachlorobiphenyls	7.4	ng/g	q	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	Total Monochlorobiphenyls	0.36	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	Total Hexachlorobiphenyls	300	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	Total Octachlorobiphenyls	34	ng/g	B	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	Total Trichlorobiphenyls	25	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	Total Tetrachlorobiphenyls	150	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	Total Pentachlorobiphenyls	380	ng/g	B	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	Total Heptachlorobiphenyls	150	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-97	34	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-96		ng/g	U	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-95	47	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-98	1.6	ng/g	C	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	Total Dichlorobiphenyls	3	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	Polychlorinated biphenyls, Total	1000	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-99	40	ng/g	C83	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-63	0.6	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-62	1	ng/g	C59	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-61	31	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-64	4.6	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-67	0.38	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-66	18	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-65	17	ng/g	C44B	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-60	0.75	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-56	5.2	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-55	0.083	ng/g	J	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-57	0.15	ng/g	J	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-6	0.33	ng/g		DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-59	1	ng/g	C	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-58	0.17	ng/g	J	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-68	0.54	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-77	1.2	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-76	31	ng/g	C61B	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-78		ng/g	U	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-80		ng/g	U	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-8	1.2	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-79	0.74	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-75	1	ng/g	C59	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-70	31	ng/g	C61B	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-7	0.074	ng/g	J	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-69	16	ng/g	C49B	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-71	5.2	ng/g	C40	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-74	31	ng/g	C61B	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-73	0.23	ng/g	JC43	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-72	1.1	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-13	0.13	ng/g	JC12	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-129	61	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-128	9.6	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-130	4.6	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-133	1.7	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-132	22	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-131	0.91	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-127		ng/g	U	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-123	0.67	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-122	0.67	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-124	1.7	ng/g	C108	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-126	0.13	ng/g	J	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-125	34	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-134	3.9	ng/g	C	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-144	2.7	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-143	3.9	ng/g	C134	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-142		ng/g	U	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-145	0.046	ng/g	J	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-148	0.48	ng/g		DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-147	55	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-146	14	ng/g	B	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-141	10	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-137	2.7	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-136	9.1	ng/g	B	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-135	26	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-138	61	ng/g	C129B	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-140	1.5	ng/g	C139	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-14		ng/g	U	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-139	1.5	ng/g	C	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-106		ng/g	U	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-105	14	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-107	4.5	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-11		ng/g	U	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-109	34	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-108	1.7	ng/g	C	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-100	0.99	ng/g	C93	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-10		ng/g	U	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-1	0.18	ng/g	J	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-101	63	ng/g	C90B	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-104		ng/g	U	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-103	1.6	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-102	1.6	ng/g	C98	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-110	64	ng/g	C	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-118	47	ng/g	B	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-117	7.9	ng/g	C85B	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-119	34	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-121		ng/g	U	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-120	0.67	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-12	0.13	ng/g	JC	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-116	7.9	ng/g	C85B	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-112		ng/g	U	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-111		ng/g	U	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-113	63	ng/g	C90B	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-115	64	ng/g	C110	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-114	0.83	ng/g		DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-149	55	ng/g	C147B	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-18	2.7	ng/g	C	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-179	8.4	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-180	36	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-183	12	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-182	0.21	ng/g	J	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-181	0.2	ng/g	J	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-178	4.2	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-173	5.6	ng/g	C171	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-172	3.1	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-171	5.6	ng/g	C	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-174	19	ng/g	B	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-177	11	ng/g	B	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-176	2.3	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-175	0.77	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-184		ng/g	U	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-192		ng/g	U	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-191	0.75	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-190	3.3	ng/g	B	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-193	36	ng/g	C180B	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-196	4	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-195	3.6	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-194	8	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-19	0.24	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-187	23	ng/g	B	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-186		ng/g	U	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-185	12	ng/g	C183B	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-188		ng/g	U	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-189	0.6	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-157	7.6	ng/g	C156	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-156	7.6	ng/g	C	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-159	0.69	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-158	5.6	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-151	26	ng/g	C135B	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-150	0.35	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-15	0.71	ng/g		DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-152	0.037	ng/g	J	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-155		ng/g	U	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-154	2.5	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-153	55	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-16	1.3	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-169		ng/g	U	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-168	55	ng/g	C153B	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-170	16	ng/g	B	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-17	1.8	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-167	2.3	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-162	0.24	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-161		ng/g	U	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-160	61	ng/g	C129B	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-163	61	ng/g	C129B	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-166	9.6	ng/g	C128B	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-165		ng/g	U	DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-164	4.5	ng/g		DNR	11
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-206	5.2	ng/g	q	J	25
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	Total Nonachlorobiphenyls	6.4	ng/g	q	J	25
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	Total Tetrachlorobiphenyls	150	ng/g	qB	J	25
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	Polychlorinated biphenyls, Total	1100	ng/g	qB	J	25
580-88908-1	J5-SC1b-50to60-82719	580-88908-29	E1668A	PCB-55	0.078	ng/g	q	J	25
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-37	0.54	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-36		ng/g	U	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-38		ng/g	U	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-4	0.21	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-39	0.042	ng/g	J	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-35	0.026	ng/g	J	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-30	1.2	ng/g	C18	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-3	0.071	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-29	0.35	ng/g	C26	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-31	1.8	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-34	0.042	ng/g	J	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-33	1.1	ng/g	C21	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-32	0.47	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-40	2.2	ng/g	C	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-5	0.01	ng/g	J	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-49	6	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-50	0.63	ng/g	C	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-53	0.63	ng/g	C50	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-52	14	ng/g	B	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-51	0.7	ng/g	C45B	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-48	0.65	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-43	0.091	ng/g	JC	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-42	1.5	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-41	2.2	ng/g	C40	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-44	7.4	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-47	7.4	ng/g	C44B	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-46	0.23	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-45	0.7	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-202	0.75	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-201	0.48	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-203	2.3	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-205	0.17	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-204		ng/g	U	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-200	0.49	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-199	3.7	ng/g	C198B	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-198	3.7	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-197	0.13	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-20	2.6	ng/g	C	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-2	0.012	ng/g	J	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-206	1.7	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-25	0.24	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-24	0.011	ng/g	J	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-23		ng/g	U	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-26	0.35	ng/g	C	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-28	2.6	ng/g	C20	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-27	0.094	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-22	0.48	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-208	0.4	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-207	0.18	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-21	1.1	ng/g	C	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-209	1.4	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-54	0.024	ng/g	J	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-9	0.031	ng/g	J	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-89	0.14	ng/g	q	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-88	4.2	ng/g	C	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-90	26	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-93	0.5	ng/g	C	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-92	6	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-91	4.2	ng/g	C88	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-87	13	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-82	2.1	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-81		ng/g	U	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-83	16	ng/g	C	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-86	13	ng/g	C	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-85	2.9	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-84	6.4	ng/g	B	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-94	0.11	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	Total Nonachlorobiphenyls	2.3	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	Total Monochlorobiphenyls	0.17	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	Total Hexachlorobiphenyls	120	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	Total Octachlorobiphenyls	15	ng/g	B	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	Total Trichlorobiphenyls	10	ng/g	q	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	Total Tetrachlorobiphenyls	57	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	Total Pentachlorobiphenyls	150	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	Total Heptachlorobiphenyls	57	ng/g	B	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-97	13	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-96	0.15	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-95	22	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-98	0.75	ng/g	C	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	Total Dichlorobiphenyls	1.4	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	Polychlorinated biphenyls, Total	410	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-99	16	ng/g	C83	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-63	0.18	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-62	0.35	ng/g	C59	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-61	12	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-64	1.9	ng/g		DNR	11

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580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-67	0.099	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-66	6.1	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-65	7.4	ng/g	C44B	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-60	0.27	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-56	1.7	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-55		ng/g	U	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-57	0.0086	ng/g	J	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-6	0.16	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-59	0.35	ng/g	C	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-58	0.054	ng/g	q	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-68	0.18	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-77	0.28	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-76	12	ng/g	C61B	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-78		ng/g	U	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-80		ng/g	U	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-8	0.65	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-79	0.26	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-75	0.35	ng/g	C59	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-70	12	ng/g	C61B	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-7	0.028	ng/g	J	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-69	6	ng/g	C49B	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-71	2.2	ng/g	C40	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-74	12	ng/g	C61B	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-73	0.091	ng/g	JC43	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-72	0.33	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-13	0.063	ng/g	JC12	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-129	22	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-128	3.4	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-130	1.7	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-133	0.67	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-132	8.1	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-131	0.31	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-127		ng/g	U	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-123	0.2	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-122	0.2	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-124	0.58	ng/g	C108	DNR	11

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580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-126		ng/g	U	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-125	13	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-134	1.4	ng/g	C	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-144	0.98	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-143	1.4	ng/g	C134	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-142		ng/g	U	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-145	0.011	ng/g	J	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-148	0.2	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-147	23	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-146	5.8	ng/g	B	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-141	3.7	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-137	0.86	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-136	4.1	ng/g	B	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-135	9.7	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-138	22	ng/g	C129B	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-140	0.56	ng/g	C139	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-14		ng/g	U	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-139	0.56	ng/g	C	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-106		ng/g	U	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-105	5	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-107	1.4	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-11	0.014	ng/g	JB	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-109	13	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-108	0.58	ng/g	C	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-100	0.5	ng/g	C93	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-10	0.01	ng/g	J	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-1	0.088	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-101	26	ng/g	C90B	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-104		ng/g	U	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-103	0.76	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-102	0.75	ng/g	C98	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-110	26	ng/g	C	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-118	16	ng/g	B	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-117	2.9	ng/g	C85B	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-119	13	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-121		ng/g	U	DNR	11

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580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-120	0.25	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-12	0.063	ng/g	JC	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-116	2.9	ng/g	C85B	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-112		ng/g	U	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-111		ng/g	U	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-113	26	ng/g	C90B	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-115	26	ng/g	C110	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-114	0.28	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-149	23	ng/g	C147B	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-18	1.2	ng/g	C	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-179	3.3	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-180	14	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-183	4.6	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-182	0.091	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-181	0.066	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-178	1.7	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-173	2.2	ng/g	C171	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-172	1.1	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-171	2.2	ng/g	C	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-174	7.2	ng/g	B	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-177	4.4	ng/g	B	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-176	0.91	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-175	0.3	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-184		ng/g	U	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-192		ng/g	U	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-191	0.28	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-190	1.3	ng/g	B	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-193	14	ng/g	C180B	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-196	1.8	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-195	1.5	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-194	3.3	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-19	0.12	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-187	9.2	ng/g	B	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-186		ng/g	U	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-185	4.6	ng/g	C183B	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-188		ng/g	U	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-189	0.22	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-157	2.4	ng/g	C156	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-156	2.4	ng/g	C	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-159	0.28	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-158	2	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-151	9.7	ng/g	C135B	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-150	0.17	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-15	0.26	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-152	0.021	ng/g	J	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-155		ng/g	U	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-154	1.1	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-153	22	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-16	0.53	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-169		ng/g	U	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-168	22	ng/g	C153B	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-170	6	ng/g	B	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-17	0.78	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-167	0.71	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-162	0.066	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-161		ng/g	U	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-160	22	ng/g	C129B	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-163	22	ng/g	C129B	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-166	3.4	ng/g	C128B	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-165		ng/g	U	DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-164	1.7	ng/g		DNR	11
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-5	0.0076	ng/g	Jq	U	25
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-206	2.6	ng/g	q	J	25
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-81	0.0055	ng/g	Jq	U	25
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	Total Nonachlorobiphenyls	3.2	ng/g	q	J	25
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	Total Hexachlorobiphenyls	120	ng/g	qB	J	25
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	Total Tetrachlorobiphenyls	56	ng/g	qB	J	25
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	Total Dichlorobiphenyls	1.3	ng/g	qB	J	25
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	Polychlorinated biphenyls, Total	410	ng/g	qB	J	25
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-145	0.011	ng/g	Jq	U	25
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-11	0.0098	ng/g	JqB	U	25
580-88908-1	J5-SC1b-60to70-82719	580-88908-30	E1668A	PCB-10	0.0096	ng/g	Jq	U	25

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-37	0.15	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-36	0.013	ng/g	J	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-38		ng/g	U	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-4	0.068	ng/g	J	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-39	0.03	ng/g	J	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-35	0.033	ng/g	J	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-30	0.43	ng/g	C18	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-3	0.02	ng/g	J	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-29	0.23	ng/g	C26	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-31	0.58	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-34	0.014	ng/g	J	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-33	0.33	ng/g	C21	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-32	0.16	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-40	0.94	ng/g	C	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-5		ng/g	U	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-49	4	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-50	0.24	ng/g	C	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-53	0.24	ng/g	C50	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-52	7.7	ng/g	B	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-51	0.22	ng/g	C45B	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-48	0.16	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-43	0.08	ng/g	JC	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-42	0.59	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-41	0.94	ng/g	C40	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-44	4	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-47	4	ng/g	C44B	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-46	0.074	ng/g	G	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-45	0.22	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-202	0.68	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-201	0.42	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-203	1.9	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-205	0.16	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-204		ng/g	U	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-200	0.4	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-199	3.2	ng/g	C198B	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-198	3.2	ng/g	CB	DNR	11

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580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-197	0.11	ng/g	q	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-20	0.79	ng/g	C	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-2	0.0079	ng/g	J	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-206	2.1	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-25	0.15	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-24	0.0037	ng/g	J	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-23		ng/g	U	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-26	0.23	ng/g	C	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-28	0.79	ng/g	C20	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-27	0.034	ng/g	J	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-22	0.14	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-208	0.58	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-207	0.19	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-21	0.33	ng/g	C	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-209	2.2	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-54	0.0062	ng/g	J	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-9	0.011	ng/g	J	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-89		ng/g	U	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-88	2.8	ng/g	C	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-90	17	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-93	0.63	ng/g	C	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-92	4.8	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-91	2.8	ng/g	C88	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-87	6.9	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-82	0.98	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-81		ng/g	U	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-83	12	ng/g	C	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-86	6.9	ng/g	C	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-85	1.4	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-84	2.8	ng/g	B	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-94	0.054	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	Total Nonachlorobiphenyls	2.9	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	Total Monochlorobiphenyls	0.064	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	Total Hexachlorobiphenyls	99	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	Total Octachlorobiphenyls	13	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	Total Trichlorobiphenyls	3.6	ng/g	q	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	Total Tetrachlorobiphenyls	29	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	Total Pentachlorobiphenyls	89	ng/g	B	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	Total Heptachlorobiphenyls	54	ng/g	B	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-97	6.9	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-96	0.068	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-95	12	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-98	0.41	ng/g	C	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	Total Dichlorobiphenyls	0.44	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	Polychlorinated biphenyls, Total	290	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-99	12	ng/g	C83	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-63	0.072	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-62	0.12	ng/g	JC59	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-61	5.5	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-64	0.71	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-67	0.039	ng/g	J	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-66	2.7	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-65	4	ng/g	C44B	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-60	0.12	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-56	0.67	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-55		ng/g	U	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-57		ng/g	U	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-6	0.064	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-59	0.12	ng/g	JC	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-58		ng/g	U	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-68	0.38	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-77	0.083	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-76	5.5	ng/g	C61B	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-78		ng/g	U	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-80		ng/g	U	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-8	0.17	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-79	0.3	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-75	0.12	ng/g	JC59	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-70	5.5	ng/g	C61B	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-7	0.01	ng/g	J	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-69	4	ng/g	C49B	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-71	0.94	ng/g	C40	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-74	5.5	ng/g	C61B	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-73	0.08	ng/g	JC43	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-72	0.39	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-13	0.029	ng/g	JC12	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-129	16	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-128	1.7	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-130	1.2	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-133	1.1	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-132	5.4	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-131	0.18	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-127		ng/g	U	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-123	0.1	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-122	0.1	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-124	0.3	ng/g	C108	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-126		ng/g	U	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-125	6.9	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-134	1	ng/g	C	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-144	0.71	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-143	1	ng/g	C134	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-142		ng/g	U	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-145	0.0087	ng/g	J	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-148	0.47	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-147	20	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-146	8	ng/g	B	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-141	2.6	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-137	0.45	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-136	3.4	ng/g	B	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-135	10	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-138	16	ng/g	C129B	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-140	0.62	ng/g	C139	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-14		ng/g	U	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-139	0.62	ng/g	C	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-106		ng/g	U	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-105	2.6	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-107	1.1	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-11	0.016	ng/g	JqB	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-109	6.9	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-108	0.3	ng/g	C	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-100	0.63	ng/g	C93	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-10		ng/g	U	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-1	0.036	ng/g	J	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-101	17	ng/g	C90B	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-104		ng/g	U	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-103	0.77	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-102	0.41	ng/g	C98	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-110	13	ng/g	C	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-118	8.6	ng/g	B	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-117	1.4	ng/g	C85B	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-119	6.9	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-121	0.073	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-120	0.37	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-12	0.029	ng/g	JC	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-116	1.4	ng/g	C85B	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-112		ng/g	U	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-111	0.13	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-113	17	ng/g	C90B	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-115	13	ng/g	C110	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-114	0.13	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-149	20	ng/g	C147B	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-18	0.43	ng/g	C	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-179	3.4	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-180	13	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-183	4	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-182	0.12	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-181	0.055	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-178	2	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-173	1.9	ng/g	C171	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-172	0.99	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-171	1.9	ng/g	C	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-174	6.1	ng/g	B	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-177	4.6	ng/g	B	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-176	0.78	ng/g		DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-175	0.25	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-184		ng/g	U	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-192		ng/g	U	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-191	0.24	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-190	1.2	ng/g	B	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-193	13	ng/g	C180B	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-196	1.6	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-195	1.4	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-194	3.1	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-19	0.038	ng/g	J	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-187	10	ng/g	B	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-186		ng/g	U	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-185	4	ng/g	C183B	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-188	0.069	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-189	0.21	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-157	1.5	ng/g	C156	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-156	1.5	ng/g	C	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-159	0.23	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-158	1.2	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-151	10	ng/g	C135B	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-150	0.34	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-15	0.068	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-152	0.0088	ng/g	J	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-155	0.019	ng/g	J	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-154	2.1	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-153	19	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-16	0.17	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-169	0.037	ng/g	J	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-168	19	ng/g	C153B	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-170	5.5	ng/g	B	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-17	0.27	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-167	0.47	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-162	0.048	ng/g	J	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-161		ng/g	U	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-160	16	ng/g	C129B	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-163	16	ng/g	C129B	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-166	1.7	ng/g	C128B	DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-165	0.084	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-164	1.3	ng/g		DNR	11
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-40	1.2	ng/g	CG	J	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-5	0.0019	ng/g	Jq	U	25
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-49	4.4	ng/g	CBG	J	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-50	0.37	ng/g	CG	J	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-53	0.37	ng/g	C50G	J	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-52	11	ng/g	BG	J	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-51	0.21	ng/g	C45BqG	UJ	14,25
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-48	0.24	ng/g	G	J	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-43	0.11	ng/g	CG	J	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-42	0.73	ng/g	G	J	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-41	1.2	ng/g	GC40	J	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-44	5.7	ng/g	CBG	J	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-47	5.7	ng/g	BC44G	J	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-46		ng/g	UG	UJ	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-45	0.21	ng/g	CBqG	UJ	14,25
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-24	0.003	ng/g	Jq	U	25
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-54	0.011	ng/g	q	J	25
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-81		ng/g	UG	UJ	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	Total Hexachlorobiphenyls	110	ng/g	Bq	J	25
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	Total Trichlorobiphenyls	4.4	ng/g	Bq	J	25
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	Total Tetrachlorobiphenyls	39	ng/g	BqG	J	14,25
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	Total Dichlorobiphenyls	0.57	ng/g	Bq	J	25
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	Polychlorinated biphenyls, Total	340	ng/g	Bq	J	25
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-63	0.096	ng/g	G	J	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-62	0.15	ng/g	C59G	J	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-64	1	ng/g	G	J	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-67		ng/g	UG	UJ	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-66	3.2	ng/g	BG	J	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-65	5.7	ng/g	BC44G	J	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-60	0.23	ng/g	G	J	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-56	0.95	ng/g	G	J	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-55		ng/g	UG	UJ	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-57		ng/g	UG	UJ	14

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-59	0.15	ng/g	CG	J	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-58		ng/g	UG	UJ	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-68	0.42	ng/g	BG	J	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-77	0.13	ng/g	G	J	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-78		ng/g	UG	UJ	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-80		ng/g	UG	UJ	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-79	0.24	ng/g	G	J	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-75	0.15	ng/g	C59G	J	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-7	0.0094	ng/g	Jq	U	25
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-69	4.4	ng/g	BC49G	J	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-71	1.2	ng/g	GC40	J	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-73	0.11	ng/g	C43G	J	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-72	0.4	ng/g	G	J	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-127		ng/g	UG	UJ	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-123	0.17	ng/g	G	J	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-122	0.15	ng/g	BG	J	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-126	0.015	ng/g	G	J	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-145	0.0053	ng/g	Jq	U	25
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-14	0.0009	ng/g	Jq	U	6
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-106		ng/g	UG	UJ	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-105	4.3	ng/g	BG	J	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-107	1.4	ng/g	BG	J	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-10	0.0032	ng/g	Jq	U	25
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-118	12	ng/g	BG	J	14
580-88908-1	J5-SC1b-70to80-82719	580-88908-31	E1668A	PCB-114	0.24	ng/g	G	J	14
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-37	0.0021	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-36		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-38		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-4		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-39		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-35		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-30	0.0062	ng/g	JqC18	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-3		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-29	0.002	ng/g	JqC26	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-31	0.0082	ng/g	J	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-34		ng/g	U	DNR	11

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580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-33	0.0045	ng/g	JqC21	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-32	0.0031	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-40	0.014	ng/g	JC	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-5		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-49	0.045	ng/g	JCB	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-50		ng/g	UC	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-53		ng/g	UC50	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-52	0.066	ng/g	B	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-51		ng/g	UC45	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-48		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-43		ng/g	UC	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-42	0.0072	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-41	0.014	ng/g	JC40	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-44	0.045	ng/g	JCB	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-47	0.045	ng/g	JC44B	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-46		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-45		ng/g	UC	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-202	0.0075	ng/g	J	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-201		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-203	0.02	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-205		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-204		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-200	0.0059	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-199	0.033	ng/g	JqC198B	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-198	0.033	ng/g	JqCB	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-197		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-20	0.012	ng/g	JC	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-2		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-206	0.22	ng/g	q	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-25	0.0033	ng/g	J	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-24		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-23		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-26	0.002	ng/g	JqC	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-28	0.012	ng/g	JC20	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-27		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-22	0.0025	ng/g	J	DNR	11

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580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-208		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-207		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-21	0.0045	ng/g	JqC	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-209	0.028	ng/g	J	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-54		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-9		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-89		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-88	0.027	ng/g	JC	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-90	0.13	ng/g	JCB	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-93	0.0057	ng/g	JqC	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-92	0.037	ng/g	J	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-91	0.027	ng/g	JC88	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-87	0.052	ng/g	JC86	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-82		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-81		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-83	0.1	ng/g	C	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-86	0.052	ng/g	JC	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-85	0.0092	ng/g	JCB	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-84	0.022	ng/g	JB	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-94		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	Total Nonachlorobiphenyls	0.22	ng/g	q	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	Total Monochlorobiphenyls	0.0032	ng/g	J	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	Total Hexachlorobiphenyls	0.81	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	Total Octachlorobiphenyls	0.12	ng/g	B	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	Total Trichlorobiphenyls	0.055	ng/g	J	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	Total Tetrachlorobiphenyls	0.29	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	Total Pentachlorobiphenyls	0.7	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	Total Heptachlorobiphenyls	0.5	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-97	0.052	ng/g	JC86	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-96		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-95	0.1	ng/g		DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-98		ng/g	UC	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	Total Dichlorobiphenyls	0.0092	ng/g	JB	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	Polychlorinated biphenyls, Total	2.7	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-99	0.1	ng/g	C83	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-63		ng/g	U	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-62		ng/g	UC59	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-61	0.053	ng/g	JCB	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-64	0.0081	ng/g	J	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-67		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-66	0.029	ng/g	J	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-65	0.045	ng/g	JC44B	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-60		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-56	0.0086	ng/g	J	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-55		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-57		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-6		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-59		ng/g	UC	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-58		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-68	0.0037	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-77		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-76	0.053	ng/g	JC61B	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-78		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-80		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-8	0.0029	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-79		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-75		ng/g	UC59	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-70	0.053	ng/g	JC61B	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-7		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-69	0.045	ng/g	JC49B	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-71	0.014	ng/g	JC40	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-74	0.053	ng/g	JC61B	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-73		ng/g	UC43	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-72	0.0055	ng/g	J	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-13		ng/g	UC12	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-129	0.13	ng/g	JCB	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-128	0.015	ng/g	JqCB	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-130	0.009	ng/g	J	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-133	0.0083	ng/g	J	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-132	0.044	ng/g	J	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-131		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-127		ng/g	U	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-123		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-122		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-124		ng/g	UC108	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-126		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-125	0.052	ng/g	JC86	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-134	0.0074	ng/g	JqC	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-144	0.0069	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-143	0.0074	ng/g	JqC134	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-142		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-145		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-148		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-147	0.17	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-146	0.059	ng/g	B	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-141	0.022	ng/g	J	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-137	0.0028	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-136	0.032	ng/g	JB	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-135	0.078	ng/g	JCB	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-138	0.13	ng/g	JC129B	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-140	0.0042	ng/g	JqC139	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-14		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-139	0.0042	ng/g	JqC	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-106		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-105	0.016	ng/g	J	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-107	0.0094	ng/g	J	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-11	0.0063	ng/g	JB	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-109	0.052	ng/g	JC86	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-108		ng/g	UC	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-100	0.0057	ng/g	JqC93	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-10		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-1	0.0032	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-101	0.13	ng/g	JC90B	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-104		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-103	0.008	ng/g	J	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-102		ng/g	UC98	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-110	0.11	ng/g	C	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-118	0.067	ng/g	B	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-117	0.0092	ng/g	JC85B	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-119	0.052	ng/g	JC86	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-121		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-120	0.0035	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-12		ng/g	UC	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-116	0.0092	ng/g	JC85B	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-112		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-111		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-113	0.13	ng/g	JC90B	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-115	0.11	ng/g	C110	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-114		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-149	0.17	ng/g	C147B	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-18	0.0062	ng/g	JqC	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-179	0.029	ng/g	J	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-180	0.12	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-183	0.038	ng/g	JCB	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-182		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-181	0.003	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-178	0.018	ng/g	J	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-173	0.019	ng/g	JqC171	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-172	0.01	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-171	0.019	ng/g	JqC	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-174	0.06	ng/g	B	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-177	0.043	ng/g	JB	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-176	0.007	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-175		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-184		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-192		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-191		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-190	0.012	ng/g	JqB	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-193	0.12	ng/g	C180B	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-196	0.017	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-195	0.0073	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-194	0.025	ng/g	J	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-19		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-187	0.087	ng/g	B	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-186		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-185	0.038	ng/g	JC183B	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-188		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-189		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-157	0.012	ng/g	JqC156	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-156	0.012	ng/g	JqC	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-159	0.003	ng/g	J	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-158	0.012	ng/g	J	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-151	0.078	ng/g	JC135B	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-150	0.0032	ng/g	J	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-15		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-152		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-155		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-154	0.015	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-153	0.16	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-16	0.0079	ng/g	J	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-169		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-168	0.16	ng/g	C153B	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-170	0.052	ng/g	B	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-17	0.0032	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-167	0.0044	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-162		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-161		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-160	0.13	ng/g	JC129B	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-163	0.13	ng/g	JC129B	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-166	0.015	ng/g	JqC128B	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-165		ng/g	U	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-164	0.01	ng/g	J	DNR	11
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-39	0.00042	ng/g	Jq	U	25
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-35	0.0003	ng/g	Jq	U	25
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-32	0.0024	ng/g	Jq	U	25
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-50	0.0029	ng/g	JCq	U	25
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-53	0.0029	ng/g	JC50q	U	25
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-202	0.0075	ng/g	JBq	U	25
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-201	0.0037	ng/g	JBq	U	25
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-197	0.0016	ng/g	JBq	U	25

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-22	0.0021	ng/g	JB	U	7
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-54	0.00056	ng/g	Jq	U	25
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-9	0.00062	ng/g	Jq	U	25
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-82	0.0089	ng/g	JBq	U	25
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	Total Hexachlorobiphenyls	0.87	ng/g	Bq	J	25
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	Total Octachlorobiphenyls	0.12	ng/g	Bq	J	25
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	Total Trichlorobiphenyls	0.051	ng/g	Bq	J	25
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	Total Tetrachlorobiphenyls	0.3	ng/g	Bq	J	25
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	Total Pentachlorobiphenyls	0.78	ng/g	Bq	J	25
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	Total Heptachlorobiphenyls	0.48	ng/g	Bq	J	25
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-96	0.00075	ng/g	Jq	U	25
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	Total Dichlorobiphenyls	0.013	ng/g	JBq	U	25
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	Polychlorinated biphenyls, Total	2.7	ng/g	Bq	J	25
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-64	0.0069	ng/g	Jq	U	25
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-77	0.0013	ng/g	Jq	U	25
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-8	0.0024	ng/g	Jq	U	25
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-72	0.0038	ng/g	Jq	U	25
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-124	0.002	ng/g	JqC108	U	25
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-134	0.0082	ng/g	JCq	U	25
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-143	0.0082	ng/g	JC134q	U	25
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-140	0.0046	ng/g	JC139q	U	25
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-139	0.0046	ng/g	JCq	U	25
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-108	0.002	ng/g	JCq	U	25
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-114	0.0011	ng/g	Jq	U	25
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-196	0.014	ng/g	Bq	J	25
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-19	0.0011	ng/g	Jq	U	25
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-189	0.0019	ng/g	JBq	U	25
580-88908-1	J5-SC1b-80to90-82719	580-88908-32	E1668A	PCB-159	0.0018	ng/g	Jq	U	25
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-37	0.0023	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-36		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-38		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-4		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-39		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-35		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-30	0.0063	ng/g	JqC18	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-3		ng/g	U	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-29	0.0023	ng/g	JqC26	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-31	0.0097	ng/g	J	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-34		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-33	0.0062	ng/g	JqC21	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-32	0.0042	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-40	0.015	ng/g	JqC	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-5		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-49	0.056	ng/g	JCB	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-50		ng/g	UC	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-53		ng/g	UC50	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-52	0.086	ng/g	B	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-51		ng/g	UC45	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-48		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-43		ng/g	UC	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-42	0.011	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-41	0.015	ng/g	JqC40	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-44	0.058	ng/g	JCB	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-47	0.058	ng/g	JC44B	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-46		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-45		ng/g	UC	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-202	0.0047	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-201	0.0032	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-203	0.023	ng/g	J	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-205	0.004	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-204	0.0012	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-200	0.0041	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-199	0.038	ng/g	JC198B	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-198	0.038	ng/g	JCB	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-197	0.002	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-20	0.016	ng/g	JC	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-2		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-206	0.024	ng/g	J	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-25	0.0032	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-24		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-23		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-26	0.0023	ng/g	JqC	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-28	0.016	ng/g	JC20	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-27		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-22		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-208		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-207		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-21	0.0062	ng/g	JqC	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-209	0.021	ng/g	J	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-54		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-9		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-89		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-88	0.034	ng/g	JC	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-90	0.15	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-93	0.0041	ng/g	JqC	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-92	0.047	ng/g	J	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-91	0.034	ng/g	JC88	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-87	0.057	ng/g	JC86	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-82		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-81		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-83	0.12	ng/g	C	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-86	0.057	ng/g	JC	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-85	0.0096	ng/g	JqCB	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-84	0.023	ng/g	JqB	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-94		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	Total Nonachlorobiphenyls	0.024	ng/g	J	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	Total Monochlorobiphenyls		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	Total Hexachlorobiphenyls	0.92	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	Total Octachlorobiphenyls	0.15	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	Total Trichlorobiphenyls	0.059	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	Total Tetrachlorobiphenyls	0.35	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	Total Pentachlorobiphenyls	0.8	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	Total Heptachlorobiphenyls	0.56	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-97	0.057	ng/g	JC86	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-96		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-95	0.12	ng/g		DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-98	0.0047	ng/g	JqC	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	Total Dichlorobiphenyls	0.005	ng/g	JqB	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	Polychlorinated biphenyls, Total	2.9	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-99	0.12	ng/g	C83	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-63		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-62	0.003	ng/g	JqC59	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-61	0.056	ng/g	JCB	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-64	0.0094	ng/g	J	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-67		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-66	0.039	ng/g	J	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-65	0.058	ng/g	JC44B	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-60		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-56	0.0077	ng/g	J	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-55		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-57		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-6		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-59	0.003	ng/g	JqC	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-58		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-68	0.0048	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-77		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-76	0.056	ng/g	JC61B	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-78		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-80		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-8		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-79		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-75	0.003	ng/g	JqC59	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-70	0.056	ng/g	JC61B	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-7		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-69	0.056	ng/g	JC49B	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-71	0.015	ng/g	JqC40	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-74	0.056	ng/g	JC61B	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-73		ng/g	UC43	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-72	0.0056	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-13		ng/g	UC12	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-129	0.14	ng/g	JCB	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-128	0.019	ng/g	JCB	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-130	0.0085	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-133	0.0071	ng/g	Jq	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-132	0.048	ng/g	J	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-131		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-127		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-123		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-122		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-124	0.0023	ng/g	JqC108	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-126		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-125	0.057	ng/g	JC86	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-134	0.0074	ng/g	JC	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-144	0.0047	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-143	0.0074	ng/g	JC134	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-142		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-145		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-148	0.0043	ng/g	J	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-147	0.2	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-146	0.067	ng/g	B	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-141	0.024	ng/g	J	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-137	0.004	ng/g	J	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-136	0.039	ng/g	JB	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-135	0.082	ng/g	JCB	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-138	0.14	ng/g	JC129B	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-140	0.0055	ng/g	JC139	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-14		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-139	0.0055	ng/g	JC	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-106		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-105	0.017	ng/g	J	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-107	0.01	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-11	0.005	ng/g	JqB	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-109	0.057	ng/g	JC86	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-108	0.0023	ng/g	JqC	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-100	0.0041	ng/g	JqC93	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-10		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-1		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-101	0.15	ng/g	C90B	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-104		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-103	0.0095	ng/g	J	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-102	0.0047	ng/g	JqC98	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-110	0.12	ng/g	C	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-118	0.069	ng/g	B	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-117	0.0096	ng/g	JqC85B	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-119	0.057	ng/g	JC86	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-121		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-120	0.0071	ng/g	J	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-12		ng/g	UC	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-116	0.0096	ng/g	JqC85B	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-112		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-111		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-113	0.15	ng/g	C90B	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-115	0.12	ng/g	C110	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-114		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-149	0.2	ng/g	C147B	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-18	0.0063	ng/g	JqC	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-179	0.032	ng/g	J	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-180	0.13	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-183	0.039	ng/g	JCB	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-182	0.0033	ng/g	J	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-181	0.0023	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-178	0.016	ng/g	J	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-173	0.018	ng/g	JqC171	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-172	0.015	ng/g	J	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-171	0.018	ng/g	JqC	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-174	0.067	ng/g	B	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-177	0.048	ng/g	JB	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-176	0.0085	ng/g	J	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-175	0.0052	ng/g	J	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-184		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-192	0.0013	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-191	0.005	ng/g	J	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-190	0.014	ng/g	JB	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-193	0.13	ng/g	C180B	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-196	0.019	ng/g	J	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-195	0.018	ng/g	J	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-194	0.034	ng/g	J	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-19		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-187	0.092	ng/g	B	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-186		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-185	0.039	ng/g	JC183B	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-188		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-189	0.0057	ng/g	J	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-157	0.014	ng/g	JqC156	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-156	0.014	ng/g	JqC	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-159	0.0033	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-158	0.012	ng/g	J	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-151	0.082	ng/g	JC135B	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-150		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-15		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-152		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-155		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-154	0.02	ng/g	J	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-153	0.19	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-16	0.0036	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-169	0.0022	ng/g	J	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-168	0.19	ng/g	C153B	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-170	0.056	ng/g	B	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-17	0.0049	ng/g	J	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-167	0.0045	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-162	0.0013	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-161		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-160	0.14	ng/g	JC129B	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-163	0.14	ng/g	JC129B	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-166	0.019	ng/g	JC128B	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-165		ng/g	U	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-164	0.014	ng/g	J	DNR	11
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-36	0.0015	ng/g	Jq	U	25
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-5	0.0011	ng/g	Jq	U	25
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-202	0.011	ng/g	qB	J	25
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-197	0.0018	ng/g	JqB	U	25
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-206	0.021	ng/g	q	J	25

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-27	0.0034	ng/g	Jq	U	25
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-208	0.0052	ng/g	Jq	U	25
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-54	0.00081	ng/g	Jq	U	25
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-9	0.004	ng/g	Jq	U	25
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-93	0.015	ng/g	JqC	U	25
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-81	0.0013	ng/g	Jq	U	25
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	Total Nonachlorobiphenyls	0.029	ng/g	q	J	25
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	Total Hexachlorobiphenyls	4.3	ng/g	qB	J	25
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	Total Octachlorobiphenyls	0.17	ng/g	qB	J	25
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	Total Trichlorobiphenyls	0.4	ng/g	qB	J	25
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	Total Tetrachlorobiphenyls	2.8	ng/g	qB	J	25
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	Total Pentachlorobiphenyls	8.5	ng/g	qB	J	25
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	Total Heptachlorobiphenyls	1	ng/g	qB	J	25
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	Total Dichlorobiphenyls	0.1	ng/g	qB	J	25
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	Polychlorinated biphenyls, Total	17	ng/g	qB	J	25
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-55	0.0056	ng/g	Jq	U	25
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-58	0.0019	ng/g	Jq	U	25
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-7	0.002	ng/g	Jq	U	25
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-126	0.0068	ng/g	Jq	U	25
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-148	0.0037	ng/g	Jq	U	25
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-11	0.0096	ng/g	JqB	U	25
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-100	0.015	ng/g	JqC93	U	25
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-120	0.0084	ng/g	Jq	U	25
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-182	0.0018	ng/g	Jq	U	25
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-175	0.0059	ng/g	Jq	U	25
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-191	0.0062	ng/g	Jq	U	25
580-88908-1	J5-SC1b-90to100-82719	580-88908-33	E1668A	PCB-152	0.0012	ng/g	Jq	U	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-37	0.012	ng/g	J	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-36	0.0085	ng/g	J	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-38		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-4	0.011	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-39		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-35		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-30	0.033	ng/g	JqC18	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-3		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-29	0.0076	ng/g	JC26	DNR	11

Qualified Data Summary Table
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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-31	0.045	ng/g	J	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-34		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-33	0.022	ng/g	JC21	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-32	0.0085	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-40	0.069	ng/g	JC	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-5		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-49	0.25	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-50	0.03	ng/g	JC	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-53	0.03	ng/g	JC50	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-52	1.6	ng/g	B	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-51		ng/g	UC45	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-48	0.016	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-43		ng/g	UC	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-42	0.036	ng/g	J	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-41	0.069	ng/g	JC40	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-44	0.52	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-47	0.52	ng/g	C44B	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-46		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-45		ng/g	UC	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-202	0.027	ng/g	J	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-201	0.015	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-203	0.086	ng/g		DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-205	0.006	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-204		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-200	0.02	ng/g	J	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-199	0.12	ng/g	C198B	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-198	0.12	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-197	0.0019	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-20	0.036	ng/g	JC	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-2		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-206	0.077	ng/g		DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-25	0.0046	ng/g	J	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-24		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-23		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-26	0.0076	ng/g	JC	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-28	0.036	ng/g	JC20	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-27	0.0023	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-22	0.016	ng/g	J	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-208		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-207		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-21	0.022	ng/g	JC	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-209	0.0091	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-54		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-9		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-89	0.027	ng/g	J	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-88	0.34	ng/g	C	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-90	3	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-93	0.029	ng/g	JC	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-92	0.59	ng/g		DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-91	0.34	ng/g	C88	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-87	2.1	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-82	0.37	ng/g		DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-81		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-83	1.5	ng/g	C	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-86	2.1	ng/g	C	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-85	0.43	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-84	0.88	ng/g	B	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-94	0.0082	ng/g	J	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	Total Nonachlorobiphenyls	0.077	ng/g		DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	Total Monochlorobiphenyls	0.0058	ng/g	J	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	Total Hexachlorobiphenyls	12	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	Total Octachlorobiphenyls	0.5	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	Total Trichlorobiphenyls	0.23	ng/g	q	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	Total Tetrachlorobiphenyls	4	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	Total Pentachlorobiphenyls	19	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	Total Heptachlorobiphenyls	2.5	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-97	2.1	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-96	0.013	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-95	2.7	ng/g		DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-98	0.07	ng/g	JC	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	Total Dichlorobiphenyls	0.046	ng/g	JqB	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	Polychlorinated biphenyls, Total	38	ng/g	qB	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-99	1.5	ng/g	C83	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-63	0.0096	ng/g	J	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-62		ng/g	UC59	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-61	0.99	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-64	0.12	ng/g		DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-67		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-66	0.22	ng/g		DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-65	0.52	ng/g	C44B	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-60	0.037	ng/g	J	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-56	0.098	ng/g		DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-55		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-57		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-6		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-59		ng/g	UC	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-58		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-68		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-77	0.0087	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-76	0.99	ng/g	C61B	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-78		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-80		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-8	0.02	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-79	0.011	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-75		ng/g	UC59	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-70	0.99	ng/g	C61B	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-7		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-69	0.25	ng/g	C49B	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-71	0.069	ng/g	JC40	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-74	0.99	ng/g	C61B	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-73		ng/g	UC43	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-72		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-13		ng/g	UC12	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-129	2.8	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-128	0.52	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-130	0.2	ng/g		DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-133	0.039	ng/g	J	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-132	1.1	ng/g		DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-131	0.055	ng/g		DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-127	0.0085	ng/g	J	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-123	0.034	ng/g	J	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-122	0.035	ng/g	J	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-124	0.11	ng/g	C108	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-126		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-125	2.1	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-134	0.19	ng/g	C	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-144	0.13	ng/g		DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-143	0.19	ng/g	C134	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-142		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-145	0.0037	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-148		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-147	1.9	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-146	0.35	ng/g	B	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-141	0.46	ng/g		DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-137	0.17	ng/g		DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-136	0.41	ng/g	B	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-135	0.83	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-138	2.8	ng/g	C129B	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-140	0.061	ng/g	JC139	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-14		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-139	0.061	ng/g	JC	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-106		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-105	0.91	ng/g		DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-107	0.15	ng/g		DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-11	0.0068	ng/g	JqB	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-109	2.1	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-108	0.11	ng/g	C	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-100	0.029	ng/g	JC93	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-10		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-1	0.0058	ng/g	J	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-101	3	ng/g	C90B	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-104		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-103	0.013	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-102	0.07	ng/g	JC98	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-110	3.4	ng/g	C	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-118	2.2	ng/g	B	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-117	0.43	ng/g	C85B	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-119	2.1	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-121		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-120		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-12		ng/g	UC	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-116	0.43	ng/g	C85B	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-112	0.0032	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-111		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-113	3	ng/g	C90B	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-115	3.4	ng/g	C110	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-114	0.066	ng/g		DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-149	1.9	ng/g	C147B	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-18	0.033	ng/g	JqC	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-179	0.12	ng/g		DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-180	0.59	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-183	0.22	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-182	0.0044	ng/g	J	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-181	0.0086	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-178	0.057	ng/g		DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-173	0.13	ng/g	C171	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-172	0.061	ng/g		DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-171	0.13	ng/g	C	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-174	0.31	ng/g	B	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-177	0.19	ng/g	B	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-176	0.044	ng/g	J	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-175	0.014	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-184		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-192		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-191	0.018	ng/g	J	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-190	0.071	ng/g	B	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-193	0.59	ng/g	C180B	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-196	0.065	ng/g		DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-195	0.047	ng/g	J	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-194	0.11	ng/g		DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-19	0.0062	ng/g	J	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-187	0.3	ng/g	B	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-186		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-185	0.22	ng/g	C183B	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-188		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-189	0.014	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-157	0.41	ng/g	C156	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-156	0.41	ng/g	C	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-159	0.014	ng/g	J	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-158	0.32	ng/g		DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-151	0.83	ng/g	C135B	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-150	0.0033	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-15	0.0084	ng/g	J	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-152	0.0036	ng/g	J	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-155		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-154	0.028	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-153	1.8	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-16	0.016	ng/g	J	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-169		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-168	1.8	ng/g	C153B	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-170	0.35	ng/g	B	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-17	0.016	ng/g	J	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-167	0.11	ng/g		DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-162	0.012	ng/g	J	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-161		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-160	2.8	ng/g	C129B	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-163	2.8	ng/g	C129B	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-166	0.52	ng/g	C128B	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-165		ng/g	U	DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-164	0.19	ng/g		DNR	11
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-29	0.0011	ng/g	JC26Bq	U	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-31	0.0029	ng/g	JBq	U	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-32	0.0018	ng/g	Jq	U	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-49	0.025	ng/g	CB	U	6
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-42	0.0028	ng/g	Jq	U	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-203	0.0071	ng/g	Jq	U	25

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580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-206	0.038	ng/g	q	J	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-25	0.00072	ng/g	Jq	U	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-26	0.0011	ng/g	JCBq	U	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-54	0.003	ng/g	Jq	U	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-93	0.0037	ng/g	JCq	U	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-82	0.0035	ng/g	JBq	U	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-83	0.037	ng/g	CBq	J	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-84	0.0073	ng/g	JBq	U	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	Total Nonachlorobiphenyls	0.038	ng/g	q	J	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	Total Monochlorobiphenyls	0.00074	ng/g	Jq	U	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	Total Hexachlorobiphenyls	0.3	ng/g	Bq	J	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	Total Octachlorobiphenyls	0.045	ng/g	Bq	J	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	Total Trichlorobiphenyls	0.018	ng/g	JBq	U	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	Total Tetrachlorobiphenyls	0.16	ng/g	Bq	J	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	Total Pentachlorobiphenyls	0.3	ng/g	Bq	J	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	Total Heptachlorobiphenyls	0.17	ng/g	Bq	J	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-95	0.05	ng/g	B	U	6
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	Total Dichlorobiphenyls	0.0055	ng/g	JBq	U	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	Polychlorinated biphenyls, Total	1.1	ng/g	Bq	J	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-99	0.037	ng/g	C83Bq	J	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-64	0.0014	ng/g	Jq	U	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-66	0.0066	ng/g	JBq	U	6
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-56	0.0025	ng/g	Jq	U	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-68	0.0015	ng/g	JBq	U	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-8	0.0017	ng/g	Jq	U	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-69	0.025	ng/g	BC49	U	6
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-128	0.0065	ng/g	JCB	U	6
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-130	0.0039	ng/g	JBq	U	6
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-133	0.0013	ng/g	Jq	U	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-144	0.0027	ng/g	Jq	U	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-137	0.0012	ng/g	Jq	U	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-105	0.0059	ng/g	JBq	U	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-107	0.003	ng/g	JBq	U	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-100	0.0037	ng/g	JC93q	U	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-1	0.00074	ng/g	Jq	U	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-179	0.0097	ng/g	B	U	6

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-178	0.0047	ng/g	JBq	U	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-173	0.0064	ng/g	JC171B	U	6
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-171	0.0064	ng/g	JCB	U	6
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-175	0.0014	ng/g	Jq	U	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-194	0.0095	ng/g	JB	U	6
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-157	0.0039	ng/g	JC156Bq	U	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-156	0.0039	ng/g	JCBq	U	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-150	0.00094	ng/g	Jq	U	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-154	0.0055	ng/g	Jq	U	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-17	0.0016	ng/g	JBq	U	25
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-166	0.0065	ng/g	JC128B	U	6
580-88908-1	J5-SC1b-100to110-82719	580-88908-34	E1668A	PCB-164	0.0042	ng/g	JBq	U	25
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-37	0.3	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-36		ng/g	U	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-38	0.018	ng/g	J	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-4	0.5	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-39	0.028	ng/g	J	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-35	0.024	ng/g	J	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-30	0.53	ng/g	C18	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-3	0.22	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-29	0.22	ng/g	C26	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-31	0.94	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-34	0.012	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-33	1	ng/g	C21	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-32	2.6	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-40	4.2	ng/g	C	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-5	0.014	ng/g	J	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-49	16	ng/g	GCB	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-50	8.3	ng/g	GC	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-53	8.3	ng/g	GC50	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-52	14	ng/g	GB	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-51	22	ng/g	GC45B	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-48	0.2	ng/g	qG	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-43	1.3	ng/g	GC	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-42	0.81	ng/g	G	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-41	4.2	ng/g	C40	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-44	41	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-47	41	ng/g	C44B	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-46	0.52	ng/g	G	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-45	22	ng/g	GCB	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-202	1.2	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-201	0.76	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-203	3.8	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-205	0.31	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-204		ng/g	U	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-200	0.75	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-199	5.9	ng/g	C198B	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-198	5.9	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-197	0.24	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-20	1.9	ng/g	C	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-2	0.12	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-206	1.9	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-25	0.44	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-24		ng/g	U	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-23		ng/g	U	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-26	0.22	ng/g	C	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-28	1.9	ng/g	C20	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-27	0.2	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-22	0.2	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-208	0.44	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-207	0.23	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-21	1	ng/g	C	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-209	0.51	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-54	2.7	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-9	0.047	ng/g	J	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-89		ng/g	U	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-88	11	ng/g	C	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-90	36	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-93	9	ng/g	C	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-92	8.8	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-91	11	ng/g	C88	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-87	15	ng/g	C86	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-82	2.1	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-81		ng/g	UG	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-83	18	ng/g	C	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-86	15	ng/g	C	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-85	4.3	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-84	5.8	ng/g	B	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-94	2.5	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	Total Nonachlorobiphenyls	2.6	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	Total Monochlorobiphenyls	0.78	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	Total Hexachlorobiphenyls	170	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	Total Octachlorobiphenyls	25	ng/g	B	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	Total Trichlorobiphenyls	11	ng/g	q	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	Total Tetrachlorobiphenyls	130	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	Total Pentachlorobiphenyls	190	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	Total Heptachlorobiphenyls	93	ng/g	B	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-97	15	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-96	1.5	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-95	23	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-98	2.3	ng/g	C	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	Total Dichlorobiphenyls	1.7	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	Polychlorinated biphenyls, Total	630	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-99	18	ng/g	C83	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-63	0.33	ng/g	G	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-62	1.2	ng/g	C59	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-61	7.4	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-64	1.1	ng/g	G	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-67	0.18	ng/g	G	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-66	3.6	ng/g	G	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-65	41	ng/g	C44B	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-60	0.19	ng/g	G	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-56	0.87	ng/g	G	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-55		ng/g	UG	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-57		ng/g	UG	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-6	0.14	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-59	1.2	ng/g	C	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-58		ng/g	UG	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-68	0.65	ng/g	G	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-77	0.27	ng/g	G	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-76	7.4	ng/g	C61B	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-78		ng/g	UG	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-80		ng/g	UG	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-8	0.44	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-79	0.22	ng/g	G	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-75	1.2	ng/g	C59	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-70	7.4	ng/g	C61B	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-7	0.035	ng/g	J	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-69	16	ng/g	GC49B	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-71	4.2	ng/g	C40	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-74	7.4	ng/g	C61B	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-73	1.3	ng/g	GC43	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-72	0.24	ng/g	G	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-13	0.075	ng/g	JC12	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-129	31	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-128	3.3	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-130	2.1	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-133	1.8	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-132	10	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-131	0.36	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-127	0.046	ng/g	J	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-123	0.16	ng/g	q	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-122	0.18	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-124	0.58	ng/g	C108	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-126	0.046	ng/g	J	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-125	15	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-134	2.4	ng/g	C	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-144	1.4	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-143	2.4	ng/g	C134	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-142		ng/g	U	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-145		ng/g	U	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-148	0.74	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-147	37	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-146	9	ng/g	B	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-141	5.1	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-137	0.95	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-136	6.2	ng/g	B	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-135	18	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-138	31	ng/g	C129B	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-140	0.85	ng/g	C139	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-14		ng/g	U	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-139	0.85	ng/g	C	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-106		ng/g	U	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-105	4.9	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-107	1.7	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-11	0.13	ng/g	B	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-109	15	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-108	0.58	ng/g	C	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-100	9	ng/g	C93	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-10	0.014	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-1	0.44	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-101	36	ng/g	C90B	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-104	0.62	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-103	3.1	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-102	2.3	ng/g	C98	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-110	25	ng/g	C	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-118	15	ng/g	B	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-117	4.3	ng/g	C85B	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-119	15	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-121	0.27	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-120	0.4	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-12	0.075	ng/g	JC	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-116	4.3	ng/g	C85B	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-112		ng/g	U	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-111	0.21	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-113	36	ng/g	C90B	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-115	25	ng/g	C110	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-114	0.34	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-149	37	ng/g	C147B	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-18	0.53	ng/g	C	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-179	5.9	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-180	23	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-183	6.9	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-182	0.21	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-181	0.12	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-178	3.3	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-173	3.4	ng/g	C171	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-172	1.9	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-171	3.4	ng/g	C	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-174	10	ng/g	B	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-177	7.3	ng/g	B	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-176	1.4	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-175	0.44	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-184		ng/g	U	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-192		ng/g	U	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-191	0.49	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-190	2.2	ng/g	B	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-193	23	ng/g	C180B	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-196	3.1	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-195	2.8	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-194	6.1	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-19	0.97	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-187	15	ng/g	B	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-186		ng/g	U	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-185	6.9	ng/g	C183B	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-188	0.2	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-189	0.44	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-157	2.8	ng/g	C156	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-156	2.8	ng/g	C	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-159	0.4	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-158	2.6	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-151	18	ng/g	C135B	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-150	0.85	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-15	0.29	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-152	0.83	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-155	0.081	ng/g		DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-154	2.7	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-153	29	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-16	0.2	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-169		ng/g	U	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-168	29	ng/g	C153B	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-170	11	ng/g	B	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-17	1.1	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-167	0.98	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-162	0.083	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-161	0.018	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-160	31	ng/g	C129B	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-163	31	ng/g	C129B	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-166	3.3	ng/g	C128B	DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-165	0.26	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-164	2.4	ng/g		DNR	11
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-81	0.046	ng/g	Jq	U	25
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	Total Hexachlorobiphenyls	290	ng/g	Bq	J	25
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	Total Tetrachlorobiphenyls	200	ng/g	Bq	J	25
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	Polychlorinated biphenyls, Total	1100	ng/g	Bq	J	25
580-88908-1	J5-SC1b-00to10-82719	580-88908-35	E1668A	PCB-145	0.037	ng/g	Jq	U	25
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-37	1.1	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-36		ng/g	U	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-38		ng/g	U	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-4	0.87	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-39	0.16	ng/g	J	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-35	0.11	ng/g	J	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-30	2.2	ng/g	C18	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-3	0.66	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-29	0.82	ng/g	C26	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-31	3.3	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-34	0.065	ng/g	J	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-33	2.1	ng/g	C21	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-32	1.1	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-40	5.7	ng/g	C	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-5		ng/g	U	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-49	18	ng/g	CB	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-50	2.4	ng/g	C	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-53	2.4	ng/g	C50	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-52	46	ng/g	B	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-51	2.2	ng/g	C45B	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-48	1.1	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-43		ng/g	UC	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-42	3.8	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-41	5.7	ng/g	C40	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-44	24	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-47	24	ng/g	C44B	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-46	0.53	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-45	2.2	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-202	1.2	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-201	0.75	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-203	3.6	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-205	0.25	ng/g	q	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-204		ng/g	U	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-200	0.79	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-199	6	ng/g	C198B	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-198	6	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-197	0.15	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-20	4.9	ng/g	C	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-2	0.097	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-206	2.9	ng/g	q	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-25	0.57	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-24	0.044	ng/g	J	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-23		ng/g	U	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-26	0.82	ng/g	C	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-28	4.9	ng/g	C20	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-27	0.2	ng/g	J	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-22	0.94	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-208	0.63	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-207	0.28	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-21	2.1	ng/g	C	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-209	1.6	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-54	0.12	ng/g	J	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-9	0.21	ng/g	J	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-89	0.58	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-88	12	ng/g	C	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-90	86	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-93	1.5	ng/g	C	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-92	18	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-91	12	ng/g	C88	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-87	49	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-82	8	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-81	1.2	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-83	50	ng/g	C	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-86	49	ng/g	C	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-85	11	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-84	22	ng/g	B	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-94	0.39	ng/g	q	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	Total Nonachlorobiphenyls	3.8	ng/g	q	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	Total Monochlorobiphenyls	2.3	ng/g	q	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	Total Hexachlorobiphenyls	330	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	Total Octachlorobiphenyls	23	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	Total Trichlorobiphenyls	20	ng/g	q	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	Total Tetrachlorobiphenyls	170	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	Total Pentachlorobiphenyls	510	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	Total Heptachlorobiphenyls	110	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-97	49	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-96	0.53	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-95	69	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-98	2.9	ng/g	C	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	Total Dichlorobiphenyls	5	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	Polychlorinated biphenyls, Total	1200	ng/g	qB	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-99	50	ng/g	C83	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-63	0.57	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-62	0.91	ng/g	C59	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-61	35	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-64	5.6	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-67	0.24	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-66	16	ng/g		DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-65	24	ng/g	C44B	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-60	0.81	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-56	4.2	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-55		ng/g	U	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-57		ng/g	U	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-6	0.57	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-59	0.91	ng/g	C	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-58	0.15	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-68	0.57	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-77	1.3	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-76	35	ng/g	C61B	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-78		ng/g	U	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-80		ng/g	U	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-8	1.9	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-79	1.1	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-75	0.91	ng/g	C59	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-70	35	ng/g	C61B	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-7	0.17	ng/g	J	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-69	18	ng/g	C49B	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-71	5.7	ng/g	C40	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-74	35	ng/g	C61B	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-73		ng/g	UC43	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-72	1.1	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-13	0.23	ng/g	JC12	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-129	69	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-128	12	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-130	5.3	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-133	1.5	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-132	25	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-131	1.1	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-127	0.16	ng/g	J	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-123	0.79	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-122	0.77	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-124	2.3	ng/g	C108	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-126	0.067	ng/g	J	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-125	49	ng/g	C86	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-134	4.6	ng/g	C	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-144	2.9	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-143	4.6	ng/g	C134	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-142		ng/g	U	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-145	0.071	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-148	0.36	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-147	58	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-146	13	ng/g	B	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-141	11	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-137	3.4	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-136	11	ng/g	B	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-135	24	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-138	69	ng/g	C129B	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-140	1.7	ng/g	C139	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-14		ng/g	U	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-139	1.7	ng/g	C	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-106		ng/g	U	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-105	19	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-107	5.1	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-11	0.18	ng/g	JB	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-109	49	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-108	2.3	ng/g	C	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-100	1.5	ng/g	C93	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-10	0.058	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-1	1.5	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-101	86	ng/g	C90B	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-104		ng/g	U	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-103	1.7	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-102	2.9	ng/g	C98	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-110	92	ng/g	C	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-118	60	ng/g	B	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-117	11	ng/g	C85B	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-119	49	ng/g	C86	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-121		ng/g	U	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-120	0.81	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-12	0.23	ng/g	JC	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-116	11	ng/g	C85B	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-112		ng/g	U	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-111		ng/g	U	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-113	86	ng/g	C90B	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-115	92	ng/g	C110	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-114	1.2	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-149	58	ng/g	C147B	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-18	2.2	ng/g	C	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-179	5.8	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-180	27	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-183	8.7	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-182	0.18	ng/g	J	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-181	0.18	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-178	3	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-173	4.7	ng/g	C171	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-172	2.4	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-171	4.7	ng/g	C	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-174	14	ng/g	B	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-177	8.6	ng/g	B	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-176	1.7	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-175	0.62	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-184		ng/g	U	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-192		ng/g	U	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-191	0.61	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-190	2.6	ng/g	B	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-193	27	ng/g	C180B	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-196	2.8	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-195	2.3	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-194	5.2	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-19	0.24	ng/g	Jq	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-187	16	ng/g	B	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-186		ng/g	U	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-185	8.7	ng/g	C183B	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-188	0.067	ng/g	J	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-189	0.51	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-157	9	ng/g	C156	DNR	11

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SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-156	9	ng/g	C	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-159	0.53	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-158	6.9	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-151	24	ng/g	C135B	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-150	0.36	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-15	0.81	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-152	0.089	ng/g	J	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-155	0.018	ng/g	J	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-154	2.3	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-153	55	ng/g	CB	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-16	0.96	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-169	0.073	ng/g	J	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-168	55	ng/g	C153B	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-170	13	ng/g	B	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-17	1.5	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-167	2.8	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-162	0.27	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-161		ng/g	U	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-160	69	ng/g	C129B	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-163	69	ng/g	C129B	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-166	12	ng/g	C128B	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-165		ng/g	U	DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-164	5.1	ng/g		DNR	11
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	PCB-206	5.3	ng/g	q	J	25
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	Total Nonachlorobiphenyls	6.2	ng/g	q	J	25
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	Total Trichlorobiphenyls	20	ng/g	qB	J	25
580-88908-1	J5-SC1b-10to20-82719	580-88908-36	E1668A	Polychlorinated biphenyls, Total	900	ng/g	qB	J	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-37	0.0016	ng/L	JqB	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-30	0.0077	ng/L	JC18B	U	7
580-88908-1	711-82719	580-88908-74	E1668A	PCB-3	0.0025	ng/L	JqB	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-29	0.0029	ng/L	JqC26B	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-31	0.0046	ng/L	JB	U	7
580-88908-1	711-82719	580-88908-74	E1668A	PCB-33	0.0052	ng/L	JC21B	U	7
580-88908-1	711-82719	580-88908-74	E1668A	PCB-32	0.0047	ng/L	JB	U	7
580-88908-1	711-82719	580-88908-74	E1668A	PCB-5	0.0023	ng/L	Jq	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-50	0.0038	ng/L	JCB	U	7

Qualified Data Summary Table
Pacific Groundwater Group - Portland Harbor SIL Phases 1b and 2

SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	711-82719	580-88908-74	E1668A	PCB-53	0.0038	ng/L	JC50B	U	7
580-88908-1	711-82719	580-88908-74	E1668A	PCB-52	0.0086	ng/L	JB	U	7
580-88908-1	711-82719	580-88908-74	E1668A	PCB-44	0.018	ng/L	JCB	U	7
580-88908-1	711-82719	580-88908-74	E1668A	PCB-47	0.018	ng/L	JC44B	U	7
580-88908-1	711-82719	580-88908-74	E1668A	PCB-202	0.00091	ng/L	Jq	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-203	0.0017	ng/L	JqB	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-199	0.0023	ng/L	JqC198B	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-198	0.0023	ng/L	JqCB	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-20	0.0067	ng/L	JCB	U	7
580-88908-1	711-82719	580-88908-74	E1668A	PCB-25	0.00089	ng/L	JqB	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-26	0.0029	ng/L	JqCB	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-28	0.0067	ng/L	JC20B	U	7
580-88908-1	711-82719	580-88908-74	E1668A	PCB-27	0.0021	ng/L	JqB	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-22	0.0029	ng/L	JqB	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-21	0.0052	ng/L	JCB	U	7
580-88908-1	711-82719	580-88908-74	E1668A	PCB-209	0.0044	ng/L	JB	U	7
580-88908-1	711-82719	580-88908-74	E1668A	PCB-90	0.011	ng/L	JqCB	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-83	0.0068	ng/L	JqC	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-99	0.0068	ng/L	JqC83	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-61	0.0094	ng/L	JCB	U	7
580-88908-1	711-82719	580-88908-74	E1668A	PCB-64	0.0031	ng/L	JB	U	7
580-88908-1	711-82719	580-88908-74	E1668A	PCB-65	0.018	ng/L	JC44B	U	7
580-88908-1	711-82719	580-88908-74	E1668A	PCB-56	0.0022	ng/L	JqB	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-68	0.0019	ng/L	JqB	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-76	0.0094	ng/L	JC61B	U	7
580-88908-1	711-82719	580-88908-74	E1668A	PCB-8	0.0046	ng/L	JqB	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-70	0.0094	ng/L	JC61B	U	7
580-88908-1	711-82719	580-88908-74	E1668A	PCB-74	0.0094	ng/L	JC61B	U	7
580-88908-1	711-82719	580-88908-74	E1668A	PCB-13	0.0045	ng/L	JqC12B	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-129	0.011	ng/L	JCB	U	7
580-88908-1	711-82719	580-88908-74	E1668A	PCB-132	0.0038	ng/L	JB	U	7
580-88908-1	711-82719	580-88908-74	E1668A	PCB-134	0.0011	ng/L	JqC	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-144	0.0011	ng/L	Jq	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-143	0.0011	ng/L	JqC134	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-147	0.01	ng/L	JCB	U	7
580-88908-1	711-82719	580-88908-74	E1668A	PCB-146	0.0017	ng/L	Jq	U	25

Qualified Data Summary Table
Pacific Groundwater Group - Portland Harbor SIL Phases 1b and 2

SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Qualifier	Validation Qualifier	Validation Reason
580-88908-1	711-82719	580-88908-74	E1668A	PCB-141	0.0025	ng/L	JB	U	7
580-88908-1	711-82719	580-88908-74	E1668A	PCB-138	0.011	ng/L	JC129B	U	7
580-88908-1	711-82719	580-88908-74	E1668A	PCB-105	0.0031	ng/L	JB	U	7
580-88908-1	711-82719	580-88908-74	E1668A	PCB-11	0.025	ng/L	JB	U	7
580-88908-1	711-82719	580-88908-74	E1668A	PCB-1	0.003	ng/L	JB	U	7
580-88908-1	711-82719	580-88908-74	E1668A	PCB-101	0.011	ng/L	JqC90B	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-118	0.0062	ng/L	JB	U	7
580-88908-1	711-82719	580-88908-74	E1668A	PCB-12	0.0045	ng/L	JqCB	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-113	0.011	ng/L	JqC90B	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-149	0.01	ng/L	JC147B	U	7
580-88908-1	711-82719	580-88908-74	E1668A	PCB-18	0.0077	ng/L	JCB	U	7
580-88908-1	711-82719	580-88908-74	E1668A	PCB-180	0.0091	ng/L	JqCB	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-183	0.0037	ng/L	JqCB	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-174	0.0052	ng/L	JqB	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-177	0.0042	ng/L	Jq	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-193	0.0091	ng/L	JqC180B	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-187	0.006	ng/L	JB	U	7
580-88908-1	711-82719	580-88908-74	E1668A	PCB-185	0.0037	ng/L	JqC183B	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-157	0.0013	ng/L	JqC156	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-156	0.0013	ng/L	JqC	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-158	0.001	ng/L	JqB	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-150	0.00083	ng/L	Jq	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-15	0.004	ng/L	JqB	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-154	0.0011	ng/L	Jq	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-153	0.0091	ng/L	JqCB	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-168	0.0091	ng/L	JqC153B	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-170	0.0058	ng/L	JqB	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-17	0.0036	ng/L	JqB	U	25
580-88908-1	711-82719	580-88908-74	E1668A	PCB-160	0.011	ng/L	JC129B	U	7
580-88908-1	711-82719	580-88908-74	E1668A	PCB-163	0.011	ng/L	JC129B	U	7

DATA VALIDATION REPORT
Portland Harbor
Swan Island Lagoon Phases 1b & 2
ARI PCB Results

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November 27, 2019

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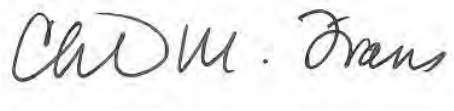

Christina Mott Frans
Project Manager
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report presents the results of Summary and Full Validation (EPA Stage 2A and EPA Stage 4) performed on sediment and field and laboratory quality control sample data for samples collected at the Head of Swan Island Lagoon at Portland Harbor. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. The analytical methods and EcoChem project chemists are listed below.

ANALYSIS	METHOD	PRIMARY REVIEW	SECONDARY REVIEW
PCB Aroclors	SW8082A	E. Clayton	C. Frans
Total Organic Carbon	SW9060A		
Total Solids	SM 2540 G-97		

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Head of Swan Island Lagoon Sediment Field Sampling Plan Portland Harbor Superfund Site* (Pacific Groundwater Group, October 22, 2018*); National Functional Guidelines for Organic Data Review* (USEPA 2008 & 2014); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2010).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned an R, the data are to be rejected and should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced previously.

Data qualifier definitions, reason codes, and validation criteria are included as Appendix A. A Qualified Data Summary Table is included in Appendix B. Data Validation Worksheets will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index

Pacific Groundwater Group - Portland Harbor Head of Swan Island Phases 1b and 2

SDG	Sample ID	Laboratory ID	PCBs	TOC	Total Solids
19I0008	L3-SC1b-20to30-82619	19I0008-01	✓	✓	✓
	L3-SC1b-30to40-82619	19I0008-02	✓	✓	✓
	D6-SC1b-20to30-82619	19I0008-05	✓	✓	✓
	D6-SC1b-30to40-82619	19I0008-06	✓	✓	✓
	D6-SC1b-40to50-82619	19I0008-07	✓	✓	✓
	D6-SC1b-50to60-82619	19I0008-08	✓	✓	✓
	D6-SC1b-60to70-82619	19I0008-09	✓	✓	✓
	D6-SC1b-70to80-82619	19I0008-10	✓	✓	✓
	D6-SC1b-80to90-82619	19I0008-11	✓	✓	✓
	D6-SC1b-90to100-82619	19I0008-12	✓	✓	✓
	D6-SC1b-100to110-82619	19I0008-13	✓	✓	✓
	D6-SC1b-110to120-82619	19I0008-14	✓	✓	✓
	411-SC1b-50to60-82619	19I0008-16	✓		✓
	J3-SC1b-20to30-82719	19I0008-17	✓	✓	✓
	J3-SC1b-30to40-82719	19I0008-18	✓	✓	✓
	J3-SC1b-40to50-82719	19I0008-19	✓	✓	✓
	J3-SC1b-50to60-82719	19I0008-20	✓	✓	✓
	J3-SC1b-60to70-82719	19I0008-21	✓	✓	✓
	J3-SC1b-70to80-82719	19I0008-22	✓	✓	✓
	J3-SC1b-80to90-82719	19I0008-23	✓	✓	✓
	J3-SC1b-90to100-82719	19I0008-24	✓	✓	✓
	J3-SC1b-10to20-82719	19I0008-25	✓	✓	✓
	412-SC1b-80to90-82719	19I0008-26	✓	✓	✓
	J6-SC1b-20to30-82819	19I0008-27	✓	✓	✓
	J6-SC1b-30to40-82819	19I0008-28	✓	✓	✓
	J6-SC1b-40to50-82819	19I0008-29	✓	✓	✓
	J6-SC1b-50to60-82819	19I0008-30	✓	✓	✓
	J6-SC1b-60to70-82819	19I0008-31	✓	✓	✓
	J6-SC1b-70to80-82819	19I0008-32	✓	✓	✓
	J6-SC1b-80to90-82819	19I0008-33	✓	✓	✓
	J6-SC1b-90to100-82819	19I0008-34	✓	✓	✓
	J6-SC1b-100to110-82819	19I0008-35	✓	✓	✓
	J6-SC1b-110to120-82819	19I0008-36	✓	✓	✓
	R4-SC1b-20to30-82819	19I0008-40	✓	✓	✓
	R4-SC1b-30to40-82819	19I0008-41	✓	✓	✓
	R4-SC1b-40to50-82819	19I0008-42	✓	✓	✓
	R4-SC1b-50to60-82819	19I0008-43	✓	✓	✓
	R4-SC1b-60to70-82819	19I0008-44	✓	✓	✓
	R4-SC1b-70to80-82819	19I0008-45	✓	✓	✓

Sample Index

Pacific Groundwater Group - Portland Harbor Head of Swan Island Phases 1b and 2

SDG	Sample ID	Laboratory ID	PCBs	TOC	Total Solids
19I0008	R4-SC1b-80to90-82819	19I0008-46	✓	✓	✓
	R4-SC1b-90to100-82819	19I0008-48	✓	✓	✓
	R4-SC1b-100to110-82819	19I0008-50	✓	✓	✓
	R4-SC1b-110to120-82819	19I0008-51	✓	✓	✓
	R4-SC1b-120to130-82819	19I0008-52	✓	✓	✓
	413-SC1b-40to50-82819	19I0008-53	✓	✓	✓
	R4-SC1b-130to140-82819	19I0008-54	✓	✓	✓
	R4-SC1b-140to150-82819	19I0008-55	✓	✓	✓
	H3-SC1b-20to30-82819	19I0008-56	✓	✓	✓
	H3-SC1b-30to40-82919	19I0008-57	✓	✓	✓
	H3-SC1b-40to50-82919	19I0008-58	✓	✓	✓
	H3-SC1b-50to60-82919	19I0008-59	✓	✓	✓
	H3-SC1b-60to70-82919	19I0008-60	✓	✓	✓
	H3-SC1b-70to80-82919	19I0008-61	✓	✓	✓
	H3-SC1b-80to90-82919	19I0008-62	✓	✓	✓
	H3-SC1b-90to100-82919	19I0008-63	✓	✓	✓
	H3-SC1b-100to110-82919	19I0008-64	✓	✓	✓
	711-82719	19I0008-67	✓	✓	
	712-82819	19I0008-68	✓	✓	
	H3-SC1b-110to114-82919	19I0008-69	✓	✓	✓
	J5-SC1b-20to30-82719	19I0008-70	✓		
	J5-SC1b-30to40-82719	19I0008-71	✓		
	J5-SC1b-40to50-82719	19I0008-72	✓		
	J5-SC1b-50to60-82719	19I0008-73	✓		
	J5-SC1b-60to70-82719	19I0008-74	✓		
	J5-SC1b-70to80-82719	19I0008-75	✓		
	J5-SC1b-80to90-82719	19I0008-76	✓		
	J5-SC1b-90to100-82719	19I0008-77	✓		
	J5-SC1b-100to110-82719	19I0008-78	✓		
19J0249	J3-SC-00to10-102218	19J0249-01	✓		
	D6-SC-0to1-102118	19J0249-02	✓		
	R4-SC-0to1-102118	19J0249-03	✓		

DATA VALIDATION REPORT
Pacific Groundwater Group: PH Head of Swan Island Sediments
PCB Aroclors by EPA 8082A

This report documents the review of analytical data from the analysis of sediment samples and the associated laboratory quality control (QC) samples. Samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the Sample Index for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
19I0008	66 Sediment, 2 Water & 2 Field Blank	EPA Stage 2A EPA Stage 4 (batch BHI0176)
19J0249	3 Sediment	EPA Stage 2A

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Ten percent (10%) of the laboratory QC results were also verified.

TECHNICAL DATA VALIDATION

This report documents the review of analytical QC requirements as listed in the following table.

1	Sample Receipt, Preservation, and Holding Times	✓	Laboratory Control Samples (LCS)
✓	Initial Calibration (ICAL)	1	Certified Reference Material
✓	Continuing Calibration (CCAL)	1	Field Duplicates
✓	Laboratory Blanks	✓	Target Analyte List
1	Field Blanks	1	Reporting Limits
2	Surrogate Compounds	2	Compound Identification
2	Internal Standards	2	Reported Results
2	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)	1	Calculation Verification (Full validation only)
2	Laboratory Duplicates		

1 Quality control results are discussed below, but no data were qualified.
2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of 2° to 6°C. The laboratory received the sample coolers within the advisory temperature range.

SDG 19I0008: Sample 712-82819 has a collection date of 8/27/19 on the chain-of-custody (COC), however, the identification (ID) segment indicates 8/28/19. This field blank sample was associated with samples collected on 8/28/19.

Field Blanks

SDG 19I0008: Samples 711-82719 and 712-82819 were identified as field blanks. Target analytes were not detected in these blank samples, no qualification was required.

Surrogate Compounds

The surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples. With the following exceptions, all surrogate recovery values were within the laboratory control limits.

SDG 19I0008: The surrogate recoveries were greater than the laboratory control limit for decachlorobiphenyl in Samples J5-SC1b-40to50-82719 and H3-SC1b-50to60-82719, and the matrix spike samples for H3-SC1b-20to30-82819 and H3-SC1b-20to30-82819. No results were qualified for these outliers because QC samples are not qualified, and the field samples were analyzed at a 10X dilution factor and were diluted beyond a level of accurate quantitation.

Matrix Spikes/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were analyzed at the appropriate frequency. No action is taken unless both the MS and MSD %R values are outside the control limits for MS/MSD %R outliers. When the MS/MSD %R values indicate a potential low bias, associated results are estimated (J/UJ-8). Only the associated positive results are estimated (J-8) if the %R values indicate a potential high bias. Precision is indicated by the relative percent difference (RPD) between the MS and MSD values. Associated positive results are estimated (J-9) if the RPD values indicate uncertainty. Qualifiers were only issued to the parent sample.

SDG 19I0008: Samples J3-SC1b-30to40-82719, H3-SC1b-20to30-82819, and J5-SC1b-20to30-82719 were analyzed as the MS/MSD samples. The %R values for Aroclor 1260 were less than the lower control limit or not recovered; the associated results in the parent samples were estimated (J-8L).

Sample R4-SC1b-20to30-82819 was analyzed as the MS/MSD sample. The MS %R value for Aroclor 1260 was less than the lower control limit but was in control in the associated MSD sample; no data were qualified for this single outlier.

SDG 19J0129: Sample J3-SC-00to10-102218 was analyzed as the MS/MSD sample. The MSD %R values for Aroclor 1016 and 1260 were less than the lower control limits but were in control in the associated MS sample; no data were qualified for these single outliers.

Laboratory Duplicates

One sample from each laboratory batch was extracted and analyzed in duplicate. Relative percent difference (RPD) values were calculated for detected analytes where results are greater than five

times the reporting limit (RL). With the exception noted below, all RPD values were less than the 20% control limit.

SDG 19I0008: Sample J5-SC1b-30to40-82719 was analyzed as a laboratory duplicate sample. The RPD value for Aroclor 1254 was greater than the control limit 32%; the associated result in the parent sample was estimated (J-9).

Certified Reference Material

The laboratory extracted and analyzed Sigma-Aldrich reference material for Aroclor-1254 (PCB1254-Loam). The criteria for CRM recovery are that the reported results are within ±20% of the 95% confidence interval of the true value for analytes with reference concentrations greater than five times the detection limit.

All CRM results were within the control limits.

Field Duplicates

For sediment samples, the RPD control limit is 50% for results greater than 5x the reporting limit (RL). For results less than 5x the RL, the absolute difference between the sample and replicate must be less than 2x the RL. No data were qualified based on field duplicate precision outliers. Users of the data should consider the impact of field precision outliers on the reported results.

SDG 19I0008: Samples J3-SC1b-80to90-82719 & 412-80to90-82719, R4-SC1b-40to50-82819 & 413-SC1b-40to50-82819, and 411-SC1b-50to60-82619 & D6-SC1b-50to60-82619 were submitted as field duplicates. Field precision was acceptable.

Reporting Limits

Reporting limits were elevated due to required dilutions and/or percent moisture adjustment and were greater than the work plan specified limits.

Compound Identification

As required by the method, the laboratory analyzed any samples with positive detections on a confirmatory column. The results from the two analytical columns were compared for agreement. An elevated RPD value may indicate the presence of an interference resulting in a high bias. When the RPD value was greater than or equal to 40% but less than 60% the reported value was estimated (J-3). If the RPD value was greater than 60%, the result was qualified as a tentative identification (NJ-3). Confirmation outliers resulting in data qualification are discussed below.

For the following samples, the second column confirmation RPD values were greater than 40% and were estimated (J/NJ-3):

SDG	Sample ID	Compound	RPD	Qualifier
19I0008	J3-SC1b-40to50-82719	Aroclor 1254	49.0	J-3

SDG	Sample ID	Compound	RPD	Qualifier
19I0008	J6-SC1b-20to30-82819	Aroclor 1254	43.2	J-3
	R4-SC1b-20to30-82819	Aroclor 1260	73.8	NJ-3
	R4-SC1b-70to80-82819	Aroclor 1248	44.4	J-3
	R4-SC1b-80to90-82819	Aroclor 1254	42.5	J-3
		Aroclor 1248	68.0	NJ-3
	R4-SC1b-100to110-82819	Aroclor 1248	70.4	NJ-3
	R4-SC1b-110to120-82819	Aroclor 1248	46.3	J-3
	R4-SC1b-120to130-82819	Aroclor 1254	40.3	J-3
		Aroclor 1248	64.1	NJ-3
	R4-SC1b-130to140-82819	Aroclor 1254	44.3	J-3
	J5-SC1b-90to100-82719	Aroclor 1260	48.0	J-3
	J5-SC1b-80to90-82719	Aroclor 1254	200	NJ-3
19J0129	D6-SC-0to1-102118	Aroclor 1248	48.4	J-3

Reported Results

SDG 19I0008: Sample J6-SC1b-40to50-82819 was reanalyzed at a 5x dilution due to an instrument response for Aroclor 1260 that exceeded the calibration range. Both sets of results were reported. The over range result was flagged as do-not report (DNR-20) and all other results in the diluted sample were flagged as do-not-report (DNR-11).

Calculation Verification

SDG 19I0008: Several results in batch 288730 of this SDG were verified by recalculation from the raw data. No calculation or transcription errors were found.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted above, accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, and MS/MSD recoveries. With the exceptions noted above, precision was also acceptable as demonstrated by the LCS/LCSD, MS/MSD, and field and laboratory duplicate RPD values.

Data were estimated due to MS/MSD accuracy outliers and a laboratory duplicate precision outlier. Results were also estimated and tentatively identified based on dual column confirmation RPD outliers.

Results were qualified as do-not-report to indicate which result not to use from multiple reported results. Data flagged as do-not-report should not be used for any reason.

All other data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
Pacific Groundwater Group: PH Head of Swan Island Sediments
Conventional Tests

This report documents the review of analytical data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Analytical Resources, Inc, Tukwila, Washington. Refer to the Sample Index for a complete list of samples.

SDG	Number of Samples and Matrix	Validation Level
19I0008	48 Sediment & 2 Field Blank	EPA Stage 3 (batch BHI0179) & EPA Stage 2A

The analytical tests that were performed are summarized below:

Parameter	Method
Total Solids	SM2540G
Total Organic Carbon (TOC)	EPA 9060

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Ten percent (10%) of the laboratory QC results were also verified.

TECHNICAL DATA VALIDATION

This report documents the review of analytical QC requirements as listed in the following table.

✓	Sample Receipt, Preservation, and Holding Times	2	Matrix Spikes (MS) and Matrix Spike Duplicates (MSD)
✓	Initial Calibration	✓	Laboratory Duplicates
✓	Calibration Verification	1	Field Duplicates
✓	Laboratory Blanks	✓	Reporting Limits
1	Field Blanks	✓	Reported Results
1	Reference Materials	1	Calculation Verification (Full validation only)
✓	Laboratory Control Samples (LCS)		

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.
1 Quality control results are discussed below, but no data were qualified.
2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

Samples 711-82719 and 712-82819 were identified as field blanks. No target analytes were detected.

Reference Materials

No certified reference materials were submitted.

Matrix Spikes/Matrix Spike Duplicate

Matrix spike/matrix spike duplicate samples (MS/MSD) were analyzed at the proper frequency of one per 20 samples or one per batch for soil samples. Where analyte concentrations were less than 4x the spike amount, the percent recovery (%R) and relative percent difference (RPD) values were evaluated. The recovery control limits are 80%-120%. If the percent recovery values indicate a potential low bias, associated results are estimated (J/UJ-8). If the %R values indicate a potential high bias, only the associated positive results are estimated (J-8). Precision is indicated by the relative percent difference (RPD) between the MS and MSD values. RPD values outside the control limits indicate uncertainty in the measured results for the sample and positive results are estimated (J-9). Qualifiers were issued to all samples associated with a QC batch. With the following exceptions %R and RPD values were within the laboratory control limits.

For batch BHI0374, Sample J3-SC1b-30to40-82719 was used for the TOC matrix spikes, the MS/MSD %R values for total organic carbon (TOC) were less than the lower control limit; all associated TOC results in the batch were estimated (J-8L) to indicate a potential low bias.

Field Duplicate

For sediment samples, the RPD control limit is 50% for results greater than 5x the reporting limit (RL). For results less than 5x the RL, the absolute difference between the sample and replicate must be less than 2x the RL. No data were qualified based on field duplicate precision outliers. Users of the data should consider the impact of field precision outliers on the reported results.

Samples J3-SC1b-80to90-82719 & 412-80to90-82719 and R4-SC1b-40to50-82819 & 413-SC1b-40to50-82819 were submitted as field duplicates. Field precision was acceptable.

Calculation Verification

Several results were verified by recalculation from the raw data. No calculation or transcription errors were found.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted previously, accuracy was acceptable, as demonstrated by the laboratory control sample and matrix spike recoveries. Precision was also acceptable as demonstrated by the laboratory and field duplicate RPD values.

Data were qualified for matrix spike recovery outliers.

All data, as qualified, are acceptable for use.

ECOCHEM
Data Quality

APPENDIX A

DATA QUALIFIER DEFINITIONS
REASON CODES
AND CRITERIA TABLES

DATA VALIDATION QUALIFIER CODES
Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

The following is an EcoChem qualifier that may also be assigned during the data review process:

DNR	Do not report; a more appropriate result is reported from another analysis or dilution.

DATA QUALIFIER REASON CODES

Group	Code	Reason for Qualification
Sample Handling	1	Improper Sample Handling or Sample Preservation (i.e., headspace, cooler temperature, pH, summa canister pressure); Exceeded Holding Times
Instrument Performance	24	Instrument Performance (i.e., tune, resolution, retention time window, endrin breakdown, lock-mass)
	5A	Initial Calibration (RF, %RSD, r^2)
	5B	Calibration Verification (CCV, CCAL; RF, %D, %R) Use bias flags (H,L)[1] where appropriate
	5C	Initial Calibration Verification (ICV %D, %R) Use bias flags (H,L)[1] where appropriate
Blank Contamination	6	Field Blank Contamination (Equipment Rinsate, Trip Blank, etc.)
	7	Lab Blank Contamination (i.e., method blank, instrument blank, etc.) Use low bias flag (L)[1] for negative instrument blanks
Precision and Accuracy	8	Matrix Spike (MS and/or MSD) Recoveries Use bias flags (H,L)[1] where appropriate
	9	Precision (all replicates: LCS/LCSD, MS/MSD, Lab Replicate, Field Replicate)
	10	Laboratory Control Sample Recoveries (a.k.a. Blank Spikes) Use bias flags (H,L)[1] where appropriate
	12	Reference Material Use bias flags (H,L)[1] where appropriate
	13	Surrogate Spike Recoveries (a.k.a. labeled compounds, recovery standards) Use bias flags (H,L)[1] where appropriate
Interferences	16	ICP/ICP-MS Serial Dilution Percent Difference
	17	ICP/ICP-MS Interference Check Standard Recovery Use bias flags (H,L)[1] where appropriate
	19	Internal Standard Performance (i.e., area, retention time, recovery)
	22	Elevated Detection Limit due to Interference (i.e., chemical and/or matrix)
	23	Bias from Matrix Interference (i.e. diphenyl ether, PCB/pesticides)
Identification and Quantitation	2	Chromatographic pattern in sample does not match pattern of calibration standard
	3	2nd column confirmation (RPD or %D)
	4	Tentatively Identified Compound (TIC) (associated with NJ only)
	20	Calibration Range or Linear Range Exceeded
	25	Compound Identification (i.e., ion ratio, retention time, relative abundance, etc.)
Miscellaneous	11	A more appropriate result is reported (multiple reported analyses i.e., dilutions, re-extractions, etc. Associated with "R" and "DNR" only)
	14	Other (See DV report for details)
	26	Method QC information not provided

[1] H = high bias indicated
L = low bias indicated

PCB Aroclors by GC
(Based on Organic NFG 2008 and SW-846 Method 8082A)

QC Element	Acceptance Criteria (NFG)	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample					
Cooler/Storage Temperature Preservation	4°C ± 2°C Tissue/sediments (may be frozen -20°C)	NFG [1] Method [2]	**If required by project:** J (pos)/UJ (ND) if greater than 6° C	1	Use Professional Judgment (PJ) to qualify for temperature outlier. Current SW846 criterion is ≤ 6° C [3]
Holding Time	**Extraction Aqueous:** 7 days from collection **Extraction Solid:** 14 days from collection **Exraction Tissue/Sediment (frozen):** 1 year **Analysis (all matrices)**: 40 days from extraction	NFG [1] Method [2]	**If required by project:** J (pos)/UJ (ND) if ext/analyzed > HT J (pos)/R (ND) if gross exceedance (> 2x HT)	1	Use PJ to qualify for holding time outlier. ***Current SW846 does not have an extraction holding time limit.*** [3] Gross exceedance > 2x HT, as per NFG 1999
Instrument Performance					
Retention Times	Surrogates: TCMX (± 0.05); DCB (± 0.10) Aroclors (± 0.07)	NFG [1]	NJ (pos)/R (ND) results for analytes with RT shifts	24	
Initial Calibration	Minimum 5 point with RSD ≤ 20% OR correlation coefficient (r-value) ≥ 0.995 OR Minimum 6-point with co-efficient of determination (r2-value) ≥ 0.99	NFG [1] Method [4]	J (pos) if %RSD greater than 20% OR r-value < 0.995 OR r^2-value < 0.99	5A	Refer to TM-01 for additional information. Use bias flags (H,L)[5] where appropriate
Initial Calibration Verification (ICV)	No NFG criteria. Project specific.	Project	J (pos) if > UCL J (pos)/UJ (ND) if < LCL	5B	Use bias flags (H,L) where appropriate
Continuing Calibration (Prior to each 12 hr. shift)	%D ± 20%	Method [2]	If > 20% (high bias): J (pos) If <20% (low bias: J (pos)/UJ (ND)	5B	Refer to TM-01 for additional information. Use bias flags (H,L) where appropriate
Blank Contamination					
Method Blank (MB)	MB: One per matrix per batch of (of ≤ 20 samples) No detected compounds > RL	NFG [1] Method [2]	U (pos) if result is less than appropriate 5X action level.	7	**Hierarchy of blank review:** **#1 - Review MB and IB, qualify as needed** **#2 - Review FB , qualify as needed** Note: Actions as per NFG 1999 Note: IB not required by method
Field Blank (FB)	FB: frequency as per QAPP No detected compounds > RL	NFG [1] Method [2]	U (pos) if result is less than appropriate 5X action level.	6	
Instrument Blanks (IB)	Analyzed at the beginning and end of every 12 hour sequence No analyte > CRQL	NFG [1]	U (pos) if result is less than appropriate 5X action level.	7	

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PCB Aroclors by GC
(Based on Organic NFG 2008 and SW-846 Method 8082A)

QC Element	Acceptance Criteria (NFG)	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy					
MS/MSD (recovery)	One set per matrix per batch (of ≤ 20 samples) AR1016 and AR1260: %R = 29% - 135%, or project limits	NFG [1] Method [2]	Qualify parent only unless other QC indicates systematic problems. J (pos) if both %R > upper control limit (UCL) J (pos)/UJ (ND) if both %R < lower control limit (LCL) J (pos)/R (ND) if both %R < 10%	8	No action if only one spike %R is outside criteria. No action if native analyte conc. > 5x the amount spiked. Use bias flags (H,L) where appropriate. Actions apply to all Aroclors in parent sample.
MS/MSD (RPD)	One set per matrix per batch (of ≤ 20 samples) AR1016: RPD < 15%, AR1260: RPD < 20% or project limits	NFG [1] Method [2]	Qualify parent only unless other QC indicates systematic problems. J (pos) if RPD > control limit	9	No action if parent is ND.
LCS	One per lab batch (of ≤ 20 samples) AR1016 and AR1260: %R = 50% - 150%, or project limits	NFG [1]	J (pos) if %R > UCL J (pos)/UJ (ND) if %R < LCL J (pos)/R (ND) if %R < 10%	10	Use bias flags (H,L) where appropriate. Actions apply to all Aroclors in associated samples.
LCS/LCSD (RPD)	if analyzed use MS/MSD RPD criteria	NFG [1]	J (pos) assoc. compound in all samples	9	LCSD not required by method or NFG
Precision and Accuracy					
Surrogates	TCMX and DCBP added to every sample %R = 30% - 150% or project limits	NFG [1] Method [2]	J (pos) if either %R > UCL J (pos)/UJ (ND) if either %R < LCL J (pos)/R (ND) if either %R < 10%	13	If %R < 10% (sample dilution is a factor), use PJ Use bias flags (H,L) where appropriate
Internal Standards (if used)	Acceptable Range: IS area = 50% to 200% of CCAL area RT within 30 seconds of CC RT	Method [2]	J (pos) if area > 200% J (pos)/UJ (ND) if area < 50% J (pos)/R (ND) if area < 25% RT > 30 seconds, narrate	19	
Field Duplicates	**Solids:** RPD < 50% OR difference < 2X RL (for results < 5X RL) **Aqueous:** RPD < 35% OR difference < 1X RL (for results < 5X RL)	EcoChem	J (pos)/UJ (ND) Qualify only parent and field duplicate samples	9	use project limits if specified

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PCB Aroclors by GC
(Based on Organic NFG 2008 and SW-846 Method 8082A)

QC Element	Acceptance Criteria (NFG)	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Compound Identification/Quantification					
Quantitation/ Identification	Between two columns: RPD < 40% or %D < 25% Within Retention Time Windows on both columns.	NFG [1] Method [2]	J (pos) if RPD = 40% - 60% (25% - 60% for %D) NJ (pos) if > 60% R (pos) if RTW criterion not met	3	See TM-08 for additional info.
Calibration Range	on column concentration < high calibration standard	NFG [1] Method [2]	J (pos) if conc > high standard and sample was not diluted	20	
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	Standard reporting policy	Use "DNR" to flag results that will not be reported.	11	TM-04 Rev. 1 for additional info.
Sample Clean-up					
GPC/Sulfur/ Florisil/Acid	No criteria - cleanups are optional	NFG [1] Method [2]	Use Professional Judgment	14	special cleanups may be required for project cleanup standards may be associated with GPC/florisil cleanups

[1] National Functional Guidelines for Organic Data Review, June, 2008
[2] Polychlorinated Biphenyls (PCBs) by Gas Chromatography USEPA Method SW846 8082A, Feb 2007, Rev. 1
[3] SW846, Chapter 4, Organic Analytes
[4] Determinative Chromatographic Separations , Method 8000C , March 2003, Rev.3
[5] "H" = high bias indicated; "L" = low bias indicated

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Conventional Methods with Instrument Calibrations (i.e., Ion Chromatography, Total Organic Carbon)
(Based on Inorganic NFG 2010 and EPA methods)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler/Storage Temperature Preservation	Cooler temperature: 4°C±2°C Preservation: Analyte/Method Specific	NFG [(1)] Method [(2)]	J (pos)/UJ (ND) if preservation requirements not met	1	Use **PJ** to qualify for cooler temp outliers.
Holding Time	Analyte/Method Specific	NFG [(1)] Method [(2)]	J (pos)/UJ (ND) if holding time exceeded	1	
Instrument Performance					
Initial Calibration (ICAL)	blank + multiple standards as per method requirements r ≥ 0.995	NFG [(1)] Method [(2)]	J (pos)/UJ (ND) for r < 0.995	5A	
Initial Calibration Verification (ICV)	Independent source analyzed immediately after calibration %R method specific	NFG [(1)] Method [(2)]	J (pos)/UJ (ND) if %R < lower control limit (LCL) J (pos) if %R > upper control limit (UCL)	5A (H,L)[3]	Qualify all samples in run
Continuing Calibration Verification (CCV)	Immediately following ICV, every 10 samples, and end of run %R method specific	NFG [(1)] Method [(2)]	J(pos)/UJ(ND) if %R < LCL J(pos) if %R > UCL	5B (H,L)[3]	Qualify samples bracketed by CCV outliers
Blank Contamination					
Method Blank (MB)	One per matrix per batch of (of ≤ 20 samples) Blank conc < MDL	NFG [(1)] Method [(2)]	U (pos) if result is < 5X method blank concentration	7	Refer to **TM-02** for additional information. Blank Evaluation based on NFG 1994

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Conventional Methods with Instrument Calibrations (i.e., Ion Chromatography, Total Organic Carbon)
(Based on Inorganic NFG 2010 and EPA methods)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Instrument Blanks (ICB/CCB)	After each ICV & CCV | blank concentration | < MDL	NFG [(1)] Method [(2)]	Action level is 5x absolute value of blank conc. For positive blanks: U (pos) results < action level For negative blanks: J (pos)/UJ (ND) results < action level	Pos Blanks: 7 Neg Blanks: 7L[3]	Use blanks bracketing samples for Qualification Refer to **TM-02** for additional information. **Hierarchy of blank review:** **#1 - Review MB, quaify as needed** **#2 - Review IB , qualify as needed** **#3 - Review FB , qualify as needed**
Field Blank (FB)	Blank conc < MDL	EcoChem standard policy	U (pos) if result is < 5x action level, as per analyte.	6	Qualify in associated field samples only. Refer to **TM-02** for additional information.
Precision and Accuracy					
Laboratory Control Sample (LCS)	One per matrix per batch (of ≤ 20 samples) %R within Method control limits (or Laboratory control limtis if none specified in method)	NFG [(1)] Method [(2)]	J (pos)/UJ (ND) if %R < LCL J (pos) if %R > UCL	10 (H,L)[3]	Qualify all samples in batch QAPP may have overriding accuracy limits.
Reference Materials (RM, CRM, SRM)	Result ±20% of the 95% confidence interval of the true value for analytes	EcoChem standard policy	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L)[3]	QAPP may have overriding accuracy limits. Some manufacturers may have different RM control limits

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Conventional Methods with Instrument Calibrations (i.e., Ion Chromatography, Total Organic Carbon)
(Based on Inorganic NFG 2010 and EPA methods)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Matrix Spike/ Matrix Spike Duplicate (MS/MSD)	Where applicable to method; MSD may not be required One per matrix per batch (of ≤ 20 samples) For samples <4x spike level, %R within method control limits (or Laboratory control limtis if none specified in method)	NFG [1] Method [2]	J (pos)/UJ (ND) if %R < LCL J (pos) if %R > UCL	8 (H,L)3	Qualify all samples in batch No action if native analyte concentration ≥ 4x spike added. Qualify all samples in batch. QAPP may have overriding accuracy limits.
Laboratory Duplicate (or MS/MSD)	One per matrix per batch (of ≤ 20 samples) RPD ≤ 20% for results ≥ 5x RL Solids: difference < 2X RL for results < 5X RL Aqueous: difference < 1X RL for results < 5X RL	NFG [1] Method [2]	J (pos)/UJ (ND) if RPD > 20% or if difference > control limit	9	Qualify all samples in batch. QAPP may have overriding precision limits.
Field Duplicate	Solids: RPD <50% (for results ≥ 5x RL) OR difference < 2X RL (for results < 5X RL) Aqueous: RPD <35% (for results ≥ 5x RL) OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	Qualify only parent and field duplicate samples J (pos)/UJ (ND)	9	QAPP may have overriding precision limits. Client/QAPP may not require qualification based on field precision.
Compound Quantitation					
Linear Range	Sample concentrations less than highest calibration standard	NFG [1] Method [2]	If result exceeds linear range & sample was not diluted J (pos)	20	
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	**TM-04** EcoChem Policy for Rejection/Selection Process for Multiple Results

[1] National Functional Guidelines for Inorganic Superfund Data Review, January 2010.
[2] SW846 or EPA Standard Methods
[3] "H" = high bias indicated; "L" = low bias indicated

(pos): Positive Result
(ND): Not Detected

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Conventional Methods by Gravimetric Analysis
(i.e., Total Solids, Total Dissolved Solids, Total Suspended Solids, Grain Size)
(Based on Inorganic NFG 2010 and EPA methods)

QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler/Storage Temperature Preservation	Cooler temperature: 4°C±2°C Preservation: Analyte/Method Specific	Method [1] NFG[2]	J (pos)/UJ (ND) if preservation requirements not met	1	Use **PJ** to qualify for cooler temp outliers.
Holding Time	Analyte/Method Specific	Method NFG[2]	J (pos)/UJ (ND) if holding time exceeded	1	
Blank Contamination					
Method Blank (MB)	If required by method,one per matrix per batch of (of ≤ 20 samples) Blank conc < MDL	NFG [1] Method [2]	U (pos) if result is < 5X method blank concentration	7	Refer to **TM-02** for additional information. Blank Evaluation based on NFG 1994
Precision and Accuracy					
LCS (If appropriate to method)	One per matrix per batch (of ≤ 20 samples) %R between 80-120%	Method [2]	J (pos)/R (ND) if %R <50% J (pos)/UJ (ND) if %R 50% - 79% J (pos) if %R > 120%	10 (H,L)[3]	Qualify all samples in batch QAPP may have overriding accuracy limits.
Reference Material (RM, SRM, or CRM)	Result ±20% of the 95% confidence interval of the true value for analytes	EcoChem standard policy	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L)[3]	QAPP may have overriding accuracy limits. Some manufacturers may have different RM control limits

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Conventional Methods by Gravimetric Analysis
(i.e., Total Solids, Total Dissolved Solids, Total Suspended Solids, Grain Size)
(Based on Inorganic NFG 2010 and EPA methods)

QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-Conformance	Reason Code	Discussion and Comments
Laboratory Duplicate	One per matrix per batch (of ≤ 20 samples) RPD ≤ 20% for results ≥ 5x RL Solids: difference < 2X RL for results < 5X RL Aqueous: difference < 1X RL for results < 5X RL	NFG [1] Method [2]	J (pos)/UJ (ND) if RPD > 20% For Grain Size, no action if results for fraction are less than 5%	9	Qualify all samples in batch, except Grain Size - qualify parent only. QAPP may have overriding precision limits.
Field Duplicate	Solids: RPD <50% (for results ≥ 5x RL) OR difference < 2X RL (for results < 5X RL) Aqueous: RPD <35% (for results ≥ 5x RL) OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	Qualify only parent and field duplicate samples J (pos)/UJ (ND)	9	QAPP may have overriding precision limits. Client/QAPP may not require qualification based on field precision.
Compound Quantitation					
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte per sample	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	

[1] National Functional Guidelines for Inorganic Superfund Data Review, January 2010.
[2] SW846 or EPA Standard Methods
[3] "H" = high bias indicated; "L" = low bias indicated

(pos): Positive Result
(ND): Not Detected

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ECOCHEM
Data Quality

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table

Pacific Groundwater Group - Portland Harbor Head of Swan Island Phases 1b and 2

SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifier	Validation Qualifier	Validation Reason Code
19I0008	J3-SC1b-30to40-82719	19I0008-18	SW8082A	Aroclor 1260	153	ug/kg	D	J	8L
	J3-SC1b-30to40-82719	19I0008-18	SW9060A	Total Organic Carbon	2.99	%	H	J	8L
	J3-SC1b-40to50-82719	19I0008-19	SW8082A	Aroclor 1254	68.3	ug/kg	P1	J	3
	J3-SC1b-40to50-82719	19I0008-19	SW9060A	Total Organic Carbon	1.06	%	H	J	8L
	J6-SC1b-20to30-82819	19I0008-27	SW8082A	Aroclor 1254	76.9	ug/kg	P1	J	3
	J6-SC1b-40to50-82819	19I0008-29	SW8082A	Aroclor 1260	242	ug/kg	E	DNR	20
	J6-SC1b-40to50-82819	19I0008-29RE1	SW8082A	Aroclor 1262		ug/kg	D U	DNR	11
	J6-SC1b-40to50-82819	19I0008-29RE1	SW8082A	Aroclor 1254	231	ug/kg	D	DNR	11
	J6-SC1b-40to50-82819	19I0008-29RE1	SW8082A	Aroclor 1268		ug/kg	D U	DNR	11
	J6-SC1b-40to50-82819	19I0008-29RE1	SW8082A	Aroclor 1221		ug/kg	D U	DNR	11
	J6-SC1b-40to50-82819	19I0008-29RE1	SW8082A	Aroclor 1016		ug/kg	D U	DNR	11
	J6-SC1b-40to50-82819	19I0008-29RE1	SW8082A	Aroclor 1242		ug/kg	D U	DNR	11
	J6-SC1b-40to50-82819	19I0008-29RE1	SW8082A	Aroclor 1248	97.3	ug/kg	D	DNR	11
	J6-SC1b-40to50-82819	19I0008-29RE1	SW8082A	Aroclor 1232		ug/kg	D U	DNR	11
	R4-SC1b-20to30-82819	19I0008-40	SW8082A	Aroclor 1260	83.3	ug/kg	P1	NJ	3
	R4-SC1b-70to80-82819	19I0008-45	SW8082A	Aroclor 1248	36.9	ug/kg	P1	J	3
	R4-SC1b-80to90-82819	19I0008-46	SW8082A	Aroclor 1254	91	ug/kg	P1	J	3
	R4-SC1b-80to90-82819	19I0008-46	SW8082A	Aroclor 1248	27.8	ug/kg	P1	NJ	3
	R4-SC1b-100to110-82819	19I0008-50	SW8082A	Aroclor 1248	16.9	ug/kg	P1	NJ	3
	R4-SC1b-110to120-82819	19I0008-51	SW8082A	Aroclor 1248	17.3	ug/kg	P1	J	3
	R4-SC1b-120to130-82819	19I0008-52	SW8082A	Aroclor 1248	20.6	ug/kg	P1	NJ	3
	R4-SC1b-120to130-82819	19I0008-52	SW8082A	Aroclor 1254	79	ug/kg	P1	J	3
	R4-SC1b-130to140-82819	19I0008-54	SW8082A	Aroclor 1254	10.2	ug/kg	P1	J	3
	H3-SC1b-20to30-82819	19I0008-56	SW8082A	Aroclor 1260	374	ug/kg	D	J	8L
	J5-SC1b-20to30-82719	19I0008-70	SW8082A	Aroclor 1260	413	ug/kg	D	J	8L
	J5-SC1b-30to40-82719	19I0008-71	SW8082A	Aroclor 1254	72.1	ug/kg		J	9
	J5-SC1b-90to100-82719	19I0008-77	SW8082A	Aroclor 1260	3.1	ug/kg	J	J	3
19J0249	D6-SC-0to1-102118	19J0249-02	SW8082A	Aroclor 1248	190	ug/kg	P1 D	J	3

DATA VALIDATION REPORT
Portland Harbor
Swan Island Lagoon Phases 1b & 2
SGS Axys Dioxins/Furans Data

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December 2, 2019

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PROJECT NARRATIVE

Basis for the Data Validation

This report presents the results of Full Validation (EPA Stage 4) performed on sediment and quality control sample data for samples collected at the Head of Swan Island Lagoon at Portland Harbor. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by TestAmerica Laboratories, Inc. Fife, Washington, TestAmerica Laboratories, Inc., Knoxville, Tennessee, TestAmerica Laboratories, Inc. Sacramento, California, ALS Environmental, Kelso, Washington, SGS Axys, Sidney BC, Canada, and GEL . The analytical methods and EcoChem project chemists are listed below.

ANALYSIS	METHOD	PRIMARY REVIEW	SECONDARY REVIEW
Dioxins/Furans	EPA1613B	E. Clayton	C. Frans

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Head of Swan Island Lagoon Sediment Field Sampling Plan Portland Harbor Superfund Site* (Pacific Groundwater Group, October 22, 2018*); National Functional Guidelines for Organic Data Review* (USEPA 2008 & 2014); *National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) & Chlorinated Dibenzofurans (CDFs) Data Review,* (USEPA September 2011); and USEPA *R10 Data Validation and Review Guidelines for Polychlorinated Dibenzo-p-Dioxin and Polychlorinated Dibenzofuran Data (PCDD/PCDF) Using Method 1613B and SW846 Method 8290A (USEPA May 2014)*.

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned an R, the data are to be rejected and should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced previously.

Data qualifier definitions, reason codes, and validation criteria are included as Appendix A. A Qualified Data Summary Table is included in Appendix B. Data Validation Worksheets will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index

Pacific Groundwater Group - Portland Harbor Head of Swan Island Phases 1b and 2

SDG	Sample ID	Laboratory ID	Dioxins/Furans
WG69303	D6-SC-108to123-102118	L31654-1	✓
	R1-0to30-101518	L31654-2	✓
	B1-0to20-101418	L31654-3	✓
	L3-SC-00to10-102218	L31654-4	✓
	F1-0to23-101418	L31654-5	✓
	R4-SC-120to138-102118	L31654-6	✓
	B5-0to26-100818	L31654-7	✓
	R4-SC-8to10-102118	L31654-8	✓
	J6-SC-40to60-102218	L31654-9	✓
	D6-SC-2to4-102118	L31654-10	✓
	J5-SC-60to80-102218	L31654-11	✓
	J7-0to26-101218	L31654-12	✓

DATA VALIDATION REPORT
Pacific Groundwater Group: PH Head of Swan Island Sediments
Dioxin/Furan Compounds by EPA 1613B

This report documents the review of analytical data from the analysis of solid samples and the associated laboratory quality control (QC) samples. Samples were analyzed by SGS Axys, Sidney BC, Canada. Refer to the Sample Index for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
WG69303	12 Solid	Stage 4

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and anomalies were discussed in the case narrative. The laboratory reported more analytes in the report and the EDD than were requested. The laboratory resubmitted the reports and EDD files with the extra results removed.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Ten percent (10%) of the laboratory QC results were also verified.

TECHNICAL DATA VALIDATION

The quality control (QC) requirements that were reviewed are listed in the following table.

1	Sample Receipt, Preservation, and Holding Times	2	Certified Reference Material
✓	System Performance and Resolution Checks	1	Field Duplicates
✓	Initial Calibration (ICAL)	✓	Target Analyte List
✓	Calibration Verification (CVER)	✓	Reporting Limits
2	Laboratory Blanks	2	Compound Identification
1	Field Blanks	✓	Compound Quantitation
✓	Labeled Compound Recovery	✓	Reported Results
2	Matrix Spike/Matrix Spike Duplicates (MS/MSD)	1	Calculation Verification
✓	Ongoing Precision and Recovery (OPR)		

✓Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.
1 Quality control results are discussed below, but no data were qualified.
2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of ≤6°C. The laboratory received the sample cooler within the advisory temperature range.

The laboratory noted that Sample J5-SC-60to80-102218 arrived in a broken jar and the sample label information was used to log in Sample L3-SC-00to10-102218.

Laboratory Blanks

To assess the impact of any blank contaminant (excluding homologs) on the reported sample results, an action level is established at five times (5x) the concentration reported in the blank. If a contaminant is reported in an associated field sample and the concentration is less than the action level, the result is qualified as not detected (U-7). No action is taken if the sample result is greater than the action level, or for non-detected results. The laboratory assigned EMPC-flags to values when a peak was detected but did not meet identification criteria. These values cannot be considered as positive identifications but are "estimated maximum possible concentrations". When these occurred in the method blank the results were considered as false positives. No action levels were established for these analytes.

Method blanks were analyzed at the appropriate frequency. Contaminant levels, associated samples, and action levels are documented in the data validation worksheets.

OCDD, OCDF, and 1,2,3,7,8-PeCDF were detected, results less than the action level for 1,2,3,7,8-PeCDF were qualified as not detected (U-7) at the reported concentrations in the associated samples.

Field Blanks

Field blank samples were not submitted with this dataset.

Matrix Spike/Matrix Spike Duplicate

Matrix spike/matrix spike duplicate (MS/MSD) samples were not analyzed with this data set. Accuracy was assessed using the ongoing precision and recovery sample as well as the reference material recoveries.

Certified Reference Material

The laboratory extracted and analyzed Clean Soil Reference Material (EDF-5183). The criterion for CRM recovery is that the reported result is within ±2x the standard deviation of the true value for analytes with reference concentrations greater than five times the detection limit. The acceptance criteria were not applied to results for 2,3,7,8-TCDD, 1,2,3,7,8-PeCDD, 1,2,3,7,8-PeCDF, 2,3,4,7,8-PeCDF, and 1,2,3,7,8,9-HxCDF because the certified values were less than five times (5x) the detection limit.

SDG WG69303: Triplicate CRMs were extracted and analyzed. Qualifiers were only applied to analytes with recoveries outside of the control limits for two of the three analyses of the reference

material. Qualifiers were not assigned for single outliers. With the following exceptions, all acceptance criteria were met.

Laboratory ID	Compound	Recovery Outlier	Qualifier
WG69303-104 & WG69303-105	1,2,3,6,7,8-HxCDD	High	J-12H
	1,2,3,4,6,7,8-HpCDF		
	1,2,3,4,7,8,9-HpCDF		
	1,2,3,4,6,7,8,9-OCDF		

Field Duplicates

Field duplicate samples were not submitted with this data set.

Compound Identification

The method requires the confirmation of 2,3,7,8-TCDF detects using an alternate GC column. The DB5 column that is typically used cannot fully separate 2,3,7,8-TCDF from closely eluting non-target TCDF isomers. The laboratory performed a second column confirmation for all samples with detections greater than the reporting limit on a DB225 column. All 2,3,7,8-TCDF results reported from the DB5 column were qualified as do-not-report (DNR-11) in favor of the DB225 results.

The laboratory reported results for 1,2,3,7,8,9-HxCDD from both analysis columns and indicated the primary column results as not reportable in the EDD. Therefore, all 1,2,3,7,8,9-HxCDD results reported from the DB5 column were qualified as do-not-report (DNR-11) in favor of the DB225 results.

For several samples, the laboratory reported EMPC or "estimated maximum possible concentration" values for one or more of the target analytes. An EMPC value is reported when a peak was detected but did not meet identification criteria, as required by the method; therefore, the result cannot be considered as a positive identification for the analyte. To indicate that the reported result for an individual analyte is in effect an elevated detection limit, the EMPC values were qualified as not detected (U-25) for all compound results below the reporting limit and were estimated (J-25) for all compound results greater than the reporting limit.

Calculation Verification

Calculation verifications were performed. No calculation or transcription errors were found.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory performed the specified analytical method. With the exceptions noted above, accuracy was acceptable, as demonstrated by the labeled compound and OPR recoveries. With the exceptions noted above, precision was also acceptable as indicated by the field duplicate samples.

Data were qualified as not detected at the reported concentrations due to method blank contamination. Results were estimated due to CRM recovery outliers. Data were qualified as not detected or estimated to indicate that EMPC values represent elevated detection limits.

Data were flagged as do-not-report due to multiple results reported for a given analyte. Data flagged as do-not-report should not be used for any reason.

All other data, as qualified, are acceptable for use.

ECOCHEM
Data Quality

APPENDIX A

DATA QUALIFIER DEFINITIONS
REASON CODES
AND CRITERIA TABLES

DATA VALIDATION QUALIFIER CODES
Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

The following is an EcoChem qualifier that may also be assigned during the data review process:

DNR	Do not report; a more appropriate result is reported from another analysis or dilution.

DATA QUALIFIER REASON CODES

Group	Code	Reason for Qualification
Sample Handling	1	Improper Sample Handling or Sample Preservation (i.e., headspace, cooler temperature, pH, summa canister pressure); Exceeded Holding Times
Instrument Performance	24	Instrument Performance (i.e., tune, resolution, retention time window, endrin breakdown, lock-mass)
	5A	Initial Calibration (RF, %RSD, r^2)
	5B	Calibration Verification (CCV, CCAL; RF, %D, %R) Use bias flags (H,L)[1] where appropriate
	5C	Initial Calibration Verification (ICV %D, %R) Use bias flags (H,L)[1] where appropriate
Blank Contamination	6	Field Blank Contamination (Equipment Rinsate, Trip Blank, etc.)
	7	Lab Blank Contamination (i.e., method blank, instrument blank, etc.) Use low bias flag (L)[1] for negative instrument blanks
Precision and Accuracy	8	Matrix Spike (MS and/or MSD) Recoveries Use bias flags (H,L)[1] where appropriate
	9	Precision (all replicates: LCS/LCSD, MS/MSD, Lab Replicate, Field Replicate)
	10	Laboratory Control Sample Recoveries (a.k.a. Blank Spikes) Use bias flags (H,L)[1] where appropriate
	12	Reference Material Use bias flags (H,L)[1] where appropriate
	13	Surrogate Spike Recoveries (a.k.a. labeled compounds, recovery standards) Use bias flags (H,L)[1] where appropriate
Interferences	16	ICP/ICP-MS Serial Dilution Percent Difference
	17	ICP/ICP-MS Interference Check Standard Recovery Use bias flags (H,L)[1] where appropriate
	19	Internal Standard Performance (i.e., area, retention time, recovery)
	22	Elevated Detection Limit due to Interference (i.e., chemical and/or matrix)
	23	Bias from Matrix Interference (i.e. diphenyl ether, PCB/pesticides)
Identification and Quantitation	2	Chromatographic pattern in sample does not match pattern of calibration standard
	3	2nd column confirmation (RPD or %D)
	4	Tentatively Identified Compound (TIC) (associated with NJ only)
	20	Calibration Range or Linear Range Exceeded
	25	Compound Identification (i.e., ion ratio, retention time, relative abundance, etc.)
Miscellaneous	11	A more appropriate result is reported (multiple reported analyses i.e., dilutions, re-extractions, etc. Associated with "R" and "DNR" only)
	14	Other (See DV report for details)
	26	Method QC information not provided

[1] H = high bias indicated
L = low bias indicated

Dioxin/Furan Analysis by HRMS
(Based on Dioxin NFG 2011 and Methods EPA 1613B and SW-846 8290)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler/Storage Temperature Preservation	Waters/Solids ≤ 6°C & in the dark Tissues <-10°C & in the dark **Preservation Aqueous:** If Cl_2 is present Thiosulfate must be added and if pH > 9 it must be adjusted to 7 - 9	NFG [1] Method[2]	J(pos)/R(ND) if thiosulfate not added if Cl_2 present; J(pos)/UJ(ND) if pH not adjusted J(pos)/UJ(ND) if temp > 20°C	1	**EcoChem PJ, see TM-05**
Holding Time	**If properly stored, 1 year or:** **Extraction (all matrices):** 30 days from collection **Analysis (all matrices)**: 45 days from extraction	NFG [1] Method[2]	If not properly stored or HT exceedance: J(pos)/UJ(ND)	1	**EcoChem PJ, see TM-05** Gross exceedance = > 1 year 2011 NFG **Note:** Under CWA, SDWA, and RCRA the HT for H2O is 7 days.
Instrument Performance					
Mass Resolution (Tuning)	PFK (Perfluorokerosene) ≥10,000 resolving power at m/z 304.9824. Exact mass of m/z 380.9760 w/in 5 ppm of theoretical value (380.97410 to 380.97790) . Analyzed prior to ICAL and at the start and end of each 12 hr. shift.	NFG [1] Method [2]	R(pos/ND) all analytes in all samples associated with the tune	24	Notify PM
Windows Defining Mix	Peaks for first and last eluters must be within established retention time windows for each selector group (chlorination level)	NFG [1] Method [2]	If peaks are not completely within windows (clipped): If natives are ok, J(pos)/UJ(ND) homologs (Totals) If natives are affected, R all results for that selector group	24	Notify PM
Column Performance Mix	Both mixes must be analyzed before ICAL and CCAL Valley < 25% (valley = (x/y)*100%) where x = ht. of TCDD (or TCDF) & y = baseline to bottom of valley For all isomers eluting near the 2378-TCDD (TCDF) peak (TCDD only for 8290)	NFG [1] Method [2]	J(pos) if valley > 25%	24	**EcoChem PJ, see TM-05, Rev. 2**; Note: TCDF is evaluated only if second column confirmation is performed
Initial Calibration **Sensitivity**	S/N ratio > 10 for all native and labeled compounds in CS1 std.	NFG [1] Method [2]	If <10, elevate Det. Limit or R(ND)	5A	
Initial Calibration **Selectivity**	Ion Abundance ratios within QC limits (Table 8 of method 8290) (Table 9 of method 1613B)	NFG [1] Method [2]	If 2 or more ion ratios are out for one compound in ICAL, J(pos)	5A	**EcoChem PJ, see TM-05, Rev. 2**

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Dioxin/Furan Analysis by HRMS
(Based on Dioxin NFG 2011 and Methods EPA 1613B and SW-846 8290)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Instrument Performance (continued)					
Initial Calibration (Minimum 5 stds.) **Stability**	%RSD < 20% for native compounds %RSD <30% for labeled compounds (%RSD < 35% for labeled compounds under 1613b)	NFG [1] Method [2]	J(pos) natives if %RSD > 20%	5A	
	Absolute RT of $^{13}C_{12}$-1234-TCDD >25 min on DB5 & >15 min on DB-225	NFG [1] Method [2]	Narrate, no action		**EcoChem PJ, see TM-05, Rev. 2**
Continuing Calibration (Prior to each 12 hr. shift) **Sensitivity**	S/N ratio for CS3 standard > 10	NFG [1] Method [2]	If <10, elevate Det. Limit or R(ND)	5B	
Continuing Calibration (Prior to each 12 hr. shift) **Selectivity**	Ion Abundance ratios within QC limits (Table 8 of method 8290) (Table 9 of method 1613B)	NFG [1] Method [2]	For congener with ion ratio outlier, J(pos) natives in all samples associated with CCAL. No action for labeled congener ion ratio outliers.	25	**EcoChem PJ, see TM-05**
Continuing Calibration (Prior to each 12 hr. shift) **Stability**	%D+/-20% for native compounds %D +/-30% for labeled compounds **(Must meet limits in Table 6, Method 1613B)** If %D in the closing CCAL are within 25%/35%, the mean RF from the two CCAL may be used to calculate samples **(Section 8.3.2.4 of 8290)**.	NFG [1] Method [2]	**Labeled compounds:** Narrate, no action. **Native compounds:** 1613: J(pos)/UJ(ND)if %D is outside Table 6 limits J(pos)/R(ND) if %D is +/-75% of Table 6 limits 8290: J(pos)/UJ(ND) if %D = 20% - 75% J(pos)/R(ND) if %D > 75%	5B (H,L)[3]	
	Absolute RT of $^{13}C_{12}$-1234-TCDD and $^{13}C_{12}$-123789-HxCDD should be ± 15 seconds of ICAL RRT for all other compounds must meet criteria listed in Table 2 Method 1316.	NFG [1] Method [2]	Narrate, no action	5B	**EcoChem PJ, see TM-05**
Blank Contamination					
Method Blank (MB)	MB: One per matrix per batch of (of ≤ 20 samples) No detected compounds > RL	NFG [1] Method [2]	U(pos) if result is < 5X action level.	7	**Hierarchy of blank review:** **#1 - Review MB, qualify as needed** **#2 - Review FB , qualify as needed**
Field Blank (FB)	FB: frequency as per QAPP No detected compounds > RL		U(pos) if result is < 5X action level.	6	

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Dioxin/Furan Analysis by HRMS
(Based on Dioxin NFG 2011 and Methods EPA 1613B and SW-846 8290)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy					
MS/MSD (recovery)	**MS/MSD not typically required for HRMS analyses.** If lab analyzes MS/MSD then one set per matrix per batch (of ≤ 20 samples) Use most current laboratory control limits	EcoChem standard policy	J(pos) if both %R > UCL - high bias J(pos)/UJ(ND) if both %R < LCL - low bias J(pos)/R(ND) if both %R < 10% - very low bias J(pos)/UJ(ND) if one > UCL & one < LCL, with no bias **PJ if only one %R outlier**	8 (H,L)[3]	No action if only one spike %R is outside criteria. No action if parent concentration is >4x the amount spiked. Qualify parent sample only unless other QC indicates systematic problems.
MS/MSD (RPD)	**MS/MSD not typically required for HRMS analyses.** If lab analyzes MS/MSD then one set per matrix per batch (of ≤ 20 samples) Use most current laboratory control limits	EcoChem standard policy	J(pos) in parent sample if RPD > CL	9	Qualify parent sample only.
LCS (or OPR)	One per lab batch (of ≤ 20 samples) Use most current laboratory control limits **or** Limits from Table 6 of 1613B	NFG (1) Method (2)	J(pos) if %R > UCL - high bias J(pos)/UJ(ND) if %R < LCL - low bias J(pos)/R(ND) if %R < 10% - very low bias	10 (H,L)[3]	No action if only one spike %R is outside criteria, when LCSD is analyzed. Qualify all associated samples.
LCS/LCSD (RPD)	**LCSD not typically required for HRMS analyses.** One set per matrix and batch of 20 samples RPD < 35%	Method (2) Ecochem standard policy	J(pos) assoc. compound in all samples if RPD > CL	9	Qualify all associated samples.
Lab Duplicate (RPD)	**Lab Dup not typically required for HRMS analyses.** One per lab batch (of ≤ 20 samples) Use most current laboratory control limits	EcoChem standard policy	J(pos)/UJ(ND) if RPD > CL	9	
Labeled Compounds (Internal Standards)	Added to all samples %R = 40% - 135% in all samples 8290 %R must meet limits in Table 7 Method 1613B	NFG (1) Method (2)	J(pos) if %R > UCL - high bias J(pos)/UJ(ND) if %R < LCL - low bias J(pos)/R(ND) if %R < 10% - very low bias	13 (H,L)[3]	
Field Duplicates	Solids: RPD <50% OR difference < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	Narrate and qualify if required by project	9	**Use professional judgment**

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Dioxin/Furan Analysis by HRMS
(Based on Dioxin NFG 2011 and Methods EPA 1613B and SW-846 8290)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Compound ID and Calculation					
Quantitation/ Identification	All ions for each isomer must maximize within ± 2 seconds. S/N ratio >2.5 Ion ratios must meet criteria listed in Table 8 Method 8290, or Table 9 of 1613B; RRTs w/in limits in Table 2 of 1613B	NFG [1] Method [2]	Narrate in report; qualify if necessary NJ(pos) for retention time outliers. U(pos) for ion ratio outliers.	25	**EcoChem PJ, see TM-05**
EMPC (estimated maximum possible concentration)	If quantitation identification criteria are not met, laboratory should report an EMPC value.	NFG [1] Method [2]	If laboratory correctly reported an EMPC value, qualify the native compound U(pos) to indicate that the value is a detection limit and qualify total homolog groups J (pos)	25	**Use professional judgment See TM-18**
Interferences	Interferences from chlorodiphenyl ether compounds	NFG [1] Method [2]	J(pos)/UJ(ND) if present	23	**See TM-16**
	Lock masses must not deviate ± 20% from values in Table 8 of 1613B	Method [2]	J(pos)/UJ(ND) if present	24	**See TM-17**
Second Column Confirmation	All 2,3,7,8-TCDF hits must be confirmed on a DB-225 (or equiv) column. All QC criteria must also be met for the confirmation analysis.	NFG [1] Method [2]	Report the DB-225 value. If not performed use PJ.	3	DNR-11 DB5 result if both results from both columns are reported. **EcoChem PJ, see TM-05**
Calculation Check	Check 10% of field & QC sample results	EcoChem standard policy	Contact laboratory for resolution and/or corrective action	na	Full data validation only.
Electronic Data Deliverable (EDD)					
Verification of EDD to hardcopy data	EcoChem verify @ 10% unless problems noted; then increase level up to 100% for next several packages.		Depending on scope of problem, correct at EcoChem (minor issues) to resubmittal by laboratory (major issues).	na	EcoChem Project Manager and/or Database Administrator will work with lab to provide long-term corrective action.
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	Standard reporting policy	Use "DNR" to flag results that will not be reported.	11	

(pos) - positive (detected) results; (ND) - not detected results

[1] National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) & Chlorinated Dibenzofurans (CDFs) Data Review, September 2011

[2] Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by High-Resolution Gas Chromatography/High-Resolution Mass Spectrometry (HRGC/HRMS), USEPA SW-846, Method 8290

[2] EPA Method 1613, Rev.B, Tetra-through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGS/HRMS, October 1994

[3] NFG 2013 suggests using "+ / -" to indicate bias; EcoChem has chosen "H" = high bias indicated; "L" = low bias indicated.

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Data Quality

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table

Pacific Groundwater Group - Portland Harbor Head of Swan Island Phases 1b and 2

SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifier	Validation Qualifier	Validation Reason Code
WG69303	B1-0to20-101418	L31654-3	E1613	2,3,7,8-TCDF	0.18	pg/g	K J	U	25
	B1-0to20-101418	L31654-3 i	E1613	2,3,7,8-TCDD	0.078	pg/g	K J	U	25
	B1-0to20-101418	L31654-3 i	E1613	1,2,3,7,8-PeCDD	0.233	pg/g	K J	U	25
	B1-0to20-101418	L31654-3 i	E1613	1,2,3,6,7,8-HxCDD	1.8	pg/g	J	J	12H
	B1-0to20-101418	L31654-3 i	E1613	1,2,3,7,8,9-HxCDD	0.723	pg/g	J	DNR	11
	B1-0to20-101418	L31654-3 i	E1613	2,3,7,8-TCDF	0.316	pg/g	J	DNR	11
	B1-0to20-101418	L31654-3 i	E1613	1,2,3,7,8-PeCDF	0.169	pg/g	B J	U	7
	B1-0to20-101418	L31654-3 i	E1613	1,2,3,7,8,9-HxCDF	0.078	pg/g	K B J	U	25
	B1-0to20-101418	L31654-3 i	E1613	2,3,4,6,7,8-HxCDF	0.292	pg/g	K J	U	25
	B1-0to20-101418	L31654-3 i	E1613	1,2,3,4,6,7,8-HpCDF	14.3	pg/g	B	J	12H
	B1-0to20-101418	L31654-3 i	E1613	1,2,3,4,7,8,9-HpCDF	0.894	pg/g	J	J	12H
	B1-0to20-101418	L31654-3 i	E1613	OCDF	57.4	pg/g	B	J	12H
	B5-0to26-100818	L31654-7 i	E1613	1,2,3,6,7,8-HxCDD	43.3	pg/g		J	12H
	B5-0to26-100818	L31654-7 i	E1613	1,2,3,7,8,9-HxCDD	11	pg/g		DNR	11
	B5-0to26-100818	L31654-7 i	E1613	2,3,7,8-TCDF	2.73	pg/g		DNR	11
	B5-0to26-100818	L31654-7 i	E1613	1,2,3,4,6,7,8-HpCDF	437	pg/g	B	J	12H
	B5-0to26-100818	L31654-7 i	E1613	1,2,3,4,7,8,9-HpCDF	22.7	pg/g		J	12H
	B5-0to26-100818	L31654-7 i	E1613	OCDF	2020	pg/g	B	J	12H
	D6-SC-108to123-102118	L31654-1	E1613	1,2,3,7,8,9-HxCDD	0.191	pg/g	K J	U	25
	D6-SC-108to123-102118	L31654-1 i2	E1613	1,2,3,6,7,8-HxCDD	0.164	pg/g	J	J	12H
	D6-SC-108to123-102118	L31654-1 i2	E1613	1,2,3,7,8,9-HxCDD	0.257	pg/g	J	DNR	11
	D6-SC-108to123-102118	L31654-1 i2	E1613	1,2,3,4,6,7,8-HpCDF	0.521	pg/g	B J	J	12H
	D6-SC-108to123-102118	L31654-1 i2	E1613	OCDF	1.24	pg/g	B J	J	12H
	D6-SC-2to4-102118	L31654-10	E1613	1,2,3,6,7,8-HxCDD	42.7	pg/g		J	12H
	D6-SC-2to4-102118	L31654-10	E1613	1,2,3,7,8,9-HxCDD	17.2	pg/g		DNR	11
	D6-SC-2to4-102118	L31654-10	E1613	2,3,7,8-TCDF	7.7	pg/g		DNR	11
	D6-SC-2to4-102118	L31654-10	E1613	1,2,3,4,6,7,8-HpCDF	324	pg/g	B	J	12H
	D6-SC-2to4-102118	L31654-10	E1613	1,2,3,4,7,8,9-HpCDF	22.1	pg/g		J	12H

Qualified Data Summary Table

Pacific Groundwater Group - Portland Harbor Head of Swan Island Phases 1b and 2

SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifier	Validation Qualifier	Validation Reason Code
WG69303	D6-SC-2to4-102118	L31654-10	E1613	OCDF	1120	pg/g	B	J	12H
	F1-0to23-101418	L31654-5 i	E1613	2,3,7,8-TCDD	0.093	pg/g	K J	U	25
	F1-0to23-101418	L31654-5 i	E1613	1,2,3,6,7,8-HxCDD	1.43	pg/g	J	J	12H
	F1-0to23-101418	L31654-5 i	E1613	1,2,3,7,8,9-HxCDD	0.693	pg/g	J	DNR	11
	F1-0to23-101418	L31654-5 i	E1613	2,3,7,8-TCDF	0.252	pg/g	J	DNR	11
	F1-0to23-101418	L31654-5 i	E1613	1,2,3,7,8-PeCDF	0.118	pg/g	K B J	U	25
	F1-0to23-101418	L31654-5 i	E1613	2,3,4,7,8-PeCDF	0.158	pg/g	K J	U	25
	F1-0to23-101418	L31654-5 i	E1613	2,3,4,6,7,8-HxCDF	0.176	pg/g	K J	U	25
	F1-0to23-101418	L31654-5 i	E1613	1,2,3,4,6,7,8-HpCDF	9.18	pg/g	B	J	12H
	F1-0to23-101418	L31654-5 i	E1613	1,2,3,4,7,8,9-HpCDF	0.568	pg/g	J	J	12H
	F1-0to23-101418	L31654-5 i	E1613	OCDF	39.8	pg/g	B	J	12H
	J5-SC-60to80-102218	L31654-11	E1613	1,2,3,6,7,8-HxCDD	40.6	pg/g		J	12H
	J5-SC-60to80-102218	L31654-11	E1613	1,2,3,7,8,9-HxCDD	20.2	pg/g		DNR	11
	J5-SC-60to80-102218	L31654-11	E1613	2,3,7,8-TCDF	7.98	pg/g		DNR	11
	J5-SC-60to80-102218	L31654-11	E1613	1,2,3,4,6,7,8-HpCDF	300	pg/g	B	J	12H
	J5-SC-60to80-102218	L31654-11	E1613	1,2,3,4,7,8,9-HpCDF	19.9	pg/g		J	12H
	J5-SC-60to80-102218	L31654-11	E1613	OCDF	818	pg/g	B	J	12H
	J6-SC-40to60-102218	L31654-9	E1613	1,2,3,6,7,8-HxCDD	34.8	pg/g		J	12H
	J6-SC-40to60-102218	L31654-9	E1613	1,2,3,7,8,9-HxCDD	18.3	pg/g		DNR	11
	J6-SC-40to60-102218	L31654-9	E1613	2,3,7,8-TCDF	6.4	pg/g		DNR	11
	J6-SC-40to60-102218	L31654-9	E1613	1,2,3,4,6,7,8-HpCDF	229	pg/g	B	J	12H
	J6-SC-40to60-102218	L31654-9	E1613	1,2,3,4,7,8,9-HpCDF	17.3	pg/g		J	12H
	J6-SC-40to60-102218	L31654-9	E1613	OCDF	598	pg/g	B	J	12H
	J7-0to26-101218	L31654-12	E1613	1,2,3,6,7,8-HxCDD	136	pg/g		J	12H
	J7-0to26-101218	L31654-12	E1613	1,2,3,7,8,9-HxCDD	26.3	pg/g		DNR	11
	J7-0to26-101218	L31654-12	E1613	2,3,7,8-TCDF	4.06	pg/g		DNR	11
	J7-0to26-101218	L31654-12	E1613	1,2,3,4,6,7,8-HpCDF	1950	pg/g	B	J	12H
	J7-0to26-101218	L31654-12	E1613	1,2,3,4,7,8,9-HpCDF	137	pg/g		J	12H

Qualified Data Summary Table

Pacific Groundwater Group - Portland Harbor Head of Swan Island Phases 1b and 2

SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifier	Validation Qualifier	Validation Reason Code
WG69303	J7-0to26-101218	L31654-12	E1613	OCDF	7380	pg/g	B	J	12H
	L3-SC-00to10-102218	L31654-4 i	E1613	2,3,7,8-TCDD	0.157	pg/g	K J	U	25
	L3-SC-00to10-102218	L31654-4 i	E1613	1,2,3,7,8-PeCDD	0.326	pg/g	K J	U	25
	L3-SC-00to10-102218	L31654-4 i	E1613	1,2,3,6,7,8-HxCDD	3.47	pg/g	J	J	12H
	L3-SC-00to10-102218	L31654-4 i	E1613	1,2,3,7,8,9-HxCDD	1.71	pg/g	J	DNR	11
	L3-SC-00to10-102218	L31654-4 i	E1613	2,3,7,8-TCDF	0.776	pg/g	J	DNR	11
	L3-SC-00to10-102218	L31654-4 i	E1613	1,2,3,4,6,7,8-HpCDF	34.1	pg/g	B	J	12H
	L3-SC-00to10-102218	L31654-4 i	E1613	1,2,3,4,7,8,9-HpCDF	2.17	pg/g	J	J	12H
	L3-SC-00to10-102218	L31654-4 i	E1613	OCDF	91	pg/g	B	J	12H
	R1-0to30-101518	L31654-2 i	E1613	1,2,3,7,8-PeCDD	0.162	pg/g	K J	U	25
	R1-0to30-101518	L31654-2 i	E1613	1,2,3,6,7,8-HxCDD	0.713	pg/g	J	J	12H
	R1-0to30-101518	L31654-2 i	E1613	1,2,3,7,8,9-HxCDD	0.55	pg/g	J	DNR	11
	R1-0to30-101518	L31654-2 i	E1613	2,3,7,8-TCDF	0.195	pg/g	J	DNR	11
	R1-0to30-101518	L31654-2 i	E1613	1,2,3,7,8-PeCDF	0.119	pg/g	B J	U	7
	R1-0to30-101518	L31654-2 i	E1613	1,2,3,6,7,8-HxCDF	0.265	pg/g	K J	U	25
	R1-0to30-101518	L31654-2 i	E1613	1,2,3,7,8,9-HxCDF	0.089	pg/g	K B J	U	25
	R1-0to30-101518	L31654-2 i	E1613	2,3,4,6,7,8-HxCDF	0.196	pg/g	K J	U	25
	R1-0to30-101518	L31654-2 i	E1613	1,2,3,4,6,7,8-HpCDF	3.79	pg/g	B J	J	12H
	R1-0to30-101518	L31654-2 i	E1613	1,2,3,4,7,8,9-HpCDF	0.253	pg/g	J	J	12H
	R1-0to30-101518	L31654-2 i	E1613	OCDF	8.69	pg/g	B J	J	12H
	R4-SC-120to138-102118	L31654-6 i	E1613	1,2,3,6,7,8-HxCDD	7.64	pg/g		J	12H
	R4-SC-120to138-102118	L31654-6 i	E1613	1,2,3,7,8,9-HxCDD	3.63	pg/g	J	DNR	11
	R4-SC-120to138-102118	L31654-6 i	E1613	2,3,7,8-TCDF	1.89	pg/g		DNR	11
	R4-SC-120to138-102118	L31654-6 i	E1613	1,2,3,4,6,7,8-HpCDF	144	pg/g	B	J	12H
	R4-SC-120to138-102118	L31654-6 i	E1613	1,2,3,4,7,8,9-HpCDF	3.42	pg/g	J	J	12H
	R4-SC-120to138-102118	L31654-6 i	E1613	OCDF	148	pg/g	B	J	12H
	R4-SC-8to10-102118	L31654-8	E1613	1,2,3,6,7,8-HxCDD	16.2	pg/g		J	12H
	R4-SC-8to10-102118	L31654-8	E1613	1,2,3,7,8,9-HxCDD	8.27	pg/g		DNR	11

Qualified Data Summary Table

Pacific Groundwater Group - Portland Harbor Head of Swan Island Phases 1b and 2

SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifier	Validation Qualifier	Validation Reason Code
WG69303	R4-SC-8to10-102118	L31654-8	E1613	1,2,3,4,6,7,8-HpCDF	281	pg/g	B	J	12H
	R4-SC-8to10-102118	L31654-8	E1613	1,2,3,4,7,8,9-HpCDF	10.1	pg/g		J	12H
	R4-SC-8to10-102118	L31654-8	E1613	OCDF	374	pg/g	B	J	12H

APPENDIX F
VALIDATED ANALYTICAL RESULTS

APPENDIX F1
VALIDATED ANALYTICAL RESULTS
GRAB SAMPLES

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	512-0to28-101118	515-0to26-101918	A1-0to30-102018	a2-0to26-100818	a3-0to31-100818	a4-0to25-100818
	Date Time			10/11/2018 11:27:00	10/19/2018 13:11:00	10/20/2018 12:05:00	10/8/2018 14:04:00	10/8/2018 11:14:00	10/8/2018 13:26:00
	X			7634124	7634730	7633984	7633927	7633863	7633800
	Y			700852	700480	701473	701400	701327	701243
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			28	26	30	26	30	25
Conventionals									
D422	Clay	STL00587	%		14	20	21	24	27
D422	Silt	STL00586	%		59	60	64	64	61
D422	Fine Sand	STL00585	%		25	19	14	12	12
D422	Medium Sand	STL00584	%		2.5	0.3	0.3	0.3	0.3
D422	Coarse Sand	STL00583	%		0.1	1.6	0.1	0.1	0
D422	Gravel	STL00581	%		0	0	0	0	0
D854	Density	STL00183	g/cm3		1.3	1.5	1.2	1.2	1.3
D854	Specific Gravity		NONE		1.3	1.5	1.2	1.2	1.3
E160.3	Total Solids		%	34	47	56	46	44	49
D2216	Total Solids		%		38	55	32	33	39
SW9060	Total Organic Carbon	7440-44-0	mg/kg		35000	2900	35000	40000	29000
Butyltins									
ALS SOP	Tri-n-butyltin Cation	36643-28-4	ug/kg		790	0.76 U	98	120	780
Organochlorine Pesticides									
ALS SOP	o,p'-DDD	53-19-0	ug/kg		0.067 U	0.063 U	0.067 U	0.07 U	0.063 U
ALS SOP	o,p'-DDE	3424-82-6	ug/kg		0.1 J	0.079 U	0.084 U	0.088 U	0.14 J
ALS SOP	o,p'-DDT	789-02-6	ug/kg		0.1 U	0.094 U	0.1 U	0.11 U	0.094 U
ALS SOP	4,4'-DDD	72-54-8	ug/kg		1.2	0.035 U	1 J	1.3 J	1.7 J
ALS SOP	4,4'-DDE	72-55-9	ug/kg		1.9	0.07 U	1.3 J	1.8 J	2.8 J
ALS SOP	4,4'-DDT	50-29-3	ug/kg		0.05 U	0.047 U	0.05 U	0.053 U	0.047 U
ALS SOP	Aldrin	309-00-2	ug/kg		0.084 U	0.079 U	0.084 U	0.088 U	0.079 U
ALS SOP	alpha-Chlordane	5103-71-9	ug/kg		0.1 J	0.062 U	0.12 J	0.11 J	0.12 J
ALS SOP	Chlordane, gamma	5566-34-7	ug/kg		0.17 J	0.064 U	0.12 J	0.13 J	0.21
ALS SOP	cis-Nonachlor	5103-73-1	ug/kg		0.11 U	0.097 U	0.11 U	0.11 U	0.097 U
ALS SOP	Dieldrin	60-57-1	ug/kg		0.082 U	0.077 U	0.082 U	0.086 U	0.077 U
ALS SOP	gamma-BHC (Lindane)	58-89-9	ug/kg		0.033 U	0.031 U	0.033 U	0.035 U	0.031 U
ALS SOP	Heptachlor	76-44-8	ug/kg		0.042 U	0.039 U	0.042 U	0.044 U	0.039 U
ALS SOP	Oxychlordane	27304-13-8	ug/kg		0.14 U	0.13 U	0.14 U	0.15 U	0.13 U
ALS SOP	trans-Nonachlor	39765-80-5	ug/kg		0.091 J	0.058 U	0.14 J	0.11 J	0.1 J
Dioxins/Furans									
CWA1613B	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg		0.71	0.0015 J	1.1	1	0.66
CWA1613B	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg		0.22	0.00022 UJ	0.13 J	0.17 J	0.14 J
CWA1613B	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg		0.016	0.00025 UJ	0.006 J	0.0068 J	0.0094 J
CWA1613B	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg		0.0037 J	0.00014 U	0.0038 J	0.0031 J	0.0045 J
CWA1613B	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg		0.03	8.2e-05 U	0.009	0.0084	0.013

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	512-0to28-101118	515-0to26-101918	A1-0to30-102018	a2-0to26-100818	a3-0to31-100818	a4-0to25-100818
	Date Time			10/11/2018 11:27:00	10/19/2018 13:11:00	10/20/2018 12:05:00	10/8/2018 14:04:00	10/8/2018 11:14:00	10/8/2018 13:26:00
	X			7634124	7634730	7633984	7633927	7633863	7633800
	Y			700852	700480	701473	701400	701327	701243
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			28	26	30	26	30	25
CWA1613B	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg		0.026 J	0.00014 UJ	0.022 J	0.022 J	0.027 J
CWA1613B	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg		0.0092	8.6e-05 U	0.0035 J	0.003 J	0.0054 U
CWA1613B	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg		0.0063	0.00013 U	0.0086	0.0068 J	0.0095
CWA1613B	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg		0.0014 U	8.4e-05 U	0.00067 U	0.00072 U	8e-04 U
CWA1613B	1,2,3,7,8-PeCDD	40321-76-4	ug/kg		0.0013 U	0.00025 U	0.0018 J	0.0015 J	0.0017 U
CWA1613B	1,2,3,7,8-PeCDF	57117-41-6	ug/kg		0.0028 J	0.00015 U	0.0014 J	0.00041 U	0.0025 J
CWA1613B	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg		0.0032 J	7.7e-05 U	0.0018 J	0.00081 J	0.0025 U
CWA1613B	2,3,4,7,8-PeCDF	57117-31-4	ug/kg		0.004 J	0.00016 U	0.0021 J	0.0018 J	0.0028 J
CWA1613B	2,3,7,8-TCDD	1746-01-6	ug/kg		0.00054 U	0.00016 U	0.00058 U	8e-04 J	0.00086 U
CWA1613B	2,3,7,8-TCDF	51207-31-9	ug/kg		0.0041	0.00011 U	0.0021	0.002	0.0047
CWA1613B	OCDD	3268-87-9	ug/kg		6.1 J	0.027	8.5 J	7.4 J	5.3 J
CWA1613B	OCDF	39001-02-0	ug/kg		0.78	0.00034 U	0.58	0.92	0.58
CWA1613B	Total HpCDD	37871-00-4	ug/kg		1.4	0.0037 J	2.7	2.1	1.3
CWA1613B	Total HpCDF	38998-75-3	ug/kg		0.99	0.00025 U	0.61	0.88	0.71
CWA1613B	Total HxCDD	34465-46-8	ug/kg		0.2 J	0.00054 J	0.2	0.18 J	0.22 J
CWA1613B	Total HxCDF	55684-94-1	ug/kg		0.37	8.6e-05 U	0.15	0.2	0.25 J
CWA1613B	Total PeCDD	36088-22-9	ug/kg		0.011 J	0.00025 U	0.0081 J	0.011 J	0.016 J
CWA1613B	Total PeCDF	30402-15-4	ug/kg		0.049 J	0.00016 U	0.017	0.02 J	0.033
CWA1613B	Total TCDD	41903-57-5	ug/kg		0.011 J	0.00016 U	0.0079 J	0.0094 J	0.01 J
CWA1613B	Total TCDF	30402-14-3	ug/kg		0.024	0.00011 U	0.008 J	0.012 J	0.023 J
Dioxins/Furans									
E1613	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg						
E1613	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg						
E1613	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg						
E1613	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg						
E1613	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg						
E1613	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg						
E1613	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg						
E1613	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg						
E1613	1,2,3,7,8-PeCDD	40321-76-4	ug/kg						
E1613	1,2,3,7,8-PeCDF	57117-41-6	ug/kg						
E1613	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg						
E1613	2,3,4,7,8-PeCDF	57117-31-4	ug/kg						
E1613	2,3,7,8-TCDD	1746-01-6	ug/kg						
E1613	2,3,7,8-TCDF	51207-31-9	ug/kg						
E1613	OCDD	3268-87-9	ug/kg						

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	512-0to28-101118	515-0to26-101918	A1-0to30-102018	a2-0to26-100818	a3-0to31-100818	a4-0to25-100818
	Date Time			10/11/2018 11:27:00	10/19/2018 13:11:00	10/20/2018 12:05:00	10/8/2018 14:04:00	10/8/2018 11:14:00	10/8/2018 13:26:00
	X			7634124	7634730	7633984	7633927	7633863	7633800
	Y			700852	700480	701473	701400	701327	701243
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			28	26	30	26	30	25
E1613	OCDF	39001-02-0	ug/kg						
E1613	Total HpCDD	37871-00-4	ug/kg						
E1613	Total HpCDF	38998-75-3	ug/kg						
E1613	Total HxCDD	34465-46-8	ug/kg						
E1613	Total HxCDF	55684-94-1	ug/kg						
E1613	Total PeCDD	36088-22-9	ug/kg						
E1613	Total PeCDF	30402-15-4	ug/kg						
E1613	Total TCDD	41903-57-5	ug/kg						
E1613	Total TCDF	30402-14-3	ug/kg						
PCB Aroclors									
SW8082A	Aroclor 1016	12674-11-2	ug/kg		1.9 U	1.3 U	2.2 UJ	2.1 U	1.7 UJ
SW8082A	Aroclor 1221	11104-28-2	ug/kg		2.4 U	1.6 U	2.8 UJ	2.8 U	2.2 UJ
SW8082A	Aroclor 1232	11141-16-5	ug/kg		2.4 U	1.6 U	2.8 UJ	2.8 U	2.2 UJ
SW8082A	Aroclor 1242	53469-21-9	ug/kg		1.2 U	0.84 U	1.5 UJ	1.4 U	1.1 UJ
SW8082A	Aroclor 1248	12672-29-6	ug/kg		0.91 U	0.62 U	1.1 UJ	1 U	0.82 UJ
SW8082A	Aroclor 1254	11097-69-1	ug/kg		74	1.4 U	2.3 UJ	44	85 J
SW8082A	Aroclor 1260	11096-82-5	ug/kg		1.9 U	1.3 U	6 J	2.2 U	1.7 UJ
PCB Congeners									
E1668A	PCB-1	2051-60-7	ng/g		1	0.00062 J	0.049	0.095	1.3
E1668A	PCB-2	2051-61-8	ng/g		0.16	5e-04 U	0.037	0.045	0.15
E1668A	PCB-3	2051-62-9	ng/g		0.55	0.00014 U	0.045	0.06	0.6
E1668A	PCB-4	13029-08-8	ng/g		1.3	0.00099 J	0.1	0.14	1
E1668A	PCB-5	16605-91-7	ng/g		0.053 J	0.00022 U	0.0013 U	0.0053 J	0.066
E1668A	PCB-6	25569-80-6	ng/g		0.35	0.00022 U	0.024	0.044	0.52
E1668A	PCB-7	33284-50-3	ng/g		0.1	0.00076 J	0.0077 J	0.011 J	0.14
E1668A	PCB-8	34883-43-7	ng/g		1.3	0.00047 U	0.078	0.17	1.7
E1668A	PCB-9	34883-39-1	ng/g		0.12 J	0.00025 U	0.0075 U	0.013 U	0.18
E1668A	PCB-10	33146-45-1	ng/g		0.065	0.00024 U	0.0051 J	0.007 J	0.064
E1668A	PCB-11	2050-67-1	ng/g		0.35	0.0024 U	0.075	0.075	0.15
E1668A	PCB-12	2974-92-7	ng/g		0.19	0.00021	0.016 U	0.023	0.2
E1668A	PCB-13	2974-90-5	ng/g		0.19	0.00021	0.016 U	0.023	0.2
E1668A	PCB-14	34883-41-5	ng/g		0.0033 U	0.00019 U	0.00075 U	0.00051 U	0.0021 U
E1668A	PCB-15	2050-68-2	ng/g		0.68	0.00047 U	0.077	0.099	0.68
E1668A	PCB-16	38444-78-9	ng/g		0.48	0.00033 U	0.049	0.15	0.93
E1668A	PCB-17	37680-66-3	ng/g		1.9	0.00026 U	0.21	0.25	1.3
E1668A	PCB-18	37680-65-2	ng/g		1.2	0.00073	0.12	0.33	2

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	512-0to28-101118	515-0to26-101918	A1-0to30-102018	a2-0to26-100818	a3-0to31-100818	a4-0to25-100818
	Date Time			10/11/2018 11:27:00	10/19/2018 13:11:00	10/20/2018 12:05:00	10/8/2018 14:04:00	10/8/2018 11:14:00	10/8/2018 13:26:00
	X			7634124	7634730	7633984	7633927	7633863	7633800
	Y			700852	700480	701473	701400	701327	701243
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			28	26	30	26	30	25
E1668A	PCB-19	38444-73-4	ng/g		2.4	6e-04 U	0.26	0.24	0.73
E1668A	PCB-20	38444-84-7	ng/g		1.9	0.0012 U	0.27	0.45	2.8
E1668A	PCB-21	55702-46-0	ng/g		0.9	0.00039 U	0.12	0.23	1.6
E1668A	PCB-22	38444-85-8	ng/g		0.4	0.00022 U	0.053	0.12	0.7
E1668A	PCB-23	55720-44-0	ng/g		0.011 U	0.00021 U	0.0023 U	0.0037 U	0.024 U
E1668A	PCB-24	55702-45-9	ng/g		0.017 J	0.00019 U	0.0034 J	0.0054 J	0.031 J
E1668A	PCB-25	55712-37-3	ng/g		0.26	2e-04 U	0.037	0.054	0.36
E1668A	PCB-26	38444-81-4	ng/g		0.3	2e-04	0.04	0.069	0.47
E1668A	PCB-27	38444-76-7	ng/g		0.36	0.00019 U	0.046	0.055	0.23
E1668A	PCB-28	7012-37-5	ng/g		1.9	0.0012 U	0.27	0.45	2.8
E1668A	PCB-29	15862-07-4	ng/g		0.3	2e-04	0.04	0.069	0.47
E1668A	PCB-30	35693-92-6	ng/g		1.2	0.00073	0.12	0.33	2
E1668A	PCB-31	16606-02-3	ng/g		1.3	0.00066 J	0.16	0.39	2.4
E1668A	PCB-32	38444-77-8	ng/g		1.1	0.00066 J	0.15	0.2	0.93
E1668A	PCB-33	38444-86-9	ng/g		0.9	0.00039 U	0.12	0.23	1.6
E1668A	PCB-34	37680-68-5	ng/g		0.011 U	0.00022 U	0.0024 U	0.0038 U	0.025 U
E1668A	PCB-35	37680-69-6	ng/g		0.058 J	0.00022 U	0.0067 J	0.0095 J	0.091
E1668A	PCB-36	38444-87-0	ng/g		0.01 U	2e-04 U	0.0021 U	0.0034 U	0.023 U
E1668A	PCB-37	38444-90-5	ng/g		0.58	0.00021 U	0.085	0.15	0.9
E1668A	PCB-38	53555-66-1	ng/g		0.01 U	2e-04 U	0.0022 U	0.0035 U	0.023 U
E1668A	PCB-39	38444-88-1	ng/g		0.041 J	0.00019 U	0.0021 U	0.0033 U	0.089
E1668A	PCB-40	38444-93-8	ng/g		2.9	0.00071 U	0.38	1	4.5
E1668A	PCB-41	52663-59-9	ng/g		2.9	0.00071 U	0.38	1	4.5
E1668A	PCB-42	36559-22-5	ng/g		1.2	0.00022 U	0.15	0.42 J	2.7
E1668A	PCB-43	70362-46-8	ng/g		0.44	0.00019	0.064	0.03	0.39
E1668A	PCB-44	41464-39-5	ng/g		19	0.012 U	2.4	5.9	25
E1668A	PCB-45	41464-39-5	ng/g		5.7	0.0021	0.86	0.95 J	2.3
E1668A	PCB-46	41464-47-5	ng/g		0.28	0.00026 U	0.047	0.04 UJ	0.37
E1668A	PCB-47	2437-79-8	ng/g		19	0.012 U	2.4	5.9	25
E1668A	PCB-48	70362-47-9	ng/g		0.45	0.00021 U	0.056	0.18 J	0.9
E1668A	PCB-49	41464-40-8	ng/g		9.6	0.0019	1.1	2.9	15
E1668A	PCB-50	62796-65-0	ng/g		3	0.00061	0.46	0.68 J	2.2
E1668A	PCB-51	68194-04-7	ng/g		5.7	0.0021	0.86	0.95 J	2.3
E1668A	PCB-52	35693-99-3	ng/g		27	0.0037 U	2.2	12 J	57
E1668A	PCB-53	41464-41-9	ng/g		3	0.00061	0.46	0.68 J	2.2
E1668A	PCB-54	15968-05-5	ng/g		0.91	0.00025 U	0.13	0.12	0.27

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	512-0to28-101118	515-0to26-101918	A1-0to30-102018	a2-0to26-100818	a3-0to31-100818	a4-0to25-100818
	Date Time			10/11/2018 11:27:00	10/19/2018 13:11:00	10/20/2018 12:05:00	10/8/2018 14:04:00	10/8/2018 11:14:00	10/8/2018 13:26:00
	X			7634124	7634730	7633984	7633927	7633863	7633800
	Y			700852	700480	701473	701400	701327	701243
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			28	26	30	26	30	25
E1668A	PCB-55	74338-24-2	ng/g		0.0099 U	0.00015 U	0.0012 U	0.023 UJ	0.013 U
E1668A	PCB-56	41464-43-1	ng/g		1.9	6e-04 U	0.22	0.92 J	4.5
E1668A	PCB-57	70424-67-8	ng/g		0.01 U	0.00015 U	0.0012 U	0.024 UJ	0.013 U
E1668A	PCB-58	41464-49-7	ng/g		0.0097 U	0.00015 U	0.0073 J	0.023 UJ	0.11
E1668A	PCB-59	74472-33-6	ng/g		0.52	0.00014	0.084	0.022	0.62
E1668A	PCB-60	33025-41-1	ng/g		0.55	0.00015 U	0.063	0.32 J	1.3
E1668A	PCB-61	33284-53-6	ng/g		18	0.003 U	1.6	9.1	42
E1668A	PCB-62	54230-22-7	ng/g		0.52	0.00014	0.084	0.022	0.62
E1668A	PCB-63	74472-34-7	ng/g		0.26	0.00013 U	0.032	0.097 J	0.49
E1668A	PCB-64	52663-58-8	ng/g		2.5	0.00014 U	0.24	1.2 J	5.6
E1668A	PCB-65	33284-54-7	ng/g		19	0.012 U	2.4	5.9	25
E1668A	PCB-66	32598-10-0	ng/g		6.2	0.0013 J	0.74	2.5 J	15
E1668A	PCB-67	73575-53-8	ng/g		0.16	0.00014 U	0.02 J	0.022 UJ	0.17
E1668A	PCB-68	73575-52-7	ng/g		0.29	0.0016 J	0.039	0.021 UJ	0.34
E1668A	PCB-69	60233-24-1	ng/g		9.6	0.0019	1.1	2.9	15
E1668A	PCB-70	32598-11-1	ng/g		18	0.003 U	1.6	9.1	42
E1668A	PCB-71	41464-46-4	ng/g		2.9	0.00071 U	0.38	1	4.5
E1668A	PCB-72	41464-42-0	ng/g		0.3	0.00015 U	0.032	0.023 UJ	0.57
E1668A	PCB-73	74338-23-1	ng/g		0.44	0.00019	0.064	0.03	0.39
E1668A	PCB-74	32690-93-0	ng/g		18	0.003 U	1.6	9.1	42
E1668A	PCB-75	32598-12-2	ng/g		0.52	0.00014	0.084	0.022	0.62
E1668A	PCB-76	70362-48-0	ng/g		18	0.003 U	1.6	9.1	42
E1668A	PCB-77	32598-13-3	ng/g		0.8	0.0018 J	0.067	0.14 J	1.4
E1668A	PCB-78	70362-49-1	ng/g		0.0098 U	0.00015 U	0.0012 U	0.023 UJ	0.013 U
E1668A	PCB-79	41464-48-6	ng/g		0.4	0.00013 U	0.035	0.15 J	2.3
E1668A	PCB-80	33284-52-5	ng/g		0.0087 U	0.00013 U	0.0011 U	0.021 UJ	0.012 U
E1668A	PCB-81	70362-50-4	ng/g		0.027 U	0.00015 U	0.0018 J	0.023 UJ	0.06 J
E1668A	PCB-82	52663-62-4	ng/g		4.3	0.00047 U	0.48	2.9	12
E1668A	PCB-83	60145-20-2	ng/g		26	0.0053 U	3.1	15	60
E1668A	PCB-84	52663-60-2	ng/g		11	0.0018 U	1.2	7.2	32
E1668A	PCB-85	65510-45-4	ng/g		6.1	0.002	0.68	3.8	16
E1668A	PCB-86	55312-69-1	ng/g		27	0.0061	3	17	72
E1668A	PCB-87	38380-02-8	ng/g		27	0.0061	3	17	72
E1668A	PCB-88	55215-17-3	ng/g		7.3	0.002	1	4	14
E1668A	PCB-89	73575-57-2	ng/g		0.29	0.00046 U	0.039	0.2	0.85
E1668A	PCB-90	68194-07-0	ng/g		48	0.012	5.6	27	110

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	512-0to28-101118	515-0to26-101918	A1-0to30-102018	a2-0to26-100818	a3-0to31-100818	a4-0to25-100818
	Date Time			10/11/2018 11:27:00	10/19/2018 13:11:00	10/20/2018 12:05:00	10/8/2018 14:04:00	10/8/2018 11:14:00	10/8/2018 13:26:00
	X			7634124	7634730	7633984	7633927	7633863	7633800
	Y			700852	700480	701473	701400	701327	701243
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			28	26	30	26	30	25
E1668A	PCB-91	68194-05-8	ng/g		7.3	0.002	1	4	14
E1668A	PCB-92	52663-61-3	ng/g		10	0.0027 J	1.2	5.4	22
E1668A	PCB-93	73575-56-1	ng/g		2.4	0.00042	0.55	0.77	1.6
E1668A	PCB-94	73575-55-0	ng/g		0.66	0.00045 U	0.097	0.22	0.0027 U
E1668A	PCB-95	38379-99-6	ng/g		38	0.0076 U	4.4	22	91
E1668A	PCB-96	73575-54-9	ng/g		0.51	0.00034 U	0.073	0.2	0.62
E1668A	PCB-97	41464-51-1	ng/g		27	0.0061	3	17	72
E1668A	PCB-98	60233-25-2	ng/g		1.7	0.00042	0.23	0.85	2.9
E1668A	PCB-99	38380-01-7	ng/g		26	0.0053 U	3.1	15	60
E1668A	PCB-100	39485-83-1	ng/g		2.4	0.00042	0.55	0.77	1.6
E1668A	PCB-101	37680-73-2	ng/g		48	0.012	5.6	27	110
E1668A	PCB-102	68194-06-9	ng/g		1.7	0.00042	0.23	0.85	2.9
E1668A	PCB-103	60145-21-3	ng/g		1.3	4e-04 U	0.22	0.44	1.2
E1668A	PCB-104	56558-16-8	ng/g	0.0041 U	3e-04 U	0.038	0.00054 U	0.0017 U	
E1668A	PCB-105	32598-14-4	ng/g	12	0.0022 U	1.2	7.1	30 J	
E1668A	PCB-106	70424-69-0	ng/g	0.028 U	0.00031 U	0.0059 U	0.013 U	0.093 UJ	
E1668A	PCB-107	70424-68-9	ng/g	2.5	0.00029 U	0.29	1.3	6 J	
E1668A	PCB-108	70362-41-3	ng/g	1.3	0.00032	0.13	0.78	3.5	
E1668A	PCB-109	74472-35-8	ng/g	27	0.0061	3	17	72	
E1668A	PCB-110	38380-03-9	ng/g	48	0.011	5.7	28	120	
E1668A	PCB-111	39635-32-0	ng/g	0.004 U	0.00029 U	0.00052 U	0.00053 U	0.0017 U	
E1668A	PCB-112	74472-36-9	ng/g	0.0042 U	3e-04 U	0.00054 U	0.00056 U	0.2	
E1668A	PCB-113	68194-10-5	ng/g	48	0.012	5.6	27	110	
E1668A	PCB-114	74472-37-0	ng/g	0.65	0.00028 U	0.068	0.43	1.7 J	
E1668A	PCB-115	74472-38-1	ng/g	48	0.011	5.7	28	120	
E1668A	PCB-116	18259-05-7	ng/g	6.1	0.002	0.68	3.8	16	
E1668A	PCB-117	68194-11-6	ng/g	6.1	0.002	0.68	3.8	16	
E1668A	PCB-118	31508-00-6	ng/g	32	0.0062 U	3.4	18	80 J	
E1668A	PCB-119	56558-17-9	ng/g	27	0.0061	3	17	72	
E1668A	PCB-120	68194-12-7	ng/g	0.35	0.00028 U	0.045	0.14	0.0016 U	
E1668A	PCB-121	56558-18-0	ng/g	0.0041 U	0.00029 U	0.00053 U	0.00054 U	0.0017 U	
E1668A	PCB-122	76842-07-4	ng/g	0.38	0.00034 U	0.045	0.24	1.1 J	
E1668A	PCB-123	65510-44-3	ng/g	0.43	0.00058 U	0.047	0.26	1.2 J	
E1668A	PCB-124	70424-70-3	ng/g	1.3	0.00032	0.13	0.78	3.5	
E1668A	PCB-125	74472-39-2	ng/g	27	0.0061	3	17	72	
E1668A	PCB-126	57465-28-8	ng/g	0.11	0.00074 U	0.0089 J	0.012 U	0.23 J	

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	512-0to28-101118	515-0to26-101918	A1-0to30-102018	a2-0to26-100818	a3-0to31-100818	a4-0to25-100818
	Date Time			10/11/2018 11:27:00	10/19/2018 13:11:00	10/20/2018 12:05:00	10/8/2018 14:04:00	10/8/2018 11:14:00	10/8/2018 13:26:00
	X			7634124	7634730	7633984	7633927	7633863	7633800
	Y			700852	700480	701473	701400	701327	701243
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			28	26	30	26	30	25
E1668A	PCB-127	39635-33-1	ng/g		0.065	0.00031 U	0.0059 U	0.036	0.092 UJ
E1668A	PCB-128	38380-07-3	ng/g		6.3	0.0025	0.85	4	17
E1668A	PCB-129	55215-18-4	ng/g		40	0.019	6.6	25	89
E1668A	PCB-130	52663-66-8	ng/g		2.8	0.0017 J	0.45	1.8	7
E1668A	PCB-131	61798-70-7	ng/g		0.61	0.00041 U	0.081	0.42	1.7
E1668A	PCB-132	38380-05-1	ng/g		14	0.0048 J	2.3	9.2	34
E1668A	PCB-133	35694-04-3	ng/g		1.1	0.00039 U	0.16	0.5	1.5
E1668A	PCB-134	52704-70-8	ng/g		2.6	0.00041	0.4	1.7	6
E1668A	PCB-135	52744-13-5	ng/g		16	0.0057 U	2.8	8.7	27
E1668A	PCB-136	38411-22-2	ng/g		6.4	0.0024 J	1.1	3.8	13
E1668A	PCB-137	35694-06-5	ng/g		1.7	0.00059 U	0.25	1.1	5.2
E1668A	PCB-138	35065-28-2	ng/g		40	0.019	6.6	25	89
E1668A	PCB-139	56030-56-9	ng/g		0.98	0.00035	0.14	0.57	2
E1668A	PCB-140	59291-64-4	ng/g		0.98	0.00035	0.14	0.57	2
E1668A	PCB-141	52712-04-6	ng/g		6.6	0.0042 J	1.2	4.3	14
E1668A	PCB-142	41411-61-4	ng/g		0.013 U	0.00041 U	0.0029 U	0.0042 U	0.012 U
E1668A	PCB-143	68194-15-0	ng/g		2.6	0.00041	0.4	1.7	6
E1668A	PCB-144	68194-14-9	ng/g		1.8	8e-04 U	0.33	1.1	4
E1668A	PCB-145	74472-40-5	ng/g		0.0015 U	0.00028 U	0.0062 U	0.014 U	0.067 J
E1668A	PCB-146	51908-16-8	ng/g		8.3	0.0024 U	1.3	4.3	13
E1668A	PCB-147	68194-13-8	ng/g		34	0.014	6	20	63
E1668A	PCB-148	74472-41-6	ng/g		0.34	0.00038 U	0.046	0.11	0.26
E1668A	PCB-149	38380-04-0	ng/g		34	0.014	6	20	63
E1668A	PCB-150	68194-08-1	ng/g		0.3	0.00027 U	0.05	0.14	0.25
E1668A	PCB-151	52663-63-5	ng/g		16	0.0057 U	2.8	8.7	27
E1668A	PCB-152	68194-09-2	ng/g		0.15	0.00027 U	0.025	0.064	0.13
E1668A	PCB-153	35065-27-1	ng/g		33	0.017	6.1	20	60
E1668A	PCB-154	60145-22-4	ng/g		1.7	0.00033 U	0.26	0.71	1.7
E1668A	PCB-155	33979-03-2	ng/g		0.026 J	0.00026 U	0.0097 J	0.00047 U	0.00093 U
E1668A	PCB-156	38380-08-4	ng/g		5.1	0.0032 U	0.73	3.2	13
E1668A	PCB-157	69782-90-7	ng/g		5.1	0.0032 U	0.73	3.2	13
E1668A	PCB-158	74472-42-7	ng/g		4	0.0023 J	0.63	2.7	9.9
E1668A	PCB-159	39635-35-3	ng/g		0.33	0.00027 U	0.072	0.2	0.44
E1668A	PCB-160	41411-62-5	ng/g		40	0.019	6.6	25	89
E1668A	PCB-161	74472-43-8	ng/g		0.0084 U	0.00026 U	0.0019 U	0.0027 U	0.008 U
E1668A	PCB-162	39635-34-2	ng/g		0.0083 U	0.00026 U	0.0018 U	0.0027 U	0.37

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	512-0to28-101118	515-0to26-101918	A1-0to30-102018	a2-0to26-100818	a3-0to31-100818	a4-0to25-100818
	Date Time			10/11/2018 11:27:00	10/19/2018 13:11:00	10/20/2018 12:05:00	10/8/2018 14:04:00	10/8/2018 11:14:00	10/8/2018 13:26:00
	X			7634124	7634730	7633984	7633927	7633863	7633800
	Y			700852	700480	701473	701400	701327	701243
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			28	26	30	26	30	25
E1668A	PCB-163	74472-44-9	ng/g		40	0.019	6.6	25	89
E1668A	PCB-164	74472-45-0	ng/g		2.9	0.0012 U	0.49	1.9	6.2
E1668A	PCB-165	74472-46-1	ng/g		0.01 U	0.00031 U	0.0022 U	0.0033 U	0.0095 U
E1668A	PCB-166	41411-63-6	ng/g		6.3	0.0025	0.85	4	17
E1668A	PCB-167	52663-72-6	ng/g		1.7	0.0021 J	0.23	0.93	3.9
E1668A	PCB-168	59291-65-5	ng/g		33	0.017	6.1	20	60
E1668A	PCB-169	32774-16-6	ng/g		0.0077 U	0.00072 J	0.0017 U	0.0025 U	0.0075 U
E1668A	PCB-170	35065-30-6	ng/g		10	0.0092 J	2.6	6.9	14
E1668A	PCB-171	52663-71-5	ng/g		3.4	0.0033	0.82	2.3	4.7
E1668A	PCB-172	52663-74-8	ng/g		1.7	0.0019 U	0.43	1.1	2.2
E1668A	PCB-173	68194-16-1	ng/g		3.4	0.0033	0.82	2.3	4.7
E1668A	PCB-174	38411-25-5	ng/g		9.8	0.0084 J	2.4	6.7	12
E1668A	PCB-175	40186-70-7	ng/g		0.42	0.00034 U	0.095	0.28	0.59
E1668A	PCB-176	52663-65-7	ng/g		1.2	0.001 J	0.28	0.81	1.6
E1668A	PCB-177	52663-70-4	ng/g		6.8	0.0041 U	1.5	4.2	7.8
E1668A	PCB-178	52663-67-9	ng/g		2.3	0.0017 J	0.5	1.3	2.5
E1668A	PCB-179	52663-64-6	ng/g		4.4	0.0028 J	0.95	2.8	4.8
E1668A	PCB-180	35065-29-3	ng/g		21	0.019	5.7	14	25
E1668A	PCB-181	74472-47-2	ng/g		0.15	0.00033 U	0.034	0.081	0.25
E1668A	PCB-182	60145-23-5	ng/g		0.18	0.00032 U	0.032	0.075	0.16
E1668A	PCB-183	52663-69-1	ng/g		6.4	0.0059	1.6	4.4	8.2
E1668A	PCB-184	74472-48-3	ng/g		0.0014 U	0.00026 U	0.00022 U	0.00032 U	7e-04 U
E1668A	PCB-185	52712-05-7	ng/g		6.4	0.0059	1.6	4.4	8.2
E1668A	PCB-186	74472-49-4	ng/g		0.0014 U	0.00026 U	0.00022 U	0.00032 U	0.00069 U
E1668A	PCB-187	52663-68-0	ng/g		13	0.0083 J	2.9	7.5	13
E1668A	PCB-188	74487-85-7	ng/g		0.066	0.00024 U	2e-04 U	3e-04 U	0.00065 U
E1668A	PCB-189	39635-31-9	ng/g		0.43	0.00066 U	0.11	0.26	0.55
E1668A	PCB-190	41411-64-7	ng/g		2.1	0.0022 U	0.6	1.4	2.6
E1668A	PCB-191	74472-50-7	ng/g		0.46	0.00078 J	0.12	0.31	0.62
E1668A	PCB-192	74472-51-8	ng/g		0.0016 U	0.00028 U	0.00025 U	0.00036 U	0.00077 U
E1668A	PCB-193	69782-91-8	ng/g		21	0.019	5.7	14	25
E1668A	PCB-194	35694-08-7	ng/g		5.9	0.0033 U	2	2.8	4.3
E1668A	PCB-195	52663-78-2	ng/g		2.7	0.0012 U	0.87	1.4	1.9
E1668A	PCB-196	42740-50-1	ng/g		2.7	0.00032 U	0.85	1.5	2.4
E1668A	PCB-197	33091-17-7	ng/g		0.2	0.00023 U	0.055	0.11	0.14 J
E1668A	PCB-198	68194-17-2	ng/g		5.4	0.0043 U	1.6	2.8	4.9

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	512-0to28-101118	515-0to26-101918	A1-0to30-102018	a2-0to26-100818	a3-0to31-100818	a4-0to25-100818
	Date Time			10/11/2018 11:27:00	10/19/2018 13:11:00	10/20/2018 12:05:00	10/8/2018 14:04:00	10/8/2018 11:14:00	10/8/2018 13:26:00
	X			7634124	7634730	7633984	7633927	7633863	7633800
	Y			700852	700480	701473	701400	701327	701243
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			28	26	30	26	30	25
E1668A	PCB-199	52663-75-9	ng/g		5.4	0.0043 U	1.6	2.8	4.9
E1668A	PCB-200	52663-73-7	ng/g		0.64	0.00025 U	0.17	0.38	0.62
E1668A	PCB-201	40186-71-8	ng/g		0.66	0.00024 U	0.16	0.36	0.63
E1668A	PCB-202	2136-99-4	ng/g		1	0.00063 J	0.23	0.5	0.99
E1668A	PCB-203	52663-76-0	ng/g		3.4	0.0026 U	1.1	1.9	3
E1668A	PCB-204	74472-52-9	ng/g		0.0031 U	0.00026 U	0.00042 U	0.00064 U	0.00093 U
E1668A	PCB-205	74472-53-0	ng/g		0.32	0.00038 U	0.1	0.15	0.23
E1668A	PCB-206	40186-72-9	ng/g		2	0.45 J	0.61	0.91 J	2.1
E1668A	PCB-207	52663-79-3	ng/g		0.23	0.00079 U	0.075	0.1	0.26
E1668A	PCB-208	52663-77-1	ng/g		0.44	0.00081 U	0.12	0.18	0.53
E1668A	PCB-209	2051-24-3	ng/g		0.58	0.00046 U	0.17	0.24	0.69
E1668A	Total Dichlorobiphenyls		ng/g		4.5 J	0.0051 J	0.39 J	0.59 J	4.7
E1668A	Total Heptachlorobiphenyls		ng/g		84	0.069 J	21	54	100
E1668A	Total Hexachlorobiphenyls		ng/g		190	0.085 J	33 J	120 J	390 J
E1668A	Total Monochlorobiphenyls		ng/g		1.7	0.0011 J	0.13	0.2	2.1
E1668A	Total Nonachlorobiphenyls		ng/g		2.7	0.45 J	0.81	1.2 J	2.9
E1668A	Total Octachlorobiphenyls		ng/g		23	0.012 J	7.1	12	19 J
E1668A	Total Pentachlorobiphenyls		ng/g		280	0.06 J	33	160	680
E1668A	Total Tetrachlorobiphenyls		ng/g		100 J	0.029 J	11 J	39	190
E1668A	Total Trichlorobiphenyls		ng/g		13 J	0.0042 J	1.6	2.7	16 J
E1668A	Polychlorinated biphenyls, Total	1336-36-3	ng/g		710 J	0.72 J	110 J	390 J	1400 J
Total Petroleum Hydrocarbons									
NWTPH-Dx	#2 Diesel (C10-C24)		ug/kg		150	20 U	76 J	54 J	110 J
NWTPH-Dx	Motor Oil (>C24-C36)		ug/kg		540	49 J	280	290	420
Metals									
SW6020B	Arsenic	7440-38-2	ug/kg		14	4	7.7	8.1	9.2
SW6020B	Cadmium	7440-43-9	ug/kg		0.78	0.074 J	0.34	0.41	0.64
SW6020B	Copper	7440-50-8	ug/kg		170	46	95	110	170
SW6020B	Lead	7439-92-1	ug/kg		66	12	26	31	68
SW6020B	Zinc	7440-66-6	ug/kg		420	65	210	220	360
SW7471A	Mercury	7439-97-6	ug/kg		0.92 J	0.059 J	0.14 J	0.16 J	0.28 J
Phthalates									
SW8270D	Bis(2-ethylhexyl) Phthalate	117-81-7	ug/kg		550 J	110	59 J	240	2000
PAHs									
SW8270D	2-Methylnaphthalene	91-57-6	ug/kg		12 J	0.12 UJ	7 J	1.4 J	16 J
SW8270D	Acenaphthene	83-32-9	ug/kg		65 J	0.047 UJ	13 J	1.8 J	23 J

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	512-0to28-101118	515-0to26-101918	A1-0to30-102018	a2-0to26-100818	a3-0to31-100818	a4-0to25-100818
	Date Time			10/11/2018 11:27:00	10/19/2018 13:11:00	10/20/2018 12:05:00	10/8/2018 14:04:00	10/8/2018 11:14:00	10/8/2018 13:26:00
	X			7634124	7634730	7633984	7633927	7633863	7633800
	Y			700852	700480	701473	701400	701327	701243
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			28	26	30	26	30	25
SW8270D	Acenaphthylene	208-96-8	ug/kg		7 J	0.046 UJ	23 J	8 J	20 J
SW8270D	Anthracene	120-12-7	ug/kg		190 J	0.038 UJ	51 J	12 J	41 J
SW8270D	Benzo(a)anthracene	56-55-3	ug/kg		420 J	0.056 UJ	210 J	170 J	150 J
SW8270D	Benzo(a)pyrene	50-32-8	ug/kg		410 J	0.11 UJ	230 J	93 J	190 J
SW8270D	Benzo(b)fluoranthene	205-99-2	ug/kg		480	0.066 U	320	190	240
SW8270D	Benzo(g,h,i)perylene	191-24-2	ug/kg		220 J	0.095 UJ	170 J	34 J	150 J
SW8270D	Benzo(k)fluoranthene	207-08-9	ug/kg		190 J	0.057 UJ	110 J	70 J	89 J
SW8270D	Chrysene	218-01-9	ug/kg		440 J	0.055 UJ	380 J	250 J	230 J
SW8270D	Dibenzo(a,h)anthracene	53-70-3	ug/kg		67 J	0.086 UJ	37 J	11 J	29 J
SW8270D	Dibenzofuran	132-64-9	ug/kg		30 J	0.045 UJ	8.3 J	1.1 J	13 J
SW8270D	Fluoranthene	206-44-0	ug/kg		730 J	0.053 UJ	530 J	170 J	310 J
SW8270D	Fluorene	86-73-7	ug/kg		78 J	0.052 UJ	19 J	2.9 J	20 J
SW8270D	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg		260 J	0.096 UJ	180 J	46 J	150 J
SW8270D	Naphthalene	91-20-3	ug/kg		16 J	0.15 UJ	17 J	2 J	29 J
SW8270D	Phenanthrene	85-01-8	ug/kg		620 J	0.11 UJ	140 J	22 J	190 J
SW8270D	Pyrene	129-00-0	ug/kg		760	0.061 U	520	210	390
Calculated Totals									
ALS SOP	CALC_TOTAL_Chlordane_ND_PDI		ug/kg		0.43 JT	0.13 UT	0.45 JT	0.42 JT	0.5 JT
ALS SOP	CALC_TOTAL_DDD_ND_PDI		ug/kg		1.2 AT	0.063 UT	1 JT	1.3 JT	1.7 JT
ALS SOP	CALC_TOTAL_DDE_ND_PDI		ug/kg		2 AJT	0.079 UT	1.3 JT	1.8 JT	2.9 JT
ALS SOP	CALC_TOTAL_DDT_ND_PDI		ug/kg		0.1 UT	0.094 UT	0.1 UT	0.11 UT	0.094 UT
ALS SOP	CALC_TOTAL_DDx_ND_PDI		ug/kg		3.2 JT	0.094 UT	2.4 JT	3.2 JT	4.7 JT
E1668A	CALC_TOTAL_PCB_ND_PDI		ug/kg		710 JT	0.72 JT	110 JT	390 JT	1400 JT
SW8082A	CALC_TOTAL_AROCLORS_ND_PDI		ug/kg		75 AT	1.6 UT	7.4 JT	45 AT	86 JT
SW8270D	CALC_TOTAL_CPAH_ND_PDI		ug/kg		600 JT	0.061 JT	340 JT	150 JT	270 JT
SW8270D	CALC_TOTAL_HPAH_ND_PDI		ug/kg		3300 JT	0.22 JT	2300 JT	980 JT	1600 JT
SW8270D	CALC_TOTAL_LPAH_ND_PDI		ug/kg		990 JT	0.18 JT	270 JT	50 JT	340 JT
SW8270D	CALC_TOTAL_PAH_ND_PDI		ug/kg		4300 JT	0.36 JT	2500 JT	1000 JT	1900 JT

DDx = dichlorodiphenyltrichloroethane and its derivatives

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyls

PeCDD = Pentachlorodibenzo-p-dioxin

PeCDF = Pentachlorodibenzofuran

TCDD = Tetrachlorodibenzo-p-dioxin

ug/kg = micrograms per kilogram

ng/g = nanograms per gram

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	512-0to28-101118	515-0to26-101918	A1-0to30-102018	a2-0to26-100818	a3-0to31-100818	a4-0to25-100818
	Date Time			10/11/2018 11:27:00	10/19/2018 13:11:00	10/20/2018 12:05:00	10/8/2018 14:04:00	10/8/2018 11:14:00	10/8/2018 13:26:00
	X			7634124	7634730	7633984	7633927	7633863	7633800
	Y			700852	700480	701473	701400	701327	701243
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			28	26	30	26	30	25

% = percent

g/cm3 = grams per cubic centimeter

J = Reported result is an estimate

T = Total concentration from component analytes.

U = Analyte was not detected in sample

R = Rejected

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	a5-0to25-100818	a6-0to23-100818	a7-0to26-100918	B1-0to20-101418	B5-0to26-100818	c4-0to27-100918
	Date Time			10/8/2018 14:38:00	10/8/2018 16:08:00	10/9/2018 13:23:00	10/14/2018 12:58:00	10/8/2018 15:07:00	10/9/2018 8:28:00
	X			7633737	7633676	7633613	7634039	7633816	7633957
	Y			701167	701091	701014	701364	701104	701118
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			25	23	26	20	26	27
Conventionals									
D422	Clay	STL00587	%	24	20	15			18
D422	Silt	STL00586	%	66	57	56			55
D422	Fine Sand	STL00585	%	10	21	26			24
D422	Medium Sand	STL00584	%	0.4	1.6	1.8			1.5
D422	Coarse Sand	STL00583	%	0	0.5	0.3			0.1
D422	Gravel	STL00581	%	0	0	0.9			0.6
D854	Density	STL00183	g/cm3	1.2	1.3	1.3			1.2
D854	Specific Gravity		NONE	1.2	1.3	1.3			1.2
E160.3	Total Solids		%	47	44	53			40
D2216	Total Solids		%	33	39	38			38
SW9060	Total Organic Carbon	7440-44-0	mg/kg	33000	27000	32000			30000
Butyltins									
ALS SOP	Tri-n-butyltin Cation	36643-28-4	ug/kg	120	180	130			100
Organochlorine Pesticides									
ALS SOP	o,p'-DDD	53-19-0	ug/kg	0.54 J	0.69 J	0.47 J			0.92 J
ALS SOP	o,p'-DDE	3424-82-6	ug/kg	0.088 J	0.089 U	0.079 U			0.097 U
ALS SOP	o,p'-DDT	789-02-6	ug/kg	0.098 U	0.11 U	0.094 U			0.12 U
ALS SOP	4,4'-DDD	72-54-8	ug/kg	2.3 J	3 J	2.5 J			2.3 J
ALS SOP	4,4'-DDE	72-55-9	ug/kg	2.5 J	0.97 J	1.8 J			1.6 J
ALS SOP	4,4'-DDT	50-29-3	ug/kg	0.73 J	0.053 U	0.047 U			0.058 U
ALS SOP	Aldrin	309-00-2	ug/kg	0.082 U	0.089 U	0.079 U			0.097 U
ALS SOP	alpha-Chlordane	5103-71-9	ug/kg	0.12 J	0.07 U	0.14 J			0.094 J
ALS SOP	Chlordane, gamma	5566-34-7	ug/kg	0.17 J	0.088 J	0.18 J			0.13 J
ALS SOP	cis-Nonachlor	5103-73-1	ug/kg	0.11 U	0.11 U	0.097 U			0.12 U
ALS SOP	Dieldrin	60-57-1	ug/kg	0.08 U	0.087 U	0.077 U			0.094 U
ALS SOP	gamma-BHC (Lindane)	58-89-9	ug/kg	0.033 U	0.035 U	0.031 U			0.038 U
ALS SOP	Heptachlor	76-44-8	ug/kg	0.041 U	0.044 U	0.039 U			0.048 U
ALS SOP	Oxychlordane	27304-13-8	ug/kg	0.14 U	0.15 U	0.13 U			0.16 U
ALS SOP	trans-Nonachlor	39765-80-5	ug/kg	0.13 J	0.068 J	0.16 J			0.094 J
Dioxins/Furans									
CWA1613B	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg	0.93	0.65	0.81			0.73
CWA1613B	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg	0.18 J	0.12 J	0.2 J			0.14 J
CWA1613B	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg	0.011 J	0.0056 J	0.011 J			0.0064 J
CWA1613B	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg	0.0042 J	0.0026 J	0.003 J			0.0028 J
CWA1613B	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg	0.015	0.0076	0.011			0.0085

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	a5-0to25-100818	a6-0to23-100818	a7-0to26-100918	B1-0to20-101418	B5-0to26-100818	c4-0to27-100918
	Date Time			10/8/2018 14:38:00	10/8/2018 16:08:00	10/9/2018 13:23:00	10/14/2018 12:58:00	10/8/2018 15:07:00	10/9/2018 8:28:00
	X			7633737	7633676	7633613	7634039	7633816	7633957
	Y			701167	701091	701014	701364	701104	701118
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			25	23	26	20	26	27
CWA1613B	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg	0.025 J	0.018 J	0.021 J			0.018 J
CWA1613B	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg	0.0053 J	0.003 J	0.0042 J			0.0036 J
CWA1613B	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg	0.0052 U	0.0056 J	0.0052 J			0.0053 J
CWA1613B	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg	0.001 U	8e-04 U	0.001 U			7e-04 U
CWA1613B	1,2,3,7,8-PeCDD	40321-76-4	ug/kg	0.00088 U	0.00096 U	0.00093 U			0.0015 J
CWA1613B	1,2,3,7,8-PeCDF	57117-41-6	ug/kg	0.002 J	0.00098 U	0.002 J			0.0011 J
CWA1613B	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg	0.003 J	0.0012 J	0.0024 J			0.0016 J
CWA1613B	2,3,4,7,8-PeCDF	57117-31-4	ug/kg	0.0031 J	0.0016 J	0.0026 J			0.0016 J
CWA1613B	2,3,7,8-TCDD	1746-01-6	ug/kg	0.00082 J	0.00045 U	0.00047 U			0.00047 U
CWA1613B	2,3,7,8-TCDF	51207-31-9	ug/kg	0.0035	0.0017	0.0027			0.0018
CWA1613B	OCDD	3268-87-9	ug/kg	7.1 J	5.2 J	6 J			5.4 J
CWA1613B	OCDF	39001-02-0	ug/kg	0.82	0.6	1.1			0.69
CWA1613B	Total HpCDD	37871-00-4	ug/kg	2	1.4	1.7			1.6
CWA1613B	Total HpCDF	38998-75-3	ug/kg	0.93	0.67	1.1			0.73
CWA1613B	Total HxCDD	34465-46-8	ug/kg	0.21 J	0.14 J	0.17			0.15
CWA1613B	Total HxCDF	55684-94-1	ug/kg	0.25	0.17	0.25			0.19
CWA1613B	Total PeCDD	36088-22-9	ug/kg	0.011 J	0.01 J	0.016 J			0.0079 J
CWA1613B	Total PeCDF	30402-15-4	ug/kg	0.028 J	0.019 J	0.031 J			0.021
CWA1613B	Total TCDD	41903-57-5	ug/kg	0.013 J	0.0078 J	0.0085 J			0.0081 J
CWA1613B	Total TCDF	30402-14-3	ug/kg	0.022 J	0.011 J	0.019 J			0.012 J
Dioxins/Furans									
E1613	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg				0.014 J	0.44 J	
E1613	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg				0.00089 J	0.023 J	
E1613	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg				0.00038 J	0.0075	
E1613	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg				0.0014 J	0.018	
E1613	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg				0.0018 J	0.043 J	
E1613	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg				0.00049 J	0.0057	
E1613	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg				0.00076 J	0.012	
E1613	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg				7.8e-05 U	6e-04 J	
E1613	1,2,3,7,8-PeCDD	40321-76-4	ug/kg				0.00023 U	0.0025 J	
E1613	1,2,3,7,8-PeCDF	57117-41-6	ug/kg				0.00017 U	0.0013 J	
E1613	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg				0.00029 U	0.0036 J	
E1613	2,3,4,7,8-PeCDF	57117-31-4	ug/kg				0.00025 J	0.0022 J	
E1613	2,3,7,8-TCDD	1746-01-6	ug/kg				7.8e-05 U	0.00077 J	
E1613	2,3,7,8-TCDF	51207-31-9	ug/kg				0.00032 J	0.0027 11	
E1613	OCDD	3268-87-9	ug/kg				0.52	11	

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	a5-0to25-100818	a6-0to23-100818	a7-0to26-100918	B1-0to20-101418	B5-0to26-100818	c4-0to27-100918
	Date Time			10/8/2018 14:38:00	10/8/2018 16:08:00	10/9/2018 13:23:00	10/14/2018 12:58:00	10/8/2018 15:07:00	10/9/2018 8:28:00
	X			7633737	7633676	7633613	7634039	7633816	7633957
	Y			701167	701091	701014	701364	701104	701118
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			25	23	26	20	26	27
E1613	OCDF	39001-02-0	ug/kg				0.057 J	2 J	
E1613	Total HpCDD	37871-00-4	ug/kg				0.12	3.1	
E1613	Total HpCDF	38998-75-3	ug/kg				0.057	2.3	
E1613	Total HxCDD	34465-46-8	ug/kg				0.0099	0.18	
E1613	Total HxCDF	55684-94-1	ug/kg				0.02	0.4	
E1613	Total PeCDD	36088-22-9	ug/kg				9e-04	0.023	
E1613	Total PeCDF	30402-15-4	ug/kg				0.0082	0.046	
E1613	Total TCDD	41903-57-5	ug/kg				0.00044	0.011	
E1613	Total TCDF	30402-14-3	ug/kg				0.0027	0.016	
PCB Aroclors									
SW8082A	Aroclor 1016	12674-11-2	ug/kg	2.1 U	1.7 UJ	1.8 UJ			1.8 UJ
SW8082A	Aroclor 1221	11104-28-2	ug/kg	2.8 U	2.1 UJ	2.3 UJ			2.3 UJ
SW8082A	Aroclor 1232	11141-16-5	ug/kg	2.8 U	2.1 UJ	2.3 UJ			2.3 UJ
SW8082A	Aroclor 1242	53469-21-9	ug/kg	1.4 U	1.1 UJ	1.2 UJ			1.2 UJ
SW8082A	Aroclor 1248	12672-29-6	ug/kg	1 U	0.81 UJ	0.89 UJ			0.86 UJ
SW8082A	Aroclor 1254	11097-69-1	ug/kg	45	52 J	57 J			130 J
SW8082A	Aroclor 1260	11096-82-5	ug/kg	2.2 U	1.7 UJ	1.9 UJ			1.8 UJ
PCB Congeners									
E1668A	PCB-1	2051-60-7	ng/g	0.36	0.27	0.089			0.22
E1668A	PCB-2	2051-61-8	ng/g	0.067	0.075	0.039 U			0.047
E1668A	PCB-3	2051-62-9	ng/g	0.17	0.11	0.061 J			0.11
E1668A	PCB-4	13029-08-8	ng/g	0.57	0.35	0.17			0.77
E1668A	PCB-5	16605-91-7	ng/g	0.013 J	0.01 J	0.0046 U			0.0066 J
E1668A	PCB-6	25569-80-6	ng/g	0.12	0.11	0.034 J			0.067
E1668A	PCB-7	33284-50-3	ng/g	0.028 U	0.025	0.0098 J			0.016
E1668A	PCB-8	34883-43-7	ng/g	0.47	0.35	0.12 J			0.21
E1668A	PCB-9	34883-39-1	ng/g	0.041	0.032	0.0051 U			0.022
E1668A	PCB-10	33146-45-1	ng/g	0.023 U	0.018	0.009 J			0.036
E1668A	PCB-11	2050-67-1	ng/g	0.097	0.093	0.091 J			0.075
E1668A	PCB-12	2974-92-7	ng/g	0.061	0.051	0.036			0.04
E1668A	PCB-13	2974-90-5	ng/g	0.061	0.051	0.036			0.04
E1668A	PCB-14	34883-41-5	ng/g	0.0017 U	0.00055 U	0.0039 U			0.00047 U
E1668A	PCB-15	2050-68-2	ng/g	0.24	0.16	0.11			0.17
E1668A	PCB-16	38444-78-9	ng/g	0.3	0.22	0.052 U			0.12
E1668A	PCB-17	37680-66-3	ng/g	1.3	0.97	0.47			1.3
E1668A	PCB-18	37680-65-2	ng/g	0.73	0.51	0.17			0.33

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	a5-0to25-100818	a6-0to23-100818	a7-0to26-100918	B1-0to20-101418	B5-0to26-100818	c4-0to27-100918
	Date Time			10/8/2018 14:38:00	10/8/2018 16:08:00	10/9/2018 13:23:00	10/14/2018 12:58:00	10/8/2018 15:07:00	10/9/2018 8:28:00
	X			7633737	7633676	7633613	7634039	7633816	7633957
	Y			701167	701091	701014	701364	701104	701118
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			25	23	26	20	26	27
E1668A	PCB-19	38444-73-4	ng/g	1.4	0.88	0.46			2.2
E1668A	PCB-20	38444-84-7	ng/g	1.7	0.96	1.4			0.79
E1668A	PCB-21	55702-46-0	ng/g	0.93	0.45	0.56			0.3
E1668A	PCB-22	38444-85-8	ng/g	0.28	0.18	0.077			0.1
E1668A	PCB-23	55720-44-0	ng/g	0.0093 U	0.0056 U	0.0071 U			0.0039 U
E1668A	PCB-24	55702-45-9	ng/g	0.012 J	0.0092 J	0.0055 U			0.00047 U
E1668A	PCB-25	55712-37-3	ng/g	0.21	0.13	0.26			0.14
E1668A	PCB-26	38444-81-4	ng/g	0.17	0.2	0.077			0.099
E1668A	PCB-27	38444-76-7	ng/g	0.24	0.21	0.07			0.3
E1668A	PCB-28	7012-37-5	ng/g	1.7	0.96	1.4			0.79
E1668A	PCB-29	15862-07-4	ng/g	0.17	0.2	0.077			0.099
E1668A	PCB-30	35693-92-6	ng/g	0.73	0.51	0.17			0.33
E1668A	PCB-31	16606-02-3	ng/g	0.87	0.6	0.28			0.38
E1668A	PCB-32	38444-77-8	ng/g	1.5	0.5	2			0.85
E1668A	PCB-33	38444-86-9	ng/g	0.93	0.45	0.56			0.3
E1668A	PCB-34	37680-68-5	ng/g	0.0097 U	0.012	0.0074 U			0.0097 J
E1668A	PCB-35	37680-69-6	ng/g	0.024 J	0.098	0.022 J			0.014
E1668A	PCB-36	38444-87-0	ng/g	0.0088 U	0.0059 J	0.0067 U			0.0037 U
E1668A	PCB-37	38444-90-5	ng/g	0.3	0.25	0.11			0.15
E1668A	PCB-38	53555-66-1	ng/g	0.0089 U	0.0054 U	0.0068 U			0.0037 U
E1668A	PCB-39	38444-88-1	ng/g	0.015 J	0.014	0.0064 U			0.0046 U
E1668A	PCB-40	38444-93-8	ng/g	1.8	1.7	2.1			1.5
E1668A	PCB-41	52663-59-9	ng/g	1.8	1.7	2.1			1.5
E1668A	PCB-42	36559-22-5	ng/g	0.58 J	0.67	0.49 J			0.49
E1668A	PCB-43	70362-46-8	ng/g	1.2 J	0.24	0.98			0.3
E1668A	PCB-44	41464-39-5	ng/g	42	10	30			11
E1668A	PCB-45	41464-39-5	ng/g	16 J	2.6	16			4.8
E1668A	PCB-46	41464-47-5	ng/g	0.31 J	0.16	0.4 J			0.2
E1668A	PCB-47	2437-79-8	ng/g	42	10	30			11
E1668A	PCB-48	70362-47-9	ng/g	0.2 J	0.26	0.071 UJ			0.2
E1668A	PCB-49	41464-40-8	ng/g	8.6 J	4.8	16			4.6
E1668A	PCB-50	62796-65-0	ng/g	3.5 J	1.5	7			2.4
E1668A	PCB-51	68194-04-7	ng/g	16 J	2.6	16			4.8
E1668A	PCB-52	35693-99-3	ng/g	7.7 J	13	4.1 J			6.7
E1668A	PCB-53	41464-41-9	ng/g	3.5 J	1.5	7			2.4
E1668A	PCB-54	15968-05-5	ng/g	1.4	0.37	1.6			0.82

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	a5-0to25-100818	a6-0to23-100818	a7-0to26-100918	B1-0to20-101418	B5-0to26-100818	c4-0to27-100918
	Date Time			10/8/2018 14:38:00	10/8/2018 16:08:00	10/9/2018 13:23:00	10/14/2018 12:58:00	10/8/2018 15:07:00	10/9/2018 8:28:00
	X			7633737	7633676	7633613	7634039	7633816	7633957
	Y			701167	701091	701014	701364	701104	701118
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			25	23	26	20	26	27
E1668A	PCB-55	74338-24-2	ng/g	0.064 UJ	0.003 U	0.052 U			0.0044 U
E1668A	PCB-56	41464-43-1	ng/g	0.63 J	1	0.28			0.5
E1668A	PCB-57	70424-67-8	ng/g	0.065 UJ	0.0031 U	0.052 U			0.0044 U
E1668A	PCB-58	41464-49-7	ng/g	0.063 UJ	0.003 U	0.051 U			0.016 J
E1668A	PCB-59	74472-33-6	ng/g	1.8	0.28	1			0.33
E1668A	PCB-60	33025-41-1	ng/g	0.21 J	0.28	0.05 U			0.14
E1668A	PCB-61	33284-53-6	ng/g	4.9	8.9	2.5			4.2
E1668A	PCB-62	54230-22-7	ng/g	1.8	0.28	1			0.33
E1668A	PCB-63	74472-34-7	ng/g	0.53 J	0.14	0.29			0.12
E1668A	PCB-64	52663-58-8	ng/g	0.79 J	1.3	0.42			0.63
E1668A	PCB-65	33284-54-7	ng/g	42	10	30			11
E1668A	PCB-66	32598-10-0	ng/g	2.3 J	3.2	1.9			2
E1668A	PCB-67	73575-53-8	ng/g	0.059 UJ	0.17	0.048 U			0.073
E1668A	PCB-68	73575-52-7	ng/g	0.82 J	0.13	0.39			0.17
E1668A	PCB-69	60233-24-1	ng/g	8.6 J	4.8	16			4.6
E1668A	PCB-70	32598-11-1	ng/g	4.9	8.9	2.5			4.2
E1668A	PCB-71	41464-46-4	ng/g	1.8	1.7	2.1			1.5
E1668A	PCB-72	41464-42-0	ng/g	0.13 J	0.15	0.051 U			0.11
E1668A	PCB-73	74338-23-1	ng/g	1.2 J	0.24	0.98			0.3
E1668A	PCB-74	32690-93-0	ng/g	4.9	8.9	2.5			4.2
E1668A	PCB-75	32598-12-2	ng/g	1.8	0.28	1			0.33
E1668A	PCB-76	70362-48-0	ng/g	4.9	8.9	2.5			4.2
E1668A	PCB-77	32598-13-3	ng/g	0.21 J	0.54	0.12			0.19
E1668A	PCB-78	70362-49-1	ng/g	0.063 UJ	0.003 U	0.051 U			0.0043 U
E1668A	PCB-79	41464-48-6	ng/g	0.12 J	0.21	0.044 U			0.11
E1668A	PCB-80	33284-52-5	ng/g	0.056 UJ	0.0027 U	0.046 U			0.0038 U
E1668A	PCB-81	70362-50-4	ng/g	0.061 UJ	0.016 J	0.051 U			0.008 J
E1668A	PCB-82	52663-62-4	ng/g	1.4	2.9	0.79			1.3
E1668A	PCB-83	60145-20-2	ng/g	14	16	21			9.7
E1668A	PCB-84	52663-60-2	ng/g	3.7	7.7	2.2			3.4
E1668A	PCB-85	65510-45-4	ng/g	5.2	3.9	3.1			2
E1668A	PCB-86	55312-69-1	ng/g	11	17	8.1			8.7
E1668A	PCB-87	38380-02-8	ng/g	11	17	8.1			8.7
E1668A	PCB-88	55215-17-3	ng/g	12	5	13			3.2
E1668A	PCB-89	73575-57-2	ng/g	0.004 U	0.24	0.0053 U			0.095 J
E1668A	PCB-90	68194-07-0	ng/g	34	29	25			18

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	a5-0to25-100818	a6-0to23-100818	a7-0to26-100918	B1-0to20-101418	B5-0to26-100818	c4-0to27-100918
	Date Time			10/8/2018 14:38:00	10/8/2018 16:08:00	10/9/2018 13:23:00	10/14/2018 12:58:00	10/8/2018 15:07:00	10/9/2018 8:28:00
	X			7633737	7633676	7633613	7634039	7633816	7633957
	Y			701167	701091	701014	701364	701104	701118
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			25	23	26	20	26	27
E1668A	PCB-91	68194-05-8	ng/g	12	5	13			3.2
E1668A	PCB-92	52663-61-3	ng/g	5.7	6.3	6.1			4.2
E1668A	PCB-93	73575-56-1	ng/g	27	1.3	4.4			1.7
E1668A	PCB-94	73575-55-0	ng/g	2.5	0.48	2.5			0.4
E1668A	PCB-95	38379-99-6	ng/g	14	24	9.9			12
E1668A	PCB-96	73575-54-9	ng/g	1.1	0.37	1.2			0.28
E1668A	PCB-97	41464-51-1	ng/g	11	17	8.1			8.7
E1668A	PCB-98	60233-25-2	ng/g	1.9	1.2	2.3			0.87
E1668A	PCB-99	38380-01-7	ng/g	14	16	21			9.7
E1668A	PCB-100	39485-83-1	ng/g	27	1.3	4.4			1.7
E1668A	PCB-101	37680-73-2	ng/g	34	29	25			18
E1668A	PCB-102	68194-06-9	ng/g	1.9	1.2	2.3			0.87
E1668A	PCB-103	60145-21-3	ng/g	5.1	0.76	3.4			0.83
E1668A	PCB-104	56558-16-8	ng/g	2.2	0.00087 U	0.42			0.14
E1668A	PCB-105	32598-14-4	ng/g	3 J	7 J	1.7			3.5
E1668A	PCB-106	70424-69-0	ng/g	0.045 UJ	0.015 UJ	0.045 U			0.011 U
E1668A	PCB-107	70424-68-9	ng/g	1 J	1.6 J	0.86			1.1
E1668A	PCB-108	70362-41-3	ng/g	0.33	0.83	0.25 J			0.43
E1668A	PCB-109	74472-35-8	ng/g	11	17	8.1			8.7
E1668A	PCB-110	38380-03-9	ng/g	17	30	14			15
E1668A	PCB-111	39635-32-0	ng/g	0.41	0.00085 U	0.11			0.09
E1668A	PCB-112	74472-36-9	ng/g	0.0026 U	0.00089 U	0.0035 U			0.00057 U
E1668A	PCB-113	68194-10-5	ng/g	34	29	25			18
E1668A	PCB-114	74472-37-0	ng/g	0.15 J	0.41 J	0.042 U			0.19
E1668A	PCB-115	74472-38-1	ng/g	17	30	14			15
E1668A	PCB-116	18259-05-7	ng/g	5.2	3.9	3.1			2
E1668A	PCB-117	68194-11-6	ng/g	5.2	3.9	3.1			2
E1668A	PCB-118	31508-00-6	ng/g	8.8 J	18 J	8.7			11
E1668A	PCB-119	56558-17-9	ng/g	11	17	8.1			8.7
E1668A	PCB-120	68194-12-7	ng/g	0.31	0.23	0.27			0.18
E1668A	PCB-121	56558-18-0	ng/g	0.85	0.00087 U	0.13			0.064
E1668A	PCB-122	76842-07-4	ng/g	0.096 J	0.26 J	0.05 U			0.12
E1668A	PCB-123	65510-44-3	ng/g	0.14 J	0.26 J	0.099 J			0.13
E1668A	PCB-124	70424-70-3	ng/g	0.33	0.83	0.25 J			0.43
E1668A	PCB-125	74472-39-2	ng/g	11	17	8.1			8.7
E1668A	PCB-126	57465-28-8	ng/g	0.044 UJ	0.096 J	0.046 U			0.041

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	a5-0to25-100818	a6-0to23-100818	a7-0to26-100918	B1-0to20-101418	B5-0to26-100818	c4-0to27-100918
	Date Time			10/8/2018 14:38:00	10/8/2018 16:08:00	10/9/2018 13:23:00	10/14/2018 12:58:00	10/8/2018 15:07:00	10/9/2018 8:28:00
	X			7633737	7633676	7633613	7634039	7633816	7633957
	Y			701167	701091	701014	701364	701104	701118
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			25	23	26	20	26	27
E1668A	PCB-127	39635-33-1	ng/g	0.045 UJ	0.043 J	0.045 U			0.021
E1668A	PCB-128	38380-07-3	ng/g	3.2	4.5	6.8			2.9
E1668A	PCB-129	55215-18-4	ng/g	29	28	90			23
E1668A	PCB-130	52663-66-8	ng/g	1.5 J	2.1	3.2			2.1
E1668A	PCB-131	61798-70-7	ng/g	0.27 J	0.46	0.035 U			0.28
E1668A	PCB-132	38380-05-1	ng/g	7 J	11	18			7.1
E1668A	PCB-133	35694-04-3	ng/g	1.9 J	0.68	1.2			0.95
E1668A	PCB-134	52704-70-8	ng/g	1.6	2	3.6			1.4
E1668A	PCB-135	52744-13-5	ng/g	13	10	38			10
E1668A	PCB-136	38411-22-2	ng/g	4.8	4.4	10			3.3
E1668A	PCB-137	35694-06-5	ng/g	1.6 J	1.3	1 J			0.74
E1668A	PCB-138	35065-28-2	ng/g	29	28	90			23
E1668A	PCB-139	56030-56-9	ng/g	0.95	0.7	0.71			0.47
E1668A	PCB-140	59291-64-4	ng/g	0.95	0.7	0.71			0.47
E1668A	PCB-141	52712-04-6	ng/g	4.6 J	4.6	22			4.1
E1668A	PCB-142	41411-61-4	ng/g	0.038 UJ	0.0037 U	0.035 U			0.0046 U
E1668A	PCB-143	68194-15-0	ng/g	1.6	2	3.6			1.4
E1668A	PCB-144	68194-14-9	ng/g	1.3	1.2	5.3			1
E1668A	PCB-145	74472-40-5	ng/g	0.028 J	0.02 J	0.0019 U			0.016
E1668A	PCB-146	51908-16-8	ng/g	7.4 J	5.4	14			5.8
E1668A	PCB-147	68194-13-8	ng/g	42	24	74			20
E1668A	PCB-148	74472-41-6	ng/g	1.8	0.18	0.3			0.22
E1668A	PCB-149	38380-04-0	ng/g	42	24	74			20
E1668A	PCB-150	68194-08-1	ng/g	2	0.19	0.57			0.16
E1668A	PCB-151	52663-63-5	ng/g	13	10	38			10
E1668A	PCB-152	68194-09-2	ng/g	1.1	0.097	0.34			0.087
E1668A	PCB-153	35065-27-1	ng/g	28	22	97			19
E1668A	PCB-154	60145-22-4	ng/g	4.6	1.1	1.9			0.82
E1668A	PCB-155	33979-03-2	ng/g	0.38	0.013	0.0017 U			0.018
E1668A	PCB-156	38380-08-4	ng/g	2.6	3.4	8			2.4
E1668A	PCB-157	69782-90-7	ng/g	2.6	3.4	8			2.4
E1668A	PCB-158	74472-42-7	ng/g	2.6	2.7	8.6			2.1
E1668A	PCB-159	39635-35-3	ng/g	0.65	0.18	1.8			0.22
E1668A	PCB-160	41411-62-5	ng/g	29	28	90			23
E1668A	PCB-161	74472-43-8	ng/g	0.024 U	0.0024 U	0.022 U			0.003 U
E1668A	PCB-162	39635-34-2	ng/g	0.024 U	0.095	0.022 U			0.069

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	a5-0to25-100818	a6-0to23-100818	a7-0to26-100918	B1-0to20-101418	B5-0to26-100818	c4-0to27-100918
	Date Time			10/8/2018 14:38:00	10/8/2018 16:08:00	10/9/2018 13:23:00	10/14/2018 12:58:00	10/8/2018 15:07:00	10/9/2018 8:28:00
	X			7633737	7633676	7633613	7634039	7633816	7633957
	Y			701167	701091	701014	701364	701104	701118
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			25	23	26	20	26	27
E1668A	PCB-163	74472-44-9	ng/g	29	28	90			23
E1668A	PCB-164	74472-45-0	ng/g	2	2.1	6.4			1.6
E1668A	PCB-165	74472-46-1	ng/g	0.73	0.0028 U	0.027 U			0.15
E1668A	PCB-166	41411-63-6	ng/g	3.2	4.5	6.8			2.9
E1668A	PCB-167	52663-72-6	ng/g	1	1	2.9			0.77
E1668A	PCB-168	59291-65-5	ng/g	28	22	97			19
E1668A	PCB-169	32774-16-6	ng/g	0.023 U	0.0023 U	0.021 U			0.0029 U
E1668A	PCB-170	35065-30-6	ng/g	27	6.2	58			7
E1668A	PCB-171	52663-71-5	ng/g	8.3	2.1	20			2.4
E1668A	PCB-172	52663-74-8	ng/g	5.6	1	9.8			1.3
E1668A	PCB-173	68194-16-1	ng/g	8.3	2.1	20			2.4
E1668A	PCB-174	38411-25-5	ng/g	22	6	57			7.7
E1668A	PCB-175	40186-70-7	ng/g	1.1	0.25	2.4			0.41
E1668A	PCB-176	52663-65-7	ng/g	2.8	0.77	6.7			0.93
E1668A	PCB-177	52663-70-4	ng/g	13	3.9	33			5.8
E1668A	PCB-178	52663-67-9	ng/g	6.9	1.3	9.7			2.5
E1668A	PCB-179	52663-64-6	ng/g	11	2.7	21			3.9
E1668A	PCB-180	35065-29-3	ng/g	65	12	140			16
E1668A	PCB-181	74472-47-2	ng/g	0.54	0.088	0.0021 U			0.072
E1668A	PCB-182	60145-23-5	ng/g	0.4	0.092	0.0021 U			0.096
E1668A	PCB-183	52663-69-1	ng/g	18	3.7	42			5
E1668A	PCB-184	74472-48-3	ng/g	0.00076 U	0.00079 U	0.0017 U			0.00089 U
E1668A	PCB-185	52712-05-7	ng/g	18	3.7	42			5
E1668A	PCB-186	74472-49-4	ng/g	0.00075 U	0.00078 U	0.0016 U			0.00088 U
E1668A	PCB-187	52663-68-0	ng/g	32	7.3	60			11
E1668A	PCB-188	74487-85-7	ng/g	0.83	0.00072 U	0.0016 U			0.00084 U
E1668A	PCB-189	39635-31-9	ng/g	1.3	0.23	2.1			0.27
E1668A	PCB-190	41411-64-7	ng/g	6.2	1.2	13			1.4
E1668A	PCB-191	74472-50-7	ng/g	1.4	0.26	2.9			0.35
E1668A	PCB-192	74472-51-8	ng/g	0.00084 U	0.00086 U	0.0018 U			0.00098 U
E1668A	PCB-193	69782-91-8	ng/g	65	12	140			16
E1668A	PCB-194	35694-08-7	ng/g	28	2.3	26 J			3.9
E1668A	PCB-195	52663-78-2	ng/g	12 J	1.1	13 J			1.8 J
E1668A	PCB-196	42740-50-1	ng/g	14	1.2	14			1.8
E1668A	PCB-197	33091-17-7	ng/g	0.99	0.072 J	0.99			0.13
E1668A	PCB-198	68194-17-2	ng/g	27	2.3	22			3.5

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	a5-0to25-100818	a6-0to23-100818	a7-0to26-100918	B1-0to20-101418	B5-0to26-100818	c4-0to27-100918
	Date Time			10/8/2018 14:38:00	10/8/2018 16:08:00	10/9/2018 13:23:00	10/14/2018 12:58:00	10/8/2018 15:07:00	10/9/2018 8:28:00
	X			7633737	7633676	7633613	7634039	7633816	7633957
	Y			701167	701091	701014	701364	701104	701118
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			25	23	26	20	26	27
E1668A	PCB-199	52663-75-9	ng/g	27	2.3	22			3.5
E1668A	PCB-200	52663-73-7	ng/g	3.7	0.3	3.2			0.45
E1668A	PCB-201	40186-71-8	ng/g	3.4	0.29	2.8			0.47
E1668A	PCB-202	2136-99-4	ng/g	5.4	0.45	3.4			0.77
E1668A	PCB-203	52663-76-0	ng/g	19	1.5	16			2.2
E1668A	PCB-204	74472-52-9	ng/g	0.00072 U	0.0017 U	0.0016 U			0.0011 U
E1668A	PCB-205	74472-53-0	ng/g	1.6	0.12	1.3			0.2
E1668A	PCB-206	40186-72-9	ng/g	17 J	2.3 J	4.4			2.8 J
E1668A	PCB-207	52663-79-3	ng/g	2.1	0.1	0.59			0.15
E1668A	PCB-208	52663-77-1	ng/g	6.1	0.23	0.71			0.28
E1668A	PCB-209	2051-24-3	ng/g	3.5	0.29	0.33			0.63
E1668A	Total Dichlorobiphenyls		ng/g	1.7 J	1.2	0.58			1.4
E1668A	Total Heptachlorobiphenyls		ng/g	220	49	480			66
E1668A	Total Hexachlorobiphenyls		ng/g	170	130 J	420 J			110
E1668A	Total Monochlorobiphenyls		ng/g	0.6	0.46	0.19 J			0.38
E1668A	Total Nonachlorobiphenyls		ng/g	25	2.6 J	5.7			3.2 J
E1668A	Total Octachlorobiphenyls		ng/g	120	9.6 J	100			15
E1668A	Total Pentachlorobiphenyls		ng/g	170	170	130 J			99 J
E1668A	Total Tetrachlorobiphenyls		ng/g	96	52 J	86			42 J
E1668A	Total Trichlorobiphenyls		ng/g	10	6.2	6 J			7.1 J
E1668A	Polychlorinated biphenyls, Total	1336-36-3	ng/g	820 J	430 J	1200 J			350 J
Total Petroleum Hydrocarbons									
NWTPH-Dx	#2 Diesel (C10-C24)		ug/kg	93 J	22 UJ	73 J			140
NWTPH-Dx	Motor Oil (>C24-C36)		ug/kg	450	51 J	350			870
Metals									
SW6020B	Arsenic	7440-38-2	ug/kg	9.7	9.1	9.5			8.2
SW6020B	Cadmium	7440-43-9	ug/kg	0.48	0.41	0.32			0.44
SW6020B	Copper	7440-50-8	ug/kg	130	160	150			120
SW6020B	Lead	7439-92-1	ug/kg	38	31	30			35
SW6020B	Zinc	7440-66-6	ug/kg	270	240	240			240
SW7471A	Mercury	7439-97-6	ug/kg	0.18 J	0.16 J	0.14 J			0.23 J
Phthalates									
SW8270D	Bis(2-ethylhexyl) Phthalate	117-81-7	ug/kg	260	26 J	230			420
PAHs									
SW8270D	2-Methylnaphthalene	91-57-6	ug/kg	1.8 J	0.8 J	0.83 J			2.4 J
SW8270D	Acenaphthene	83-32-9	ug/kg	3.7 J	1.6 J	1.4 J			9.8 J

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	a5-0to25-100818	a6-0to23-100818	a7-0to26-100918	B1-0to20-101418	B5-0to26-100818	c4-0to27-100918
	Date Time			10/8/2018 14:38:00	10/8/2018 16:08:00	10/9/2018 13:23:00	10/14/2018 12:58:00	10/8/2018 15:07:00	10/9/2018 8:28:00
	X			7633737	7633676	7633613	7634039	7633816	7633957
	Y			701167	701091	701014	701364	701104	701118
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			25	23	26	20	26	27
SW8270D	Acenaphthylene	208-96-8	ug/kg	4.1 J	1.6 J	1.7 J			8.2 J
SW8270D	Anthracene	120-12-7	ug/kg	7.8 J	3.3 J	3.5 J			170 J
SW8270D	Benzo(a)anthracene	56-55-3	ug/kg	36 J	21 J	15 J			1100 J
SW8270D	Benzo(a)pyrene	50-32-8	ug/kg	43 J	22 J	18 J			800 J
SW8270D	Benzo(b)fluoranthene	205-99-2	ug/kg	67	34	30			1100
SW8270D	Benzo(g,h,i)perylene	191-24-2	ug/kg	33 J	15 J	15 J			400 J
SW8270D	Benzo(k)fluoranthene	207-08-9	ug/kg	24 J	13 J	11 J			370 J
SW8270D	Chrysene	218-01-9	ug/kg	68 J	32 J	33 J			1500 J
SW8270D	Dibenzo(a,h)anthracene	53-70-3	ug/kg	7 J	3.7 J	3.4 J			150 J
SW8270D	Dibenzofuran	132-64-9	ug/kg	1.8 J	0.8 J	0.9 J			2.9 J
SW8270D	Fluoranthene	206-44-0	ug/kg	74 J	33 J	26 J			1100 J
SW8270D	Fluorene	86-73-7	ug/kg	3.7 J	1.5 J	1.6 J			27 J
SW8270D	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	34 J	17 J	15 J			470 J
SW8270D	Naphthalene	91-20-3	ug/kg	4.2 J	1.8 J	2.2 J			4.3 J
SW8270D	Phenanthrene	85-01-8	ug/kg	35 J	13 J	12 J			240 J
SW8270D	Pyrene	129-00-0	ug/kg	87	40	32			1100
Calculated Totals									
ALS SOP	CALC_TOTAL_Chlordane_ND_PDI		ug/kg	0.49 JT	0.23 JT	0.55 JT			0.4 JT
ALS SOP	CALC_TOTAL_DDD_ND_PDI		ug/kg	2.8 JT	3.7 JT	3 JT			3.2 JT
ALS SOP	CALC_TOTAL_DDE_ND_PDI		ug/kg	2.6 JT	1 JT	1.8 JT			1.6 JT
ALS SOP	CALC_TOTAL_DDT_ND_PDI		ug/kg	0.78 JT	0.11 UT	0.094 UT			0.12 UT
ALS SOP	CALC_TOTAL_DDx_ND_PDI		ug/kg	6.2 JT	4.7 JT	4.8 JT			4.9 JT
E1668A	CALC_TOTAL_PCB_ND_PDI		ug/kg	820 JT	430 JT	1200 JT			350 JT
SW8082A	CALC_TOTAL_AROCLORS_ND_PDI		ug/kg	46 AT	53 JT	58 JT			130 JT
SW8270D	CALC_TOTAL_CPAH_ND_PDI		ug/kg	64 JT	33 JT	28 JT			1200 JT
SW8270D	CALC_TOTAL_HPAH_ND_PDI		ug/kg	380 JT	180 JT	160 JT			6600 JT
SW8270D	CALC_TOTAL_LPAH_ND_PDI		ug/kg	60 JT	24 JT	23 JT			460 JT
SW8270D	CALC_TOTAL_PAH_ND_PDI		ug/kg	440 JT	210 JT	180 JT			7100 JT

DDx = dichlorodiphenyltrichloroethane and its derivatives

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyls

PeCDD = Pentachlorodibenzo-p-dioxin

PeCDF = Pentachlorodibenzofuran

TCDD = Tetrachlorodibenzo-p-dioxin

ug/kg = micrograms per kilogram

ng/g = nanograms per gram

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	a5-0to25-100818	a6-0to23-100818	a7-0to26-100918	B1-0to20-101418	B5-0to26-100818	c4-0to27-100918
	Date Time			10/8/2018 14:38:00	10/8/2018 16:08:00	10/9/2018 13:23:00	10/14/2018 12:58:00	10/8/2018 15:07:00	10/9/2018 8:28:00
	X			7633737	7633676	7633613	7634039	7633816	7633957
	Y			701167	701091	701014	701364	701104	701118
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			25	23	26	20	26	27

% = percent

g/cm3 = grams per cubic centimeter

J = Reported result is an estimate

T = Total concentration from component analytes.

U = Analyte was not detected in sample

R = Rejected

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	d2-0to19-101018	F1-0to23-101418	f2-0to19-101018	F5-0to28-101118	g6-0to27-101818	h2-0to30-101218
	Date Time			10/10/2018 15:21:00	10/14/2018 11:08:00	10/10/2018 16:36:00	10/11/2018 11:27:00	10/18/2018 14:12:00	10/12/2018 10:28:00
	X			7634154	7634355	7634318	7634124	7634140	7634467
	Y			701206	701129	701080	700852	700711	700952
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			19	23	19	28	27	30
Conventionals									
D422	Clay	STL00587	%	3.8		2		25	13
D422	Silt	STL00586	%	3.1		4.5		65	40
D422	Fine Sand	STL00585	%	50		62		8.8	42
D422	Medium Sand	STL00584	%	39		27		0.8	3.5
D422	Coarse Sand	STL00583	%	2.7		1.8		0.1	0.6
D422	Gravel	STL00581	%	1.1		2.2		0	0
D854	Density	STL00183	g/cm3	1.8		1.7		1.2	1.4
D854	Specific Gravity		NONE	1.8		1.7		1.3	1.4
E160.3	Total Solids		%	72		73	37	51	49
D2216	Total Solids		%	71		69		33	42
SW9060	Total Organic Carbon	7440-44-0	mg/kg	12000		38000		35000	36000
Butyltins									
ALS SOP	Tri-n-butyltin Cation	36643-28-4	ug/kg	23		12		460	100
Organochlorine Pesticides									
ALS SOP	o,p'-DDD	53-19-0	ug/kg	0.61 J		0.84 J		0.063 U	0.063 U
ALS SOP	o,p'-DDE	3424-82-6	ug/kg	0.079 U		0.12 J		0.079 U	0.079 U
ALS SOP	o,p'-DDT	789-02-6	ug/kg	0.094 U		0.094 U		0.094 U	0.094 U
ALS SOP	4,4'-DDD	72-54-8	ug/kg	2.1 J		3.4 J		1.1 J	1.3 J
ALS SOP	4,4'-DDE	72-55-9	ug/kg	0.44 J		1.1 J		1.5 J	1.1 J
ALS SOP	4,4'-DDT	50-29-3	ug/kg	0.047 U		0.047 U		0.047 U	0.047 U
ALS SOP	Aldrin	309-00-2	ug/kg	0.079 U		0.079 U		0.079 U	0.079 U
ALS SOP	alpha-Chlordane	5103-71-9	ug/kg	0.17		0.083 J		0.11 J	0.11 J
ALS SOP	Chlordane, gamma	5566-34-7	ug/kg	0.25		0.12 J		0.16 J	0.17 J
ALS SOP	cis-Nonachlor	5103-73-1	ug/kg	0.097 U		0.097 U		0.097 U	0.097 U
ALS SOP	Dieldrin	60-57-1	ug/kg	0.077 U		0.077 U		0.077 U	0.077 U
ALS SOP	gamma-BHC (Lindane)	58-89-9	ug/kg	0.031 U		0.031 U		0.031 U	0.031 U
ALS SOP	Heptachlor	76-44-8	ug/kg	0.039 U		0.039 U		0.039 U	0.039 U
ALS SOP	Oxychlordane	27304-13-8	ug/kg	0.13 U		0.13 U		0.13 U	0.13 U
ALS SOP	trans-Nonachlor	39765-80-5	ug/kg	0.12 J		0.058 U		0.13 J	0.1 J
Dioxins/Furans									
CWA1613B	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg	0.14		0.14		1.1	0.35
CWA1613B	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg	0.034 J		0.022 J		0.3 J	0.088 J
CWA1613B	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg	0.0015 J		0.0012 J		0.019 J	0.0045 J
CWA1613B	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg	5e-04 U		0.00049 U		0.0044 J	0.002 J
CWA1613B	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg	0.003 J		0.0016 J		0.03	0.0086

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	d2-0to19-101018	F1-0to23-101418	f2-0to19-101018	F5-0to28-101118	g6-0to27-101818	h2-0to30-101218
	Date Time			10/10/2018 15:21:00	10/14/2018 11:08:00	10/10/2018 16:36:00	10/11/2018 11:27:00	10/18/2018 14:12:00	10/12/2018 10:28:00
	X			7634154	7634355	7634318	7634124	7634140	7634467
	Y			701206	701129	701080	700852	700711	700952
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			19	23	19	28	27	30
CWA1613B	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg	0.0034 J		0.003 J		0.036 J	0.01 J
CWA1613B	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg	0.00085 J		0.00089 J		0.0075 J	0.0025 J
CWA1613B	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg	0.0013 J		0.0012 J		0.0083	0.0031 J
CWA1613B	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg	0.00024 U		0.00017 U		0.0013 U	0.00054 U
CWA1613B	1,2,3,7,8-PeCDD	40321-76-4	ug/kg	2e-04 U		0.00024 U		0.00077 U	0.00071 U
CWA1613B	1,2,3,7,8-PeCDF	57117-41-6	ug/kg	0.00023 J		0.00031 U		0.0022 J	0.00086 J
CWA1613B	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg	0.00049 J		0.00044 J		0.0035 J	0.0011 J
CWA1613B	2,3,4,7,8-PeCDF	57117-31-4	ug/kg	0.00048 J		0.00038 J		0.0039 J	0.0014 J
CWA1613B	2,3,7,8-TCDD	1746-01-6	ug/kg	0.00013 U		0.00039 J		0.00053 U	0.00043 U
CWA1613B	2,3,7,8-TCDF	51207-31-9	ug/kg	0.00045 J		0.00053 J		0.0036	0.0013
CWA1613B	OCDD	3268-87-9	ug/kg	1.3		1.2		9.2 J	2.7
CWA1613B	OCDF	39001-02-0	ug/kg	0.16		0.096		1.5	0.38
CWA1613B	Total HpCDD	37871-00-4	ug/kg	0.35		0.4		2.4	0.76
CWA1613B	Total HpCDF	38998-75-3	ug/kg	0.16		0.099		1.6	0.42
CWA1613B	Total HxCDD	34465-46-8	ug/kg	0.026 J		0.037 J		0.24 J	0.084 J
CWA1613B	Total HxCDF	55684-94-1	ug/kg	0.04		0.027		0.4	0.13
CWA1613B	Total PeCDD	36088-22-9	ug/kg	0.00087 U		0.0013 U		0.01 J	0.0055 U
CWA1613B	Total PeCDF	30402-15-4	ug/kg	0.0065		0.0066 J		0.042	0.016 J
CWA1613B	Total TCDD	41903-57-5	ug/kg	0.00083 J		0.0022 J		0.012 J	0.0064 J
CWA1613B	Total TCDF	30402-14-3	ug/kg	0.0042 J		0.0037		0.029	0.011 J
Dioxins/Furans									
E1613	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg		0.0092 J				
E1613	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg		0.00057 J				
E1613	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg		0.00027 J				
E1613	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg		0.00082 J				
E1613	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg		0.0014 J				
E1613	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg		0.00039 J				
E1613	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg		0.00055 J				
E1613	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg		1e-04 J				
E1613	1,2,3,7,8-PeCDD	40321-76-4	ug/kg		0.00014 J				
E1613	1,2,3,7,8-PeCDF	57117-41-6	ug/kg		0.00012 U				
E1613	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg		0.00018 U				
E1613	2,3,4,7,8-PeCDF	57117-31-4	ug/kg		0.00016 U				
E1613	2,3,7,8-TCDD	1746-01-6	ug/kg		9.3e-05 U				
E1613	2,3,7,8-TCDF	51207-31-9	ug/kg		0.00016 J				
E1613	OCDD	3268-87-9	ug/kg		0.43				

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	d2-0to19-101018	F1-0to23-101418	f2-0to19-101018	F5-0to28-101118	g6-0to27-101818	h2-0to30-101218
	Date Time			10/10/2018 15:21:00	10/14/2018 11:08:00	10/10/2018 16:36:00	10/11/2018 11:27:00	10/18/2018 14:12:00	10/12/2018 10:28:00
	X			7634154	7634355	7634318	7634124	7634140	7634467
	Y			701206	701129	701080	700852	700711	700952
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			19	23	19	28	27	30
E1613	OCDF	39001-02-0	ug/kg		0.04 J				
E1613	Total HpCDD	37871-00-4	ug/kg		0.11				
E1613	Total HpCDF	38998-75-3	ug/kg		0.04				
E1613	Total HxCDD	34465-46-8	ug/kg		0.0089				
E1613	Total HxCDF	55684-94-1	ug/kg		0.012				
E1613	Total PeCDD	36088-22-9	ug/kg		0.00084				
E1613	Total PeCDF	30402-15-4	ug/kg		0.0037				
E1613	Total TCDD	41903-57-5	ug/kg		0.00056				
E1613	Total TCDF	30402-14-3	ug/kg		0.0017				
PCB Aroclors									
SW8082A	Aroclor 1016	12674-11-2	ug/kg	0.94 UJ		0.98 UJ		2.3 U	1.7 U
SW8082A	Aroclor 1221	11104-28-2	ug/kg	1.2 UJ		1.3 UJ		2.9 U	2.1 U
SW8082A	Aroclor 1232	11141-16-5	ug/kg	1.2 UJ		1.3 UJ		2.9 U	2.1 U
SW8082A	Aroclor 1242	53469-21-9	ug/kg	0.62 UJ		0.65 UJ		1.5 U	1.1 U
SW8082A	Aroclor 1248	12672-29-6	ug/kg	0.46 UJ		0.48 UJ		1.1 U	0.81 U
SW8082A	Aroclor 1254	11097-69-1	ug/kg	1 UJ		18 J		2.4 U	1.8 U
SW8082A	Aroclor 1260	11096-82-5	ug/kg	8.1 J		1 UJ		86 J	20 J
PCB Congeners									
E1668A	PCB-1	2051-60-7	ng/g	0.025 J		0.014		0.89	0.097
E1668A	PCB-2	2051-61-8	ng/g	0.0081 U		0.0042 U		0.11	0.052 J
E1668A	PCB-3	2051-62-9	ng/g	0.024 J		0.0094 J		0.4	0.068
E1668A	PCB-4	13029-08-8	ng/g	0.029 J		0.043		1.3	0.19
E1668A	PCB-5	16605-91-7	ng/g	0.001 U		0.0011 U		0.03	0.0053 U
E1668A	PCB-6	25569-80-6	ng/g	0.013 U		0.013		0.2	0.033 J
E1668A	PCB-7	33284-50-3	ng/g	0.0032 U		0.0033 J		0.058	0.011 U
E1668A	PCB-8	34883-43-7	ng/g	0.031 J		0.043		0.65	0.12
E1668A	PCB-9	34883-39-1	ng/g	0.0032 U		0.0045 J		0.078	0.013 J
E1668A	PCB-10	33146-45-1	ng/g	0.0011 U		0.0021 J		0.058	0.0078 U
E1668A	PCB-11	2050-67-1	ng/g	0.02 U		0.018 U		0.13	0.12
E1668A	PCB-12	2974-92-7	ng/g	0.0098		0.0071 U		0.11	0.025 U
E1668A	PCB-13	2974-90-5	ng/g	0.0098		0.0071 U		0.11	0.025 U
E1668A	PCB-14	34883-41-5	ng/g	0.00087 U		0.00041 U		0.00082 U	0.0016 U
E1668A	PCB-15	2050-68-2	ng/g	0.033 J		0.027		0.38	0.098
E1668A	PCB-16	38444-78-9	ng/g	0.016 U		0.076		0.2	0.0031 U
E1668A	PCB-17	37680-66-3	ng/g	0.071		0.13		3.2	0.5
E1668A	PCB-18	37680-65-2	ng/g	0.03		0.17		0.57	0.13

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	d2-0to19-101018	F1-0to23-101418	f2-0to19-101018	F5-0to28-101118	g6-0to27-101818	h2-0to30-101218
	Date Time			10/10/2018 15:21:00	10/14/2018 11:08:00	10/10/2018 16:36:00	10/11/2018 11:27:00	10/18/2018 14:12:00	10/12/2018 10:28:00
	X			7634154	7634355	7634318	7634124	7634140	7634467
	Y			701206	701129	701080	700852	700711	700952
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			19	23	19	28	27	30
E1668A	PCB-19	38444-73-4	ng/g	0.087		0.072		3.9	0.62
E1668A	PCB-20	38444-84-7	ng/g	0.096		0.24		1.8	0.45
E1668A	PCB-21	55702-46-0	ng/g	0.033		0.09		0.79	0.21
E1668A	PCB-22	38444-85-8	ng/g	0.015 J		0.046		0.17	0.054 J
E1668A	PCB-23	55720-44-0	ng/g	0.00098 U		0.0012 U		0.011 U	0.0025 U
E1668A	PCB-24	55702-45-9	ng/g	0.0012 U		0.003 U		0.0098 U	0.0018 U
E1668A	PCB-25	55712-37-3	ng/g	0.015 J		0.029		0.43	0.088
E1668A	PCB-26	38444-81-4	ng/g	0.018		0.053		0.18	0.05
E1668A	PCB-27	38444-76-7	ng/g	0.018 J		0.022		0.65	0.11
E1668A	PCB-28	7012-37-5	ng/g	0.096		0.24		1.8	0.45
E1668A	PCB-29	15862-07-4	ng/g	0.018		0.053		0.18	0.05
E1668A	PCB-30	35693-92-6	ng/g	0.03		0.17		0.57	0.13
E1668A	PCB-31	16606-02-3	ng/g	0.052 J		0.15		0.68	0.18
E1668A	PCB-32	38444-77-8	ng/g	0.057		0.11		3.3	0.51
E1668A	PCB-33	38444-86-9	ng/g	0.033		0.09		0.79	0.21
E1668A	PCB-34	37680-68-5	ng/g	0.001 U		0.0024 J		0.016	0.0053 J
E1668A	PCB-35	37680-69-6	ng/g	0.0028 J		0.0046 J		0.021	0.012 J
E1668A	PCB-36	38444-87-0	ng/g	0.00092 U		0.0012 U		0.01 U	0.0024 U
E1668A	PCB-37	38444-90-5	ng/g	0.031 J		0.048		0.24	0.1
E1668A	PCB-38	53555-66-1	ng/g	0.00094 U		0.0012 U		0.01 U	0.0024 U
E1668A	PCB-39	38444-88-1	ng/g	0.00089 U		0.0052 J		0.022	0.0067 J
E1668A	PCB-40	38444-93-8	ng/g	0.11		0.27		3.9 J	1.1
E1668A	PCB-41	52663-59-9	ng/g	0.11		0.27		3.9 J	1.1
E1668A	PCB-42	36559-22-5	ng/g	0.043 J		0.16		0.85 J	0.21
E1668A	PCB-43	70362-46-8	ng/g	0.018 U		0.024		0.9 J	0.22
E1668A	PCB-44	41464-39-5	ng/g	0.67		1.4		32 J	7.5
E1668A	PCB-45	41464-39-5	ng/g	0.3		0.45		19 J	3.6
E1668A	PCB-46	41464-47-5	ng/g	0.015 U		0.034		0.58 J	0.098
E1668A	PCB-47	2437-79-8	ng/g	0.67		1.4		32 J	7.5
E1668A	PCB-48	70362-47-9	ng/g	0.017 J		0.057		0.18 J	0.07
E1668A	PCB-49	41464-40-8	ng/g	0.32		0.9		13 J	2.8
E1668A	PCB-50	62796-65-0	ng/g	0.16		0.22		9.4 J	1.6
E1668A	PCB-51	68194-04-7	ng/g	0.3		0.45		19 J	3.6
E1668A	PCB-52	35693-99-3	ng/g	0.49		2		11 J	2.5
E1668A	PCB-53	41464-41-9	ng/g	0.16		0.22		9.4 J	1.6
E1668A	PCB-54	15968-05-5	ng/g	0.052		0.055		2.8	0.55

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	d2-0to19-101018	F1-0to23-101418	f2-0to19-101018	F5-0to28-101118	g6-0to27-101818	h2-0to30-101218
	Date Time			10/10/2018 15:21:00	10/14/2018 11:08:00	10/10/2018 16:36:00	10/11/2018 11:27:00	10/18/2018 14:12:00	10/12/2018 10:28:00
	X			7634154	7634355	7634318	7634124	7634140	7634467
	Y			701206	701129	701080	700852	700711	700952
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			19	23	19	28	27	30
E1668A	PCB-55	74338-24-2	ng/g	0.002 U		0.0042 U		0.074 UJ	0.0048 U
E1668A	PCB-56	41464-43-1	ng/g	0.06		0.16		0.64 J	0.23
E1668A	PCB-57	70424-67-8	ng/g	0.0018 U		0.00064 U		0.075 UJ	0.0048 U
E1668A	PCB-58	41464-49-7	ng/g	0.0017 U		0.0079 J		0.072 UJ	0.0047 U
E1668A	PCB-59	74472-33-6	ng/g	0.026		0.061		0.95 J	0.21
E1668A	PCB-60	33025-41-1	ng/g	0.017 J		0.04		0.072 UJ	0.059
E1668A	PCB-61	33284-53-6	ng/g	0.39		1.2		5.3 J	1.6
E1668A	PCB-62	54230-22-7	ng/g	0.026		0.061		0.95 J	0.21
E1668A	PCB-63	74472-34-7	ng/g	0.0096 J		0.03		0.21 J	0.064
E1668A	PCB-64	52663-58-8	ng/g	0.062		0.27		0.86 J	0.26
E1668A	PCB-65	33284-54-7	ng/g	0.67		1.4		32 J	7.5
E1668A	PCB-66	32598-10-0	ng/g	0.23		0.58		3.1 J	0.98
E1668A	PCB-67	73575-53-8	ng/g	0.0069 J		0.017		0.069 UJ	0.055 U
E1668A	PCB-68	73575-52-7	ng/g	0.013 J		0.024		0.39 J	0.11
E1668A	PCB-69	60233-24-1	ng/g	0.32		0.9		13 J	2.8
E1668A	PCB-70	32598-11-1	ng/g	0.39		1.2		5.3 J	1.6
E1668A	PCB-71	41464-46-4	ng/g	0.11		0.27		3.9 J	1.1
E1668A	PCB-72	41464-42-0	ng/g	0.01 J		0.039		0.23 J	0.11
E1668A	PCB-73	74338-23-1	ng/g	0.018 U		0.024		0.9 J	0.22
E1668A	PCB-74	32690-93-0	ng/g	0.39		1.2		5.3 J	1.6
E1668A	PCB-75	32598-12-2	ng/g	0.026		0.061		0.95 J	0.21
E1668A	PCB-76	70362-48-0	ng/g	0.39		1.2		5.3 J	1.6
E1668A	PCB-77	32598-13-3	ng/g	0.022 J		0.043		0.23 J	0.09
E1668A	PCB-78	70362-49-1	ng/g	0.0018 U		0.00063 U		0.073 UJ	0.0047 U
E1668A	PCB-79	41464-48-6	ng/g	0.0085 U		0.019		0.15 J	0.065
E1668A	PCB-80	33284-52-5	ng/g	0.0016 U		0.00056 U		0.065 UJ	0.0042 U
E1668A	PCB-81	70362-50-4	ng/g	0.0018 U		0.0014 J		0.073 UJ	0.0048 U
E1668A	PCB-82	52663-62-4	ng/g	0.096		0.21		1.4	0.51
E1668A	PCB-83	60145-20-2	ng/g	0.69		1.3		14	6.5
E1668A	PCB-84	52663-60-2	ng/g	0.24		0.72		4.6	1.3
E1668A	PCB-85	65510-45-4	ng/g	0.14		0.29		2.4 J	0.89
E1668A	PCB-86	55312-69-1	ng/g	0.59		1.3		11	4
E1668A	PCB-87	38380-02-8	ng/g	0.59		1.3		11	4
E1668A	PCB-88	55215-17-3	ng/g	0.22		0.41		7.4	2.3
E1668A	PCB-89	73575-57-2	ng/g	0.0018 U		0.019 J		0.14	0.0022 U
E1668A	PCB-90	68194-07-0	ng/g	1.2		2.6		26	10

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	d2-0to19-101018	F1-0to23-101418	f2-0to19-101018	F5-0to28-101118	g6-0to27-101818	h2-0to30-101218
	Date Time			10/10/2018 15:21:00	10/14/2018 11:08:00	10/10/2018 16:36:00	10/11/2018 11:27:00	10/18/2018 14:12:00	10/12/2018 10:28:00
	X			7634154	7634355	7634318	7634124	7634140	7634467
	Y			701206	701129	701080	700852	700711	700952
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			19	23	19	28	27	30
E1668A	PCB-91	68194-05-8	ng/g	0.22		0.41		7.4	2.3
E1668A	PCB-92	52663-61-3	ng/g	0.28		0.55		6.1	2.7
E1668A	PCB-93	73575-56-1	ng/g	0.11		0.14		4.9	1.7
E1668A	PCB-94	73575-55-0	ng/g	0.027 J		0.036		1.3	0.45
E1668A	PCB-95	38379-99-6	ng/g	0.98		2.5		18	6.6
E1668A	PCB-96	73575-54-9	ng/g	0.021 J		0.031		1	0.26
E1668A	PCB-97	41464-51-1	ng/g	0.59		1.3		11	4
E1668A	PCB-98	60233-25-2	ng/g	0.059		0.11		2	0.79
E1668A	PCB-99	38380-01-7	ng/g	0.69		1.3		14	6.5
E1668A	PCB-100	39485-83-1	ng/g	0.11		0.14		4.9	1.7
E1668A	PCB-101	37680-73-2	ng/g	1.2		2.6		26	10
E1668A	PCB-102	68194-06-9	ng/g	0.059		0.11		2	0.79
E1668A	PCB-103	60145-21-3	ng/g	0.06		0.091		2.1	0.8
E1668A	PCB-104	56558-16-8	ng/g	0.011 J		0.013		0.47	0.13
E1668A	PCB-105	32598-14-4	ng/g	0.22		0.37		3	1.2
E1668A	PCB-106	70424-69-0	ng/g	0.0018 U		0.0011 U		0.014 U	0.014 U
E1668A	PCB-107	70424-68-9	ng/g	0.062		0.11		1.1	0.51
E1668A	PCB-108	70362-41-3	ng/g	0.025		0.044		0.4	0.14
E1668A	PCB-109	74472-35-8	ng/g	0.59		1.3		11	4
E1668A	PCB-110	38380-03-9	ng/g	1.2		2.6		20	7.2
E1668A	PCB-111	39635-32-0	ng/g	0.0065 J		0.00035 U		0.12	0.061
E1668A	PCB-112	74472-36-9	ng/g	0.0012 U		0.00037 U		0.0016 U	0.0014 U
E1668A	PCB-113	68194-10-5	ng/g	1.2		2.6		26	10
E1668A	PCB-114	74472-37-0	ng/g	0.014 J		0.021		0.18	0.056 J
E1668A	PCB-115	74472-38-1	ng/g	1.2		2.6		20	7.2
E1668A	PCB-116	18259-05-7	ng/g	0.14		0.29		2.4 J	0.89
E1668A	PCB-117	68194-11-6	ng/g	0.14		0.29		2.4 J	0.89
E1668A	PCB-118	31508-00-6	ng/g	0.72		1.3		11	4.1
E1668A	PCB-119	56558-17-9	ng/g	0.59		1.3		11	4
E1668A	PCB-120	68194-12-7	ng/g	0.01 U		0.02		0.26	0.19
E1668A	PCB-121	56558-18-0	ng/g	0.0062 J		0.00036 U		0.13	0.052 J
E1668A	PCB-122	76842-07-4	ng/g	0.0073 U		0.014		0.12	0.041 U
E1668A	PCB-123	65510-44-3	ng/g	0.0094 U		0.016		0.13	0.044 U
E1668A	PCB-124	70424-70-3	ng/g	0.025		0.044		0.4	0.14
E1668A	PCB-125	74472-39-2	ng/g	0.59		1.3		11	4
E1668A	PCB-126	57465-28-8	ng/g	0.0034 J		0.0042 J		0.031	0.017 J

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	d2-0to19-101018	F1-0to23-101418	f2-0to19-101018	F5-0to28-101118	g6-0to27-101818	h2-0to30-101218
	Date Time			10/10/2018 15:21:00	10/14/2018 11:08:00	10/10/2018 16:36:00	10/11/2018 11:27:00	10/18/2018 14:12:00	10/12/2018 10:28:00
	X			7634154	7634355	7634318	7634124	7634140	7634467
	Y			701206	701129	701080	700852	700711	700952
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			19	23	19	28	27	30
E1668A	PCB-127	39635-33-1	ng/g	0.0018 U		0.0011 U		0.014 U	0.014 U
E1668A	PCB-128	38380-07-3	ng/g	0.18		0.24		2.9	1.8
E1668A	PCB-129	55215-18-4	ng/g	1.4		2		25	16
E1668A	PCB-130	52663-66-8	ng/g	0.092		0.12		1.5	0.96
E1668A	PCB-131	61798-70-7	ng/g	0.016 J		0.026		0.28	0.11
E1668A	PCB-132	38380-05-1	ng/g	0.46		0.72		8.5	4.3
E1668A	PCB-133	35694-04-3	ng/g	0.037 J		0.045		0.91	0.55
E1668A	PCB-134	52704-70-8	ng/g	0.085		0.13		1.7	0.81
E1668A	PCB-135	52744-13-5	ng/g	0.7		1		12	8.2
E1668A	PCB-136	38411-22-2	ng/g	0.26		0.38		4.9	2.6
E1668A	PCB-137	35694-06-5	ng/g	0.039 J		0.052		0.67	0.28
E1668A	PCB-138	35065-28-2	ng/g	1.4		2		25	16
E1668A	PCB-139	56030-56-9	ng/g	0.027		0.036		0.58	0.39
E1668A	PCB-140	59291-64-4	ng/g	0.027		0.036		0.58	0.39
E1668A	PCB-141	52712-04-6	ng/g	0.26		0.39		4.3	2.9
E1668A	PCB-142	41411-61-4	ng/g	0.0019 U		0.00095 U		0.007 U	0.013 U
E1668A	PCB-143	68194-15-0	ng/g	0.085		0.13		1.7	0.81
E1668A	PCB-144	68194-14-9	ng/g	0.079		0.13		1.1	0.73
E1668A	PCB-145	74472-40-5	ng/g	0.0012 U		0.0018 U		0.021	0.0011 U
E1668A	PCB-146	51908-16-8	ng/g	0.3		0.38		5.9	4.8
E1668A	PCB-147	68194-13-8	ng/g	1.4		2		28	15
E1668A	PCB-148	74472-41-6	ng/g	0.014 J		0.011 J		0.32	0.21
E1668A	PCB-149	38380-04-0	ng/g	1.4		2		28	15
E1668A	PCB-150	68194-08-1	ng/g	0.01 U		0.011		0.39	0.18
E1668A	PCB-151	52663-63-5	ng/g	0.7		1		12	8.2
E1668A	PCB-152	68194-09-2	ng/g	0.0051 J		0.0056 J		0.26	0.088
E1668A	PCB-153	35065-27-1	ng/g	1.3		1.8		24	18
E1668A	PCB-154	60145-22-4	ng/g	0.061		0.067		1.6	1.2
E1668A	PCB-155	33979-03-2	ng/g	0.0019 U		0.0014 J		0.04	0.018 J
E1668A	PCB-156	38380-08-4	ng/g	0.13		0.18		2.1	1.6
E1668A	PCB-157	69782-90-7	ng/g	0.13		0.18		2.1	1.6
E1668A	PCB-158	74472-42-7	ng/g	0.13		0.19		2.1	1.4
E1668A	PCB-159	39635-35-3	ng/g	0.019 J		0.021		0.26	0.36
E1668A	PCB-160	41411-62-5	ng/g	1.4		2		25	16
E1668A	PCB-161	74472-43-8	ng/g	0.0012 U		0.00061 U		0.0045 U	0.0083 U
E1668A	PCB-162	39635-34-2	ng/g	0.0012 U		6e-04 U		0.0044 U	0.0082 U

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	d2-0to19-101018	F1-0to23-101418	f2-0to19-101018	F5-0to28-101118	g6-0to27-101818	h2-0to30-101218
	Date Time			10/10/2018 15:21:00	10/14/2018 11:08:00	10/10/2018 16:36:00	10/11/2018 11:27:00	10/18/2018 14:12:00	10/12/2018 10:28:00
	X			7634154	7634355	7634318	7634124	7634140	7634467
	Y			701206	701129	701080	700852	700711	700952
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			19	23	19	28	27	30
E1668A	PCB-163	74472-44-9	ng/g	1.4		2		25	16
E1668A	PCB-164	74472-45-0	ng/g	0.11		0.15		1.9	1.2
E1668A	PCB-165	74472-46-1	ng/g	0.0015 U		0.00073 U		0.0054 U	0.0099 U
E1668A	PCB-166	41411-63-6	ng/g	0.18		0.24		2.9	1.8
E1668A	PCB-167	52663-72-6	ng/g	0.047		0.064		0.74	0.6
E1668A	PCB-168	59291-65-5	ng/g	1.3		1.8		24	18
E1668A	PCB-169	32774-16-6	ng/g	0.0037 U		0.00055 U		0.0042 U	0.0076 U
E1668A	PCB-170	35065-30-6	ng/g	0.45		0.66		8.1	13
E1668A	PCB-171	52663-71-5	ng/g	0.16		0.24		2.7	3.9
E1668A	PCB-172	52663-74-8	ng/g	0.088		0.12		1.3	2.1
E1668A	PCB-173	68194-16-1	ng/g	0.16		0.24		2.7	3.9
E1668A	PCB-174	38411-25-5	ng/g	0.52		0.76		8.7	12
E1668A	PCB-175	40186-70-7	ng/g	0.025 J		0.037		0.36	0.48
E1668A	PCB-176	52663-65-7	ng/g	0.065		0.097		1.1	1.3
E1668A	PCB-177	52663-70-4	ng/g	0.33		0.43		5.6	7.5
E1668A	PCB-178	52663-67-9	ng/g	0.12		0.16		2.2	2.3
E1668A	PCB-179	52663-64-6	ng/g	0.23		0.33		4.3	4.3
E1668A	PCB-180	35065-29-3	ng/g	1.1		1.6		18	29
E1668A	PCB-181	74472-47-2	ng/g	0.0054 J		0.0072 J		0.078	0.001 U
E1668A	PCB-182	60145-23-5	ng/g	0.0064 U		0.0074 J		0.14	0.14
E1668A	PCB-183	52663-69-1	ng/g	0.36		0.53		5.7	8.3
E1668A	PCB-184	74472-48-3	ng/g	0.00078 U		4e-04 U		0.00052 U	8e-04 U
E1668A	PCB-185	52712-05-7	ng/g	0.36		0.53		5.7	8.3
E1668A	PCB-186	74472-49-4	ng/g	0.00078 U		4e-04 U		0.00052 U	0.00079 U
E1668A	PCB-187	52663-68-0	ng/g	0.72		0.91		11	14
E1668A	PCB-188	74487-85-7	ng/g	0.0045 J		0.00037 U		0.078	0.00074 U
E1668A	PCB-189	39635-31-9	ng/g	0.017 J		0.023		0.29	0.52
E1668A	PCB-190	41411-64-7	ng/g	0.096		0.15		1.6	2.8
E1668A	PCB-191	74472-50-7	ng/g	0.021 J		0.037		0.38	0.61
E1668A	PCB-192	74472-51-8	ng/g	0.00086 U		0.00044 U		0.00057 U	0.00088 U
E1668A	PCB-193	69782-91-8	ng/g	1.1		1.6		18	29
E1668A	PCB-194	35694-08-7	ng/g	0.24		0.31		3.6	7.6
E1668A	PCB-195	52663-78-2	ng/g	0.093		0.15		1.7	3.6
E1668A	PCB-196	42740-50-1	ng/g	0.15		0.19		1.8	3.7
E1668A	PCB-197	33091-17-7	ng/g	0.0091 U		0.015		0.13	0.25
E1668A	PCB-198	68194-17-2	ng/g	0.38		0.38		3.5	6.6

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	d2-0to19-101018	F1-0to23-101418	f2-0to19-101018	F5-0to28-101118	g6-0to27-101818	h2-0to30-101218
	Date Time			10/10/2018 15:21:00	10/14/2018 11:08:00	10/10/2018 16:36:00	10/11/2018 11:27:00	10/18/2018 14:12:00	10/12/2018 10:28:00
	X			7634154	7634355	7634318	7634124	7634140	7634467
	Y			701206	701129	701080	700852	700711	700952
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			19	23	19	28	27	30
E1668A	PCB-199	52663-75-9	ng/g	0.38		0.38		3.5	6.6
E1668A	PCB-200	52663-73-7	ng/g	0.035 J		0.047		0.45	0.86
E1668A	PCB-201	40186-71-8	ng/g	0.053		0.049		0.46	0.82
E1668A	PCB-202	2136-99-4	ng/g	0.11		0.072		0.73	1.1
E1668A	PCB-203	52663-76-0	ng/g	0.19		0.25		2.2	4.4
E1668A	PCB-204	74472-52-9	ng/g	0.0013 U		0.00042 U		0.001 U	0.0012 U
E1668A	PCB-205	74472-53-0	ng/g	0.011 U		0.017		0.18	0.38
E1668A	PCB-206	40186-72-9	ng/g	1.4 J		0.21		1.7 J	2.1 J
E1668A	PCB-207	52663-79-3	ng/g	0.016 J		0.02		0.15	0.23
E1668A	PCB-208	52663-77-1	ng/g	0.048		0.061		0.36	0.37
E1668A	PCB-209	2051-24-3	ng/g	0.046 J		0.12		0.46	0.35
E1668A	Total Dichlorobiphenyls		ng/g	0.14 J		0.16 J		3	0.62 J
E1668A	Total Heptachlorobiphenyls		ng/g	4.3 J		6.1		72	100
E1668A	Total Hexachlorobiphenyls		ng/g	7.2 J		10 J		130	84
E1668A	Total Monochlorobiphenyls		ng/g	0.057 J		0.028 J		1.4	0.22
E1668A	Total Nonachlorobiphenyls		ng/g	1.5 J		0.29		2.2 J	2.7 J
E1668A	Total Octachlorobiphenyls		ng/g	1.3 J		1.5		15	29
E1668A	Total Pentachlorobiphenyls		ng/g	7 J		15 J		140 J	53 J
E1668A	Total Tetrachlorobiphenyls		ng/g	3.1 J		8.1 J		110 J	24 J
E1668A	Total Trichlorobiphenyls		ng/g	0.54 J		1.3 J		16 J	3
E1668A	Polychlorinated biphenyls, Total	1336-36-3	ng/g	25 J		42 J		490 J	300 J
Total Petroleum Hydrocarbons									
NWTPH-Dx	#2 Diesel (C10-C24)		ug/kg	56 J		54		140	80 J
NWTPH-Dx	Motor Oil (>C24-C36)		ug/kg	360		210		640	500
Metals									
SW6020B	Arsenic	7440-38-2	ug/kg	5.9		3.6		14	7.9
SW6020B	Cadmium	7440-43-9	ug/kg	0.18		0.17 J		1.1	0.62
SW6020B	Copper	7440-50-8	ug/kg	95		46		260	100
SW6020B	Lead	7439-92-1	ug/kg	24		12		64	32
SW6020B	Zinc	7440-66-6	ug/kg	150		130		570	270
SW7471A	Mercury	7439-97-6	ug/kg	0.028 J		0.07 J		0.3 J	0.16 J
Phthalates									
SW8270D	Bis(2-ethylhexyl) Phthalate	117-81-7	ug/kg	120 J		70		770	3700
PAHs									
SW8270D	2-Methylnaphthalene	91-57-6	ug/kg	4.2 J		5.6 J		3.7 J	10 J
SW8270D	Acenaphthene	83-32-9	ug/kg	9.8 J		9.7 J		6.5 J	35 J

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	d2-0to19-101018	F1-0to23-101418	f2-0to19-101018	F5-0to28-101118	g6-0to27-101818	h2-0to30-101218
	Date Time			10/10/2018 15:21:00	10/14/2018 11:08:00	10/10/2018 16:36:00	10/11/2018 11:27:00	10/18/2018 14:12:00	10/12/2018 10:28:00
	X			7634154	7634355	7634318	7634124	7634140	7634467
	Y			701206	701129	701080	700852	700711	700952
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			19	23	19	28	27	30
SW8270D	Acenaphthylene	208-96-8	ug/kg	11 J		6.2 J		7.3 J	37 J
SW8270D	Anthracene	120-12-7	ug/kg	20 J		7.4 J		15 J	84 J
SW8270D	Benzo(a)anthracene	56-55-3	ug/kg	110 J		27 J		60 J	250 J
SW8270D	Benzo(a)pyrene	50-32-8	ug/kg	90 J		38 J		65 J	270 J
SW8270D	Benzo(b)fluoranthene	205-99-2	ug/kg	140		54		100	350
SW8270D	Benzo(g,h,i)perylene	191-24-2	ug/kg	55 J		23 J		51 J	190 J
SW8270D	Benzo(k)fluoranthene	207-08-9	ug/kg	55 J		21 J		32 J	140 J
SW8270D	Chrysene	218-01-9	ug/kg	170 J		46 J		100 J	360 J
SW8270D	Dibenzo(a,h)anthracene	53-70-3	ug/kg	12 J		5.3 J		11 J	42 J
SW8270D	Dibenzofuran	132-64-9	ug/kg	4 J		5.3 J		3.7 J	11 J
SW8270D	Fluoranthene	206-44-0	ug/kg	320 J		72 J		140 J	570 J
SW8270D	Fluorene	86-73-7	ug/kg	12 J		9.4 J		6.6 J	38 J
SW8270D	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	61 J		27 J		51 J	200 J
SW8270D	Naphthalene	91-20-3	ug/kg	5.4 J		6.8 J		5.9 J	28 J
SW8270D	Phenanthrene	85-01-8	ug/kg	76 J		33 J		56 J	300 J
SW8270D	Pyrene	129-00-0	ug/kg	280		82		160	630
Calculated Totals									
ALS SOP	CALC_TOTAL_Chlordane_ND_PDI		ug/kg	0.6 JT		0.27 JT		0.46 JT	0.44 JT
ALS SOP	CALC_TOTAL_DDD_ND_PDI		ug/kg	2.7 JT		4.2 JT		1.1 JT	1.3 JT
ALS SOP	CALC_TOTAL_DDE_ND_PDI		ug/kg	0.48 JT		1.2 JT		1.5 JT	1.1 JT
ALS SOP	CALC_TOTAL_DDT_ND_PDI		ug/kg	0.094 UT		0.094 UT		0.094 UT	0.094 UT
ALS SOP	CALC_TOTAL_DDx_ND_PDI		ug/kg	3.2 JT		5.5 JT		2.6 JT	2.4 JT
E1668A	CALC_TOTAL_PCB_ND_PDI		ug/kg	25 JT		42 JT		490 JT	300 JT
SW8082A	CALC_TOTAL_AROCLORS_ND_PDI		ug/kg	8.7 JT		19 JT		87 JT	21 JT
SW8270D	CALC_TOTAL_CPAH_ND_PDI		ug/kg	130 JT		54 JT		98 JT	390 JT
SW8270D	CALC_TOTAL_HPAH_ND_PDI		ug/kg	1100 JT		320 JT		640 JT	2500 JT
SW8270D	CALC_TOTAL_LPAH_ND_PDI		ug/kg	140 JT		78 JT		100 JT	530 JT
SW8270D	CALC_TOTAL_PAH_ND_PDI		ug/kg	1200 JT		400 JT		740 JT	3000 JT

DDx = dichlorodiphenyltrichloroethane and its derivatives

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyls

PeCDD = Pentachlorodibenzo-p-dioxin

PeCDF = Pentachlorodibenzofuran

TCDD = Tetrachlorodibenzo-p-dioxin

ug/kg = micrograms per kilogram

ng/g = nanograms per gram

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	d2-0to19-101018	F1-0to23-101418	f2-0to19-101018	F5-0to28-101118	g6-0to27-101818	h2-0to30-101218
	Date Time			10/10/2018 15:21:00	10/14/2018 11:08:00	10/10/2018 16:36:00	10/11/2018 11:27:00	10/18/2018 14:12:00	10/12/2018 10:28:00
	X			7634154	7634355	7634318	7634124	7634140	7634467
	Y			701206	701129	701080	700852	700711	700952
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			19	23	19	28	27	30

% = percent

g/cm3 = grams per cubic centimeter

J = Reported result is an estimate

T = Total concentration from component analytes.

U = Analyte was not detected in sample

R = Rejected

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	H7-0to24-101218	j2a3-0to18-101218	J7-0to26-101218	M4-0to26-101918	N5-0to28-101418	N7-0to27-101418
	Date Time			10/12/2018 15:14:00	10/12/2018 12:57:00	10/12/2018 15:52:00	10/19/2018 13:11:00	10/14/2018 16:46:00	10/14/2018 15:10:00
	X			7634152	7634615	7634304	7634730	7634746	7634641
	Y			700569	700815	700441	700480	700343	700178
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			24	18	26	26	28	27
Conventionals									
D422	Clay	STL00587	%		0		18	19	18
D422	Silt	STL00586	%		4.4		56	69	57
D422	Fine Sand	STL00585	%		31		23	11	21
D422	Medium Sand	STL00584	%		43		2.3	0.5	4.4
D422	Coarse Sand	STL00583	%		10		0.1	0	0.5
D422	Gravel	STL00581	%		11		0	0	0
D854	Density	STL00183	g/cm3		1.9		1.3	1.2	1.3
D854	Specific Gravity		NONE		1.9		1.3	1.2	1.3
E160.3	Total Solids		%	43	78	45	45		
D2216	Total Solids		%		81		38	31	35
SW9060	Total Organic Carbon	7440-44-0	mg/kg		13000		31000	35000	35000
Butyltins									
ALS SOP	Tri-n-butyltin Cation	36643-28-4	ug/kg		16		900		
Organochlorine Pesticides									
ALS SOP	o,p'-DDD	53-19-0	ug/kg		0.063 U		0.07 U		
ALS SOP	o,p'-DDE	3424-82-6	ug/kg		0.079 U		0.17 J		
ALS SOP	o,p'-DDT	789-02-6	ug/kg		0.094 U		0.11 U		
ALS SOP	4,4'-DDD	72-54-8	ug/kg		0.98 J		1.9 J		
ALS SOP	4,4'-DDE	72-55-9	ug/kg		0.38 J		2.8 J		
ALS SOP	4,4'-DDT	50-29-3	ug/kg		0.047 U		0.053 U		
ALS SOP	Aldrin	309-00-2	ug/kg		0.079 U		0.088 U		
ALS SOP	alpha-Chlordane	5103-71-9	ug/kg		0.22		0.16 J		
ALS SOP	Chlordane, gamma	5566-34-7	ug/kg		0.3		0.26		
ALS SOP	cis-Nonachlor	5103-73-1	ug/kg		0.097 U		0.11 U		
ALS SOP	Dieldrin	60-57-1	ug/kg		0.077 U		0.086 U		
ALS SOP	gamma-BHC (Lindane)	58-89-9	ug/kg		0.031 U		0.052 J		
ALS SOP	Heptachlor	76-44-8	ug/kg		0.039 U		0.044 U		
ALS SOP	Oxychlordane	27304-13-8	ug/kg		0.13 U		0.15 U		
ALS SOP	trans-Nonachlor	39765-80-5	ug/kg		0.2		0.14 J		
Dioxins/Furans									
CWA1613B	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg		0.038		0.72	0.53	0.8
CWA1613B	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg		0.0093 J		0.21	0.18	0.31
CWA1613B	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg		0.00039 UJ		0.014	0.0097	0.028
CWA1613B	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg		0.00051 J		0.0042 J	0.0025 J	0.0029 J
CWA1613B	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg		0.0011 U		0.03	0.02	0.069

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	H7-0to24-101218	j2a3-0to18-101218	J7-0to26-101218	M4-0to26-101918	N5-0to28-101418	N7-0to27-101418
	Date Time			10/12/2018 15:14:00	10/12/2018 12:57:00	10/12/2018 15:52:00	10/19/2018 13:11:00	10/14/2018 16:46:00	10/14/2018 15:10:00
	X			7634152	7634615	7634304	7634730	7634746	7634641
	Y			700569	700815	700441	700480	700343	700178
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			24	18	26	26	28	27
CWA1613B	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg		0.0015 UJ		0.027 J	0.018 J	0.025 J
CWA1613B	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg		0.00042 J		0.0075	0.0049 J	0.013
CWA1613B	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg		0.00093 J		0.0082	0.0062 J	0.0059 J
CWA1613B	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg		2e-04 U		0.0015 U	0.0011 U	0.001 U
CWA1613B	1,2,3,7,8-PeCDD	40321-76-4	ug/kg		0.00031 U		0.0019 J	0.00099 U	0.0016 J
CWA1613B	1,2,3,7,8-PeCDF	57117-41-6	ug/kg		0.00017 J		0.00065 U	0.00058 U	0.002 U
CWA1613B	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg		0.00022 J		0.0032 J	0.0018 U	0.0058 J
CWA1613B	2,3,4,7,8-PeCDF	57117-31-4	ug/kg		0.00011 U		0.0037 J	0.0021 J	0.006 J
CWA1613B	2,3,7,8-TCDD	1746-01-6	ug/kg		0.00011 U		0.00077 U	0.00056 J	0.00062 J
CWA1613B	2,3,7,8-TCDF	51207-31-9	ug/kg		4e-04 J		0.0039	0.0017	0.0015
CWA1613B	OCDD	3268-87-9	ug/kg		0.32		6.3 J	4.3	7 J
CWA1613B	OCDF	39001-02-0	ug/kg		0.032		0.77	0.7	0.73
CWA1613B	Total HpCDD	37871-00-4	ug/kg		0.086		1.5	1	1.7
CWA1613B	Total HpCDF	38998-75-3	ug/kg		0.038 J		0.93	0.82	1.3
CWA1613B	Total HxCDD	34465-46-8	ug/kg		0.013 J		0.22	0.098 J	0.17 J
CWA1613B	Total HxCDF	55684-94-1	ug/kg		0.016 J		0.38	0.22 J	0.55
CWA1613B	Total PeCDD	36088-22-9	ug/kg		0.0015 U		0.015 J	0.0067 U	0.011 J
CWA1613B	Total PeCDF	30402-15-4	ug/kg		0.0028 U		0.04	0.024 J	0.056 J
CWA1613B	Total TCDD	41903-57-5	ug/kg		0.00078 J		0.012 J	0.0044	0.0061
CWA1613B	Total TCDF	30402-14-3	ug/kg		0.0027 J		0.024	0.0089 J	0.0083 J
Dioxins/Furans									
E1613	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg			2 J			
E1613	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg			0.14 J			
E1613	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg			0.0094			
E1613	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg			0.25			
E1613	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg			0.14 J			
E1613	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg			0.039			
E1613	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg			0.023			
E1613	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg			0.0027 J			
E1613	1,2,3,7,8-PeCDD	40321-76-4	ug/kg			0.0038 J			
E1613	1,2,3,7,8-PeCDF	57117-41-6	ug/kg			0.0048 J			
E1613	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg			0.018			
E1613	2,3,4,7,8-PeCDF	57117-31-4	ug/kg			0.02			
E1613	2,3,7,8-TCDD	1746-01-6	ug/kg			8e-04 J			
E1613	2,3,7,8-TCDF	51207-31-9	ug/kg			0.0041 11			
E1613	OCDD	3268-87-9	ug/kg			39			

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	H7-0to24-101218	j2a3-0to18-101218	J7-0to26-101218	M4-0to26-101918	N5-0to28-101418	N7-0to27-101418
	Date Time			10/12/2018 15:14:00	10/12/2018 12:57:00	10/12/2018 15:52:00	10/19/2018 13:11:00	10/14/2018 16:46:00	10/14/2018 15:10:00
	X			7634152	7634615	7634304	7634730	7634746	7634641
	Y			700569	700815	700441	700480	700343	700178
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			24	18	26	26	28	27
E1613	OCDF	39001-02-0	ug/kg			7.4 J			
E1613	Total HpCDD	37871-00-4	ug/kg			9.6			
E1613	Total HpCDF	38998-75-3	ug/kg			10			
E1613	Total HxCDD	34465-46-8	ug/kg			0.63			
E1613	Total HxCDF	55684-94-1	ug/kg			2.6			
E1613	Total PeCDD	36088-22-9	ug/kg			0.048			
E1613	Total PeCDF	30402-15-4	ug/kg			0.22			
E1613	Total TCDD	41903-57-5	ug/kg			0.014			
E1613	Total TCDF	30402-14-3	ug/kg			0.034			
PCB Aroclors									
SW8082A	Aroclor 1016	12674-11-2	ug/kg		0.9 U		1.7 U	2.3 U	2 U
SW8082A	Aroclor 1221	11104-28-2	ug/kg		1.2 U		2.2 U	3 U	2.6 U
SW8082A	Aroclor 1232	11141-16-5	ug/kg		1.2 U		2.2 U	3 U	2.6 U
SW8082A	Aroclor 1242	53469-21-9	ug/kg	0.6 U		1.1 U		1.6 U	1.3 U
SW8082A	Aroclor 1248	12672-29-6	ug/kg	0.44 U		0.81 U		1.1 U	0.99 U
SW8082A	Aroclor 1254	11097-69-1	ug/kg	0.97 U		1.8 U		2.5 U	2.2 U
SW8082A	Aroclor 1260	11096-82-5	ug/kg	16		32 NJ		24	37 NJ
PCB Congeners									
E1668A	PCB-1	2051-60-7	ng/g	0.0098		0.95		0.13	0.062
E1668A	PCB-2	2051-61-8	ng/g	0.012		0.15		0.051	0.05
E1668A	PCB-3	2051-62-9	ng/g	0.0057 U		0.4		0.087	0.051
E1668A	PCB-4	13029-08-8	ng/g	0.17		0.91		0.52	0.18
E1668A	PCB-5	16605-91-7	ng/g	0.00068 U		0.024 J		0.0087 J	0.0016 U
E1668A	PCB-6	25569-80-6	ng/g	0.0058 J		0.19		0.11	0.031
E1668A	PCB-7	33284-50-3	ng/g	0.0022 J		0.05 J		0.02 J	0.0055 U
E1668A	PCB-8	34883-43-7	ng/g	0.064		0.58		0.52	0.097
E1668A	PCB-9	34883-39-1	ng/g	0.002 J		0.059 J		0.032	0.0067 U
E1668A	PCB-10	33146-45-1	ng/g	0.005 J		0.043 J		0.015 U	0.0072 J
E1668A	PCB-11	2050-67-1	ng/g	0.08		0.15		0.1	0.093
E1668A	PCB-12	2974-92-7	ng/g	0.0046		0.11		0.044	0.025
E1668A	PCB-13	2974-90-5	ng/g	0.0046		0.11		0.044	0.025
E1668A	PCB-14	34883-41-5	ng/g	0.00037 U		0.0018 U		0.0015 U	0.0013 U
E1668A	PCB-15	2050-68-2	ng/g	0.03		0.37		0.28	0.11
E1668A	PCB-16	38444-78-9	ng/g	0.02 J		0.24		0.55	0.069
E1668A	PCB-17	37680-66-3	ng/g	0.13		1.6		1.3	0.76
E1668A	PCB-18	37680-65-2	ng/g	0.066		0.57		1.2	0.19

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	H7-0to24-101218	j2a3-0to18-101218	J7-0to26-101218	M4-0to26-101918	N5-0to28-101418	N7-0to27-101418
	Date Time			10/12/2018 15:14:00	10/12/2018 12:57:00	10/12/2018 15:52:00	10/19/2018 13:11:00	10/14/2018 16:46:00	10/14/2018 15:10:00
	X			7634152	7634615	7634304	7634730	7634746	7634641
	Y			700569	700815	700441	700480	700343	700178
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			24	18	26	26	28	27
E1668A	PCB-19	38444-73-4	ng/g	0.28		2.2	1.2	0.71	
E1668A	PCB-20	38444-84-7	ng/g	0.097		1.6	1.6	0.53	
E1668A	PCB-21	55702-46-0	ng/g	0.038		0.65	0.83	0.22	
E1668A	PCB-22	38444-85-8	ng/g	0.021		0.23	0.44	0.07	
E1668A	PCB-23	55720-44-0	ng/g	0.00069 U		0.008 U	0.011 U	0.0026 U	
E1668A	PCB-24	55702-45-9	ng/g	0.00037 U		0.0022 U	0.014 U	0.0011 U	
E1668A	PCB-25	55712-37-3	ng/g	0.017		0.23	0.18	0.092	
E1668A	PCB-26	38444-81-4	ng/g	0.015		0.23	0.24	0.065	
E1668A	PCB-27	38444-76-7	ng/g	0.035		0.32	0.24	0.14	
E1668A	PCB-28	7012-37-5	ng/g	0.097		1.6	1.6	0.53	
E1668A	PCB-29	15862-07-4	ng/g	0.015		0.23	0.24	0.065	
E1668A	PCB-30	35693-92-6	ng/g	0.066		0.57	1.2	0.19	
E1668A	PCB-31	16606-02-3	ng/g	0.055		0.82	1.2	0.24	
E1668A	PCB-32	38444-77-8	ng/g	0.14		1.1	0.81	0.62	
E1668A	PCB-33	38444-86-9	ng/g	0.038		0.65	0.83	0.22	
E1668A	PCB-34	37680-68-5	ng/g	0.00072 U		0.015 U	0.012 U	0.0055 J	
E1668A	PCB-35	37680-69-6	ng/g	0.004 J		0.033 J	0.02 U	0.0088 J	
E1668A	PCB-36	38444-87-0	ng/g	0.00082 J		0.0076 U	0.01 U	0.0024 U	
E1668A	PCB-37	38444-90-5	ng/g	0.027		0.38	0.45	0.11	
E1668A	PCB-38	53555-66-1	ng/g	0.00066 U		0.0077 U	0.011 U	0.0025 U	
E1668A	PCB-39	38444-88-1	ng/g	0.00062 U		0.039 J	0.01 U	0.0023 U	
E1668A	PCB-40	38444-93-8	ng/g	0.14		2.4	2	1.1	
E1668A	PCB-41	52663-59-9	ng/g	0.14		2.4	2	1.1	
E1668A	PCB-42	36559-22-5	ng/g	0.043		0.94	0.83	0.3	
E1668A	PCB-43	70362-46-8	ng/g	0.026		0.45	0.22	0.21	
E1668A	PCB-44	41464-39-5	ng/g	0.78		16	13	8	
E1668A	PCB-45	41464-39-5	ng/g	0.44		6.4	3.6	4.1	
E1668A	PCB-46	41464-47-5	ng/g	0.019		0.26	0.18	0.13	
E1668A	PCB-47	2437-79-8	ng/g	0.78		16	13	8	
E1668A	PCB-48	70362-47-9	ng/g	0.019		0.28	0.43	0.11	
E1668A	PCB-49	41464-40-8	ng/g	0.37		7.8	5.9	3.1	
E1668A	PCB-50	62796-65-0	ng/g	0.3		3	2	1.6	
E1668A	PCB-51	68194-04-7	ng/g	0.44		6.4	3.6	4.1	
E1668A	PCB-52	35693-99-3	ng/g	0.4		12	20	3.7	
E1668A	PCB-53	41464-41-9	ng/g	0.3		3	2	1.6	
E1668A	PCB-54	15968-05-5	ng/g	0.084		0.92	0.53	0.65	

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	H7-0to24-101218	j2a3-0to18-101218	J7-0to26-101218	M4-0to26-101918	N5-0to28-101418	N7-0to27-101418
	Date Time			10/12/2018 15:14:00	10/12/2018 12:57:00	10/12/2018 15:52:00	10/19/2018 13:11:00	10/14/2018 16:46:00	10/14/2018 15:10:00
	X			7634152	7634615	7634304	7634730	7634746	7634641
	Y			700569	700815	700441	700480	700343	700178
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			24	18	26	26	28	27
E1668A	PCB-55	74338-24-2	ng/g		0.00097 U		0.0062 U	0.037 J	0.0032 U
E1668A	PCB-56	41464-43-1	ng/g		0.046		1.1	1.5	0.35
E1668A	PCB-57	70424-67-8	ng/g		0.00054 U		0.0063 U	0.0058 U	0.0032 U
E1668A	PCB-58	41464-49-7	ng/g		0.0013 U		0.056 J	0.0056 U	0.0031 U
E1668A	PCB-59	74472-33-6	ng/g		0.03		0.49	0.33	0.27
E1668A	PCB-60	33025-41-1	ng/g		0.017 J		0.2	0.53	0.1
E1668A	PCB-61	33284-53-6	ng/g		0.22		8.1	14	2.5
E1668A	PCB-62	54230-22-7	ng/g		0.03		0.49	0.33	0.27
E1668A	PCB-63	74472-34-7	ng/g		0.00047 U		0.2	0.18	0.078
E1668A	PCB-64	52663-58-8	ng/g		0.053		1.3	1.9	0.42
E1668A	PCB-65	33284-54-7	ng/g		0.78		16	13	8
E1668A	PCB-66	32598-10-0	ng/g		0.14		4.1	4.3	1.3
E1668A	PCB-67	73575-53-8	ng/g		0.0055 U		0.1	0.099	0.06
E1668A	PCB-68	73575-52-7	ng/g		0.01 J		0.34	0.13	0.11
E1668A	PCB-69	60233-24-1	ng/g		0.37		7.8	5.9	3.1
E1668A	PCB-70	32598-11-1	ng/g		0.22		8.1	14	2.5
E1668A	PCB-71	41464-46-4	ng/g		0.14		2.4	2	1.1
E1668A	PCB-72	41464-42-0	ng/g		0.0066 U		0.31	0.12	0.066
E1668A	PCB-73	74338-23-1	ng/g		0.026		0.45	0.22	0.21
E1668A	PCB-74	32690-93-0	ng/g		0.22		8.1	14	2.5
E1668A	PCB-75	32598-12-2	ng/g		0.03		0.49	0.33	0.27
E1668A	PCB-76	70362-48-0	ng/g		0.22		8.1	14	2.5
E1668A	PCB-77	32598-13-3	ng/g		0.021		0.4	0.32	0.13
E1668A	PCB-78	70362-49-1	ng/g		0.00053 U		0.0061 U	0.0057 U	0.0031 U
E1668A	PCB-79	41464-48-6	ng/g		0.0043 U		0.22	0.28	0.073
E1668A	PCB-80	33284-52-5	ng/g		0.00047 U		0.0055 U	0.0051 U	0.0035 U
E1668A	PCB-81	70362-50-4	ng/g		0.0015 U		0.02 J	0.039	0.0084 U
E1668A	PCB-82	52663-62-4	ng/g		0.072		2.1	4.2	0.85
E1668A	PCB-83	60145-20-2	ng/g		0.51		17	22	7
E1668A	PCB-84	52663-60-2	ng/g		0.23		5.7	10	2.3
E1668A	PCB-85	65510-45-4	ng/g		0.089 J		3.1	5.7	1.3
E1668A	PCB-86	55312-69-1	ng/g		0.6		13	26	5.5
E1668A	PCB-87	38380-02-8	ng/g		0.6		13	26	5.5
E1668A	PCB-88	55215-17-3	ng/g		0.24		5.3	6.1	2.8
E1668A	PCB-89	73575-57-2	ng/g		0.0071 U		0.16	0.29	0.077
E1668A	PCB-90	68194-07-0	ng/g		0.95		28	44	13

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	H7-0to24-101218	j2a3-0to18-101218	J7-0to26-101218	M4-0to26-101918	N5-0to28-101418	N7-0to27-101418
	Date Time			10/12/2018 15:14:00	10/12/2018 12:57:00	10/12/2018 15:52:00	10/19/2018 13:11:00	10/14/2018 16:46:00	10/14/2018 15:10:00
	X			7634152	7634615	7634304	7634730	7634746	7634641
	Y			700569	700815	700441	700480	700343	700178
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			24	18	26	26	28	27
E1668A	PCB-91	68194-05-8	ng/g	0.24		5.3	6.1	2.8	
E1668A	PCB-92	52663-61-3	ng/g	0.006 U		6.9	8.8	2.9	
E1668A	PCB-93	73575-56-1	ng/g	0.12		2.6	1.8	1.7	
E1668A	PCB-94	73575-55-0	ng/g	0.031		0.66	0.49	0.4	
E1668A	PCB-95	38379-99-6	ng/g	0.87		20	34	9.2	
E1668A	PCB-96	73575-54-9	ng/g	0.026		0.45	0.39	0.27	
E1668A	PCB-97	41464-51-1	ng/g	0.6		13	26	5.5	
E1668A	PCB-98	60233-25-2	ng/g	0.061		1.3	1.4	0.74	
E1668A	PCB-99	38380-01-7	ng/g	0.51		17	22	7	
E1668A	PCB-100	39485-83-1	ng/g	0.12		2.6	1.8	1.7	
E1668A	PCB-101	37680-73-2	ng/g	0.95		28	44	13	
E1668A	PCB-102	68194-06-9	ng/g	0.061		1.3	1.4	0.74	
E1668A	PCB-103	60145-21-3	ng/g	0.063		1.3	0.86	0.71	
E1668A	PCB-104	56558-16-8	ng/g	0.01		0.18	0.0015 U	0.13	
E1668A	PCB-105	32598-14-4	ng/g	0.16		4.5	10	1.9	
E1668A	PCB-106	70424-69-0	ng/g	0.0016 U		0.018 U	0.021 U	0.014 U	
E1668A	PCB-107	70424-68-9	ng/g	0.041		1.6	2	0.57	
E1668A	PCB-108	70362-41-3	ng/g	0.018		0.55	1.2	0.23	
E1668A	PCB-109	74472-35-8	ng/g	0.6		13	26	5.5	
E1668A	PCB-110	38380-03-9	ng/g	0.99		25	45	11	
E1668A	PCB-111	39635-32-0	ng/g	0.0055 J		0.14	0.0014 U	0.055	
E1668A	PCB-112	74472-36-9	ng/g	5e-04 U		0.0019 U	0.0015 U	0.0014 U	
E1668A	PCB-113	68194-10-5	ng/g	0.95		28	44	13	
E1668A	PCB-114	74472-37-0	ng/g	0.0088 J		0.24	0.67	0.11	
E1668A	PCB-115	74472-38-1	ng/g	0.99		25	45	11	
E1668A	PCB-116	18259-05-7	ng/g	0.089 J		3.1	5.7	1.3	
E1668A	PCB-117	68194-11-6	ng/g	0.089 J		3.1	5.7	1.3	
E1668A	PCB-118	31508-00-6	ng/g	0.47		15	28	5.9	
E1668A	PCB-119	56558-17-9	ng/g	0.6		13	26	5.5	
E1668A	PCB-120	68194-12-7	ng/g	0.011		0.34	0.21	0.13	
E1668A	PCB-121	56558-18-0	ng/g	0.0052 J		0.11	0.0015 U	0.05	
E1668A	PCB-122	76842-07-4	ng/g	0.0048 U		0.18	0.34	0.071 J	
E1668A	PCB-123	65510-44-3	ng/g	0.0055 U		0.18	0.38	0.097	
E1668A	PCB-124	70424-70-3	ng/g	0.018		0.55	1.2	0.23	
E1668A	PCB-125	74472-39-2	ng/g	0.6		13	26	5.5	
E1668A	PCB-126	57465-28-8	ng/g	0.003 U		0.062 J	0.068	0.029	

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	H7-0to24-101218	j2a3-0to18-101218	J7-0to26-101218	M4-0to26-101918	N5-0to28-101418	N7-0to27-101418
	Date Time			10/12/2018 15:14:00	10/12/2018 12:57:00	10/12/2018 15:52:00	10/19/2018 13:11:00	10/14/2018 16:46:00	10/14/2018 15:10:00
	X			7634152	7634615	7634304	7634730	7634746	7634641
	Y			700569	700815	700441	700480	700343	700178
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			24	18	26	26	28	27
E1668A	PCB-127	39635-33-1	ng/g		0.0016 U		0.018 U	0.066	0.013 U
E1668A	PCB-128	38380-07-3	ng/g		0.22		3.4	5.8	2
E1668A	PCB-129	55215-18-4	ng/g		1.8		25	37	17
E1668A	PCB-130	52663-66-8	ng/g		0.11		1.8	2.6	1
E1668A	PCB-131	61798-70-7	ng/g		0.023		0.32	0.63	0.18
E1668A	PCB-132	38380-05-1	ng/g		0.63		9	13	5.6
E1668A	PCB-133	35694-04-3	ng/g		0.037		1.3	0.73	0.47
E1668A	PCB-134	52704-70-8	ng/g		0.11		1.7	2.4	1
E1668A	PCB-135	52744-13-5	ng/g		0.69		12	13	8.5
E1668A	PCB-136	38411-22-2	ng/g		0.26		4.4	5.5	2.9
E1668A	PCB-137	35694-06-5	ng/g		0.05		0.89	1.8	0.47
E1668A	PCB-138	35065-28-2	ng/g		1.8		25	37	17
E1668A	PCB-139	56030-56-9	ng/g		0.032		0.88	0.82	0.35
E1668A	PCB-140	59291-64-4	ng/g		0.032		0.88	0.82	0.35
E1668A	PCB-141	52712-04-6	ng/g		0.37		4	6.5	3.4
E1668A	PCB-142	41411-61-4	ng/g		0.0013 U		0.0065 U	0.007 U	0.0055 U
E1668A	PCB-143	68194-15-0	ng/g		0.11		1.7	2.4	1
E1668A	PCB-144	68194-14-9	ng/g		0.086		1.1	1.8	0.89
E1668A	PCB-145	74472-40-5	ng/g		0.001 U		0.01 U	0.034	0.001 U
E1668A	PCB-146	51908-16-8	ng/g		0.32		8.4	6.1	3.9
E1668A	PCB-147	68194-13-8	ng/g		1.8		24	29	17
E1668A	PCB-148	74472-41-6	ng/g		0.0095 J		0.51	0.18	0.14
E1668A	PCB-149	38380-04-0	ng/g		1.8		24	29	17
E1668A	PCB-150	68194-08-1	ng/g		0.011		0.31	0.2	0.16
E1668A	PCB-151	52663-63-5	ng/g		0.69		12	13	8.5
E1668A	PCB-152	68194-09-2	ng/g		0.0061 J		0.15	0.11	0.082
E1668A	PCB-153	35065-27-1	ng/g		1.6		23	29	17
E1668A	PCB-154	60145-22-4	ng/g		0.047		2	1	0.79
E1668A	PCB-155	33979-03-2	ng/g		0.00098 U		0.029 J	0.019 J	0.015
E1668A	PCB-156	38380-08-4	ng/g		0.14		2.6	5.1	1.7
E1668A	PCB-157	69782-90-7	ng/g		0.14		2.6	5.1	1.7
E1668A	PCB-158	74472-42-7	ng/g		0.17		2.2	4	1.6
E1668A	PCB-159	39635-35-3	ng/g		0.017		0.24	0.26	0.23
E1668A	PCB-160	41411-62-5	ng/g		1.8		25	37	17
E1668A	PCB-161	74472-43-8	ng/g		0.00086 U		0.0042 U	0.0045 U	0.0035 U
E1668A	PCB-162	39635-34-2	ng/g		0.00085 U		0.0041 U	0.13	0.0035 U

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	H7-0to24-101218	j2a3-0to18-101218	J7-0to26-101218	M4-0to26-101918	N5-0to28-101418	N7-0to27-101418
	Date Time			10/12/2018 15:14:00	10/12/2018 12:57:00	10/12/2018 15:52:00	10/19/2018 13:11:00	10/14/2018 16:46:00	10/14/2018 15:10:00
	X			7634152	7634615	7634304	7634730	7634746	7634641
	Y			700569	700815	700441	700480	700343	700178
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			24	18	26	26	28	27
E1668A	PCB-163	74472-44-9	ng/g	1.8	25	37	17		
E1668A	PCB-164	74472-45-0	ng/g	0.15	1.9	2.7	1.4		
E1668A	PCB-165	74472-46-1	ng/g	0.001 U	0.005 U	0.0053 U	0.0042 U		
E1668A	PCB-166	41411-63-6	ng/g	0.22	3.4	5.8	2		
E1668A	PCB-167	52663-72-6	ng/g	0.058	0.89	1.6	0.62		
E1668A	PCB-168	59291-65-5	ng/g	1.6	23	29	17		
E1668A	PCB-169	32774-16-6	ng/g	0.00082 U	0.0038 U	0.004 U	0.0033 U		
E1668A	PCB-170	35065-30-6	ng/g	0.56	8.4	8.1	7.6		
E1668A	PCB-171	52663-71-5	ng/g	0.18	2.7	2.9	2.6		
E1668A	PCB-172	52663-74-8	ng/g	0.093	1.5	1.4	1.3		
E1668A	PCB-173	68194-16-1	ng/g	0.18	2.7	2.9	2.6		
E1668A	PCB-174	38411-25-5	ng/g	0.59	8.1	8.2	8		
E1668A	PCB-175	40186-70-7	ng/g	0.027	0.35	0.36	0.33		
E1668A	PCB-176	52663-65-7	ng/g	0.072	1.2	1	0.97		
E1668A	PCB-177	52663-70-4	ng/g	0.34	7	4.9	5		
E1668A	PCB-178	52663-67-9	ng/g	0.12	2.8	1.7	1.6		
E1668A	PCB-179	52663-64-6	ng/g	0.25	4.2	3.4	3.4		
E1668A	PCB-180	35065-29-3	ng/g	1.1	19	17	16		
E1668A	PCB-181	74472-47-2	ng/g	0.0061 U	0.098	0.14	0.073		
E1668A	PCB-182	60145-23-5	ng/g	0.0071 J	0.2	0.1	0.1		
E1668A	PCB-183	52663-69-1	ng/g	0.39	5.4	5.4	5.4		
E1668A	PCB-184	74472-48-3	ng/g	0.00029 U	0.0018 U	0.001 U	0.00075 U		
E1668A	PCB-185	52712-05-7	ng/g	0.39	5.4	5.4	5.4		
E1668A	PCB-186	74472-49-4	ng/g	0.00028 U	0.0018 U	0.001 U	0.00075 U		
E1668A	PCB-187	52663-68-0	ng/g	0.67	13	9.4	9.5		
E1668A	PCB-188	74487-85-7	ng/g	0.00025 U	0.071	0.00095 U	0.00068 U		
E1668A	PCB-189	39635-31-9	ng/g	0.021	0.36	0.32	0.28		
E1668A	PCB-190	41411-64-7	ng/g	0.1	1.8	1.7	1.6		
E1668A	PCB-191	74472-50-7	ng/g	0.027	0.39	0.38	0.36		
E1668A	PCB-192	74472-51-8	ng/g	0.00031 U	0.002 U	0.0011 U	0.00083 U		
E1668A	PCB-193	69782-91-8	ng/g	1.1	19	17	16		
E1668A	PCB-194	35694-08-7	ng/g	0.23	5.4	3.2	3.7 J		
E1668A	PCB-195	52663-78-2	ng/g	0.1	2.4	1.4	1.8 J		
E1668A	PCB-196	42740-50-1	ng/g	0.11	2.7	1.8	1.8		
E1668A	PCB-197	33091-17-7	ng/g	0.0057 U	0.22	0.13	0.1 J		
E1668A	PCB-198	68194-17-2	ng/g	0.24	5.3	3.7	3.6		

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	H7-0to24-101218	j2a3-0to18-101218	J7-0to26-101218	M4-0to26-101918	N5-0to28-101418	N7-0to27-101418
	Date Time			10/12/2018 15:14:00	10/12/2018 12:57:00	10/12/2018 15:52:00	10/19/2018 13:11:00	10/14/2018 16:46:00	10/14/2018 15:10:00
	X			7634152	7634615	7634304	7634730	7634746	7634641
	Y			700569	700815	700441	700480	700343	700178
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			24	18	26	26	28	27
E1668A	PCB-199	52663-75-9	ng/g	0.24		5.3	3.7	3.6	
E1668A	PCB-200	52663-73-7	ng/g	0.026 J		0.61	0.46	0.48	
E1668A	PCB-201	40186-71-8	ng/g	0.031		0.73	0.47	0.45	
E1668A	PCB-202	2136-99-4	ng/g	0.048		1	0.69	0.67	
E1668A	PCB-203	52663-76-0	ng/g	0.15		3.3	2.4	2.3	
E1668A	PCB-204	74472-52-9	ng/g	0.00097 U		0.0024 U	0.00091 U	0.002 U	
E1668A	PCB-205	74472-53-0	ng/g	0.011		0.28	0.17	0.2 J	
E1668A	PCB-206	40186-72-9	ng/g	0.19 J		2 J	1.3	1.7 J	
E1668A	PCB-207	52663-79-3	ng/g	0.015		0.22	0.17	0.16	
E1668A	PCB-208	52663-77-1	ng/g	0.038		0.4	0.38	0.3	
E1668A	PCB-209	2051-24-3	ng/g	0.064		0.51	0.47	0.47	
E1668A	Total Dichlorobiphenyls		ng/g	0.36 J		2.5	1.6 J	0.56 J	
E1668A	Total Heptachlorobiphenyls		ng/g	4.6 J		77	66	64	
E1668A	Total Hexachlorobiphenyls		ng/g	8.7 J		130 J	170	88	
E1668A	Total Monochlorobiphenyls		ng/g	0.028 J		1.5	0.27	0.16	
E1668A	Total Nonachlorobiphenyls		ng/g	0.24 J		2.6 J	1.9	2.2 J	
E1668A	Total Octachlorobiphenyls		ng/g	0.95 J		22	14	15 J	
E1668A	Total Pentachlorobiphenyls		ng/g	5.6 J		160	250	69	
E1668A	Total Tetrachlorobiphenyls		ng/g	3.2 J		67	72 J	28 J	
E1668A	Total Trichlorobiphenyls		ng/g	0.95 J		10 J	10 J	3.8 J	
E1668A	Polychlorinated biphenyls, Total	1336-36-3	ng/g	25 J		470 J	590 J	270 J	
Total Petroleum Hydrocarbons									
NWTPH-Dx	#2 Diesel (C10-C24)		ug/kg	16 J		160	88 J	120	
NWTPH-Dx	Motor Oil (>C24-C36)		ug/kg	130 J		600	360	500	
Metals									
SW6020B	Arsenic	7440-38-2	ug/kg	4.1		11	10	13	
SW6020B	Cadmium	7440-43-9	ug/kg	0.73		0.68	0.53	0.53	
SW6020B	Copper	7440-50-8	ug/kg	34		160	140	230	
SW6020B	Lead	7439-92-1	ug/kg	19		57	44	45	
SW6020B	Zinc	7440-66-6	ug/kg	190		390	310	360	
SW7471A	Mercury	7439-97-6	ug/kg	0.024 J		0.29 J	0.22 J	0.18 J	
Phthalates									
SW8270D	Bis(2-ethylhexyl) Phthalate	117-81-7	ug/kg	720		1300			
PAHs									
SW8270D	2-Methylnaphthalene	91-57-6	ug/kg	3.1 J		3.4 J			
SW8270D	Acenaphthene	83-32-9	ug/kg	5.9 J		13 J			

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	H7-0to24-101218	j2a3-0to18-101218	J7-0to26-101218	M4-0to26-101918	N5-0to28-101418	N7-0to27-101418
	Date Time			10/12/2018 15:14:00	10/12/2018 12:57:00	10/12/2018 15:52:00	10/19/2018 13:11:00	10/14/2018 16:46:00	10/14/2018 15:10:00
	X			7634152	7634615	7634304	7634730	7634746	7634641
	Y			700569	700815	700441	700480	700343	700178
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			24	18	26	26	28	27
SW8270D	Acenaphthylene	208-96-8	ug/kg		4.1 J		8.9 J		
SW8270D	Anthracene	120-12-7	ug/kg		22 J		19 J		
SW8270D	Benzo(a)anthracene	56-55-3	ug/kg		93 J		81 J		
SW8270D	Benzo(a)pyrene	50-32-8	ug/kg		110 J		93 J		
SW8270D	Benzo(b)fluoranthene	205-99-2	ug/kg		150		130 J		
SW8270D	Benzo(g,h,i)perylene	191-24-2	ug/kg		89 J		68 J		
SW8270D	Benzo(k)fluoranthene	207-08-9	ug/kg		62 J		47 J		
SW8270D	Chrysene	218-01-9	ug/kg		120 J		120 J		
SW8270D	Dibenzo(a,h)anthracene	53-70-3	ug/kg		20 J		16 J		
SW8270D	Dibenzofuran	132-64-9	ug/kg		5.4 J		3.6 J		
SW8270D	Fluoranthene	206-44-0	ug/kg		190 J		140 J		
SW8270D	Fluorene	86-73-7	ug/kg		12 J		6.6 J		
SW8270D	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg		91 J		71 J		
SW8270D	Naphthalene	91-20-3	ug/kg		4.3 J		6.9 J		
SW8270D	Phenanthrene	85-01-8	ug/kg		98 J		73 J		
SW8270D	Pyrene	129-00-0	ug/kg		190		170 J		
Calculated Totals									
ALS SOP	CALC_TOTAL_Chlordane_ND_PDI		ug/kg		0.78 T		0.64 JT		
ALS SOP	CALC_TOTAL_DDD_ND_PDI		ug/kg		1 JT		1.9 JT		
ALS SOP	CALC_TOTAL_DDE_ND_PDI		ug/kg		0.42 JT		3 JT		
ALS SOP	CALC_TOTAL_DDT_ND_PDI		ug/kg		0.094 UT		0.11 UT		
ALS SOP	CALC_TOTAL_DDx_ND_PDI		ug/kg		1.4 JT		4.9 JT		
E1668A	CALC_TOTAL_PCB_ND_PDI		ug/kg		25 JT		470 JT	590 JT	270 JT
SW8082A	CALC_TOTAL_AROCLORS_ND_PDI		ug/kg		17 AT		33 JNT	26 AT	38 JNT
SW8270D	CALC_TOTAL_CPAH_ND_PDI		ug/kg		160 JT		140 JT		
SW8270D	CALC_TOTAL_HPAH_ND_PDI		ug/kg		900 JT		760 JT		
SW8270D	CALC_TOTAL_LPAH_ND_PDI		ug/kg		150 JT		130 JT		
SW8270D	CALC_TOTAL_PAH_ND_PDI		ug/kg		1100 JT		890 JT		

DDx = dichlorodiphenyltrichloroethane and its derivatives

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyls

PeCDD = Pentachlorodibenzo-p-dioxin

PeCDF = Pentachlorodibenzofuran

TCDD = Tetrachlorodibenzo-p-dioxin

ug/kg = micrograms per kilogram

ng/g = nanograms per gram

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	H7-0to24-101218	j2a3-0to18-101218	J7-0to26-101218	M4-0to26-101918	N5-0to28-101418	N7-0to27-101418
	Date Time			10/12/2018 15:14:00	10/12/2018 12:57:00	10/12/2018 15:52:00	10/19/2018 13:11:00	10/14/2018 16:46:00	10/14/2018 15:10:00
	X			7634152	7634615	7634304	7634730	7634746	7634641
	Y			700569	700815	700441	700480	700343	700178
	Top (cm)			0	0	0	0	0	0
	Bottom (cm)			24	18	26	26	28	27

% = percent

g/cm3 = grams per cubic centimeter

J = Reported result is an estimate

T = Total concentration from component analytes.

U = Analyte was not detected in sample

R = Rejected

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	O7-0to27-101918	q2-0to13-101818	q6-0to27-102018	R1-0to30-101518	t6-0to29-101618
	Date Time			10/19/2018 15:36:00	10/18/2018 9:39:00	10/20/2018 9:19:00	10/15/2018 14:37:00	10/16/2018 14:38:00
	X			7634695	7635155	7634912	7635294	7635145
	Y			700126	700380	700077	700378	699887
	Top (cm)			0	0	0	0	0
	Bottom (cm)			27	13	27	30	29
Conventionals								
D422	Clay	STL00587	%	20	6.9	19	16	
D422	Silt	STL00586	%	56	41	70	72	
D422	Fine Sand	STL00585	%	21	32	10	9.2	
D422	Medium Sand	STL00584	%	3	16	0.3	1.6	
D422	Coarse Sand	STL00583	%	0.2	2.4	0.2	0.5	
D422	Gravel	STL00581	%	0	2	0	0	
D854	Density	STL00183	g/cm3	1.3	1.8	1.2	1.2	
D854	Specific Gravity		NONE	1.3	1.8	1.2	1.2	
E160.3	Total Solids		%	39	69	36	38	
D2216	Total Solids		%	34	68	30	32	
SW9060	Total Organic Carbon	7440-44-0	mg/kg	35000	7400	39000	36000	
Butyltins								
ALS SOP	Tri-n-butyltin Cation	36643-28-4	ug/kg	670	1.7	130	230	
Organochlorine Pesticides								
ALS SOP	o,p'-DDD	53-19-0	ug/kg	0.83	0.063 U	0.11 J	0.082 U	
ALS SOP	o,p'-DDE	3424-82-6	ug/kg	0.15	0.079 U	0.11 U	0.11 U	
ALS SOP	o,p'-DDT	789-02-6	ug/kg	0.13 U	0.53 J	0.13 U	0.13 U	
ALS SOP	4,4'-DDD	72-54-8	ug/kg	3.6	0.61 J	0.43	0.6 J	
ALS SOP	4,4'-DDE	72-55-9	ug/kg	3.1	0.22 J	0.67	0.99 J	
ALS SOP	4,4'-DDT	50-29-3	ug/kg	0.67	3 J	0.15	0.061 U	
ALS SOP	Aldrin	309-00-2	ug/kg	0.11 U	0.079 U	0.11 U	0.11 U	
ALS SOP	alpha-Chlordane	5103-71-9	ug/kg	0.24 J	0.062 U	0.085 U	0.081 U	
ALS SOP	Chlordane, gamma	5566-34-7	ug/kg	0.36	0.064 U	0.088 U	0.083 U	
ALS SOP	cis-Nonachlor	5103-73-1	ug/kg	0.13 U	0.097 U	0.14 U	0.13 U	
ALS SOP	Dieldrin	60-57-1	ug/kg	0.099 U	0.077 U	0.11 U	0.1 U	
ALS SOP	gamma-BHC (Lindane)	58-89-9	ug/kg	0.04 U	0.031 U	0.043 U	0.041 U	
ALS SOP	Heptachlor	76-44-8	ug/kg	0.05 U	0.039 U	0.054 U	0.051 U	
ALS SOP	Oxychlordane	27304-13-8	ug/kg	0.17 U	0.13 U	0.18 U	0.17 U	
ALS SOP	trans-Nonachlor	39765-80-5	ug/kg	0.2 J	0.058 U	0.079 U	0.076 U	
Dioxins/Furans								
CWA1613B	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg	0.93	0.0066	1.1	0.39	
CWA1613B	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg	0.32	0.0015 U	0.31	0.1	
CWA1613B	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg	0.023	0.00027 U	0.018	0.0071 J	
CWA1613B	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg	0.0039 J	0.00017 U	0.0052 U	0.0028 J	
CWA1613B	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg	0.065	0.00014 U	0.043	0.017	

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	O7-0to27-101918	q2-0to13-101818	q6-0to27-102018	R1-0to30-101518	t6-0to29-101618
	Date Time			10/19/2018 15:36:00	10/18/2018 9:39:00	10/20/2018 9:19:00	10/15/2018 14:37:00	10/16/2018 14:38:00
	X			7634695	7635155	7634912	7635294	7635145
	Y			700126	700380	700077	700378	699887
	Top (cm)			0	0	0	0	0
	Bottom (cm)			27	13	27	30	29
CWA1613B	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg	0.031 J	0.00025 UJ	0.033 J		0.013 J
CWA1613B	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg	0.014	0.00013 U	0.012		0.005 J
CWA1613B	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg	0.0078	0.00016 U	0.0088		0.0063 J
CWA1613B	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg	0.0033 U	0.00012 U	0.002 U		0.00082 U
CWA1613B	1,2,3,7,8-PeCDD	40321-76-4	ug/kg	0.0019 J	0.00025 U	0.0011 U		0.0014 J
CWA1613B	1,2,3,7,8-PeCDF	57117-41-6	ug/kg	0.002 J	0.00014 U	0.0016 U		0.00073 U
CWA1613B	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg	0.0058 J	0.00011 U	0.0046 J		0.0024 J
CWA1613B	2,3,4,7,8-PeCDF	57117-31-4	ug/kg	0.0062 J	0.00015 U	0.0047 J		0.0025 J
CWA1613B	2,3,7,8-TCDD	1746-01-6	ug/kg	0.00066 U	0.00015 U	0.001 U		4e-04 U
CWA1613B	2,3,7,8-TCDF	51207-31-9	ug/kg	0.0023	0.00012 U	0.0024		0.002
CWA1613B	OCDD	3268-87-9	ug/kg	7.6 J	0.06	7.9 J		3.2
CWA1613B	OCDF	39001-02-0	ug/kg	0.93	0.0063 J	1.2		0.33
CWA1613B	Total HpCDD	37871-00-4	ug/kg	2	0.014	2.5		0.86
CWA1613B	Total HpCDF	38998-75-3	ug/kg	1.4	0.0063 J	1.5		0.45
CWA1613B	Total HxCDD	34465-46-8	ug/kg	0.2 J	0.0018 U	0.25 J		0.1
CWA1613B	Total HxCDF	55684-94-1	ug/kg	0.56	0.0019 U	0.45		0.17 J
CWA1613B	Total PeCDD	36088-22-9	ug/kg	0.016 J	0.00025 U	0.012 J		0.011 J
CWA1613B	Total PeCDF	30402-15-4	ug/kg	0.072	0.00032 U	0.059 J		0.03
CWA1613B	Total TCDD	41903-57-5	ug/kg	0.0099 J	0.00015 U	0.012 J		0.0072 J
CWA1613B	Total TCDF	30402-14-3	ug/kg	0.012	0.00012 U	0.015 J		0.014 J
Dioxins/Furans								
E1613	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg				0.0038 J	
E1613	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg				0.00025 J	
E1613	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg				2e-04 J	
E1613	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg				0.00038 J	
E1613	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg				0.00071 J	
E1613	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg				0.00026 U	
E1613	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg				0.00045 J	
E1613	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg				8.9e-05 U	
E1613	1,2,3,7,8-PeCDD	40321-76-4	ug/kg				0.00016 U	
E1613	1,2,3,7,8-PeCDF	57117-41-6	ug/kg				0.00012 U	
E1613	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg				2e-04 U	
E1613	2,3,4,7,8-PeCDF	57117-31-4	ug/kg				0.00014 J	
E1613	2,3,7,8-TCDD	1746-01-6	ug/kg				0.00015 U	
E1613	2,3,7,8-TCDF	51207-31-9	ug/kg				0.00011 J	
E1613	OCDD	3268-87-9	ug/kg				0.16	

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	O7-0to27-101918	q2-0to13-101818	q6-0to27-102018	R1-0to30-101518	t6-0to29-101618
	Date Time			10/19/2018 15:36:00	10/18/2018 9:39:00	10/20/2018 9:19:00	10/15/2018 14:37:00	10/16/2018 14:38:00
	X			7634695	7635155	7634912	7635294	7635145
	Y			700126	700380	700077	700378	699887
	Top (cm)			0	0	0	0	0
	Bottom (cm)			27	13	27	30	29
E1613	OCDF	39001-02-0	ug/kg				0.0087 J	
E1613	Total HpCDD	37871-00-4	ug/kg				0.053	
E1613	Total HpCDF	38998-75-3	ug/kg				0.012	
E1613	Total HxCDD	34465-46-8	ug/kg				0.0057	
E1613	Total HxCDF	55684-94-1	ug/kg				0.0063	
E1613	Total PeCDD	36088-22-9	ug/kg				0.00026	
E1613	Total PeCDF	30402-15-4	ug/kg				0.0038	
E1613	Total TCDD	41903-57-5	ug/kg				0.00012	
E1613	Total TCDF	30402-14-3	ug/kg				0.0012	
PCB Aroclors								
SW8082A	Aroclor 1016	12674-11-2	ug/kg	2.2 U	0.96 U	2.3 U	2.1 U	
SW8082A	Aroclor 1221	11104-28-2	ug/kg	2.8 U	1.2 U	3 U	2.7 U	
SW8082A	Aroclor 1232	11141-16-5	ug/kg	2.8 U	1.2 U	3 U	2.7 U	
SW8082A	Aroclor 1242	53469-21-9	ug/kg	1.4 U	0.64 U	1.5 U	1.4 U	
SW8082A	Aroclor 1248	12672-29-6	ug/kg	1.1 U	0.47 U	1.1 U	1 U	
SW8082A	Aroclor 1254	11097-69-1	ug/kg	39 J	1.4 J	2.5 U	2.3 U	
SW8082A	Aroclor 1260	11096-82-5	ug/kg	2.2 U	1 U	9.9	17	
PCB Congeners								
E1668A	PCB-1	2051-60-7	ng/g	0.057	0.0021 J	0.046 J	0.087	
E1668A	PCB-2	2051-61-8	ng/g	0.051	0.0015 J	0.047 J	0.053	
E1668A	PCB-3	2051-62-9	ng/g	0.044	0.00058 U	0.046 J	0.057	
E1668A	PCB-4	13029-08-8	ng/g	0.13	0.015 J	0.14 J	0.21	
E1668A	PCB-5	16605-91-7	ng/g	0.0024 U	0.00077 U	0.0023 U	0.0036 J	
E1668A	PCB-6	25569-80-6	ng/g	0.03	0.00078 U	0.018 J	0.051	
E1668A	PCB-7	33284-50-3	ng/g	0.0059 U	0.00074 U	0.0076 U	0.0098 J	
E1668A	PCB-8	34883-43-7	ng/g	0.1	0.0037 U	0.07 J	0.17	
E1668A	PCB-9	34883-39-1	ng/g	0.0081 J	0.00085 U	0.0073 U	0.012 J	
E1668A	PCB-10	33146-45-1	ng/g	0.0065 J	0.00081 U	0.0077 J	0.006 U	
E1668A	PCB-11	2050-67-1	ng/g	0.16	0.0082 J	0.11 J	0.098	
E1668A	PCB-12	2974-92-7	ng/g	0.028	0.00074	0.021 U	0.039	
E1668A	PCB-13	2974-90-5	ng/g	0.028	0.00074	0.021 U	0.039	
E1668A	PCB-14	34883-41-5	ng/g	0.00068 U	0.00064 U	0.0019 U	0.00051 U	
E1668A	PCB-15	2050-68-2	ng/g	0.11	0.0065 J	0.098	0.12	
E1668A	PCB-16	38444-78-9	ng/g	0.071	0.0015 U	0.053 J	0.069 J	
E1668A	PCB-17	37680-66-3	ng/g	0.28	0.031	0.37	0.26	
E1668A	PCB-18	37680-65-2	ng/g	0.17	0.0088	0.12	0.18	

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	O7-0to27-101918	q2-0to13-101818	q6-0to27-102018	R1-0to30-101518	t6-0to29-101618
	Date Time			10/19/2018 15:36:00	10/18/2018 9:39:00	10/20/2018 9:19:00	10/15/2018 14:37:00	10/16/2018 14:38:00
	X			7634695	7635155	7634912	7635294	7635145
	Y			700126	700380	700077	700378	699887
	Top (cm)			0	0	0	0	0
	Bottom (cm)			27	13	27	30	29
E1668A	PCB-19	38444-73-4	ng/g	0.34	0.048 J	0.39		0.24
E1668A	PCB-20	38444-84-7	ng/g	0.43	0.015 U	0.57		0.41
E1668A	PCB-21	55702-46-0	ng/g	0.18	0.0057 U	0.14		0.16
E1668A	PCB-22	38444-85-8	ng/g	0.074	0.0021 U	0.062 J		0.076
E1668A	PCB-23	55720-44-0	ng/g	0.0023 U	0.00076 U	0.0032 U		0.0024 U
E1668A	PCB-24	55702-45-9	ng/g	0.0022 U	0.00089 U	0.0021 U		0.0027 J
E1668A	PCB-25	55712-37-3	ng/g	0.072	0.0041 J	0.057 J		0.052
E1668A	PCB-26	38444-81-4	ng/g	0.081	0.0021 U	0.044		0.065
E1668A	PCB-27	38444-76-7	ng/g	0.066	0.0068 U	0.085		0.058
E1668A	PCB-28	7012-37-5	ng/g	0.43	0.015 U	0.57		0.41
E1668A	PCB-29	15862-07-4	ng/g	0.081	0.0021 U	0.044		0.065
E1668A	PCB-30	35693-92-6	ng/g	0.17	0.0088	0.12		0.18
E1668A	PCB-31	16606-02-3	ng/g	0.23	0.0076 J	0.22		0.25
E1668A	PCB-32	38444-77-8	ng/g	0.29	0.015	0.43		0.19
E1668A	PCB-33	38444-86-9	ng/g	0.18	0.0057 U	0.14		0.16
E1668A	PCB-34	37680-68-5	ng/g	0.0035 J	0.00079 U	0.0033 U		0.0046 J
E1668A	PCB-35	37680-69-6	ng/g	0.041	0.00079 U	0.0096 J		0.0083 J
E1668A	PCB-36	38444-87-0	ng/g	0.0089 U	0.00071 U	0.003 U		0.0023 U
E1668A	PCB-37	38444-90-5	ng/g	0.11	0.0045 J	0.11		0.13
E1668A	PCB-38	53555-66-1	ng/g	0.0023 U	0.00073 U	0.003 U		0.0023 U
E1668A	PCB-39	38444-88-1	ng/g	0.0021 U	0.00069 U	0.0029 U		0.0022 U
E1668A	PCB-40	38444-93-8	ng/g	0.8	0.026	0.85		0.61
E1668A	PCB-41	52663-59-9	ng/g	0.8	0.026	0.85		0.61
E1668A	PCB-42	36559-22-5	ng/g	0.28	0.0074 J	0.34		0.23
E1668A	PCB-43	70362-46-8	ng/g	0.11 J	0.0052	0.088 U		0.077
E1668A	PCB-44	41464-39-5	ng/g	5	0.21	3.9		2.9
E1668A	PCB-45	41464-39-5	ng/g	2.1	0.1	1.6		1
E1668A	PCB-46	41464-47-5	ng/g	0.095	0.0016 U	0.17		0.061
E1668A	PCB-47	2437-79-8	ng/g	5	0.21	3.9		2.9
E1668A	PCB-48	70362-47-9	ng/g	0.095	0.0013 U	0.077 J		0.098
E1668A	PCB-49	41464-40-8	ng/g	2.1	0.074	1.9		1.4
E1668A	PCB-50	62796-65-0	ng/g	0.99	0.048	1		0.53
E1668A	PCB-51	68194-04-7	ng/g	2.1	0.1	1.6		1
E1668A	PCB-52	35693-99-3	ng/g	3.5	0.065	1.9		2.3
E1668A	PCB-53	41464-41-9	ng/g	0.99	0.048	1		0.53
E1668A	PCB-54	15968-05-5	ng/g	0.27	0.024	0.2		0.12

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	O7-0to27-101918	q2-0to13-101818	q6-0to27-102018	R1-0to30-101518	t6-0to29-101618
	Date Time			10/19/2018 15:36:00	10/18/2018 9:39:00	10/20/2018 9:19:00	10/15/2018 14:37:00	10/16/2018 14:38:00
	X			7634695	7635155	7634912	7635294	7635145
	Y			700126	700380	700077	700378	699887
	Top (cm)			0	0	0	0	0
	Bottom (cm)			27	13	27	30	29
E1668A	PCB-55	74338-24-2	ng/g	0.0024 U	0.00094 U	0.0033 U		0.0016 U
E1668A	PCB-56	41464-43-1	ng/g	0.32	0.0087 J	0.23		0.33
E1668A	PCB-57	70424-67-8	ng/g	0.0024 U	0.00095 U	0.0033 U		0.0016 U
E1668A	PCB-58	41464-49-7	ng/g	0.0023 U	0.00092 U	0.0032 U		0.0016 U
E1668A	PCB-59	74472-33-6	ng/g	0.16	0.0082	0.13		0.1
E1668A	PCB-60	33025-41-1	ng/g	0.093	0.0038 J	0.058 J		0.09
E1668A	PCB-61	33284-53-6	ng/g	2.4	0.044	1.3		1.9
E1668A	PCB-62	54230-22-7	ng/g	0.16	0.0082	0.13		0.1
E1668A	PCB-63	74472-34-7	ng/g	0.055	0.00083 U	0.058 J		0.044
E1668A	PCB-64	52663-58-8	ng/g	0.4	0.01	0.27		0.34
E1668A	PCB-65	33284-54-7	ng/g	5	0.21	3.9		2.9
E1668A	PCB-66	32598-10-0	ng/g	1.2	0.026	1		1.1
E1668A	PCB-67	73575-53-8	ng/g	0.046	0.0012 J	0.024 U		0.029
E1668A	PCB-68	73575-52-7	ng/g	0.072	0.0022 U	0.063 U		0.046
E1668A	PCB-69	60233-24-1	ng/g	2.1	0.074	1.9		1.4
E1668A	PCB-70	32598-11-1	ng/g	2.4	0.044	1.3		1.9
E1668A	PCB-71	41464-46-4	ng/g	0.8	0.026	0.85		0.61
E1668A	PCB-72	41464-42-0	ng/g	0.054	0.00092 U	0.051 J		0.046
E1668A	PCB-73	74338-23-1	ng/g	0.11 J	0.0052	0.088 U		0.077
E1668A	PCB-74	32690-93-0	ng/g	2.4	0.044	1.3		1.9
E1668A	PCB-75	32598-12-2	ng/g	0.16	0.0082	0.13		0.1
E1668A	PCB-76	70362-48-0	ng/g	2.4	0.044	1.3		1.9
E1668A	PCB-77	32598-13-3	ng/g	0.11	0.0041 U	0.11		0.097
E1668A	PCB-78	70362-49-1	ng/g	0.0023 U	0.00092 U	0.0032 U		0.0016 U
E1668A	PCB-79	41464-48-6	ng/g	0.052	0.00079 U	0.026 U		0.038
E1668A	PCB-80	33284-52-5	ng/g	0.0021 U	0.00083 U	0.0029 U		0.0014 U
E1668A	PCB-81	70362-50-4	ng/g	0.004 U	0.00095 U	0.0087 U		0.0016 U
E1668A	PCB-82	52663-62-4	ng/g	0.71	0.019	0.33		0.43
E1668A	PCB-83	60145-20-2	ng/g	5.1	0.11	3.5		3.6
E1668A	PCB-84	52663-60-2	ng/g	2	0.032	0.97		1.1
E1668A	PCB-85	65510-45-4	ng/g	1	0.026	0.57		0.66
E1668A	PCB-86	55312-69-1	ng/g	4.4	0.09	2.4		2.8
E1668A	PCB-87	38380-02-8	ng/g	4.4	0.09	2.4		2.8
E1668A	PCB-88	55215-17-3	ng/g	1.8	0.042	1.4		1.2
E1668A	PCB-89	73575-57-2	ng/g	0.058	0.0016 U	0.038 J		0.043
E1668A	PCB-90	68194-07-0	ng/g	9.5	0.19	6		6.4

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	O7-0to27-101918	q2-0to13-101818	q6-0to27-102018	R1-0to30-101518	t6-0to29-101618
	Date Time			10/19/2018 15:36:00	10/18/2018 9:39:00	10/20/2018 9:19:00	10/15/2018 14:37:00	10/16/2018 14:38:00
	X			7634695	7635155	7634912	7635294	7635145
	Y			700126	700380	700077	700378	699887
	Top (cm)			0	0	0	0	0
	Bottom (cm)			27	13	27	30	29
E1668A	PCB-91	68194-05-8	ng/g	1.8	0.042	1.4		1.2
E1668A	PCB-92	52663-61-3	ng/g	2	0.042	1.4		1.4
E1668A	PCB-93	73575-56-1	ng/g	0.93	0.041	0.73		0.54
E1668A	PCB-94	73575-55-0	ng/g	0.24	0.0085 U	0.2		0.14
E1668A	PCB-95	38379-99-6	ng/g	7.6	0.15	4.3		4.7
E1668A	PCB-96	73575-54-9	ng/g	0.17	0.0041 U	0.13		0.098
E1668A	PCB-97	41464-51-1	ng/g	4.4	0.09	2.4		2.8
E1668A	PCB-98	60233-25-2	ng/g	0.51	0.013 U	0.39		0.34
E1668A	PCB-99	38380-01-7	ng/g	5.1	0.11	3.5		3.6
E1668A	PCB-100	39485-83-1	ng/g	0.93	0.041	0.73		0.54
E1668A	PCB-101	37680-73-2	ng/g	9.5	0.19	6		6.4
E1668A	PCB-102	68194-06-9	ng/g	0.51	0.013 U	0.39		0.34
E1668A	PCB-103	60145-21-3	ng/g	0.44	0.015	0.35		0.29
E1668A	PCB-104	56558-16-8	ng/g	0.069	0.0044 J	0.051 J		0.035
E1668A	PCB-105	32598-14-4	ng/g	1.6	0.035	0.74		1.1
E1668A	PCB-106	70424-69-0	ng/g	0.012 U	0.0011 U	0.0053 U		0.0035 U
E1668A	PCB-107	70424-68-9	ng/g	0.45	0.0094 J	0.3		0.33
E1668A	PCB-108	70362-41-3	ng/g	0.19	0.0053	0.083 U		0.12
E1668A	PCB-109	74472-35-8	ng/g	4.4	0.09	2.4		2.8
E1668A	PCB-110	38380-03-9	ng/g	8.8	0.18	5		5.6
E1668A	PCB-111	39635-32-0	ng/g	0.00063 U	0.00097 U	0.033 J		0.024 J
E1668A	PCB-112	74472-36-9	ng/g	0.00066 U	0.001 U	0.0031 U		0.00066 U
E1668A	PCB-113	68194-10-5	ng/g	9.5	0.19	6		6.4
E1668A	PCB-114	74472-37-0	ng/g	0.092	0.0032 U	0.047 J		0.065
E1668A	PCB-115	74472-38-1	ng/g	8.8	0.18	5		5.6
E1668A	PCB-116	18259-05-7	ng/g	1	0.026	0.57		0.66
E1668A	PCB-117	68194-11-6	ng/g	1	0.026	0.57		0.66
E1668A	PCB-118	31508-00-6	ng/g	5.1	0.095	2.7		3.4
E1668A	PCB-119	56558-17-9	ng/g	4.4	0.09	2.4		2.8
E1668A	PCB-120	68194-12-7	ng/g	0.089	0.00093 U	0.076 U		0.07
E1668A	PCB-121	56558-18-0	ng/g	0.00064 U	0.0024 U	0.028 J		0.00064 U
E1668A	PCB-122	76842-07-4	ng/g	0.06	0.0026 U	0.03 J		0.039
E1668A	PCB-123	65510-44-3	ng/g	0.064	0.0017 U	0.049 J		0.045
E1668A	PCB-124	70424-70-3	ng/g	0.19	0.0053	0.083 U		0.12
E1668A	PCB-125	74472-39-2	ng/g	4.4	0.09	2.4		2.8
E1668A	PCB-126	57465-28-8	ng/g	0.018 U	0.0011 U	0.026 J		0.013 U

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	O7-0to27-101918	q2-0to13-101818	q6-0to27-102018	R1-0to30-101518	t6-0to29-101618
	Date Time			10/19/2018 15:36:00	10/18/2018 9:39:00	10/20/2018 9:19:00	10/15/2018 14:37:00	10/16/2018 14:38:00
	X			7634695	7635155	7634912	7635294	7635145
	Y			700126	700380	700077	700378	699887
	Top (cm)			0	0	0	0	0
	Bottom (cm)			27	13	27	30	29
E1668A	PCB-127	39635-33-1	ng/g	0.012 U	0.0011 U	0.0052 U		0.0035 U
E1668A	PCB-128	38380-07-3	ng/g	1.7	0.036	0.98		1.1
E1668A	PCB-129	55215-18-4	ng/g	14	0.27	9.4		10
E1668A	PCB-130	52663-66-8	ng/g	0.85	0.018	0.53		0.6
E1668A	PCB-131	61798-70-7	ng/g	0.15	0.0042 U	0.081		0.094
E1668A	PCB-132	38380-05-1	ng/g	4.6	0.083	2.8		3.2
E1668A	PCB-133	35694-04-3	ng/g	0.33	0.0079 J	0.25		0.27
E1668A	PCB-134	52704-70-8	ng/g	0.83	0.016 U	0.5		0.57
E1668A	PCB-135	52744-13-5	ng/g	6	0.13	4.4		4.5
E1668A	PCB-136	38411-22-2	ng/g	2.2	0.046	1.5		1.6
E1668A	PCB-137	35694-06-5	ng/g	0.36	0.0074 U	0.17		0.22
E1668A	PCB-138	35065-28-2	ng/g	14	0.27	9.4		10
E1668A	PCB-139	56030-56-9	ng/g	0.25	0.0049 U	0.16		0.18
E1668A	PCB-140	59291-64-4	ng/g	0.25	0.0049 U	0.16		0.18
E1668A	PCB-141	52712-04-6	ng/g	2.7	0.053	1.8		2.1
E1668A	PCB-142	41411-61-4	ng/g	0.0036 U	0.0017 U	0.0065 U		0.0032 U
E1668A	PCB-143	68194-15-0	ng/g	0.83	0.016 U	0.5		0.57
E1668A	PCB-144	68194-14-9	ng/g	0.68	0.015	0.48		0.48
E1668A	PCB-145	74472-40-5	ng/g	0.0095 U	0.00069 U	0.0026 U		0.0033 U
E1668A	PCB-146	51908-16-8	ng/g	2.8	0.051	2.1		2.2
E1668A	PCB-147	68194-13-8	ng/g	13	0.25	9.1		10
E1668A	PCB-148	74472-41-6	ng/g	0.097	0.00091 U	0.081		0.077
E1668A	PCB-149	38380-04-0	ng/g	13	0.25	9.1		10
E1668A	PCB-150	68194-08-1	ng/g	0.1	0.0048 J	0.085		0.075
E1668A	PCB-151	52663-63-5	ng/g	6	0.13	4.4		4.5
E1668A	PCB-152	68194-09-2	ng/g	0.054	0.0023 J	0.042 J		0.034
E1668A	PCB-153	35065-27-1	ng/g	13	0.25	9.6		10
E1668A	PCB-154	60145-22-4	ng/g	0.51	0.013	0.43		0.42
E1668A	PCB-155	33979-03-2	ng/g	0.011 J	0.0024 U	0.011 J		0.007 J
E1668A	PCB-156	38380-08-4	ng/g	1.3	0.023 J	0.8		0.87
E1668A	PCB-157	69782-90-7	ng/g	1.3	0.023 J	0.8		0.87
E1668A	PCB-158	74472-42-7	ng/g	1.3	0.028	0.8		0.88
E1668A	PCB-159	39635-35-3	ng/g	0.18	0.0037 J	0.14		0.14
E1668A	PCB-160	41411-62-5	ng/g	14	0.27	9.4		10
E1668A	PCB-161	74472-43-8	ng/g	0.0023 U	0.0011 U	0.0041 U		0.002 U
E1668A	PCB-162	39635-34-2	ng/g	0.034	0.0011 U	0.0041 U		0.019

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	O7-0to27-101918	q2-0to13-101818	q6-0to27-102018	R1-0to30-101518	t6-0to29-101618
	Date Time			10/19/2018 15:36:00	10/18/2018 9:39:00	10/20/2018 9:19:00	10/15/2018 14:37:00	10/16/2018 14:38:00
	X			7634695	7635155	7634912	7635294	7635145
	Y			700126	700380	700077	700378	699887
	Top (cm)			0	0	0	0	0
	Bottom (cm)			27	13	27	30	29
E1668A	PCB-163	74472-44-9	ng/g	14	0.27	9.4		10
E1668A	PCB-164	74472-45-0	ng/g	1.1	0.021	0.74		0.8
E1668A	PCB-165	74472-46-1	ng/g	0.0028 U	0.0013 U	0.0049 U		0.0024 U
E1668A	PCB-166	41411-63-6	ng/g	1.7	0.036	0.98		1.1
E1668A	PCB-167	52663-72-6	ng/g	0.46	0.011 U	0.32		0.31
E1668A	PCB-168	59291-65-5	ng/g	13	0.25	9.6		10
E1668A	PCB-169	32774-16-6	ng/g	0.0022 U	0.00099 U	0.0037 U		0.0019 U
E1668A	PCB-170	35065-30-6	ng/g	6.7	0.087	4.4		4.5
E1668A	PCB-171	52663-71-5	ng/g	2	0.038	1.4		1.5
E1668A	PCB-172	52663-74-8	ng/g	1.1	0.018	0.69		0.75
E1668A	PCB-173	68194-16-1	ng/g	2	0.038	1.4		1.5
E1668A	PCB-174	38411-25-5	ng/g	6.4	0.1	4.6		4.9
E1668A	PCB-175	40186-70-7	ng/g	0.26	0.0052 J	0.17		0.19
E1668A	PCB-176	52663-65-7	ng/g	0.75	0.014	0.52		0.56
E1668A	PCB-177	52663-70-4	ng/g	3.8	0.062	2.8		3
E1668A	PCB-178	52663-67-9	ng/g	1.2	0.023	0.91		1
E1668A	PCB-179	52663-64-6	ng/g	2.5	0.043	1.9		2
E1668A	PCB-180	35065-29-3	ng/g	14	0.2	9.6		10
E1668A	PCB-181	74472-47-2	ng/g	0.00056 U	0.0022 U	0.039 J		0.00041 U
E1668A	PCB-182	60145-23-5	ng/g	0.063	0.0045 J	0.047 J		0.055
E1668A	PCB-183	52663-69-1	ng/g	4.3	0.065	2.9		3.1
E1668A	PCB-184	74472-48-3	ng/g	0.00044 U	0.0011 U	0.0026 U		0.00032 U
E1668A	PCB-185	52712-05-7	ng/g	4.3	0.065	2.9		3.1
E1668A	PCB-186	74472-49-4	ng/g	0.00043 U	0.001 U	0.0025 U		0.00032 U
E1668A	PCB-187	52663-68-0	ng/g	7.4	0.12	5.4		5.8
E1668A	PCB-188	74487-85-7	ng/g	4e-04 U	0.00099 U	0.0024 U		0.00029 U
E1668A	PCB-189	39635-31-9	ng/g	0.24	0.001 U	0.17		0.15
E1668A	PCB-190	41411-64-7	ng/g	1.3	0.019 J	0.92		0.92
E1668A	PCB-191	74472-50-7	ng/g	0.28	0.0056 J	0.19		0.2
E1668A	PCB-192	74472-51-8	ng/g	0.00048 U	0.0037 J	0.0028 U		0.00035 U
E1668A	PCB-193	69782-91-8	ng/g	14	0.2	9.6		10
E1668A	PCB-194	35694-08-7	ng/g	3.3	0.038	2		2.1
E1668A	PCB-195	52663-78-2	ng/g	1.6	0.015 J	0.97		1
E1668A	PCB-196	42740-50-1	ng/g	1.6	0.021	1		0.98
E1668A	PCB-197	33091-17-7	ng/g	0.09 J	0.00089 U	0.068 J		0.051 J
E1668A	PCB-198	68194-17-2	ng/g	3.1	0.039	2		2

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	O7-0to27-101918	q2-0to13-101818	q6-0to27-102018	R1-0to30-101518	t6-0to29-101618
	Date Time			10/19/2018 15:36:00	10/18/2018 9:39:00	10/20/2018 9:19:00	10/15/2018 14:37:00	10/16/2018 14:38:00
	X			7634695	7635155	7634912	7635294	7635145
	Y			700126	700380	700077	700378	699887
	Top (cm)			0	0	0	0	0
	Bottom (cm)			27	13	27	30	29
E1668A	PCB-199	52663-75-9	ng/g	3.1	0.039	2		2
E1668A	PCB-200	52663-73-7	ng/g	0.4	0.00096 U	0.25		0.26
E1668A	PCB-201	40186-71-8	ng/g	0.38	0.0057 U	0.23		0.24
E1668A	PCB-202	2136-99-4	ng/g	0.57	0.014	0.36		0.39
E1668A	PCB-203	52663-76-0	ng/g	2.1	0.026	1.2		1.2
E1668A	PCB-204	74472-52-9	ng/g	0.00058 U	0.00098 U	0.006 U		0.00072 U
E1668A	PCB-205	74472-53-0	ng/g	0.16	0.002 U	0.11		0.1
E1668A	PCB-206	40186-72-9	ng/g	1.5 J	0.16 J	15 J		0.67
E1668A	PCB-207	52663-79-3	ng/g	0.14	0.0056 U	0.063 J		0.074
E1668A	PCB-208	52663-77-1	ng/g	0.32	0.0058 U	0.14		0.18
E1668A	PCB-209	2051-24-3	ng/g	0.42	0.012	0.27		0.29
E1668A	Total Dichlorobiphenyls		ng/g	0.58 J	0.033 J	0.48 J		0.72 J
E1668A	Total Heptachlorobiphenyls		ng/g	52	0.81 J	37		39
E1668A	Total Hexachlorobiphenyls		ng/g	69 J	1.4 J	47		51 J
E1668A	Total Monochlorobiphenyls		ng/g	0.15	0.0036 J	0.14		0.2
E1668A	Total Nonachlorobiphenyls		ng/g	2 J	0.16 J	15 J		0.92
E1668A	Total Octachlorobiphenyls		ng/g	13 J	0.16 J	8.2		8.3 J
E1668A	Total Pentachlorobiphenyls		ng/g	53	1.1 J	32 J		35 J
E1668A	Total Tetrachlorobiphenyls		ng/g	20 J	0.67 J	15 J		13
E1668A	Total Trichlorobiphenyls		ng/g	2.4 J	0.15 J	2.7		2.2 J
E1668A	Polychlorinated biphenyls, Total	1336-36-3	ng/g	210 J	4.5 J	160 J		150 J
Total Petroleum Hydrocarbons								
NWTPH-Dx	#2 Diesel (C10-C24)		ug/kg	95 J	16 J	120		140
NWTPH-Dx	Motor Oil (>C24-C36)		ug/kg	490	60	570		660
Metals								
SW6020B	Arsenic	7440-38-2	ug/kg	12	4.7	9.4		10
SW6020B	Cadmium	7440-43-9	ug/kg	0.44	0.12 J	0.44		0.46
SW6020B	Copper	7440-50-8	ug/kg	150	33	120		150
SW6020B	Lead	7439-92-1	ug/kg	42	14	36		39
SW6020B	Zinc	7440-66-6	ug/kg	300	110	280		310
SW7471A	Mercury	7439-97-6	ug/kg	0.2 J	0.043 J	0.16 J		0.25 J
Phthalates								
SW8270D	Bis(2-ethylhexyl) Phthalate	117-81-7	ug/kg	88 J	160	67 J		30 J
PAHs								
SW8270D	2-Methylnaphthalene	91-57-6	ug/kg	0.22 J	0.12 UJ	0.17 UJ		0.16 J
SW8270D	Acenaphthene	83-32-9	ug/kg	0.77 J	0.3 J	0.29 J		0.6 J

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	O7-0to27-101918	q2-0to13-101818	q6-0to27-102018	R1-0to30-101518	t6-0to29-101618
	Date Time			10/19/2018 15:36:00	10/18/2018 9:39:00	10/20/2018 9:19:00	10/15/2018 14:37:00	10/16/2018 14:38:00
	X			7634695	7635155	7634912	7635294	7635145
	Y			700126	700380	700077	700378	699887
	Top (cm)			0	0	0	0	0
	Bottom (cm)			27	13	27	30	29
SW8270D	Acenaphthylene	208-96-8	ug/kg	0.78 J	0.97 J	0.6 J		0.68 J
SW8270D	Anthracene	120-12-7	ug/kg	2.3 J	1.2 J	1.3 J		0.85 J
SW8270D	Benzo(a)anthracene	56-55-3	ug/kg	10 J	5.4 J	4.8 J		4.3 J
SW8270D	Benzo(a)pyrene	50-32-8	ug/kg	19 J	8.3 J	5.4 J		6.4 J
SW8270D	Benzo(b)fluoranthene	205-99-2	ug/kg	22	11	8		8.1
SW8270D	Benzo(g,h,i)perylene	191-24-2	ug/kg	16 J	9 J	4.2 J		6.2 J
SW8270D	Benzo(k)fluoranthene	207-08-9	ug/kg	8.4 J	4 J	3.5 J		3 J
SW8270D	Chrysene	218-01-9	ug/kg	14 J	8.7 J	9.3 J		6.5 J
SW8270D	Dibenzo(a,h)anthracene	53-70-3	ug/kg	3.4 J	1.4 J	0.95 J		0.94 J
SW8270D	Dibenzofuran	132-64-9	ug/kg	0.37 J	0.25 UJ	0.24 UJ		0.19 UJ
SW8270D	Fluoranthene	206-44-0	ug/kg	17 J	15 J	8.1 J		12 J
SW8270D	Fluorene	86-73-7	ug/kg	0.98 J	0.27 J	0.48 J		0.44 J
SW8270D	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	16 J	8.8 J	4.2 J		5.7 J
SW8270D	Naphthalene	91-20-3	ug/kg	0.44 J	0.23 J	0.33 J		0.3 J
SW8270D	Phenanthrene	85-01-8	ug/kg	6.1 J	8.7 J	3.3 J		5 J
SW8270D	Pyrene	129-00-0	ug/kg	22	18	10		16
Calculated Totals								
ALS SOP	CALC_TOTAL_Chlordane_ND_PDI		ug/kg	0.88 JT	0.13 UT	0.18 UT		0.17 UT
ALS SOP	CALC_TOTAL_DDD_ND_PDI		ug/kg		0.64 JT	0.54 AJT		0.64 JT
ALS SOP	CALC_TOTAL_DDE_ND_PDI		ug/kg		0.26 JT	0.72 AT		1 JT
ALS SOP	CALC_TOTAL_DDT_ND_PDI		ug/kg	0.74 AT	3.5 JT	0.22 AT		0.13 UT
ALS SOP	CALC_TOTAL_DDx_ND_PDI		ug/kg	8.4 AT	4.4 JT	1.4 JT		1.7 JT
E1668A	CALC_TOTAL_PCB_ND_PDI		ug/kg	210 JT	4.5 JT	160 JT		150 JT
SW8082A	CALC_TOTAL_AROCLORS_ND_PDI		ug/kg	40 JT	2 JT	11 AT		18 AT
SW8270D	CALC_TOTAL_CPAH_ND_PDI		ug/kg	27 JT	12 JT	8.1 JT		9.2 JT
SW8270D	CALC_TOTAL_HPAH_ND_PDI		ug/kg	120 JT	75 JT	47 JT		58 JT
SW8270D	CALC_TOTAL_LPAH_ND_PDI		ug/kg	12 JT	12 JT	6.4 JT		8 JT
SW8270D	CALC_TOTAL_PAH_ND_PDI		ug/kg	130 JT	86 JT	53 JT		66 JT

DDx = dichlorodiphenyltrichloroethane and its derivatives

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyls

PeCDD = Pentachlorodibenzo-p-dioxin

PeCDF = Pentachlorodibenzofuran

TCDD = Tetrachlorodibenzo-p-dioxin

ug/kg = micrograms per kilogram

ng/g = nanograms per gram

Appendix F. Validated Results - Grab and Shore Samples

Analysis Method	Parameter	CAS Number	Units	O7-0to27-101918	q2-0to13-101818	q6-0to27-102018	R1-0to30-101518	t6-0to29-101618
	Date Time			10/19/2018 15:36:00	10/18/2018 9:39:00	10/20/2018 9:19:00	10/15/2018 14:37:00	10/16/2018 14:38:00
	X			7634695	7635155	7634912	7635294	7635145
	Y			700126	700380	700077	700378	699887
	Top (cm)			0	0	0	0	0
	Bottom (cm)			27	13	27	30	29

% = percent

g/cm3 = grams per cubic centimeter

J = Reported result is an estimate

T = Total concentration from component analytes.

U = Analyte was not detected in sample

R = Rejected

APPENDIX F2
VALIDATED ANALYTICAL RESULTS
CORE SAMPLES

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	411-sc1b-50to60-82619	412-sc1b-80to90-82719	413-sc1b-40to50-82819	D6-SC-0to1-102118	D6-SC-108to123-102118
	Date Time			8/26/2019 15:00:00	8/27/2019 12:35:00	8/28/2019 10:45:00	10/21/2018 16:00:00	10/21/2018 18:00:00
	X			7633913	7634552	7634373	7633913	7633913
	Y			700913	700761	700517	700913	700913
	Top (cm)			152	244	122	0	329
	Bottom (cm)			183	274	152	30	375
Conventionals								
E160.3	Total Solids		%	60	80	57		
PSEP	Total Solids		%					
SM2540G	Total Solids		%	59	78	55		
SW9060A	Carbon, Total Organic	7440-044-0	mg/kg		3400	28800		
Organochlorine Pesticides								
ALS SOP	o,p'-DDD	53-19-0	ug/kg	0.88	0.63 U	0.63 U		
ALS SOP	o,p'-DDE	3424-82-6	ug/kg	0.79 U	0.79 U	0.79 U		
ALS SOP	o,p'-DDT	789-02-6	ug/kg	0.94 U	0.94 U	0.94 U		
ALS SOP	4,4'-DDD	72-54-8	ug/kg	3.4	0.35 U	1.6		
ALS SOP	4,4'-DDE	72-55-9	ug/kg	5.9	0.7 U	3.4		
ALS SOP	4,4'-DDT	50-29-3	ug/kg	0.47 U	0.47 U	1.5		
Dioxins/Furans								
CWA1613B	1,2,3,4,6,7,8,9-OCDD	3268-87-9	ug/kg	0.98	0.28	0.46		
CWA1613B	1,2,3,4,6,7,8,9-OCDF	39001-02-0	ug/kg	0.1	0.036	0.022		
CWA1613B	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg	0.079	0.018	0.033		
CWA1613B	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg	0.037	0.1	0.0075		
CWA1613B	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg	0.0021 J	0.00088 J	0.00058 U		
CWA1613B	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg	0.00044 U	0.005 U	0.00028 J		
CWA1613B	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg	0.0022 J	0.0013 J	0.00085 J		
CWA1613B	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg	0.0026 J	0.0014 J	0.0016 J		
CWA1613B	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg	0.0023 J	0.0052	0.00065 J		
CWA1613B	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg	0.0011 J	0.00057 J	0.00087 U		
CWA1613B	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg	0.00053 U	0.00048 U	0.00023 J		
CWA1613B	1,2,3,7,8-PeCDD	40321-76-4	ug/kg	0.00034 J	0.00045 J	0.00025 U		
CWA1613B	1,2,3,7,8-PeCDF	57117-41-6	ug/kg	0.00064 J	0.00041 U	0.00027 U		
CWA1613B	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg	0.0015 J	0.0024 J	0.00056 U		
CWA1613B	2,3,4,7,8-PeCDF	57117-31-4	ug/kg	0.0011 J	0.0014 J	0.00043 J		
CWA1613B	2,3,7,8-TCDD	1746-01-6	ug/kg	0.00094 U	0.00099 U	0.001 U		
CWA1613B	2,3,7,8-TCDF	51207-31-9	ug/kg	5e-04 U	0.00029 U	0.00052 J		
CWA1613B	Total HpCDD	37871-00-4	ug/kg	0.17	0.045	0.07		
CWA1613B	Total HpCDF	38998-75-3	ug/kg	0.13 J	0.16 J	0.029 U		
CWA1613B	Total HxCDD	34465-46-8	ug/kg	0.023 J	0.011 J	0.011 U		
CWA1613B	Total HxCDF	55684-94-1	ug/kg	0.044 J	0.064 J	0.012 U		
CWA1613B	Total PeCDD	36088-22-9	ug/kg	0.0043 J	0.0032 J	0.0016 U		
CWA1613B	Total PeCDF	30402-15-4	ug/kg	0.022 J	0.04 J	0.0059 U		

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	411-sc1b-50to60-82619	412-sc1b-80to90-82719	413-sc1b-40to50-82819	D6-SC-0to1-102118	D6-SC-108to123-102118
	Date Time			8/26/2019 15:00:00	8/27/2019 12:35:00	8/28/2019 10:45:00	10/21/2018 16:00:00	10/21/2018 18:00:00
	X			7633913	7634552	7634373	7633913	7633913
	Y			700913	700761	700517	700913	700913
	Top (cm)			152	244	122	0	329
	Bottom (cm)			183	274	152	30	375
CWA1613B	Total TCDD	41903-57-5	ug/kg	0.0014 J	0.00048 J	0.00064 U		
CWA1613B	Total TCDF	30402-14-3	ug/kg	0.0069 J	0.01 J	0.0036 U		
Dioxins/Furans								
E1613	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg					0.0034 J
E1613	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg					0.00052 J
E1613	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg					0.00067 U
E1613	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg					9.7e-05 J
E1613	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg					0.00066 U
E1613	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg					0.00016 J
E1613	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg					0.00073 U
E1613	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg					0.00019 U
E1613	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg					7.1e-05 J
E1613	1,2,3,7,8-PeCDD	40321-76-4	ug/kg					6.1e-05 J
E1613	1,2,3,7,8-PeCDF	57117-41-6	ug/kg					0.00082 U
E1613	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg					0.00079 U
E1613	2,3,4,7,8-PeCDF	57117-31-4	ug/kg					0.00077 U
E1613	2,3,7,8-TCDD	1746-01-6	ug/kg					5.2e-05 J
E1613	2,3,7,8-TCDF	51207-31-9	ug/kg					9.9e-05 U
E1613	OCDD	3268-87-9	ug/kg					0.042
E1613	OCDF	39001-02-0	ug/kg					0.0012 J
E1613	Total HpCDD	37871-00-4	ug/kg					0.0081
E1613	Total HpCDF	38998-75-3	ug/kg					0.0015
E1613	Total HxCDD	34465-46-8	ug/kg					0.0022
E1613	Total HxCDF	55684-94-1	ug/kg					5e-04
E1613	Total PeCDD	36088-22-9	ug/kg					0.00034
E1613	Total PeCDF	30402-15-4	ug/kg					0.000050 U
E1613	Total TCDD	41903-57-5	ug/kg					0.00085
E1613	Total TCDF	30402-14-3	ug/kg					0.000050 U
PCB Aroclors								
SW8082A	Aroclor 1016	12674-11-2	ug/kg	7.8 U	1.6 U	7.8 U	16 U	
SW8082A	Aroclor 1221	11104-28-2	ug/kg	7.8 U	1.6 U	7.8 U	16 U	
SW8082A	Aroclor 1232	11141-16-5	ug/kg	7.8 U	1.6 U	7.8 U	16 U	
SW8082A	Aroclor 1242	53469-21-9	ug/kg	7.8 U	1.6 U	7.8 U	16 U	
SW8082A	Aroclor 1248	12672-29-6	ug/kg	100	1.6 U	160	190 J	
SW8082A	Aroclor 1254	11097-69-1	ug/kg	270	6.2	390	710	
SW8082A	Aroclor 1260	11096-82-5	ug/kg	93	6.8	270	630	

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	411-sc1b-50to60-82619	412-sc1b-80to90-82719	413-sc1b-40to50-82819	D6-SC-0to1-102118	D6-SC-108to123-102118
	Date Time			8/26/2019 15:00:00	8/27/2019 12:35:00	8/28/2019 10:45:00	10/21/2018 16:00:00	10/21/2018 18:00:00
	X			7633913	7634552	7634373	7633913	7633913
	Y			700913	700761	700517	700913	700913
	Top (cm)			152	244	122	0	329
	Bottom (cm)			183	274	152	30	375
SW8082A	Aroclor 1262	37324-23-5	ug/kg	2.9 U	0.6 U	2.9 U	5.9 U	
SW8082A	Aroclor 1268	11100-14-4	ug/kg	2.9 U	0.6 U	2.9 U	5.9 U	
PCB Congeners								
E1668A	PCB-1	2051-60-7	ng/g					
E1668A	PCB-2	2051-61-8	ng/g					
E1668A	PCB-3	2051-62-9	ng/g					
E1668A	PCB-4	13029-08-8	ng/g					
E1668A	PCB-5	16605-91-7	ng/g					
E1668A	PCB-6	25569-80-6	ng/g					
E1668A	PCB-7	33284-50-3	ng/g					
E1668A	PCB-8	34883-43-7	ng/g					
E1668A	PCB-9	34883-39-1	ng/g					
E1668A	PCB-10	33146-45-1	ng/g					
E1668A	PCB-11	2050-67-1	ng/g					
E1668A	PCB-12	2974-92-7	ng/g					
E1668A	PCB-13	2974-90-5	ng/g					
E1668A	PCB-14	34883-41-5	ng/g					
E1668A	PCB-15	2050-68-2	ng/g					
E1668A	PCB-16	38444-78-9	ng/g					
E1668A	PCB-17	37680-66-3	ng/g					
E1668A	PCB-18	37680-65-2	ng/g					
E1668A	PCB-19	38444-73-4	ng/g					
E1668A	PCB-20	38444-84-7	ng/g					
E1668A	PCB-21	55702-46-0	ng/g					
E1668A	PCB-22	38444-85-8	ng/g					
E1668A	PCB-23	55720-44-0	ng/g					
E1668A	PCB-24	55702-45-9	ng/g					
E1668A	PCB-25	55712-37-3	ng/g					
E1668A	PCB-26	38444-81-4	ng/g					
E1668A	PCB-27	38444-76-7	ng/g					
E1668A	PCB-28	7012-37-5	ng/g					
E1668A	PCB-29	15862-07-4	ng/g					
E1668A	PCB-30	35693-92-6	ng/g					
E1668A	PCB-31	16606-02-3	ng/g					
E1668A	PCB-32	38444-77-8	ng/g					
E1668A	PCB-33	38444-86-9	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	411-sc1b-50to60-82619	412-sc1b-80to90-82719	413-sc1b-40to50-82819	D6-SC-0to1-102118	D6-SC-108to123-102118
	Date Time			8/26/2019 15:00:00	8/27/2019 12:35:00	8/28/2019 10:45:00	10/21/2018 16:00:00	10/21/2018 18:00:00
	X			7633913	7634552	7634373	7633913	7633913
	Y			700913	700761	700517	700913	700913
	Top (cm)			152	244	122	0	329
	Bottom (cm)			183	274	152	30	375
E1668A	PCB-34	37680-68-5	ng/g					
E1668A	PCB-35	37680-69-6	ng/g					
E1668A	PCB-36	38444-87-0	ng/g					
E1668A	PCB-37	38444-90-5	ng/g					
E1668A	PCB-38	53555-66-1	ng/g					
E1668A	PCB-39	38444-88-1	ng/g					
E1668A	PCB-40	38444-93-8	ng/g					
E1668A	PCB-41	52663-59-9	ng/g					
E1668A	PCB-42	36559-22-5	ng/g					
E1668A	PCB-43	70362-46-8	ng/g					
E1668A	PCB-44	41464-39-5	ng/g					
E1668A	PCB-45	41464-39-5	ng/g					
E1668A	PCB-46	41464-47-5	ng/g					
E1668A	PCB-47	2437-79-8	ng/g					
E1668A	PCB-48	70362-47-9	ng/g					
E1668A	PCB-49	41464-40-8	ng/g					
E1668A	PCB-50	62796-65-0	ng/g					
E1668A	PCB-51	68194-04-7	ng/g					
E1668A	PCB-52	35693-99-3	ng/g					
E1668A	PCB-53	41464-41-9	ng/g					
E1668A	PCB-54	15968-05-5	ng/g					
E1668A	PCB-55	74338-24-2	ng/g					
E1668A	PCB-56	41464-43-1	ng/g					
E1668A	PCB-57	70424-67-8	ng/g					
E1668A	PCB-58	41464-49-7	ng/g					
E1668A	PCB-59	74472-33-6	ng/g					
E1668A	PCB-60	33025-41-1	ng/g					
E1668A	PCB-61	33284-53-6	ng/g					
E1668A	PCB-62	54230-22-7	ng/g					
E1668A	PCB-63	74472-34-7	ng/g					
E1668A	PCB-64	52663-58-8	ng/g					
E1668A	PCB-65	33284-54-7	ng/g					
E1668A	PCB-66	32598-10-0	ng/g					
E1668A	PCB-67	73575-53-8	ng/g					
E1668A	PCB-68	73575-52-7	ng/g					
E1668A	PCB-69	60233-24-1	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	411-sc1b-50to60-82619	412-sc1b-80to90-82719	413-sc1b-40to50-82819	D6-SC-0to1-102118	D6-SC-108to123-102118
	Date Time			8/26/2019 15:00:00	8/27/2019 12:35:00	8/28/2019 10:45:00	10/21/2018 16:00:00	10/21/2018 18:00:00
	X			7633913	7634552	7634373	7633913	7633913
	Y			700913	700761	700517	700913	700913
	Top (cm)			152	244	122	0	329
	Bottom (cm)			183	274	152	30	375
E1668A	PCB-70	32598-11-1	ng/g					
E1668A	PCB-71	41464-46-4	ng/g					
E1668A	PCB-72	41464-42-0	ng/g					
E1668A	PCB-73	74338-23-1	ng/g					
E1668A	PCB-74	32690-93-0	ng/g					
E1668A	PCB-75	32598-12-2	ng/g					
E1668A	PCB-76	70362-48-0	ng/g					
E1668A	PCB-77	32598-13-3	ng/g					
E1668A	PCB-78	70362-49-1	ng/g					
E1668A	PCB-79	41464-48-6	ng/g					
E1668A	PCB-80	33284-52-5	ng/g					
E1668A	PCB-81	70362-50-4	ng/g					
E1668A	PCB-82	52663-62-4	ng/g					
E1668A	PCB-83	60145-20-2	ng/g					
E1668A	PCB-84	52663-60-2	ng/g					
E1668A	PCB-85	65510-45-4	ng/g					
E1668A	PCB-86	55312-69-1	ng/g					
E1668A	PCB-87	38380-02-8	ng/g					
E1668A	PCB-88	55215-17-3	ng/g					
E1668A	PCB-89	73575-57-2	ng/g					
E1668A	PCB-90	68194-07-0	ng/g					
E1668A	PCB-91	68194-05-8	ng/g					
E1668A	PCB-92	52663-61-3	ng/g					
E1668A	PCB-93	73575-56-1	ng/g					
E1668A	PCB-94	73575-55-0	ng/g					
E1668A	PCB-95	38379-99-6	ng/g					
E1668A	PCB-96	73575-54-9	ng/g					
E1668A	PCB-97	41464-51-1	ng/g					
E1668A	PCB-98	60233-25-2	ng/g					
E1668A	PCB-99	38380-01-7	ng/g					
E1668A	PCB-100	39485-83-1	ng/g					
E1668A	PCB-101	37680-73-2	ng/g					
E1668A	PCB-102	68194-06-9	ng/g					
E1668A	PCB-103	60145-21-3	ng/g					
E1668A	PCB-104	56558-16-8	ng/g					
E1668A	PCB-105	32598-14-4	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	411-sc1b-50to60-82619	412-sc1b-80to90-82719	413-sc1b-40to50-82819	D6-SC-0to1-102118	D6-SC-108to123-102118
	Date Time			8/26/2019 15:00:00	8/27/2019 12:35:00	8/28/2019 10:45:00	10/21/2018 16:00:00	10/21/2018 18:00:00
	X			7633913	7634552	7634373	7633913	7633913
	Y			700913	700761	700517	700913	700913
	Top (cm)			152	244	122	0	329
	Bottom (cm)			183	274	152	30	375
E1668A	PCB-106	70424-69-0	ng/g					
E1668A	PCB-107	70424-68-9	ng/g					
E1668A	PCB-108	70362-41-3	ng/g					
E1668A	PCB-109	74472-35-8	ng/g					
E1668A	PCB-110	38380-03-9	ng/g					
E1668A	PCB-111	39635-32-0	ng/g					
E1668A	PCB-112	74472-36-9	ng/g					
E1668A	PCB-113	68194-10-5	ng/g					
E1668A	PCB-114	74472-37-0	ng/g					
E1668A	PCB-115	74472-38-1	ng/g					
E1668A	PCB-116	18259-05-7	ng/g					
E1668A	PCB-117	68194-11-6	ng/g					
E1668A	PCB-118	31508-00-6	ng/g					
E1668A	PCB-119	56558-17-9	ng/g					
E1668A	PCB-120	68194-12-7	ng/g					
E1668A	PCB-121	56558-18-0	ng/g					
E1668A	PCB-122	76842-07-4	ng/g					
E1668A	PCB-123	65510-44-3	ng/g					
E1668A	PCB-124	70424-70-3	ng/g					
E1668A	PCB-125	74472-39-2	ng/g					
E1668A	PCB-126	57465-28-8	ng/g					
E1668A	PCB-127	39635-33-1	ng/g					
E1668A	PCB-128	38380-07-3	ng/g					
E1668A	PCB-129	55215-18-4	ng/g					
E1668A	PCB-130	52663-66-8	ng/g					
E1668A	PCB-131	61798-70-7	ng/g					
E1668A	PCB-132	38380-05-1	ng/g					
E1668A	PCB-133	35694-04-3	ng/g					
E1668A	PCB-134	52704-70-8	ng/g					
E1668A	PCB-135	52744-13-5	ng/g					
E1668A	PCB-136	38411-22-2	ng/g					
E1668A	PCB-137	35694-06-5	ng/g					
E1668A	PCB-138	35065-28-2	ng/g					
E1668A	PCB-139	56030-56-9	ng/g					
E1668A	PCB-140	59291-64-4	ng/g					
E1668A	PCB-141	52712-04-6	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	411-sc1b-50to60-82619	412-sc1b-80to90-82719	413-sc1b-40to50-82819	D6-SC-0to1-102118	D6-SC-108to123-102118
	Date Time			8/26/2019 15:00:00	8/27/2019 12:35:00	8/28/2019 10:45:00	10/21/2018 16:00:00	10/21/2018 18:00:00
	X			7633913	7634552	7634373	7633913	7633913
	Y			700913	700761	700517	700913	700913
	Top (cm)			152	244	122	0	329
	Bottom (cm)			183	274	152	30	375
E1668A	PCB-142	41411-61-4	ng/g					
E1668A	PCB-143	68194-15-0	ng/g					
E1668A	PCB-144	68194-14-9	ng/g					
E1668A	PCB-145	74472-40-5	ng/g					
E1668A	PCB-146	51908-16-8	ng/g					
E1668A	PCB-147	68194-13-8	ng/g					
E1668A	PCB-148	74472-41-6	ng/g					
E1668A	PCB-149	38380-04-0	ng/g					
E1668A	PCB-150	68194-08-1	ng/g					
E1668A	PCB-151	52663-63-5	ng/g					
E1668A	PCB-152	68194-09-2	ng/g					
E1668A	PCB-153	35065-27-1	ng/g					
E1668A	PCB-154	60145-22-4	ng/g					
E1668A	PCB-155	33979-03-2	ng/g					
E1668A	PCB-156	38380-08-4	ng/g					
E1668A	PCB-157	69782-90-7	ng/g					
E1668A	PCB-158	74472-42-7	ng/g					
E1668A	PCB-159	39635-35-3	ng/g					
E1668A	PCB-160	41411-62-5	ng/g					
E1668A	PCB-161	74472-43-8	ng/g					
E1668A	PCB-162	39635-34-2	ng/g					
E1668A	PCB-163	74472-44-9	ng/g					
E1668A	PCB-164	74472-45-0	ng/g					
E1668A	PCB-165	74472-46-1	ng/g					
E1668A	PCB-166	41411-63-6	ng/g					
E1668A	PCB-167	52663-72-6	ng/g					
E1668A	PCB-168	59291-65-5	ng/g					
E1668A	PCB-169	32774-16-6	ng/g					
E1668A	PCB-170	35065-30-6	ng/g					
E1668A	PCB-171	52663-71-5	ng/g					
E1668A	PCB-172	52663-74-8	ng/g					
E1668A	PCB-173	68194-16-1	ng/g					
E1668A	PCB-174	38411-25-5	ng/g					
E1668A	PCB-175	40186-70-7	ng/g					
E1668A	PCB-176	52663-65-7	ng/g					
E1668A	PCB-177	52663-70-4	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	411-sc1b-50to60-82619	412-sc1b-80to90-82719	413-sc1b-40to50-82819	D6-SC-0to1-102118	D6-SC-108to123-102118
	Date Time			8/26/2019 15:00:00	8/27/2019 12:35:00	8/28/2019 10:45:00	10/21/2018 16:00:00	10/21/2018 18:00:00
	X			7633913	7634552	7634373	7633913	7633913
	Y			700913	700761	700517	700913	700913
	Top (cm)			152	244	122	0	329
	Bottom (cm)			183	274	152	30	375
E1668A	PCB-178	52663-67-9	ng/g					
E1668A	PCB-179	52663-64-6	ng/g					
E1668A	PCB-180	35065-29-3	ng/g					
E1668A	PCB-181	74472-47-2	ng/g					
E1668A	PCB-182	60145-23-5	ng/g					
E1668A	PCB-183	52663-69-1	ng/g					
E1668A	PCB-184	74472-48-3	ng/g					
E1668A	PCB-185	52712-05-7	ng/g					
E1668A	PCB-186	74472-49-4	ng/g					
E1668A	PCB-187	52663-68-0	ng/g					
E1668A	PCB-188	74487-85-7	ng/g					
E1668A	PCB-189	39635-31-9	ng/g					
E1668A	PCB-190	41411-64-7	ng/g					
E1668A	PCB-191	74472-50-7	ng/g					
E1668A	PCB-192	74472-51-8	ng/g					
E1668A	PCB-193	69782-91-8	ng/g					
E1668A	PCB-194	35694-08-7	ng/g					
E1668A	PCB-195	52663-78-2	ng/g					
E1668A	PCB-196	42740-50-1	ng/g					
E1668A	PCB-197	33091-17-7	ng/g					
E1668A	PCB-198	68194-17-2	ng/g					
E1668A	PCB-199	52663-75-9	ng/g					
E1668A	PCB-200	52663-73-7	ng/g					
E1668A	PCB-201	40186-71-8	ng/g					
E1668A	PCB-202	2136-99-4	ng/g					
E1668A	PCB-203	52663-76-0	ng/g					
E1668A	PCB-204	74472-52-9	ng/g					
E1668A	PCB-205	74472-53-0	ng/g					
E1668A	PCB-206	40186-72-9	ng/g					
E1668A	PCB-207	52663-79-3	ng/g					
E1668A	PCB-208	52663-77-1	ng/g					
E1668A	PCB-209	2051-24-3	ng/g					
E1668A	Total Dichlorobiphenyls		ng/g					
E1668A	Total Heptachlorobiphenyls		ng/g					
E1668A	Total Hexachlorobiphenyls		ng/g					
E1668A	Total Monochlorobiphenyls		ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	411-sc1b-50to60-82619	412-sc1b-80to90-82719	413-sc1b-40to50-82819	D6-SC-0to1-102118	D6-SC-108to123-102118
	Date Time			8/26/2019 15:00:00	8/27/2019 12:35:00	8/28/2019 10:45:00	10/21/2018 16:00:00	10/21/2018 18:00:00
	X			7633913	7634552	7634373	7633913	7633913
	Y			700913	700761	700517	700913	700913
	Top (cm)			152	244	122	0	329
	Bottom (cm)			183	274	152	30	375
E1668A	Total Nonachlorobiphenyls		ng/g					
E1668A	Total Octachlorobiphenyls		ng/g					
E1668A	Total Pentachlorobiphenyls		ng/g					
E1668A	Total Tetrachlorobiphenyls		ng/g					
E1668A	Total Trichlorobiphenyls		ng/g					
E1668A	Polychlorinated biphenyls, Total	1336-36-3	ng/g					
PAHs								
SW8270D	2-Methylnaphthalene	91-57-6	ug/kg	19 J	10 J	2.8 J		
SW8270D	Acenaphthene	83-32-9	ug/kg	20 J	4.4 J	3.9 J		
SW8270D	Acenaphthylene	208-96-8	ug/kg	17	8.3 J	2.5 J		
SW8270D	Anthracene	120-12-7	ug/kg	30	16 J	5		
SW8270D	Benzo(a)anthracene	56-55-3	ug/kg	69	52	23		
SW8270D	Benzo(a)pyrene	50-32-8	ug/kg	87	59	32		
SW8270D	Benzo(b)fluoranthene	205-99-2	ug/kg	99	57	39		
SW8270D	Benzo(g,h,i)perylene	191-24-2	ug/kg	77	37 J	22		
SW8270D	Benzo(k)fluoranthene	207-08-9	ug/kg	36	18	14		
SW8270D	Chrysene	218-01-9	ug/kg	93	53	28		
SW8270D	Dibenzo(a,h)anthracene	53-70-3	ug/kg	14	6.4	5.8		
SW8270D	Dibenzofuran	132-64-9	ug/kg	7.7	1.3 J	1.5 J		
SW8270D	Fluoranthene	206-44-0	ug/kg	180	71 J	41 J		
SW8270D	Fluorene	86-73-7	ug/kg	14	2.7 J	3.5 J		
SW8270D	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	72	37	24		
SW8270D	Naphthalene	91-20-3	ug/kg	33 J	8.4 J	4.1 J		
SW8270D	Phenanthrene	85-01-8	ug/kg	150	40 J	21 J		
SW8270D	Pyrene	129-00-0	ug/kg	220	100	43		
Calculated Totals								
ALS SOP	CALC_TOTAL_DDD_ND_PDI		ug/kg	4.3 R	0.63 UT	1.9 AT		
ALS SOP	CALC_TOTAL_DDE_ND_PDI		ug/kg	6.3 AT	0.79 UT	3.8 AT		
ALS SOP	CALC_TOTAL_DDT_ND_PDI		ug/kg	0.94 UT	0.94 UT	2 AT		
ALS SOP	CALC_TOTAL_DDx_ND_PDI		ug/kg	11 T	0.94 UT	7 T		
E1668A	CALC_TOTAL_PCB_ND_PDI		ug/kg					
SW8082A	CALC_TOTAL_AROCLORS_ND_PDI		ug/kg	470 AT	14 T	820 AT	1500 JT	
SW8270D	CALC_TOTAL_CPAH_ND_PDI		ug/kg	130 T	80 T	47 T		
SW8270D	CALC_TOTAL_HPAH_ND_PDI		ug/kg	810 T	420 JT	220 JT		
SW8270D	CALC_TOTAL_LPAH_ND_PDI		ug/kg	280 JT	90 JT	43 JT		
SW8270D	CALC_TOTAL_PAH_ND_PDI		ug/kg	1100 JT	510 JT	260 JT		

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	411-sc1b-50to60-82619	412-sc1b-80to90-82719	413-sc1b-40to50-82819	D6-SC-0to1-102118	D6-SC-108to123-102118
	Date Time			8/26/2019 15:00:00	8/27/2019 12:35:00	8/28/2019 10:45:00	10/21/2018 16:00:00	10/21/2018 18:00:00
	X			7633913	7634552	7634373	7633913	7633913
	Y			700913	700761	700517	700913	700913
	Top (cm)			152	244	122	0	329
	Bottom (cm)			183	274	152	30	375

DDx = dichlorodiphenyltrichloroethane and its derivatives

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyls

PeCDD = Pentachlorodibenzo-p-dioxin

PeCDF = Pentachlorodibenzofuran

TCDD = Tetrachlorodibenzo-p-dioxin

ug/kg = micrograms per kilogram

ng/g = nanograms per gram

% = percent

g/cm3 = grams per cubic centimeter

J = Reported result is an estimate

T = Total concentration from component analytes.

U = Analyte was not detected in sample

R = Rejected

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	d6-sc1b-100to110-82619	d6-sc1b-10to20-82619	d6-sc1b-110to120-82619	d6-sc1b-20to30-82619	d6-sc1b-20to30-82619r1
	Date Time			8/26/2019 17:40:00	8/26/2019 12:10:00	8/26/2019 17:50:00	8/26/2019 12:45:00	8/26/2019 12:45:00
	X			7633913	7633913	7633913	7633913	7633913
	Y			700913	700913	700913	700913	700913
	Top (cm)			305	30	335	61	61
	Bottom (cm)			335	61	366	91	91
Conventionals								
E160.3	Total Solids		%	71		72	53	
PSEP	Total Solids		%					
SM2540G	Total Solids		%	70		71	54	
SW9060A	Carbon, Total Organic	7440-044-0	mg/kg	5300		4300	22500	
Organochlorine Pesticides								
ALS SOP	o,p'-DDD	53-19-0	ug/kg	0.63 U		0.63 U	0.63 U	
ALS SOP	o,p'-DDE	3424-82-6	ug/kg	0.79 U		0.79 U	0.79 U	
ALS SOP	o,p'-DDT	789-02-6	ug/kg	0.94 U		0.94 U	0.94 U	
ALS SOP	4,4'-DDD	72-54-8	ug/kg	0.35 U		0.35 U	2.6	
ALS SOP	4,4'-DDE	72-55-9	ug/kg	0.7 U		0.7 U	5.5	
ALS SOP	4,4'-DDT	50-29-3	ug/kg	0.47 U		0.47 U	4.8	
Dioxins/Furans								
CWA1613B	1,2,3,4,6,7,8,9-OCDD	3268-87-9	ug/kg	0.013		0.011	5.8 J	
CWA1613B	1,2,3,4,6,7,8,9-OCDF	39001-02-0	ug/kg	0.0012 J		0.0097 U	0.62	
CWA1613B	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg	0.0014 U		0.001 J	0.43	
CWA1613B	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg	0.00042 J		0.00019 J	0.14	
CWA1613B	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg	0.0047 U		0.0048 U	0.0072	
CWA1613B	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg	0.0047 U		0.0048 U	0.0017 J	
CWA1613B	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg	0.0047 U		0.0048 U	0.0062	
CWA1613B	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg	0.0047 U		0.0048 U	0.015	
CWA1613B	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg	0.0047 U		0.0048 U	0.0039 J	
CWA1613B	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg	0.0047 U		0.0048 U	0.0053	
CWA1613B	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg	0.0047 U		0.0048 U	0.0012 J	
CWA1613B	1,2,3,7,8-PeCDD	40321-76-4	ug/kg	0.0047 U		0.0048 U	0.0012 J	
CWA1613B	1,2,3,7,8-PeCDF	57117-41-6	ug/kg	0.0047 U		0.0048 U	0.0011 J	
CWA1613B	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg	0.0047 U		0.0048 U	0.0036 J	
CWA1613B	2,3,4,7,8-PeCDF	57117-31-4	ug/kg	0.0047 U		0.0048 U	0.0024 J	
CWA1613B	2,3,7,8-TCDD	1746-01-6	ug/kg	0.00094 U		0.00097 U	0.00045 U	
CWA1613B	2,3,7,8-TCDF	51207-31-9	ug/kg	0.00023 U		0.00021 U	0.0015 DNR	0.0018
CWA1613B	Total HpCDD	37871-00-4	ug/kg	0.0032 J		0.0028 J	0.83	
CWA1613B	Total HpCDF	38998-75-3	ug/kg	0.0014 J		0.00048 J	0.63 J	
CWA1613B	Total HxCDD	34465-46-8	ug/kg	0.00066 J		0.0012 J	0.1 J	
CWA1613B	Total HxCDF	55684-94-1	ug/kg	0.00039 J		0.0048 U	0.14 J	
CWA1613B	Total PeCDD	36088-22-9	ug/kg	0.0047 U		0.00012 J	0.014 J	
CWA1613B	Total PeCDF	30402-15-4	ug/kg	0.00014 J		0.00012 J	0.038 J	

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	d6-sc1b-100to110-82619	d6-sc1b-10to20-82619	d6-sc1b-110to120-82619	d6-sc1b-20to30-82619	d6-sc1b-20to30-82619r1
	Date Time			8/26/2019 17:40:00	8/26/2019 12:10:00	8/26/2019 17:50:00	8/26/2019 12:45:00	8/26/2019 12:45:00
	X			7633913	7633913	7633913	7633913	7633913
	Y			700913	700913	700913	700913	700913
	Top (cm)			305	30	335	61	61
	Bottom (cm)			335	61	366	91	91
CWA1613B	Total TCDD	41903-57-5	ug/kg	0.00034 J		0.00028 J	0.0061 J	
CWA1613B	Total TCDF	30402-14-3	ug/kg	0.00045 J		0.00021 J	0.02 J	
Dioxins/Furans								
E1613	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg					
E1613	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg					
E1613	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg					
E1613	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg					
E1613	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg					
E1613	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg					
E1613	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg					
E1613	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg					
E1613	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg					
E1613	1,2,3,7,8-PeCDD	40321-76-4	ug/kg					
E1613	1,2,3,7,8-PeCDF	57117-41-6	ug/kg					
E1613	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg					
E1613	2,3,4,7,8-PeCDF	57117-31-4	ug/kg					
E1613	2,3,7,8-TCDD	1746-01-6	ug/kg					
E1613	2,3,7,8-TCDF	51207-31-9	ug/kg					
E1613	OCDD	3268-87-9	ug/kg					
E1613	OCDF	39001-02-0	ug/kg					
E1613	Total HpCDD	37871-00-4	ug/kg					
E1613	Total HpCDF	38998-75-3	ug/kg					
E1613	Total HxCDD	34465-46-8	ug/kg					
E1613	Total HxCDF	55684-94-1	ug/kg					
E1613	Total PeCDD	36088-22-9	ug/kg					
E1613	Total PeCDF	30402-15-4	ug/kg					
E1613	Total TCDD	41903-57-5	ug/kg					
E1613	Total TCDF	30402-14-3	ug/kg					
PCB Aroclors								
SW8082A	Aroclor 1016	12674-11-2	ug/kg	1.6 U	15.5 U	1.6 U	7.8 U	
SW8082A	Aroclor 1221	11104-28-2	ug/kg	1.6 U	15.5 U	1.6 U	7.8 U	
SW8082A	Aroclor 1232	11141-16-5	ug/kg	1.6 U	15.5 U	1.6 U	7.8 U	
SW8082A	Aroclor 1242	53469-21-9	ug/kg	1.6 U	15.5 U	1.6 U	7.8 U	
SW8082A	Aroclor 1248	12672-29-6	ug/kg	1.6 U	323	1.6 U	220	
SW8082A	Aroclor 1254	11097-69-1	ug/kg	1.6 U	1040	1.6 U	620	
SW8082A	Aroclor 1260	11096-82-5	ug/kg	0.6 U	349	0.6 U	200	

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	d6-sc1b-100to110-82619	d6-sc1b-10to20-82619	d6-sc1b-110to120-82619	d6-sc1b-20to30-82619	d6-sc1b-20to30-82619r1
	Date Time			8/26/2019 17:40:00	8/26/2019 12:10:00	8/26/2019 17:50:00	8/26/2019 12:45:00	8/26/2019 12:45:00
	X			7633913	7633913	7633913	7633913	7633913
	Y			700913	700913	700913	700913	700913
	Top (cm)			305	30	335	61	61
	Bottom (cm)			335	61	366	91	91
SW8082A	Aroclor 1262	37324-23-5	ug/kg	0.6 U	5.8 U	0.6 U	2.9 U	
SW8082A	Aroclor 1268	11100-14-4	ug/kg	0.6 U	5.8 U	0.6 U	2.9 U	
PCB Congeners								
E1668A	PCB-1	2051-60-7	ng/g					
E1668A	PCB-2	2051-61-8	ng/g					
E1668A	PCB-3	2051-62-9	ng/g					
E1668A	PCB-4	13029-08-8	ng/g					
E1668A	PCB-5	16605-91-7	ng/g					
E1668A	PCB-6	25569-80-6	ng/g					
E1668A	PCB-7	33284-50-3	ng/g					
E1668A	PCB-8	34883-43-7	ng/g					
E1668A	PCB-9	34883-39-1	ng/g					
E1668A	PCB-10	33146-45-1	ng/g					
E1668A	PCB-11	2050-67-1	ng/g					
E1668A	PCB-12	2974-92-7	ng/g					
E1668A	PCB-13	2974-90-5	ng/g					
E1668A	PCB-14	34883-41-5	ng/g					
E1668A	PCB-15	2050-68-2	ng/g					
E1668A	PCB-16	38444-78-9	ng/g					
E1668A	PCB-17	37680-66-3	ng/g					
E1668A	PCB-18	37680-65-2	ng/g					
E1668A	PCB-19	38444-73-4	ng/g					
E1668A	PCB-20	38444-84-7	ng/g					
E1668A	PCB-21	55702-46-0	ng/g					
E1668A	PCB-22	38444-85-8	ng/g					
E1668A	PCB-23	55720-44-0	ng/g					
E1668A	PCB-24	55702-45-9	ng/g					
E1668A	PCB-25	55712-37-3	ng/g					
E1668A	PCB-26	38444-81-4	ng/g					
E1668A	PCB-27	38444-76-7	ng/g					
E1668A	PCB-28	7012-37-5	ng/g					
E1668A	PCB-29	15862-07-4	ng/g					
E1668A	PCB-30	35693-92-6	ng/g					
E1668A	PCB-31	16606-02-3	ng/g					
E1668A	PCB-32	38444-77-8	ng/g					
E1668A	PCB-33	38444-86-9	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	d6-sc1b-100to110-82619	d6-sc1b-10to20-82619	d6-sc1b-110to120-82619	d6-sc1b-20to30-82619	d6-sc1b-20to30-82619r1
	Date Time			8/26/2019 17:40:00	8/26/2019 12:10:00	8/26/2019 17:50:00	8/26/2019 12:45:00	8/26/2019 12:45:00
	X			7633913	7633913	7633913	7633913	7633913
	Y			700913	700913	700913	700913	700913
	Top (cm)			305	30	335	61	61
	Bottom (cm)			335	61	366	91	91
E1668A	PCB-34	37680-68-5	ng/g					
E1668A	PCB-35	37680-69-6	ng/g					
E1668A	PCB-36	38444-87-0	ng/g					
E1668A	PCB-37	38444-90-5	ng/g					
E1668A	PCB-38	53555-66-1	ng/g					
E1668A	PCB-39	38444-88-1	ng/g					
E1668A	PCB-40	38444-93-8	ng/g					
E1668A	PCB-41	52663-59-9	ng/g					
E1668A	PCB-42	36559-22-5	ng/g					
E1668A	PCB-43	70362-46-8	ng/g					
E1668A	PCB-44	41464-39-5	ng/g					
E1668A	PCB-45	41464-39-5	ng/g					
E1668A	PCB-46	41464-47-5	ng/g					
E1668A	PCB-47	2437-79-8	ng/g					
E1668A	PCB-48	70362-47-9	ng/g					
E1668A	PCB-49	41464-40-8	ng/g					
E1668A	PCB-50	62796-65-0	ng/g					
E1668A	PCB-51	68194-04-7	ng/g					
E1668A	PCB-52	35693-99-3	ng/g					
E1668A	PCB-53	41464-41-9	ng/g					
E1668A	PCB-54	15968-05-5	ng/g					
E1668A	PCB-55	74338-24-2	ng/g					
E1668A	PCB-56	41464-43-1	ng/g					
E1668A	PCB-57	70424-67-8	ng/g					
E1668A	PCB-58	41464-49-7	ng/g					
E1668A	PCB-59	74472-33-6	ng/g					
E1668A	PCB-60	33025-41-1	ng/g					
E1668A	PCB-61	33284-53-6	ng/g					
E1668A	PCB-62	54230-22-7	ng/g					
E1668A	PCB-63	74472-34-7	ng/g					
E1668A	PCB-64	52663-58-8	ng/g					
E1668A	PCB-65	33284-54-7	ng/g					
E1668A	PCB-66	32598-10-0	ng/g					
E1668A	PCB-67	73575-53-8	ng/g					
E1668A	PCB-68	73575-52-7	ng/g					
E1668A	PCB-69	60233-24-1	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	d6-sc1b-100to110-82619	d6-sc1b-10to20-82619	d6-sc1b-110to120-82619	d6-sc1b-20to30-82619	d6-sc1b-20to30-82619r1
	Date Time			8/26/2019 17:40:00	8/26/2019 12:10:00	8/26/2019 17:50:00	8/26/2019 12:45:00	8/26/2019 12:45:00
	X			7633913	7633913	7633913	7633913	7633913
	Y			700913	700913	700913	700913	700913
	Top (cm)			305	30	335	61	61
	Bottom (cm)			335	61	366	91	91
E1668A	PCB-70	32598-11-1	ng/g					
E1668A	PCB-71	41464-46-4	ng/g					
E1668A	PCB-72	41464-42-0	ng/g					
E1668A	PCB-73	74338-23-1	ng/g					
E1668A	PCB-74	32690-93-0	ng/g					
E1668A	PCB-75	32598-12-2	ng/g					
E1668A	PCB-76	70362-48-0	ng/g					
E1668A	PCB-77	32598-13-3	ng/g					
E1668A	PCB-78	70362-49-1	ng/g					
E1668A	PCB-79	41464-48-6	ng/g					
E1668A	PCB-80	33284-52-5	ng/g					
E1668A	PCB-81	70362-50-4	ng/g					
E1668A	PCB-82	52663-62-4	ng/g					
E1668A	PCB-83	60145-20-2	ng/g					
E1668A	PCB-84	52663-60-2	ng/g					
E1668A	PCB-85	65510-45-4	ng/g					
E1668A	PCB-86	55312-69-1	ng/g					
E1668A	PCB-87	38380-02-8	ng/g					
E1668A	PCB-88	55215-17-3	ng/g					
E1668A	PCB-89	73575-57-2	ng/g					
E1668A	PCB-90	68194-07-0	ng/g					
E1668A	PCB-91	68194-05-8	ng/g					
E1668A	PCB-92	52663-61-3	ng/g					
E1668A	PCB-93	73575-56-1	ng/g					
E1668A	PCB-94	73575-55-0	ng/g					
E1668A	PCB-95	38379-99-6	ng/g					
E1668A	PCB-96	73575-54-9	ng/g					
E1668A	PCB-97	41464-51-1	ng/g					
E1668A	PCB-98	60233-25-2	ng/g					
E1668A	PCB-99	38380-01-7	ng/g					
E1668A	PCB-100	39485-83-1	ng/g					
E1668A	PCB-101	37680-73-2	ng/g					
E1668A	PCB-102	68194-06-9	ng/g					
E1668A	PCB-103	60145-21-3	ng/g					
E1668A	PCB-104	56558-16-8	ng/g					
E1668A	PCB-105	32598-14-4	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	d6-sc1b-100to110-82619	d6-sc1b-10to20-82619	d6-sc1b-110to120-82619	d6-sc1b-20to30-82619	d6-sc1b-20to30-82619r1
	Date Time			8/26/2019 17:40:00	8/26/2019 12:10:00	8/26/2019 17:50:00	8/26/2019 12:45:00	8/26/2019 12:45:00
	X			7633913	7633913	7633913	7633913	7633913
	Y			700913	700913	700913	700913	700913
	Top (cm)			305	30	335	61	61
	Bottom (cm)			335	61	366	91	91
E1668A	PCB-106	70424-69-0	ng/g					
E1668A	PCB-107	70424-68-9	ng/g					
E1668A	PCB-108	70362-41-3	ng/g					
E1668A	PCB-109	74472-35-8	ng/g					
E1668A	PCB-110	38380-03-9	ng/g					
E1668A	PCB-111	39635-32-0	ng/g					
E1668A	PCB-112	74472-36-9	ng/g					
E1668A	PCB-113	68194-10-5	ng/g					
E1668A	PCB-114	74472-37-0	ng/g					
E1668A	PCB-115	74472-38-1	ng/g					
E1668A	PCB-116	18259-05-7	ng/g					
E1668A	PCB-117	68194-11-6	ng/g					
E1668A	PCB-118	31508-00-6	ng/g					
E1668A	PCB-119	56558-17-9	ng/g					
E1668A	PCB-120	68194-12-7	ng/g					
E1668A	PCB-121	56558-18-0	ng/g					
E1668A	PCB-122	76842-07-4	ng/g					
E1668A	PCB-123	65510-44-3	ng/g					
E1668A	PCB-124	70424-70-3	ng/g					
E1668A	PCB-125	74472-39-2	ng/g					
E1668A	PCB-126	57465-28-8	ng/g					
E1668A	PCB-127	39635-33-1	ng/g					
E1668A	PCB-128	38380-07-3	ng/g					
E1668A	PCB-129	55215-18-4	ng/g					
E1668A	PCB-130	52663-66-8	ng/g					
E1668A	PCB-131	61798-70-7	ng/g					
E1668A	PCB-132	38380-05-1	ng/g					
E1668A	PCB-133	35694-04-3	ng/g					
E1668A	PCB-134	52704-70-8	ng/g					
E1668A	PCB-135	52744-13-5	ng/g					
E1668A	PCB-136	38411-22-2	ng/g					
E1668A	PCB-137	35694-06-5	ng/g					
E1668A	PCB-138	35065-28-2	ng/g					
E1668A	PCB-139	56030-56-9	ng/g					
E1668A	PCB-140	59291-64-4	ng/g					
E1668A	PCB-141	52712-04-6	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	d6-sc1b-100to110-82619	d6-sc1b-10to20-82619	d6-sc1b-110to120-82619	d6-sc1b-20to30-82619	d6-sc1b-20to30-82619r1
	Date Time			8/26/2019 17:40:00	8/26/2019 12:10:00	8/26/2019 17:50:00	8/26/2019 12:45:00	8/26/2019 12:45:00
	X			7633913	7633913	7633913	7633913	7633913
	Y			700913	700913	700913	700913	700913
	Top (cm)			305	30	335	61	61
	Bottom (cm)			335	61	366	91	91
E1668A	PCB-142	41411-61-4	ng/g					
E1668A	PCB-143	68194-15-0	ng/g					
E1668A	PCB-144	68194-14-9	ng/g					
E1668A	PCB-145	74472-40-5	ng/g					
E1668A	PCB-146	51908-16-8	ng/g					
E1668A	PCB-147	68194-13-8	ng/g					
E1668A	PCB-148	74472-41-6	ng/g					
E1668A	PCB-149	38380-04-0	ng/g					
E1668A	PCB-150	68194-08-1	ng/g					
E1668A	PCB-151	52663-63-5	ng/g					
E1668A	PCB-152	68194-09-2	ng/g					
E1668A	PCB-153	35065-27-1	ng/g					
E1668A	PCB-154	60145-22-4	ng/g					
E1668A	PCB-155	33979-03-2	ng/g					
E1668A	PCB-156	38380-08-4	ng/g					
E1668A	PCB-157	69782-90-7	ng/g					
E1668A	PCB-158	74472-42-7	ng/g					
E1668A	PCB-159	39635-35-3	ng/g					
E1668A	PCB-160	41411-62-5	ng/g					
E1668A	PCB-161	74472-43-8	ng/g					
E1668A	PCB-162	39635-34-2	ng/g					
E1668A	PCB-163	74472-44-9	ng/g					
E1668A	PCB-164	74472-45-0	ng/g					
E1668A	PCB-165	74472-46-1	ng/g					
E1668A	PCB-166	41411-63-6	ng/g					
E1668A	PCB-167	52663-72-6	ng/g					
E1668A	PCB-168	59291-65-5	ng/g					
E1668A	PCB-169	32774-16-6	ng/g					
E1668A	PCB-170	35065-30-6	ng/g					
E1668A	PCB-171	52663-71-5	ng/g					
E1668A	PCB-172	52663-74-8	ng/g					
E1668A	PCB-173	68194-16-1	ng/g					
E1668A	PCB-174	38411-25-5	ng/g					
E1668A	PCB-175	40186-70-7	ng/g					
E1668A	PCB-176	52663-65-7	ng/g					
E1668A	PCB-177	52663-70-4	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	d6-sc1b-100to110-82619	d6-sc1b-10to20-82619	d6-sc1b-110to120-82619	d6-sc1b-20to30-82619	d6-sc1b-20to30-82619r1
	Date Time			8/26/2019 17:40:00	8/26/2019 12:10:00	8/26/2019 17:50:00	8/26/2019 12:45:00	8/26/2019 12:45:00
	X			7633913	7633913	7633913	7633913	7633913
	Y			700913	700913	700913	700913	700913
	Top (cm)			305	30	335	61	61
	Bottom (cm)			335	61	366	91	91
E1668A	PCB-178	52663-67-9	ng/g					
E1668A	PCB-179	52663-64-6	ng/g					
E1668A	PCB-180	35065-29-3	ng/g					
E1668A	PCB-181	74472-47-2	ng/g					
E1668A	PCB-182	60145-23-5	ng/g					
E1668A	PCB-183	52663-69-1	ng/g					
E1668A	PCB-184	74472-48-3	ng/g					
E1668A	PCB-185	52712-05-7	ng/g					
E1668A	PCB-186	74472-49-4	ng/g					
E1668A	PCB-187	52663-68-0	ng/g					
E1668A	PCB-188	74487-85-7	ng/g					
E1668A	PCB-189	39635-31-9	ng/g					
E1668A	PCB-190	41411-64-7	ng/g					
E1668A	PCB-191	74472-50-7	ng/g					
E1668A	PCB-192	74472-51-8	ng/g					
E1668A	PCB-193	69782-91-8	ng/g					
E1668A	PCB-194	35694-08-7	ng/g					
E1668A	PCB-195	52663-78-2	ng/g					
E1668A	PCB-196	42740-50-1	ng/g					
E1668A	PCB-197	33091-17-7	ng/g					
E1668A	PCB-198	68194-17-2	ng/g					
E1668A	PCB-199	52663-75-9	ng/g					
E1668A	PCB-200	52663-73-7	ng/g					
E1668A	PCB-201	40186-71-8	ng/g					
E1668A	PCB-202	2136-99-4	ng/g					
E1668A	PCB-203	52663-76-0	ng/g					
E1668A	PCB-204	74472-52-9	ng/g					
E1668A	PCB-205	74472-53-0	ng/g					
E1668A	PCB-206	40186-72-9	ng/g					
E1668A	PCB-207	52663-79-3	ng/g					
E1668A	PCB-208	52663-77-1	ng/g					
E1668A	PCB-209	2051-24-3	ng/g					
E1668A	Total Dichlorobiphenyls		ng/g					
E1668A	Total Heptachlorobiphenyls		ng/g					
E1668A	Total Hexachlorobiphenyls		ng/g					
E1668A	Total Monochlorobiphenyls		ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	d6-sc1b-100to110-82619	d6-sc1b-10to20-82619	d6-sc1b-110to120-82619	d6-sc1b-20to30-82619	d6-sc1b-20to30-82619r1
	Date Time			8/26/2019 17:40:00	8/26/2019 12:10:00	8/26/2019 17:50:00	8/26/2019 12:45:00	8/26/2019 12:45:00
	X			7633913	7633913	7633913	7633913	7633913
	Y			700913	700913	700913	700913	700913
	Top (cm)			305	30	335	61	61
	Bottom (cm)			335	61	366	91	91
E1668A	Total Nonachlorobiphenyls		ng/g					
E1668A	Total Octachlorobiphenyls		ng/g					
E1668A	Total Pentachlorobiphenyls		ng/g					
E1668A	Total Tetrachlorobiphenyls		ng/g					
E1668A	Total Trichlorobiphenyls		ng/g					
E1668A	Polychlorinated biphenyls, Total	1336-36-3	ng/g					
PAHs								
SW8270D	2-Methylnaphthalene	91-57-6	ug/kg	0.18 J		0.14 J	5.9 J	
SW8270D	Acenaphthene	83-32-9	ug/kg	0.091 J		0.064 J	9.2 J	
SW8270D	Acenaphthylene	208-96-8	ug/kg	0.073 J		0.046 U	5.4 J	
SW8270D	Anthracene	120-12-7	ug/kg	0.084 J		0.038 U	14	
SW8270D	Benzo(a)anthracene	56-55-3	ug/kg	0.38		0.13 U	53	
SW8270D	Benzo(a)pyrene	50-32-8	ug/kg	0.5		0.15 J	70	
SW8270D	Benzo(b)fluoranthene	205-99-2	ug/kg	0.82		0.4	83	
SW8270D	Benzo(g,h,i)perylene	191-24-2	ug/kg	0.41		0.16 J	49	
SW8270D	Benzo(k)fluoranthene	207-08-9	ug/kg	0.2 J		0.1 J	31	
SW8270D	Chrysene	218-01-9	ug/kg	0.5		0.15 J	70	
SW8270D	Dibenzo(a,h)anthracene	53-70-3	ug/kg	0.099 J		0.086 U	12	
SW8270D	Dibenzofuran	132-64-9	ug/kg	0.1 J		0.071 J	3 J	
SW8270D	Fluoranthene	206-44-0	ug/kg	0.66		0.2 J	120	
SW8270D	Fluorene	86-73-7	ug/kg	0.11 J		0.08 J	6.4 J	
SW8270D	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0.39		0.15 J	54	
SW8270D	Naphthalene	91-20-3	ug/kg	0.23 J		0.15 UJ	7.3 J	
SW8270D	Phenanthrene	85-01-8	ug/kg	0.56		0.31 U	62 J	
SW8270D	Pyrene	129-00-0	ug/kg	0.8		0.28 J	120	
Calculated Totals								
ALS SOP	CALC_TOTAL_DDD_ND_PDI		ug/kg	0.63 UT		0.63 UT	2.9 AT	
ALS SOP	CALC_TOTAL_DDE_ND_PDI		ug/kg	0.79 UT		0.79 UT	5.9 AT	
ALS SOP	CALC_TOTAL_DDT_ND_PDI		ug/kg	0.94 UT		0.94 UT	5.3 AT	
ALS SOP	CALC_TOTAL_DDx_ND_PDI		ug/kg	0.94 UT		0.94 UT	13 T	
E1668A	CALC_TOTAL_PCB_ND_PDI		ug/kg					
SW8082A	CALC_TOTAL_AROCLORS_ND_PDI		ug/kg	1.6 UT	1700 AT	1.6 UT	1000 AT	
SW8270D	CALC_TOTAL_CPAH_ND_PDI		ug/kg	0.76 JT		0.26 JT	100 T	
SW8270D	CALC_TOTAL_HPAH_ND_PDI		ug/kg	3.7 JT		1.3 JT	550 T	
SW8270D	CALC_TOTAL_LPAH_ND_PDI		ug/kg	1.3 JT		0.67 JT	110 JT	
SW8270D	CALC_TOTAL_PAH_ND_PDI		ug/kg	5.1 JT		1.9 JT	660 JT	

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	d6-sc1b-100to110-82619	d6-sc1b-10to20-82619	d6-sc1b-110to120-82619	d6-sc1b-20to30-82619	d6-sc1b-20to30-82619r1
	Date Time			8/26/2019 17:40:00	8/26/2019 12:10:00	8/26/2019 17:50:00	8/26/2019 12:45:00	8/26/2019 12:45:00
	X			7633913	7633913	7633913	7633913	7633913
	Y			700913	700913	700913	700913	700913
	Top (cm)			305	30	335	61	61
	Bottom (cm)			335	61	366	91	91

DDx = dichlorodiphenyltrichloroethane and its derivatives

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyls

PeCDD = Pentachlorodibenzo-p-dioxin

PeCDF = Pentachlorodibenzofuran

TCDD = Tetrachlorodibenzo-p-dioxin

ug/kg = micrograms per kilogram

ng/g = nanograms per gram

% = percent

g/cm3 = grams per cubic centimeter

J = Reported result is an estimate

T = Total concentration from component analytes.

U = Analyte was not detected in sample

R = Rejected

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	d6-sc1b-30to40-82619	d6-sc1b-40to50-82619	d6-sc1b-50to60-82619	d6-sc1b-60to70-82619	d6-sc1b-70to80-82619
	Date Time			8/26/2019 13:00:00	8/26/2019 14:45:00	8/26/2019 14:50:00	8/26/2019 15:30:00	8/26/2019 15:40:00
	X			7633913	7633913	7633913	7633913	7633913
	Y			700913	700913	700913	700913	700913
	Top (cm)			91	122	152	183	213
	Bottom (cm)			122	152	183	213	244
Conventionals								
E160.3	Total Solids		%	54	57	60	62	66
PSEP	Total Solids		%					
SM2540G	Total Solids		%	53	56	60	61	79
SW9060A	Carbon, Total Organic	7440-044-0	mg/kg	21200	20300	17600	14100	7700
Organochlorine Pesticides								
ALS SOP	o,p'-DDD	53-19-0	ug/kg	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U
ALS SOP	o,p'-DDE	3424-82-6	ug/kg	0.79 U	0.79 U	0.79 U	0.79 U	0.79 U
ALS SOP	o,p'-DDT	789-02-6	ug/kg	0.94 U	0.94 U	0.94 U	0.94 U	0.94 U
ALS SOP	4,4'-DDD	72-54-8	ug/kg	4.3	1.3	3.1	1.8 U	0.35 U
ALS SOP	4,4'-DDE	72-55-9	ug/kg	7.4	4.5	5.3	2.7	0.7 U
ALS SOP	4,4'-DDT	50-29-3	ug/kg	3.8	0.47 U	0.47 U	0.47 U	0.47 U
Dioxins/Furans								
CWA1613B	1,2,3,4,6,7,8,9-OCDD	3268-87-9	ug/kg	0.29	2.1	0.5	0.27	0.44
CWA1613B	1,2,3,4,6,7,8,9-OCDF	39001-02-0	ug/kg	0.03	0.19	0.054	0.03	0.036
CWA1613B	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg	0.025	0.17	0.039	0.023	0.032
CWA1613B	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg	0.0097	0.075	0.018	0.01	0.014
CWA1613B	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg	6e-04 J	0.0036 J	0.00093 J	0.00062 J	0.00066 J
CWA1613B	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg	0.005 U	0.0014 J	0.00029 U	0.00019 U	0.00027 J
CWA1613B	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg	0.0021 J	0.004 J	0.00097 J	0.00055 J	0.00082 J
CWA1613B	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg	0.0011 J	0.0063	0.0013 J	0.00084 J	0.0012 J
CWA1613B	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg	0.00079 U	0.0036 J	0.001 J	0.00056 J	0.00081 J
CWA1613B	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg	0.00047 U	0.0037 J	0.00063 J	0.00043 J	0.00076 J
CWA1613B	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg	0.005 U	0.00087 J	0.00037 U	0.0049 U	0.00021 U
CWA1613B	1,2,3,7,8-PeCDD	40321-76-4	ug/kg	0.005 U	0.001 J	0.00028 J	0.00015 J	0.00024 J
CWA1613B	1,2,3,7,8-PeCDF	57117-41-6	ug/kg	0.00071 J	0.00078 J	0.00025 U	0.00017 U	0.00023 U
CWA1613B	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg	0.00042 J	0.0029 J	0.00086 J	0.00046 J	0.00059 J
CWA1613B	2,3,4,7,8-PeCDF	57117-31-4	ug/kg	4e-04 J	0.0017 J	0.00051 J	0.00027 J	0.00038 J
CWA1613B	2,3,7,8-TCDD	1746-01-6	ug/kg	0.001 U	0.00053 U	9.8e-05 J	8.5e-05 J	9.6e-05 J
CWA1613B	2,3,7,8-TCDF	51207-31-9	ug/kg	0.00052 J	0.00081 J	0.00042 U	0.00026 U	0.00033 U
CWA1613B	Total HpCDD	37871-00-4	ug/kg	0.05	0.34	0.087	0.05	0.074
CWA1613B	Total HpCDF	38998-75-3	ug/kg	0.036 J	0.25 J	0.065 J	0.039 J	0.047 J
CWA1613B	Total HxCDD	34465-46-8	ug/kg	0.0075 J	0.054 J	0.012 J	0.0075 J	0.012 J
CWA1613B	Total HxCDF	55684-94-1	ug/kg	0.013 J	0.078 J	0.022 J	0.013 J	0.017 J
CWA1613B	Total PeCDD	36088-22-9	ug/kg	0.001 J	0.0098 J	0.0023 J	0.0018 J	0.0022 J
CWA1613B	Total PeCDF	30402-15-4	ug/kg	0.005 J	0.032 J	0.011 J	0.0062 J	0.0077 J

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	d6-sc1b-30to40-82619	d6-sc1b-40to50-82619	d6-sc1b-50to60-82619	d6-sc1b-60to70-82619	d6-sc1b-70to80-82619
	Date Time			8/26/2019 13:00:00	8/26/2019 14:45:00	8/26/2019 14:50:00	8/26/2019 15:30:00	8/26/2019 15:40:00
	X			7633913	7633913	7633913	7633913	7633913
	Y			700913	700913	700913	700913	700913
	Top (cm)			91	122	152	183	213
	Bottom (cm)			122	152	183	213	244
CWA1613B	Total TCDD	41903-57-5	ug/kg	0.00055 J	0.0052 J	0.00079 J	0.00066 J	0.0013 J
CWA1613B	Total TCDF	30402-14-3	ug/kg	0.0033 J	0.014 J	0.0041 J	0.0025 J	0.003 J
Dioxins/Furans								
E1613	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg					
E1613	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg					
E1613	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg					
E1613	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg					
E1613	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg					
E1613	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg					
E1613	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg					
E1613	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg					
E1613	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg					
E1613	1,2,3,7,8-PeCDD	40321-76-4	ug/kg					
E1613	1,2,3,7,8-PeCDF	57117-41-6	ug/kg					
E1613	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg					
E1613	2,3,4,7,8-PeCDF	57117-31-4	ug/kg					
E1613	2,3,7,8-TCDD	1746-01-6	ug/kg					
E1613	2,3,7,8-TCDF	51207-31-9	ug/kg					
E1613	OCDD	3268-87-9	ug/kg					
E1613	OCDF	39001-02-0	ug/kg					
E1613	Total HpCDD	37871-00-4	ug/kg					
E1613	Total HpCDF	38998-75-3	ug/kg					
E1613	Total HxCDD	34465-46-8	ug/kg					
E1613	Total HxCDF	55684-94-1	ug/kg					
E1613	Total PeCDD	36088-22-9	ug/kg					
E1613	Total PeCDF	30402-15-4	ug/kg					
E1613	Total TCDD	41903-57-5	ug/kg					
E1613	Total TCDF	30402-14-3	ug/kg					
PCB Aroclors								
SW8082A	Aroclor 1016	12674-11-2	ug/kg	16 U	1.6 U	7.8 U	7.8 U	1.6 U
SW8082A	Aroclor 1221	11104-28-2	ug/kg	16 U	1.6 U	7.8 U	7.8 U	1.6 U
SW8082A	Aroclor 1232	11141-16-5	ug/kg	16 U	1.6 U	7.8 U	7.8 U	1.6 U
SW8082A	Aroclor 1242	53469-21-9	ug/kg	16 U	1.6 U	7.8 U	7.8 U	1.6 U
SW8082A	Aroclor 1248	12672-29-6	ug/kg	220	62	97	80	11
SW8082A	Aroclor 1254	11097-69-1	ug/kg	540	140	200	180	27
SW8082A	Aroclor 1260	11096-82-5	ug/kg	640	84	100	92	12

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	d6-sc1b-30to40-82619	d6-sc1b-40to50-82619	d6-sc1b-50to60-82619	d6-sc1b-60to70-82619	d6-sc1b-70to80-82619
	Date Time			8/26/2019 13:00:00	8/26/2019 14:45:00	8/26/2019 14:50:00	8/26/2019 15:30:00	8/26/2019 15:40:00
	X			7633913	7633913	7633913	7633913	7633913
	Y			700913	700913	700913	700913	700913
	Top (cm)			91	122	152	183	213
	Bottom (cm)			122	152	183	213	244
SW8082A	Aroclor 1262	37324-23-5	ug/kg	5.9 U	0.6 U	2.9 U	2.9 U	0.6 U
SW8082A	Aroclor 1268	11100-14-4	ug/kg	5.9 U	0.6 U	2.9 U	2.9 U	0.6 U
PCB Congeners								
E1668A	PCB-1	2051-60-7	ng/g					
E1668A	PCB-2	2051-61-8	ng/g					
E1668A	PCB-3	2051-62-9	ng/g					
E1668A	PCB-4	13029-08-8	ng/g					
E1668A	PCB-5	16605-91-7	ng/g					
E1668A	PCB-6	25569-80-6	ng/g					
E1668A	PCB-7	33284-50-3	ng/g					
E1668A	PCB-8	34883-43-7	ng/g					
E1668A	PCB-9	34883-39-1	ng/g					
E1668A	PCB-10	33146-45-1	ng/g					
E1668A	PCB-11	2050-67-1	ng/g					
E1668A	PCB-12	2974-92-7	ng/g					
E1668A	PCB-13	2974-90-5	ng/g					
E1668A	PCB-14	34883-41-5	ng/g					
E1668A	PCB-15	2050-68-2	ng/g					
E1668A	PCB-16	38444-78-9	ng/g					
E1668A	PCB-17	37680-66-3	ng/g					
E1668A	PCB-18	37680-65-2	ng/g					
E1668A	PCB-19	38444-73-4	ng/g					
E1668A	PCB-20	38444-84-7	ng/g					
E1668A	PCB-21	55702-46-0	ng/g					
E1668A	PCB-22	38444-85-8	ng/g					
E1668A	PCB-23	55720-44-0	ng/g					
E1668A	PCB-24	55702-45-9	ng/g					
E1668A	PCB-25	55712-37-3	ng/g					
E1668A	PCB-26	38444-81-4	ng/g					
E1668A	PCB-27	38444-76-7	ng/g					
E1668A	PCB-28	7012-37-5	ng/g					
E1668A	PCB-29	15862-07-4	ng/g					
E1668A	PCB-30	35693-92-6	ng/g					
E1668A	PCB-31	16606-02-3	ng/g					
E1668A	PCB-32	38444-77-8	ng/g					
E1668A	PCB-33	38444-86-9	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	d6-sc1b-30to40-82619	d6-sc1b-40to50-82619	d6-sc1b-50to60-82619	d6-sc1b-60to70-82619	d6-sc1b-70to80-82619
	Date Time			8/26/2019 13:00:00	8/26/2019 14:45:00	8/26/2019 14:50:00	8/26/2019 15:30:00	8/26/2019 15:40:00
	X			7633913	7633913	7633913	7633913	7633913
	Y			700913	700913	700913	700913	700913
	Top (cm)			91	122	152	183	213
	Bottom (cm)			122	152	183	213	244
E1668A	PCB-34	37680-68-5	ng/g					
E1668A	PCB-35	37680-69-6	ng/g					
E1668A	PCB-36	38444-87-0	ng/g					
E1668A	PCB-37	38444-90-5	ng/g					
E1668A	PCB-38	53555-66-1	ng/g					
E1668A	PCB-39	38444-88-1	ng/g					
E1668A	PCB-40	38444-93-8	ng/g					
E1668A	PCB-41	52663-59-9	ng/g					
E1668A	PCB-42	36559-22-5	ng/g					
E1668A	PCB-43	70362-46-8	ng/g					
E1668A	PCB-44	41464-39-5	ng/g					
E1668A	PCB-45	41464-39-5	ng/g					
E1668A	PCB-46	41464-47-5	ng/g					
E1668A	PCB-47	2437-79-8	ng/g					
E1668A	PCB-48	70362-47-9	ng/g					
E1668A	PCB-49	41464-40-8	ng/g					
E1668A	PCB-50	62796-65-0	ng/g					
E1668A	PCB-51	68194-04-7	ng/g					
E1668A	PCB-52	35693-99-3	ng/g					
E1668A	PCB-53	41464-41-9	ng/g					
E1668A	PCB-54	15968-05-5	ng/g					
E1668A	PCB-55	74338-24-2	ng/g					
E1668A	PCB-56	41464-43-1	ng/g					
E1668A	PCB-57	70424-67-8	ng/g					
E1668A	PCB-58	41464-49-7	ng/g					
E1668A	PCB-59	74472-33-6	ng/g					
E1668A	PCB-60	33025-41-1	ng/g					
E1668A	PCB-61	33284-53-6	ng/g					
E1668A	PCB-62	54230-22-7	ng/g					
E1668A	PCB-63	74472-34-7	ng/g					
E1668A	PCB-64	52663-58-8	ng/g					
E1668A	PCB-65	33284-54-7	ng/g					
E1668A	PCB-66	32598-10-0	ng/g					
E1668A	PCB-67	73575-53-8	ng/g					
E1668A	PCB-68	73575-52-7	ng/g					
E1668A	PCB-69	60233-24-1	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	d6-sc1b-30to40-82619	d6-sc1b-40to50-82619	d6-sc1b-50to60-82619	d6-sc1b-60to70-82619	d6-sc1b-70to80-82619
	Date Time			8/26/2019 13:00:00	8/26/2019 14:45:00	8/26/2019 14:50:00	8/26/2019 15:30:00	8/26/2019 15:40:00
	X			7633913	7633913	7633913	7633913	7633913
	Y			700913	700913	700913	700913	700913
	Top (cm)			91	122	152	183	213
	Bottom (cm)			122	152	183	213	244
E1668A	PCB-70	32598-11-1	ng/g					
E1668A	PCB-71	41464-46-4	ng/g					
E1668A	PCB-72	41464-42-0	ng/g					
E1668A	PCB-73	74338-23-1	ng/g					
E1668A	PCB-74	32690-93-0	ng/g					
E1668A	PCB-75	32598-12-2	ng/g					
E1668A	PCB-76	70362-48-0	ng/g					
E1668A	PCB-77	32598-13-3	ng/g					
E1668A	PCB-78	70362-49-1	ng/g					
E1668A	PCB-79	41464-48-6	ng/g					
E1668A	PCB-80	33284-52-5	ng/g					
E1668A	PCB-81	70362-50-4	ng/g					
E1668A	PCB-82	52663-62-4	ng/g					
E1668A	PCB-83	60145-20-2	ng/g					
E1668A	PCB-84	52663-60-2	ng/g					
E1668A	PCB-85	65510-45-4	ng/g					
E1668A	PCB-86	55312-69-1	ng/g					
E1668A	PCB-87	38380-02-8	ng/g					
E1668A	PCB-88	55215-17-3	ng/g					
E1668A	PCB-89	73575-57-2	ng/g					
E1668A	PCB-90	68194-07-0	ng/g					
E1668A	PCB-91	68194-05-8	ng/g					
E1668A	PCB-92	52663-61-3	ng/g					
E1668A	PCB-93	73575-56-1	ng/g					
E1668A	PCB-94	73575-55-0	ng/g					
E1668A	PCB-95	38379-99-6	ng/g					
E1668A	PCB-96	73575-54-9	ng/g					
E1668A	PCB-97	41464-51-1	ng/g					
E1668A	PCB-98	60233-25-2	ng/g					
E1668A	PCB-99	38380-01-7	ng/g					
E1668A	PCB-100	39485-83-1	ng/g					
E1668A	PCB-101	37680-73-2	ng/g					
E1668A	PCB-102	68194-06-9	ng/g					
E1668A	PCB-103	60145-21-3	ng/g					
E1668A	PCB-104	56558-16-8	ng/g					
E1668A	PCB-105	32598-14-4	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	d6-sc1b-30to40-82619	d6-sc1b-40to50-82619	d6-sc1b-50to60-82619	d6-sc1b-60to70-82619	d6-sc1b-70to80-82619
	Date Time			8/26/2019 13:00:00	8/26/2019 14:45:00	8/26/2019 14:50:00	8/26/2019 15:30:00	8/26/2019 15:40:00
	X			7633913	7633913	7633913	7633913	7633913
	Y			700913	700913	700913	700913	700913
	Top (cm)			91	122	152	183	213
	Bottom (cm)			122	152	183	213	244
E1668A	PCB-106	70424-69-0	ng/g					
E1668A	PCB-107	70424-68-9	ng/g					
E1668A	PCB-108	70362-41-3	ng/g					
E1668A	PCB-109	74472-35-8	ng/g					
E1668A	PCB-110	38380-03-9	ng/g					
E1668A	PCB-111	39635-32-0	ng/g					
E1668A	PCB-112	74472-36-9	ng/g					
E1668A	PCB-113	68194-10-5	ng/g					
E1668A	PCB-114	74472-37-0	ng/g					
E1668A	PCB-115	74472-38-1	ng/g					
E1668A	PCB-116	18259-05-7	ng/g					
E1668A	PCB-117	68194-11-6	ng/g					
E1668A	PCB-118	31508-00-6	ng/g					
E1668A	PCB-119	56558-17-9	ng/g					
E1668A	PCB-120	68194-12-7	ng/g					
E1668A	PCB-121	56558-18-0	ng/g					
E1668A	PCB-122	76842-07-4	ng/g					
E1668A	PCB-123	65510-44-3	ng/g					
E1668A	PCB-124	70424-70-3	ng/g					
E1668A	PCB-125	74472-39-2	ng/g					
E1668A	PCB-126	57465-28-8	ng/g					
E1668A	PCB-127	39635-33-1	ng/g					
E1668A	PCB-128	38380-07-3	ng/g					
E1668A	PCB-129	55215-18-4	ng/g					
E1668A	PCB-130	52663-66-8	ng/g					
E1668A	PCB-131	61798-70-7	ng/g					
E1668A	PCB-132	38380-05-1	ng/g					
E1668A	PCB-133	35694-04-3	ng/g					
E1668A	PCB-134	52704-70-8	ng/g					
E1668A	PCB-135	52744-13-5	ng/g					
E1668A	PCB-136	38411-22-2	ng/g					
E1668A	PCB-137	35694-06-5	ng/g					
E1668A	PCB-138	35065-28-2	ng/g					
E1668A	PCB-139	56030-56-9	ng/g					
E1668A	PCB-140	59291-64-4	ng/g					
E1668A	PCB-141	52712-04-6	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	d6-sc1b-30to40-82619	d6-sc1b-40to50-82619	d6-sc1b-50to60-82619	d6-sc1b-60to70-82619	d6-sc1b-70to80-82619
	Date Time			8/26/2019 13:00:00	8/26/2019 14:45:00	8/26/2019 14:50:00	8/26/2019 15:30:00	8/26/2019 15:40:00
	X			7633913	7633913	7633913	7633913	7633913
	Y			700913	700913	700913	700913	700913
	Top (cm)			91	122	152	183	213
	Bottom (cm)			122	152	183	213	244
E1668A	PCB-142	41411-61-4	ng/g					
E1668A	PCB-143	68194-15-0	ng/g					
E1668A	PCB-144	68194-14-9	ng/g					
E1668A	PCB-145	74472-40-5	ng/g					
E1668A	PCB-146	51908-16-8	ng/g					
E1668A	PCB-147	68194-13-8	ng/g					
E1668A	PCB-148	74472-41-6	ng/g					
E1668A	PCB-149	38380-04-0	ng/g					
E1668A	PCB-150	68194-08-1	ng/g					
E1668A	PCB-151	52663-63-5	ng/g					
E1668A	PCB-152	68194-09-2	ng/g					
E1668A	PCB-153	35065-27-1	ng/g					
E1668A	PCB-154	60145-22-4	ng/g					
E1668A	PCB-155	33979-03-2	ng/g					
E1668A	PCB-156	38380-08-4	ng/g					
E1668A	PCB-157	69782-90-7	ng/g					
E1668A	PCB-158	74472-42-7	ng/g					
E1668A	PCB-159	39635-35-3	ng/g					
E1668A	PCB-160	41411-62-5	ng/g					
E1668A	PCB-161	74472-43-8	ng/g					
E1668A	PCB-162	39635-34-2	ng/g					
E1668A	PCB-163	74472-44-9	ng/g					
E1668A	PCB-164	74472-45-0	ng/g					
E1668A	PCB-165	74472-46-1	ng/g					
E1668A	PCB-166	41411-63-6	ng/g					
E1668A	PCB-167	52663-72-6	ng/g					
E1668A	PCB-168	59291-65-5	ng/g					
E1668A	PCB-169	32774-16-6	ng/g					
E1668A	PCB-170	35065-30-6	ng/g					
E1668A	PCB-171	52663-71-5	ng/g					
E1668A	PCB-172	52663-74-8	ng/g					
E1668A	PCB-173	68194-16-1	ng/g					
E1668A	PCB-174	38411-25-5	ng/g					
E1668A	PCB-175	40186-70-7	ng/g					
E1668A	PCB-176	52663-65-7	ng/g					
E1668A	PCB-177	52663-70-4	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	d6-sc1b-30to40-82619	d6-sc1b-40to50-82619	d6-sc1b-50to60-82619	d6-sc1b-60to70-82619	d6-sc1b-70to80-82619
	Date Time			8/26/2019 13:00:00	8/26/2019 14:45:00	8/26/2019 14:50:00	8/26/2019 15:30:00	8/26/2019 15:40:00
	X			7633913	7633913	7633913	7633913	7633913
	Y			700913	700913	700913	700913	700913
	Top (cm)			91	122	152	183	213
	Bottom (cm)			122	152	183	213	244
E1668A	PCB-178	52663-67-9	ng/g					
E1668A	PCB-179	52663-64-6	ng/g					
E1668A	PCB-180	35065-29-3	ng/g					
E1668A	PCB-181	74472-47-2	ng/g					
E1668A	PCB-182	60145-23-5	ng/g					
E1668A	PCB-183	52663-69-1	ng/g					
E1668A	PCB-184	74472-48-3	ng/g					
E1668A	PCB-185	52712-05-7	ng/g					
E1668A	PCB-186	74472-49-4	ng/g					
E1668A	PCB-187	52663-68-0	ng/g					
E1668A	PCB-188	74487-85-7	ng/g					
E1668A	PCB-189	39635-31-9	ng/g					
E1668A	PCB-190	41411-64-7	ng/g					
E1668A	PCB-191	74472-50-7	ng/g					
E1668A	PCB-192	74472-51-8	ng/g					
E1668A	PCB-193	69782-91-8	ng/g					
E1668A	PCB-194	35694-08-7	ng/g					
E1668A	PCB-195	52663-78-2	ng/g					
E1668A	PCB-196	42740-50-1	ng/g					
E1668A	PCB-197	33091-17-7	ng/g					
E1668A	PCB-198	68194-17-2	ng/g					
E1668A	PCB-199	52663-75-9	ng/g					
E1668A	PCB-200	52663-73-7	ng/g					
E1668A	PCB-201	40186-71-8	ng/g					
E1668A	PCB-202	2136-99-4	ng/g					
E1668A	PCB-203	52663-76-0	ng/g					
E1668A	PCB-204	74472-52-9	ng/g					
E1668A	PCB-205	74472-53-0	ng/g					
E1668A	PCB-206	40186-72-9	ng/g					
E1668A	PCB-207	52663-79-3	ng/g					
E1668A	PCB-208	52663-77-1	ng/g					
E1668A	PCB-209	2051-24-3	ng/g					
E1668A	Total Dichlorobiphenyls		ng/g					
E1668A	Total Heptachlorobiphenyls		ng/g					
E1668A	Total Hexachlorobiphenyls		ng/g					
E1668A	Total Monochlorobiphenyls		ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	d6-sc1b-30to40-82619	d6-sc1b-40to50-82619	d6-sc1b-50to60-82619	d6-sc1b-60to70-82619	d6-sc1b-70to80-82619
	Date Time			8/26/2019 13:00:00	8/26/2019 14:45:00	8/26/2019 14:50:00	8/26/2019 15:30:00	8/26/2019 15:40:00
	X			7633913	7633913	7633913	7633913	7633913
	Y			700913	700913	700913	700913	700913
	Top (cm)			91	122	152	183	213
	Bottom (cm)			122	152	183	213	244
E1668A	Total Nonachlorobiphenyls		ng/g					
E1668A	Total Octachlorobiphenyls		ng/g					
E1668A	Total Pentachlorobiphenyls		ng/g					
E1668A	Total Tetrachlorobiphenyls		ng/g					
E1668A	Total Trichlorobiphenyls		ng/g					
E1668A	Polychlorinated biphenyls, Total	1336-36-3	ng/g					
PAHs								
SW8270D	2-Methylnaphthalene	91-57-6	ug/kg	5 J	8.6 J	16 J	7.7 J	1 J
SW8270D	Acenaphthene	83-32-9	ug/kg	9.8 J	15 J	18 J	7.6 J	1 J
SW8270D	Acenaphthylene	208-96-8	ug/kg	5.7 J	8.4 J	16 J	7.7 J	0.9 J
SW8270D	Anthracene	120-12-7	ug/kg	17	22	28	16	1.6
SW8270D	Benzo(a)anthracene	56-55-3	ug/kg	74	70	67	43	4.8
SW8270D	Benzo(a)pyrene	50-32-8	ug/kg	82	81	84	53	6.2
SW8270D	Benzo(b)fluoranthene	205-99-2	ug/kg	100	99	97	61	7.6
SW8270D	Benzo(g,h,i)perylene	191-24-2	ug/kg	53	62	75	44	5.4
SW8270D	Benzo(k)fluoranthene	207-08-9	ug/kg	35	36	32	21	2.4
SW8270D	Chrysene	218-01-9	ug/kg	87	90	92	60	6.6
SW8270D	Dibenzo(a,h)anthracene	53-70-3	ug/kg	14	14	13	9.1	1
SW8270D	Dibenzofuran	132-64-9	ug/kg	2.8 J	4.4 J	7.2 J	2.9 J	0.45 J
SW8270D	Fluoranthene	206-44-0	ug/kg	140	160	160	88	11
SW8270D	Fluorene	86-73-7	ug/kg	6.2 J	12 J	12 J	5.5 J	0.76 J
SW8270D	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	59	62	69	42	5.2
SW8270D	Naphthalene	91-20-3	ug/kg	6.1 J	11 J	25 J	11 J	1.6 J
SW8270D	Phenanthrene	85-01-8	ug/kg	74 J	120 J	130 J	69 J	8.6 J
SW8270D	Pyrene	129-00-0	ug/kg	150	170	210	120	14
Calculated Totals								
ALS SOP	CALC_TOTAL_DDD_ND_PDI		ug/kg	4.6 AT	1.6 AT	3.4 AT	1.8 UT	0.63 UT
ALS SOP	CALC_TOTAL_DDE_ND_PDI		ug/kg	7.8 AT	4.9 AT	5.7 AT	3.1 AT	0.79 UT
ALS SOP	CALC_TOTAL_DDT_ND_PDI		ug/kg	4.3 AT	0.94 UT	0.94 UT	0.94 UT	0.94 UT
ALS SOP	CALC_TOTAL_DDx_ND_PDI		ug/kg	16 T	6.3 T	8.9 T	3.6 T	0.94 UT
E1668A	CALC_TOTAL_PCB_ND_PDI		ug/kg					
SW8082A	CALC_TOTAL_AROCLORS_ND_PDI		ug/kg	1400 AT	280 AT	410 AT	360 AT	51 AT
SW8270D	CALC_TOTAL_CPAH_ND_PDI		ug/kg	120 T	120 T	120 T	77 T	9 T
SW8270D	CALC_TOTAL_HPAH_ND_PDI		ug/kg	660 T	710 T	770 T	460 T	54 T
SW8270D	CALC_TOTAL_LPAH_ND_PDI		ug/kg	120 JT	200 JT	240 JT	120 JT	15 JT
SW8270D	CALC_TOTAL_PAH_ND_PDI		ug/kg	780 JT	910 JT	1000 JT	580 JT	70 JT

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	d6-sc1b-30to40-82619	d6-sc1b-40to50-82619	d6-sc1b-50to60-82619	d6-sc1b-60to70-82619	d6-sc1b-70to80-82619
	Date Time			8/26/2019 13:00:00	8/26/2019 14:45:00	8/26/2019 14:50:00	8/26/2019 15:30:00	8/26/2019 15:40:00
	X			7633913	7633913	7633913	7633913	7633913
	Y			700913	700913	700913	700913	700913
	Top (cm)			91	122	152	183	213
	Bottom (cm)			122	152	183	213	244

DDx = dichlorodiphenyltrichloroethane and its derivatives

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyls

PeCDD = Pentachlorodibenzo-p-dioxin

PeCDF = Pentachlorodibenzofuran

TCDD = Tetrachlorodibenzo-p-dioxin

ug/kg = micrograms per kilogram

ng/g = nanograms per gram

% = percent

g/cm3 = grams per cubic centimeter

J = Reported result is an estimate

T = Total concentration from component analytes.

U = Analyte was not detected in sample

R = Rejected

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	d6-sc1b-80to90-82619	d6-sc1b-90to100-82619	D6-SC-2to4-102118	h3-sc1b-00to10-82919	h3-sc1b-100to110-82919
	Date Time			8/26/2019 16:55:00	8/26/2019 17:00:00	10/21/2018 16:30:00	8/28/2019 20:05:00	8/29/2019 9:50:00
	X			7633913	7633913	7633913	7634399	7634399
	Y			700913	700913	700913	700882	700882
	Top (cm)			244	274	61	0	305
	Bottom (cm)			274	305	122	30	335
Conventionals								
E160.3	Total Solids		%	68	72			65
PSEP	Total Solids		%					
SM2540G	Total Solids		%	67	71			63
SW9060A	Carbon, Total Organic	7440-044-0	mg/kg	8700	5600			
Organochlorine Pesticides								
ALS SOP	o,p'-DDD	53-19-0	ug/kg	0.63 U	0.63 U			0.63 U
ALS SOP	o,p'-DDE	3424-82-6	ug/kg	0.79 U	0.79 U			0.79 U
ALS SOP	o,p'-DDT	789-02-6	ug/kg	0.94 U	0.94 U			0.94 U
ALS SOP	4,4'-DDD	72-54-8	ug/kg	0.35 U	0.35 U			0.35 U
ALS SOP	4,4'-DDE	72-55-9	ug/kg	0.7 U	0.7 U			0.7 U
ALS SOP	4,4'-DDT	50-29-3	ug/kg	0.47 U	0.47 U			0.47 U
Dioxins/Furans								
CWA1613B	1,2,3,4,6,7,8,9-OCDD	3268-87-9	ug/kg	0.032	0.018			0.0092 J
CWA1613B	1,2,3,4,6,7,8,9-OCDF	39001-02-0	ug/kg	0.0038 J	0.0015 J			0.00032 U
CWA1613B	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg	0.0027 J	0.0015 J			0.001 J
CWA1613B	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg	0.0012 J	0.00064 J			0.00042 U
CWA1613B	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg	0.0047 U	0.0046 U			0.0047 U
CWA1613B	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg	0.0047 U	0.0046 U			0.0047 U
CWA1613B	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg	0.00013 U	9.2e-05 U			0.0047 U
CWA1613B	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg	0.0047 U	0.0046 U			0.0047 U
CWA1613B	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg	8e-05 U	0.0046 U			4.7e-05 U
CWA1613B	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg	0.0047 U	0.0046 U			0.0047 U
CWA1613B	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg	0.0047 U	0.0046 U			0.0047 U
CWA1613B	1,2,3,7,8-PeCDD	40321-76-4	ug/kg	0.0047 U	0.0046 U			0.0047 U
CWA1613B	1,2,3,7,8-PeCDF	57117-41-6	ug/kg	6.2e-05 U	0.0046 U			5.4e-05 U
CWA1613B	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg	0.0047 U	0.0046 U			0.0047 U
CWA1613B	2,3,4,7,8-PeCDF	57117-31-4	ug/kg	6e-05 U	0.0046 U			0.0047 U
CWA1613B	2,3,7,8-TCDD	1746-01-6	ug/kg	0.00094 U	0.00092 U			0.00094 U
CWA1613B	2,3,7,8-TCDF	51207-31-9	ug/kg	0.00017 U	0.00019 U			0.00035 U
CWA1613B	Total HpCDD	37871-00-4	ug/kg	0.0057 J	0.0034 J			0.0027 J
CWA1613B	Total HpCDF	38998-75-3	ug/kg	0.0044 J	0.002 J			0.00078 J
CWA1613B	Total HxCDD	34465-46-8	ug/kg	0.00094 J	0.00089 J			0.00098 J
CWA1613B	Total HxCDF	55684-94-1	ug/kg	0.0016 J	0.00076 J			0.00045 J
CWA1613B	Total PeCDD	36088-22-9	ug/kg	9.9e-05 J	2e-04 J			3e-04 J
CWA1613B	Total PeCDF	30402-15-4	ug/kg	0.00073 J	0.00036 J			0.00037 J

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	d6-sc1b-80to90-82619	d6-sc1b-90to100-82619	D6-SC-2to4-102118	h3-sc1b-00to10-82919	h3-sc1b-100to110-82919
	Date Time			8/26/2019 16:55:00	8/26/2019 17:00:00	10/21/2018 16:30:00	8/28/2019 20:05:00	8/29/2019 9:50:00
	X			7633913	7633913	7633913	7634399	7634399
	Y			700913	700913	700913	700882	700882
	Top (cm)			244	274	61	0	305
	Bottom (cm)			274	305	122	30	335
CWA1613B	Total TCDD	41903-57-5	ug/kg	6.4e-05 J	0.00035 J			0.00028 J
CWA1613B	Total TCDF	30402-14-3	ug/kg	0.00044 J	0.00034 J			0.00089 J
Dioxins/Furans								
E1613	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg			1.1		
E1613	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg			0.32 J		
E1613	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg			0.022 J		
E1613	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg			0.0074		
E1613	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg			0.026		
E1613	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg			0.043 J		
E1613	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg			0.015		
E1613	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg			0.02		
E1613	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg			0.0012 J		
E1613	1,2,3,7,8-PeCDD	40321-76-4	ug/kg			0.0038 J		
E1613	1,2,3,7,8-PeCDF	57117-41-6	ug/kg			0.005		
E1613	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg			0.0055		
E1613	2,3,4,7,8-PeCDF	57117-31-4	ug/kg			0.0045 J		
E1613	2,3,7,8-TCDD	1746-01-6	ug/kg			0.0016		
E1613	2,3,7,8-TCDF	51207-31-9	ug/kg			0.0049 DNR		
E1613	OCDD	3268-87-9	ug/kg			12		
E1613	OCDF	39001-02-0	ug/kg			1.1 J		
E1613	Total HpCDD	37871-00-4	ug/kg			2.2		
E1613	Total HpCDF	38998-75-3	ug/kg			1.4		
E1613	Total HxCDD	34465-46-8	ug/kg			0.22		
E1613	Total HxCDF	55684-94-1	ug/kg			0.37		
E1613	Total PeCDD	36088-22-9	ug/kg			0.041		
E1613	Total PeCDF	30402-15-4	ug/kg			0.11		
E1613	Total TCDD	41903-57-5	ug/kg			0.011		
E1613	Total TCDF	30402-14-3	ug/kg			0.052		
PCB Aroclors								
SW8082A	Aroclor 1016	12674-11-2	ug/kg	1.6 U	1.6 U		15.5 U	1.5 U
SW8082A	Aroclor 1221	11104-28-2	ug/kg	1.6 U	1.6 U		15.5 U	1.5 U
SW8082A	Aroclor 1232	11141-16-5	ug/kg	1.6 U	1.6 U		15.5 U	1.5 U
SW8082A	Aroclor 1242	53469-21-9	ug/kg	1.6 U	1.6 U		15.5 U	1.5 U
SW8082A	Aroclor 1248	12672-29-6	ug/kg	4.6	1.9 J		250 J	1.5 U
SW8082A	Aroclor 1254	11097-69-1	ug/kg	9.1	2.9 J		775	1.5 U
SW8082A	Aroclor 1260	11096-82-5	ug/kg	5.4	1.4 J		460	0.6 U

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	d6-sc1b-80to90-82619	d6-sc1b-90to100-82619	D6-SC-2to4-102118	h3-sc1b-00to10-82919	h3-sc1b-100to110-82919
	Date Time			8/26/2019 16:55:00	8/26/2019 17:00:00	10/21/2018 16:30:00	8/28/2019 20:05:00	8/29/2019 9:50:00
	X			7633913	7633913	7633913	7634399	7634399
	Y			700913	700913	700913	700882	700882
	Top (cm)			244	274	61	0	305
	Bottom (cm)			274	305	122	30	335
SW8082A	Aroclor 1262	37324-23-5	ug/kg	0.6 U	0.6 U		5.8 U	0.6 U
SW8082A	Aroclor 1268	11100-14-4	ug/kg	0.6 U	0.6 U		5.8 U	0.6 U
PCB Congeners								
E1668A	PCB-1	2051-60-7	ng/g					
E1668A	PCB-2	2051-61-8	ng/g					
E1668A	PCB-3	2051-62-9	ng/g					
E1668A	PCB-4	13029-08-8	ng/g					
E1668A	PCB-5	16605-91-7	ng/g					
E1668A	PCB-6	25569-80-6	ng/g					
E1668A	PCB-7	33284-50-3	ng/g					
E1668A	PCB-8	34883-43-7	ng/g					
E1668A	PCB-9	34883-39-1	ng/g					
E1668A	PCB-10	33146-45-1	ng/g					
E1668A	PCB-11	2050-67-1	ng/g					
E1668A	PCB-12	2974-92-7	ng/g					
E1668A	PCB-13	2974-90-5	ng/g					
E1668A	PCB-14	34883-41-5	ng/g					
E1668A	PCB-15	2050-68-2	ng/g					
E1668A	PCB-16	38444-78-9	ng/g					
E1668A	PCB-17	37680-66-3	ng/g					
E1668A	PCB-18	37680-65-2	ng/g					
E1668A	PCB-19	38444-73-4	ng/g					
E1668A	PCB-20	38444-84-7	ng/g					
E1668A	PCB-21	55702-46-0	ng/g					
E1668A	PCB-22	38444-85-8	ng/g					
E1668A	PCB-23	55720-44-0	ng/g					
E1668A	PCB-24	55702-45-9	ng/g					
E1668A	PCB-25	55712-37-3	ng/g					
E1668A	PCB-26	38444-81-4	ng/g					
E1668A	PCB-27	38444-76-7	ng/g					
E1668A	PCB-28	7012-37-5	ng/g					
E1668A	PCB-29	15862-07-4	ng/g					
E1668A	PCB-30	35693-92-6	ng/g					
E1668A	PCB-31	16606-02-3	ng/g					
E1668A	PCB-32	38444-77-8	ng/g					
E1668A	PCB-33	38444-86-9	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	d6-sc1b-80to90-82619	d6-sc1b-90to100-82619	D6-SC-2to4-102118	h3-sc1b-00to10-82919	h3-sc1b-100to110-82919
	Date Time			8/26/2019 16:55:00	8/26/2019 17:00:00	10/21/2018 16:30:00	8/28/2019 20:05:00	8/29/2019 9:50:00
	X			7633913	7633913	7633913	7634399	7634399
	Y			700913	700913	700913	700882	700882
	Top (cm)			244	274	61	0	305
	Bottom (cm)			274	305	122	30	335
E1668A	PCB-34	37680-68-5	ng/g					
E1668A	PCB-35	37680-69-6	ng/g					
E1668A	PCB-36	38444-87-0	ng/g					
E1668A	PCB-37	38444-90-5	ng/g					
E1668A	PCB-38	53555-66-1	ng/g					
E1668A	PCB-39	38444-88-1	ng/g					
E1668A	PCB-40	38444-93-8	ng/g					
E1668A	PCB-41	52663-59-9	ng/g					
E1668A	PCB-42	36559-22-5	ng/g					
E1668A	PCB-43	70362-46-8	ng/g					
E1668A	PCB-44	41464-39-5	ng/g					
E1668A	PCB-45	41464-39-5	ng/g					
E1668A	PCB-46	41464-47-5	ng/g					
E1668A	PCB-47	2437-79-8	ng/g					
E1668A	PCB-48	70362-47-9	ng/g					
E1668A	PCB-49	41464-40-8	ng/g					
E1668A	PCB-50	62796-65-0	ng/g					
E1668A	PCB-51	68194-04-7	ng/g					
E1668A	PCB-52	35693-99-3	ng/g					
E1668A	PCB-53	41464-41-9	ng/g					
E1668A	PCB-54	15968-05-5	ng/g					
E1668A	PCB-55	74338-24-2	ng/g					
E1668A	PCB-56	41464-43-1	ng/g					
E1668A	PCB-57	70424-67-8	ng/g					
E1668A	PCB-58	41464-49-7	ng/g					
E1668A	PCB-59	74472-33-6	ng/g					
E1668A	PCB-60	33025-41-1	ng/g					
E1668A	PCB-61	33284-53-6	ng/g					
E1668A	PCB-62	54230-22-7	ng/g					
E1668A	PCB-63	74472-34-7	ng/g					
E1668A	PCB-64	52663-58-8	ng/g					
E1668A	PCB-65	33284-54-7	ng/g					
E1668A	PCB-66	32598-10-0	ng/g					
E1668A	PCB-67	73575-53-8	ng/g					
E1668A	PCB-68	73575-52-7	ng/g					
E1668A	PCB-69	60233-24-1	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	d6-sc1b-80to90-82619	d6-sc1b-90to100-82619	D6-SC-2to4-102118	h3-sc1b-00to10-82919	h3-sc1b-100to110-82919
	Date Time			8/26/2019 16:55:00	8/26/2019 17:00:00	10/21/2018 16:30:00	8/28/2019 20:05:00	8/29/2019 9:50:00
	X			7633913	7633913	7633913	7634399	7634399
	Y			700913	700913	700913	700882	700882
	Top (cm)			244	274	61	0	305
	Bottom (cm)			274	305	122	30	335
E1668A	PCB-70	32598-11-1	ng/g					
E1668A	PCB-71	41464-46-4	ng/g					
E1668A	PCB-72	41464-42-0	ng/g					
E1668A	PCB-73	74338-23-1	ng/g					
E1668A	PCB-74	32690-93-0	ng/g					
E1668A	PCB-75	32598-12-2	ng/g					
E1668A	PCB-76	70362-48-0	ng/g					
E1668A	PCB-77	32598-13-3	ng/g					
E1668A	PCB-78	70362-49-1	ng/g					
E1668A	PCB-79	41464-48-6	ng/g					
E1668A	PCB-80	33284-52-5	ng/g					
E1668A	PCB-81	70362-50-4	ng/g					
E1668A	PCB-82	52663-62-4	ng/g					
E1668A	PCB-83	60145-20-2	ng/g					
E1668A	PCB-84	52663-60-2	ng/g					
E1668A	PCB-85	65510-45-4	ng/g					
E1668A	PCB-86	55312-69-1	ng/g					
E1668A	PCB-87	38380-02-8	ng/g					
E1668A	PCB-88	55215-17-3	ng/g					
E1668A	PCB-89	73575-57-2	ng/g					
E1668A	PCB-90	68194-07-0	ng/g					
E1668A	PCB-91	68194-05-8	ng/g					
E1668A	PCB-92	52663-61-3	ng/g					
E1668A	PCB-93	73575-56-1	ng/g					
E1668A	PCB-94	73575-55-0	ng/g					
E1668A	PCB-95	38379-99-6	ng/g					
E1668A	PCB-96	73575-54-9	ng/g					
E1668A	PCB-97	41464-51-1	ng/g					
E1668A	PCB-98	60233-25-2	ng/g					
E1668A	PCB-99	38380-01-7	ng/g					
E1668A	PCB-100	39485-83-1	ng/g					
E1668A	PCB-101	37680-73-2	ng/g					
E1668A	PCB-102	68194-06-9	ng/g					
E1668A	PCB-103	60145-21-3	ng/g					
E1668A	PCB-104	56558-16-8	ng/g					
E1668A	PCB-105	32598-14-4	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	d6-sc1b-80to90-82619	d6-sc1b-90to100-82619	D6-SC-2to4-102118	h3-sc1b-00to10-82919	h3-sc1b-100to110-82919
	Date Time			8/26/2019 16:55:00	8/26/2019 17:00:00	10/21/2018 16:30:00	8/28/2019 20:05:00	8/29/2019 9:50:00
	X			7633913	7633913	7633913	7634399	7634399
	Y			700913	700913	700913	700882	700882
	Top (cm)			244	274	61	0	305
	Bottom (cm)			274	305	122	30	335
E1668A	PCB-106	70424-69-0	ng/g					
E1668A	PCB-107	70424-68-9	ng/g					
E1668A	PCB-108	70362-41-3	ng/g					
E1668A	PCB-109	74472-35-8	ng/g					
E1668A	PCB-110	38380-03-9	ng/g					
E1668A	PCB-111	39635-32-0	ng/g					
E1668A	PCB-112	74472-36-9	ng/g					
E1668A	PCB-113	68194-10-5	ng/g					
E1668A	PCB-114	74472-37-0	ng/g					
E1668A	PCB-115	74472-38-1	ng/g					
E1668A	PCB-116	18259-05-7	ng/g					
E1668A	PCB-117	68194-11-6	ng/g					
E1668A	PCB-118	31508-00-6	ng/g					
E1668A	PCB-119	56558-17-9	ng/g					
E1668A	PCB-120	68194-12-7	ng/g					
E1668A	PCB-121	56558-18-0	ng/g					
E1668A	PCB-122	76842-07-4	ng/g					
E1668A	PCB-123	65510-44-3	ng/g					
E1668A	PCB-124	70424-70-3	ng/g					
E1668A	PCB-125	74472-39-2	ng/g					
E1668A	PCB-126	57465-28-8	ng/g					
E1668A	PCB-127	39635-33-1	ng/g					
E1668A	PCB-128	38380-07-3	ng/g					
E1668A	PCB-129	55215-18-4	ng/g					
E1668A	PCB-130	52663-66-8	ng/g					
E1668A	PCB-131	61798-70-7	ng/g					
E1668A	PCB-132	38380-05-1	ng/g					
E1668A	PCB-133	35694-04-3	ng/g					
E1668A	PCB-134	52704-70-8	ng/g					
E1668A	PCB-135	52744-13-5	ng/g					
E1668A	PCB-136	38411-22-2	ng/g					
E1668A	PCB-137	35694-06-5	ng/g					
E1668A	PCB-138	35065-28-2	ng/g					
E1668A	PCB-139	56030-56-9	ng/g					
E1668A	PCB-140	59291-64-4	ng/g					
E1668A	PCB-141	52712-04-6	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	d6-sc1b-80to90-82619	d6-sc1b-90to100-82619	D6-SC-2to4-102118	h3-sc1b-00to10-82919	h3-sc1b-100to110-82919
	Date Time			8/26/2019 16:55:00	8/26/2019 17:00:00	10/21/2018 16:30:00	8/28/2019 20:05:00	8/29/2019 9:50:00
	X			7633913	7633913	7633913	7634399	7634399
	Y			700913	700913	700913	700882	700882
	Top (cm)			244	274	61	0	305
	Bottom (cm)			274	305	122	30	335
E1668A	PCB-142	41411-61-4	ng/g					
E1668A	PCB-143	68194-15-0	ng/g					
E1668A	PCB-144	68194-14-9	ng/g					
E1668A	PCB-145	74472-40-5	ng/g					
E1668A	PCB-146	51908-16-8	ng/g					
E1668A	PCB-147	68194-13-8	ng/g					
E1668A	PCB-148	74472-41-6	ng/g					
E1668A	PCB-149	38380-04-0	ng/g					
E1668A	PCB-150	68194-08-1	ng/g					
E1668A	PCB-151	52663-63-5	ng/g					
E1668A	PCB-152	68194-09-2	ng/g					
E1668A	PCB-153	35065-27-1	ng/g					
E1668A	PCB-154	60145-22-4	ng/g					
E1668A	PCB-155	33979-03-2	ng/g					
E1668A	PCB-156	38380-08-4	ng/g					
E1668A	PCB-157	69782-90-7	ng/g					
E1668A	PCB-158	74472-42-7	ng/g					
E1668A	PCB-159	39635-35-3	ng/g					
E1668A	PCB-160	41411-62-5	ng/g					
E1668A	PCB-161	74472-43-8	ng/g					
E1668A	PCB-162	39635-34-2	ng/g					
E1668A	PCB-163	74472-44-9	ng/g					
E1668A	PCB-164	74472-45-0	ng/g					
E1668A	PCB-165	74472-46-1	ng/g					
E1668A	PCB-166	41411-63-6	ng/g					
E1668A	PCB-167	52663-72-6	ng/g					
E1668A	PCB-168	59291-65-5	ng/g					
E1668A	PCB-169	32774-16-6	ng/g					
E1668A	PCB-170	35065-30-6	ng/g					
E1668A	PCB-171	52663-71-5	ng/g					
E1668A	PCB-172	52663-74-8	ng/g					
E1668A	PCB-173	68194-16-1	ng/g					
E1668A	PCB-174	38411-25-5	ng/g					
E1668A	PCB-175	40186-70-7	ng/g					
E1668A	PCB-176	52663-65-7	ng/g					
E1668A	PCB-177	52663-70-4	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	d6-sc1b-80to90-82619	d6-sc1b-90to100-82619	D6-SC-2to4-102118	h3-sc1b-00to10-82919	h3-sc1b-100to110-82919
	Date Time			8/26/2019 16:55:00	8/26/2019 17:00:00	10/21/2018 16:30:00	8/28/2019 20:05:00	8/29/2019 9:50:00
	X			7633913	7633913	7633913	7634399	7634399
	Y			700913	700913	700913	700882	700882
	Top (cm)			244	274	61	0	305
	Bottom (cm)			274	305	122	30	335
E1668A	PCB-178	52663-67-9	ng/g					
E1668A	PCB-179	52663-64-6	ng/g					
E1668A	PCB-180	35065-29-3	ng/g					
E1668A	PCB-181	74472-47-2	ng/g					
E1668A	PCB-182	60145-23-5	ng/g					
E1668A	PCB-183	52663-69-1	ng/g					
E1668A	PCB-184	74472-48-3	ng/g					
E1668A	PCB-185	52712-05-7	ng/g					
E1668A	PCB-186	74472-49-4	ng/g					
E1668A	PCB-187	52663-68-0	ng/g					
E1668A	PCB-188	74487-85-7	ng/g					
E1668A	PCB-189	39635-31-9	ng/g					
E1668A	PCB-190	41411-64-7	ng/g					
E1668A	PCB-191	74472-50-7	ng/g					
E1668A	PCB-192	74472-51-8	ng/g					
E1668A	PCB-193	69782-91-8	ng/g					
E1668A	PCB-194	35694-08-7	ng/g					
E1668A	PCB-195	52663-78-2	ng/g					
E1668A	PCB-196	42740-50-1	ng/g					
E1668A	PCB-197	33091-17-7	ng/g					
E1668A	PCB-198	68194-17-2	ng/g					
E1668A	PCB-199	52663-75-9	ng/g					
E1668A	PCB-200	52663-73-7	ng/g					
E1668A	PCB-201	40186-71-8	ng/g					
E1668A	PCB-202	2136-99-4	ng/g					
E1668A	PCB-203	52663-76-0	ng/g					
E1668A	PCB-204	74472-52-9	ng/g					
E1668A	PCB-205	74472-53-0	ng/g					
E1668A	PCB-206	40186-72-9	ng/g					
E1668A	PCB-207	52663-79-3	ng/g					
E1668A	PCB-208	52663-77-1	ng/g					
E1668A	PCB-209	2051-24-3	ng/g					
E1668A	Total Dichlorobiphenyls		ng/g					
E1668A	Total Heptachlorobiphenyls		ng/g					
E1668A	Total Hexachlorobiphenyls		ng/g					
E1668A	Total Monochlorobiphenyls		ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	d6-sc1b-80to90-82619	d6-sc1b-90to100-82619	D6-SC-2to4-102118	h3-sc1b-00to10-82919	h3-sc1b-100to110-82919
	Date Time			8/26/2019 16:55:00	8/26/2019 17:00:00	10/21/2018 16:30:00	8/28/2019 20:05:00	8/29/2019 9:50:00
	X			7633913	7633913	7633913	7634399	7634399
	Y			700913	700913	700913	700882	700882
	Top (cm)			244	274	61	0	305
	Bottom (cm)			274	305	122	30	335
E1668A	Total Nonachlorobiphenyls		ng/g					
E1668A	Total Octachlorobiphenyls		ng/g					
E1668A	Total Pentachlorobiphenyls		ng/g					
E1668A	Total Tetrachlorobiphenyls		ng/g					
E1668A	Total Trichlorobiphenyls		ng/g					
E1668A	Polychlorinated biphenyls, Total	1336-36-3	ng/g					
PAHs								
SW8270D	2-Methylnaphthalene	91-57-6	ug/kg	1 J	0.3 J			0.62 J
SW8270D	Acenaphthene	83-32-9	ug/kg	0.82 J	0.15 J			0.26 J
SW8270D	Acenaphthylene	208-96-8	ug/kg	0.69 J	0.11 J			0.55 J
SW8270D	Anthracene	120-12-7	ug/kg	1.4	0.23 J			0.46 J
SW8270D	Benzo(a)anthracene	56-55-3	ug/kg	4.6	0.63			0.97
SW8270D	Benzo(a)pyrene	50-32-8	ug/kg	5.4	0.76			1.5
SW8270D	Benzo(b)fluoranthene	205-99-2	ug/kg	6.7	1.2			2.3
SW8270D	Benzo(g,h,i)perylene	191-24-2	ug/kg	4.9	0.76			1.7
SW8270D	Benzo(k)fluoranthene	207-08-9	ug/kg	2	0.34			0.51 J
SW8270D	Chrysene	218-01-9	ug/kg	6	0.83			1.5
SW8270D	Dibenzo(a,h)anthracene	53-70-3	ug/kg	0.93	0.17 J			0.25 J
SW8270D	Dibenzofuran	132-64-9	ug/kg	0.42 J	0.13 J			0.19 J
SW8270D	Fluoranthene	206-44-0	ug/kg	9.5	1.4			3.5
SW8270D	Fluorene	86-73-7	ug/kg	0.69 J	0.17 J			0.39 J
SW8270D	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	4.6	0.65			1.4
SW8270D	Naphthalene	91-20-3	ug/kg	1.6 J	0.35 J			1 J
SW8270D	Phenanthrene	85-01-8	ug/kg	7.5 J	1.2			2.6 J
SW8270D	Pyrene	129-00-0	ug/kg	12	1.7			4.6
Calculated Totals								
ALS SOP	CALC_TOTAL_DDD_ND_PDI		ug/kg	0.63 UT	0.63 UT			0.63 UT
ALS SOP	CALC_TOTAL_DDE_ND_PDI		ug/kg	0.79 UT	0.79 UT			0.79 UT
ALS SOP	CALC_TOTAL_DDT_ND_PDI		ug/kg	0.94 UT	0.94 UT			0.94 UT
ALS SOP	CALC_TOTAL_DDx_ND_PDI		ug/kg	0.94 UT	0.94 UT			0.94 UT
E1668A	CALC_TOTAL_PCB_ND_PDI		ug/kg					
SW8082A	CALC_TOTAL_AROCLORS_ND_PDI		ug/kg	20 AT	7 JT		1500 JT	1.5 UT
SW8270D	CALC_TOTAL_CPAH_ND_PDI		ug/kg	7.9 T	1.2 JT			2.2 JT
SW8270D	CALC_TOTAL_HPAH_ND_PDI		ug/kg	48 T	6.9 JT			15 JT
SW8270D	CALC_TOTAL_LPAH_ND_PDI		ug/kg	14 JT	2.5 JT			5.9 JT
SW8270D	CALC_TOTAL_PAH_ND_PDI		ug/kg	62 JT	9.4 JT			21 JT

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	d6-sc1b-80to90-82619	d6-sc1b-90to100-82619	D6-SC-2to4-102118	h3-sc1b-00to10-82919	h3-sc1b-100to110-82919
	Date Time			8/26/2019 16:55:00	8/26/2019 17:00:00	10/21/2018 16:30:00	8/28/2019 20:05:00	8/29/2019 9:50:00
	X			7633913	7633913	7633913	7634399	7634399
	Y			700913	700913	700913	700882	700882
	Top (cm)			244	274	61	0	305
	Bottom (cm)			274	305	122	30	335

DDx = dichlorodiphenyltrichloroethane and its derivatives

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyls

PeCDD = Pentachlorodibenzo-p-dioxin

PeCDF = Pentachlorodibenzofuran

TCDD = Tetrachlorodibenzo-p-dioxin

ug/kg = micrograms per kilogram

ng/g = nanograms per gram

% = percent

g/cm3 = grams per cubic centimeter

J = Reported result is an estimate

T = Total concentration from component analytes.

U = Analyte was not detected in sample

R = Rejected

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	h3-sc1b-10-20-82919	h3-sc1b-110to114-82919	h3-sc1b-20to30-82819	h3-sc1b-20to30-82819r1	h3-sc1b-30to40-82919
	Date Time			8/28/2019 20:10:00	8/29/2019 10:00:00	8/28/2019 20:15:00	8/28/2019 20:15:00	8/29/2019 8:25:00
	X			7634399	7634399	7634399	7634399	7634399
	Y			700882	700882	700882	700882	700882
	Top (cm)			30	335	61	61	91
	Bottom (cm)			61	347	91	91	122
Conventionals								
E160.3	Total Solids		%			60		74
PSEP	Total Solids		%					
SM2540G	Total Solids		%		64	59		77
SW9060A	Carbon, Total Organic	7440-044-0	mg/kg		6500	43600 J		
Organochlorine Pesticides								
ALS SOP	o,p'-DDD	53-19-0	ug/kg			0.63 U		0.63 U
ALS SOP	o,p'-DDE	3424-82-6	ug/kg			1.3		0.79 U
ALS SOP	o,p'-DDT	789-02-6	ug/kg			0.94 U		0.94 U
ALS SOP	4,4'-DDD	72-54-8	ug/kg			3.7		2.4
ALS SOP	4,4'-DDE	72-55-9	ug/kg			10		0.8
ALS SOP	4,4'-DDT	50-29-3	ug/kg			0.47 U		0.47 U
Dioxins/Furans								
CWA1613B	1,2,3,4,6,7,8,9-OCDD	3268-87-9	ug/kg			3.9 J		0.053
CWA1613B	1,2,3,4,6,7,8,9-OCDF	39001-02-0	ug/kg			0.41		0.0064 J
CWA1613B	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg			0.32		0.0043 J
CWA1613B	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg			0.23		0.011
CWA1613B	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg			0.0089		0.0048 U
CWA1613B	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg			0.0025 J		0.0048 U
CWA1613B	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg			0.01		0.00032 U
CWA1613B	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg			0.014		0.0048 U
CWA1613B	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg			0.012		0.00065 J
CWA1613B	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg			0.006		0.0048 U
CWA1613B	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg			0.0023 J		0.0048 U
CWA1613B	1,2,3,7,8-PeCDD	40321-76-4	ug/kg			0.0018 U		0.0048 U
CWA1613B	1,2,3,7,8-PeCDF	57117-41-6	ug/kg			0.002 J		0.0048 U
CWA1613B	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg			0.011		0.00038 U
CWA1613B	2,3,4,7,8-PeCDF	57117-31-4	ug/kg			0.011		0.00038 U
CWA1613B	2,3,7,8-TCDD	1746-01-6	ug/kg			0.00076 J		0.00097 U
CWA1613B	2,3,7,8-TCDF	51207-31-9	ug/kg			0.0017 DNR	0.0016	0.00048 U
CWA1613B	Total HpCDD	37871-00-4	ug/kg			0.7		0.0097 J
CWA1613B	Total HpCDF	38998-75-3	ug/kg			0.62 J		0.019
CWA1613B	Total HxCDD	34465-46-8	ug/kg			0.11 J		0.0018 J
CWA1613B	Total HxCDF	55684-94-1	ug/kg			0.28 J		0.009 J
CWA1613B	Total PeCDD	36088-22-9	ug/kg			0.031 J		0.00047 J
CWA1613B	Total PeCDF	30402-15-4	ug/kg			0.21 J		0.0059 J

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	h3-sc1b-10-20-82919	h3-sc1b-110to114-82919	h3-sc1b-20to30-82819	h3-sc1b-20to30-82819r1	h3-sc1b-30to40-82919
	Date Time			8/28/2019 20:10:00	8/29/2019 10:00:00	8/28/2019 20:15:00	8/28/2019 20:15:00	8/29/2019 8:25:00
	X			7634399	7634399	7634399	7634399	7634399
	Y			700882	700882	700882	700882	700882
	Top (cm)			30	335	61	61	91
	Bottom (cm)			61	347	91	91	122
CWA1613B	Total TCDD	41903-57-5	ug/kg			0.024 J		0.00026 J
CWA1613B	Total TCDF	30402-14-3	ug/kg			0.07 J		0.0025 J
Dioxins/Furans								
E1613	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg					
E1613	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg					
E1613	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg					
E1613	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg					
E1613	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg					
E1613	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg					
E1613	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg					
E1613	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg					
E1613	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg					
E1613	1,2,3,7,8-PeCDD	40321-76-4	ug/kg					
E1613	1,2,3,7,8-PeCDF	57117-41-6	ug/kg					
E1613	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg					
E1613	2,3,4,7,8-PeCDF	57117-31-4	ug/kg					
E1613	2,3,7,8-TCDD	1746-01-6	ug/kg					
E1613	2,3,7,8-TCDF	51207-31-9	ug/kg					
E1613	OCDD	3268-87-9	ug/kg					
E1613	OCDF	39001-02-0	ug/kg					
E1613	Total HpCDD	37871-00-4	ug/kg					
E1613	Total HpCDF	38998-75-3	ug/kg					
E1613	Total HxCDD	34465-46-8	ug/kg					
E1613	Total HxCDF	55684-94-1	ug/kg					
E1613	Total PeCDD	36088-22-9	ug/kg					
E1613	Total PeCDF	30402-15-4	ug/kg					
E1613	Total TCDD	41903-57-5	ug/kg					
E1613	Total TCDF	30402-14-3	ug/kg					
PCB Aroclors								
SW8082A	Aroclor 1016	12674-11-2	ug/kg	15.4 U	1.5 U	7.8 U		1.6 U
SW8082A	Aroclor 1221	11104-28-2	ug/kg	15.4 U	1.5 U	7.8 U		1.6 U
SW8082A	Aroclor 1232	11141-16-5	ug/kg	15.4 U	1.5 U	7.8 U		1.6 U
SW8082A	Aroclor 1242	53469-21-9	ug/kg	15.4 U	1.5 U	7.8 U		1.6 U
SW8082A	Aroclor 1248	12672-29-6	ug/kg	15.4 U	1.5 U	7.8 U		5.9
SW8082A	Aroclor 1254	11097-69-1	ug/kg	1070	2.6 J	370		24
SW8082A	Aroclor 1260	11096-82-5	ug/kg	474	0.6 U	370 J		28

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	h3-sc1b-10-20-82919	h3-sc1b-110to114-82919	h3-sc1b-20to30-82819	h3-sc1b-20to30-82819r1	h3-sc1b-30to40-82919
	Date Time			8/28/2019 20:10:00	8/29/2019 10:00:00	8/28/2019 20:15:00	8/28/2019 20:15:00	8/29/2019 8:25:00
	X			7634399	7634399	7634399	7634399	7634399
	Y			700882	700882	700882	700882	700882
	Top (cm)			30	335	61	61	91
	Bottom (cm)			61	347	91	91	122
SW8082A	Aroclor 1262	37324-23-5	ug/kg	5.8 U	0.6 U	2.9 U		0.6 U
SW8082A	Aroclor 1268	11100-14-4	ug/kg	5.8 U	0.6 U	2.9 U		0.6 U
PCB Congeners								
E1668A	PCB-1	2051-60-7	ng/g					
E1668A	PCB-2	2051-61-8	ng/g					
E1668A	PCB-3	2051-62-9	ng/g					
E1668A	PCB-4	13029-08-8	ng/g					
E1668A	PCB-5	16605-91-7	ng/g					
E1668A	PCB-6	25569-80-6	ng/g					
E1668A	PCB-7	33284-50-3	ng/g					
E1668A	PCB-8	34883-43-7	ng/g					
E1668A	PCB-9	34883-39-1	ng/g					
E1668A	PCB-10	33146-45-1	ng/g					
E1668A	PCB-11	2050-67-1	ng/g					
E1668A	PCB-12	2974-92-7	ng/g					
E1668A	PCB-13	2974-90-5	ng/g					
E1668A	PCB-14	34883-41-5	ng/g					
E1668A	PCB-15	2050-68-2	ng/g					
E1668A	PCB-16	38444-78-9	ng/g					
E1668A	PCB-17	37680-66-3	ng/g					
E1668A	PCB-18	37680-65-2	ng/g					
E1668A	PCB-19	38444-73-4	ng/g					
E1668A	PCB-20	38444-84-7	ng/g					
E1668A	PCB-21	55702-46-0	ng/g					
E1668A	PCB-22	38444-85-8	ng/g					
E1668A	PCB-23	55720-44-0	ng/g					
E1668A	PCB-24	55702-45-9	ng/g					
E1668A	PCB-25	55712-37-3	ng/g					
E1668A	PCB-26	38444-81-4	ng/g					
E1668A	PCB-27	38444-76-7	ng/g					
E1668A	PCB-28	7012-37-5	ng/g					
E1668A	PCB-29	15862-07-4	ng/g					
E1668A	PCB-30	35693-92-6	ng/g					
E1668A	PCB-31	16606-02-3	ng/g					
E1668A	PCB-32	38444-77-8	ng/g					
E1668A	PCB-33	38444-86-9	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	h3-sc1b-10-20-82919	h3-sc1b-110to114-82919	h3-sc1b-20to30-82819	h3-sc1b-20to30-82819r1	h3-sc1b-30to40-82919
	Date Time			8/28/2019 20:10:00	8/29/2019 10:00:00	8/28/2019 20:15:00	8/28/2019 20:15:00	8/29/2019 8:25:00
	X			7634399	7634399	7634399	7634399	7634399
	Y			700882	700882	700882	700882	700882
	Top (cm)			30	335	61	61	91
	Bottom (cm)			61	347	91	91	122
E1668A	PCB-34	37680-68-5	ng/g					
E1668A	PCB-35	37680-69-6	ng/g					
E1668A	PCB-36	38444-87-0	ng/g					
E1668A	PCB-37	38444-90-5	ng/g					
E1668A	PCB-38	53555-66-1	ng/g					
E1668A	PCB-39	38444-88-1	ng/g					
E1668A	PCB-40	38444-93-8	ng/g					
E1668A	PCB-41	52663-59-9	ng/g					
E1668A	PCB-42	36559-22-5	ng/g					
E1668A	PCB-43	70362-46-8	ng/g					
E1668A	PCB-44	41464-39-5	ng/g					
E1668A	PCB-45	41464-39-5	ng/g					
E1668A	PCB-46	41464-47-5	ng/g					
E1668A	PCB-47	2437-79-8	ng/g					
E1668A	PCB-48	70362-47-9	ng/g					
E1668A	PCB-49	41464-40-8	ng/g					
E1668A	PCB-50	62796-65-0	ng/g					
E1668A	PCB-51	68194-04-7	ng/g					
E1668A	PCB-52	35693-99-3	ng/g					
E1668A	PCB-53	41464-41-9	ng/g					
E1668A	PCB-54	15968-05-5	ng/g					
E1668A	PCB-55	74338-24-2	ng/g					
E1668A	PCB-56	41464-43-1	ng/g					
E1668A	PCB-57	70424-67-8	ng/g					
E1668A	PCB-58	41464-49-7	ng/g					
E1668A	PCB-59	74472-33-6	ng/g					
E1668A	PCB-60	33025-41-1	ng/g					
E1668A	PCB-61	33284-53-6	ng/g					
E1668A	PCB-62	54230-22-7	ng/g					
E1668A	PCB-63	74472-34-7	ng/g					
E1668A	PCB-64	52663-58-8	ng/g					
E1668A	PCB-65	33284-54-7	ng/g					
E1668A	PCB-66	32598-10-0	ng/g					
E1668A	PCB-67	73575-53-8	ng/g					
E1668A	PCB-68	73575-52-7	ng/g					
E1668A	PCB-69	60233-24-1	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	h3-sc1b-10-20-82919	h3-sc1b-110to114-82919	h3-sc1b-20to30-82819	h3-sc1b-20to30-82819r1	h3-sc1b-30to40-82919
	Date Time			8/28/2019 20:10:00	8/29/2019 10:00:00	8/28/2019 20:15:00	8/28/2019 20:15:00	8/29/2019 8:25:00
	X			7634399	7634399	7634399	7634399	7634399
	Y			700882	700882	700882	700882	700882
	Top (cm)			30	335	61	61	91
	Bottom (cm)			61	347	91	91	122
E1668A	PCB-70	32598-11-1	ng/g					
E1668A	PCB-71	41464-46-4	ng/g					
E1668A	PCB-72	41464-42-0	ng/g					
E1668A	PCB-73	74338-23-1	ng/g					
E1668A	PCB-74	32690-93-0	ng/g					
E1668A	PCB-75	32598-12-2	ng/g					
E1668A	PCB-76	70362-48-0	ng/g					
E1668A	PCB-77	32598-13-3	ng/g					
E1668A	PCB-78	70362-49-1	ng/g					
E1668A	PCB-79	41464-48-6	ng/g					
E1668A	PCB-80	33284-52-5	ng/g					
E1668A	PCB-81	70362-50-4	ng/g					
E1668A	PCB-82	52663-62-4	ng/g					
E1668A	PCB-83	60145-20-2	ng/g					
E1668A	PCB-84	52663-60-2	ng/g					
E1668A	PCB-85	65510-45-4	ng/g					
E1668A	PCB-86	55312-69-1	ng/g					
E1668A	PCB-87	38380-02-8	ng/g					
E1668A	PCB-88	55215-17-3	ng/g					
E1668A	PCB-89	73575-57-2	ng/g					
E1668A	PCB-90	68194-07-0	ng/g					
E1668A	PCB-91	68194-05-8	ng/g					
E1668A	PCB-92	52663-61-3	ng/g					
E1668A	PCB-93	73575-56-1	ng/g					
E1668A	PCB-94	73575-55-0	ng/g					
E1668A	PCB-95	38379-99-6	ng/g					
E1668A	PCB-96	73575-54-9	ng/g					
E1668A	PCB-97	41464-51-1	ng/g					
E1668A	PCB-98	60233-25-2	ng/g					
E1668A	PCB-99	38380-01-7	ng/g					
E1668A	PCB-100	39485-83-1	ng/g					
E1668A	PCB-101	37680-73-2	ng/g					
E1668A	PCB-102	68194-06-9	ng/g					
E1668A	PCB-103	60145-21-3	ng/g					
E1668A	PCB-104	56558-16-8	ng/g					
E1668A	PCB-105	32598-14-4	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	h3-sc1b-10-20-82919	h3-sc1b-110to114-82919	h3-sc1b-20to30-82819	h3-sc1b-20to30-82819r1	h3-sc1b-30to40-82919
	Date Time			8/28/2019 20:10:00	8/29/2019 10:00:00	8/28/2019 20:15:00	8/28/2019 20:15:00	8/29/2019 8:25:00
	X			7634399	7634399	7634399	7634399	7634399
	Y			700882	700882	700882	700882	700882
	Top (cm)			30	335	61	61	91
	Bottom (cm)			61	347	91	91	122
E1668A	PCB-106	70424-69-0	ng/g					
E1668A	PCB-107	70424-68-9	ng/g					
E1668A	PCB-108	70362-41-3	ng/g					
E1668A	PCB-109	74472-35-8	ng/g					
E1668A	PCB-110	38380-03-9	ng/g					
E1668A	PCB-111	39635-32-0	ng/g					
E1668A	PCB-112	74472-36-9	ng/g					
E1668A	PCB-113	68194-10-5	ng/g					
E1668A	PCB-114	74472-37-0	ng/g					
E1668A	PCB-115	74472-38-1	ng/g					
E1668A	PCB-116	18259-05-7	ng/g					
E1668A	PCB-117	68194-11-6	ng/g					
E1668A	PCB-118	31508-00-6	ng/g					
E1668A	PCB-119	56558-17-9	ng/g					
E1668A	PCB-120	68194-12-7	ng/g					
E1668A	PCB-121	56558-18-0	ng/g					
E1668A	PCB-122	76842-07-4	ng/g					
E1668A	PCB-123	65510-44-3	ng/g					
E1668A	PCB-124	70424-70-3	ng/g					
E1668A	PCB-125	74472-39-2	ng/g					
E1668A	PCB-126	57465-28-8	ng/g					
E1668A	PCB-127	39635-33-1	ng/g					
E1668A	PCB-128	38380-07-3	ng/g					
E1668A	PCB-129	55215-18-4	ng/g					
E1668A	PCB-130	52663-66-8	ng/g					
E1668A	PCB-131	61798-70-7	ng/g					
E1668A	PCB-132	38380-05-1	ng/g					
E1668A	PCB-133	35694-04-3	ng/g					
E1668A	PCB-134	52704-70-8	ng/g					
E1668A	PCB-135	52744-13-5	ng/g					
E1668A	PCB-136	38411-22-2	ng/g					
E1668A	PCB-137	35694-06-5	ng/g					
E1668A	PCB-138	35065-28-2	ng/g					
E1668A	PCB-139	56030-56-9	ng/g					
E1668A	PCB-140	59291-64-4	ng/g					
E1668A	PCB-141	52712-04-6	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	h3-sc1b-10-20-82919	h3-sc1b-110to114-82919	h3-sc1b-20to30-82819	h3-sc1b-20to30-82819r1	h3-sc1b-30to40-82919
	Date Time			8/28/2019 20:10:00	8/29/2019 10:00:00	8/28/2019 20:15:00	8/28/2019 20:15:00	8/29/2019 8:25:00
	X			7634399	7634399	7634399	7634399	7634399
	Y			700882	700882	700882	700882	700882
	Top (cm)			30	335	61	61	91
	Bottom (cm)			61	347	91	91	122
E1668A	PCB-142	41411-61-4	ng/g					
E1668A	PCB-143	68194-15-0	ng/g					
E1668A	PCB-144	68194-14-9	ng/g					
E1668A	PCB-145	74472-40-5	ng/g					
E1668A	PCB-146	51908-16-8	ng/g					
E1668A	PCB-147	68194-13-8	ng/g					
E1668A	PCB-148	74472-41-6	ng/g					
E1668A	PCB-149	38380-04-0	ng/g					
E1668A	PCB-150	68194-08-1	ng/g					
E1668A	PCB-151	52663-63-5	ng/g					
E1668A	PCB-152	68194-09-2	ng/g					
E1668A	PCB-153	35065-27-1	ng/g					
E1668A	PCB-154	60145-22-4	ng/g					
E1668A	PCB-155	33979-03-2	ng/g					
E1668A	PCB-156	38380-08-4	ng/g					
E1668A	PCB-157	69782-90-7	ng/g					
E1668A	PCB-158	74472-42-7	ng/g					
E1668A	PCB-159	39635-35-3	ng/g					
E1668A	PCB-160	41411-62-5	ng/g					
E1668A	PCB-161	74472-43-8	ng/g					
E1668A	PCB-162	39635-34-2	ng/g					
E1668A	PCB-163	74472-44-9	ng/g					
E1668A	PCB-164	74472-45-0	ng/g					
E1668A	PCB-165	74472-46-1	ng/g					
E1668A	PCB-166	41411-63-6	ng/g					
E1668A	PCB-167	52663-72-6	ng/g					
E1668A	PCB-168	59291-65-5	ng/g					
E1668A	PCB-169	32774-16-6	ng/g					
E1668A	PCB-170	35065-30-6	ng/g					
E1668A	PCB-171	52663-71-5	ng/g					
E1668A	PCB-172	52663-74-8	ng/g					
E1668A	PCB-173	68194-16-1	ng/g					
E1668A	PCB-174	38411-25-5	ng/g					
E1668A	PCB-175	40186-70-7	ng/g					
E1668A	PCB-176	52663-65-7	ng/g					
E1668A	PCB-177	52663-70-4	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	h3-sc1b-10-20-82919	h3-sc1b-110to114-82919	h3-sc1b-20to30-82819	h3-sc1b-20to30-82819r1	h3-sc1b-30to40-82919
	Date Time			8/28/2019 20:10:00	8/29/2019 10:00:00	8/28/2019 20:15:00	8/28/2019 20:15:00	8/29/2019 8:25:00
	X			7634399	7634399	7634399	7634399	7634399
	Y			700882	700882	700882	700882	700882
	Top (cm)			30	335	61	61	91
	Bottom (cm)			61	347	91	91	122
E1668A	PCB-178	52663-67-9	ng/g					
E1668A	PCB-179	52663-64-6	ng/g					
E1668A	PCB-180	35065-29-3	ng/g					
E1668A	PCB-181	74472-47-2	ng/g					
E1668A	PCB-182	60145-23-5	ng/g					
E1668A	PCB-183	52663-69-1	ng/g					
E1668A	PCB-184	74472-48-3	ng/g					
E1668A	PCB-185	52712-05-7	ng/g					
E1668A	PCB-186	74472-49-4	ng/g					
E1668A	PCB-187	52663-68-0	ng/g					
E1668A	PCB-188	74487-85-7	ng/g					
E1668A	PCB-189	39635-31-9	ng/g					
E1668A	PCB-190	41411-64-7	ng/g					
E1668A	PCB-191	74472-50-7	ng/g					
E1668A	PCB-192	74472-51-8	ng/g					
E1668A	PCB-193	69782-91-8	ng/g					
E1668A	PCB-194	35694-08-7	ng/g					
E1668A	PCB-195	52663-78-2	ng/g					
E1668A	PCB-196	42740-50-1	ng/g					
E1668A	PCB-197	33091-17-7	ng/g					
E1668A	PCB-198	68194-17-2	ng/g					
E1668A	PCB-199	52663-75-9	ng/g					
E1668A	PCB-200	52663-73-7	ng/g					
E1668A	PCB-201	40186-71-8	ng/g					
E1668A	PCB-202	2136-99-4	ng/g					
E1668A	PCB-203	52663-76-0	ng/g					
E1668A	PCB-204	74472-52-9	ng/g					
E1668A	PCB-205	74472-53-0	ng/g					
E1668A	PCB-206	40186-72-9	ng/g					
E1668A	PCB-207	52663-79-3	ng/g					
E1668A	PCB-208	52663-77-1	ng/g					
E1668A	PCB-209	2051-24-3	ng/g					
E1668A	Total Dichlorobiphenyls		ng/g					
E1668A	Total Heptachlorobiphenyls		ng/g					
E1668A	Total Hexachlorobiphenyls		ng/g					
E1668A	Total Monochlorobiphenyls		ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	h3-sc1b-10-20-82919	h3-sc1b-110to114-82919	h3-sc1b-20to30-82819	h3-sc1b-20to30-82819r1	h3-sc1b-30to40-82919
	Date Time			8/28/2019 20:10:00	8/29/2019 10:00:00	8/28/2019 20:15:00	8/28/2019 20:15:00	8/29/2019 8:25:00
	X			7634399	7634399	7634399	7634399	7634399
	Y			700882	700882	700882	700882	700882
	Top (cm)			30	335	61	61	91
	Bottom (cm)			61	347	91	91	122
E1668A	Total Nonachlorobiphenyls		ng/g					
E1668A	Total Octachlorobiphenyls		ng/g					
E1668A	Total Pentachlorobiphenyls		ng/g					
E1668A	Total Tetrachlorobiphenyls		ng/g					
E1668A	Total Trichlorobiphenyls		ng/g					
E1668A	Polychlorinated biphenyls, Total	1336-36-3	ng/g					
PAHs								
SW8270D	2-Methylnaphthalene	91-57-6	ug/kg			36 J		11 J
SW8270D	Acenaphthene	83-32-9	ug/kg			39 J		7.4 J
SW8270D	Acenaphthylene	208-96-8	ug/kg			26 J		8.4 J
SW8270D	Anthracene	120-12-7	ug/kg			42		11
SW8270D	Benzo(a)anthracene	56-55-3	ug/kg			97		20
SW8270D	Benzo(a)pyrene	50-32-8	ug/kg			110		28
SW8270D	Benzo(b)fluoranthene	205-99-2	ug/kg			140		30
SW8270D	Benzo(g,h,i)perylene	191-24-2	ug/kg			110		28
SW8270D	Benzo(k)fluoranthene	207-08-9	ug/kg			45		9.3
SW8270D	Chrysene	218-01-9	ug/kg			140		28
SW8270D	Dibenzo(a,h)anthracene	53-70-3	ug/kg			18		3.7
SW8270D	Dibenzofuran	132-64-9	ug/kg			18 J		4 J
SW8270D	Fluoranthene	206-44-0	ug/kg			220		55
SW8270D	Fluorene	86-73-7	ug/kg			43 J		10 J
SW8270D	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg			100		25
SW8270D	Naphthalene	91-20-3	ug/kg			38 J		15 J
SW8270D	Phenanthrene	85-01-8	ug/kg			250 J		55 J
SW8270D	Pyrene	129-00-0	ug/kg			310		79
Calculated Totals								
ALS SOP	CALC_TOTAL_DDD_ND_PDI		ug/kg			4 AT		2.7 AT
ALS SOP	CALC_TOTAL_DDE_ND_PDI		ug/kg			11 R		1.2 AT
ALS SOP	CALC_TOTAL_DDT_ND_PDI		ug/kg			0.94 UT		0.94 UT
ALS SOP	CALC_TOTAL_DDx_ND_PDI		ug/kg			15 T		3.7 T
E1668A	CALC_TOTAL_PCB_ND_PDI		ug/kg					
SW8082A	CALC_TOTAL_AROCLORS_ND_PDI		ug/kg	1600 T	3.4 JT	750 JT		58 AT
SW8270D	CALC_TOTAL_CPAH_ND_PDI		ug/kg			160 T		39 T
SW8270D	CALC_TOTAL_HPAH_ND_PDI		ug/kg			1100 T		270 T
SW8270D	CALC_TOTAL_LPAH_ND_PDI		ug/kg			470 JT		120 JT
SW8270D	CALC_TOTAL_PAH_ND_PDI		ug/kg			1600 JT		380 JT

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	h3-sc1b-10-20-82919	h3-sc1b-110to114-82919	h3-sc1b-20to30-82819	h3-sc1b-20to30-82819r1	h3-sc1b-30to40-82919
	Date Time			8/28/2019 20:10:00	8/29/2019 10:00:00	8/28/2019 20:15:00	8/28/2019 20:15:00	8/29/2019 8:25:00
	X			7634399	7634399	7634399	7634399	7634399
	Y			700882	700882	700882	700882	700882
	Top (cm)			30	335	61	61	91
	Bottom (cm)			61	347	91	91	122

DDx = dichlorodiphenyltrichloroethane and its derivatives

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyls

PeCDD = Pentachlorodibenzo-p-dioxin

PeCDF = Pentachlorodibenzofuran

TCDD = Tetrachlorodibenzo-p-dioxin

ug/kg = micrograms per kilogram

ng/g = nanograms per gram

% = percent

g/cm3 = grams per cubic centimeter

J = Reported result is an estimate

T = Total concentration from component analytes.

U = Analyte was not detected in sample

R = Rejected

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	h3-sc1b-40to50-82919	h3-sc1b-50to60-82919	h3-sc1b-60to70-82919	h3-sc1b-70to80-82919	h3-sc1b-80to90-82919	h3-sc1b-90to100-82919
	Date Time			8/29/2019 8:30:00	8/29/2019 8:35:00	8/29/2019 9:00:00	8/29/2019 9:05:00	8/29/2019 9:30:00	8/29/2019 9:35:00
	X			7634399	7634399	7634399	7634399	7634399	7634399
	Y			700882	700882	700882	700882	700882	700882
	Top (cm)			122	152	183	213	244	274
	Bottom (cm)			152	183	213	244	274	305
Conventionals									
E160.3	Total Solids		%	74	70	64	52	58	65
PSEP	Total Solids		%						
SM2540G	Total Solids		%	68	72	64	50	56	63
SW9060A	Carbon, Total Organic	7440-044-0	mg/kg						
Organochlorine Pesticides									
ALS SOP	o,p'-DDD	53-19-0	ug/kg	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U
ALS SOP	o,p'-DDE	3424-82-6	ug/kg	0.79 U	0.79 U	0.79 U	0.79 U	0.79 U	0.79 U
ALS SOP	o,p'-DDT	789-02-6	ug/kg	0.94 U	0.94 U	0.94 U	0.94 U	0.94 U	0.94 U
ALS SOP	4,4'-DDD	72-54-8	ug/kg	1.1	0.85	0.35 U	0.35 U	0.35 U	0.35 U
ALS SOP	4,4'-DDE	72-55-9	ug/kg	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U
ALS SOP	4,4'-DDT	50-29-3	ug/kg	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U
Dioxins/Furans									
CWA1613B	1,2,3,4,6,7,8,9-OCDD	3268-87-9	ug/kg	0.56	0.025	0.37	0.057	0.009 J	0.0036 J
CWA1613B	1,2,3,4,6,7,8,9-OCDF	39001-02-0	ug/kg	0.045	0.003 J	0.029	0.0058 J	0.00037 U	0.0093 U
CWA1613B	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg	0.034	0.002 J	0.024	0.0055	0.001 J	5e-04 U
CWA1613B	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg	0.094	0.01	0.044	0.0091	0.00068 U	0.00013 U
CWA1613B	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg	0.0012 J	0.0046 U	0.00059 U	0.00036 U	0.0047 U	0.0047 U
CWA1613B	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg	0.00026 J	0.0046 U	0.00018 U	0.0049 U	0.0047 U	0.0047 U
CWA1613B	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg	0.0017 J	2e-04 J	0.00086 J	0.00056 U	0.00014 U	4.8e-05 J
CWA1613B	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg	0.0021 J	0.00022 U	0.0012 J	0.00039 U	0.0047 U	0.0047 U
CWA1613B	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg	0.0061	0.00066 J	0.0022 J	8e-04 J	1e-04 U	0.0047 U
CWA1613B	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg	0.00086 J	0.0046 U	0.00051 U	0.00046 U	0.0047 U	0.0047 U
CWA1613B	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg	0.00053 U	0.0046 U	0.00025 U	0.0049 U	0.0047 U	6.5e-05 U
CWA1613B	1,2,3,7,8-PeCDD	40321-76-4	ug/kg	0.00032 U	0.0046 U	0.00027 J	0.00023 U	0.0047 U	0.0047 U
CWA1613B	1,2,3,7,8-PeCDF	57117-41-6	ug/kg	0.00056 J	0.00011 J	0.00025 U	0.00034 U	0.00012 J	9.7e-05 J
CWA1613B	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg	0.0029 J	0.00032 U	0.0014 J	0.00054 U	8.3e-05 U	0.0047 U
CWA1613B	2,3,4,7,8-PeCDF	57117-31-4	ug/kg	0.0021 J	0.00021 U	0.0011 J	0.00061 U	0.00011 U	0.0047 U
CWA1613B	2,3,7,8-TCDD	1746-01-6	ug/kg	0.00093 U	0.00093 U	0.00095 U	0.00097 U	0.00094 U	0.00093 U
CWA1613B	2,3,7,8-TCDF	51207-31-9	ug/kg	8e-04 U	0.00028 U	0.00039 U	0.00073 U	0.00041 U	4e-04 U
CWA1613B	Total HpCDD	37871-00-4	ug/kg	0.088	0.0049 J	0.063	0.014	0.0026 J	0.0012 J
CWA1613B	Total HpCDF	38998-75-3	ug/kg	0.17 J	0.017	0.081 J	0.017 J	0.0012 J	0.00013 J
CWA1613B	Total HxCDD	34465-46-8	ug/kg	0.017 J	0.0016 J	0.011 J	0.0052 J	0.001 J	0.00064 J
CWA1613B	Total HxCDF	55684-94-1	ug/kg	0.075 J	0.0085 J	0.036 J	0.0099 J	0.00089 J	2e-04 J
CWA1613B	Total PeCDD	36088-22-9	ug/kg	0.0049 J	4e-04 J	0.0027 J	0.0025 J	0.00029 J	7.5e-05 J
CWA1613B	Total PeCDF	30402-15-4	ug/kg	0.05 J	0.0061 J	0.029 J	0.0099 J	0.00082 J	0.00036 J

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	h3-sc1b-40to50-82919	h3-sc1b-50to60-82919	h3-sc1b-60to70-82919	h3-sc1b-70to80-82919	h3-sc1b-80to90-82919	h3-sc1b-90to100-82919
	Date Time			8/29/2019 8:30:00	8/29/2019 8:35:00	8/29/2019 9:00:00	8/29/2019 9:05:00	8/29/2019 9:30:00	8/29/2019 9:35:00
	X			7634399	7634399	7634399	7634399	7634399	7634399
	Y			700882	700882	700882	700882	700882	700882
	Top (cm)			122	152	183	213	244	274
	Bottom (cm)			152	183	213	244	274	305
CWA1613B	Total TCDD	41903-57-5	ug/kg	0.0016 J	0.00017 J	0.00062 J	0.0024 J	0.00057 J	0.00037 J
CWA1613B	Total TCDF	30402-14-3	ug/kg	0.015 J	0.0021 J	0.0086 J	0.0095 J	0.0019 J	0.00085 J
Dioxins/Furans									
E1613	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg						
E1613	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg						
E1613	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg						
E1613	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg						
E1613	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg						
E1613	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg						
E1613	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg						
E1613	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg						
E1613	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg						
E1613	1,2,3,7,8-PeCDD	40321-76-4	ug/kg						
E1613	1,2,3,7,8-PeCDF	57117-41-6	ug/kg						
E1613	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg						
E1613	2,3,4,7,8-PeCDF	57117-31-4	ug/kg						
E1613	2,3,7,8-TCDD	1746-01-6	ug/kg						
E1613	2,3,7,8-TCDF	51207-31-9	ug/kg						
E1613	OCDD	3268-87-9	ug/kg						
E1613	OCDF	39001-02-0	ug/kg						
E1613	Total HpCDD	37871-00-4	ug/kg						
E1613	Total HpCDF	38998-75-3	ug/kg						
E1613	Total HxCDD	34465-46-8	ug/kg						
E1613	Total HxCDF	55684-94-1	ug/kg						
E1613	Total PeCDD	36088-22-9	ug/kg						
E1613	Total PeCDF	30402-15-4	ug/kg						
E1613	Total TCDD	41903-57-5	ug/kg						
E1613	Total TCDF	30402-14-3	ug/kg						
PCB Aroclors									
SW8082A	Aroclor 1016	12674-11-2	ug/kg	1.6 U	1.6 U	1.6 U	1.6 U	1.5 U	1.5 U
SW8082A	Aroclor 1221	11104-28-2	ug/kg	1.6 U	1.6 U	1.6 U	1.6 U	1.5 U	1.5 U
SW8082A	Aroclor 1232	11141-16-5	ug/kg	1.6 U	1.6 U	1.6 U	1.6 U	1.5 U	1.5 U
SW8082A	Aroclor 1242	53469-21-9	ug/kg	1.6 U	1.6 U	1.6 U	1.6 U	1.5 U	1.5 U
SW8082A	Aroclor 1248	12672-29-6	ug/kg	4.4	6.7	1.6 U	1.6 U	1.5 U	1.5 U
SW8082A	Aroclor 1254	11097-69-1	ug/kg	17	25	5.8	1.6 U	1.5 U	1.5 U
SW8082A	Aroclor 1260	11096-82-5	ug/kg	24	44	9	1.9 J	0.6 U	0.6 U

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	h3-sc1b-40to50-82919	h3-sc1b-50to60-82919	h3-sc1b-60to70-82919	h3-sc1b-70to80-82919	h3-sc1b-80to90-82919	h3-sc1b-90to100-82919
	Date Time			8/29/2019 8:30:00	8/29/2019 8:35:00	8/29/2019 9:00:00	8/29/2019 9:05:00	8/29/2019 9:30:00	8/29/2019 9:35:00
	X			7634399	7634399	7634399	7634399	7634399	7634399
	Y			700882	700882	700882	700882	700882	700882
	Top (cm)			122	152	183	213	244	274
	Bottom (cm)			152	183	213	244	274	305
SW8082A	Aroclor 1262	37324-23-5	ug/kg	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
SW8082A	Aroclor 1268	11100-14-4	ug/kg	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
PCB Congeners									
E1668A	PCB-1	2051-60-7	ng/g						
E1668A	PCB-2	2051-61-8	ng/g						
E1668A	PCB-3	2051-62-9	ng/g						
E1668A	PCB-4	13029-08-8	ng/g						
E1668A	PCB-5	16605-91-7	ng/g						
E1668A	PCB-6	25569-80-6	ng/g						
E1668A	PCB-7	33284-50-3	ng/g						
E1668A	PCB-8	34883-43-7	ng/g						
E1668A	PCB-9	34883-39-1	ng/g						
E1668A	PCB-10	33146-45-1	ng/g						
E1668A	PCB-11	2050-67-1	ng/g						
E1668A	PCB-12	2974-92-7	ng/g						
E1668A	PCB-13	2974-90-5	ng/g						
E1668A	PCB-14	34883-41-5	ng/g						
E1668A	PCB-15	2050-68-2	ng/g						
E1668A	PCB-16	38444-78-9	ng/g						
E1668A	PCB-17	37680-66-3	ng/g						
E1668A	PCB-18	37680-65-2	ng/g						
E1668A	PCB-19	38444-73-4	ng/g						
E1668A	PCB-20	38444-84-7	ng/g						
E1668A	PCB-21	55702-46-0	ng/g						
E1668A	PCB-22	38444-85-8	ng/g						
E1668A	PCB-23	55720-44-0	ng/g						
E1668A	PCB-24	55702-45-9	ng/g						
E1668A	PCB-25	55712-37-3	ng/g						
E1668A	PCB-26	38444-81-4	ng/g						
E1668A	PCB-27	38444-76-7	ng/g						
E1668A	PCB-28	7012-37-5	ng/g						
E1668A	PCB-29	15862-07-4	ng/g						
E1668A	PCB-30	35693-92-6	ng/g						
E1668A	PCB-31	16606-02-3	ng/g						
E1668A	PCB-32	38444-77-8	ng/g						
E1668A	PCB-33	38444-86-9	ng/g						

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	h3-sc1b-40to50-82919	h3-sc1b-50to60-82919	h3-sc1b-60to70-82919	h3-sc1b-70to80-82919	h3-sc1b-80to90-82919	h3-sc1b-90to100-82919
	Date Time			8/29/2019 8:30:00	8/29/2019 8:35:00	8/29/2019 9:00:00	8/29/2019 9:05:00	8/29/2019 9:30:00	8/29/2019 9:35:00
	X			7634399	7634399	7634399	7634399	7634399	7634399
	Y			700882	700882	700882	700882	700882	700882
	Top (cm)			122	152	183	213	244	274
	Bottom (cm)			152	183	213	244	274	305
E1668A	PCB-34	37680-68-5	ng/g						
E1668A	PCB-35	37680-69-6	ng/g						
E1668A	PCB-36	38444-87-0	ng/g						
E1668A	PCB-37	38444-90-5	ng/g						
E1668A	PCB-38	53555-66-1	ng/g						
E1668A	PCB-39	38444-88-1	ng/g						
E1668A	PCB-40	38444-93-8	ng/g						
E1668A	PCB-41	52663-59-9	ng/g						
E1668A	PCB-42	36559-22-5	ng/g						
E1668A	PCB-43	70362-46-8	ng/g						
E1668A	PCB-44	41464-39-5	ng/g						
E1668A	PCB-45	41464-39-5	ng/g						
E1668A	PCB-46	41464-47-5	ng/g						
E1668A	PCB-47	2437-79-8	ng/g						
E1668A	PCB-48	70362-47-9	ng/g						
E1668A	PCB-49	41464-40-8	ng/g						
E1668A	PCB-50	62796-65-0	ng/g						
E1668A	PCB-51	68194-04-7	ng/g						
E1668A	PCB-52	35693-99-3	ng/g						
E1668A	PCB-53	41464-41-9	ng/g						
E1668A	PCB-54	15968-05-5	ng/g						
E1668A	PCB-55	74338-24-2	ng/g						
E1668A	PCB-56	41464-43-1	ng/g						
E1668A	PCB-57	70424-67-8	ng/g						
E1668A	PCB-58	41464-49-7	ng/g						
E1668A	PCB-59	74472-33-6	ng/g						
E1668A	PCB-60	33025-41-1	ng/g						
E1668A	PCB-61	33284-53-6	ng/g						
E1668A	PCB-62	54230-22-7	ng/g						
E1668A	PCB-63	74472-34-7	ng/g						
E1668A	PCB-64	52663-58-8	ng/g						
E1668A	PCB-65	33284-54-7	ng/g						
E1668A	PCB-66	32598-10-0	ng/g						
E1668A	PCB-67	73575-53-8	ng/g						
E1668A	PCB-68	73575-52-7	ng/g						
E1668A	PCB-69	60233-24-1	ng/g						

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	h3-sc1b-40to50-82919	h3-sc1b-50to60-82919	h3-sc1b-60to70-82919	h3-sc1b-70to80-82919	h3-sc1b-80to90-82919	h3-sc1b-90to100-82919
	Date Time			8/29/2019 8:30:00	8/29/2019 8:35:00	8/29/2019 9:00:00	8/29/2019 9:05:00	8/29/2019 9:30:00	8/29/2019 9:35:00
	X			7634399	7634399	7634399	7634399	7634399	7634399
	Y			700882	700882	700882	700882	700882	700882
	Top (cm)			122	152	183	213	244	274
	Bottom (cm)			152	183	213	244	274	305
E1668A	PCB-70	32598-11-1	ng/g						
E1668A	PCB-71	41464-46-4	ng/g						
E1668A	PCB-72	41464-42-0	ng/g						
E1668A	PCB-73	74338-23-1	ng/g						
E1668A	PCB-74	32690-93-0	ng/g						
E1668A	PCB-75	32598-12-2	ng/g						
E1668A	PCB-76	70362-48-0	ng/g						
E1668A	PCB-77	32598-13-3	ng/g						
E1668A	PCB-78	70362-49-1	ng/g						
E1668A	PCB-79	41464-48-6	ng/g						
E1668A	PCB-80	33284-52-5	ng/g						
E1668A	PCB-81	70362-50-4	ng/g						
E1668A	PCB-82	52663-62-4	ng/g						
E1668A	PCB-83	60145-20-2	ng/g						
E1668A	PCB-84	52663-60-2	ng/g						
E1668A	PCB-85	65510-45-4	ng/g						
E1668A	PCB-86	55312-69-1	ng/g						
E1668A	PCB-87	38380-02-8	ng/g						
E1668A	PCB-88	55215-17-3	ng/g						
E1668A	PCB-89	73575-57-2	ng/g						
E1668A	PCB-90	68194-07-0	ng/g						
E1668A	PCB-91	68194-05-8	ng/g						
E1668A	PCB-92	52663-61-3	ng/g						
E1668A	PCB-93	73575-56-1	ng/g						
E1668A	PCB-94	73575-55-0	ng/g						
E1668A	PCB-95	38379-99-6	ng/g						
E1668A	PCB-96	73575-54-9	ng/g						
E1668A	PCB-97	41464-51-1	ng/g						
E1668A	PCB-98	60233-25-2	ng/g						
E1668A	PCB-99	38380-01-7	ng/g						
E1668A	PCB-100	39485-83-1	ng/g						
E1668A	PCB-101	37680-73-2	ng/g						
E1668A	PCB-102	68194-06-9	ng/g						
E1668A	PCB-103	60145-21-3	ng/g						
E1668A	PCB-104	56558-16-8	ng/g						
E1668A	PCB-105	32598-14-4	ng/g						

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	h3-sc1b-40to50-82919	h3-sc1b-50to60-82919	h3-sc1b-60to70-82919	h3-sc1b-70to80-82919	h3-sc1b-80to90-82919	h3-sc1b-90to100-82919
	Date Time			8/29/2019 8:30:00	8/29/2019 8:35:00	8/29/2019 9:00:00	8/29/2019 9:05:00	8/29/2019 9:30:00	8/29/2019 9:35:00
	X			7634399	7634399	7634399	7634399	7634399	7634399
	Y			700882	700882	700882	700882	700882	700882
	Top (cm)			122	152	183	213	244	274
	Bottom (cm)			152	183	213	244	274	305
E1668A	PCB-106	70424-69-0	ng/g						
E1668A	PCB-107	70424-68-9	ng/g						
E1668A	PCB-108	70362-41-3	ng/g						
E1668A	PCB-109	74472-35-8	ng/g						
E1668A	PCB-110	38380-03-9	ng/g						
E1668A	PCB-111	39635-32-0	ng/g						
E1668A	PCB-112	74472-36-9	ng/g						
E1668A	PCB-113	68194-10-5	ng/g						
E1668A	PCB-114	74472-37-0	ng/g						
E1668A	PCB-115	74472-38-1	ng/g						
E1668A	PCB-116	18259-05-7	ng/g						
E1668A	PCB-117	68194-11-6	ng/g						
E1668A	PCB-118	31508-00-6	ng/g						
E1668A	PCB-119	56558-17-9	ng/g						
E1668A	PCB-120	68194-12-7	ng/g						
E1668A	PCB-121	56558-18-0	ng/g						
E1668A	PCB-122	76842-07-4	ng/g						
E1668A	PCB-123	65510-44-3	ng/g						
E1668A	PCB-124	70424-70-3	ng/g						
E1668A	PCB-125	74472-39-2	ng/g						
E1668A	PCB-126	57465-28-8	ng/g						
E1668A	PCB-127	39635-33-1	ng/g						
E1668A	PCB-128	38380-07-3	ng/g						
E1668A	PCB-129	55215-18-4	ng/g						
E1668A	PCB-130	52663-66-8	ng/g						
E1668A	PCB-131	61798-70-7	ng/g						
E1668A	PCB-132	38380-05-1	ng/g						
E1668A	PCB-133	35694-04-3	ng/g						
E1668A	PCB-134	52704-70-8	ng/g						
E1668A	PCB-135	52744-13-5	ng/g						
E1668A	PCB-136	38411-22-2	ng/g						
E1668A	PCB-137	35694-06-5	ng/g						
E1668A	PCB-138	35065-28-2	ng/g						
E1668A	PCB-139	56030-56-9	ng/g						
E1668A	PCB-140	59291-64-4	ng/g						
E1668A	PCB-141	52712-04-6	ng/g						

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	h3-sc1b-40to50-82919	h3-sc1b-50to60-82919	h3-sc1b-60to70-82919	h3-sc1b-70to80-82919	h3-sc1b-80to90-82919	h3-sc1b-90to100-82919
	Date Time			8/29/2019 8:30:00	8/29/2019 8:35:00	8/29/2019 9:00:00	8/29/2019 9:05:00	8/29/2019 9:30:00	8/29/2019 9:35:00
	X			7634399	7634399	7634399	7634399	7634399	7634399
	Y			700882	700882	700882	700882	700882	700882
	Top (cm)			122	152	183	213	244	274
	Bottom (cm)			152	183	213	244	274	305
E1668A	PCB-142	41411-61-4	ng/g						
E1668A	PCB-143	68194-15-0	ng/g						
E1668A	PCB-144	68194-14-9	ng/g						
E1668A	PCB-145	74472-40-5	ng/g						
E1668A	PCB-146	51908-16-8	ng/g						
E1668A	PCB-147	68194-13-8	ng/g						
E1668A	PCB-148	74472-41-6	ng/g						
E1668A	PCB-149	38380-04-0	ng/g						
E1668A	PCB-150	68194-08-1	ng/g						
E1668A	PCB-151	52663-63-5	ng/g						
E1668A	PCB-152	68194-09-2	ng/g						
E1668A	PCB-153	35065-27-1	ng/g						
E1668A	PCB-154	60145-22-4	ng/g						
E1668A	PCB-155	33979-03-2	ng/g						
E1668A	PCB-156	38380-08-4	ng/g						
E1668A	PCB-157	69782-90-7	ng/g						
E1668A	PCB-158	74472-42-7	ng/g						
E1668A	PCB-159	39635-35-3	ng/g						
E1668A	PCB-160	41411-62-5	ng/g						
E1668A	PCB-161	74472-43-8	ng/g						
E1668A	PCB-162	39635-34-2	ng/g						
E1668A	PCB-163	74472-44-9	ng/g						
E1668A	PCB-164	74472-45-0	ng/g						
E1668A	PCB-165	74472-46-1	ng/g						
E1668A	PCB-166	41411-63-6	ng/g						
E1668A	PCB-167	52663-72-6	ng/g						
E1668A	PCB-168	59291-65-5	ng/g						
E1668A	PCB-169	32774-16-6	ng/g						
E1668A	PCB-170	35065-30-6	ng/g						
E1668A	PCB-171	52663-71-5	ng/g						
E1668A	PCB-172	52663-74-8	ng/g						
E1668A	PCB-173	68194-16-1	ng/g						
E1668A	PCB-174	38411-25-5	ng/g						
E1668A	PCB-175	40186-70-7	ng/g						
E1668A	PCB-176	52663-65-7	ng/g						
E1668A	PCB-177	52663-70-4	ng/g						

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	h3-sc1b-40to50-82919	h3-sc1b-50to60-82919	h3-sc1b-60to70-82919	h3-sc1b-70to80-82919	h3-sc1b-80to90-82919	h3-sc1b-90to100-82919
	Date Time			8/29/2019 8:30:00	8/29/2019 8:35:00	8/29/2019 9:00:00	8/29/2019 9:05:00	8/29/2019 9:30:00	8/29/2019 9:35:00
	X			7634399	7634399	7634399	7634399	7634399	7634399
	Y			700882	700882	700882	700882	700882	700882
	Top (cm)			122	152	183	213	244	274
	Bottom (cm)			152	183	213	244	274	305
E1668A	PCB-178	52663-67-9	ng/g						
E1668A	PCB-179	52663-64-6	ng/g						
E1668A	PCB-180	35065-29-3	ng/g						
E1668A	PCB-181	74472-47-2	ng/g						
E1668A	PCB-182	60145-23-5	ng/g						
E1668A	PCB-183	52663-69-1	ng/g						
E1668A	PCB-184	74472-48-3	ng/g						
E1668A	PCB-185	52712-05-7	ng/g						
E1668A	PCB-186	74472-49-4	ng/g						
E1668A	PCB-187	52663-68-0	ng/g						
E1668A	PCB-188	74487-85-7	ng/g						
E1668A	PCB-189	39635-31-9	ng/g						
E1668A	PCB-190	41411-64-7	ng/g						
E1668A	PCB-191	74472-50-7	ng/g						
E1668A	PCB-192	74472-51-8	ng/g						
E1668A	PCB-193	69782-91-8	ng/g						
E1668A	PCB-194	35694-08-7	ng/g						
E1668A	PCB-195	52663-78-2	ng/g						
E1668A	PCB-196	42740-50-1	ng/g						
E1668A	PCB-197	33091-17-7	ng/g						
E1668A	PCB-198	68194-17-2	ng/g						
E1668A	PCB-199	52663-75-9	ng/g						
E1668A	PCB-200	52663-73-7	ng/g						
E1668A	PCB-201	40186-71-8	ng/g						
E1668A	PCB-202	2136-99-4	ng/g						
E1668A	PCB-203	52663-76-0	ng/g						
E1668A	PCB-204	74472-52-9	ng/g						
E1668A	PCB-205	74472-53-0	ng/g						
E1668A	PCB-206	40186-72-9	ng/g						
E1668A	PCB-207	52663-79-3	ng/g						
E1668A	PCB-208	52663-77-1	ng/g						
E1668A	PCB-209	2051-24-3	ng/g						
E1668A	Total Dichlorobiphenyls		ng/g						
E1668A	Total Heptachlorobiphenyls		ng/g						
E1668A	Total Hexachlorobiphenyls		ng/g						
E1668A	Total Monochlorobiphenyls		ng/g						

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	h3-sc1b-40to50-82919	h3-sc1b-50to60-82919	h3-sc1b-60to70-82919	h3-sc1b-70to80-82919	h3-sc1b-80to90-82919	h3-sc1b-90to100-82919
	Date Time			8/29/2019 8:30:00	8/29/2019 8:35:00	8/29/2019 9:00:00	8/29/2019 9:05:00	8/29/2019 9:30:00	8/29/2019 9:35:00
	X			7634399	7634399	7634399	7634399	7634399	7634399
	Y			700882	700882	700882	700882	700882	700882
	Top (cm)			122	152	183	213	244	274
	Bottom (cm)			152	183	213	244	274	305
E1668A	Total Nonachlorobiphenyls		ng/g						
E1668A	Total Octachlorobiphenyls		ng/g						
E1668A	Total Pentachlorobiphenyls		ng/g						
E1668A	Total Tetrachlorobiphenyls		ng/g						
E1668A	Total Trichlorobiphenyls		ng/g						
E1668A	Polychlorinated biphenyls, Total	1336-36-3	ng/g						
PAHs									
SW8270D	2-Methylnaphthalene	91-57-6	ug/kg	7.6 J	8.3 J	11 J	4.9 J	2.5 J	2.3 J
SW8270D	Acenaphthene	83-32-9	ug/kg	7.2 J	4.9 J	14 J	3 J	2.9 J	1.6 J
SW8270D	Acenaphthylene	208-96-8	ug/kg	9.8 J	12 J	18 J	5.3 J	7 J	4.9 J
SW8270D	Anthracene	120-12-7	ug/kg	13	13	27	5.6	5.5	5
SW8270D	Benzo(a)anthracene	56-55-3	ug/kg	23	42	51	48	16	13
SW8270D	Benzo(a)pyrene	50-32-8	ug/kg	35	73	92	72	28	17
SW8270D	Benzo(b)fluoranthene	205-99-2	ug/kg	37	70	86	66	27	17
SW8270D	Benzo(g,h,i)perylene	191-24-2	ug/kg	37	69	100	46	28	16
SW8270D	Benzo(k)fluoranthene	207-08-9	ug/kg	11	22	28	24	8.7	6.2
SW8270D	Chrysene	218-01-9	ug/kg	35	55	69	58	21	15
SW8270D	Dibenzo(a,h)anthracene	53-70-3	ug/kg	4.2	7.6	8.5	9.3	3.2	2.3
SW8270D	Dibenzofuran	132-64-9	ug/kg	3.1 J	2.5 J	4.9 J	1.5 J	1.5 J	1 J
SW8270D	Fluoranthene	206-44-0	ug/kg	65	100	180	60	47	30
SW8270D	Fluorene	86-73-7	ug/kg	11 J	6 J	11 J	3.3 J	2.9 J	1.8 J
SW8270D	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	33	65	85	47	25	14
SW8270D	Naphthalene	91-20-3	ug/kg	16 J	13 J	32 J	10 J	9.6 J	8.4 J
SW8270D	Phenanthrene	85-01-8	ug/kg	64 J	53 J	120 J	27 J	24 J	16 J
SW8270D	Pyrene	129-00-0	ug/kg	95	130	230	88	65	35
Calculated Totals									
ALS SOP	CALC_TOTAL_DDD_ND_PDI		ug/kg	1.4 AT	1.2 AT	0.63 UT	0.63 UT	0.63 UT	0.63 UT
ALS SOP	CALC_TOTAL_DDE_ND_PDI		ug/kg	0.79 UT	0.79 UT	0.79 UT	0.79 UT	0.79 UT	0.79 UT
ALS SOP	CALC_TOTAL_DDT_ND_PDI		ug/kg	0.94 UT	0.94 UT	0.94 UT	0.94 UT	0.94 UT	0.94 UT
ALS SOP	CALC_TOTAL_DDx_ND_PDI		ug/kg	1.6 T	1.3 T	0.94 UT	0.94 UT	0.94 UT	0.94 UT
E1668A	CALC_TOTAL_PCB_ND_PDI		ug/kg						
SW8082A	CALC_TOTAL_AROCLORS_ND_PDI		ug/kg	46 AT	76 AT	16 T	2.7 JT	1.5 UT	1.5 UT
SW8270D	CALC_TOTAL_CPAH_ND_PDI		ug/kg	49 T	99 T	120 T	98 T	38 T	24 T
SW8270D	CALC_TOTAL_HPAH_ND_PDI		ug/kg	330 T	540 T	820 T	430 T	230 T	140 T
SW8270D	CALC_TOTAL_LPAH_ND_PDI		ug/kg	130 JT	110 JT	230 JT	59 JT	54 JT	40 JT
SW8270D	CALC_TOTAL_PAH_ND_PDI		ug/kg	460 JT	650 JT	1000 JT	490 JT	290 JT	180 JT

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	h3-sc1b-40to50-82919	h3-sc1b-50to60-82919	h3-sc1b-60to70-82919	h3-sc1b-70to80-82919	h3-sc1b-80to90-82919	h3-sc1b-90to100-82919
	Date Time			8/29/2019 8:30:00	8/29/2019 8:35:00	8/29/2019 9:00:00	8/29/2019 9:05:00	8/29/2019 9:30:00	8/29/2019 9:35:00
	X			7634399	7634399	7634399	7634399	7634399	7634399
	Y			700882	700882	700882	700882	700882	700882
	Top (cm)			122	152	183	213	244	274
	Bottom (cm)			152	183	213	244	274	305

DDx = dichlorodiphenyltrichloroethane and its derivatives

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyls

PeCDD = Pentachlorodibenzo-p-dioxin

PeCDF = Pentachlorodibenzofuran

TCDD = Tetrachlorodibenzo-p-dioxin

ug/kg = micrograms per kilogram

ng/g = nanograms per gram

% = percent

g/cm3 = grams per cubic centimeter

J = Reported result is an estimate

T = Total concentration from component analytes.

U = Analyte was not detected in sample

R = Rejected

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	J3-SC-00to10-102218	j3-sc1b-10to20-82719	j3-sc1b-20to30-82719	j3-sc1b-30to40-82719	j3-sc1b-30to40-82719r1
	Date Time			10/22/2018 12:40:00	8/27/2019 9:55:00	8/27/2019 10:00:00	8/27/2019 10:05:00	8/27/2019 10:05:00
	X			7634552	7634552	7634552	7634552	7634552
	Y			700761	700761	700761	700761	700761
	Top (cm)			0	30	61	91	91
	Bottom (cm)			30	61	91	122	122
Conventionals								
E160.3	Total Solids		%		82	67	60	
PSEP	Total Solids		%					
SM2540G	Total Solids		%		80	67	59	
SW9060A	Carbon, Total Organic	7440-044-0	mg/kg		900	14600	29900 J	
Organochlorine Pesticides								
ALS SOP	o,p'-DDD	53-19-0	ug/kg		0.63 U	0.63 U	0.63 U	
ALS SOP	o,p'-DDE	3424-82-6	ug/kg		0.79 U	1.2	1.9	
ALS SOP	o,p'-DDT	789-02-6	ug/kg		0.94 U	0.94 U	0.94 U	
ALS SOP	4,4'-DDD	72-54-8	ug/kg		0.38 J	4.3	5.6	
ALS SOP	4,4'-DDE	72-55-9	ug/kg		0.7 U	9.6	16	
ALS SOP	4,4'-DDT	50-29-3	ug/kg		0.47 U	0.47 U	0.47 U	
Dioxins/Furans								
CWA1613B	1,2,3,4,6,7,8,9-OCDD	3268-87-9	ug/kg		0.3	0.69	3.7	
CWA1613B	1,2,3,4,6,7,8,9-OCDF	39001-02-0	ug/kg		0.042	0.069	0.42	
CWA1613B	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg		0.03	0.057	0.32	
CWA1613B	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg		0.012	0.022	0.13	
CWA1613B	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg		0.00047 J	0.0012 J	0.0085	
CWA1613B	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg		0.00019 U	0.0045 U	0.0035 J	
CWA1613B	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg		0.00067 J	0.0023 J	0.011	
CWA1613B	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg		0.00093 U	0.0022 J	0.011	
CWA1613B	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg		5e-04 J	0.0015 J	0.0062	
CWA1613B	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg		0.00037 J	0.0011 J	0.0052	
CWA1613B	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg		0.0046 U	0.00053 U	0.0018 J	
CWA1613B	1,2,3,7,8-PeCDD	40321-76-4	ug/kg		0.0046 U	0.00039 J	0.0017 J	
CWA1613B	1,2,3,7,8-PeCDF	57117-41-6	ug/kg		0.00015 U	0.00039 U	0.0013 U	
CWA1613B	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg		4e-04 U	0.0013 J	0.0063	
CWA1613B	2,3,4,7,8-PeCDF	57117-31-4	ug/kg		4e-04 J	0.00086 J	0.0036 J	
CWA1613B	2,3,7,8-TCDD	1746-01-6	ug/kg		0.00092 U	0.00091 U	5e-04 J	
CWA1613B	2,3,7,8-TCDF	51207-31-9	ug/kg		0.00025 U	0.00091 U	0.00099 DNR	0.001
CWA1613B	Total HpCDD	37871-00-4	ug/kg		0.057	0.12	0.67	
CWA1613B	Total HpCDF	38998-75-3	ug/kg		0.043 J	0.078 J	0.46 J	
CWA1613B	Total HxCDD	34465-46-8	ug/kg		0.0074 J	0.017 J	0.094 J	
CWA1613B	Total HxCDF	55684-94-1	ug/kg		0.012 J	0.029 J	0.16 J	
CWA1613B	Total PeCDD	36088-22-9	ug/kg		0.00073 J	0.0031 J	0.018 J	
CWA1613B	Total PeCDF	30402-15-4	ug/kg		0.0065 J	0.014 J	0.072 J	

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	J3-SC-00to10-102218	j3-sc1b-10to20-82719	j3-sc1b-20to30-82719	j3-sc1b-30to40-82719	j3-sc1b-30to40-82719r1
	Date Time			10/22/2018 12:40:00	8/27/2019 9:55:00	8/27/2019 10:00:00	8/27/2019 10:05:00	8/27/2019 10:05:00
	X			7634552	7634552	7634552	7634552	7634552
	Y			700761	700761	700761	700761	700761
	Top (cm)			0	30	61	91	91
	Bottom (cm)			30	61	91	122	122
CWA1613B	Total TCDD	41903-57-5	ug/kg		0.00022 J	0.001 J	0.011 J	
CWA1613B	Total TCDF	30402-14-3	ug/kg		0.0019 J	0.0051 J	0.028 J	
Dioxins/Furans								
E1613	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg					
E1613	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg					
E1613	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg					
E1613	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg					
E1613	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg					
E1613	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg					
E1613	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg					
E1613	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg					
E1613	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg					
E1613	1,2,3,7,8-PeCDD	40321-76-4	ug/kg					
E1613	1,2,3,7,8-PeCDF	57117-41-6	ug/kg					
E1613	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg					
E1613	2,3,4,7,8-PeCDF	57117-31-4	ug/kg					
E1613	2,3,7,8-TCDD	1746-01-6	ug/kg					
E1613	2,3,7,8-TCDF	51207-31-9	ug/kg					
E1613	OCDD	3268-87-9	ug/kg					
E1613	OCDF	39001-02-0	ug/kg					
E1613	Total HpCDD	37871-00-4	ug/kg					
E1613	Total HpCDF	38998-75-3	ug/kg					
E1613	Total HxCDD	34465-46-8	ug/kg					
E1613	Total HxCDF	55684-94-1	ug/kg					
E1613	Total PeCDD	36088-22-9	ug/kg					
E1613	Total PeCDF	30402-15-4	ug/kg					
E1613	Total TCDD	41903-57-5	ug/kg					
E1613	Total TCDF	30402-14-3	ug/kg					
PCB Aroclors								
SW8082A	Aroclor 1016	12674-11-2	ug/kg	1.6 U	1.6 U	1.6 U	7.8 U	
SW8082A	Aroclor 1221	11104-28-2	ug/kg	1.6 U	1.6 U	1.6 U	7.8 U	
SW8082A	Aroclor 1232	11141-16-5	ug/kg	1.6 U	1.6 U	1.6 U	7.8 U	
SW8082A	Aroclor 1242	53469-21-9	ug/kg	1.6 U	1.6 U	1.6 U	7.8 U	
SW8082A	Aroclor 1248	12672-29-6	ug/kg	10	2.3 J	43	7.8 U	
SW8082A	Aroclor 1254	11097-69-1	ug/kg	28	4.6	130	340	
SW8082A	Aroclor 1260	11096-82-5	ug/kg	16	4.1	57	150 J	

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	J3-SC-00to10-102218	j3-sc1b-10to20-82719	j3-sc1b-20to30-82719	j3-sc1b-30to40-82719	j3-sc1b-30to40-82719r1
	Date Time			10/22/2018 12:40:00	8/27/2019 9:55:00	8/27/2019 10:00:00	8/27/2019 10:05:00	8/27/2019 10:05:00
	X			7634552	7634552	7634552	7634552	7634552
	Y			700761	700761	700761	700761	700761
	Top (cm)			0	30	61	91	91
	Bottom (cm)			30	61	91	122	122
SW8082A	Aroclor 1262	37324-23-5	ug/kg	0.6 U	0.6 U	0.6 U	2.9 U	
SW8082A	Aroclor 1268	11100-14-4	ug/kg	0.6 U	0.6 U	0.6 U	2.9 U	
PCB Congeners								
E1668A	PCB-1	2051-60-7	ng/g					
E1668A	PCB-2	2051-61-8	ng/g					
E1668A	PCB-3	2051-62-9	ng/g					
E1668A	PCB-4	13029-08-8	ng/g					
E1668A	PCB-5	16605-91-7	ng/g					
E1668A	PCB-6	25569-80-6	ng/g					
E1668A	PCB-7	33284-50-3	ng/g					
E1668A	PCB-8	34883-43-7	ng/g					
E1668A	PCB-9	34883-39-1	ng/g					
E1668A	PCB-10	33146-45-1	ng/g					
E1668A	PCB-11	2050-67-1	ng/g					
E1668A	PCB-12	2974-92-7	ng/g					
E1668A	PCB-13	2974-90-5	ng/g					
E1668A	PCB-14	34883-41-5	ng/g					
E1668A	PCB-15	2050-68-2	ng/g					
E1668A	PCB-16	38444-78-9	ng/g					
E1668A	PCB-17	37680-66-3	ng/g					
E1668A	PCB-18	37680-65-2	ng/g					
E1668A	PCB-19	38444-73-4	ng/g					
E1668A	PCB-20	38444-84-7	ng/g					
E1668A	PCB-21	55702-46-0	ng/g					
E1668A	PCB-22	38444-85-8	ng/g					
E1668A	PCB-23	55720-44-0	ng/g					
E1668A	PCB-24	55702-45-9	ng/g					
E1668A	PCB-25	55712-37-3	ng/g					
E1668A	PCB-26	38444-81-4	ng/g					
E1668A	PCB-27	38444-76-7	ng/g					
E1668A	PCB-28	7012-37-5	ng/g					
E1668A	PCB-29	15862-07-4	ng/g					
E1668A	PCB-30	35693-92-6	ng/g					
E1668A	PCB-31	16606-02-3	ng/g					
E1668A	PCB-32	38444-77-8	ng/g					
E1668A	PCB-33	38444-86-9	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	J3-SC-00to10-102218	j3-sc1b-10to20-82719	j3-sc1b-20to30-82719	j3-sc1b-30to40-82719	j3-sc1b-30to40-82719r1
	Date Time			10/22/2018 12:40:00	8/27/2019 9:55:00	8/27/2019 10:00:00	8/27/2019 10:05:00	8/27/2019 10:05:00
	X			7634552	7634552	7634552	7634552	7634552
	Y			700761	700761	700761	700761	700761
	Top (cm)			0	30	61	91	91
	Bottom (cm)			30	61	91	122	122
E1668A	PCB-34	37680-68-5	ng/g					
E1668A	PCB-35	37680-69-6	ng/g					
E1668A	PCB-36	38444-87-0	ng/g					
E1668A	PCB-37	38444-90-5	ng/g					
E1668A	PCB-38	53555-66-1	ng/g					
E1668A	PCB-39	38444-88-1	ng/g					
E1668A	PCB-40	38444-93-8	ng/g					
E1668A	PCB-41	52663-59-9	ng/g					
E1668A	PCB-42	36559-22-5	ng/g					
E1668A	PCB-43	70362-46-8	ng/g					
E1668A	PCB-44	41464-39-5	ng/g					
E1668A	PCB-45	41464-39-5	ng/g					
E1668A	PCB-46	41464-47-5	ng/g					
E1668A	PCB-47	2437-79-8	ng/g					
E1668A	PCB-48	70362-47-9	ng/g					
E1668A	PCB-49	41464-40-8	ng/g					
E1668A	PCB-50	62796-65-0	ng/g					
E1668A	PCB-51	68194-04-7	ng/g					
E1668A	PCB-52	35693-99-3	ng/g					
E1668A	PCB-53	41464-41-9	ng/g					
E1668A	PCB-54	15968-05-5	ng/g					
E1668A	PCB-55	74338-24-2	ng/g					
E1668A	PCB-56	41464-43-1	ng/g					
E1668A	PCB-57	70424-67-8	ng/g					
E1668A	PCB-58	41464-49-7	ng/g					
E1668A	PCB-59	74472-33-6	ng/g					
E1668A	PCB-60	33025-41-1	ng/g					
E1668A	PCB-61	33284-53-6	ng/g					
E1668A	PCB-62	54230-22-7	ng/g					
E1668A	PCB-63	74472-34-7	ng/g					
E1668A	PCB-64	52663-58-8	ng/g					
E1668A	PCB-65	33284-54-7	ng/g					
E1668A	PCB-66	32598-10-0	ng/g					
E1668A	PCB-67	73575-53-8	ng/g					
E1668A	PCB-68	73575-52-7	ng/g					
E1668A	PCB-69	60233-24-1	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	J3-SC-00to10-102218	j3-sc1b-10to20-82719	j3-sc1b-20to30-82719	j3-sc1b-30to40-82719	j3-sc1b-30to40-82719r1
	Date Time			10/22/2018 12:40:00	8/27/2019 9:55:00	8/27/2019 10:00:00	8/27/2019 10:05:00	8/27/2019 10:05:00
	X			7634552	7634552	7634552	7634552	7634552
	Y			700761	700761	700761	700761	700761
	Top (cm)			0	30	61	91	91
	Bottom (cm)			30	61	91	122	122
E1668A	PCB-70	32598-11-1	ng/g					
E1668A	PCB-71	41464-46-4	ng/g					
E1668A	PCB-72	41464-42-0	ng/g					
E1668A	PCB-73	74338-23-1	ng/g					
E1668A	PCB-74	32690-93-0	ng/g					
E1668A	PCB-75	32598-12-2	ng/g					
E1668A	PCB-76	70362-48-0	ng/g					
E1668A	PCB-77	32598-13-3	ng/g					
E1668A	PCB-78	70362-49-1	ng/g					
E1668A	PCB-79	41464-48-6	ng/g					
E1668A	PCB-80	33284-52-5	ng/g					
E1668A	PCB-81	70362-50-4	ng/g					
E1668A	PCB-82	52663-62-4	ng/g					
E1668A	PCB-83	60145-20-2	ng/g					
E1668A	PCB-84	52663-60-2	ng/g					
E1668A	PCB-85	65510-45-4	ng/g					
E1668A	PCB-86	55312-69-1	ng/g					
E1668A	PCB-87	38380-02-8	ng/g					
E1668A	PCB-88	55215-17-3	ng/g					
E1668A	PCB-89	73575-57-2	ng/g					
E1668A	PCB-90	68194-07-0	ng/g					
E1668A	PCB-91	68194-05-8	ng/g					
E1668A	PCB-92	52663-61-3	ng/g					
E1668A	PCB-93	73575-56-1	ng/g					
E1668A	PCB-94	73575-55-0	ng/g					
E1668A	PCB-95	38379-99-6	ng/g					
E1668A	PCB-96	73575-54-9	ng/g					
E1668A	PCB-97	41464-51-1	ng/g					
E1668A	PCB-98	60233-25-2	ng/g					
E1668A	PCB-99	38380-01-7	ng/g					
E1668A	PCB-100	39485-83-1	ng/g					
E1668A	PCB-101	37680-73-2	ng/g					
E1668A	PCB-102	68194-06-9	ng/g					
E1668A	PCB-103	60145-21-3	ng/g					
E1668A	PCB-104	56558-16-8	ng/g					
E1668A	PCB-105	32598-14-4	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	J3-SC-00to10-102218	j3-sc1b-10to20-82719	j3-sc1b-20to30-82719	j3-sc1b-30to40-82719	j3-sc1b-30to40-82719r1
	Date Time			10/22/2018 12:40:00	8/27/2019 9:55:00	8/27/2019 10:00:00	8/27/2019 10:05:00	8/27/2019 10:05:00
	X			7634552	7634552	7634552	7634552	7634552
	Y			700761	700761	700761	700761	700761
	Top (cm)			0	30	61	91	91
	Bottom (cm)			30	61	91	122	122
E1668A	PCB-106	70424-69-0	ng/g					
E1668A	PCB-107	70424-68-9	ng/g					
E1668A	PCB-108	70362-41-3	ng/g					
E1668A	PCB-109	74472-35-8	ng/g					
E1668A	PCB-110	38380-03-9	ng/g					
E1668A	PCB-111	39635-32-0	ng/g					
E1668A	PCB-112	74472-36-9	ng/g					
E1668A	PCB-113	68194-10-5	ng/g					
E1668A	PCB-114	74472-37-0	ng/g					
E1668A	PCB-115	74472-38-1	ng/g					
E1668A	PCB-116	18259-05-7	ng/g					
E1668A	PCB-117	68194-11-6	ng/g					
E1668A	PCB-118	31508-00-6	ng/g					
E1668A	PCB-119	56558-17-9	ng/g					
E1668A	PCB-120	68194-12-7	ng/g					
E1668A	PCB-121	56558-18-0	ng/g					
E1668A	PCB-122	76842-07-4	ng/g					
E1668A	PCB-123	65510-44-3	ng/g					
E1668A	PCB-124	70424-70-3	ng/g					
E1668A	PCB-125	74472-39-2	ng/g					
E1668A	PCB-126	57465-28-8	ng/g					
E1668A	PCB-127	39635-33-1	ng/g					
E1668A	PCB-128	38380-07-3	ng/g					
E1668A	PCB-129	55215-18-4	ng/g					
E1668A	PCB-130	52663-66-8	ng/g					
E1668A	PCB-131	61798-70-7	ng/g					
E1668A	PCB-132	38380-05-1	ng/g					
E1668A	PCB-133	35694-04-3	ng/g					
E1668A	PCB-134	52704-70-8	ng/g					
E1668A	PCB-135	52744-13-5	ng/g					
E1668A	PCB-136	38411-22-2	ng/g					
E1668A	PCB-137	35694-06-5	ng/g					
E1668A	PCB-138	35065-28-2	ng/g					
E1668A	PCB-139	56030-56-9	ng/g					
E1668A	PCB-140	59291-64-4	ng/g					
E1668A	PCB-141	52712-04-6	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	J3-SC-00to10-102218	j3-sc1b-10to20-82719	j3-sc1b-20to30-82719	j3-sc1b-30to40-82719	j3-sc1b-30to40-82719r1
	Date Time			10/22/2018 12:40:00	8/27/2019 9:55:00	8/27/2019 10:00:00	8/27/2019 10:05:00	8/27/2019 10:05:00
	X			7634552	7634552	7634552	7634552	7634552
	Y			700761	700761	700761	700761	700761
	Top (cm)			0	30	61	91	91
	Bottom (cm)			30	61	91	122	122
E1668A	PCB-142	41411-61-4	ng/g					
E1668A	PCB-143	68194-15-0	ng/g					
E1668A	PCB-144	68194-14-9	ng/g					
E1668A	PCB-145	74472-40-5	ng/g					
E1668A	PCB-146	51908-16-8	ng/g					
E1668A	PCB-147	68194-13-8	ng/g					
E1668A	PCB-148	74472-41-6	ng/g					
E1668A	PCB-149	38380-04-0	ng/g					
E1668A	PCB-150	68194-08-1	ng/g					
E1668A	PCB-151	52663-63-5	ng/g					
E1668A	PCB-152	68194-09-2	ng/g					
E1668A	PCB-153	35065-27-1	ng/g					
E1668A	PCB-154	60145-22-4	ng/g					
E1668A	PCB-155	33979-03-2	ng/g					
E1668A	PCB-156	38380-08-4	ng/g					
E1668A	PCB-157	69782-90-7	ng/g					
E1668A	PCB-158	74472-42-7	ng/g					
E1668A	PCB-159	39635-35-3	ng/g					
E1668A	PCB-160	41411-62-5	ng/g					
E1668A	PCB-161	74472-43-8	ng/g					
E1668A	PCB-162	39635-34-2	ng/g					
E1668A	PCB-163	74472-44-9	ng/g					
E1668A	PCB-164	74472-45-0	ng/g					
E1668A	PCB-165	74472-46-1	ng/g					
E1668A	PCB-166	41411-63-6	ng/g					
E1668A	PCB-167	52663-72-6	ng/g					
E1668A	PCB-168	59291-65-5	ng/g					
E1668A	PCB-169	32774-16-6	ng/g					
E1668A	PCB-170	35065-30-6	ng/g					
E1668A	PCB-171	52663-71-5	ng/g					
E1668A	PCB-172	52663-74-8	ng/g					
E1668A	PCB-173	68194-16-1	ng/g					
E1668A	PCB-174	38411-25-5	ng/g					
E1668A	PCB-175	40186-70-7	ng/g					
E1668A	PCB-176	52663-65-7	ng/g					
E1668A	PCB-177	52663-70-4	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	J3-SC-00to10-102218	j3-sc1b-10to20-82719	j3-sc1b-20to30-82719	j3-sc1b-30to40-82719	j3-sc1b-30to40-82719r1
	Date Time			10/22/2018 12:40:00	8/27/2019 9:55:00	8/27/2019 10:00:00	8/27/2019 10:05:00	8/27/2019 10:05:00
	X			7634552	7634552	7634552	7634552	7634552
	Y			700761	700761	700761	700761	700761
	Top (cm)			0	30	61	91	91
	Bottom (cm)			30	61	91	122	122
E1668A	PCB-178	52663-67-9	ng/g					
E1668A	PCB-179	52663-64-6	ng/g					
E1668A	PCB-180	35065-29-3	ng/g					
E1668A	PCB-181	74472-47-2	ng/g					
E1668A	PCB-182	60145-23-5	ng/g					
E1668A	PCB-183	52663-69-1	ng/g					
E1668A	PCB-184	74472-48-3	ng/g					
E1668A	PCB-185	52712-05-7	ng/g					
E1668A	PCB-186	74472-49-4	ng/g					
E1668A	PCB-187	52663-68-0	ng/g					
E1668A	PCB-188	74487-85-7	ng/g					
E1668A	PCB-189	39635-31-9	ng/g					
E1668A	PCB-190	41411-64-7	ng/g					
E1668A	PCB-191	74472-50-7	ng/g					
E1668A	PCB-192	74472-51-8	ng/g					
E1668A	PCB-193	69782-91-8	ng/g					
E1668A	PCB-194	35694-08-7	ng/g					
E1668A	PCB-195	52663-78-2	ng/g					
E1668A	PCB-196	42740-50-1	ng/g					
E1668A	PCB-197	33091-17-7	ng/g					
E1668A	PCB-198	68194-17-2	ng/g					
E1668A	PCB-199	52663-75-9	ng/g					
E1668A	PCB-200	52663-73-7	ng/g					
E1668A	PCB-201	40186-71-8	ng/g					
E1668A	PCB-202	2136-99-4	ng/g					
E1668A	PCB-203	52663-76-0	ng/g					
E1668A	PCB-204	74472-52-9	ng/g					
E1668A	PCB-205	74472-53-0	ng/g					
E1668A	PCB-206	40186-72-9	ng/g					
E1668A	PCB-207	52663-79-3	ng/g					
E1668A	PCB-208	52663-77-1	ng/g					
E1668A	PCB-209	2051-24-3	ng/g					
E1668A	Total Dichlorobiphenyls		ng/g					
E1668A	Total Heptachlorobiphenyls		ng/g					
E1668A	Total Hexachlorobiphenyls		ng/g					
E1668A	Total Monochlorobiphenyls		ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units		J3-SC-00to10-102218	j3-sc1b-10to20-82719	j3-sc1b-20to30-82719	j3-sc1b-30to40-82719	j3-sc1b-30to40-82719r1
	Date Time				10/22/2018 12:40:00	8/27/2019 9:55:00	8/27/2019 10:00:00	8/27/2019 10:05:00	8/27/2019 10:05:00
	X				7634552	7634552	7634552	7634552	7634552
	Y				700761	700761	700761	700761	700761
	Top (cm)				0	30	61	91	91
	Bottom (cm)				30	61	91	122	122
E1668A	Total Nonachlorobiphenyls		ng/g						
E1668A	Total Octachlorobiphenyls		ng/g						
E1668A	Total Pentachlorobiphenyls		ng/g						
E1668A	Total Tetrachlorobiphenyls		ng/g						
E1668A	Total Trichlorobiphenyls		ng/g						
E1668A	Polychlorinated biphenyls, Total	1336-36-3	ng/g						
PAHs									
SW8270D	2-Methylnaphthalene	91-57-6	ug/kg			0.47 J	9.8 J	20 J	
SW8270D	Acenaphthene	83-32-9	ug/kg			0.58 J	18 J	44 J	
SW8270D	Acenaphthylene	208-96-8	ug/kg			0.53 J	7.7	14	
SW8270D	Anthracene	120-12-7	ug/kg			0.98 J	22	45	
SW8270D	Benzo(a)anthracene	56-55-3	ug/kg			3.6	54	100	
SW8270D	Benzo(a)pyrene	50-32-8	ug/kg			4.4	62	110	
SW8270D	Benzo(b)fluoranthene	205-99-2	ug/kg			5.7	78	140	
SW8270D	Benzo(g,h,i)perylene	191-24-2	ug/kg			4.5 J	55	99	
SW8270D	Benzo(k)fluoranthene	207-08-9	ug/kg			2.2	26	48	
SW8270D	Chrysene	218-01-9	ug/kg			5.3	75	140	
SW8270D	Dibenzo(a,h)anthracene	53-70-3	ug/kg			0.76	10	18	
SW8270D	Dibenzofuran	132-64-9	ug/kg			0.35 J	5.7	10	
SW8270D	Fluoranthene	206-44-0	ug/kg			7.8 J	130	290	
SW8270D	Fluorene	86-73-7	ug/kg			0.59 J	19	40	
SW8270D	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg			4	52	94	
SW8270D	Naphthalene	91-20-3	ug/kg			0.95 J	19 J	32 J	
SW8270D	Phenanthrene	85-01-8	ug/kg			6.2 J	140	430	
SW8270D	Pyrene	129-00-0	ug/kg			12	170	360	
Calculated Totals									
ALS SOP	CALC_TOTAL_DDD_ND_PDI		ug/kg			0.7 JT	4.6 AT	5.9 AT	
ALS SOP	CALC_TOTAL_DDE_ND_PDI		ug/kg			0.79 UT	11 R	18 R	
ALS SOP	CALC_TOTAL_DDT_ND_PDI		ug/kg			0.94 UT	0.94 UT	0.94 UT	
ALS SOP	CALC_TOTAL_DDx_ND_PDI		ug/kg			0.85 JT	16 T	24 T	
E1668A	CALC_TOTAL_PCB_ND_PDI		ug/kg						
SW8082A	CALC_TOTAL_AROCLORS_ND_PDI		ug/kg	56 AT		12 JT	230 AT	500 JT	
SW8270D	CALC_TOTAL_CPAH_ND_PDI		ug/kg			6.5 T	91 T	160 T	
SW8270D	CALC_TOTAL_HPAH_ND_PDI		ug/kg			42 JT	610 T	1200 T	
SW8270D	CALC_TOTAL_LPAH_ND_PDI		ug/kg			10 JT	240 JT	620 JT	
SW8270D	CALC_TOTAL_PAH_ND_PDI		ug/kg			53 JT	840 JT	1800 JT	

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	J3-SC-00to10-102218	j3-sc1b-10to20-82719	j3-sc1b-20to30-82719	j3-sc1b-30to40-82719	j3-sc1b-30to40-82719r1
	Date Time			10/22/2018 12:40:00	8/27/2019 9:55:00	8/27/2019 10:00:00	8/27/2019 10:05:00	8/27/2019 10:05:00
	X			7634552	7634552	7634552	7634552	7634552
	Y			700761	700761	700761	700761	700761
	Top (cm)			0	30	61	91	91
	Bottom (cm)			30	61	91	122	122

DDx = dichlorodiphenyltrichloroethane and its derivatives

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyls

PeCDD = Pentachlorodibenzo-p-dioxin

PeCDF = Pentachlorodibenzofuran

TCDD = Tetrachlorodibenzo-p-dioxin

ug/kg = micrograms per kilogram

ng/g = nanograms per gram

% = percent

g/cm3 = grams per cubic centimeter

J = Reported result is an estimate

T = Total concentration from component analytes.

U = Analyte was not detected in sample

R = Rejected

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j3-sc1b-40to50-82719	j3-sc1b-50to60-82719	j3-sc1b-60to70-82719	j3-sc1b-70to80-82719	j3-sc1b-80to90-82719	j3-sc1b-90to100-82719
	Date Time			8/27/2019 11:20:00	8/27/2019 11:25:00	8/27/2019 11:30:00	8/27/2019 11:35:00	8/27/2019 12:20:00	8/27/2019 12:25:00
	X			7634552	7634552	7634552	7634552	7634552	7634552
	Y			700761	700761	700761	700761	700761	700761
	Top (cm)			122	152	183	213	244	274
	Bottom (cm)			152	183	213	244	274	305
Conventionals									
E160.3	Total Solids		%	67	74	84	82	80	78
PSEP	Total Solids		%						
SM2540G	Total Solids		%	67	76	81	80	75	71
SW9060A	Carbon, Total Organic	7440-044-0	mg/kg	10600 J	4900	600	600	4000	4000
Organochlorine Pesticides									
ALS SOP	o,p'-DDD	53-19-0	ug/kg	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U
ALS SOP	o,p'-DDE	3424-82-6	ug/kg	1.3	0.79 U	0.79 U	0.79 U	0.79 U	0.79 U
ALS SOP	o,p'-DDT	789-02-6	ug/kg	0.94 U	0.94 U	0.94 U	0.94 U	0.94 U	0.94 U
ALS SOP	4,4'-DDD	72-54-8	ug/kg	3	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U
ALS SOP	4,4'-DDE	72-55-9	ug/kg	10	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U
ALS SOP	4,4'-DDT	50-29-3	ug/kg	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U
Dioxins/Furans									
CWA1613B	1,2,3,4,6,7,8,9-OCDD	3268-87-9	ug/kg	0.36	0.12	0.012	0.013	0.14	0.058
CWA1613B	1,2,3,4,6,7,8,9-OCDF	39001-02-0	ug/kg	0.03	0.015	0.0013 J	0.0012 J	0.018	0.0049 J
CWA1613B	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg	0.026	0.0095	0.00098 U	0.0012 J	0.0096	0.0039 J
CWA1613B	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg	0.027	0.046	0.0014 J	0.002 J	0.055	0.0061
CWA1613B	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg	7e-04 J	0.0045 U	0.0048 U	0.0047 U	0.00049 J	0.0047 U
CWA1613B	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg	0.0046 U	0.0045 U	0.0048 U	0.0047 U	0.00016 J	0.0047 U
CWA1613B	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg	0.00087 J	0.001 J	0.0048 U	0.0047 U	0.00097 J	0.00022 U
CWA1613B	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg	0.0013 J	0.00062 J	0.0048 U	0.0047 U	0.00082 J	0.00024 U
CWA1613B	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg	0.0016 J	0.0028 J	0.00017 J	0.0047 U	0.003 J	0.00036 U
CWA1613B	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg	0.00071 J	0.00024 J	0.0048 U	0.0047 U	0.00045 J	0.0047 U
CWA1613B	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg	0.00034 U	0.00036 U	0.0048 U	0.0047 U	0.00029 U	0.0047 U
CWA1613B	1,2,3,7,8-PeCDD	40321-76-4	ug/kg	0.00026 J	0.00024 J	0.0048 U	0.0047 U	0.00021 U	0.0047 U
CWA1613B	1,2,3,7,8-PeCDF	57117-41-6	ug/kg	0.00024 U	0.00029 U	0.0048 U	0.0047 U	0.00035 U	0.0047 U
CWA1613B	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg	0.0013 J	0.0013 J	0.0048 U	0.0047 U	0.0016 J	2e-04 J
CWA1613B	2,3,4,7,8-PeCDF	57117-31-4	ug/kg	0.0014 J	0.00082 J	0.0048 U	0.0047 U	0.00088 J	0.00025 J
CWA1613B	2,3,7,8-TCDD	1746-01-6	ug/kg	0.00092 U	0.00089 U	0.00097 U	0.00093 U	0.00095 U	0.00094 U
CWA1613B	2,3,7,8-TCDF	51207-31-9	ug/kg	0.00035 U	0.00089 U	0.00022 U	0.00093 U	0.00023 U	2e-04 U
CWA1613B	Total HpCDD	37871-00-4	ug/kg	0.061	0.021	0.0023 J	0.003 J	0.024	0.01 J
CWA1613B	Total HpCDF	38998-75-3	ug/kg	0.059 J	0.076	0.003 J	0.0036 J	0.087 J	0.011
CWA1613B	Total HxCDD	34465-46-8	ug/kg	0.01 J	0.0055 J	0.00022 J	0.00067 J	0.007 J	0.0019 J
CWA1613B	Total HxCDF	55684-94-1	ug/kg	0.028 J	0.036 J	0.0015 J	0.0016 J	0.039 J	0.0048 J
CWA1613B	Total PeCDD	36088-22-9	ug/kg	0.0034 J	0.0019 J	0.0048 U	0.0047 U	0.0018 J	2e-04 J
CWA1613B	Total PeCDF	30402-15-4	ug/kg	0.027 J	0.022 J	0.001 J	0.00098 J	0.026 J	0.004 J

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j3-sc1b-40to50-82719	j3-sc1b-50to60-82719	j3-sc1b-60to70-82719	j3-sc1b-70to80-82719	j3-sc1b-80to90-82719	j3-sc1b-90to100-82719
	Date Time			8/27/2019 11:20:00	8/27/2019 11:25:00	8/27/2019 11:30:00	8/27/2019 11:35:00	8/27/2019 12:20:00	8/27/2019 12:25:00
	X			7634552	7634552	7634552	7634552	7634552	7634552
	Y			700761	700761	700761	700761	700761	700761
	Top (cm)			122	152	183	213	244	274
	Bottom (cm)			152	183	213	244	274	305
CWA1613B	Total TCDD	41903-57-5	ug/kg	0.002 J	0.00037 J	0.00097 U	0.00093 U	0.00032 J	0.00016 J
CWA1613B	Total TCDF	30402-14-3	ug/kg	0.0096 J	0.0055 J	0.00022 J	0.00093 U	0.007 J	0.0015 J
Dioxins/Furans									
E1613	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg						
E1613	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg						
E1613	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg						
E1613	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg						
E1613	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg						
E1613	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg						
E1613	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg						
E1613	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg						
E1613	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg						
E1613	1,2,3,7,8-PeCDD	40321-76-4	ug/kg						
E1613	1,2,3,7,8-PeCDF	57117-41-6	ug/kg						
E1613	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg						
E1613	2,3,4,7,8-PeCDF	57117-31-4	ug/kg						
E1613	2,3,7,8-TCDD	1746-01-6	ug/kg						
E1613	2,3,7,8-TCDF	51207-31-9	ug/kg						
E1613	OCDD	3268-87-9	ug/kg						
E1613	OCDF	39001-02-0	ug/kg						
E1613	Total HpCDD	37871-00-4	ug/kg						
E1613	Total HpCDF	38998-75-3	ug/kg						
E1613	Total HxCDD	34465-46-8	ug/kg						
E1613	Total HxCDF	55684-94-1	ug/kg						
E1613	Total PeCDD	36088-22-9	ug/kg						
E1613	Total PeCDF	30402-15-4	ug/kg						
E1613	Total TCDD	41903-57-5	ug/kg						
E1613	Total TCDF	30402-14-3	ug/kg						
PCB Aroclors									
SW8082A	Aroclor 1016	12674-11-2	ug/kg	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
SW8082A	Aroclor 1221	11104-28-2	ug/kg	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
SW8082A	Aroclor 1232	11141-16-5	ug/kg	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
SW8082A	Aroclor 1242	53469-21-9	ug/kg	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
SW8082A	Aroclor 1248	12672-29-6	ug/kg	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
SW8082A	Aroclor 1254	11097-69-1	ug/kg	68 J	12	1.6 U	1.6 U	4 J	1.6 U
SW8082A	Aroclor 1260	11096-82-5	ug/kg	67	14	0.6 U	0.6 U	7.1	0.6 U

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j3-sc1b-40to50-82719	j3-sc1b-50to60-82719	j3-sc1b-60to70-82719	j3-sc1b-70to80-82719	j3-sc1b-80to90-82719	j3-sc1b-90to100-82719
	Date Time			8/27/2019 11:20:00	8/27/2019 11:25:00	8/27/2019 11:30:00	8/27/2019 11:35:00	8/27/2019 12:20:00	8/27/2019 12:25:00
	X			7634552	7634552	7634552	7634552	7634552	7634552
	Y			700761	700761	700761	700761	700761	700761
	Top (cm)			122	152	183	213	244	274
	Bottom (cm)			152	183	213	244	274	305
SW8082A	Aroclor 1262	37324-23-5	ug/kg	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
SW8082A	Aroclor 1268	11100-14-4	ug/kg	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
PCB Congeners									
E1668A	PCB-1	2051-60-7	ng/g						
E1668A	PCB-2	2051-61-8	ng/g						
E1668A	PCB-3	2051-62-9	ng/g						
E1668A	PCB-4	13029-08-8	ng/g						
E1668A	PCB-5	16605-91-7	ng/g						
E1668A	PCB-6	25569-80-6	ng/g						
E1668A	PCB-7	33284-50-3	ng/g						
E1668A	PCB-8	34883-43-7	ng/g						
E1668A	PCB-9	34883-39-1	ng/g						
E1668A	PCB-10	33146-45-1	ng/g						
E1668A	PCB-11	2050-67-1	ng/g						
E1668A	PCB-12	2974-92-7	ng/g						
E1668A	PCB-13	2974-90-5	ng/g						
E1668A	PCB-14	34883-41-5	ng/g						
E1668A	PCB-15	2050-68-2	ng/g						
E1668A	PCB-16	38444-78-9	ng/g						
E1668A	PCB-17	37680-66-3	ng/g						
E1668A	PCB-18	37680-65-2	ng/g						
E1668A	PCB-19	38444-73-4	ng/g						
E1668A	PCB-20	38444-84-7	ng/g						
E1668A	PCB-21	55702-46-0	ng/g						
E1668A	PCB-22	38444-85-8	ng/g						
E1668A	PCB-23	55720-44-0	ng/g						
E1668A	PCB-24	55702-45-9	ng/g						
E1668A	PCB-25	55712-37-3	ng/g						
E1668A	PCB-26	38444-81-4	ng/g						
E1668A	PCB-27	38444-76-7	ng/g						
E1668A	PCB-28	7012-37-5	ng/g						
E1668A	PCB-29	15862-07-4	ng/g						
E1668A	PCB-30	35693-92-6	ng/g						
E1668A	PCB-31	16606-02-3	ng/g						
E1668A	PCB-32	38444-77-8	ng/g						
E1668A	PCB-33	38444-86-9	ng/g						

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j3-sc1b-40to50-82719	j3-sc1b-50to60-82719	j3-sc1b-60to70-82719	j3-sc1b-70to80-82719	j3-sc1b-80to90-82719	j3-sc1b-90to100-82719
	Date Time			8/27/2019 11:20:00	8/27/2019 11:25:00	8/27/2019 11:30:00	8/27/2019 11:35:00	8/27/2019 12:20:00	8/27/2019 12:25:00
	X			7634552	7634552	7634552	7634552	7634552	7634552
	Y			700761	700761	700761	700761	700761	700761
	Top (cm)			122	152	183	213	244	274
	Bottom (cm)			152	183	213	244	274	305
E1668A	PCB-34	37680-68-5	ng/g						
E1668A	PCB-35	37680-69-6	ng/g						
E1668A	PCB-36	38444-87-0	ng/g						
E1668A	PCB-37	38444-90-5	ng/g						
E1668A	PCB-38	53555-66-1	ng/g						
E1668A	PCB-39	38444-88-1	ng/g						
E1668A	PCB-40	38444-93-8	ng/g						
E1668A	PCB-41	52663-59-9	ng/g						
E1668A	PCB-42	36559-22-5	ng/g						
E1668A	PCB-43	70362-46-8	ng/g						
E1668A	PCB-44	41464-39-5	ng/g						
E1668A	PCB-45	41464-39-5	ng/g						
E1668A	PCB-46	41464-47-5	ng/g						
E1668A	PCB-47	2437-79-8	ng/g						
E1668A	PCB-48	70362-47-9	ng/g						
E1668A	PCB-49	41464-40-8	ng/g						
E1668A	PCB-50	62796-65-0	ng/g						
E1668A	PCB-51	68194-04-7	ng/g						
E1668A	PCB-52	35693-99-3	ng/g						
E1668A	PCB-53	41464-41-9	ng/g						
E1668A	PCB-54	15968-05-5	ng/g						
E1668A	PCB-55	74338-24-2	ng/g						
E1668A	PCB-56	41464-43-1	ng/g						
E1668A	PCB-57	70424-67-8	ng/g						
E1668A	PCB-58	41464-49-7	ng/g						
E1668A	PCB-59	74472-33-6	ng/g						
E1668A	PCB-60	33025-41-1	ng/g						
E1668A	PCB-61	33284-53-6	ng/g						
E1668A	PCB-62	54230-22-7	ng/g						
E1668A	PCB-63	74472-34-7	ng/g						
E1668A	PCB-64	52663-58-8	ng/g						
E1668A	PCB-65	33284-54-7	ng/g						
E1668A	PCB-66	32598-10-0	ng/g						
E1668A	PCB-67	73575-53-8	ng/g						
E1668A	PCB-68	73575-52-7	ng/g						
E1668A	PCB-69	60233-24-1	ng/g						

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j3-sc1b-40to50-82719	j3-sc1b-50to60-82719	j3-sc1b-60to70-82719	j3-sc1b-70to80-82719	j3-sc1b-80to90-82719	j3-sc1b-90to100-82719
	Date Time			8/27/2019 11:20:00	8/27/2019 11:25:00	8/27/2019 11:30:00	8/27/2019 11:35:00	8/27/2019 12:20:00	8/27/2019 12:25:00
	X			7634552	7634552	7634552	7634552	7634552	7634552
	Y			700761	700761	700761	700761	700761	700761
	Top (cm)			122	152	183	213	244	274
	Bottom (cm)			152	183	213	244	274	305
E1668A	PCB-70	32598-11-1	ng/g						
E1668A	PCB-71	41464-46-4	ng/g						
E1668A	PCB-72	41464-42-0	ng/g						
E1668A	PCB-73	74338-23-1	ng/g						
E1668A	PCB-74	32690-93-0	ng/g						
E1668A	PCB-75	32598-12-2	ng/g						
E1668A	PCB-76	70362-48-0	ng/g						
E1668A	PCB-77	32598-13-3	ng/g						
E1668A	PCB-78	70362-49-1	ng/g						
E1668A	PCB-79	41464-48-6	ng/g						
E1668A	PCB-80	33284-52-5	ng/g						
E1668A	PCB-81	70362-50-4	ng/g						
E1668A	PCB-82	52663-62-4	ng/g						
E1668A	PCB-83	60145-20-2	ng/g						
E1668A	PCB-84	52663-60-2	ng/g						
E1668A	PCB-85	65510-45-4	ng/g						
E1668A	PCB-86	55312-69-1	ng/g						
E1668A	PCB-87	38380-02-8	ng/g						
E1668A	PCB-88	55215-17-3	ng/g						
E1668A	PCB-89	73575-57-2	ng/g						
E1668A	PCB-90	68194-07-0	ng/g						
E1668A	PCB-91	68194-05-8	ng/g						
E1668A	PCB-92	52663-61-3	ng/g						
E1668A	PCB-93	73575-56-1	ng/g						
E1668A	PCB-94	73575-55-0	ng/g						
E1668A	PCB-95	38379-99-6	ng/g						
E1668A	PCB-96	73575-54-9	ng/g						
E1668A	PCB-97	41464-51-1	ng/g						
E1668A	PCB-98	60233-25-2	ng/g						
E1668A	PCB-99	38380-01-7	ng/g						
E1668A	PCB-100	39485-83-1	ng/g						
E1668A	PCB-101	37680-73-2	ng/g						
E1668A	PCB-102	68194-06-9	ng/g						
E1668A	PCB-103	60145-21-3	ng/g						
E1668A	PCB-104	56558-16-8	ng/g						
E1668A	PCB-105	32598-14-4	ng/g						

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j3-sc1b-40to50-82719	j3-sc1b-50to60-82719	j3-sc1b-60to70-82719	j3-sc1b-70to80-82719	j3-sc1b-80to90-82719	j3-sc1b-90to100-82719
	Date Time			8/27/2019 11:20:00	8/27/2019 11:25:00	8/27/2019 11:30:00	8/27/2019 11:35:00	8/27/2019 12:20:00	8/27/2019 12:25:00
	X			7634552	7634552	7634552	7634552	7634552	7634552
	Y			700761	700761	700761	700761	700761	700761
	Top (cm)			122	152	183	213	244	274
	Bottom (cm)			152	183	213	244	274	305
E1668A	PCB-106	70424-69-0	ng/g						
E1668A	PCB-107	70424-68-9	ng/g						
E1668A	PCB-108	70362-41-3	ng/g						
E1668A	PCB-109	74472-35-8	ng/g						
E1668A	PCB-110	38380-03-9	ng/g						
E1668A	PCB-111	39635-32-0	ng/g						
E1668A	PCB-112	74472-36-9	ng/g						
E1668A	PCB-113	68194-10-5	ng/g						
E1668A	PCB-114	74472-37-0	ng/g						
E1668A	PCB-115	74472-38-1	ng/g						
E1668A	PCB-116	18259-05-7	ng/g						
E1668A	PCB-117	68194-11-6	ng/g						
E1668A	PCB-118	31508-00-6	ng/g						
E1668A	PCB-119	56558-17-9	ng/g						
E1668A	PCB-120	68194-12-7	ng/g						
E1668A	PCB-121	56558-18-0	ng/g						
E1668A	PCB-122	76842-07-4	ng/g						
E1668A	PCB-123	65510-44-3	ng/g						
E1668A	PCB-124	70424-70-3	ng/g						
E1668A	PCB-125	74472-39-2	ng/g						
E1668A	PCB-126	57465-28-8	ng/g						
E1668A	PCB-127	39635-33-1	ng/g						
E1668A	PCB-128	38380-07-3	ng/g						
E1668A	PCB-129	55215-18-4	ng/g						
E1668A	PCB-130	52663-66-8	ng/g						
E1668A	PCB-131	61798-70-7	ng/g						
E1668A	PCB-132	38380-05-1	ng/g						
E1668A	PCB-133	35694-04-3	ng/g						
E1668A	PCB-134	52704-70-8	ng/g						
E1668A	PCB-135	52744-13-5	ng/g						
E1668A	PCB-136	38411-22-2	ng/g						
E1668A	PCB-137	35694-06-5	ng/g						
E1668A	PCB-138	35065-28-2	ng/g						
E1668A	PCB-139	56030-56-9	ng/g						
E1668A	PCB-140	59291-64-4	ng/g						
E1668A	PCB-141	52712-04-6	ng/g						

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j3-sc1b-40to50-82719	j3-sc1b-50to60-82719	j3-sc1b-60to70-82719	j3-sc1b-70to80-82719	j3-sc1b-80to90-82719	j3-sc1b-90to100-82719
	Date Time			8/27/2019 11:20:00	8/27/2019 11:25:00	8/27/2019 11:30:00	8/27/2019 11:35:00	8/27/2019 12:20:00	8/27/2019 12:25:00
	X			7634552	7634552	7634552	7634552	7634552	7634552
	Y			700761	700761	700761	700761	700761	700761
	Top (cm)			122	152	183	213	244	274
	Bottom (cm)			152	183	213	244	274	305
E1668A	PCB-142	41411-61-4	ng/g						
E1668A	PCB-143	68194-15-0	ng/g						
E1668A	PCB-144	68194-14-9	ng/g						
E1668A	PCB-145	74472-40-5	ng/g						
E1668A	PCB-146	51908-16-8	ng/g						
E1668A	PCB-147	68194-13-8	ng/g						
E1668A	PCB-148	74472-41-6	ng/g						
E1668A	PCB-149	38380-04-0	ng/g						
E1668A	PCB-150	68194-08-1	ng/g						
E1668A	PCB-151	52663-63-5	ng/g						
E1668A	PCB-152	68194-09-2	ng/g						
E1668A	PCB-153	35065-27-1	ng/g						
E1668A	PCB-154	60145-22-4	ng/g						
E1668A	PCB-155	33979-03-2	ng/g						
E1668A	PCB-156	38380-08-4	ng/g						
E1668A	PCB-157	69782-90-7	ng/g						
E1668A	PCB-158	74472-42-7	ng/g						
E1668A	PCB-159	39635-35-3	ng/g						
E1668A	PCB-160	41411-62-5	ng/g						
E1668A	PCB-161	74472-43-8	ng/g						
E1668A	PCB-162	39635-34-2	ng/g						
E1668A	PCB-163	74472-44-9	ng/g						
E1668A	PCB-164	74472-45-0	ng/g						
E1668A	PCB-165	74472-46-1	ng/g						
E1668A	PCB-166	41411-63-6	ng/g						
E1668A	PCB-167	52663-72-6	ng/g						
E1668A	PCB-168	59291-65-5	ng/g						
E1668A	PCB-169	32774-16-6	ng/g						
E1668A	PCB-170	35065-30-6	ng/g						
E1668A	PCB-171	52663-71-5	ng/g						
E1668A	PCB-172	52663-74-8	ng/g						
E1668A	PCB-173	68194-16-1	ng/g						
E1668A	PCB-174	38411-25-5	ng/g						
E1668A	PCB-175	40186-70-7	ng/g						
E1668A	PCB-176	52663-65-7	ng/g						
E1668A	PCB-177	52663-70-4	ng/g						

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j3-sc1b-40to50-82719	j3-sc1b-50to60-82719	j3-sc1b-60to70-82719	j3-sc1b-70to80-82719	j3-sc1b-80to90-82719	j3-sc1b-90to100-82719
	Date Time			8/27/2019 11:20:00	8/27/2019 11:25:00	8/27/2019 11:30:00	8/27/2019 11:35:00	8/27/2019 12:20:00	8/27/2019 12:25:00
	X			7634552	7634552	7634552	7634552	7634552	7634552
	Y			700761	700761	700761	700761	700761	700761
	Top (cm)			122	152	183	213	244	274
	Bottom (cm)			152	183	213	244	274	305
E1668A	PCB-178	52663-67-9	ng/g						
E1668A	PCB-179	52663-64-6	ng/g						
E1668A	PCB-180	35065-29-3	ng/g						
E1668A	PCB-181	74472-47-2	ng/g						
E1668A	PCB-182	60145-23-5	ng/g						
E1668A	PCB-183	52663-69-1	ng/g						
E1668A	PCB-184	74472-48-3	ng/g						
E1668A	PCB-185	52712-05-7	ng/g						
E1668A	PCB-186	74472-49-4	ng/g						
E1668A	PCB-187	52663-68-0	ng/g						
E1668A	PCB-188	74487-85-7	ng/g						
E1668A	PCB-189	39635-31-9	ng/g						
E1668A	PCB-190	41411-64-7	ng/g						
E1668A	PCB-191	74472-50-7	ng/g						
E1668A	PCB-192	74472-51-8	ng/g						
E1668A	PCB-193	69782-91-8	ng/g						
E1668A	PCB-194	35694-08-7	ng/g						
E1668A	PCB-195	52663-78-2	ng/g						
E1668A	PCB-196	42740-50-1	ng/g						
E1668A	PCB-197	33091-17-7	ng/g						
E1668A	PCB-198	68194-17-2	ng/g						
E1668A	PCB-199	52663-75-9	ng/g						
E1668A	PCB-200	52663-73-7	ng/g						
E1668A	PCB-201	40186-71-8	ng/g						
E1668A	PCB-202	2136-99-4	ng/g						
E1668A	PCB-203	52663-76-0	ng/g						
E1668A	PCB-204	74472-52-9	ng/g						
E1668A	PCB-205	74472-53-0	ng/g						
E1668A	PCB-206	40186-72-9	ng/g						
E1668A	PCB-207	52663-79-3	ng/g						
E1668A	PCB-208	52663-77-1	ng/g						
E1668A	PCB-209	2051-24-3	ng/g						
E1668A	Total Dichlorobiphenyls		ng/g						
E1668A	Total Heptachlorobiphenyls		ng/g						
E1668A	Total Hexachlorobiphenyls		ng/g						
E1668A	Total Monochlorobiphenyls		ng/g						

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j3-sc1b-40to50-82719	j3-sc1b-50to60-82719	j3-sc1b-60to70-82719	j3-sc1b-70to80-82719	j3-sc1b-80to90-82719	j3-sc1b-90to100-82719
	Date Time			8/27/2019 11:20:00	8/27/2019 11:25:00	8/27/2019 11:30:00	8/27/2019 11:35:00	8/27/2019 12:20:00	8/27/2019 12:25:00
	X			7634552	7634552	7634552	7634552	7634552	7634552
	Y			700761	700761	700761	700761	700761	700761
	Top (cm)			122	152	183	213	244	274
	Bottom (cm)			152	183	213	244	274	305
E1668A	Total Nonachlorobiphenyls		ng/g						
E1668A	Total Octachlorobiphenyls		ng/g						
E1668A	Total Pentachlorobiphenyls		ng/g						
E1668A	Total Tetrachlorobiphenyls		ng/g						
E1668A	Total Trichlorobiphenyls		ng/g						
E1668A	Polychlorinated biphenyls, Total	1336-36-3	ng/g						
PAHs									
SW8270D	2-Methylnaphthalene	91-57-6	ug/kg	12 J	6.2 J	2.9 J	2.2 J	8.6 J	2.1 J
SW8270D	Acenaphthene	83-32-9	ug/kg	64 J	4.8 J	0.36 J	0.19 J	1.9 J	1.9 J
SW8270D	Acenaphthylene	208-96-8	ug/kg	9.1	6.6	2.5	0.49	5.9	5.4 J
SW8270D	Anthracene	120-12-7	ug/kg	16	10	2.9	1.1	7.5	6.8 J
SW8270D	Benzo(a)anthracene	56-55-3	ug/kg	28	17	14	2	31	23
SW8270D	Benzo(a)pyrene	50-32-8	ug/kg	39	28	22	3.4	46	30
SW8270D	Benzo(b)fluoranthene	205-99-2	ug/kg	44	31	20	3.3	46	28
SW8270D	Benzo(g,h,i)perylene	191-24-2	ug/kg	42	31	18	3.4	41	23 J
SW8270D	Benzo(k)fluoranthene	207-08-9	ug/kg	14	9.9	6.5	1.1	15	10
SW8270D	Chrysene	218-01-9	ug/kg	40	26	17	2.6	38	28
SW8270D	Dibenzo(a,h)anthracene	53-70-3	ug/kg	5.7	2.9	2	0.37	5	3.1
SW8270D	Dibenzofuran	132-64-9	ug/kg	4.6	2.6	0.88	0.2 J	1.2	0.87 J
SW8270D	Fluoranthene	206-44-0	ug/kg	78	61	37	6.1	72	45 J
SW8270D	Fluorene	86-73-7	ug/kg	18	5.1	0.73	0.45	2.5	2 J
SW8270D	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	37	28	18	3.1	39	22
SW8270D	Naphthalene	91-20-3	ug/kg	19 J	16 J	7.7 J	1.2 J	7.7 J	6.1 J
SW8270D	Phenanthrene	85-01-8	ug/kg	87	43	12	6.7	32	26 J
SW8270D	Pyrene	129-00-0	ug/kg	120	79	50	9	89	71
Calculated Totals									
ALS SOP	CALC_TOTAL_DDD_ND_PDI		ug/kg	3.3 AT	0.63 UT	0.63 UT	0.63 UT	0.63 UT	0.63 UT
ALS SOP	CALC_TOTAL_DDE_ND_PDI		ug/kg	11 R	0.79 UT	0.79 UT	0.79 UT	0.79 UT	0.79 UT
ALS SOP	CALC_TOTAL_DDT_ND_PDI		ug/kg	0.94 UT	0.94 UT	0.94 UT	0.94 UT	0.94 UT	0.94 UT
ALS SOP	CALC_TOTAL_DDx_ND_PDI		ug/kg	15 T	0.94 UT	0.94 UT	0.94 UT	0.94 UT	0.94 UT
E1668A	CALC_TOTAL_PCB_ND_PDI		ug/kg						
SW8082A	CALC_TOTAL_AROCLORS_ND_PDI		ug/kg	140 JT	27 T	1.6 UT	1.6 UT	12 JT	1.6 UT
SW8270D	CALC_TOTAL_CPAH_ND_PDI		ug/kg	56 T	39 T	29 T	4.6 T	63 T	41 T
SW8270D	CALC_TOTAL_HPAH_ND_PDI		ug/kg	390 T	270 T	180 T	30 T	360 T	250 JT
SW8270D	CALC_TOTAL_LPAH_ND_PDI		ug/kg	230 JT	92 JT	29 JT	12 JT	66 JT	50 JT
SW8270D	CALC_TOTAL_PAH_ND_PDI		ug/kg	610 JT	360 JT	210 JT	42 JT	430 JT	300 JT

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j3-sc1b-40to50-82719	j3-sc1b-50to60-82719	j3-sc1b-60to70-82719	j3-sc1b-70to80-82719	j3-sc1b-80to90-82719	j3-sc1b-90to100-82719
	Date Time			8/27/2019 11:20:00	8/27/2019 11:25:00	8/27/2019 11:30:00	8/27/2019 11:35:00	8/27/2019 12:20:00	8/27/2019 12:25:00
	X			7634552	7634552	7634552	7634552	7634552	7634552
	Y			700761	700761	700761	700761	700761	700761
	Top (cm)			122	152	183	213	244	274
	Bottom (cm)			152	183	213	244	274	305

DDx = dichlorodiphenyltrichloroethane and its derivatives

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyls

PeCDD = Pentachlorodibenzo-p-dioxin

PeCDF = Pentachlorodibenzofuran

TCDD = Tetrachlorodibenzo-p-dioxin

ug/kg = micrograms per kilogram

ng/g = nanograms per gram

% = percent

g/cm3 = grams per cubic centimeter

J = Reported result is an estimate

T = Total concentration from component analytes.

U = Analyte was not detected in sample

R = Rejected

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j5-sc1b-00to10-82719	j5-sc1b-100to110-82719	j5-sc1b-10to20-82719	j5-sc1b-20to30-82719	j5-sc1b-20to30-82719r1	j5-sc1b-30to40-82719
	Date Time			8/27/2019 4:45:00	8/27/2019 17:35:00	8/27/2019 14:50:00	8/27/2019 14:55:00	8/27/2019 14:55:00	8/27/2019 15:00:00
	X			7634424	7634424	7634424	7634424	7634424	7634424
	Y			700618	700618	700618	700618	700618	700618
	Top (cm)			0	305	30	61	61	91
	Bottom (cm)			30	335	61	91	91	122
Conventionals									
E160.3	Total Solids		%		71		51		52
PSEP	Total Solids		%		71		51		50
SM2540G	Total Solids		%						
SW9060A	Carbon, Total Organic	7440-044-0	mg/kg						
Organochlorine Pesticides									
ALS SOP	o,p'-DDD	53-19-0	ug/kg		0.63 U		0.75 J		0.63 U
ALS SOP	o,p'-DDE	3424-82-6	ug/kg		0.79 U		0.79 U		0.79 U
ALS SOP	o,p'-DDT	789-02-6	ug/kg		0.94 U		0.94 U		0.94 U
ALS SOP	4,4'-DDD	72-54-8	ug/kg		0.35 U		2.9		2.6
ALS SOP	4,4'-DDE	72-55-9	ug/kg		0.7 U		4.5		4.5
ALS SOP	4,4'-DDT	50-29-3	ug/kg		0.47 U		0.47 U		0.47 U
Dioxins/Furans									
CWA1613B	1,2,3,4,6,7,8,9-OCDD	3268-87-9	ug/kg		0.016		2 J		0.93
CWA1613B	1,2,3,4,6,7,8,9-OCDF	39001-02-0	ug/kg		0.00053 J		0.12 J		0.041
CWA1613B	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg		0.0013 J		0.14 J		0.069
CWA1613B	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg		0.00029 U		0.038 J		0.014
CWA1613B	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg		0.005 U		0.0027 J		0.0012 J
CWA1613B	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg		0.005 U		0.00098 J		0.00048 J
CWA1613B	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg		0.005 U		0.0031 J		0.0011 J
CWA1613B	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg		0.005 U		0.0052 J		0.003 J
CWA1613B	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg		0.005 U		0.0032 J		0.0015 J
CWA1613B	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg		0.005 U		0.0027 J		0.0015 J
CWA1613B	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg		0.005 U		0.00079 U		0.00046 U
CWA1613B	1,2,3,7,8-PeCDD	40321-76-4	ug/kg		0.005 U		0.00095 J		0.00059 J
CWA1613B	1,2,3,7,8-PeCDF	57117-41-6	ug/kg		0.005 U		0.00073 J		0.00041 J
CWA1613B	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg		0.005 U		0.0023 J		0.001 J
CWA1613B	2,3,4,7,8-PeCDF	57117-31-4	ug/kg		0.005 U		0.0016 J		0.00078 J
CWA1613B	2,3,7,8-TCDD	1746-01-6	ug/kg		0.00099 U		0.00036 U		0.00021 U
CWA1613B	2,3,7,8-TCDF	51207-31-9	ug/kg		0.00046 J		0.0011 DNR	0.00084 J	0.00073 J
CWA1613B	Total HpCDD	37871-00-4	ug/kg		0.0033 J		0.3		0.15
CWA1613B	Total HpCDF	38998-75-3	ug/kg		0.00073 J		0.14 J		0.051 J
CWA1613B	Total HxCDD	34465-46-8	ug/kg		0.00086 J		0.045 J		0.024 J
CWA1613B	Total HxCDF	55684-94-1	ug/kg		0.00017 J		0.058 J		0.024 J
CWA1613B	Total PeCDD	36088-22-9	ug/kg		0.005 U		0.0083 J		0.0049 J
CWA1613B	Total PeCDF	30402-15-4	ug/kg		0.00012 J		0.029 J		0.014 J

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j5-sc1b-00to10-82719	j5-sc1b-100to110-82719	j5-sc1b-10to20-82719	j5-sc1b-20to30-82719	j5-sc1b-20to30-82719r1	j5-sc1b-30to40-82719
	Date Time			8/27/2019 4:45:00	8/27/2019 17:35:00	8/27/2019 14:50:00	8/27/2019 14:55:00	8/27/2019 14:55:00	8/27/2019 15:00:00
	X			7634424	7634424	7634424	7634424	7634424	7634424
	Y			700618	700618	700618	700618	700618	700618
	Top (cm)			0	305	30	61	61	91
	Bottom (cm)			30	335	61	91	91	122
CWA1613B	Total TCDD	41903-57-5	ug/kg		0.00038 J		0.0037 J		0.002 J
CWA1613B	Total TCDF	30402-14-3	ug/kg		0.00075 J		0.012 J		0.0073 J
Dioxins/Furans									
E1613	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg						
E1613	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg						
E1613	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg						
E1613	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg						
E1613	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg						
E1613	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg						
E1613	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg						
E1613	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg						
E1613	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg						
E1613	1,2,3,7,8-PeCDD	40321-76-4	ug/kg						
E1613	1,2,3,7,8-PeCDF	57117-41-6	ug/kg						
E1613	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg						
E1613	2,3,4,7,8-PeCDF	57117-31-4	ug/kg						
E1613	2,3,7,8-TCDD	1746-01-6	ug/kg						
E1613	2,3,7,8-TCDF	51207-31-9	ug/kg						
E1613	OCDD	3268-87-9	ug/kg						
E1613	OCDF	39001-02-0	ug/kg						
E1613	Total HpCDD	37871-00-4	ug/kg						
E1613	Total HpCDF	38998-75-3	ug/kg						
E1613	Total HxCDD	34465-46-8	ug/kg						
E1613	Total HxCDF	55684-94-1	ug/kg						
E1613	Total PeCDD	36088-22-9	ug/kg						
E1613	Total PeCDF	30402-15-4	ug/kg						
E1613	Total TCDD	41903-57-5	ug/kg						
E1613	Total TCDF	30402-14-3	ug/kg						
PCB Aroclors									
SW8082A	Aroclor 1016	12674-11-2	ug/kg	7.8 U	1.5 U	15.5 U	16 U		1.5 U
SW8082A	Aroclor 1221	11104-28-2	ug/kg	7.8 U	1.5 U	15.5 U	16 U		1.5 U
SW8082A	Aroclor 1232	11141-16-5	ug/kg	7.8 U	1.5 U	15.5 U	16 U		1.5 U
SW8082A	Aroclor 1242	53469-21-9	ug/kg	7.8 U	1.5 U	15.5 U	16 U		1.5 U
SW8082A	Aroclor 1248	12672-29-6	ug/kg	7.8 U	1.5 U	268	150		60
SW8082A	Aroclor 1254	11097-69-1	ug/kg	320	1.5 U	681	370		72 J
SW8082A	Aroclor 1260	11096-82-5	ug/kg	279 J	0.6 U	266	410 J		84

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j5-sc1b-00to10-82719	j5-sc1b-100to110-82719	j5-sc1b-10to20-82719	j5-sc1b-20to30-82719	j5-sc1b-20to30-82719r1	j5-sc1b-30to40-82719
	Date Time			8/27/2019 4:45:00	8/27/2019 17:35:00	8/27/2019 14:50:00	8/27/2019 14:55:00	8/27/2019 14:55:00	8/27/2019 15:00:00
	X			7634424	7634424	7634424	7634424	7634424	7634424
	Y			700618	700618	700618	700618	700618	700618
	Top (cm)			0	305	30	61	61	91
	Bottom (cm)			30	335	61	91	91	122
SW8082A	Aroclor 1262	37324-23-5	ug/kg	2.9 U	0.6 U	5.8 U	5.9 U		0.6 U
SW8082A	Aroclor 1268	11100-14-4	ug/kg	2.9 U	0.6 U	5.8 U	5.9 U		0.6 U
PCB Congeners									
E1668A	PCB-1	2051-60-7	ng/g	0.44 DNR	0.0058 DNR	1.5 DNR	1.1 DNR		0.1 DNR
E1668A	PCB-2	2051-61-8	ng/g	0.12 DNR	0.0013 DNR	0.097 DNR	0.12 DNR		0.025 DNR
E1668A	PCB-3	2051-62-9	ng/g	0.22 DNR	0.0013 DNR	0.66 DNR	0.54 DNR		0.059 DNR
E1668A	PCB-4	13029-08-8	ng/g	0.5 DNR	0.011 DNR	0.87 DNR	0.64 DNR		0.15 DNR
E1668A	PCB-5	16605-91-7	ng/g	0.014 DNR	0.0017 DNR	0.015 DNR	0.12 DNR		0.008 DNR
E1668A	PCB-6	25569-80-6	ng/g	0.14 DNR	0.0017 DNR	0.57 DNR	0.54 DNR		0.13 DNR
E1668A	PCB-7	33284-50-3	ng/g	0.035 DNR	0.0016 DNR	0.17 DNR	0.13 DNR		0.026 DNR
E1668A	PCB-8	34883-43-7	ng/g	0.44 DNR	0.02 DNR	1.9 DNR	1.9 DNR		0.41 DNR
E1668A	PCB-9	34883-39-1	ng/g	0.047 DNR	0.0019 DNR	0.21 DNR	0.17 DNR		0.025 DNR
E1668A	PCB-10	33146-45-1	ng/g	0.014 DNR	0.0018 DNR	0.058 DNR	0.033 DNR		0.0078 DNR
E1668A	PCB-11	2050-67-1	ng/g	0.13 DNR	0.0068 DNR	0.18 DNR	0.047 DNR		0.052 DNR
E1668A	PCB-12	2974-92-7	ng/g	0.075 DNR	0.0016 DNR	0.23 DNR	0.18 DNR		0.051 DNR
E1668A	PCB-13	2974-90-5	ng/g	0.075 DNR	0.0016 DNR	0.23 DNR	0.18 DNR		0.051 DNR
E1668A	PCB-14	34883-41-5	ng/g	0.0026 DNR	0.0014 DNR	0.013 DNR	0.0023 DNR		0.0025 DNR
E1668A	PCB-15	2050-68-2	ng/g	0.29 DNR	0.0084 DNR	0.81 DNR	0.59 DNR		0.22 DNR
E1668A	PCB-16	38444-78-9	ng/g	0.2 DNR	0.016 DNR	0.96 DNR	1 DNR		0.54 DNR
E1668A	PCB-17	37680-66-3	ng/g	1.1 DNR	0.016 DNR	1.5 DNR	1.6 DNR		0.87 DNR
E1668A	PCB-18	37680-65-2	ng/g	0.53 DNR	0.033 DNR	2.2 DNR	2.5 DNR		1.4 DNR
E1668A	PCB-19	38444-73-4	ng/g	0.97 DNR	0.0062 DNR	0.24 DNR	0.26 DNR		0.12 DNR
E1668A	PCB-20	38444-84-7	ng/g	1.9 DNR	0.036 DNR	4.9 DNR	4.8 DNR		2.4 DNR
E1668A	PCB-21	55702-46-0	ng/g	1 DNR	0.022 DNR	2.1 DNR	2.1 DNR		0.99 DNR
E1668A	PCB-22	38444-85-8	ng/g	0.2 DNR	0.016 DNR	0.94 DNR	1.1 DNR		0.59 DNR
E1668A	PCB-23	55720-44-0	ng/g	0.0088 DNR	0.0012 DNR	0.026 DNR	0.025 DNR		0.0093 DNR
E1668A	PCB-24	55702-45-9	ng/g	0.0023 DNR	0.0013 DNR	0.044 DNR	0.026 DNR		0.015 DNR
E1668A	PCB-25	55712-37-3	ng/g	0.44 DNR	0.0046 DNR	0.57 DNR	0.58 DNR		0.2 DNR
E1668A	PCB-26	38444-81-4	ng/g	0.22 DNR	0.0076 DNR	0.82 DNR	0.98 DNR		0.32 DNR
E1668A	PCB-27	38444-76-7	ng/g	0.2 DNR	0.0023 DNR	0.2 DNR	0.18 DNR		0.093 DNR
E1668A	PCB-28	7012-37-5	ng/g	1.9 DNR	0.036 DNR	4.9 DNR	4.8 DNR		2.4 DNR
E1668A	PCB-29	15862-07-4	ng/g	0.22 DNR	0.0076 DNR	0.82 DNR	0.98 DNR		0.32 DNR
E1668A	PCB-30	35693-92-6	ng/g	0.53 DNR	0.033 DNR	2.2 DNR	2.5 DNR		1.4 DNR
E1668A	PCB-31	16606-02-3	ng/g	0.94 DNR	0.045 DNR	3.3 DNR	3.5 DNR		1.8 DNR
E1668A	PCB-32	38444-77-8	ng/g	2.6 DNR	0.0085 DNR	1.1 DNR	1.3 DNR		0.48 DNR
E1668A	PCB-33	38444-86-9	ng/g	1 DNR	0.022 DNR	2.1 DNR	2.1 DNR		0.99 DNR

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j5-sc1b-00to10-82719	j5-sc1b-100to110-82719	j5-sc1b-10to20-82719	j5-sc1b-20to30-82719	j5-sc1b-20to30-82719r1	j5-sc1b-30to40-82719
	Date Time			8/27/2019 4:45:00	8/27/2019 17:35:00	8/27/2019 14:50:00	8/27/2019 14:55:00	8/27/2019 14:55:00	8/27/2019 15:00:00
	X			7634424	7634424	7634424	7634424	7634424	7634424
	Y			700618	700618	700618	700618	700618	700618
	Top (cm)			0	305	30	61	61	91
	Bottom (cm)			30	335	61	91	91	122
E1668A	PCB-34	37680-68-5	ng/g	0.012 DNR	0.0012 DNR	0.065 DNR	0.067 DNR		0.035 DNR
E1668A	PCB-35	37680-69-6	ng/g	0.024 DNR	0.0012 DNR	0.11 DNR	0.066 DNR		0.037 DNR
E1668A	PCB-36	38444-87-0	ng/g	0.0083 DNR	0.0085 DNR	0.024 DNR	0.024 DNR		0.0087 DNR
E1668A	PCB-37	38444-90-5	ng/g	0.3 DNR	0.012 DNR	1.1 DNR	0.87 DNR		0.51 DNR
E1668A	PCB-38	53555-66-1	ng/g	0.018 DNR	0.0011 DNR	0.025 DNR	0.024 DNR		0.0089 DNR
E1668A	PCB-39	38444-88-1	ng/g	0.028 DNR	0.0011 DNR	0.16 DNR	0.095 DNR		0.04 DNR
E1668A	PCB-40	38444-93-8	ng/g	4.2 DNR	0.069 DNR	5.7 DNR	6 DNR		2 DNR
E1668A	PCB-41	52663-59-9	ng/g	4.2 DNR	0.069 DNR	5.7 DNR	6 DNR		2 DNR
E1668A	PCB-42	36559-22-5	ng/g	0.81 DNR	0.036 DNR	3.8 DNR	2.5 DNR		0.0063 DNR
E1668A	PCB-43	70362-46-8	ng/g	1.3 DNR	0.0076 DNR	0.024 DNR	0.36 DNR		0.088 DNR
E1668A	PCB-44	41464-39-5	ng/g	41 DNR	0.52 DNR	24 DNR	23 DNR		4.7 DNR
E1668A	PCB-45	41464-39-5	ng/g	22 DNR	0.0086 DNR	2.2 DNR	5.1 DNR		0.84 DNR
E1668A	PCB-46	41464-47-5	ng/g	0.52 DNR	0.01 DNR	0.53 DNR	0.46 DNR		0.2 DNR
E1668A	PCB-47	2437-79-8	ng/g	41 DNR	0.52 DNR	24 DNR	23 DNR		4.7 DNR
E1668A	PCB-48	70362-47-9	ng/g	0.2 DNR	0.016 DNR	1.1 DNR	1 DNR		0.63 DNR
E1668A	PCB-49	41464-40-8	ng/g	16 DNR	0.25 DNR	18 DNR	15 DNR		3.6 DNR
E1668A	PCB-50	62796-65-0	ng/g	8.3 DNR	0.03 DNR	2.4 DNR	2.9 DNR		0.59 DNR
E1668A	PCB-51	68194-04-7	ng/g	22 DNR	0.0086 DNR	2.2 DNR	5.1 DNR		0.84 DNR
E1668A	PCB-52	35693-99-3	ng/g	14 DNR	1.6 DNR	46 DNR	33 DNR		6.1 DNR
E1668A	PCB-53	41464-41-9	ng/g	8.3 DNR	0.03 DNR	2.4 DNR	2.9 DNR		0.59 DNR
E1668A	PCB-54	15968-05-5	ng/g	2.7 DNR	4e-04 DNR	0.12 DNR	0.35 DNR		0.049 DNR
E1668A	PCB-55	74338-24-2	ng/g	0.11 DNR	0.0059 DNR	0.018 DNR	0.096 DNR		0.027 DNR
E1668A	PCB-56	41464-43-1	ng/g	0.87 DNR	0.098 DNR	4.2 DNR	3.1 DNR		1.6 DNR
E1668A	PCB-57	70424-67-8	ng/g	0.11 DNR	0.0059 DNR	0.018 DNR	0.064 DNR		0.013 DNR
E1668A	PCB-58	41464-49-7	ng/g	0.11 DNR	0.0057 DNR	0.15 DNR	0.095 DNR		0.048 DNR
E1668A	PCB-59	74472-33-6	ng/g	1.2 DNR	0.0056 DNR	0.91 DNR	0.68 DNR		0.31 DNR
E1668A	PCB-60	33025-41-1	ng/g	0.19 DNR	0.037 DNR	0.81 DNR	0.58 DNR		0.27 DNR
E1668A	PCB-61	33284-53-6	ng/g	7.4 DNR	0.99 DNR	35 DNR	21 DNR		6.8 DNR
E1668A	PCB-62	54230-22-7	ng/g	1.2 DNR	0.0056 DNR	0.91 DNR	0.68 DNR		0.31 DNR
E1668A	PCB-63	74472-34-7	ng/g	0.33 DNR	0.0096 DNR	0.57 DNR	0.38 DNR		0.16 DNR
E1668A	PCB-64	52663-58-8	ng/g	1.1 DNR	0.12 DNR	5.6 DNR	3.3 DNR		1.4 DNR
E1668A	PCB-65	33284-54-7	ng/g	41 DNR	0.52 DNR	24 DNR	23 DNR		4.7 DNR
E1668A	PCB-66	32598-10-0	ng/g	3.6 DNR	0.22 DNR	16 DNR	9.9 DNR		4.2 DNR
E1668A	PCB-67	73575-53-8	ng/g	0.18 DNR	0.0054 DNR	0.24 DNR	0.35 DNR		0.088 DNR
E1668A	PCB-68	73575-52-7	ng/g	0.65 DNR	0.0051 DNR	0.57 DNR	0.49 DNR		0.098 DNR
E1668A	PCB-69	60233-24-1	ng/g	16 DNR	0.25 DNR	18 DNR	15 DNR		3.6 DNR

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j5-sc1b-00to10-82719	j5-sc1b-100to110-82719	j5-sc1b-10to20-82719	j5-sc1b-20to30-82719	j5-sc1b-20to30-82719r1	j5-sc1b-30to40-82719
	Date Time			8/27/2019 4:45:00	8/27/2019 17:35:00	8/27/2019 14:50:00	8/27/2019 14:55:00	8/27/2019 14:55:00	8/27/2019 15:00:00
	X			7634424	7634424	7634424	7634424	7634424	7634424
	Y			700618	700618	700618	700618	700618	700618
	Top (cm)			0	305	30	61	61	91
	Bottom (cm)			30	335	61	91	91	122
E1668A	PCB-70	32598-11-1	ng/g	7.4 DNR	0.99 DNR	35 DNR	21 DNR		6.8 DNR
E1668A	PCB-71	41464-46-4	ng/g	4.2 DNR	0.069 DNR	5.7 DNR	6 DNR		2 DNR
E1668A	PCB-72	41464-42-0	ng/g	0.24 DNR	0.0058 DNR	1.1 DNR	0.78 DNR		0.22 DNR
E1668A	PCB-73	74338-23-1	ng/g	1.3 DNR	0.0076 DNR	0.024 DNR	0.36 DNR		0.088 DNR
E1668A	PCB-74	32690-93-0	ng/g	7.4 DNR	0.99 DNR	35 DNR	21 DNR		6.8 DNR
E1668A	PCB-75	32598-12-2	ng/g	1.2 DNR	0.0056 DNR	0.91 DNR	0.68 DNR		0.31 DNR
E1668A	PCB-76	70362-48-0	ng/g	7.4 DNR	0.99 DNR	35 DNR	21 DNR		6.8 DNR
E1668A	PCB-77	32598-13-3	ng/g	0.27 DNR	0.0087 DNR	1.3 DNR	0.47 DNR		0.27 DNR
E1668A	PCB-78	70362-49-1	ng/g	0.11 DNR	0.0058 DNR	0.018 DNR	0.014 DNR		0.0041 DNR
E1668A	PCB-79	41464-48-6	ng/g	0.22 DNR	0.011 DNR	1.1 DNR	0.57 DNR		0.14 DNR
E1668A	PCB-80	33284-52-5	ng/g	0.096 DNR	0.0052 DNR	0.016 DNR	0.071 DNR		0.0037 DNR
E1668A	PCB-81	70362-50-4	ng/g	0.11 DNR	0.0059 DNR	1.2 DNR	0.047 DNR		0.0042 DNR
E1668A	PCB-82	52663-62-4	ng/g	2.1 DNR	0.37 DNR	8 DNR	3.9 DNR		0.87 DNR
E1668A	PCB-83	60145-20-2	ng/g	18 DNR	1.5 DNR	50 DNR	34 DNR		7.2 DNR
E1668A	PCB-84	52663-60-2	ng/g	5.8 DNR	0.88 DNR	22 DNR	11 DNR		2.3 DNR
E1668A	PCB-85	65510-45-4	ng/g	4.3 DNR	0.43 DNR	11 DNR	5.7 DNR		1.3 DNR
E1668A	PCB-86	55312-69-1	ng/g	15 DNR	2.1 DNR	49 DNR	26 DNR		4.9 DNR
E1668A	PCB-87	38380-02-8	ng/g	15 DNR	2.1 DNR	49 DNR	26 DNR		4.9 DNR
E1668A	PCB-88	55215-17-3	ng/g	11 DNR	0.34 DNR	12 DNR	8.9 DNR		1.8 DNR
E1668A	PCB-89	73575-57-2	ng/g	0.0031 DNR	0.027 DNR	0.58 DNR	0.25 DNR		0.094 DNR
E1668A	PCB-90	68194-07-0	ng/g	36 DNR	3 DNR	86 DNR	53 DNR		11 DNR
E1668A	PCB-91	68194-05-8	ng/g	11 DNR	0.34 DNR	12 DNR	8.9 DNR		1.8 DNR
E1668A	PCB-92	52663-61-3	ng/g	8.8 DNR	0.59 DNR	18 DNR	15 DNR		2.6 DNR
E1668A	PCB-93	73575-56-1	ng/g	9 DNR	0.029 DNR	1.5 DNR	2.4 DNR		0.29 DNR
E1668A	PCB-94	73575-55-0	ng/g	2.5 DNR	0.0082 DNR	0.39 DNR	0.84 DNR		0.086 DNR
E1668A	PCB-95	38379-99-6	ng/g	23 DNR	2.7 DNR	69 DNR	41 DNR		8 DNR
E1668A	PCB-96	73575-54-9	ng/g	1.5 DNR	0.013 DNR	0.53 DNR	0.56 DNR		0.08 DNR
E1668A	PCB-97	41464-51-1	ng/g	15 DNR	2.1 DNR	49 DNR	26 DNR		4.9 DNR
E1668A	PCB-98	60233-25-2	ng/g	2.3 DNR	0.07 DNR	2.9 DNR	3.1 DNR		0.52 DNR
E1668A	PCB-99	38380-01-7	ng/g	18 DNR	1.5 DNR	50 DNR	34 DNR		7.2 DNR
E1668A	PCB-100	39485-83-1	ng/g	9 DNR	0.029 DNR	1.5 DNR	2.4 DNR		0.29 DNR
E1668A	PCB-101	37680-73-2	ng/g	36 DNR	3 DNR	86 DNR	53 DNR		11 DNR
E1668A	PCB-102	68194-06-9	ng/g	2.3 DNR	0.07 DNR	2.9 DNR	3.1 DNR		0.52 DNR
E1668A	PCB-103	60145-21-3	ng/g	3.1 DNR	0.013 DNR	1.7 DNR	2.5 DNR		0.37 DNR
E1668A	PCB-104	56558-16-8	ng/g	0.62 DNR	0.002 DNR	0.0091 DNR	0.087 DNR		0.002 DNR
E1668A	PCB-105	32598-14-4	ng/g	4.9 DNR	0.91 DNR	19 DNR	11 DNR		1.6 DNR

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j5-sc1b-00to10-82719	j5-sc1b-100to110-82719	j5-sc1b-10to20-82719	j5-sc1b-20to30-82719	j5-sc1b-20to30-82719r1	j5-sc1b-30to40-82719
	Date Time			8/27/2019 4:45:00	8/27/2019 17:35:00	8/27/2019 14:50:00	8/27/2019 14:55:00	8/27/2019 14:55:00	8/27/2019 15:00:00
	X			7634424	7634424	7634424	7634424	7634424	7634424
	Y			700618	700618	700618	700618	700618	700618
	Top (cm)			0	305	30	61	61	91
	Bottom (cm)			30	335	61	91	91	122
E1668A	PCB-106	70424-69-0	ng/g	0.021 DNR	0.0035 DNR	0.056 DNR	0.037 DNR		0.01 DNR
E1668A	PCB-107	70424-68-9	ng/g	1.7 DNR	0.15 DNR	5.1 DNR	3.3 DNR		0.72 DNR
E1668A	PCB-108	70362-41-3	ng/g	0.58 DNR	0.11 DNR	2.3 DNR	1.2 DNR		0.19 DNR
E1668A	PCB-109	74472-35-8	ng/g	15 DNR	2.1 DNR	49 DNR	26 DNR		4.9 DNR
E1668A	PCB-110	38380-03-9	ng/g	25 DNR	3.4 DNR	92 DNR	47 DNR		9.9 DNR
E1668A	PCB-111	39635-32-0	ng/g	0.21 DNR	0.002 DNR	0.0089 DNR	0.24 DNR		0.002 DNR
E1668A	PCB-112	74472-36-9	ng/g	0.002 DNR	0.0032 DNR	0.0093 DNR	0.0018 DNR		0.0021 DNR
E1668A	PCB-113	68194-10-5	ng/g	36 DNR	3 DNR	86 DNR	53 DNR		11 DNR
E1668A	PCB-114	74472-37-0	ng/g	0.34 DNR	0.066 DNR	1.2 DNR	0.67 DNR		0.082 DNR
E1668A	PCB-115	74472-38-1	ng/g	25 DNR	3.4 DNR	92 DNR	47 DNR		9.9 DNR
E1668A	PCB-116	18259-05-7	ng/g	4.3 DNR	0.43 DNR	11 DNR	5.7 DNR		1.3 DNR
E1668A	PCB-117	68194-11-6	ng/g	4.3 DNR	0.43 DNR	11 DNR	5.7 DNR		1.3 DNR
E1668A	PCB-118	31508-00-6	ng/g	15 DNR	2.2 DNR	60 DNR	31 DNR		6 DNR
E1668A	PCB-119	56558-17-9	ng/g	15 DNR	2.1 DNR	49 DNR	26 DNR		4.9 DNR
E1668A	PCB-120	68194-12-7	ng/g	0.4 DNR	0.0019 DNR	0.81 DNR	0.83 DNR		0.17 DNR
E1668A	PCB-121	56558-18-0	ng/g	0.27 DNR	0.002 DNR	0.0091 DNR	0.1 DNR		0.002 DNR
E1668A	PCB-122	76842-07-4	ng/g	0.18 DNR	0.035 DNR	0.77 DNR	0.39 DNR		0.082 DNR
E1668A	PCB-123	65510-44-3	ng/g	0.16 DNR	0.034 DNR	0.79 DNR	0.4 DNR		0.07 DNR
E1668A	PCB-124	70424-70-3	ng/g	0.58 DNR	0.11 DNR	2.3 DNR	1.2 DNR		0.19 DNR
E1668A	PCB-125	74472-39-2	ng/g	15 DNR	2.1 DNR	49 DNR	26 DNR		4.9 DNR
E1668A	PCB-126	57465-28-8	ng/g	0.046 DNR	0.0035 DNR	0.067 DNR	0.038 DNR		0.019 DNR
E1668A	PCB-127	39635-33-1	ng/g	0.046 DNR	0.0085 DNR	0.16 DNR	0.086 DNR		0.01 DNR
E1668A	PCB-128	38380-07-3	ng/g	3.3 DNR	0.52 DNR	12 DNR	6.6 DNR		1.2 DNR
E1668A	PCB-129	55215-18-4	ng/g	31 DNR	2.8 DNR	69 DNR	47 DNR		9.9 DNR
E1668A	PCB-130	52663-66-8	ng/g	2.1 DNR	0.2 DNR	5.3 DNR	3.5 DNR		0.83 DNR
E1668A	PCB-131	61798-70-7	ng/g	0.36 DNR	0.055 DNR	1.1 DNR	0.63 DNR		0.11 DNR
E1668A	PCB-132	38380-05-1	ng/g	10 DNR	1.1 DNR	25 DNR	18 DNR		3.6 DNR
E1668A	PCB-133	35694-04-3	ng/g	1.8 DNR	0.039 DNR	1.5 DNR	2 DNR		0.33 DNR
E1668A	PCB-134	52704-70-8	ng/g	2.4 DNR	0.19 DNR	4.6 DNR	3.5 DNR		0.59 DNR
E1668A	PCB-135	52744-13-5	ng/g	18 DNR	0.83 DNR	24 DNR	27 DNR		4.6 DNR
E1668A	PCB-136	38411-22-2	ng/g	6.2 DNR	0.41 DNR	11 DNR	11 DNR		1.8 DNR
E1668A	PCB-137	35694-06-5	ng/g	0.95 DNR	0.17 DNR	3.4 DNR	1.8 DNR		0.28 DNR
E1668A	PCB-138	35065-28-2	ng/g	31 DNR	2.8 DNR	69 DNR	47 DNR		9.9 DNR
E1668A	PCB-139	56030-56-9	ng/g	0.85 DNR	0.061 DNR	1.7 DNR	1.6 DNR		0.23 DNR
E1668A	PCB-140	59291-64-4	ng/g	0.85 DNR	0.061 DNR	1.7 DNR	1.6 DNR		0.23 DNR
E1668A	PCB-141	52712-04-6	ng/g	5.1 DNR	0.46 DNR	11 DNR	7.8 DNR		1.6 DNR

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j5-sc1b-00to10-82719	j5-sc1b-100to110-82719	j5-sc1b-10to20-82719	j5-sc1b-20to30-82719	j5-sc1b-20to30-82719r1	j5-sc1b-30to40-82719
	Date Time			8/27/2019 4:45:00	8/27/2019 17:35:00	8/27/2019 14:50:00	8/27/2019 14:55:00	8/27/2019 14:55:00	8/27/2019 15:00:00
	X			7634424	7634424	7634424	7634424	7634424	7634424
	Y			700618	700618	700618	700618	700618	700618
	Top (cm)			0	305	30	61	61	91
	Bottom (cm)			30	335	61	91	91	122
E1668A	PCB-142	41411-61-4	ng/g	0.021 DNR	0.0026 DNR	0.031 DNR	0.024 DNR		0.008 DNR
E1668A	PCB-143	68194-15-0	ng/g	2.4 DNR	0.19 DNR	4.6 DNR	3.5 DNR		0.59 DNR
E1668A	PCB-144	68194-14-9	ng/g	1.4 DNR	0.13 DNR	2.9 DNR	2.2 DNR		0.45 DNR
E1668A	PCB-145	74472-40-5	ng/g	0.00083 DNR	0.0037 DNR	0.071 DNR	0.067 DNR		0.004 DNR
E1668A	PCB-146	51908-16-8	ng/g	9 DNR	0.35 DNR	13 DNR	16 DNR		2.9 DNR
E1668A	PCB-147	68194-13-8	ng/g	37 DNR	1.9 DNR	58 DNR	53 DNR		11 DNR
E1668A	PCB-148	74472-41-6	ng/g	0.74 DNR	0.0011 DNR	0.36 DNR	0.74 DNR		0.077 DNR
E1668A	PCB-149	38380-04-0	ng/g	37 DNR	1.9 DNR	58 DNR	53 DNR		11 DNR
E1668A	PCB-150	68194-08-1	ng/g	0.85 DNR	0.0033 DNR	0.36 DNR	0.7 DNR		0.084 DNR
E1668A	PCB-151	52663-63-5	ng/g	18 DNR	0.83 DNR	24 DNR	27 DNR		4.6 DNR
E1668A	PCB-152	68194-09-2	ng/g	0.83 DNR	0.0036 DNR	0.089 DNR	0.13 DNR		0.01 DNR
E1668A	PCB-153	35065-27-1	ng/g	29 DNR	1.8 DNR	55 DNR	47 DNR		11 DNR
E1668A	PCB-154	60145-22-4	ng/g	2.7 DNR	0.028 DNR	2.3 DNR	4.1 DNR		0.51 DNR
E1668A	PCB-155	33979-03-2	ng/g	0.081 DNR	0.00072 DNR	0.018 DNR	0.031 DNR		0.0011 DNR
E1668A	PCB-156	38380-08-4	ng/g	2.8 DNR	0.41 DNR	9 DNR	5 DNR		0.83 DNR
E1668A	PCB-157	69782-90-7	ng/g	2.8 DNR	0.41 DNR	9 DNR	5 DNR		0.83 DNR
E1668A	PCB-158	74472-42-7	ng/g	2.6 DNR	0.32 DNR	6.9 DNR	4.2 DNR		0.7 DNR
E1668A	PCB-159	39635-35-3	ng/g	0.4 DNR	0.014 DNR	0.53 DNR	0.58 DNR		0.17 DNR
E1668A	PCB-160	41411-62-5	ng/g	31 DNR	2.8 DNR	69 DNR	47 DNR		9.9 DNR
E1668A	PCB-161	74472-43-8	ng/g	0.018 DNR	0.0016 DNR	0.02 DNR	0.016 DNR		0.0051 DNR
E1668A	PCB-162	39635-34-2	ng/g	0.083 DNR	0.012 DNR	0.27 DNR	0.13 DNR		0.005 DNR
E1668A	PCB-163	74472-44-9	ng/g	31 DNR	2.8 DNR	69 DNR	47 DNR		9.9 DNR
E1668A	PCB-164	74472-45-0	ng/g	2.4 DNR	0.19 DNR	5.1 DNR	3.7 DNR		0.79 DNR
E1668A	PCB-165	74472-46-1	ng/g	0.26 DNR	0.002 DNR	0.024 DNR	0.11 DNR		0.0061 DNR
E1668A	PCB-166	41411-63-6	ng/g	3.3 DNR	0.52 DNR	12 DNR	6.6 DNR		1.2 DNR
E1668A	PCB-167	52663-72-6	ng/g	0.98 DNR	0.11 DNR	2.8 DNR	1.5 DNR		0.28 DNR
E1668A	PCB-168	59291-65-5	ng/g	29 DNR	1.8 DNR	55 DNR	47 DNR		11 DNR
E1668A	PCB-169	32774-16-6	ng/g	0.012 DNR	0.0015 DNR	0.073 DNR	0.085 DNR		0.0047 DNR
E1668A	PCB-170	35065-30-6	ng/g	11 DNR	0.35 DNR	13 DNR	12 DNR		3.4 DNR
E1668A	PCB-171	52663-71-5	ng/g	3.4 DNR	0.13 DNR	4.7 DNR	4.2 DNR		1.1 DNR
E1668A	PCB-172	52663-74-8	ng/g	1.9 DNR	0.061 DNR	2.4 DNR	2.3 DNR		0.64 DNR
E1668A	PCB-173	68194-16-1	ng/g	3.4 DNR	0.13 DNR	4.7 DNR	4.2 DNR		1.1 DNR
E1668A	PCB-174	38411-25-5	ng/g	10 DNR	0.31 DNR	14 DNR	14 DNR		4.4 DNR
E1668A	PCB-175	40186-70-7	ng/g	0.44 DNR	0.014 DNR	0.62 DNR	0.58 DNR		0.17 DNR
E1668A	PCB-176	52663-65-7	ng/g	1.4 DNR	0.044 DNR	1.7 DNR	1.9 DNR		0.5 DNR
E1668A	PCB-177	52663-70-4	ng/g	7.3 DNR	0.19 DNR	8.6 DNR	9.8 DNR		2.6 DNR

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j5-sc1b-00to10-82719	j5-sc1b-100to110-82719	j5-sc1b-10to20-82719	j5-sc1b-20to30-82719	j5-sc1b-20to30-82719r1	j5-sc1b-30to40-82719
	Date Time			8/27/2019 4:45:00	8/27/2019 17:35:00	8/27/2019 14:50:00	8/27/2019 14:55:00	8/27/2019 14:55:00	8/27/2019 15:00:00
	X			7634424	7634424	7634424	7634424	7634424	7634424
	Y			700618	700618	700618	700618	700618	700618
	Top (cm)			0	305	30	61	61	91
	Bottom (cm)			30	335	61	91	91	122
E1668A	PCB-178	52663-67-9	ng/g	3.3 DNR	0.057 DNR	3 DNR	3.7 DNR		0.92 DNR
E1668A	PCB-179	52663-64-6	ng/g	5.9 DNR	0.12 DNR	5.8 DNR	7.8 DNR		2 DNR
E1668A	PCB-180	35065-29-3	ng/g	23 DNR	0.59 DNR	27 DNR	29 DNR		7.8 DNR
E1668A	PCB-181	74472-47-2	ng/g	0.12 DNR	0.0086 DNR	0.18 DNR	0.14 DNR		0.0012 DNR
E1668A	PCB-182	60145-23-5	ng/g	0.21 DNR	0.0044 DNR	0.18 DNR	0.24 DNR		0.044 DNR
E1668A	PCB-183	52663-69-1	ng/g	6.9 DNR	0.22 DNR	8.7 DNR	9.1 DNR		2.6 DNR
E1668A	PCB-184	74472-48-3	ng/g	0.00077 DNR	0.00094 DNR	0.0042 DNR	0.021 DNR		0.00093 DNR
E1668A	PCB-185	52712-05-7	ng/g	6.9 DNR	0.22 DNR	8.7 DNR	9.1 DNR		2.6 DNR
E1668A	PCB-186	74472-49-4	ng/g	0.00076 DNR	0.00092 DNR	0.0042 DNR	0.00058 DNR		0.00092 DNR
E1668A	PCB-187	52663-68-0	ng/g	15 DNR	0.3 DNR	16 DNR	20 DNR		5.3 DNR
E1668A	PCB-188	74487-85-7	ng/g	0.2 DNR	0.00083 DNR	0.067 DNR	0.11 DNR		0.00081 DNR
E1668A	PCB-189	39635-31-9	ng/g	0.44 DNR	0.014 DNR	0.51 DNR	0.46 DNR		0.11 DNR
E1668A	PCB-190	41411-64-7	ng/g	2.2 DNR	0.071 DNR	2.6 DNR	2.6 DNR		0.64 DNR
E1668A	PCB-191	74472-50-7	ng/g	0.49 DNR	0.018 DNR	0.61 DNR	0.58 DNR		0.14 DNR
E1668A	PCB-192	74472-51-8	ng/g	0.00084 DNR	0.001 DNR	0.0047 DNR	0.00064 DNR		0.001 DNR
E1668A	PCB-193	69782-91-8	ng/g	23 DNR	0.59 DNR	27 DNR	29 DNR		7.8 DNR
E1668A	PCB-194	35694-08-7	ng/g	6.1 DNR	0.11 DNR	5.2 DNR	6.6 DNR		2 DNR
E1668A	PCB-195	52663-78-2	ng/g	2.8 DNR	0.047 DNR	2.3 DNR	3 DNR		0.86 DNR
E1668A	PCB-196	42740-50-1	ng/g	3.1 DNR	0.065 DNR	2.8 DNR	3.5 DNR		1 DNR
E1668A	PCB-197	33091-17-7	ng/g	0.24 DNR	0.0019 DNR	0.15 DNR	0.25 DNR		0.066 DNR
E1668A	PCB-198	68194-17-2	ng/g	5.9 DNR	0.12 DNR	6 DNR	7.6 DNR		2.4 DNR
E1668A	PCB-199	52663-75-9	ng/g	5.9 DNR	0.12 DNR	6 DNR	7.6 DNR		2.4 DNR
E1668A	PCB-200	52663-73-7	ng/g	0.75 DNR	0.02 DNR	0.79 DNR	0.98 DNR		0.31 DNR
E1668A	PCB-201	40186-71-8	ng/g	0.76 DNR	0.015 DNR	0.75 DNR	0.96 DNR		0.3 DNR
E1668A	PCB-202	2136-99-4	ng/g	1.2 DNR	0.027 DNR	1.2 DNR	1.5 DNR		0.48 DNR
E1668A	PCB-203	52663-76-0	ng/g	3.8 DNR	0.086 DNR	3.6 DNR	4.4 DNR		1.3 DNR
E1668A	PCB-204	74472-52-9	ng/g	0.00073 DNR	8e-04 DNR	0.01 DNR	0.001 DNR		0.002 DNR
E1668A	PCB-205	74472-53-0	ng/g	0.31 DNR	0.006 DNR	0.25 DNR	0.34 DNR		0.094 DNR
E1668A	PCB-206	40186-72-9	ng/g	1.9 DNR	0.077 DNR	2.9 DNR	2.6 DNR		1.1 DNR
E1668A	PCB-207	52663-79-3	ng/g	0.23 DNR	0.0029 DNR	0.28 DNR	0.33 DNR		0.11 DNR
E1668A	PCB-208	52663-77-1	ng/g	0.44 DNR	0.0032 DNR	0.63 DNR	0.62 DNR		0.22 DNR
E1668A	PCB-209	2051-24-3	ng/g	0.51 DNR	0.0091 DNR	1.6 DNR	1.2 DNR		0.83 DNR
E1668A	Total Dichlorobiphenyls		ng/g	1.7 DNR	0.046 DNR	5 DNR	4.4 DNR		1.1 DNR
E1668A	Total Heptachlorobiphenyls		ng/g	93 DNR	2.5 DNR	110 DNR	120 DNR		32 DNR
E1668A	Total Hexachlorobiphenyls		ng/g	170 DNR	12 DNR	330 DNR	270 DNR		54 DNR
E1668A	Total Monochlorobiphenyls		ng/g	0.78 DNR	0.0058 DNR	2.3 DNR	1.8 DNR		0.18 DNR

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j5-sc1b-00to10-82719	j5-sc1b-100to110-82719	j5-sc1b-10to20-82719	j5-sc1b-20to30-82719	j5-sc1b-20to30-82719r1	j5-sc1b-30to40-82719
	Date Time			8/27/2019 4:45:00	8/27/2019 17:35:00	8/27/2019 14:50:00	8/27/2019 14:55:00	8/27/2019 14:55:00	8/27/2019 15:00:00
	X			7634424	7634424	7634424	7634424	7634424	7634424
	Y			700618	700618	700618	700618	700618	700618
	Top (cm)			0	305	30	61	61	91
	Bottom (cm)			30	335	61	91	91	122
E1668A	Total Nonachlorobiphenyls		ng/g	2.6 DNR	0.077 DNR	3.8 DNR	3.6 DNR		1.4 DNR
E1668A	Total Octachlorobiphenyls		ng/g	25 DNR	0.5 DNR	23 DNR	29 DNR		8.8 DNR
E1668A	Total Pentachlorobiphenyls		ng/g	190 DNR	19 DNR	510 DNR	300 DNR		60 DNR
E1668A	Total Tetrachlorobiphenyls		ng/g	130 DNR	4 DNR	170 DNR	130 DNR		34 DNR
E1668A	Total Trichlorobiphenyls		ng/g	11 DNR	0.23 DNR	20 DNR	21 DNR		10 DNR
E1668A	Polychlorinated biphenyls, Total	1336-36-3	ng/g	630 DNR	38 DNR	1200 DNR	890 DNR		200 DNR
PAHs									
SW8270D	2-Methylnaphthalene	91-57-6	ug/kg		0.12 J		20 J		10 J
SW8270D	Acenaphthene	83-32-9	ug/kg		0.054 J		20 J		9.1 J
SW8270D	Acenaphthylene	208-96-8	ug/kg		0.046 U		10		7.5
SW8270D	Anthracene	120-12-7	ug/kg		0.04 J		24		11
SW8270D	Benzo(a)anthracene	56-55-3	ug/kg		0.11 J		48		30
SW8270D	Benzo(a)pyrene	50-32-8	ug/kg		0.14 J		62		40
SW8270D	Benzo(b)fluoranthene	205-99-2	ug/kg		0.28 J		71		47
SW8270D	Benzo(g,h,i)perylene	191-24-2	ug/kg		0.15 J		51		31
SW8270D	Benzo(k)fluoranthene	207-08-9	ug/kg		0.057 U		23		15
SW8270D	Chrysene	218-01-9	ug/kg		0.16 J		63		37
SW8270D	Dibenzo(a,h)anthracene	53-70-3	ug/kg		0.086 U		9.6		6.4
SW8270D	Dibenzofuran	132-64-9	ug/kg		0.07 J		9.3		4.9
SW8270D	Fluoranthene	206-44-0	ug/kg		0.18 U		130		69
SW8270D	Fluorene	86-73-7	ug/kg		0.073 J		22		8.6
SW8270D	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg		0.15 J		48		31
SW8270D	Naphthalene	91-20-3	ug/kg		0.15 UJ		36 J		20 J
SW8270D	Phenanthrene	85-01-8	ug/kg		0.29 U		120		45
SW8270D	Pyrene	129-00-0	ug/kg		0.3 J		140		76
Calculated Totals									
ALS SOP	CALC_TOTAL_DDD_ND_PDI		ug/kg		0.63 UT		3.6 AJT		2.9 AT
ALS SOP	CALC_TOTAL_DDE_ND_PDI		ug/kg		0.79 UT		4.9 AT		4.9 AT
ALS SOP	CALC_TOTAL_DDT_ND_PDI		ug/kg		0.94 UT		0.94 UT		0.94 UT
ALS SOP	CALC_TOTAL_DDx_ND_PDI		ug/kg		0.94 UT		8.6 JT		7.6 T
E1668A	CALC_TOTAL_PCB_ND_PDI		ug/kg	1100 JT	1.1 JT	900 JT	870 JT		210 JT
SW8082A	CALC_TOTAL_AROCLORS_ND_PDI		ug/kg	600 JT	1.5 UT	1200 AT	940 JT		220 JT
SW8270D	CALC_TOTAL_CPAH_ND_PDI		ug/kg		0.24 JT		89 T		57 T
SW8270D	CALC_TOTAL_HPAH_ND_PDI		ug/kg		1.2 JT		550 T		320 T
SW8270D	CALC_TOTAL_LPAH_ND_PDI		ug/kg		0.65 JT		250 JT		110 JT
SW8270D	CALC_TOTAL_PAH_ND_PDI		ug/kg		1.8 JT		800 JT		430 JT

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j5-sc1b-00to10-82719	j5-sc1b-100to110-82719	j5-sc1b-10to20-82719	j5-sc1b-20to30-82719	j5-sc1b-20to30-82719r1	j5-sc1b-30to40-82719
	Date Time			8/27/2019 4:45:00	8/27/2019 17:35:00	8/27/2019 14:50:00	8/27/2019 14:55:00	8/27/2019 14:55:00	8/27/2019 15:00:00
	X			7634424	7634424	7634424	7634424	7634424	7634424
	Y			700618	700618	700618	700618	700618	700618
	Top (cm)			0	305	30	61	61	91
	Bottom (cm)			30	335	61	91	91	122

DDx = dichlorodiphenyltrichloroethane and its derivatives

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyls

PeCDD = Pentachlorodibenzo-p-dioxin

PeCDF = Pentachlorodibenzofuran

TCDD = Tetrachlorodibenzo-p-dioxin

ug/kg = micrograms per kilogram

ng/g = nanograms per gram

% = percent

g/cm3 = grams per cubic centimeter

J = Reported result is an estimate

T = Total concentration from component analytes.

U = Analyte was not detected in sample

R = Rejected

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j5-sc1b-40to50-82719	j5-sc1b-50to60-82719	j5-sc1b-50to60-82719r1	j5-sc1b-60to70-82719	j5-sc1b-70to80-82719	j5-sc1b-80to90-82719
	Date Time			8/27/2019 16:10:00	8/27/2019 16:15:00	8/27/2019 16:15:00	8/27/2019 16:20:00	8/27/2019 16:25:00	8/27/2019 17:25:00
	X			7634424	7634424	7634424	7634424	7634424	7634424
	Y			700618	700618	700618	700618	700618	700618
	Top (cm)			122	152	152	183	213	244
	Bottom (cm)			152	183	183	213	244	274
Conventionals									
E160.3	Total Solids		%	55	56		57	66	71
PSEP	Total Solids		%	54	56		56	65	70
SM2540G	Total Solids		%						
SW9060A	Carbon, Total Organic	7440-044-0	mg/kg						
Organochlorine Pesticides									
ALS SOP	o,p'-DDD	53-19-0	ug/kg	0.63 U	0.63 U		0.63 U	0.63 U	0.63 U
ALS SOP	o,p'-DDE	3424-82-6	ug/kg	0.79 U	1.6		0.79 U	0.79 U	0.79 U
ALS SOP	o,p'-DDT	789-02-6	ug/kg	0.94 U	0.94 U		0.94 U	0.94 U	0.94 U
ALS SOP	4,4'-DDD	72-54-8	ug/kg	2	1.9		2.3	2.4	0.35 U
ALS SOP	4,4'-DDE	72-55-9	ug/kg	3.7	12		6.6	3.9	0.7 U
ALS SOP	4,4'-DDT	50-29-3	ug/kg	1.7	3		0.47 U	0.47 U	0.47 U
Dioxins/Furans									
CWA1613B	1,2,3,4,6,7,8,9-OCDD	3268-87-9	ug/kg	1.5	1.9		0.65	0.9	0.0023 U
CWA1613B	1,2,3,4,6,7,8,9-OCDF	39001-02-0	ug/kg	0.1	0.4		0.056	0.097	0.00023 J
CWA1613B	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg	0.14	0.22		0.057	0.069	0.00024 U
CWA1613B	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg	0.035	0.09		0.021	0.062	0.00019 U
CWA1613B	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg	0.0023 J	0.0049 J		0.0012 J	0.002 J	0.005 U
CWA1613B	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg	0.00077 J	0.00098 J		0.00041 U	0.00052 U	0.005 U
CWA1613B	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg	0.0033 J	0.0054		0.0013 J	0.0023 J	4.8e-05 U
CWA1613B	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg	0.0055	0.007		0.002 J	0.0028 J	0.005 U
CWA1613B	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg	0.002 J	0.0025 J		0.0011 J	0.0031 J	0.005 U
CWA1613B	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg	0.0026 J	0.0025 J		0.0012 J	0.0012 J	0.005 U
CWA1613B	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg	0.00073 U	0.00085 U		0.00039 U	0.00055 U	8.1e-05 U
CWA1613B	1,2,3,7,8-PeCDD	40321-76-4	ug/kg	0.00078 J	0.00086 J		0.00038 U	0.00046 U	0.005 U
CWA1613B	1,2,3,7,8-PeCDF	57117-41-6	ug/kg	0.00057 J	0.00097 J		0.00031 J	0.00053 U	0.005 U
CWA1613B	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg	0.0019 J	0.0025 J		0.00097 J	0.0022 J	0.005 U
CWA1613B	2,3,4,7,8-PeCDF	57117-31-4	ug/kg	0.0013 J	0.0016 J		0.00058 J	0.0014 U	0.005 U
CWA1613B	2,3,7,8-TCDD	1746-01-6	ug/kg	0.00022 U	0.00031 J		0.00016 J	0.00019 J	0.00099 U
CWA1613B	2,3,7,8-TCDF	51207-31-9	ug/kg	0.00084 J	0.0011 DNR	0.001	0.00054 J	0.00063 J	0.00032 J
CWA1613B	Total HpCDD	37871-00-4	ug/kg	0.27	0.39		0.12	0.16	0.00058 J
CWA1613B	Total HpCDF	38998-75-3	ug/kg	0.13 J	0.41 J		0.072 J	0.16 J	0.00038 J
CWA1613B	Total HxCDD	34465-46-8	ug/kg	0.038 J	0.042 J		0.017 J	0.024 J	0.00012 J
CWA1613B	Total HxCDF	55684-94-1	ug/kg	0.05 J	0.11 J		0.027 J	0.059 J	0.00028 J
CWA1613B	Total PeCDD	36088-22-9	ug/kg	0.0061 J	0.0077 J		0.0032 J	0.0065 J	0.005 U
CWA1613B	Total PeCDF	30402-15-4	ug/kg	0.022 J	0.029 J		0.013 J	0.037 J	0.00023 J

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j5-sc1b-40to50-82719	j5-sc1b-50to60-82719	j5-sc1b-50to60-82719r1	j5-sc1b-60to70-82719	j5-sc1b-70to80-82719	j5-sc1b-80to90-82719
	Date Time			8/27/2019 16:10:00	8/27/2019 16:15:00	8/27/2019 16:15:00	8/27/2019 16:20:00	8/27/2019 16:25:00	8/27/2019 17:25:00
	X			7634424	7634424	7634424	7634424	7634424	7634424
	Y			700618	700618	700618	700618	700618	700618
	Top (cm)			122	152	152	183	213	244
	Bottom (cm)			152	183	183	213	244	274
CWA1613B	Total TCDD	41903-57-5	ug/kg	0.0023 J	0.0036 J		0.0011 J	0.0033 J	0.00018 J
CWA1613B	Total TCDF	30402-14-3	ug/kg	0.01 J	0.015 J		0.0046 J	0.012 J	0.00076 J
Dioxins/Furans									
E1613	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg						
E1613	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg						
E1613	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg						
E1613	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg						
E1613	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg						
E1613	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg						
E1613	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg						
E1613	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg						
E1613	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg						
E1613	1,2,3,7,8-PeCDD	40321-76-4	ug/kg						
E1613	1,2,3,7,8-PeCDF	57117-41-6	ug/kg						
E1613	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg						
E1613	2,3,4,7,8-PeCDF	57117-31-4	ug/kg						
E1613	2,3,7,8-TCDD	1746-01-6	ug/kg						
E1613	2,3,7,8-TCDF	51207-31-9	ug/kg						
E1613	OCDD	3268-87-9	ug/kg						
E1613	OCDF	39001-02-0	ug/kg						
E1613	Total HpCDD	37871-00-4	ug/kg						
E1613	Total HpCDF	38998-75-3	ug/kg						
E1613	Total HxCDD	34465-46-8	ug/kg						
E1613	Total HxCDF	55684-94-1	ug/kg						
E1613	Total PeCDD	36088-22-9	ug/kg						
E1613	Total PeCDF	30402-15-4	ug/kg						
E1613	Total TCDD	41903-57-5	ug/kg						
E1613	Total TCDF	30402-14-3	ug/kg						
PCB Aroclors									
SW8082A	Aroclor 1016	12674-11-2	ug/kg	16 U	15 U	1.6 U	1.5 U	1.6 U	
SW8082A	Aroclor 1221	11104-28-2	ug/kg	16 U	15 U	1.6 U	1.5 U	1.6 U	
SW8082A	Aroclor 1232	11141-16-5	ug/kg	16 U	15 U	1.6 U	1.5 U	1.6 U	
SW8082A	Aroclor 1242	53469-21-9	ug/kg	16 U	15 U	1.6 U	1.5 U	1.6 U	
SW8082A	Aroclor 1248	12672-29-6	ug/kg	170	240	64	1.5 U	1.6 U	
SW8082A	Aroclor 1254	11097-69-1	ug/kg	470	550	140	170	2.1 J	
SW8082A	Aroclor 1260	11096-82-5	ug/kg	240	380	120	130	1.7 J	

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j5-sc1b-40to50-82719	j5-sc1b-50to60-82719	j5-sc1b-50to60-82719r1	j5-sc1b-60to70-82719	j5-sc1b-70to80-82719	j5-sc1b-80to90-82719
	Date Time			8/27/2019 16:10:00	8/27/2019 16:15:00	8/27/2019 16:15:00	8/27/2019 16:20:00	8/27/2019 16:25:00	8/27/2019 17:25:00
	X			7634424	7634424	7634424	7634424	7634424	7634424
	Y			700618	700618	700618	700618	700618	700618
	Top (cm)			122	152	152	183	213	244
	Bottom (cm)			152	183	183	213	244	274
SW8082A	Aroclor 1262	37324-23-5	ug/kg	5.9 U	5.8 U		0.6 U	0.6 U	0.6 U
SW8082A	Aroclor 1268	11100-14-4	ug/kg	5.9 U	5.8 U		0.6 U	0.6 U	0.6 U
PCB Congeners									
E1668A	PCB-1	2051-60-7	ng/g	1.3 DNR	0.18 DNR		0.088 DNR	0.036 DNR	0.0032 DNR
E1668A	PCB-2	2051-61-8	ng/g	0.051 DNR	0.028 DNR		0.012 DNR	0.0079 DNR	0.00091 DNR
E1668A	PCB-3	2051-62-9	ng/g	0.31 DNR	0.15 DNR		0.071 DNR	0.02 DNR	0.0011 DNR
E1668A	PCB-4	13029-08-8	ng/g	1.6 DNR	0.44 DNR		0.21 DNR	0.068 DNR	0.0029 DNR
E1668A	PCB-5	16605-91-7	ng/g	0.058 DNR	0.017 DNR		0.01 DNR	0.0024 DNR	0.0014 DNR
E1668A	PCB-6	25569-80-6	ng/g	0.41 DNR	0.33 DNR		0.16 DNR	0.064 DNR	0.0014 DNR
E1668A	PCB-7	33284-50-3	ng/g	0.061 DNR	0.074 DNR		0.028 DNR	0.01 DNR	0.0013 DNR
E1668A	PCB-8	34883-43-7	ng/g	1.2 DNR	1.2 DNR		0.65 DNR	0.17 DNR	0.0029 DNR
E1668A	PCB-9	34883-39-1	ng/g	0.09 DNR	0.11 DNR		0.031 DNR	0.011 DNR	0.0015 DNR
E1668A	PCB-10	33146-45-1	ng/g	0.04 DNR	0.018 DNR		0.01 DNR	0.0025 DNR	0.0015 DNR
E1668A	PCB-11	2050-67-1	ng/g	0.077 DNR	0.017 DNR		0.014 DNR	0.016 DNR	0.0063 DNR
E1668A	PCB-12	2974-92-7	ng/g	0.19 DNR	0.13 DNR		0.063 DNR	0.029 DNR	0.0013 DNR
E1668A	PCB-13	2974-90-5	ng/g	0.19 DNR	0.13 DNR		0.063 DNR	0.029 DNR	0.0013 DNR
E1668A	PCB-14	34883-41-5	ng/g	0.032 DNR	0.014 DNR		0.0018 DNR	0.002 DNR	0.0012 DNR
E1668A	PCB-15	2050-68-2	ng/g	0.55 DNR	0.71 DNR		0.26 DNR	0.068 DNR	0.0011 DNR
E1668A	PCB-16	38444-78-9	ng/g	0.81 DNR	1.3 DNR		0.53 DNR	0.17 DNR	0.0079 DNR
E1668A	PCB-17	37680-66-3	ng/g	1.2 DNR	1.8 DNR		0.78 DNR	0.27 DNR	0.0032 DNR
E1668A	PCB-18	37680-65-2	ng/g	1.8 DNR	2.7 DNR		1.2 DNR	0.43 DNR	0.0062 DNR
E1668A	PCB-19	38444-73-4	ng/g	0.35 DNR	0.24 DNR		0.12 DNR	0.038 DNR	0.00095 DNR
E1668A	PCB-20	38444-84-7	ng/g	3.7 DNR	6.5 DNR		2.6 DNR	0.79 DNR	0.012 DNR
E1668A	PCB-21	55702-46-0	ng/g	1.5 DNR	2.4 DNR		1.1 DNR	0.33 DNR	0.0045 DNR
E1668A	PCB-22	38444-85-8	ng/g	0.71 DNR	1.1 DNR		0.48 DNR	0.14 DNR	0.0025 DNR
E1668A	PCB-23	55720-44-0	ng/g	0.026 DNR	0.037 DNR		0.014 DNR	0.0056 DNR	0.0011 DNR
E1668A	PCB-24	55702-45-9	ng/g	0.025 DNR	0.035 DNR		0.011 DNR	0.0037 DNR	0.00059 DNR
E1668A	PCB-25	55712-37-3	ng/g	0.45 DNR	0.72 DNR		0.24 DNR	0.15 DNR	0.0033 DNR
E1668A	PCB-26	38444-81-4	ng/g	0.75 DNR	1.4 DNR		0.35 DNR	0.23 DNR	0.002 DNR
E1668A	PCB-27	38444-76-7	ng/g	0.13 DNR	0.22 DNR		0.094 DNR	0.034 DNR	0.00057 DNR
E1668A	PCB-28	7012-37-5	ng/g	3.7 DNR	6.5 DNR		2.6 DNR	0.79 DNR	0.012 DNR
E1668A	PCB-29	15862-07-4	ng/g	0.75 DNR	1.4 DNR		0.35 DNR	0.23 DNR	0.002 DNR
E1668A	PCB-30	35693-92-6	ng/g	1.8 DNR	2.7 DNR		1.2 DNR	0.43 DNR	0.0062 DNR
E1668A	PCB-31	16606-02-3	ng/g	2.5 DNR	4.1 DNR		1.8 DNR	0.58 DNR	0.0082 DNR
E1668A	PCB-32	38444-77-8	ng/g	0.65 DNR	1.1 DNR		0.47 DNR	0.16 DNR	0.0031 DNR
E1668A	PCB-33	38444-86-9	ng/g	1.5 DNR	2.4 DNR		1.1 DNR	0.33 DNR	0.0045 DNR

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j5-sc1b-40to50-82719	j5-sc1b-50to60-82719	j5-sc1b-50to60-82719r1	j5-sc1b-60to70-82719	j5-sc1b-70to80-82719	j5-sc1b-80to90-82719
	Date Time			8/27/2019 16:10:00	8/27/2019 16:15:00	8/27/2019 16:15:00	8/27/2019 16:20:00	8/27/2019 16:25:00	8/27/2019 17:25:00
	X			7634424	7634424	7634424	7634424	7634424	7634424
	Y			700618	700618	700618	700618	700618	700618
	Top (cm)			122	152	152	183	213	244
	Bottom (cm)			152	183	183	213	244	274
E1668A	PCB-34	37680-68-5	ng/g	0.062 DNR	0.085 DNR		0.042 DNR	0.014 DNR	0.0011 DNR
E1668A	PCB-35	37680-69-6	ng/g	0.083 DNR	0.064 DNR		0.026 DNR	0.033 DNR	0.0011 DNR
E1668A	PCB-36	38444-87-0	ng/g	0.024 DNR	0.035 DNR		0.013 DNR	0.013 DNR	0.00099 DNR
E1668A	PCB-37	38444-90-5	ng/g	0.86 DNR	1.5 DNR		0.54 DNR	0.15 DNR	0.0021 DNR
E1668A	PCB-38	53555-66-1	ng/g	0.025 DNR	0.035 DNR		0.014 DNR	0.0054 DNR	0.001 DNR
E1668A	PCB-39	38444-88-1	ng/g	0.097 DNR	0.13 DNR		0.042 DNR	0.03 DNR	0.00095 DNR
E1668A	PCB-40	38444-93-8	ng/g	3.6 DNR	5.2 DNR		2.2 DNR	0.94 DNR	0.014 DNR
E1668A	PCB-41	52663-59-9	ng/g	3.6 DNR	5.2 DNR		2.2 DNR	0.94 DNR	0.014 DNR
E1668A	PCB-42	36559-22-5	ng/g	2.6 DNR	3.8 DNR		1.5 DNR	0.59 DNR	0.0072 DNR
E1668A	PCB-43	70362-46-8	ng/g	0.19 DNR	0.23 DNR		0.091 DNR	0.08 DNR	0.0018 DNR
E1668A	PCB-44	41464-39-5	ng/g	12 DNR	17 DNR		7.4 DNR	4 DNR	0.045 DNR
E1668A	PCB-45	41464-39-5	ng/g	1.1 DNR	1.4 DNR		0.7 DNR	0.22 DNR	0.002 DNR
E1668A	PCB-46	41464-47-5	ng/g	0.32 DNR	0.52 DNR		0.23 DNR	0.074 DNR	0.0023 DNR
E1668A	PCB-47	2437-79-8	ng/g	12 DNR	17 DNR		7.4 DNR	4 DNR	0.045 DNR
E1668A	PCB-48	70362-47-9	ng/g	0.98 DNR	1.6 DNR		0.65 DNR	0.16 DNR	0.0019 DNR
E1668A	PCB-49	41464-40-8	ng/g	10 DNR	16 DNR		6 DNR	4 DNR	0.045 DNR
E1668A	PCB-50	62796-65-0	ng/g	1.1 DNR	1.3 DNR		0.63 DNR	0.24 DNR	0.0019 DNR
E1668A	PCB-51	68194-04-7	ng/g	1.1 DNR	1.4 DNR		0.7 DNR	0.22 DNR	0.002 DNR
E1668A	PCB-52	35693-99-3	ng/g	26 DNR	35 DNR		14 DNR	7.7 DNR	0.066 DNR
E1668A	PCB-53	41464-41-9	ng/g	1.1 DNR	1.3 DNR		0.63 DNR	0.24 DNR	0.0019 DNR
E1668A	PCB-54	15968-05-5	ng/g	0.031 DNR	0.029 DNR		0.024 DNR	0.0062 DNR	0.00071 DNR
E1668A	PCB-55	74338-24-2	ng/g	0.13 DNR	0.083 DNR		0.0071 DNR	0.033 DNR	0.0014 DNR
E1668A	PCB-56	41464-43-1	ng/g	3.6 DNR	5.2 DNR		1.7 DNR	0.67 DNR	0.0086 DNR
E1668A	PCB-57	70424-67-8	ng/g	0.065 DNR	0.15 DNR		0.0086 DNR	0.033 DNR	0.0014 DNR
E1668A	PCB-58	41464-49-7	ng/g	0.16 DNR	0.17 DNR		0.054 DNR	0.032 DNR	0.0013 DNR
E1668A	PCB-59	74472-33-6	ng/g	0.73 DNR	1 DNR		0.35 DNR	0.12 DNR	0.0013 DNR
E1668A	PCB-60	33025-41-1	ng/g	0.65 DNR	0.75 DNR		0.27 DNR	0.12 DNR	0.0013 DNR
E1668A	PCB-61	33284-53-6	ng/g	23 DNR	31 DNR		12 DNR	5.5 DNR	0.053 DNR
E1668A	PCB-62	54230-22-7	ng/g	0.73 DNR	1 DNR		0.35 DNR	0.12 DNR	0.0013 DNR
E1668A	PCB-63	74472-34-7	ng/g	0.47 DNR	0.6 DNR		0.18 DNR	0.072 DNR	0.0012 DNR
E1668A	PCB-64	52663-58-8	ng/g	3.3 DNR	4.6 DNR		1.9 DNR	0.71 DNR	0.0081 DNR
E1668A	PCB-65	33284-54-7	ng/g	12 DNR	17 DNR		7.4 DNR	4 DNR	0.045 DNR
E1668A	PCB-66	32598-10-0	ng/g	14 DNR	18 DNR		6.1 DNR	2.7 DNR	0.029 DNR
E1668A	PCB-67	73575-53-8	ng/g	0.27 DNR	0.38 DNR		0.099 DNR	0.039 DNR	0.0013 DNR
E1668A	PCB-68	73575-52-7	ng/g	0.37 DNR	0.54 DNR		0.18 DNR	0.38 DNR	0.0037 DNR
E1668A	PCB-69	60233-24-1	ng/g	10 DNR	16 DNR		6 DNR	4 DNR	0.045 DNR

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j5-sc1b-40to50-82719	j5-sc1b-50to60-82719	j5-sc1b-50to60-82719r1	j5-sc1b-60to70-82719	j5-sc1b-70to80-82719	j5-sc1b-80to90-82719
	Date Time			8/27/2019 16:10:00	8/27/2019 16:15:00	8/27/2019 16:15:00	8/27/2019 16:20:00	8/27/2019 16:25:00	8/27/2019 17:25:00
	X			7634424	7634424	7634424	7634424	7634424	7634424
	Y			700618	700618	700618	700618	700618	700618
	Top (cm)			122	152	152	183	213	244
	Bottom (cm)			152	183	183	213	244	274
E1668A	PCB-70	32598-11-1	ng/g	23 DNR	31 DNR		12 DNR	5.5 DNR	0.053 DNR
E1668A	PCB-71	41464-46-4	ng/g	3.6 DNR	5.2 DNR		2.2 DNR	0.94 DNR	0.014 DNR
E1668A	PCB-72	41464-42-0	ng/g	0.68 DNR	1.1 DNR		0.33 DNR	0.39 DNR	0.0055 DNR
E1668A	PCB-73	74338-23-1	ng/g	0.19 DNR	0.23 DNR		0.091 DNR	0.08 DNR	0.0018 DNR
E1668A	PCB-74	32690-93-0	ng/g	23 DNR	31 DNR		12 DNR	5.5 DNR	0.053 DNR
E1668A	PCB-75	32598-12-2	ng/g	0.73 DNR	1 DNR		0.35 DNR	0.12 DNR	0.0013 DNR
E1668A	PCB-76	70362-48-0	ng/g	23 DNR	31 DNR		12 DNR	5.5 DNR	0.053 DNR
E1668A	PCB-77	32598-13-3	ng/g	1.1 DNR	1.2 DNR		0.28 DNR	0.083 DNR	0.0013 DNR
E1668A	PCB-78	70362-49-1	ng/g	0.021 DNR	0.024 DNR		0.007 DNR	0.033 DNR	0.0013 DNR
E1668A	PCB-79	41464-48-6	ng/g	0.45 DNR	0.74 DNR		0.26 DNR	0.3 DNR	0.0011 DNR
E1668A	PCB-80	33284-52-5	ng/g	0.054 DNR	0.022 DNR		0.0063 DNR	0.029 DNR	0.0012 DNR
E1668A	PCB-81	70362-50-4	ng/g	0.034 DNR	0.067 DNR		0.0071 DNR	0.033 DNR	0.0013 DNR
E1668A	PCB-82	52663-62-4	ng/g	4.6 DNR	5.6 DNR		2.1 DNR	0.98 DNR	0.0025 DNR
E1668A	PCB-83	60145-20-2	ng/g	29 DNR	40 DNR		16 DNR	12 DNR	0.1 DNR
E1668A	PCB-84	52663-60-2	ng/g	11 DNR	14 DNR		6.4 DNR	2.8 DNR	0.022 DNR
E1668A	PCB-85	65510-45-4	ng/g	6.7 DNR	7.9 DNR		2.9 DNR	1.4 DNR	0.0092 DNR
E1668A	PCB-86	55312-69-1	ng/g	26 DNR	34 DNR		13 DNR	6.9 DNR	0.052 DNR
E1668A	PCB-87	38380-02-8	ng/g	26 DNR	34 DNR		13 DNR	6.9 DNR	0.052 DNR
E1668A	PCB-88	55215-17-3	ng/g	6.2 DNR	8.7 DNR		4.2 DNR	2.8 DNR	0.027 DNR
E1668A	PCB-89	73575-57-2	ng/g	0.3 DNR	0.44 DNR		0.14 DNR	0.002 DNR	0.0024 DNR
E1668A	PCB-90	68194-07-0	ng/g	47 DNR	63 DNR		26 DNR	17 DNR	0.13 DNR
E1668A	PCB-91	68194-05-8	ng/g	6.2 DNR	8.7 DNR		4.2 DNR	2.8 DNR	0.027 DNR
E1668A	PCB-92	52663-61-3	ng/g	10 DNR	16 DNR		6 DNR	4.8 DNR	0.037 DNR
E1668A	PCB-93	73575-56-1	ng/g	0.6 DNR	0.99 DNR		0.5 DNR	0.63 DNR	0.0057 DNR
E1668A	PCB-94	73575-55-0	ng/g	0.2 DNR	0.021 DNR		0.11 DNR	0.054 DNR	0.0024 DNR
E1668A	PCB-95	38379-99-6	ng/g	35 DNR	47 DNR		22 DNR	12 DNR	0.1 DNR
E1668A	PCB-96	73575-54-9	ng/g	0.22 DNR	0.016 DNR		0.15 DNR	0.068 DNR	0.0018 DNR
E1668A	PCB-97	41464-51-1	ng/g	26 DNR	34 DNR		13 DNR	6.9 DNR	0.052 DNR
E1668A	PCB-98	60233-25-2	ng/g	1.2 DNR	1.6 DNR		0.75 DNR	0.41 DNR	0.0022 DNR
E1668A	PCB-99	38380-01-7	ng/g	29 DNR	40 DNR		16 DNR	12 DNR	0.1 DNR
E1668A	PCB-100	39485-83-1	ng/g	0.6 DNR	0.99 DNR		0.5 DNR	0.63 DNR	0.0057 DNR
E1668A	PCB-101	37680-73-2	ng/g	47 DNR	63 DNR		26 DNR	17 DNR	0.13 DNR
E1668A	PCB-102	68194-06-9	ng/g	1.2 DNR	1.6 DNR		0.75 DNR	0.41 DNR	0.0022 DNR
E1668A	PCB-103	60145-21-3	ng/g	0.97 DNR	1.6 DNR		0.76 DNR	0.77 DNR	0.008 DNR
E1668A	PCB-104	56558-16-8	ng/g	0.033 DNR	0.014 DNR		0.0018 DNR	0.0013 DNR	0.0016 DNR
E1668A	PCB-105	32598-14-4	ng/g	11 DNR	14 DNR		5 DNR	2.6 DNR	0.016 DNR

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j5-sc1b-40to50-82719	j5-sc1b-50to60-82719	j5-sc1b-50to60-82719r1	j5-sc1b-60to70-82719	j5-sc1b-70to80-82719	j5-sc1b-80to90-82719
	Date Time			8/27/2019 16:10:00	8/27/2019 16:15:00	8/27/2019 16:15:00	8/27/2019 16:20:00	8/27/2019 16:25:00	8/27/2019 17:25:00
	X			7634424	7634424	7634424	7634424	7634424	7634424
	Y			700618	700618	700618	700618	700618	700618
	Top (cm)			122	152	152	183	213	244
	Bottom (cm)			152	183	183	213	244	274
E1668A	PCB-106	70424-69-0	ng/g	0.096 DNR	0.075 DNR		0.024 DNR	0.016 DNR	0.0015 DNR
E1668A	PCB-107	70424-68-9	ng/g	3.2 DNR	4.5 DNR		1.4 DNR	1.1 DNR	0.0094 DNR
E1668A	PCB-108	70362-41-3	ng/g	1.3 DNR	1.7 DNR		0.58 DNR	0.3 DNR	0.0015 DNR
E1668A	PCB-109	74472-35-8	ng/g	26 DNR	34 DNR		13 DNR	6.9 DNR	0.052 DNR
E1668A	PCB-110	38380-03-9	ng/g	51 DNR	64 DNR		26 DNR	13 DNR	0.11 DNR
E1668A	PCB-111	39635-32-0	ng/g	0.085 DNR	0.013 DNR		0.0018 DNR	0.13 DNR	0.0015 DNR
E1668A	PCB-112	74472-36-9	ng/g	0.034 DNR	0.014 DNR		0.0018 DNR	0.0013 DNR	0.0016 DNR
E1668A	PCB-113	68194-10-5	ng/g	47 DNR	63 DNR		26 DNR	17 DNR	0.13 DNR
E1668A	PCB-114	74472-37-0	ng/g	0.7 DNR	0.83 DNR		0.28 DNR	0.13 DNR	0.0014 DNR
E1668A	PCB-115	74472-38-1	ng/g	51 DNR	64 DNR		26 DNR	13 DNR	0.11 DNR
E1668A	PCB-116	18259-05-7	ng/g	6.7 DNR	7.9 DNR		2.9 DNR	1.4 DNR	0.0092 DNR
E1668A	PCB-117	68194-11-6	ng/g	6.7 DNR	7.9 DNR		2.9 DNR	1.4 DNR	0.0092 DNR
E1668A	PCB-118	31508-00-6	ng/g	36 DNR	47 DNR		16 DNR	8.6 DNR	0.067 DNR
E1668A	PCB-119	56558-17-9	ng/g	26 DNR	34 DNR		13 DNR	6.9 DNR	0.052 DNR
E1668A	PCB-120	68194-12-7	ng/g	0.52 DNR	0.67 DNR		0.25 DNR	0.37 DNR	0.0035 DNR
E1668A	PCB-121	56558-18-0	ng/g	0.062 DNR	0.014 DNR		0.0018 DNR	0.073 DNR	0.0016 DNR
E1668A	PCB-122	76842-07-4	ng/g	0.51 DNR	0.67 DNR		0.2 DNR	0.1 DNR	0.0017 DNR
E1668A	PCB-123	65510-44-3	ng/g	0.54 DNR	0.67 DNR		0.2 DNR	0.1 DNR	0.0014 DNR
E1668A	PCB-124	70424-70-3	ng/g	1.3 DNR	1.7 DNR		0.58 DNR	0.3 DNR	0.0015 DNR
E1668A	PCB-125	74472-39-2	ng/g	26 DNR	34 DNR		13 DNR	6.9 DNR	0.052 DNR
E1668A	PCB-126	57465-28-8	ng/g	0.12 DNR	0.13 DNR		0.024 DNR	0.016 DNR	0.0015 DNR
E1668A	PCB-127	39635-33-1	ng/g	0.095 DNR	0.074 DNR		0.023 DNR	0.016 DNR	0.0015 DNR
E1668A	PCB-128	38380-07-3	ng/g	7.6 DNR	9.6 DNR		3.4 DNR	1.7 DNR	0.015 DNR
E1668A	PCB-129	55215-18-4	ng/g	47 DNR	61 DNR		22 DNR	16 DNR	0.13 DNR
E1668A	PCB-130	52663-66-8	ng/g	3.7 DNR	4.6 DNR		1.7 DNR	1.2 DNR	0.009 DNR
E1668A	PCB-131	61798-70-7	ng/g	0.73 DNR	0.91 DNR		0.31 DNR	0.18 DNR	0.0024 DNR
E1668A	PCB-132	38380-05-1	ng/g	17 DNR	22 DNR		8.1 DNR	5.4 DNR	0.044 DNR
E1668A	PCB-133	35694-04-3	ng/g	1.1 DNR	1.7 DNR		0.67 DNR	1.1 DNR	0.0083 DNR
E1668A	PCB-134	52704-70-8	ng/g	2.9 DNR	3.9 DNR		1.4 DNR	1 DNR	0.0074 DNR
E1668A	PCB-135	52744-13-5	ng/g	16 DNR	26 DNR		9.7 DNR	10 DNR	0.078 DNR
E1668A	PCB-136	38411-22-2	ng/g	6.1 DNR	9.1 DNR		4.1 DNR	3.4 DNR	0.032 DNR
E1668A	PCB-137	35694-06-5	ng/g	2.1 DNR	2.7 DNR		0.86 DNR	0.45 DNR	0.0028 DNR
E1668A	PCB-138	35065-28-2	ng/g	47 DNR	61 DNR		22 DNR	16 DNR	0.13 DNR
E1668A	PCB-139	56030-56-9	ng/g	1 DNR	1.5 DNR		0.56 DNR	0.62 DNR	0.0042 DNR
E1668A	PCB-140	59291-64-4	ng/g	1 DNR	1.5 DNR		0.56 DNR	0.62 DNR	0.0042 DNR
E1668A	PCB-141	52712-04-6	ng/g	7.4 DNR	10 DNR		3.7 DNR	2.6 DNR	0.022 DNR

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j5-sc1b-40to50-82719	j5-sc1b-50to60-82719	j5-sc1b-50to60-82719r1	j5-sc1b-60to70-82719	j5-sc1b-70to80-82719	j5-sc1b-80to90-82719
	Date Time			8/27/2019 16:10:00	8/27/2019 16:15:00	8/27/2019 16:15:00	8/27/2019 16:20:00	8/27/2019 16:25:00	8/27/2019 17:25:00
	X			7634424	7634424	7634424	7634424	7634424	7634424
	Y			700618	700618	700618	700618	700618	700618
	Top (cm)			122	152	152	183	213	244
	Bottom (cm)			152	183	183	213	244	274
E1668A	PCB-142	41411-61-4	ng/g	0.019 DNR	0.039 DNR		0.0097 DNR	0.0096 DNR	0.0024 DNR
E1668A	PCB-143	68194-15-0	ng/g	2.9 DNR	3.9 DNR		1.4 DNR	1 DNR	0.0074 DNR
E1668A	PCB-144	68194-14-9	ng/g	1.7 DNR	2.7 DNR		0.98 DNR	0.71 DNR	0.0069 DNR
E1668A	PCB-145	74472-40-5	ng/g	0.038 DNR	0.046 DNR		0.011 DNR	0.0087 DNR	0.00059 DNR
E1668A	PCB-146	51908-16-8	ng/g	9.5 DNR	14 DNR		5.8 DNR	8 DNR	0.059 DNR
E1668A	PCB-147	68194-13-8	ng/g	41 DNR	55 DNR		23 DNR	20 DNR	0.17 DNR
E1668A	PCB-148	74472-41-6	ng/g	0.22 DNR	0.48 DNR		0.2 DNR	0.47 DNR	0.00079 DNR
E1668A	PCB-149	38380-04-0	ng/g	41 DNR	55 DNR		23 DNR	20 DNR	0.17 DNR
E1668A	PCB-150	68194-08-1	ng/g	0.17 DNR	0.35 DNR		0.17 DNR	0.34 DNR	0.0032 DNR
E1668A	PCB-151	52663-63-5	ng/g	16 DNR	26 DNR		9.7 DNR	10 DNR	0.078 DNR
E1668A	PCB-152	68194-09-2	ng/g	0.049 DNR	0.037 DNR		0.021 DNR	0.0088 DNR	0.00056 DNR
E1668A	PCB-153	35065-27-1	ng/g	40 DNR	55 DNR		22 DNR	19 DNR	0.16 DNR
E1668A	PCB-154	60145-22-4	ng/g	1.3 DNR	2.5 DNR		1.1 DNR	2.1 DNR	0.015 DNR
E1668A	PCB-155	33979-03-2	ng/g	0.014 DNR	0.0081 DNR		0.00095 DNR	0.019 DNR	0.00054 DNR
E1668A	PCB-156	38380-08-4	ng/g	5.5 DNR	7.6 DNR		2.4 DNR	1.5 DNR	0.012 DNR
E1668A	PCB-157	69782-90-7	ng/g	5.5 DNR	7.6 DNR		2.4 DNR	1.5 DNR	0.012 DNR
E1668A	PCB-158	74472-42-7	ng/g	4.4 DNR	5.6 DNR		2 DNR	1.2 DNR	0.012 DNR
E1668A	PCB-159	39635-35-3	ng/g	0.43 DNR	0.69 DNR		0.28 DNR	0.23 DNR	0.003 DNR
E1668A	PCB-160	41411-62-5	ng/g	47 DNR	61 DNR		22 DNR	16 DNR	0.13 DNR
E1668A	PCB-161	74472-43-8	ng/g	0.012 DNR	0.025 DNR		0.0062 DNR	0.0062 DNR	0.0015 DNR
E1668A	PCB-162	39635-34-2	ng/g	0.16 DNR	0.24 DNR		0.066 DNR	0.048 DNR	0.0015 DNR
E1668A	PCB-163	74472-44-9	ng/g	47 DNR	61 DNR		22 DNR	16 DNR	0.13 DNR
E1668A	PCB-164	74472-45-0	ng/g	3.4 DNR	4.5 DNR		1.7 DNR	1.3 DNR	0.01 DNR
E1668A	PCB-165	74472-46-1	ng/g	0.015 DNR	0.03 DNR		0.0074 DNR	0.084 DNR	0.0018 DNR
E1668A	PCB-166	41411-63-6	ng/g	7.6 DNR	9.6 DNR		3.4 DNR	1.7 DNR	0.015 DNR
E1668A	PCB-167	52663-72-6	ng/g	1.7 DNR	2.3 DNR		0.71 DNR	0.47 DNR	0.0044 DNR
E1668A	PCB-168	59291-65-5	ng/g	40 DNR	55 DNR		22 DNR	19 DNR	0.16 DNR
E1668A	PCB-169	32774-16-6	ng/g	0.012 DNR	0.022 DNR		0.0055 DNR	0.037 DNR	0.0014 DNR
E1668A	PCB-170	35065-30-6	ng/g	11 DNR	16 DNR		6 DNR	5.5 DNR	0.052 DNR
E1668A	PCB-171	52663-71-5	ng/g	3.7 DNR	5.6 DNR		2.2 DNR	1.9 DNR	0.019 DNR
E1668A	PCB-172	52663-74-8	ng/g	1.9 DNR	3.1 DNR		1.1 DNR	0.99 DNR	0.01 DNR
E1668A	PCB-173	68194-16-1	ng/g	3.7 DNR	5.6 DNR		2.2 DNR	1.9 DNR	0.019 DNR
E1668A	PCB-174	38411-25-5	ng/g	13 DNR	19 DNR		7.2 DNR	6.1 DNR	0.06 DNR
E1668A	PCB-175	40186-70-7	ng/g	0.54 DNR	0.77 DNR		0.3 DNR	0.25 DNR	0.0014 DNR
E1668A	PCB-176	52663-65-7	ng/g	1.6 DNR	2.3 DNR		0.91 DNR	0.78 DNR	0.007 DNR
E1668A	PCB-177	52663-70-4	ng/g	7.4 DNR	11 DNR		4.4 DNR	4.6 DNR	0.043 DNR

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j5-sc1b-40to50-82719	j5-sc1b-50to60-82719	j5-sc1b-50to60-82719r1	j5-sc1b-60to70-82719	j5-sc1b-70to80-82719	j5-sc1b-80to90-82719
	Date Time			8/27/2019 16:10:00	8/27/2019 16:15:00	8/27/2019 16:15:00	8/27/2019 16:20:00	8/27/2019 16:25:00	8/27/2019 17:25:00
	X			7634424	7634424	7634424	7634424	7634424	7634424
	Y			700618	700618	700618	700618	700618	700618
	Top (cm)			122	152	152	183	213	244
	Bottom (cm)			152	183	183	213	244	274
E1668A	PCB-178	52663-67-9	ng/g	2.7 DNR	4.2 DNR		1.7 DNR	2 DNR	0.018 DNR
E1668A	PCB-179	52663-64-6	ng/g	5.5 DNR	8.4 DNR		3.3 DNR	3.4 DNR	0.029 DNR
E1668A	PCB-180	35065-29-3	ng/g	24 DNR	36 DNR		14 DNR	13 DNR	0.12 DNR
E1668A	PCB-181	74472-47-2	ng/g	0.15 DNR	0.2 DNR		0.066 DNR	0.055 DNR	0.003 DNR
E1668A	PCB-182	60145-23-5	ng/g	0.14 DNR	0.21 DNR		0.091 DNR	0.12 DNR	0.0013 DNR
E1668A	PCB-183	52663-69-1	ng/g	7.9 DNR	12 DNR		4.6 DNR	4 DNR	0.038 DNR
E1668A	PCB-184	74472-48-3	ng/g	0.0091 DNR	0.0076 DNR		0.00099 DNR	0.0011 DNR	0.0011 DNR
E1668A	PCB-185	52712-05-7	ng/g	7.9 DNR	12 DNR		4.6 DNR	4 DNR	0.038 DNR
E1668A	PCB-186	74472-49-4	ng/g	0.009 DNR	0.0075 DNR		0.00098 DNR	0.001 DNR	0.0011 DNR
E1668A	PCB-187	52663-68-0	ng/g	15 DNR	23 DNR		9.2 DNR	10 DNR	0.087 DNR
E1668A	PCB-188	74487-85-7	ng/g	0.057 DNR	0.0071 DNR		0.00091 DNR	0.069 DNR	0.00097 DNR
E1668A	PCB-189	39635-31-9	ng/g	0.37 DNR	0.6 DNR		0.22 DNR	0.21 DNR	0.0012 DNR
E1668A	PCB-190	41411-64-7	ng/g	2.1 DNR	3.3 DNR		1.3 DNR	1.2 DNR	0.012 DNR
E1668A	PCB-191	74472-50-7	ng/g	0.5 DNR	0.75 DNR		0.28 DNR	0.24 DNR	0.0011 DNR
E1668A	PCB-192	74472-51-8	ng/g	0.01 DNR	0.0084 DNR		0.0011 DNR	0.0012 DNR	0.0012 DNR
E1668A	PCB-193	69782-91-8	ng/g	24 DNR	36 DNR		14 DNR	13 DNR	0.12 DNR
E1668A	PCB-194	35694-08-7	ng/g	5.3 DNR	8 DNR		3.3 DNR	3.1 DNR	0.025 DNR
E1668A	PCB-195	52663-78-2	ng/g	2.3 DNR	3.6 DNR		1.5 DNR	1.4 DNR	0.0073 DNR
E1668A	PCB-196	42740-50-1	ng/g	2.5 DNR	4 DNR		1.8 DNR	1.6 DNR	0.017 DNR
E1668A	PCB-197	33091-17-7	ng/g	0.18 DNR	0.34 DNR		0.13 DNR	0.11 DNR	0.001 DNR
E1668A	PCB-198	68194-17-2	ng/g	5.8 DNR	8.6 DNR		3.7 DNR	3.2 DNR	0.033 DNR
E1668A	PCB-199	52663-75-9	ng/g	5.8 DNR	8.6 DNR		3.7 DNR	3.2 DNR	0.033 DNR
E1668A	PCB-200	52663-73-7	ng/g	0.73 DNR	1.1 DNR		0.49 DNR	0.4 DNR	0.0059 DNR
E1668A	PCB-201	40186-71-8	ng/g	0.73 DNR	1.1 DNR		0.48 DNR	0.42 DNR	0.001 DNR
E1668A	PCB-202	2136-99-4	ng/g	1.2 DNR	1.7 DNR		0.75 DNR	0.68 DNR	0.0075 DNR
E1668A	PCB-203	52663-76-0	ng/g	3.5 DNR	5 DNR		2.3 DNR	1.9 DNR	0.02 DNR
E1668A	PCB-204	74472-52-9	ng/g	0.011 DNR	0.015 DNR		0.0016 DNR	0.002 DNR	0.0011 DNR
E1668A	PCB-205	74472-53-0	ng/g	0.27 DNR	0.41 DNR		0.17 DNR	0.16 DNR	0.0018 DNR
E1668A	PCB-206	40186-72-9	ng/g	2.6 DNR	6 DNR		1.7 DNR	2.1 DNR	0.22 DNR
E1668A	PCB-207	52663-79-3	ng/g	0.29 DNR	0.41 DNR		0.18 DNR	0.19 DNR	0.0042 DNR
E1668A	PCB-208	52663-77-1	ng/g	0.68 DNR	0.95 DNR		0.4 DNR	0.58 DNR	0.0045 DNR
E1668A	PCB-209	2051-24-3	ng/g	1.5 DNR	2.3 DNR		1.4 DNR	2.2 DNR	0.028 DNR
E1668A	Total Dichlorobiphenyls		ng/g	4.2 DNR	3 DNR		1.4 DNR	0.44 DNR	0.0092 DNR
E1668A	Total Heptachlorobiphenyls		ng/g	98 DNR	150 DNR		57 DNR	54 DNR	0.5 DNR
E1668A	Total Hexachlorobiphenyls		ng/g	220 DNR	300 DNR		120 DNR	99 DNR	0.81 DNR
E1668A	Total Monochlorobiphenyls		ng/g	1.7 DNR	0.36 DNR		0.17 DNR	0.064 DNR	0.0032 DNR

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j5-sc1b-40to50-82719	j5-sc1b-50to60-82719	j5-sc1b-50to60-82719r1	j5-sc1b-60to70-82719	j5-sc1b-70to80-82719	j5-sc1b-80to90-82719
	Date Time			8/27/2019 16:10:00	8/27/2019 16:15:00	8/27/2019 16:15:00	8/27/2019 16:20:00	8/27/2019 16:25:00	8/27/2019 17:25:00
	X			7634424	7634424	7634424	7634424	7634424	7634424
	Y			700618	700618	700618	700618	700618	700618
	Top (cm)			122	152	152	183	213	244
	Bottom (cm)			152	183	183	213	244	274
E1668A	Total Nonachlorobiphenyls		ng/g	3.6 DNR	7.4 DNR		2.3 DNR	2.9 DNR	0.22 DNR
E1668A	Total Octachlorobiphenyls		ng/g	23 DNR	34 DNR		15 DNR	13 DNR	0.12 DNR
E1668A	Total Pentachlorobiphenyls		ng/g	280 DNR	380 DNR		150 DNR	89 DNR	0.7 DNR
E1668A	Total Tetrachlorobiphenyls		ng/g	110 DNR	150 DNR		57 DNR	29 DNR	0.29 DNR
E1668A	Total Trichlorobiphenyls		ng/g	16 DNR	25 DNR		10 DNR	3.6 DNR	0.055 DNR
E1668A	Polychlorinated biphenyls, Total	1336-36-3	ng/g	760 DNR	1000 DNR		410 DNR	290 DNR	2.7 DNR
PAHs									
SW8270D	2-Methylnaphthalene	91-57-6	ug/kg	18 J	14 J		6.3 J	10 J	0.2 J
SW8270D	Acenaphthene	83-32-9	ug/kg	21 J	29 J		11 J	9 J	0.21 J
SW8270D	Acenaphthylene	208-96-8	ug/kg	14 J	14		7.2	10	0.11 J
SW8270D	Anthracene	120-12-7	ug/kg	27 J	40		15	19	0.2 J
SW8270D	Benzo(a)anthracene	56-55-3	ug/kg	77 J	99		38	40	0.53
SW8270D	Benzo(a)pyrene	50-32-8	ug/kg	100	110		49	51	0.69
SW8270D	Benzo(b)fluoranthene	205-99-2	ug/kg	120	150		61	57	0.86
SW8270D	Benzo(g,h,i)perylene	191-24-2	ug/kg	87 J	88		44	48	0.68
SW8270D	Benzo(k)fluoranthene	207-08-9	ug/kg	47	53		20	19	0.23 J
SW8270D	Chrysene	218-01-9	ug/kg	110 J	140		54	57	0.72
SW8270D	Dibenzo(a,h)anthracene	53-70-3	ug/kg	15 J	20		8.2	7.4	0.14 J
SW8270D	Dibenzofuran	132-64-9	ug/kg	12 J	8.7		3.8	5	0.11 J
SW8270D	Fluoranthene	206-44-0	ug/kg	190 J	270		91	91	1
SW8270D	Fluorene	86-73-7	ug/kg	24 J	25		9	7.8	0.14 J
SW8270D	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	82 J	88		41	43	0.58
SW8270D	Naphthalene	91-20-3	ug/kg	31 J	21 J		11 J	17 J	0.23 J
SW8270D	Phenanthrene	85-01-8	ug/kg	150 J	190		65	75	1.3
SW8270D	Pyrene	129-00-0	ug/kg	240	300		110	130	1.8
Calculated Totals									
ALS SOP	CALC_TOTAL_DDD_ND_PDI		ug/kg	2.3 AT	2.2 AT		2.6 AT	2.7 AT	0.63 UT
ALS SOP	CALC_TOTAL_DDE_ND_PDI		ug/kg	4.1 AT	14 R		7 AT	4.3 AT	0.79 UT
ALS SOP	CALC_TOTAL_DDT_ND_PDI		ug/kg	2.2 AT	3.5 AT		0.94 UT	0.94 UT	0.94 UT
ALS SOP	CALC_TOTAL_DDx_ND_PDI		ug/kg	7.9 T	19 T		9.4 T	6.8 T	0.94 UT
E1668A	CALC_TOTAL_PCB_ND_PDI		ug/kg	480 JT	1100 JT		410 JT	340 JT	2.7 JT
SW8082A	CALC_TOTAL_AROCLORS_ND_PDI		ug/kg	890 AT	1200 AT		330 AT	300 T	4.6 JT
SW8270D	CALC_TOTAL_CPAH_ND_PDI		ug/kg	140 JT	160 T		71 T	73 T	1 JT
SW8270D	CALC_TOTAL_HPAH_ND_PDI		ug/kg	900 JT	1100 T		440 T	470 T	6.1 JT
SW8270D	CALC_TOTAL_LPAH_ND_PDI		ug/kg	280 JT	330 JT		120 JT	150 JT	2.4 JT
SW8270D	CALC_TOTAL_PAH_ND_PDI		ug/kg	1200 JT	1400 JT		560 JT	620 JT	8.5 JT

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j5-sc1b-40to50-82719	j5-sc1b-50to60-82719	j5-sc1b-50to60-82719r1	j5-sc1b-60to70-82719	j5-sc1b-70to80-82719	j5-sc1b-80to90-82719
	Date Time			8/27/2019 16:10:00	8/27/2019 16:15:00	8/27/2019 16:15:00	8/27/2019 16:20:00	8/27/2019 16:25:00	8/27/2019 17:25:00
	X			7634424	7634424	7634424	7634424	7634424	7634424
	Y			700618	700618	700618	700618	700618	700618
	Top (cm)			122	152	152	183	213	244
	Bottom (cm)			152	183	183	213	244	274

DDx = dichlorodiphenyltrichloroethane and its derivatives

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyls

PeCDD = Pentachlorodibenzo-p-dioxin

PeCDF = Pentachlorodibenzofuran

TCDD = Tetrachlorodibenzo-p-dioxin

ug/kg = micrograms per kilogram

ng/g = nanograms per gram

% = percent

g/cm3 = grams per cubic centimeter

J = Reported result is an estimate

T = Total concentration from component analytes.

U = Analyte was not detected in sample

R = Rejected

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j5-sc1b-90to100-82719	J5-SC-60to80-102218	j6-sc1b-00to10-82719	j6-sc1b-100to110-82819	j6-sc1b-10to20-82719
	Date Time			8/27/2019 17:30:00	10/22/2018 16:50:00	8/27/2019 19:30:00	8/28/2019 12:05:00	8/27/2019 19:35:00
	X			7634424	7634424	7634373	7634373	7634373
	Y			700618	700618	700517	700517	700517
	Top (cm)			274	183	0	305	30
	Bottom (cm)			305	244	30	335	61
Conventionals								
E160.3	Total Solids		%	72			72	
PSEP	Total Solids		%	72				
SM2540G	Total Solids		%				70	
SW9060A	Carbon, Total Organic	7440-044-0	mg/kg				4800	
Organochlorine Pesticides								
ALS SOP	o,p'-DDD	53-19-0	ug/kg	0.63 U			0.63 U	
ALS SOP	o,p'-DDE	3424-82-6	ug/kg	0.79 U			0.79 U	
ALS SOP	o,p'-DDT	789-02-6	ug/kg	0.94 U			0.94 U	
ALS SOP	4,4'-DDD	72-54-8	ug/kg	0.35 U			0.35 U	
ALS SOP	4,4'-DDE	72-55-9	ug/kg	0.7 U			0.7 U	
ALS SOP	4,4'-DDT	50-29-3	ug/kg	0.47 U			0.47 U	
Dioxins/Furans								
CWA1613B	1,2,3,4,6,7,8,9-OCDD	3268-87-9	ug/kg	0.017			0.00072 U	
CWA1613B	1,2,3,4,6,7,8,9-OCDF	39001-02-0	ug/kg	0.0012 J			0.0092 U	
CWA1613B	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg	0.0015 J			0.0046 U	
CWA1613B	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg	0.00062 U			0.00011 U	
CWA1613B	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg	0.0049 U			0.0046 U	
CWA1613B	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg	0.0049 U			0.0046 U	
CWA1613B	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg	8.9e-05 U			0.0046 U	
CWA1613B	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg	0.0049 U			0.0046 U	
CWA1613B	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg	5.9e-05 U			0.0046 U	
CWA1613B	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg	0.0049 U			0.0046 U	
CWA1613B	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg	0.0049 U			0.0046 U	
CWA1613B	1,2,3,7,8-PeCDD	40321-76-4	ug/kg	0.0049 U			0.0046 U	
CWA1613B	1,2,3,7,8-PeCDF	57117-41-6	ug/kg	7.9e-05 J			0.0046 U	
CWA1613B	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg	0.0049 U			0.0046 U	
CWA1613B	2,3,4,7,8-PeCDF	57117-31-4	ug/kg	4.9e-05 J			0.0046 U	
CWA1613B	2,3,7,8-TCDD	1746-01-6	ug/kg	5.3e-05 U			0.00092 U	
CWA1613B	2,3,7,8-TCDF	51207-31-9	ug/kg	0.00028 J			3e-04 U	
CWA1613B	Total HpCDD	37871-00-4	ug/kg	0.0035 J			0.0046 U	
CWA1613B	Total HpCDF	38998-75-3	ug/kg	0.002 J			0.00011 J	
CWA1613B	Total HxCDD	34465-46-8	ug/kg	0.00077 J			0.0046 U	
CWA1613B	Total HxCDF	55684-94-1	ug/kg	8e-04 J			0.0046 U	
CWA1613B	Total PeCDD	36088-22-9	ug/kg	0.00018 J			0.0046 U	
CWA1613B	Total PeCDF	30402-15-4	ug/kg	0.00056 J			0.0046 U	

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j5-sc1b-90to100-82719	J5-SC-60to80-102218	j6-sc1b-00to10-82719	j6-sc1b-100to110-82819	j6-sc1b-10to20-82719
	Date Time			8/27/2019 17:30:00	10/22/2018 16:50:00	8/27/2019 19:30:00	8/28/2019 12:05:00	8/27/2019 19:35:00
	X			7634424	7634424	7634373	7634373	7634373
	Y			700618	700618	700517	700517	700517
	Top (cm)			274	183	0	305	30
	Bottom (cm)			305	244	30	335	61
CWA1613B	Total TCDD	41903-57-5	ug/kg	0.00036 J			0.00092 U	
CWA1613B	Total TCDF	30402-14-3	ug/kg	0.00079 J			0.00052 J	
Dioxins/Furans								
E1613	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg		1.1			
E1613	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg		0.3 J			
E1613	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg		0.02 J			
E1613	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg		0.0085			
E1613	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg		0.03			
E1613	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg		0.041 J			
E1613	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg		0.016			
E1613	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg		0.021			
E1613	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg		0.0011 J			
E1613	1,2,3,7,8-PeCDD	40321-76-4	ug/kg		0.0039 J			
E1613	1,2,3,7,8-PeCDF	57117-41-6	ug/kg		0.005			
E1613	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg		0.0059			
E1613	2,3,4,7,8-PeCDF	57117-31-4	ug/kg		0.005			
E1613	2,3,7,8-TCDD	1746-01-6	ug/kg		0.0019			
E1613	2,3,7,8-TCDF	51207-31-9	ug/kg		0.0053 DNR			
E1613	OCDD	3268-87-9	ug/kg		16			
E1613	OCDF	39001-02-0	ug/kg		0.82 J			
E1613	Total HpCDD	37871-00-4	ug/kg		2.4			
E1613	Total HpCDF	38998-75-3	ug/kg		1.1			
E1613	Total HxCDD	34465-46-8	ug/kg		0.27			
E1613	Total HxCDF	55684-94-1	ug/kg		0.35			
E1613	Total PeCDD	36088-22-9	ug/kg		0.048			
E1613	Total PeCDF	30402-15-4	ug/kg		0.13			
E1613	Total TCDD	41903-57-5	ug/kg		0.019			
E1613	Total TCDF	30402-14-3	ug/kg		0.09			
PCB Aroclors								
SW8082A	Aroclor 1016	12674-11-2	ug/kg	1.5 U		15.6 U	1.6 U	7.7 U
SW8082A	Aroclor 1221	11104-28-2	ug/kg	1.5 U		15.6 U	1.6 U	7.7 U
SW8082A	Aroclor 1232	11141-16-5	ug/kg	1.5 U		15.6 U	1.6 U	7.7 U
SW8082A	Aroclor 1242	53469-21-9	ug/kg	1.5 U		15.6 U	1.6 U	7.7 U
SW8082A	Aroclor 1248	12672-29-6	ug/kg	1.5 U		15.6 U	1.6 U	84.7
SW8082A	Aroclor 1254	11097-69-1	ug/kg	2.7 J		720	1.6 U	161
SW8082A	Aroclor 1260	11096-82-5	ug/kg	3.1 J		444	0.6 U	178 J

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j5-sc1b-90to100-82719	J5-SC-60to80-102218	j6-sc1b-00to10-82719	j6-sc1b-100to110-82819	j6-sc1b-10to20-82719
	Date Time			8/27/2019 17:30:00	10/22/2018 16:50:00	8/27/2019 19:30:00	8/28/2019 12:05:00	8/27/2019 19:35:00
	X			7634424	7634424	7634373	7634373	7634373
	Y			700618	700618	700517	700517	700517
	Top (cm)			274	183	0	305	30
	Bottom (cm)			305	244	30	335	61
SW8082A	Aroclor 1262	37324-23-5	ug/kg	0.6 U		5.9 U	0.6 U	2.9 U
SW8082A	Aroclor 1268	11100-14-4	ug/kg	0.6 U		5.9 U	0.6 U	2.9 U
PCB Congeners								
E1668A	PCB-1	2051-60-7	ng/g	0.0016 DNR				
E1668A	PCB-2	2051-61-8	ng/g	0.0017 DNR				
E1668A	PCB-3	2051-62-9	ng/g	0.0018 DNR				
E1668A	PCB-4	13029-08-8	ng/g	0.0026 DNR				
E1668A	PCB-5	16605-91-7	ng/g	0.0012 DNR				
E1668A	PCB-6	25569-80-6	ng/g	0.0012 DNR				
E1668A	PCB-7	33284-50-3	ng/g	0.0012 DNR				
E1668A	PCB-8	34883-43-7	ng/g	0.0012 DNR				
E1668A	PCB-9	34883-39-1	ng/g	0.0013 DNR				
E1668A	PCB-10	33146-45-1	ng/g	0.0013 DNR				
E1668A	PCB-11	2050-67-1	ng/g	0.005 DNR				
E1668A	PCB-12	2974-92-7	ng/g	0.0012 DNR				
E1668A	PCB-13	2974-90-5	ng/g	0.0012 DNR				
E1668A	PCB-14	34883-41-5	ng/g	0.001 DNR				
E1668A	PCB-15	2050-68-2	ng/g	0.00097 DNR				
E1668A	PCB-16	38444-78-9	ng/g	0.0036 DNR				
E1668A	PCB-17	37680-66-3	ng/g	0.0049 DNR				
E1668A	PCB-18	37680-65-2	ng/g	0.0063 DNR				
E1668A	PCB-19	38444-73-4	ng/g	0.0017 DNR				
E1668A	PCB-20	38444-84-7	ng/g	0.016 DNR				
E1668A	PCB-21	55702-46-0	ng/g	0.0062 DNR				
E1668A	PCB-22	38444-85-8	ng/g	0.0012 DNR				
E1668A	PCB-23	55720-44-0	ng/g	0.0012 DNR				
E1668A	PCB-24	55702-45-9	ng/g	0.001 DNR				
E1668A	PCB-25	55712-37-3	ng/g	0.0032 DNR				
E1668A	PCB-26	38444-81-4	ng/g	0.0023 DNR				
E1668A	PCB-27	38444-76-7	ng/g	0.001 DNR				
E1668A	PCB-28	7012-37-5	ng/g	0.016 DNR				
E1668A	PCB-29	15862-07-4	ng/g	0.0023 DNR				
E1668A	PCB-30	35693-92-6	ng/g	0.0063 DNR				
E1668A	PCB-31	16606-02-3	ng/g	0.0097 DNR				
E1668A	PCB-32	38444-77-8	ng/g	0.0042 DNR				
E1668A	PCB-33	38444-86-9	ng/g	0.0062 DNR				

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j5-sc1b-90to100-82719	J5-SC-60to80-102218	j6-sc1b-00to10-82719	j6-sc1b-100to110-82819	j6-sc1b-10to20-82719
	Date Time			8/27/2019 17:30:00	10/22/2018 16:50:00	8/27/2019 19:30:00	8/28/2019 12:05:00	8/27/2019 19:35:00
	X			7634424	7634424	7634373	7634373	7634373
	Y			700618	700618	700517	700517	700517
	Top (cm)			274	183	0	305	30
	Bottom (cm)			305	244	30	335	61
E1668A	PCB-34	37680-68-5	ng/g	0.0012 DNR				
E1668A	PCB-35	37680-69-6	ng/g	0.0012 DNR				
E1668A	PCB-36	38444-87-0	ng/g	0.0011 DNR				
E1668A	PCB-37	38444-90-5	ng/g	0.0023 DNR				
E1668A	PCB-38	53555-66-1	ng/g	0.0011 DNR				
E1668A	PCB-39	38444-88-1	ng/g	0.0011 DNR				
E1668A	PCB-40	38444-93-8	ng/g	0.015 DNR				
E1668A	PCB-41	52663-59-9	ng/g	0.015 DNR				
E1668A	PCB-42	36559-22-5	ng/g	0.011 DNR				
E1668A	PCB-43	70362-46-8	ng/g	0.0015 DNR				
E1668A	PCB-44	41464-39-5	ng/g	0.058 DNR				
E1668A	PCB-45	41464-39-5	ng/g	0.0017 DNR				
E1668A	PCB-46	41464-47-5	ng/g	0.002 DNR				
E1668A	PCB-47	2437-79-8	ng/g	0.058 DNR				
E1668A	PCB-48	70362-47-9	ng/g	0.0016 DNR				
E1668A	PCB-49	41464-40-8	ng/g	0.056 DNR				
E1668A	PCB-50	62796-65-0	ng/g	0.0017 DNR				
E1668A	PCB-51	68194-04-7	ng/g	0.0017 DNR				
E1668A	PCB-52	35693-99-3	ng/g	0.086 DNR				
E1668A	PCB-53	41464-41-9	ng/g	0.0017 DNR				
E1668A	PCB-54	15968-05-5	ng/g	0.0011 DNR				
E1668A	PCB-55	74338-24-2	ng/g	0.0012 DNR				
E1668A	PCB-56	41464-43-1	ng/g	0.0077 DNR				
E1668A	PCB-57	70424-67-8	ng/g	0.0012 DNR				
E1668A	PCB-58	41464-49-7	ng/g	0.0012 DNR				
E1668A	PCB-59	74472-33-6	ng/g	0.003 DNR				
E1668A	PCB-60	33025-41-1	ng/g	0.0012 DNR				
E1668A	PCB-61	33284-53-6	ng/g	0.056 DNR				
E1668A	PCB-62	54230-22-7	ng/g	0.003 DNR				
E1668A	PCB-63	74472-34-7	ng/g	0.0011 DNR				
E1668A	PCB-64	52663-58-8	ng/g	0.0094 DNR				
E1668A	PCB-65	33284-54-7	ng/g	0.058 DNR				
E1668A	PCB-66	32598-10-0	ng/g	0.039 DNR				
E1668A	PCB-67	73575-53-8	ng/g	0.0011 DNR				
E1668A	PCB-68	73575-52-7	ng/g	0.0048 DNR				
E1668A	PCB-69	60233-24-1	ng/g	0.056 DNR				

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j5-sc1b-90to100-82719	J5-SC-60to80-102218	j6-sc1b-00to10-82719	j6-sc1b-100to110-82819	j6-sc1b-10to20-82719
	Date Time			8/27/2019 17:30:00	10/22/2018 16:50:00	8/27/2019 19:30:00	8/28/2019 12:05:00	8/27/2019 19:35:00
	X			7634424	7634424	7634373	7634373	7634373
	Y			700618	700618	700517	700517	700517
	Top (cm)			274	183	0	305	30
	Bottom (cm)			305	244	30	335	61
E1668A	PCB-70	32598-11-1	ng/g	0.056 DNR				
E1668A	PCB-71	41464-46-4	ng/g	0.015 DNR				
E1668A	PCB-72	41464-42-0	ng/g	0.0056 DNR				
E1668A	PCB-73	74338-23-1	ng/g	0.0015 DNR				
E1668A	PCB-74	32690-93-0	ng/g	0.056 DNR				
E1668A	PCB-75	32598-12-2	ng/g	0.003 DNR				
E1668A	PCB-76	70362-48-0	ng/g	0.056 DNR				
E1668A	PCB-77	32598-13-3	ng/g	0.0011 DNR				
E1668A	PCB-78	70362-49-1	ng/g	0.0012 DNR				
E1668A	PCB-79	41464-48-6	ng/g	0.001 DNR				
E1668A	PCB-80	33284-52-5	ng/g	0.0011 DNR				
E1668A	PCB-81	70362-50-4	ng/g	0.0012 DNR				
E1668A	PCB-82	52663-62-4	ng/g	0.0031 DNR				
E1668A	PCB-83	60145-20-2	ng/g	0.12 DNR				
E1668A	PCB-84	52663-60-2	ng/g	0.023 DNR				
E1668A	PCB-85	65510-45-4	ng/g	0.0096 DNR				
E1668A	PCB-86	55312-69-1	ng/g	0.057 DNR				
E1668A	PCB-87	38380-02-8	ng/g	0.057 DNR				
E1668A	PCB-88	55215-17-3	ng/g	0.034 DNR				
E1668A	PCB-89	73575-57-2	ng/g	0.003 DNR				
E1668A	PCB-90	68194-07-0	ng/g	0.15 DNR				
E1668A	PCB-91	68194-05-8	ng/g	0.034 DNR				
E1668A	PCB-92	52663-61-3	ng/g	0.047 DNR				
E1668A	PCB-93	73575-56-1	ng/g	0.0041 DNR				
E1668A	PCB-94	73575-55-0	ng/g	0.003 DNR				
E1668A	PCB-95	38379-99-6	ng/g	0.12 DNR				
E1668A	PCB-96	73575-54-9	ng/g	0.0022 DNR				
E1668A	PCB-97	41464-51-1	ng/g	0.057 DNR				
E1668A	PCB-98	60233-25-2	ng/g	0.0047 DNR				
E1668A	PCB-99	38380-01-7	ng/g	0.12 DNR				
E1668A	PCB-100	39485-83-1	ng/g	0.0041 DNR				
E1668A	PCB-101	37680-73-2	ng/g	0.15 DNR				
E1668A	PCB-102	68194-06-9	ng/g	0.0047 DNR				
E1668A	PCB-103	60145-21-3	ng/g	0.0095 DNR				
E1668A	PCB-104	56558-16-8	ng/g	0.002 DNR				
E1668A	PCB-105	32598-14-4	ng/g	0.017 DNR				

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j5-sc1b-90to100-82719	J5-SC-60to80-102218	j6-sc1b-00to10-82719	j6-sc1b-100to110-82819	j6-sc1b-10to20-82719
	Date Time			8/27/2019 17:30:00	10/22/2018 16:50:00	8/27/2019 19:30:00	8/28/2019 12:05:00	8/27/2019 19:35:00
	X			7634424	7634424	7634373	7634373	7634373
	Y			700618	700618	700517	700517	700517
	Top (cm)			274	183	0	305	30
	Bottom (cm)			305	244	30	335	61
E1668A	PCB-106	70424-69-0	ng/g	0.0017 DNR				
E1668A	PCB-107	70424-68-9	ng/g	0.01 DNR				
E1668A	PCB-108	70362-41-3	ng/g	0.0023 DNR				
E1668A	PCB-109	74472-35-8	ng/g	0.057 DNR				
E1668A	PCB-110	38380-03-9	ng/g	0.12 DNR				
E1668A	PCB-111	39635-32-0	ng/g	0.0019 DNR				
E1668A	PCB-112	74472-36-9	ng/g	0.002 DNR				
E1668A	PCB-113	68194-10-5	ng/g	0.15 DNR				
E1668A	PCB-114	74472-37-0	ng/g	0.0015 DNR				
E1668A	PCB-115	74472-38-1	ng/g	0.12 DNR				
E1668A	PCB-116	18259-05-7	ng/g	0.0096 DNR				
E1668A	PCB-117	68194-11-6	ng/g	0.0096 DNR				
E1668A	PCB-118	31508-00-6	ng/g	0.069 DNR				
E1668A	PCB-119	56558-17-9	ng/g	0.057 DNR				
E1668A	PCB-120	68194-12-7	ng/g	0.0071 DNR				
E1668A	PCB-121	56558-18-0	ng/g	0.0019 DNR				
E1668A	PCB-122	76842-07-4	ng/g	0.0019 DNR				
E1668A	PCB-123	65510-44-3	ng/g	0.0017 DNR				
E1668A	PCB-124	70424-70-3	ng/g	0.0023 DNR				
E1668A	PCB-125	74472-39-2	ng/g	0.057 DNR				
E1668A	PCB-126	57465-28-8	ng/g	0.0017 DNR				
E1668A	PCB-127	39635-33-1	ng/g	0.0017 DNR				
E1668A	PCB-128	38380-07-3	ng/g	0.019 DNR				
E1668A	PCB-129	55215-18-4	ng/g	0.14 DNR				
E1668A	PCB-130	52663-66-8	ng/g	0.0085 DNR				
E1668A	PCB-131	61798-70-7	ng/g	0.0016 DNR				
E1668A	PCB-132	38380-05-1	ng/g	0.048 DNR				
E1668A	PCB-133	35694-04-3	ng/g	0.0071 DNR				
E1668A	PCB-134	52704-70-8	ng/g	0.0074 DNR				
E1668A	PCB-135	52744-13-5	ng/g	0.082 DNR				
E1668A	PCB-136	38411-22-2	ng/g	0.039 DNR				
E1668A	PCB-137	35694-06-5	ng/g	0.004 DNR				
E1668A	PCB-138	35065-28-2	ng/g	0.14 DNR				
E1668A	PCB-139	56030-56-9	ng/g	0.0055 DNR				
E1668A	PCB-140	59291-64-4	ng/g	0.0055 DNR				
E1668A	PCB-141	52712-04-6	ng/g	0.024 DNR				

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j5-sc1b-90to100-82719	J5-SC-60to80-102218	j6-sc1b-00to10-82719	j6-sc1b-100to110-82819	j6-sc1b-10to20-82719
	Date Time			8/27/2019 17:30:00	10/22/2018 16:50:00	8/27/2019 19:30:00	8/28/2019 12:05:00	8/27/2019 19:35:00
	X			7634424	7634424	7634373	7634373	7634373
	Y			700618	700618	700517	700517	700517
	Top (cm)			274	183	0	305	30
	Bottom (cm)			305	244	30	335	61
E1668A	PCB-142	41411-61-4	ng/g	0.0016 DNR				
E1668A	PCB-143	68194-15-0	ng/g	0.0074 DNR				
E1668A	PCB-144	68194-14-9	ng/g	0.0047 DNR				
E1668A	PCB-145	74472-40-5	ng/g	0.00065 DNR				
E1668A	PCB-146	51908-16-8	ng/g	0.067 DNR				
E1668A	PCB-147	68194-13-8	ng/g	0.2 DNR				
E1668A	PCB-148	74472-41-6	ng/g	0.0043 DNR				
E1668A	PCB-149	38380-04-0	ng/g	0.2 DNR				
E1668A	PCB-150	68194-08-1	ng/g	0.00063 DNR				
E1668A	PCB-151	52663-63-5	ng/g	0.082 DNR				
E1668A	PCB-152	68194-09-2	ng/g	0.00062 DNR				
E1668A	PCB-153	35065-27-1	ng/g	0.19 DNR				
E1668A	PCB-154	60145-22-4	ng/g	0.02 DNR				
E1668A	PCB-155	33979-03-2	ng/g	6e-04 DNR				
E1668A	PCB-156	38380-08-4	ng/g	0.014 DNR				
E1668A	PCB-157	69782-90-7	ng/g	0.014 DNR				
E1668A	PCB-158	74472-42-7	ng/g	0.012 DNR				
E1668A	PCB-159	39635-35-3	ng/g	0.0033 DNR				
E1668A	PCB-160	41411-62-5	ng/g	0.14 DNR				
E1668A	PCB-161	74472-43-8	ng/g	0.001 DNR				
E1668A	PCB-162	39635-34-2	ng/g	0.0013 DNR				
E1668A	PCB-163	74472-44-9	ng/g	0.14 DNR				
E1668A	PCB-164	74472-45-0	ng/g	0.014 DNR				
E1668A	PCB-165	74472-46-1	ng/g	0.0012 DNR				
E1668A	PCB-166	41411-63-6	ng/g	0.019 DNR				
E1668A	PCB-167	52663-72-6	ng/g	0.0045 DNR				
E1668A	PCB-168	59291-65-5	ng/g	0.19 DNR				
E1668A	PCB-169	32774-16-6	ng/g	0.0022 DNR				
E1668A	PCB-170	35065-30-6	ng/g	0.056 DNR				
E1668A	PCB-171	52663-71-5	ng/g	0.018 DNR				
E1668A	PCB-172	52663-74-8	ng/g	0.015 DNR				
E1668A	PCB-173	68194-16-1	ng/g	0.018 DNR				
E1668A	PCB-174	38411-25-5	ng/g	0.067 DNR				
E1668A	PCB-175	40186-70-7	ng/g	0.0052 DNR				
E1668A	PCB-176	52663-65-7	ng/g	0.0085 DNR				
E1668A	PCB-177	52663-70-4	ng/g	0.048 DNR				

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j5-sc1b-90to100-82719	J5-SC-60to80-102218	j6-sc1b-00to10-82719	j6-sc1b-100to110-82819	j6-sc1b-10to20-82719
	Date Time			8/27/2019 17:30:00	10/22/2018 16:50:00	8/27/2019 19:30:00	8/28/2019 12:05:00	8/27/2019 19:35:00
	X			7634424	7634424	7634373	7634373	7634373
	Y			700618	700618	700517	700517	700517
	Top (cm)			274	183	0	305	30
	Bottom (cm)			305	244	30	335	61
E1668A	PCB-178	52663-67-9	ng/g	0.016 DNR				
E1668A	PCB-179	52663-64-6	ng/g	0.032 DNR				
E1668A	PCB-180	35065-29-3	ng/g	0.13 DNR				
E1668A	PCB-181	74472-47-2	ng/g	0.0023 DNR				
E1668A	PCB-182	60145-23-5	ng/g	0.0033 DNR				
E1668A	PCB-183	52663-69-1	ng/g	0.039 DNR				
E1668A	PCB-184	74472-48-3	ng/g	0.00066 DNR				
E1668A	PCB-185	52712-05-7	ng/g	0.039 DNR				
E1668A	PCB-186	74472-49-4	ng/g	0.00065 DNR				
E1668A	PCB-187	52663-68-0	ng/g	0.092 DNR				
E1668A	PCB-188	74487-85-7	ng/g	0.00062 DNR				
E1668A	PCB-189	39635-31-9	ng/g	0.0057 DNR				
E1668A	PCB-190	41411-64-7	ng/g	0.014 DNR				
E1668A	PCB-191	74472-50-7	ng/g	0.005 DNR				
E1668A	PCB-192	74472-51-8	ng/g	0.0013 DNR				
E1668A	PCB-193	69782-91-8	ng/g	0.13 DNR				
E1668A	PCB-194	35694-08-7	ng/g	0.034 DNR				
E1668A	PCB-195	52663-78-2	ng/g	0.018 DNR				
E1668A	PCB-196	42740-50-1	ng/g	0.019 DNR				
E1668A	PCB-197	33091-17-7	ng/g	0.002 DNR				
E1668A	PCB-198	68194-17-2	ng/g	0.038 DNR				
E1668A	PCB-199	52663-75-9	ng/g	0.038 DNR				
E1668A	PCB-200	52663-73-7	ng/g	0.0041 DNR				
E1668A	PCB-201	40186-71-8	ng/g	0.0032 DNR				
E1668A	PCB-202	2136-99-4	ng/g	0.0047 DNR				
E1668A	PCB-203	52663-76-0	ng/g	0.023 DNR				
E1668A	PCB-204	74472-52-9	ng/g	0.0012 DNR				
E1668A	PCB-205	74472-53-0	ng/g	0.004 DNR				
E1668A	PCB-206	40186-72-9	ng/g	0.024 DNR				
E1668A	PCB-207	52663-79-3	ng/g	0.0026 DNR				
E1668A	PCB-208	52663-77-1	ng/g	0.0028 DNR				
E1668A	PCB-209	2051-24-3	ng/g	0.021 DNR				
E1668A	Total Dichlorobiphenyls		ng/g	0.005 DNR				
E1668A	Total Heptachlorobiphenyls		ng/g	0.56 DNR				
E1668A	Total Hexachlorobiphenyls		ng/g	0.92 DNR				
E1668A	Total Monochlorobiphenyls		ng/g	0.0018 DNR				

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j5-sc1b-90to100-82719	J5-SC-60to80-102218	j6-sc1b-00to10-82719	j6-sc1b-100to110-82819	j6-sc1b-10to20-82719
	Date Time			8/27/2019 17:30:00	10/22/2018 16:50:00	8/27/2019 19:30:00	8/28/2019 12:05:00	8/27/2019 19:35:00
	X			7634424	7634424	7634373	7634373	7634373
	Y			700618	700618	700517	700517	700517
	Top (cm)			274	183	0	305	30
	Bottom (cm)			305	244	30	335	61
E1668A	Total Nonachlorobiphenyls		ng/g	0.024 DNR				
E1668A	Total Octachlorobiphenyls		ng/g	0.15 DNR				
E1668A	Total Pentachlorobiphenyls		ng/g	0.8 DNR				
E1668A	Total Tetrachlorobiphenyls		ng/g	0.35 DNR				
E1668A	Total Trichlorobiphenyls		ng/g	0.059 DNR				
E1668A	Polychlorinated biphenyls, Total	1336-36-3	ng/g	2.9 DNR				
PAHs								
SW8270D	2-Methylnaphthalene	91-57-6	ug/kg	0.22 J			0.12 UJ	
SW8270D	Acenaphthene	83-32-9	ug/kg	0.11 J			0.047 UJ	
SW8270D	Acenaphthylene	208-96-8	ug/kg	0.094 J			0.046 UJ	
SW8270D	Anthracene	120-12-7	ug/kg	0.14 J			0.038 U	
SW8270D	Benzo(a)anthracene	56-55-3	ug/kg	0.47			0.091 J	
SW8270D	Benzo(a)pyrene	50-32-8	ug/kg	0.57			0.085 J	
SW8270D	Benzo(b)fluoranthene	205-99-2	ug/kg	0.82			0.2 J	
SW8270D	Benzo(g,h,i)perylene	191-24-2	ug/kg	0.6			0.1 J	
SW8270D	Benzo(k)fluoranthene	207-08-9	ug/kg	0.28 J			0.073 J	
SW8270D	Chrysene	218-01-9	ug/kg	0.63			0.068 J	
SW8270D	Dibenzo(a,h)anthracene	53-70-3	ug/kg	0.12 J			0.086 U	
SW8270D	Dibenzofuran	132-64-9	ug/kg	0.12 J			0.045 UJ	
SW8270D	Fluoranthene	206-44-0	ug/kg	0.88			0.095 J	
SW8270D	Fluorene	86-73-7	ug/kg	0.13 J			0.052 UJ	
SW8270D	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0.57			0.11 J	
SW8270D	Naphthalene	91-20-3	ug/kg	0.29 J			0.15 UJ	
SW8270D	Phenanthrene	85-01-8	ug/kg	0.93			0.16 J	
SW8270D	Pyrene	129-00-0	ug/kg	1.4			0.14 J	
Calculated Totals								
ALS SOP	CALC_TOTAL_DDD_ND_PDI		ug/kg	0.63 UT			0.63 UT	
ALS SOP	CALC_TOTAL_DDE_ND_PDI		ug/kg	0.79 UT			0.79 UT	
ALS SOP	CALC_TOTAL_DDT_ND_PDI		ug/kg	0.94 UT			0.94 UT	
ALS SOP	CALC_TOTAL_DDx_ND_PDI		ug/kg	0.94 UT			0.94 UT	
E1668A	CALC_TOTAL_PCB_ND_PDI		ug/kg	17 JT				
SW8082A	CALC_TOTAL_AROCLORS_ND_PDI		ug/kg	6.6 JT		1200 T	1.6 UT	430 JT
SW8270D	CALC_TOTAL_CPAH_ND_PDI		ug/kg	0.88 JT			0.17 JT	
SW8270D	CALC_TOTAL_HPAH_ND_PDI		ug/kg	5.2 JT			0.73 JT	
SW8270D	CALC_TOTAL_LPAH_ND_PDI		ug/kg	1.9 JT			0.24 JT	
SW8270D	CALC_TOTAL_PAH_ND_PDI		ug/kg	7.2 JT			0.92 JT	

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j5-sc1b-90to100-82719	J5-SC-60to80-102218	j6-sc1b-00to10-82719	j6-sc1b-100to110-82819	j6-sc1b-10to20-82719
	Date Time			8/27/2019 17:30:00	10/22/2018 16:50:00	8/27/2019 19:30:00	8/28/2019 12:05:00	8/27/2019 19:35:00
	X			7634424	7634424	7634373	7634373	7634373
	Y			700618	700618	700517	700517	700517
	Top (cm)			274	183	0	305	30
	Bottom (cm)			305	244	30	335	61

DDx = dichlorodiphenyltrichloroethane and its derivatives

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyls

PeCDD = Pentachlorodibenzo-p-dioxin

PeCDF = Pentachlorodibenzofuran

TCDD = Tetrachlorodibenzo-p-dioxin

ug/kg = micrograms per kilogram

ng/g = nanograms per gram

% = percent

g/cm3 = grams per cubic centimeter

J = Reported result is an estimate

T = Total concentration from component analytes.

U = Analyte was not detected in sample

R = Rejected

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j6-sc1b-110to120-82819	j6-sc1b-20to30-82819	j6-sc1b-20to30-82819r1	j6-sc1b-30to40-82819	j6-sc1b-40to50-82819	j6-sc1b-50to60-82819
	Date Time			8/28/2019 12:10:00	8/28/2019 9:20:00	8/28/2019 9:20:00	8/28/2019 9:25:00	8/28/2019 10:25:00	8/28/2019 10:30:00
	X			7634373	7634373	7634373	7634373	7634373	7634373
	Y			700517	700517	700517	700517	700517	700517
	Top (cm)			335	61	61	91	122	152
	Bottom (cm)			366	91	91	122	152	183
Conventionals									
E160.3	Total Solids		%	73	54		55	56	59
PSEP	Total Solids		%						
SM2540G	Total Solids		%	74	52		53	55	58
SW9060A	Carbon, Total Organic	7440-044-0	mg/kg	2500	31700		30700	30200	18800
Organochlorine Pesticides									
ALS SOP	o,p'-DDD	53-19-0	ug/kg	0.63 U	0.63 U		0.63 U	0.63 U	0.63 U
ALS SOP	o,p'-DDE	3424-82-6	ug/kg	0.79 U	0.79 U		0.79 U	0.79 U	0.92
ALS SOP	o,p'-DDT	789-02-6	ug/kg	0.94 U	0.94 U		0.94 U	0.94 U	0.94 U
ALS SOP	4,4'-DDD	72-54-8	ug/kg	0.35 U	1.3		1.6	1.8	1.6
ALS SOP	4,4'-DDE	72-55-9	ug/kg	0.7 U	2.2		2.9	3.6	7.8
ALS SOP	4,4'-DDT	50-29-3	ug/kg	0.47 U	0.47 U		0.47 U	0.62 J	0.47 U
Dioxins/Furans									
CWA1613B	1,2,3,4,6,7,8,9-OCDD	3268-87-9	ug/kg	0.00073 U	2.6 J		1.3	1.2	1.8
CWA1613B	1,2,3,4,6,7,8,9-OCDF	39001-02-0	ug/kg	0.0089 U	0.11 J		0.095	0.06	0.18
CWA1613B	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg	0.0044 U	0.17 J		0.11	0.095	0.17
CWA1613B	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg	9.8e-05 U	0.035 J		0.025	0.019	0.054
CWA1613B	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg	0.0044 U	0.0026 J		0.0018 J	0.0014 J	0.0035 J
CWA1613B	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg	0.0044 U	0.00086 J		0.00058 U	0.00063 J	0.0011 U
CWA1613B	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg	0.0044 U	0.003 J		0.0023 J	0.002 J	0.0058
CWA1613B	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg	0.0044 U	0.0079		0.0047 J	0.004 J	0.0066
CWA1613B	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg	0.0044 U	0.004 J		0.0017 J	0.0016 J	0.0027 J
CWA1613B	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg	0.0044 U	0.0035 J		0.0021 J	0.0018 J	0.003 J
CWA1613B	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg	0.0044 U	0.00089 U		0.00046 U	0.00055 U	0.0011 J
CWA1613B	1,2,3,7,8-PeCDD	40321-76-4	ug/kg	0.0044 U	0.0013 J		0.00062 J	0.00053 J	0.00098 J
CWA1613B	1,2,3,7,8-PeCDF	57117-41-6	ug/kg	0.0044 U	0.00079 J		0.00048 J	0.00048 U	0.00094 J
CWA1613B	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg	0.0044 U	0.0025 J		0.0014 J	0.0013 J	0.0025 J
CWA1613B	2,3,4,7,8-PeCDF	57117-31-4	ug/kg	0.0044 U	0.0017 J		0.001 J	0.001 U	0.0018 J
CWA1613B	2,3,7,8-TCDD	1746-01-6	ug/kg	0.00089 U	0.00053 J		3e-04 J	3e-04 U	0.00044 U
CWA1613B	2,3,7,8-TCDF	51207-31-9	ug/kg	0.00024 U	0.0016 DNR	0.0014	0.00089 U	0.00075 U	0.0016 DNR
CWA1613B	Total HpCDD	37871-00-4	ug/kg	0.0044 U	0.38		0.22	0.2	0.33
CWA1613B	Total HpCDF	38998-75-3	ug/kg	9.8e-05 J	0.13 J		0.1 J	0.072 J	0.21 J
CWA1613B	Total HxCDD	34465-46-8	ug/kg	0.0044 U	0.058 J		0.033 J	0.03 J	0.043 J
CWA1613B	Total HxCDF	55684-94-1	ug/kg	0.0044 U	0.058 J		0.037 J	0.031 J	0.071 J
CWA1613B	Total PeCDD	36088-22-9	ug/kg	0.0044 U	0.011 J		0.0055 J	0.0048 J	0.0074 J
CWA1613B	Total PeCDF	30402-15-4	ug/kg	0.0044 U	0.03 J		0.015 J	0.014 J	0.027 J

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j6-sc1b-110to120-82819	j6-sc1b-20to30-82819	j6-sc1b-20to30-82819r1	j6-sc1b-30to40-82819	j6-sc1b-40to50-82819	j6-sc1b-50to60-82819
	Date Time			8/28/2019 12:10:00	8/28/2019 9:20:00	8/28/2019 9:20:00	8/28/2019 9:25:00	8/28/2019 10:25:00	8/28/2019 10:30:00
	X			7634373	7634373	7634373	7634373	7634373	7634373
	Y			700517	700517	700517	700517	700517	700517
	Top (cm)			335	61	61	91	122	152
	Bottom (cm)			366	91	91	122	152	183
CWA1613B	Total TCDD	41903-57-5	ug/kg	0.00089 U	0.0041 J		0.0019 J	0.0016 J	0.0029 J
CWA1613B	Total TCDF	30402-14-3	ug/kg	0.00048 J	0.016 J		0.0077 J	0.0062 J	0.017 J
Dioxins/Furans									
E1613	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg						
E1613	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg						
E1613	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg						
E1613	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg						
E1613	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg						
E1613	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg						
E1613	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg						
E1613	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg						
E1613	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg						
E1613	1,2,3,7,8-PeCDD	40321-76-4	ug/kg						
E1613	1,2,3,7,8-PeCDF	57117-41-6	ug/kg						
E1613	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg						
E1613	2,3,4,7,8-PeCDF	57117-31-4	ug/kg						
E1613	2,3,7,8-TCDD	1746-01-6	ug/kg						
E1613	2,3,7,8-TCDF	51207-31-9	ug/kg						
E1613	OCDD	3268-87-9	ug/kg						
E1613	OCDF	39001-02-0	ug/kg						
E1613	Total HpCDD	37871-00-4	ug/kg						
E1613	Total HpCDF	38998-75-3	ug/kg						
E1613	Total HxCDD	34465-46-8	ug/kg						
E1613	Total HxCDF	55684-94-1	ug/kg						
E1613	Total PeCDD	36088-22-9	ug/kg						
E1613	Total PeCDF	30402-15-4	ug/kg						
E1613	Total TCDD	41903-57-5	ug/kg						
E1613	Total TCDF	30402-14-3	ug/kg						
PCB Aroclors									
SW8082A	Aroclor 1016	12674-11-2	ug/kg	1.6 U	1.6 U		1.6 U	1.6 U	7.8 U
SW8082A	Aroclor 1221	11104-28-2	ug/kg	1.6 U	1.6 U		1.6 U	1.6 U	7.8 U
SW8082A	Aroclor 1232	11141-16-5	ug/kg	1.6 U	1.6 U		1.6 U	1.6 U	7.8 U
SW8082A	Aroclor 1242	53469-21-9	ug/kg	1.6 U	1.6 U		1.6 U	1.6 U	7.8 U
SW8082A	Aroclor 1248	12672-29-6	ug/kg	1.6 U	43		77	87	150
SW8082A	Aroclor 1254	11097-69-1	ug/kg	1.6 U	77 J		120	140	380
SW8082A	Aroclor 1260	11096-82-5	ug/kg	0.6 U	66		170	240 DNR	210

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j6-sc1b-110to120-82819	j6-sc1b-20to30-82819	j6-sc1b-20to30-82819r1	j6-sc1b-30to40-82819	j6-sc1b-40to50-82819	j6-sc1b-50to60-82819
	Date Time			8/28/2019 12:10:00	8/28/2019 9:20:00	8/28/2019 9:20:00	8/28/2019 9:25:00	8/28/2019 10:25:00	8/28/2019 10:30:00
	X			7634373	7634373	7634373	7634373	7634373	7634373
	Y			700517	700517	700517	700517	700517	700517
	Top (cm)			335	61	61	91	122	152
	Bottom (cm)			366	91	91	122	152	183
SW8082A	Aroclor 1262	37324-23-5	ug/kg	0.6 U	0.6 U		0.6 U	0.6 U	2.9 U
SW8082A	Aroclor 1268	11100-14-4	ug/kg	0.6 U	0.6 U		0.6 U	0.6 U	2.9 U
PCB Congeners									
E1668A	PCB-1	2051-60-7	ng/g						
E1668A	PCB-2	2051-61-8	ng/g						
E1668A	PCB-3	2051-62-9	ng/g						
E1668A	PCB-4	13029-08-8	ng/g						
E1668A	PCB-5	16605-91-7	ng/g						
E1668A	PCB-6	25569-80-6	ng/g						
E1668A	PCB-7	33284-50-3	ng/g						
E1668A	PCB-8	34883-43-7	ng/g						
E1668A	PCB-9	34883-39-1	ng/g						
E1668A	PCB-10	33146-45-1	ng/g						
E1668A	PCB-11	2050-67-1	ng/g						
E1668A	PCB-12	2974-92-7	ng/g						
E1668A	PCB-13	2974-90-5	ng/g						
E1668A	PCB-14	34883-41-5	ng/g						
E1668A	PCB-15	2050-68-2	ng/g						
E1668A	PCB-16	38444-78-9	ng/g						
E1668A	PCB-17	37680-66-3	ng/g						
E1668A	PCB-18	37680-65-2	ng/g						
E1668A	PCB-19	38444-73-4	ng/g						
E1668A	PCB-20	38444-84-7	ng/g						
E1668A	PCB-21	55702-46-0	ng/g						
E1668A	PCB-22	38444-85-8	ng/g						
E1668A	PCB-23	55720-44-0	ng/g						
E1668A	PCB-24	55702-45-9	ng/g						
E1668A	PCB-25	55712-37-3	ng/g						
E1668A	PCB-26	38444-81-4	ng/g						
E1668A	PCB-27	38444-76-7	ng/g						
E1668A	PCB-28	7012-37-5	ng/g						
E1668A	PCB-29	15862-07-4	ng/g						
E1668A	PCB-30	35693-92-6	ng/g						
E1668A	PCB-31	16606-02-3	ng/g						
E1668A	PCB-32	38444-77-8	ng/g						
E1668A	PCB-33	38444-86-9	ng/g						

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j6-sc1b-110to120-82819	j6-sc1b-20to30-82819	j6-sc1b-20to30-82819r1	j6-sc1b-30to40-82819	j6-sc1b-40to50-82819	j6-sc1b-50to60-82819
	Date Time			8/28/2019 12:10:00	8/28/2019 9:20:00	8/28/2019 9:20:00	8/28/2019 9:25:00	8/28/2019 10:25:00	8/28/2019 10:30:00
	X			7634373	7634373	7634373	7634373	7634373	7634373
	Y			700517	700517	700517	700517	700517	700517
	Top (cm)			335	61	61	91	122	152
	Bottom (cm)			366	91	91	122	152	183
E1668A	PCB-34	37680-68-5	ng/g						
E1668A	PCB-35	37680-69-6	ng/g						
E1668A	PCB-36	38444-87-0	ng/g						
E1668A	PCB-37	38444-90-5	ng/g						
E1668A	PCB-38	53555-66-1	ng/g						
E1668A	PCB-39	38444-88-1	ng/g						
E1668A	PCB-40	38444-93-8	ng/g						
E1668A	PCB-41	52663-59-9	ng/g						
E1668A	PCB-42	36559-22-5	ng/g						
E1668A	PCB-43	70362-46-8	ng/g						
E1668A	PCB-44	41464-39-5	ng/g						
E1668A	PCB-45	41464-39-5	ng/g						
E1668A	PCB-46	41464-47-5	ng/g						
E1668A	PCB-47	2437-79-8	ng/g						
E1668A	PCB-48	70362-47-9	ng/g						
E1668A	PCB-49	41464-40-8	ng/g						
E1668A	PCB-50	62796-65-0	ng/g						
E1668A	PCB-51	68194-04-7	ng/g						
E1668A	PCB-52	35693-99-3	ng/g						
E1668A	PCB-53	41464-41-9	ng/g						
E1668A	PCB-54	15968-05-5	ng/g						
E1668A	PCB-55	74338-24-2	ng/g						
E1668A	PCB-56	41464-43-1	ng/g						
E1668A	PCB-57	70424-67-8	ng/g						
E1668A	PCB-58	41464-49-7	ng/g						
E1668A	PCB-59	74472-33-6	ng/g						
E1668A	PCB-60	33025-41-1	ng/g						
E1668A	PCB-61	33284-53-6	ng/g						
E1668A	PCB-62	54230-22-7	ng/g						
E1668A	PCB-63	74472-34-7	ng/g						
E1668A	PCB-64	52663-58-8	ng/g						
E1668A	PCB-65	33284-54-7	ng/g						
E1668A	PCB-66	32598-10-0	ng/g						
E1668A	PCB-67	73575-53-8	ng/g						
E1668A	PCB-68	73575-52-7	ng/g						
E1668A	PCB-69	60233-24-1	ng/g						

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j6-sc1b-110to120-82819	j6-sc1b-20to30-82819	j6-sc1b-20to30-82819r1	j6-sc1b-30to40-82819	j6-sc1b-40to50-82819	j6-sc1b-50to60-82819
	Date Time			8/28/2019 12:10:00	8/28/2019 9:20:00	8/28/2019 9:20:00	8/28/2019 9:25:00	8/28/2019 10:25:00	8/28/2019 10:30:00
	X			7634373	7634373	7634373	7634373	7634373	7634373
	Y			700517	700517	700517	700517	700517	700517
	Top (cm)			335	61	61	91	122	152
	Bottom (cm)			366	91	91	122	152	183
E1668A	PCB-70	32598-11-1	ng/g						
E1668A	PCB-71	41464-46-4	ng/g						
E1668A	PCB-72	41464-42-0	ng/g						
E1668A	PCB-73	74338-23-1	ng/g						
E1668A	PCB-74	32690-93-0	ng/g						
E1668A	PCB-75	32598-12-2	ng/g						
E1668A	PCB-76	70362-48-0	ng/g						
E1668A	PCB-77	32598-13-3	ng/g						
E1668A	PCB-78	70362-49-1	ng/g						
E1668A	PCB-79	41464-48-6	ng/g						
E1668A	PCB-80	33284-52-5	ng/g						
E1668A	PCB-81	70362-50-4	ng/g						
E1668A	PCB-82	52663-62-4	ng/g						
E1668A	PCB-83	60145-20-2	ng/g						
E1668A	PCB-84	52663-60-2	ng/g						
E1668A	PCB-85	65510-45-4	ng/g						
E1668A	PCB-86	55312-69-1	ng/g						
E1668A	PCB-87	38380-02-8	ng/g						
E1668A	PCB-88	55215-17-3	ng/g						
E1668A	PCB-89	73575-57-2	ng/g						
E1668A	PCB-90	68194-07-0	ng/g						
E1668A	PCB-91	68194-05-8	ng/g						
E1668A	PCB-92	52663-61-3	ng/g						
E1668A	PCB-93	73575-56-1	ng/g						
E1668A	PCB-94	73575-55-0	ng/g						
E1668A	PCB-95	38379-99-6	ng/g						
E1668A	PCB-96	73575-54-9	ng/g						
E1668A	PCB-97	41464-51-1	ng/g						
E1668A	PCB-98	60233-25-2	ng/g						
E1668A	PCB-99	38380-01-7	ng/g						
E1668A	PCB-100	39485-83-1	ng/g						
E1668A	PCB-101	37680-73-2	ng/g						
E1668A	PCB-102	68194-06-9	ng/g						
E1668A	PCB-103	60145-21-3	ng/g						
E1668A	PCB-104	56558-16-8	ng/g						
E1668A	PCB-105	32598-14-4	ng/g						

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j6-sc1b-110to120-82819	j6-sc1b-20to30-82819	j6-sc1b-20to30-82819r1	j6-sc1b-30to40-82819	j6-sc1b-40to50-82819	j6-sc1b-50to60-82819
	Date Time			8/28/2019 12:10:00	8/28/2019 9:20:00	8/28/2019 9:20:00	8/28/2019 9:25:00	8/28/2019 10:25:00	8/28/2019 10:30:00
	X			7634373	7634373	7634373	7634373	7634373	7634373
	Y			700517	700517	700517	700517	700517	700517
	Top (cm)			335	61	61	91	122	152
	Bottom (cm)			366	91	91	122	152	183
E1668A	PCB-106	70424-69-0	ng/g						
E1668A	PCB-107	70424-68-9	ng/g						
E1668A	PCB-108	70362-41-3	ng/g						
E1668A	PCB-109	74472-35-8	ng/g						
E1668A	PCB-110	38380-03-9	ng/g						
E1668A	PCB-111	39635-32-0	ng/g						
E1668A	PCB-112	74472-36-9	ng/g						
E1668A	PCB-113	68194-10-5	ng/g						
E1668A	PCB-114	74472-37-0	ng/g						
E1668A	PCB-115	74472-38-1	ng/g						
E1668A	PCB-116	18259-05-7	ng/g						
E1668A	PCB-117	68194-11-6	ng/g						
E1668A	PCB-118	31508-00-6	ng/g						
E1668A	PCB-119	56558-17-9	ng/g						
E1668A	PCB-120	68194-12-7	ng/g						
E1668A	PCB-121	56558-18-0	ng/g						
E1668A	PCB-122	76842-07-4	ng/g						
E1668A	PCB-123	65510-44-3	ng/g						
E1668A	PCB-124	70424-70-3	ng/g						
E1668A	PCB-125	74472-39-2	ng/g						
E1668A	PCB-126	57465-28-8	ng/g						
E1668A	PCB-127	39635-33-1	ng/g						
E1668A	PCB-128	38380-07-3	ng/g						
E1668A	PCB-129	55215-18-4	ng/g						
E1668A	PCB-130	52663-66-8	ng/g						
E1668A	PCB-131	61798-70-7	ng/g						
E1668A	PCB-132	38380-05-1	ng/g						
E1668A	PCB-133	35694-04-3	ng/g						
E1668A	PCB-134	52704-70-8	ng/g						
E1668A	PCB-135	52744-13-5	ng/g						
E1668A	PCB-136	38411-22-2	ng/g						
E1668A	PCB-137	35694-06-5	ng/g						
E1668A	PCB-138	35065-28-2	ng/g						
E1668A	PCB-139	56030-56-9	ng/g						
E1668A	PCB-140	59291-64-4	ng/g						
E1668A	PCB-141	52712-04-6	ng/g						

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j6-sc1b-110to120-82819	j6-sc1b-20to30-82819	j6-sc1b-20to30-82819r1	j6-sc1b-30to40-82819	j6-sc1b-40to50-82819	j6-sc1b-50to60-82819
	Date Time			8/28/2019 12:10:00	8/28/2019 9:20:00	8/28/2019 9:20:00	8/28/2019 9:25:00	8/28/2019 10:25:00	8/28/2019 10:30:00
	X			7634373	7634373	7634373	7634373	7634373	7634373
	Y			700517	700517	700517	700517	700517	700517
	Top (cm)			335	61	61	91	122	152
	Bottom (cm)			366	91	91	122	152	183
E1668A	PCB-142	41411-61-4	ng/g						
E1668A	PCB-143	68194-15-0	ng/g						
E1668A	PCB-144	68194-14-9	ng/g						
E1668A	PCB-145	74472-40-5	ng/g						
E1668A	PCB-146	51908-16-8	ng/g						
E1668A	PCB-147	68194-13-8	ng/g						
E1668A	PCB-148	74472-41-6	ng/g						
E1668A	PCB-149	38380-04-0	ng/g						
E1668A	PCB-150	68194-08-1	ng/g						
E1668A	PCB-151	52663-63-5	ng/g						
E1668A	PCB-152	68194-09-2	ng/g						
E1668A	PCB-153	35065-27-1	ng/g						
E1668A	PCB-154	60145-22-4	ng/g						
E1668A	PCB-155	33979-03-2	ng/g						
E1668A	PCB-156	38380-08-4	ng/g						
E1668A	PCB-157	69782-90-7	ng/g						
E1668A	PCB-158	74472-42-7	ng/g						
E1668A	PCB-159	39635-35-3	ng/g						
E1668A	PCB-160	41411-62-5	ng/g						
E1668A	PCB-161	74472-43-8	ng/g						
E1668A	PCB-162	39635-34-2	ng/g						
E1668A	PCB-163	74472-44-9	ng/g						
E1668A	PCB-164	74472-45-0	ng/g						
E1668A	PCB-165	74472-46-1	ng/g						
E1668A	PCB-166	41411-63-6	ng/g						
E1668A	PCB-167	52663-72-6	ng/g						
E1668A	PCB-168	59291-65-5	ng/g						
E1668A	PCB-169	32774-16-6	ng/g						
E1668A	PCB-170	35065-30-6	ng/g						
E1668A	PCB-171	52663-71-5	ng/g						
E1668A	PCB-172	52663-74-8	ng/g						
E1668A	PCB-173	68194-16-1	ng/g						
E1668A	PCB-174	38411-25-5	ng/g						
E1668A	PCB-175	40186-70-7	ng/g						
E1668A	PCB-176	52663-65-7	ng/g						
E1668A	PCB-177	52663-70-4	ng/g						

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j6-sc1b-110to120-82819	j6-sc1b-20to30-82819	j6-sc1b-20to30-82819r1	j6-sc1b-30to40-82819	j6-sc1b-40to50-82819	j6-sc1b-50to60-82819
	Date Time			8/28/2019 12:10:00	8/28/2019 9:20:00	8/28/2019 9:20:00	8/28/2019 9:25:00	8/28/2019 10:25:00	8/28/2019 10:30:00
	X			7634373	7634373	7634373	7634373	7634373	7634373
	Y			700517	700517	700517	700517	700517	700517
	Top (cm)			335	61	61	91	122	152
	Bottom (cm)			366	91	91	122	152	183
E1668A	PCB-178	52663-67-9	ng/g						
E1668A	PCB-179	52663-64-6	ng/g						
E1668A	PCB-180	35065-29-3	ng/g						
E1668A	PCB-181	74472-47-2	ng/g						
E1668A	PCB-182	60145-23-5	ng/g						
E1668A	PCB-183	52663-69-1	ng/g						
E1668A	PCB-184	74472-48-3	ng/g						
E1668A	PCB-185	52712-05-7	ng/g						
E1668A	PCB-186	74472-49-4	ng/g						
E1668A	PCB-187	52663-68-0	ng/g						
E1668A	PCB-188	74487-85-7	ng/g						
E1668A	PCB-189	39635-31-9	ng/g						
E1668A	PCB-190	41411-64-7	ng/g						
E1668A	PCB-191	74472-50-7	ng/g						
E1668A	PCB-192	74472-51-8	ng/g						
E1668A	PCB-193	69782-91-8	ng/g						
E1668A	PCB-194	35694-08-7	ng/g						
E1668A	PCB-195	52663-78-2	ng/g						
E1668A	PCB-196	42740-50-1	ng/g						
E1668A	PCB-197	33091-17-7	ng/g						
E1668A	PCB-198	68194-17-2	ng/g						
E1668A	PCB-199	52663-75-9	ng/g						
E1668A	PCB-200	52663-73-7	ng/g						
E1668A	PCB-201	40186-71-8	ng/g						
E1668A	PCB-202	2136-99-4	ng/g						
E1668A	PCB-203	52663-76-0	ng/g						
E1668A	PCB-204	74472-52-9	ng/g						
E1668A	PCB-205	74472-53-0	ng/g						
E1668A	PCB-206	40186-72-9	ng/g						
E1668A	PCB-207	52663-79-3	ng/g						
E1668A	PCB-208	52663-77-1	ng/g						
E1668A	PCB-209	2051-24-3	ng/g						
E1668A	Total Dichlorobiphenyls		ng/g						
E1668A	Total Heptachlorobiphenyls		ng/g						
E1668A	Total Hexachlorobiphenyls		ng/g						
E1668A	Total Monochlorobiphenyls		ng/g						

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j6-sc1b-110to120-82819	j6-sc1b-20to30-82819	j6-sc1b-20to30-82819r1	j6-sc1b-30to40-82819	j6-sc1b-40to50-82819	j6-sc1b-50to60-82819
	Date Time			8/28/2019 12:10:00	8/28/2019 9:20:00	8/28/2019 9:20:00	8/28/2019 9:25:00	8/28/2019 10:25:00	8/28/2019 10:30:00
	X			7634373	7634373	7634373	7634373	7634373	7634373
	Y			700517	700517	700517	700517	700517	700517
	Top (cm)			335	61	61	91	122	152
	Bottom (cm)			366	91	91	122	152	183
E1668A	Total Nonachlorobiphenyls		ng/g						
E1668A	Total Octachlorobiphenyls		ng/g						
E1668A	Total Pentachlorobiphenyls		ng/g						
E1668A	Total Tetrachlorobiphenyls		ng/g						
E1668A	Total Trichlorobiphenyls		ng/g						
E1668A	Polychlorinated biphenyls, Total	1336-36-3	ng/g						
PAHs									
SW8270D	2-Methylnaphthalene	91-57-6	ug/kg	0.12 UJ	7.1 J		4.5 J	4.2 J	3.9 J
SW8270D	Acenaphthene	83-32-9	ug/kg	0.047 UJ	7.8 J		5.5 J	5.5 J	6.9 J
SW8270D	Acenaphthylene	208-96-8	ug/kg	0.046 UJ	6.2 J		3.6 J	3.1 J	4.6 J
SW8270D	Anthracene	120-12-7	ug/kg	0.038 U	7.6		7.6	7.5	9.9
SW8270D	Benzo(a)anthracene	56-55-3	ug/kg	0.07 J	24		29	32	35
SW8270D	Benzo(a)pyrene	50-32-8	ug/kg	0.07 U	34		38	41	43
SW8270D	Benzo(b)fluoranthene	205-99-2	ug/kg	0.14 J	37		47	47	56
SW8270D	Benzo(g,h,i)perylene	191-24-2	ug/kg	0.095 J	27		28	28	32
SW8270D	Benzo(k)fluoranthene	207-08-9	ug/kg	0.057 U	13		16	18	19
SW8270D	Chrysene	218-01-9	ug/kg	0.062 J	29		36	40	48
SW8270D	Dibenzo(a,h)anthracene	53-70-3	ug/kg	0.086 U	5.1		6.6	6.8	8.3
SW8270D	Dibenzofuran	132-64-9	ug/kg	0.045 UJ	3.2 J		2.4 J	2.2 J	2.1 J
SW8270D	Fluoranthene	206-44-0	ug/kg	0.094 J	52 J		60 J	63 J	73 J
SW8270D	Fluorene	86-73-7	ug/kg	0.052 UJ	6.1 J		5.1 J	4.9 J	4.3 J
SW8270D	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0.096 J	27		30	30	35
SW8270D	Naphthalene	91-20-3	ug/kg	0.15 UJ	14 J		8.3 J	6.2 J	5.1 J
SW8270D	Phenanthrene	85-01-8	ug/kg	0.14 J	33 J		33 J	32 J	48 J
SW8270D	Pyrene	129-00-0	ug/kg	0.12 J	58		60	66	85
Calculated Totals									
ALS SOP	CALC_TOTAL_DDD_ND_PDI		ug/kg	0.63 UT	1.6 AT		1.9 AT	2.1 AT	1.9 AT
ALS SOP	CALC_TOTAL_DDE_ND_PDI		ug/kg	0.79 UT	2.6 AT		3.3 AT	4 AT	8.7 R
ALS SOP	CALC_TOTAL_DDT_ND_PDI		ug/kg	0.94 UT	0.94 UT		0.94 UT	1.1 JT	0.94 UT
ALS SOP	CALC_TOTAL_DDx_ND_PDI		ug/kg	0.94 UT	4 T		5 T	6.5 JT	11 T
E1668A	CALC_TOTAL_PCB_ND_PDI		ug/kg						
SW8082A	CALC_TOTAL_AROCLORS_ND_PDI		ug/kg	1.6 UT	190 JT		370 AT	480 AT	740 AT
SW8270D	CALC_TOTAL_CPAH_ND_PDI		ug/kg	0.064 JT	48 T		55 T	59 T	64 T
SW8270D	CALC_TOTAL_HPAH_ND_PDI		ug/kg	0.39 JT	260 JT		290 JT	310 JT	360 JT
SW8270D	CALC_TOTAL_LPAH_ND_PDI		ug/kg	0.22 JT	82 JT		68 JT	63 JT	83 JT
SW8270D	CALC_TOTAL_PAH_ND_PDI		ug/kg	0.56 JT	340 JT		360 JT	370 JT	440 JT

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j6-sc1b-110to120-82819	j6-sc1b-20to30-82819	j6-sc1b-20to30-82819r1	j6-sc1b-30to40-82819	j6-sc1b-40to50-82819	j6-sc1b-50to60-82819
	Date Time			8/28/2019 12:10:00	8/28/2019 9:20:00	8/28/2019 9:20:00	8/28/2019 9:25:00	8/28/2019 10:25:00	8/28/2019 10:30:00
	X			7634373	7634373	7634373	7634373	7634373	7634373
	Y			700517	700517	700517	700517	700517	700517
	Top (cm)			335	61	61	91	122	152
	Bottom (cm)			366	91	91	122	152	183

DDx = dichlorodiphenyltrichloroethane and its derivatives

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyls

PeCDD = Pentachlorodibenzo-p-dioxin

PeCDF = Pentachlorodibenzofuran

TCDD = Tetrachlorodibenzo-p-dioxin

ug/kg = micrograms per kilogram

ng/g = nanograms per gram

% = percent

g/cm3 = grams per cubic centimeter

J = Reported result is an estimate

T = Total concentration from component analytes.

U = Analyte was not detected in sample

R = Rejected

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j6-sc1b-50to60-82819r1	j6-sc1b-60to70-82819	j6-sc1b-60to70-82819r1	j6-sc1b-70to80-82819	j6-sc1b-80to90-82819
	Date Time			8/28/2019 10:30:00	8/28/2019 10:35:00	8/28/2019 10:35:00	8/28/2019 10:40:00	8/28/2019 11:55:00
	X			7634373	7634373	7634373	7634373	7634373
	Y			700517	700517	700517	700517	700517
	Top (cm)			152	183	183	213	244
	Bottom (cm)			183	213	213	244	274
Conventionals								
E160.3	Total Solids		%		62		70	71
PSEP	Total Solids		%					
SM2540G	Total Solids		%		60		70	70
SW9060A	Carbon, Total Organic	7440-044-0	mg/kg		13500		6200	5200
Organochlorine Pesticides								
ALS SOP	o,p'-DDD	53-19-0	ug/kg		0.63 U		0.63 U	0.63 U
ALS SOP	o,p'-DDE	3424-82-6	ug/kg		2		0.79 U	0.79 U
ALS SOP	o,p'-DDT	789-02-6	ug/kg		0.94 U		0.94 U	0.94 U
ALS SOP	4,4'-DDD	72-54-8	ug/kg		2.6		0.46 J	0.35 U
ALS SOP	4,4'-DDE	72-55-9	ug/kg		13		0.7 U	0.7 U
ALS SOP	4,4'-DDT	50-29-3	ug/kg		0.47 U		0.47 U	0.47 U
Dioxins/Furans								
CWA1613B	1,2,3,4,6,7,8,9-OCDD	3268-87-9	ug/kg		2.2		0.012	0.038
CWA1613B	1,2,3,4,6,7,8,9-OCDF	39001-02-0	ug/kg		0.28		0.0012 U	0.0037 J
CWA1613B	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg		0.21		0.00094 U	0.0037 J
CWA1613B	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg		0.076		0.00048 U	0.0012 J
CWA1613B	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg		0.0045 J		0.0047 U	0.0048 U
CWA1613B	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg		0.0028 J		0.0047 U	0.0048 U
CWA1613B	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg		0.006		0.0047 U	0.0048 U
CWA1613B	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg		0.0078		0.0047 U	0.0048 U
CWA1613B	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg		0.0038 J		0.0047 U	0.0048 U
CWA1613B	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg		0.0039 J		0.0047 U	0.0048 U
CWA1613B	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg		0.0011 J		0.0047 U	0.0048 U
CWA1613B	1,2,3,7,8-PeCDD	40321-76-4	ug/kg		0.0012 J		0.0047 U	0.0048 U
CWA1613B	1,2,3,7,8-PeCDF	57117-41-6	ug/kg		0.00091 J		0.0047 U	0.0048 U
CWA1613B	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg		0.0032 J		0.0047 U	0.0048 U
CWA1613B	2,3,4,7,8-PeCDF	57117-31-4	ug/kg		0.0017 J		0.0047 U	0.0048 U
CWA1613B	2,3,7,8-TCDD	1746-01-6	ug/kg		0.00051 J		0.00094 U	0.00096 U
CWA1613B	2,3,7,8-TCDF	51207-31-9	ug/kg	0.0013	0.00094 DNR	0.00075 U	0.00037 U	0.00029 U
CWA1613B	Total HpCDD	37871-00-4	ug/kg		0.41		0.0021 J	0.0071 J
CWA1613B	Total HpCDF	38998-75-3	ug/kg		0.29 J		0.0017 J	0.0046 J
CWA1613B	Total HxCDD	34465-46-8	ug/kg		0.065 J		0.00041 J	0.001 J
CWA1613B	Total HxCDF	55684-94-1	ug/kg		0.099 J		0.00061 J	0.0014 J
CWA1613B	Total PeCDD	36088-22-9	ug/kg		0.012 J		0.0047 U	0.0048 U
CWA1613B	Total PeCDF	30402-15-4	ug/kg		0.034 J		0.00025 J	0.00061 J

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j6-sc1b-50to60-82819r1	j6-sc1b-60to70-82819	j6-sc1b-60to70-82819r1	j6-sc1b-70to80-82819	j6-sc1b-80to90-82819
	Date Time			8/28/2019 10:30:00	8/28/2019 10:35:00	8/28/2019 10:35:00	8/28/2019 10:40:00	8/28/2019 11:55:00
	X			7634373	7634373	7634373	7634373	7634373
	Y			700517	700517	700517	700517	700517
	Top (cm)			152	183	183	213	244
	Bottom (cm)			183	213	213	244	274
CWA1613B	Total TCDD	41903-57-5	ug/kg		0.0039 J		0.00011 J	0.00096 U
CWA1613B	Total TCDF	30402-14-3	ug/kg		0.013 J		0.00059 J	6e-04 J
Dioxins/Furans								
E1613	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg					
E1613	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg					
E1613	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg					
E1613	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg					
E1613	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg					
E1613	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg					
E1613	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg					
E1613	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg					
E1613	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg					
E1613	1,2,3,7,8-PeCDD	40321-76-4	ug/kg					
E1613	1,2,3,7,8-PeCDF	57117-41-6	ug/kg					
E1613	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg					
E1613	2,3,4,7,8-PeCDF	57117-31-4	ug/kg					
E1613	2,3,7,8-TCDD	1746-01-6	ug/kg					
E1613	2,3,7,8-TCDF	51207-31-9	ug/kg					
E1613	OCDD	3268-87-9	ug/kg					
E1613	OCDF	39001-02-0	ug/kg					
E1613	Total HpCDD	37871-00-4	ug/kg					
E1613	Total HpCDF	38998-75-3	ug/kg					
E1613	Total HxCDD	34465-46-8	ug/kg					
E1613	Total HxCDF	55684-94-1	ug/kg					
E1613	Total PeCDD	36088-22-9	ug/kg					
E1613	Total PeCDF	30402-15-4	ug/kg					
E1613	Total TCDD	41903-57-5	ug/kg					
E1613	Total TCDF	30402-14-3	ug/kg					
PCB Aroclors								
SW8082A	Aroclor 1016	12674-11-2	ug/kg		7.8 U		1.6 U	1.6 U
SW8082A	Aroclor 1221	11104-28-2	ug/kg		7.8 U		1.6 U	1.6 U
SW8082A	Aroclor 1232	11141-16-5	ug/kg		7.8 U		1.6 U	1.6 U
SW8082A	Aroclor 1242	53469-21-9	ug/kg		7.8 U		1.6 U	1.6 U
SW8082A	Aroclor 1248	12672-29-6	ug/kg		94		12	3.3 J
SW8082A	Aroclor 1254	11097-69-1	ug/kg		220		30	6.9
SW8082A	Aroclor 1260	11096-82-5	ug/kg		140		17	3 J

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j6-sc1b-50to60-82819r1	j6-sc1b-60to70-82819	j6-sc1b-60to70-82819r1	j6-sc1b-70to80-82819	j6-sc1b-80to90-82819
	Date Time			8/28/2019 10:30:00	8/28/2019 10:35:00	8/28/2019 10:35:00	8/28/2019 10:40:00	8/28/2019 11:55:00
	X			7634373	7634373	7634373	7634373	7634373
	Y			700517	700517	700517	700517	700517
	Top (cm)			152	183	183	213	244
	Bottom (cm)			183	213	213	244	274
SW8082A	Aroclor 1262	37324-23-5	ug/kg		2.9 U		0.6 U	0.6 U
SW8082A	Aroclor 1268	11100-14-4	ug/kg		2.9 U		0.6 U	0.6 U
PCB Congeners								
E1668A	PCB-1	2051-60-7	ng/g					
E1668A	PCB-2	2051-61-8	ng/g					
E1668A	PCB-3	2051-62-9	ng/g					
E1668A	PCB-4	13029-08-8	ng/g					
E1668A	PCB-5	16605-91-7	ng/g					
E1668A	PCB-6	25569-80-6	ng/g					
E1668A	PCB-7	33284-50-3	ng/g					
E1668A	PCB-8	34883-43-7	ng/g					
E1668A	PCB-9	34883-39-1	ng/g					
E1668A	PCB-10	33146-45-1	ng/g					
E1668A	PCB-11	2050-67-1	ng/g					
E1668A	PCB-12	2974-92-7	ng/g					
E1668A	PCB-13	2974-90-5	ng/g					
E1668A	PCB-14	34883-41-5	ng/g					
E1668A	PCB-15	2050-68-2	ng/g					
E1668A	PCB-16	38444-78-9	ng/g					
E1668A	PCB-17	37680-66-3	ng/g					
E1668A	PCB-18	37680-65-2	ng/g					
E1668A	PCB-19	38444-73-4	ng/g					
E1668A	PCB-20	38444-84-7	ng/g					
E1668A	PCB-21	55702-46-0	ng/g					
E1668A	PCB-22	38444-85-8	ng/g					
E1668A	PCB-23	55720-44-0	ng/g					
E1668A	PCB-24	55702-45-9	ng/g					
E1668A	PCB-25	55712-37-3	ng/g					
E1668A	PCB-26	38444-81-4	ng/g					
E1668A	PCB-27	38444-76-7	ng/g					
E1668A	PCB-28	7012-37-5	ng/g					
E1668A	PCB-29	15862-07-4	ng/g					
E1668A	PCB-30	35693-92-6	ng/g					
E1668A	PCB-31	16606-02-3	ng/g					
E1668A	PCB-32	38444-77-8	ng/g					
E1668A	PCB-33	38444-86-9	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j6-sc1b-50to60-82819r1	j6-sc1b-60to70-82819	j6-sc1b-60to70-82819r1	j6-sc1b-70to80-82819	j6-sc1b-80to90-82819
	Date Time			8/28/2019 10:30:00	8/28/2019 10:35:00	8/28/2019 10:35:00	8/28/2019 10:40:00	8/28/2019 11:55:00
	X			7634373	7634373	7634373	7634373	7634373
	Y			700517	700517	700517	700517	700517
	Top (cm)			152	183	183	213	244
	Bottom (cm)			183	213	213	244	274
E1668A	PCB-34	37680-68-5	ng/g					
E1668A	PCB-35	37680-69-6	ng/g					
E1668A	PCB-36	38444-87-0	ng/g					
E1668A	PCB-37	38444-90-5	ng/g					
E1668A	PCB-38	53555-66-1	ng/g					
E1668A	PCB-39	38444-88-1	ng/g					
E1668A	PCB-40	38444-93-8	ng/g					
E1668A	PCB-41	52663-59-9	ng/g					
E1668A	PCB-42	36559-22-5	ng/g					
E1668A	PCB-43	70362-46-8	ng/g					
E1668A	PCB-44	41464-39-5	ng/g					
E1668A	PCB-45	41464-39-5	ng/g					
E1668A	PCB-46	41464-47-5	ng/g					
E1668A	PCB-47	2437-79-8	ng/g					
E1668A	PCB-48	70362-47-9	ng/g					
E1668A	PCB-49	41464-40-8	ng/g					
E1668A	PCB-50	62796-65-0	ng/g					
E1668A	PCB-51	68194-04-7	ng/g					
E1668A	PCB-52	35693-99-3	ng/g					
E1668A	PCB-53	41464-41-9	ng/g					
E1668A	PCB-54	15968-05-5	ng/g					
E1668A	PCB-55	74338-24-2	ng/g					
E1668A	PCB-56	41464-43-1	ng/g					
E1668A	PCB-57	70424-67-8	ng/g					
E1668A	PCB-58	41464-49-7	ng/g					
E1668A	PCB-59	74472-33-6	ng/g					
E1668A	PCB-60	33025-41-1	ng/g					
E1668A	PCB-61	33284-53-6	ng/g					
E1668A	PCB-62	54230-22-7	ng/g					
E1668A	PCB-63	74472-34-7	ng/g					
E1668A	PCB-64	52663-58-8	ng/g					
E1668A	PCB-65	33284-54-7	ng/g					
E1668A	PCB-66	32598-10-0	ng/g					
E1668A	PCB-67	73575-53-8	ng/g					
E1668A	PCB-68	73575-52-7	ng/g					
E1668A	PCB-69	60233-24-1	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j6-sc1b-50to60-82819r1	j6-sc1b-60to70-82819	j6-sc1b-60to70-82819r1	j6-sc1b-70to80-82819	j6-sc1b-80to90-82819
	Date Time			8/28/2019 10:30:00	8/28/2019 10:35:00	8/28/2019 10:35:00	8/28/2019 10:40:00	8/28/2019 11:55:00
	X			7634373	7634373	7634373	7634373	7634373
	Y			700517	700517	700517	700517	700517
	Top (cm)			152	183	183	213	244
	Bottom (cm)			183	213	213	244	274
E1668A	PCB-70	32598-11-1	ng/g					
E1668A	PCB-71	41464-46-4	ng/g					
E1668A	PCB-72	41464-42-0	ng/g					
E1668A	PCB-73	74338-23-1	ng/g					
E1668A	PCB-74	32690-93-0	ng/g					
E1668A	PCB-75	32598-12-2	ng/g					
E1668A	PCB-76	70362-48-0	ng/g					
E1668A	PCB-77	32598-13-3	ng/g					
E1668A	PCB-78	70362-49-1	ng/g					
E1668A	PCB-79	41464-48-6	ng/g					
E1668A	PCB-80	33284-52-5	ng/g					
E1668A	PCB-81	70362-50-4	ng/g					
E1668A	PCB-82	52663-62-4	ng/g					
E1668A	PCB-83	60145-20-2	ng/g					
E1668A	PCB-84	52663-60-2	ng/g					
E1668A	PCB-85	65510-45-4	ng/g					
E1668A	PCB-86	55312-69-1	ng/g					
E1668A	PCB-87	38380-02-8	ng/g					
E1668A	PCB-88	55215-17-3	ng/g					
E1668A	PCB-89	73575-57-2	ng/g					
E1668A	PCB-90	68194-07-0	ng/g					
E1668A	PCB-91	68194-05-8	ng/g					
E1668A	PCB-92	52663-61-3	ng/g					
E1668A	PCB-93	73575-56-1	ng/g					
E1668A	PCB-94	73575-55-0	ng/g					
E1668A	PCB-95	38379-99-6	ng/g					
E1668A	PCB-96	73575-54-9	ng/g					
E1668A	PCB-97	41464-51-1	ng/g					
E1668A	PCB-98	60233-25-2	ng/g					
E1668A	PCB-99	38380-01-7	ng/g					
E1668A	PCB-100	39485-83-1	ng/g					
E1668A	PCB-101	37680-73-2	ng/g					
E1668A	PCB-102	68194-06-9	ng/g					
E1668A	PCB-103	60145-21-3	ng/g					
E1668A	PCB-104	56558-16-8	ng/g					
E1668A	PCB-105	32598-14-4	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j6-sc1b-50to60-82819r1	j6-sc1b-60to70-82819	j6-sc1b-60to70-82819r1	j6-sc1b-70to80-82819	j6-sc1b-80to90-82819
	Date Time			8/28/2019 10:30:00	8/28/2019 10:35:00	8/28/2019 10:35:00	8/28/2019 10:40:00	8/28/2019 11:55:00
	X			7634373	7634373	7634373	7634373	7634373
	Y			700517	700517	700517	700517	700517
	Top (cm)			152	183	183	213	244
	Bottom (cm)			183	213	213	244	274
E1668A	PCB-106	70424-69-0	ng/g					
E1668A	PCB-107	70424-68-9	ng/g					
E1668A	PCB-108	70362-41-3	ng/g					
E1668A	PCB-109	74472-35-8	ng/g					
E1668A	PCB-110	38380-03-9	ng/g					
E1668A	PCB-111	39635-32-0	ng/g					
E1668A	PCB-112	74472-36-9	ng/g					
E1668A	PCB-113	68194-10-5	ng/g					
E1668A	PCB-114	74472-37-0	ng/g					
E1668A	PCB-115	74472-38-1	ng/g					
E1668A	PCB-116	18259-05-7	ng/g					
E1668A	PCB-117	68194-11-6	ng/g					
E1668A	PCB-118	31508-00-6	ng/g					
E1668A	PCB-119	56558-17-9	ng/g					
E1668A	PCB-120	68194-12-7	ng/g					
E1668A	PCB-121	56558-18-0	ng/g					
E1668A	PCB-122	76842-07-4	ng/g					
E1668A	PCB-123	65510-44-3	ng/g					
E1668A	PCB-124	70424-70-3	ng/g					
E1668A	PCB-125	74472-39-2	ng/g					
E1668A	PCB-126	57465-28-8	ng/g					
E1668A	PCB-127	39635-33-1	ng/g					
E1668A	PCB-128	38380-07-3	ng/g					
E1668A	PCB-129	55215-18-4	ng/g					
E1668A	PCB-130	52663-66-8	ng/g					
E1668A	PCB-131	61798-70-7	ng/g					
E1668A	PCB-132	38380-05-1	ng/g					
E1668A	PCB-133	35694-04-3	ng/g					
E1668A	PCB-134	52704-70-8	ng/g					
E1668A	PCB-135	52744-13-5	ng/g					
E1668A	PCB-136	38411-22-2	ng/g					
E1668A	PCB-137	35694-06-5	ng/g					
E1668A	PCB-138	35065-28-2	ng/g					
E1668A	PCB-139	56030-56-9	ng/g					
E1668A	PCB-140	59291-64-4	ng/g					
E1668A	PCB-141	52712-04-6	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j6-sc1b-50to60-82819r1	j6-sc1b-60to70-82819	j6-sc1b-60to70-82819r1	j6-sc1b-70to80-82819	j6-sc1b-80to90-82819
	Date Time			8/28/2019 10:30:00	8/28/2019 10:35:00	8/28/2019 10:35:00	8/28/2019 10:40:00	8/28/2019 11:55:00
	X			7634373	7634373	7634373	7634373	7634373
	Y			700517	700517	700517	700517	700517
	Top (cm)			152	183	183	213	244
	Bottom (cm)			183	213	213	244	274
E1668A	PCB-142	41411-61-4	ng/g					
E1668A	PCB-143	68194-15-0	ng/g					
E1668A	PCB-144	68194-14-9	ng/g					
E1668A	PCB-145	74472-40-5	ng/g					
E1668A	PCB-146	51908-16-8	ng/g					
E1668A	PCB-147	68194-13-8	ng/g					
E1668A	PCB-148	74472-41-6	ng/g					
E1668A	PCB-149	38380-04-0	ng/g					
E1668A	PCB-150	68194-08-1	ng/g					
E1668A	PCB-151	52663-63-5	ng/g					
E1668A	PCB-152	68194-09-2	ng/g					
E1668A	PCB-153	35065-27-1	ng/g					
E1668A	PCB-154	60145-22-4	ng/g					
E1668A	PCB-155	33979-03-2	ng/g					
E1668A	PCB-156	38380-08-4	ng/g					
E1668A	PCB-157	69782-90-7	ng/g					
E1668A	PCB-158	74472-42-7	ng/g					
E1668A	PCB-159	39635-35-3	ng/g					
E1668A	PCB-160	41411-62-5	ng/g					
E1668A	PCB-161	74472-43-8	ng/g					
E1668A	PCB-162	39635-34-2	ng/g					
E1668A	PCB-163	74472-44-9	ng/g					
E1668A	PCB-164	74472-45-0	ng/g					
E1668A	PCB-165	74472-46-1	ng/g					
E1668A	PCB-166	41411-63-6	ng/g					
E1668A	PCB-167	52663-72-6	ng/g					
E1668A	PCB-168	59291-65-5	ng/g					
E1668A	PCB-169	32774-16-6	ng/g					
E1668A	PCB-170	35065-30-6	ng/g					
E1668A	PCB-171	52663-71-5	ng/g					
E1668A	PCB-172	52663-74-8	ng/g					
E1668A	PCB-173	68194-16-1	ng/g					
E1668A	PCB-174	38411-25-5	ng/g					
E1668A	PCB-175	40186-70-7	ng/g					
E1668A	PCB-176	52663-65-7	ng/g					
E1668A	PCB-177	52663-70-4	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j6-sc1b-50to60-82819r1	j6-sc1b-60to70-82819	j6-sc1b-60to70-82819r1	j6-sc1b-70to80-82819	j6-sc1b-80to90-82819
	Date Time			8/28/2019 10:30:00	8/28/2019 10:35:00	8/28/2019 10:35:00	8/28/2019 10:40:00	8/28/2019 11:55:00
	X			7634373	7634373	7634373	7634373	7634373
	Y			700517	700517	700517	700517	700517
	Top (cm)			152	183	183	213	244
	Bottom (cm)			183	213	213	244	274
E1668A	PCB-178	52663-67-9	ng/g					
E1668A	PCB-179	52663-64-6	ng/g					
E1668A	PCB-180	35065-29-3	ng/g					
E1668A	PCB-181	74472-47-2	ng/g					
E1668A	PCB-182	60145-23-5	ng/g					
E1668A	PCB-183	52663-69-1	ng/g					
E1668A	PCB-184	74472-48-3	ng/g					
E1668A	PCB-185	52712-05-7	ng/g					
E1668A	PCB-186	74472-49-4	ng/g					
E1668A	PCB-187	52663-68-0	ng/g					
E1668A	PCB-188	74487-85-7	ng/g					
E1668A	PCB-189	39635-31-9	ng/g					
E1668A	PCB-190	41411-64-7	ng/g					
E1668A	PCB-191	74472-50-7	ng/g					
E1668A	PCB-192	74472-51-8	ng/g					
E1668A	PCB-193	69782-91-8	ng/g					
E1668A	PCB-194	35694-08-7	ng/g					
E1668A	PCB-195	52663-78-2	ng/g					
E1668A	PCB-196	42740-50-1	ng/g					
E1668A	PCB-197	33091-17-7	ng/g					
E1668A	PCB-198	68194-17-2	ng/g					
E1668A	PCB-199	52663-75-9	ng/g					
E1668A	PCB-200	52663-73-7	ng/g					
E1668A	PCB-201	40186-71-8	ng/g					
E1668A	PCB-202	2136-99-4	ng/g					
E1668A	PCB-203	52663-76-0	ng/g					
E1668A	PCB-204	74472-52-9	ng/g					
E1668A	PCB-205	74472-53-0	ng/g					
E1668A	PCB-206	40186-72-9	ng/g					
E1668A	PCB-207	52663-79-3	ng/g					
E1668A	PCB-208	52663-77-1	ng/g					
E1668A	PCB-209	2051-24-3	ng/g					
E1668A	Total Dichlorobiphenyls		ng/g					
E1668A	Total Heptachlorobiphenyls		ng/g					
E1668A	Total Hexachlorobiphenyls		ng/g					
E1668A	Total Monochlorobiphenyls		ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j6-sc1b-50to60-82819r1	j6-sc1b-60to70-82819	j6-sc1b-60to70-82819r1	j6-sc1b-70to80-82819	j6-sc1b-80to90-82819
	Date Time			8/28/2019 10:30:00	8/28/2019 10:35:00	8/28/2019 10:35:00	8/28/2019 10:40:00	8/28/2019 11:55:00
	X			7634373	7634373	7634373	7634373	7634373
	Y			700517	700517	700517	700517	700517
	Top (cm)			152	183	183	213	244
	Bottom (cm)			183	213	213	244	274
E1668A	Total Nonachlorobiphenyls		ng/g					
E1668A	Total Octachlorobiphenyls		ng/g					
E1668A	Total Pentachlorobiphenyls		ng/g					
E1668A	Total Tetrachlorobiphenyls		ng/g					
E1668A	Total Trichlorobiphenyls		ng/g					
E1668A	Polychlorinated biphenyls, Total	1336-36-3	ng/g					
PAHs								
SW8270D	2-Methylnaphthalene	91-57-6	ug/kg		5.5 J		1.1 J	0.23 J
SW8270D	Acenaphthene	83-32-9	ug/kg		7.3 J		1.1 J	0.18 J
SW8270D	Acenaphthylene	208-96-8	ug/kg		4.1 J		0.87 J	0.12 J
SW8270D	Anthracene	120-12-7	ug/kg		10		1.7	0.35
SW8270D	Benzo(a)anthracene	56-55-3	ug/kg		33		7.1	1.5
SW8270D	Benzo(a)pyrene	50-32-8	ug/kg		39		8.5	1.8
SW8270D	Benzo(b)fluoranthene	205-99-2	ug/kg		48		9.2	1.9
SW8270D	Benzo(g,h,i)perylene	191-24-2	ug/kg		31		6.5	1.4
SW8270D	Benzo(k)fluoranthene	207-08-9	ug/kg		17		3.1	0.67
SW8270D	Chrysene	218-01-9	ug/kg		43		9.2	2.1
SW8270D	Dibenzo(a,h)anthracene	53-70-3	ug/kg		6.9		1.5	0.35
SW8270D	Dibenzofuran	132-64-9	ug/kg		2.4 J		0.51 J	0.11 J
SW8270D	Fluoranthene	206-44-0	ug/kg		67 J		9.5 J	2.2
SW8270D	Fluorene	86-73-7	ug/kg		4 J		0.83 J	0.19 J
SW8270D	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg		31		6.6	1.3
SW8270D	Naphthalene	91-20-3	ug/kg		9 J		2.1 J	0.39 J
SW8270D	Phenanthrene	85-01-8	ug/kg		53 J		9.7 J	2.2 J
SW8270D	Pyrene	129-00-0	ug/kg		81		17	3.7
Calculated Totals								
ALS SOP	CALC_TOTAL_DDD_ND_PDI		ug/kg		2.9 AT		0.78 JT	0.63 UT
ALS SOP	CALC_TOTAL_DDE_ND_PDI		ug/kg		15 R		0.79 UT	0.79 UT
ALS SOP	CALC_TOTAL_DDT_ND_PDI		ug/kg		0.94 UT		0.94 UT	0.94 UT
ALS SOP	CALC_TOTAL_DDx_ND_PDI		ug/kg		18 T		0.93 JT	0.94 UT
E1668A	CALC_TOTAL_PCB_ND_PDI		ug/kg					
SW8082A	CALC_TOTAL_AROCLORS_ND_PDI		ug/kg		460 AT		60 AT	14 JT
SW8270D	CALC_TOTAL_CPAH_ND_PDI		ug/kg		57 T		12 T	2.6 T
SW8270D	CALC_TOTAL_HPAH_ND_PDI		ug/kg		330 JT		66 JT	14 T
SW8270D	CALC_TOTAL_LPAH_ND_PDI		ug/kg		93 JT		17 JT	3.7 JT
SW8270D	CALC_TOTAL_PAH_ND_PDI		ug/kg		420 JT		83 JT	18 JT

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j6-sc1b-50to60-82819r1	j6-sc1b-60to70-82819	j6-sc1b-60to70-82819r1	j6-sc1b-70to80-82819	j6-sc1b-80to90-82819
	Date Time			8/28/2019 10:30:00	8/28/2019 10:35:00	8/28/2019 10:35:00	8/28/2019 10:40:00	8/28/2019 11:55:00
	X			7634373	7634373	7634373	7634373	7634373
	Y			700517	700517	700517	700517	700517
	Top (cm)			152	183	183	213	244
	Bottom (cm)			183	213	213	244	274

DDx = dichlorodiphenyltrichloroethane and its derivatives

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyls

PeCDD = Pentachlorodibenzo-p-dioxin

PeCDF = Pentachlorodibenzofuran

TCDD = Tetrachlorodibenzo-p-dioxin

ug/kg = micrograms per kilogram

ng/g = nanograms per gram

% = percent

g/cm3 = grams per cubic centimeter

J = Reported result is an estimate

T = Total concentration from component analytes.

U = Analyte was not detected in sample

R = Rejected

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j6-sc1b-90to100-82819	J6-SC-40to60-102218	L3-SC-00to10-102218	l3-sc1b-00to10-82619	l3-sc1b-10to20-82619
	Date Time			8/28/2019 12:00:00	10/22/2018 18:50:00	10/22/2018 10:35:00	8/26/2019 10:06:00	8/26/2019 10:07:00
	X			7634373	7634373	7634702	7634702	7634702
	Y			700517	700517	700623	700623	700623
	Top (cm)			274	122	0	0	30
	Bottom (cm)			305	183	30	30	61
Conventionals								
E160.3	Total Solids		%	69				
PSEP	Total Solids		%					
SM2540G	Total Solids		%	69				
SW9060A	Carbon, Total Organic	7440-044-0	mg/kg	7200				
Organochlorine Pesticides								
ALS SOP	o,p'-DDD	53-19-0	ug/kg	0.63 U				
ALS SOP	o,p'-DDE	3424-82-6	ug/kg	0.79 U				
ALS SOP	o,p'-DDT	789-02-6	ug/kg	0.94 U				
ALS SOP	4,4'-DDD	72-54-8	ug/kg	0.35 U				
ALS SOP	4,4'-DDE	72-55-9	ug/kg	0.7 U				
ALS SOP	4,4'-DDT	50-29-3	ug/kg	0.47 U				
Dioxins/Furans								
CWA1613B	1,2,3,4,6,7,8,9-OCDD	3268-87-9	ug/kg	0.0098 U				
CWA1613B	1,2,3,4,6,7,8,9-OCDF	39001-02-0	ug/kg	0.0098 U				
CWA1613B	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg	0.0049 U				
CWA1613B	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg	0.0049 U				
CWA1613B	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg	0.0049 U				
CWA1613B	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg	0.0049 U				
CWA1613B	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg	0.0049 U				
CWA1613B	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg	0.0049 U				
CWA1613B	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg	0.0049 U				
CWA1613B	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg	0.0049 U				
CWA1613B	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg	0.0049 U				
CWA1613B	1,2,3,7,8-PeCDD	40321-76-4	ug/kg	0.0049 U				
CWA1613B	1,2,3,7,8-PeCDF	57117-41-6	ug/kg	0.0049 U				
CWA1613B	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg	0.0049 U				
CWA1613B	2,3,4,7,8-PeCDF	57117-31-4	ug/kg	0.0049 U				
CWA1613B	2,3,7,8-TCDD	1746-01-6	ug/kg	0.00098 U				
CWA1613B	2,3,7,8-TCDF	51207-31-9	ug/kg	0.00098 U				
CWA1613B	Total HpCDD	37871-00-4	ug/kg	0.0049 U				
CWA1613B	Total HpCDF	38998-75-3	ug/kg	0.0049 U				
CWA1613B	Total HxCDD	34465-46-8	ug/kg	0.0049 U				
CWA1613B	Total HxCDF	55684-94-1	ug/kg	0.0049 U				
CWA1613B	Total PeCDD	36088-22-9	ug/kg	0.0049 U				
CWA1613B	Total PeCDF	30402-15-4	ug/kg	0.0049 U				

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j6-sc1b-90to100-82819	J6-SC-40to60-102218	L3-SC-00to10-102218	l3-sc1b-00to10-82619	l3-sc1b-10to20-82619
	Date Time			8/28/2019 12:00:00	10/22/2018 18:50:00	10/22/2018 10:35:00	8/26/2019 10:06:00	8/26/2019 10:07:00
	X			7634373	7634373	7634702	7634702	7634702
	Y			700517	700517	700623	700623	700623
	Top (cm)			274	122	0	0	30
	Bottom (cm)			305	183	30	30	61
CWA1613B	Total TCDD	41903-57-5	ug/kg	0.00098 U				
CWA1613B	Total TCDF	30402-14-3	ug/kg	0.00098 U				
Dioxins/Furans								
E1613	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg		0.95	0.087		
E1613	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg		0.23 J	0.034 J		
E1613	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg		0.017 J	0.0022 J		
E1613	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg		0.0083	0.00061 J		
E1613	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg		0.024	0.0034 J		
E1613	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg		0.035 J	0.0035 J		
E1613	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg		0.015	0.0015 J		
E1613	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg		0.018	0.0014 J		
E1613	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg		0.001 J	0.00016 J		
E1613	1,2,3,7,8-PeCDD	40321-76-4	ug/kg		0.0036 J	0.00033 U		
E1613	1,2,3,7,8-PeCDF	57117-41-6	ug/kg		0.0041 J	0.00053 J		
E1613	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg		0.0048	0.00064 J		
E1613	2,3,4,7,8-PeCDF	57117-31-4	ug/kg		0.0037 J	0.00057 J		
E1613	2,3,7,8-TCDD	1746-01-6	ug/kg		0.002	0.00016 U		
E1613	2,3,7,8-TCDF	51207-31-9	ug/kg		0.0039 DNR	0.00052 DNR		
E1613	OCDD	3268-87-9	ug/kg		13	0.88		
E1613	OCDF	39001-02-0	ug/kg		0.6 J	0.091 J		
E1613	Total HpCDD	37871-00-4	ug/kg		2	0.17		
E1613	Total HpCDF	38998-75-3	ug/kg		0.84	0.13		
E1613	Total HxCDD	34465-46-8	ug/kg		0.24	0.022		
E1613	Total HxCDF	55684-94-1	ug/kg		0.3	0.04		
E1613	Total PeCDD	36088-22-9	ug/kg		0.043	0.002		
E1613	Total PeCDF	30402-15-4	ug/kg		0.11	0.0093		
E1613	Total TCDD	41903-57-5	ug/kg		0.017	0.002		
E1613	Total TCDF	30402-14-3	ug/kg		0.067	0.0067		
PCB Aroclors								
SW8082A	Aroclor 1016	12674-11-2	ug/kg	1.6 U			1.5 U	1.6 U
SW8082A	Aroclor 1221	11104-28-2	ug/kg	1.6 U			1.5 U	1.6 U
SW8082A	Aroclor 1232	11141-16-5	ug/kg	1.6 U			1.5 U	1.6 U
SW8082A	Aroclor 1242	53469-21-9	ug/kg	1.6 U			1.5 U	1.6 U
SW8082A	Aroclor 1248	12672-29-6	ug/kg	1.6 U			4.8	5.1
SW8082A	Aroclor 1254	11097-69-1	ug/kg	1.6 U			13	14.5
SW8082A	Aroclor 1260	11096-82-5	ug/kg	0.6 U			11.2	9.5

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j6-sc1b-90to100-82819	J6-SC-40to60-102218	L3-SC-00to10-102218	l3-sc1b-00to10-82619	l3-sc1b-10to20-82619
	Date Time			8/28/2019 12:00:00	10/22/2018 18:50:00	10/22/2018 10:35:00	8/26/2019 10:06:00	8/26/2019 10:07:00
	X			7634373	7634373	7634702	7634702	7634702
	Y			700517	700517	700623	700623	700623
	Top (cm)			274	122	0	0	30
	Bottom (cm)			305	183	30	30	61
SW8082A	Aroclor 1262	37324-23-5	ug/kg	0.6 U			0.6 U	0.6 U
SW8082A	Aroclor 1268	11100-14-4	ug/kg	0.6 U			0.6 U	0.6 U
PCB Congeners								
E1668A	PCB-1	2051-60-7	ng/g					
E1668A	PCB-2	2051-61-8	ng/g					
E1668A	PCB-3	2051-62-9	ng/g					
E1668A	PCB-4	13029-08-8	ng/g					
E1668A	PCB-5	16605-91-7	ng/g					
E1668A	PCB-6	25569-80-6	ng/g					
E1668A	PCB-7	33284-50-3	ng/g					
E1668A	PCB-8	34883-43-7	ng/g					
E1668A	PCB-9	34883-39-1	ng/g					
E1668A	PCB-10	33146-45-1	ng/g					
E1668A	PCB-11	2050-67-1	ng/g					
E1668A	PCB-12	2974-92-7	ng/g					
E1668A	PCB-13	2974-90-5	ng/g					
E1668A	PCB-14	34883-41-5	ng/g					
E1668A	PCB-15	2050-68-2	ng/g					
E1668A	PCB-16	38444-78-9	ng/g					
E1668A	PCB-17	37680-66-3	ng/g					
E1668A	PCB-18	37680-65-2	ng/g					
E1668A	PCB-19	38444-73-4	ng/g					
E1668A	PCB-20	38444-84-7	ng/g					
E1668A	PCB-21	55702-46-0	ng/g					
E1668A	PCB-22	38444-85-8	ng/g					
E1668A	PCB-23	55720-44-0	ng/g					
E1668A	PCB-24	55702-45-9	ng/g					
E1668A	PCB-25	55712-37-3	ng/g					
E1668A	PCB-26	38444-81-4	ng/g					
E1668A	PCB-27	38444-76-7	ng/g					
E1668A	PCB-28	7012-37-5	ng/g					
E1668A	PCB-29	15862-07-4	ng/g					
E1668A	PCB-30	35693-92-6	ng/g					
E1668A	PCB-31	16606-02-3	ng/g					
E1668A	PCB-32	38444-77-8	ng/g					
E1668A	PCB-33	38444-86-9	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j6-sc1b-90to100-82819	J6-SC-40to60-102218	L3-SC-00to10-102218	l3-sc1b-00to10-82619	l3-sc1b-10to20-82619
	Date Time			8/28/2019 12:00:00	10/22/2018 18:50:00	10/22/2018 10:35:00	8/26/2019 10:06:00	8/26/2019 10:07:00
	X			7634373	7634373	7634702	7634702	7634702
	Y			700517	700517	700623	700623	700623
	Top (cm)			274	122	0	0	30
	Bottom (cm)			305	183	30	30	61
E1668A	PCB-34	37680-68-5	ng/g					
E1668A	PCB-35	37680-69-6	ng/g					
E1668A	PCB-36	38444-87-0	ng/g					
E1668A	PCB-37	38444-90-5	ng/g					
E1668A	PCB-38	53555-66-1	ng/g					
E1668A	PCB-39	38444-88-1	ng/g					
E1668A	PCB-40	38444-93-8	ng/g					
E1668A	PCB-41	52663-59-9	ng/g					
E1668A	PCB-42	36559-22-5	ng/g					
E1668A	PCB-43	70362-46-8	ng/g					
E1668A	PCB-44	41464-39-5	ng/g					
E1668A	PCB-45	41464-39-5	ng/g					
E1668A	PCB-46	41464-47-5	ng/g					
E1668A	PCB-47	2437-79-8	ng/g					
E1668A	PCB-48	70362-47-9	ng/g					
E1668A	PCB-49	41464-40-8	ng/g					
E1668A	PCB-50	62796-65-0	ng/g					
E1668A	PCB-51	68194-04-7	ng/g					
E1668A	PCB-52	35693-99-3	ng/g					
E1668A	PCB-53	41464-41-9	ng/g					
E1668A	PCB-54	15968-05-5	ng/g					
E1668A	PCB-55	74338-24-2	ng/g					
E1668A	PCB-56	41464-43-1	ng/g					
E1668A	PCB-57	70424-67-8	ng/g					
E1668A	PCB-58	41464-49-7	ng/g					
E1668A	PCB-59	74472-33-6	ng/g					
E1668A	PCB-60	33025-41-1	ng/g					
E1668A	PCB-61	33284-53-6	ng/g					
E1668A	PCB-62	54230-22-7	ng/g					
E1668A	PCB-63	74472-34-7	ng/g					
E1668A	PCB-64	52663-58-8	ng/g					
E1668A	PCB-65	33284-54-7	ng/g					
E1668A	PCB-66	32598-10-0	ng/g					
E1668A	PCB-67	73575-53-8	ng/g					
E1668A	PCB-68	73575-52-7	ng/g					
E1668A	PCB-69	60233-24-1	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j6-sc1b-90to100-82819	J6-SC-40to60-102218	L3-SC-00to10-102218	l3-sc1b-00to10-82619	l3-sc1b-10to20-82619
	Date Time			8/28/2019 12:00:00	10/22/2018 18:50:00	10/22/2018 10:35:00	8/26/2019 10:06:00	8/26/2019 10:07:00
	X			7634373	7634373	7634702	7634702	7634702
	Y			700517	700517	700623	700623	700623
	Top (cm)			274	122	0	0	30
	Bottom (cm)			305	183	30	30	61
E1668A	PCB-70	32598-11-1	ng/g					
E1668A	PCB-71	41464-46-4	ng/g					
E1668A	PCB-72	41464-42-0	ng/g					
E1668A	PCB-73	74338-23-1	ng/g					
E1668A	PCB-74	32690-93-0	ng/g					
E1668A	PCB-75	32598-12-2	ng/g					
E1668A	PCB-76	70362-48-0	ng/g					
E1668A	PCB-77	32598-13-3	ng/g					
E1668A	PCB-78	70362-49-1	ng/g					
E1668A	PCB-79	41464-48-6	ng/g					
E1668A	PCB-80	33284-52-5	ng/g					
E1668A	PCB-81	70362-50-4	ng/g					
E1668A	PCB-82	52663-62-4	ng/g					
E1668A	PCB-83	60145-20-2	ng/g					
E1668A	PCB-84	52663-60-2	ng/g					
E1668A	PCB-85	65510-45-4	ng/g					
E1668A	PCB-86	55312-69-1	ng/g					
E1668A	PCB-87	38380-02-8	ng/g					
E1668A	PCB-88	55215-17-3	ng/g					
E1668A	PCB-89	73575-57-2	ng/g					
E1668A	PCB-90	68194-07-0	ng/g					
E1668A	PCB-91	68194-05-8	ng/g					
E1668A	PCB-92	52663-61-3	ng/g					
E1668A	PCB-93	73575-56-1	ng/g					
E1668A	PCB-94	73575-55-0	ng/g					
E1668A	PCB-95	38379-99-6	ng/g					
E1668A	PCB-96	73575-54-9	ng/g					
E1668A	PCB-97	41464-51-1	ng/g					
E1668A	PCB-98	60233-25-2	ng/g					
E1668A	PCB-99	38380-01-7	ng/g					
E1668A	PCB-100	39485-83-1	ng/g					
E1668A	PCB-101	37680-73-2	ng/g					
E1668A	PCB-102	68194-06-9	ng/g					
E1668A	PCB-103	60145-21-3	ng/g					
E1668A	PCB-104	56558-16-8	ng/g					
E1668A	PCB-105	32598-14-4	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j6-sc1b-90to100-82819	J6-SC-40to60-102218	L3-SC-00to10-102218	l3-sc1b-00to10-82619	l3-sc1b-10to20-82619
	Date Time			8/28/2019 12:00:00	10/22/2018 18:50:00	10/22/2018 10:35:00	8/26/2019 10:06:00	8/26/2019 10:07:00
	X			7634373	7634373	7634702	7634702	7634702
	Y			700517	700517	700623	700623	700623
	Top (cm)			274	122	0	0	30
	Bottom (cm)			305	183	30	30	61
E1668A	PCB-106	70424-69-0	ng/g					
E1668A	PCB-107	70424-68-9	ng/g					
E1668A	PCB-108	70362-41-3	ng/g					
E1668A	PCB-109	74472-35-8	ng/g					
E1668A	PCB-110	38380-03-9	ng/g					
E1668A	PCB-111	39635-32-0	ng/g					
E1668A	PCB-112	74472-36-9	ng/g					
E1668A	PCB-113	68194-10-5	ng/g					
E1668A	PCB-114	74472-37-0	ng/g					
E1668A	PCB-115	74472-38-1	ng/g					
E1668A	PCB-116	18259-05-7	ng/g					
E1668A	PCB-117	68194-11-6	ng/g					
E1668A	PCB-118	31508-00-6	ng/g					
E1668A	PCB-119	56558-17-9	ng/g					
E1668A	PCB-120	68194-12-7	ng/g					
E1668A	PCB-121	56558-18-0	ng/g					
E1668A	PCB-122	76842-07-4	ng/g					
E1668A	PCB-123	65510-44-3	ng/g					
E1668A	PCB-124	70424-70-3	ng/g					
E1668A	PCB-125	74472-39-2	ng/g					
E1668A	PCB-126	57465-28-8	ng/g					
E1668A	PCB-127	39635-33-1	ng/g					
E1668A	PCB-128	38380-07-3	ng/g					
E1668A	PCB-129	55215-18-4	ng/g					
E1668A	PCB-130	52663-66-8	ng/g					
E1668A	PCB-131	61798-70-7	ng/g					
E1668A	PCB-132	38380-05-1	ng/g					
E1668A	PCB-133	35694-04-3	ng/g					
E1668A	PCB-134	52704-70-8	ng/g					
E1668A	PCB-135	52744-13-5	ng/g					
E1668A	PCB-136	38411-22-2	ng/g					
E1668A	PCB-137	35694-06-5	ng/g					
E1668A	PCB-138	35065-28-2	ng/g					
E1668A	PCB-139	56030-56-9	ng/g					
E1668A	PCB-140	59291-64-4	ng/g					
E1668A	PCB-141	52712-04-6	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j6-sc1b-90to100-82819	J6-SC-40to60-102218	L3-SC-00to10-102218	l3-sc1b-00to10-82619	l3-sc1b-10to20-82619
	Date Time			8/28/2019 12:00:00	10/22/2018 18:50:00	10/22/2018 10:35:00	8/26/2019 10:06:00	8/26/2019 10:07:00
	X			7634373	7634373	7634702	7634702	7634702
	Y			700517	700517	700623	700623	700623
	Top (cm)			274	122	0	0	30
	Bottom (cm)			305	183	30	30	61
E1668A	PCB-142	41411-61-4	ng/g					
E1668A	PCB-143	68194-15-0	ng/g					
E1668A	PCB-144	68194-14-9	ng/g					
E1668A	PCB-145	74472-40-5	ng/g					
E1668A	PCB-146	51908-16-8	ng/g					
E1668A	PCB-147	68194-13-8	ng/g					
E1668A	PCB-148	74472-41-6	ng/g					
E1668A	PCB-149	38380-04-0	ng/g					
E1668A	PCB-150	68194-08-1	ng/g					
E1668A	PCB-151	52663-63-5	ng/g					
E1668A	PCB-152	68194-09-2	ng/g					
E1668A	PCB-153	35065-27-1	ng/g					
E1668A	PCB-154	60145-22-4	ng/g					
E1668A	PCB-155	33979-03-2	ng/g					
E1668A	PCB-156	38380-08-4	ng/g					
E1668A	PCB-157	69782-90-7	ng/g					
E1668A	PCB-158	74472-42-7	ng/g					
E1668A	PCB-159	39635-35-3	ng/g					
E1668A	PCB-160	41411-62-5	ng/g					
E1668A	PCB-161	74472-43-8	ng/g					
E1668A	PCB-162	39635-34-2	ng/g					
E1668A	PCB-163	74472-44-9	ng/g					
E1668A	PCB-164	74472-45-0	ng/g					
E1668A	PCB-165	74472-46-1	ng/g					
E1668A	PCB-166	41411-63-6	ng/g					
E1668A	PCB-167	52663-72-6	ng/g					
E1668A	PCB-168	59291-65-5	ng/g					
E1668A	PCB-169	32774-16-6	ng/g					
E1668A	PCB-170	35065-30-6	ng/g					
E1668A	PCB-171	52663-71-5	ng/g					
E1668A	PCB-172	52663-74-8	ng/g					
E1668A	PCB-173	68194-16-1	ng/g					
E1668A	PCB-174	38411-25-5	ng/g					
E1668A	PCB-175	40186-70-7	ng/g					
E1668A	PCB-176	52663-65-7	ng/g					
E1668A	PCB-177	52663-70-4	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j6-sc1b-90to100-82819	J6-SC-40to60-102218	L3-SC-00to10-102218	l3-sc1b-00to10-82619	l3-sc1b-10to20-82619
	Date Time			8/28/2019 12:00:00	10/22/2018 18:50:00	10/22/2018 10:35:00	8/26/2019 10:06:00	8/26/2019 10:07:00
	X			7634373	7634373	7634702	7634702	7634702
	Y			700517	700517	700623	700623	700623
	Top (cm)			274	122	0	0	30
	Bottom (cm)			305	183	30	30	61
E1668A	PCB-178	52663-67-9	ng/g					
E1668A	PCB-179	52663-64-6	ng/g					
E1668A	PCB-180	35065-29-3	ng/g					
E1668A	PCB-181	74472-47-2	ng/g					
E1668A	PCB-182	60145-23-5	ng/g					
E1668A	PCB-183	52663-69-1	ng/g					
E1668A	PCB-184	74472-48-3	ng/g					
E1668A	PCB-185	52712-05-7	ng/g					
E1668A	PCB-186	74472-49-4	ng/g					
E1668A	PCB-187	52663-68-0	ng/g					
E1668A	PCB-188	74487-85-7	ng/g					
E1668A	PCB-189	39635-31-9	ng/g					
E1668A	PCB-190	41411-64-7	ng/g					
E1668A	PCB-191	74472-50-7	ng/g					
E1668A	PCB-192	74472-51-8	ng/g					
E1668A	PCB-193	69782-91-8	ng/g					
E1668A	PCB-194	35694-08-7	ng/g					
E1668A	PCB-195	52663-78-2	ng/g					
E1668A	PCB-196	42740-50-1	ng/g					
E1668A	PCB-197	33091-17-7	ng/g					
E1668A	PCB-198	68194-17-2	ng/g					
E1668A	PCB-199	52663-75-9	ng/g					
E1668A	PCB-200	52663-73-7	ng/g					
E1668A	PCB-201	40186-71-8	ng/g					
E1668A	PCB-202	2136-99-4	ng/g					
E1668A	PCB-203	52663-76-0	ng/g					
E1668A	PCB-204	74472-52-9	ng/g					
E1668A	PCB-205	74472-53-0	ng/g					
E1668A	PCB-206	40186-72-9	ng/g					
E1668A	PCB-207	52663-79-3	ng/g					
E1668A	PCB-208	52663-77-1	ng/g					
E1668A	PCB-209	2051-24-3	ng/g					
E1668A	Total Dichlorobiphenyls		ng/g					
E1668A	Total Heptachlorobiphenyls		ng/g					
E1668A	Total Hexachlorobiphenyls		ng/g					
E1668A	Total Monochlorobiphenyls		ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j6-sc1b-90to100-82819	J6-SC-40to60-102218	L3-SC-00to10-102218	l3-sc1b-00to10-82619	l3-sc1b-10to20-82619
	Date Time			8/28/2019 12:00:00	10/22/2018 18:50:00	10/22/2018 10:35:00	8/26/2019 10:06:00	8/26/2019 10:07:00
	X			7634373	7634373	7634702	7634702	7634702
	Y			700517	700517	700623	700623	700623
	Top (cm)			274	122	0	0	30
	Bottom (cm)			305	183	30	30	61
E1668A	Total Nonachlorobiphenyls		ng/g					
E1668A	Total Octachlorobiphenyls		ng/g					
E1668A	Total Pentachlorobiphenyls		ng/g					
E1668A	Total Tetrachlorobiphenyls		ng/g					
E1668A	Total Trichlorobiphenyls		ng/g					
E1668A	Polychlorinated biphenyls, Total	1336-36-3	ng/g					
PAHs								
SW8270D	2-Methylnaphthalene	91-57-6	ug/kg	0.12 UJ				
SW8270D	Acenaphthene	83-32-9	ug/kg	0.047 UJ				
SW8270D	Acenaphthylene	208-96-8	ug/kg	0.046 UJ				
SW8270D	Anthracene	120-12-7	ug/kg	0.038 U				
SW8270D	Benzo(a)anthracene	56-55-3	ug/kg	0.12 J				
SW8270D	Benzo(a)pyrene	50-32-8	ug/kg	0.1 J				
SW8270D	Benzo(b)fluoranthene	205-99-2	ug/kg	0.22 J				
SW8270D	Benzo(g,h,i)perylene	191-24-2	ug/kg	0.12 J				
SW8270D	Benzo(k)fluoranthene	207-08-9	ug/kg	0.057 U				
SW8270D	Chrysene	218-01-9	ug/kg	0.11 J				
SW8270D	Dibenzo(a,h)anthracene	53-70-3	ug/kg	0.086 U				
SW8270D	Dibenzofuran	132-64-9	ug/kg	0.056 J				
SW8270D	Fluoranthene	206-44-0	ug/kg	0.13 J				
SW8270D	Fluorene	86-73-7	ug/kg	0.058 J				
SW8270D	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0.14 J				
SW8270D	Naphthalene	91-20-3	ug/kg	0.15 UJ				
SW8270D	Phenanthrene	85-01-8	ug/kg	0.22 J				
SW8270D	Pyrene	129-00-0	ug/kg	0.24 J				
Calculated Totals								
ALS SOP	CALC_TOTAL_DDD_ND_PDI		ug/kg	0.63 UT				
ALS SOP	CALC_TOTAL_DDE_ND_PDI		ug/kg	0.79 UT				
ALS SOP	CALC_TOTAL_DDT_ND_PDI		ug/kg	0.94 UT				
ALS SOP	CALC_TOTAL_DDx_ND_PDI		ug/kg	0.94 UT				
E1668A	CALC_TOTAL_PCB_ND_PDI		ug/kg					
SW8082A	CALC_TOTAL_AROCLORS_ND_PDI		ug/kg	1.6 UT		30 AT		30 AT
SW8270D	CALC_TOTAL_CPAH_ND_PDI		ug/kg	0.19 JT				
SW8270D	CALC_TOTAL_HPAH_ND_PDI		ug/kg	1 JT				
SW8270D	CALC_TOTAL_LPAH_ND_PDI		ug/kg	0.35 JT				
SW8270D	CALC_TOTAL_PAH_ND_PDI		ug/kg	1.3 JT				

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	j6-sc1b-90to100-82819	J6-SC-40to60-102218	L3-SC-00to10-102218	l3-sc1b-00to10-82619	l3-sc1b-10to20-82619
	Date Time			8/28/2019 12:00:00	10/22/2018 18:50:00	10/22/2018 10:35:00	8/26/2019 10:06:00	8/26/2019 10:07:00
	X			7634373	7634373	7634702	7634702	7634702
	Y			700517	700517	700623	700623	700623
	Top (cm)			274	122	0	0	30
	Bottom (cm)			305	183	30	30	61

DDx = dichlorodiphenyltrichloroethane and its derivatives

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyls

PeCDD = Pentachlorodibenzo-p-dioxin

PeCDF = Pentachlorodibenzofuran

TCDD = Tetrachlorodibenzo-p-dioxin

ug/kg = micrograms per kilogram

ng/g = nanograms per gram

% = percent

g/cm3 = grams per cubic centimeter

J = Reported result is an estimate

T = Total concentration from component analytes.

U = Analyte was not detected in sample

R = Rejected

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	l3-sc1b-20to30-82619	l3-sc1b-30to40-82619	R4-SC-0to1-102118	R4-SC-120to138-102118	r4-sc1b-100to110-82819
	Date Time			8/26/2019 10:30:00	8/26/2019 10:35:00	10/21/2018 18:40:00	10/21/2018 20:45:00	8/28/2019 17:00:00
	X			7634702	7634702	7635121	7635121	7635121
	Y			700623	700623	700172	700172	700172
	Top (cm)			61	91	0	366	305
	Bottom (cm)			91	122	30	421	335
Conventionals								
E160.3	Total Solids		%	80	80			54
PSEP	Total Solids		%					
SM2540G	Total Solids		%	79	79			53
SW9060A	Carbon, Total Organic	7440-044-0	mg/kg	1200	1100			40600
Organochlorine Pesticides								
ALS SOP	o,p'-DDD	53-19-0	ug/kg	0.63 U	0.63 U			1.2
ALS SOP	o,p'-DDE	3424-82-6	ug/kg	0.79 U	0.79 U			0.79 U
ALS SOP	o,p'-DDT	789-02-6	ug/kg	0.94 U	0.94 U			5.1
ALS SOP	4,4'-DDD	72-54-8	ug/kg	0.74	0.68			4
ALS SOP	4,4'-DDE	72-55-9	ug/kg	0.7 U	0.7 U			2.3
ALS SOP	4,4'-DDT	50-29-3	ug/kg	0.47 U	0.47 U			0.47 U
Dioxins/Furans								
CWA1613B	1,2,3,4,6,7,8,9-OCDD	3268-87-9	ug/kg	0.57	0.25			0.11
CWA1613B	1,2,3,4,6,7,8,9-OCDF	39001-02-0	ug/kg	0.057	0.023			0.0084 J
CWA1613B	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg	0.058	0.023			0.0081
CWA1613B	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg	0.038	0.0093			0.0069
CWA1613B	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg	0.0036 J	0.00042 U			0.00025 U
CWA1613B	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg	0.0049 U	0.0048 U			0.005 U
CWA1613B	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg	0.0091	0.00082 J			0.00036 J
CWA1613B	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg	0.0022 J	0.00078 J			0.00034 J
CWA1613B	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg	0.0018 J	0.00053 U			0.00073 J
CWA1613B	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg	0.00044 U	0.00051 U			0.00021 U
CWA1613B	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg	0.0013 J	0.00023 U			0.005 U
CWA1613B	1,2,3,7,8-PeCDD	40321-76-4	ug/kg	0.0049 U	0.0048 U			0.005 U
CWA1613B	1,2,3,7,8-PeCDF	57117-41-6	ug/kg	0.00039 U	0.00021 J			0.00019 U
CWA1613B	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg	0.0022 J	0.00045 U			0.00039 J
CWA1613B	2,3,4,7,8-PeCDF	57117-31-4	ug/kg	0.0012 J	0.00032 U			0.00045 J
CWA1613B	2,3,7,8-TCDD	1746-01-6	ug/kg	0.00098 U	0.00095 U			0.00099 U
CWA1613B	2,3,7,8-TCDF	51207-31-9	ug/kg	5e-04 J	0.00048 J			0.00037 J
CWA1613B	Total HpCDD	37871-00-4	ug/kg	0.11	0.048			0.048
CWA1613B	Total HpCDF	38998-75-3	ug/kg	0.13 J	0.029 J			0.017 U
CWA1613B	Total HxCDD	34465-46-8	ug/kg	0.01 J	0.0074 J			0.0042 U
CWA1613B	Total HxCDF	55684-94-1	ug/kg	0.07 J	0.012 J			0.0082 J
CWA1613B	Total PeCDD	36088-22-9	ug/kg	0.00094 J	0.0016 J			0.00071 U
CWA1613B	Total PeCDF	30402-15-4	ug/kg	0.012 J	0.0057 J			0.0078 U

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	l3-sc1b-20to30-82619	l3-sc1b-30to40-82619	R4-SC-0to1-102118	R4-SC-120to138-102118	r4-sc1b-100to110-82819
	Date Time			8/26/2019 10:30:00	8/26/2019 10:35:00	10/21/2018 18:40:00	10/21/2018 20:45:00	8/28/2019 17:00:00
	X			7634702	7634702	7635121	7635121	7635121
	Y			700623	700623	700172	700172	700172
	Top (cm)			61	91	0	366	305
	Bottom (cm)			91	122	30	421	335
CWA1613B	Total TCDD	41903-57-5	ug/kg	0.00042 J	0.00044 J			0.00049 U
CWA1613B	Total TCDF	30402-14-3	ug/kg	0.0029 J	0.0021 J			0.0032 U
Dioxins/Furans								
E1613	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg				0.14	
E1613	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg				0.14 J	
E1613	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg				0.0034 J	
E1613	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg				0.0013 J	
E1613	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg				0.0039 J	
E1613	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg				0.0076 J	
E1613	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg				0.011	
E1613	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg				0.0032 J	
E1613	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg				0.00031 J	
E1613	1,2,3,7,8-PeCDD	40321-76-4	ug/kg				0.00092 J	
E1613	1,2,3,7,8-PeCDF	57117-41-6	ug/kg				0.00094 J	
E1613	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg				0.0024 J	
E1613	2,3,4,7,8-PeCDF	57117-31-4	ug/kg				0.0012 J	
E1613	2,3,7,8-TCDD	1746-01-6	ug/kg				0.00039 J	
E1613	2,3,7,8-TCDF	51207-31-9	ug/kg				0.00076 J	
E1613	OCDD	3268-87-9	ug/kg				2.2	
E1613	OCDF	39001-02-0	ug/kg				0.15 J	
E1613	Total HpCDD	37871-00-4	ug/kg				0.35	
E1613	Total HpCDF	38998-75-3	ug/kg				0.33	
E1613	Total HxCDD	34465-46-8	ug/kg				0.056	
E1613	Total HxCDF	55684-94-1	ug/kg				0.13	
E1613	Total PeCDD	36088-22-9	ug/kg				0.014	
E1613	Total PeCDF	30402-15-4	ug/kg				0.066	
E1613	Total TCDD	41903-57-5	ug/kg				0.01	
E1613	Total TCDF	30402-14-3	ug/kg				0.028	
PCB Aroclors								
SW8082A	Aroclor 1016	12674-11-2	ug/kg	1.6 U	1.6 U	1.6 U		1.6 U
SW8082A	Aroclor 1221	11104-28-2	ug/kg	1.6 U	1.6 U	1.6 U		1.6 U
SW8082A	Aroclor 1232	11141-16-5	ug/kg	1.6 U	1.6 U	1.6 U		1.6 U
SW8082A	Aroclor 1242	53469-21-9	ug/kg	1.6 U	1.6 U	1.6 U		1.6 U
SW8082A	Aroclor 1248	12672-29-6	ug/kg	4.6	1.6 U	43		17 NJ
SW8082A	Aroclor 1254	11097-69-1	ug/kg	11	8.1	100		64
SW8082A	Aroclor 1260	11096-82-5	ug/kg	6.7	5.1	77		76

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	l3-sc1b-20to30-82619	l3-sc1b-30to40-82619	R4-SC-0to1-102118	R4-SC-120to138-102118	r4-sc1b-100to110-82819
	Date Time			8/26/2019 10:30:00	8/26/2019 10:35:00	10/21/2018 18:40:00	10/21/2018 20:45:00	8/28/2019 17:00:00
	X			7634702	7634702	7635121	7635121	7635121
	Y			700623	700623	700172	700172	700172
	Top (cm)			61	91	0	366	305
	Bottom (cm)			91	122	30	421	335
SW8082A	Aroclor 1262	37324-23-5	ug/kg	0.6 U	0.6 U	0.6 U		0.6 U
SW8082A	Aroclor 1268	11100-14-4	ug/kg	0.6 U	0.6 U	0.6 U		0.6 U
PCB Congeners								
E1668A	PCB-1	2051-60-7	ng/g					
E1668A	PCB-2	2051-61-8	ng/g					
E1668A	PCB-3	2051-62-9	ng/g					
E1668A	PCB-4	13029-08-8	ng/g					
E1668A	PCB-5	16605-91-7	ng/g					
E1668A	PCB-6	25569-80-6	ng/g					
E1668A	PCB-7	33284-50-3	ng/g					
E1668A	PCB-8	34883-43-7	ng/g					
E1668A	PCB-9	34883-39-1	ng/g					
E1668A	PCB-10	33146-45-1	ng/g					
E1668A	PCB-11	2050-67-1	ng/g					
E1668A	PCB-12	2974-92-7	ng/g					
E1668A	PCB-13	2974-90-5	ng/g					
E1668A	PCB-14	34883-41-5	ng/g					
E1668A	PCB-15	2050-68-2	ng/g					
E1668A	PCB-16	38444-78-9	ng/g					
E1668A	PCB-17	37680-66-3	ng/g					
E1668A	PCB-18	37680-65-2	ng/g					
E1668A	PCB-19	38444-73-4	ng/g					
E1668A	PCB-20	38444-84-7	ng/g					
E1668A	PCB-21	55702-46-0	ng/g					
E1668A	PCB-22	38444-85-8	ng/g					
E1668A	PCB-23	55720-44-0	ng/g					
E1668A	PCB-24	55702-45-9	ng/g					
E1668A	PCB-25	55712-37-3	ng/g					
E1668A	PCB-26	38444-81-4	ng/g					
E1668A	PCB-27	38444-76-7	ng/g					
E1668A	PCB-28	7012-37-5	ng/g					
E1668A	PCB-29	15862-07-4	ng/g					
E1668A	PCB-30	35693-92-6	ng/g					
E1668A	PCB-31	16606-02-3	ng/g					
E1668A	PCB-32	38444-77-8	ng/g					
E1668A	PCB-33	38444-86-9	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	l3-sc1b-20to30-82619	l3-sc1b-30to40-82619	R4-SC-0to1-102118	R4-SC-120to138-102118	r4-sc1b-100to110-82819
	Date Time			8/26/2019 10:30:00	8/26/2019 10:35:00	10/21/2018 18:40:00	10/21/2018 20:45:00	8/28/2019 17:00:00
	X			7634702	7634702	7635121	7635121	7635121
	Y			700623	700623	700172	700172	700172
	Top (cm)			61	91	0	366	305
	Bottom (cm)			91	122	30	421	335
E1668A	PCB-34	37680-68-5	ng/g					
E1668A	PCB-35	37680-69-6	ng/g					
E1668A	PCB-36	38444-87-0	ng/g					
E1668A	PCB-37	38444-90-5	ng/g					
E1668A	PCB-38	53555-66-1	ng/g					
E1668A	PCB-39	38444-88-1	ng/g					
E1668A	PCB-40	38444-93-8	ng/g					
E1668A	PCB-41	52663-59-9	ng/g					
E1668A	PCB-42	36559-22-5	ng/g					
E1668A	PCB-43	70362-46-8	ng/g					
E1668A	PCB-44	41464-39-5	ng/g					
E1668A	PCB-45	41464-39-5	ng/g					
E1668A	PCB-46	41464-47-5	ng/g					
E1668A	PCB-47	2437-79-8	ng/g					
E1668A	PCB-48	70362-47-9	ng/g					
E1668A	PCB-49	41464-40-8	ng/g					
E1668A	PCB-50	62796-65-0	ng/g					
E1668A	PCB-51	68194-04-7	ng/g					
E1668A	PCB-52	35693-99-3	ng/g					
E1668A	PCB-53	41464-41-9	ng/g					
E1668A	PCB-54	15968-05-5	ng/g					
E1668A	PCB-55	74338-24-2	ng/g					
E1668A	PCB-56	41464-43-1	ng/g					
E1668A	PCB-57	70424-67-8	ng/g					
E1668A	PCB-58	41464-49-7	ng/g					
E1668A	PCB-59	74472-33-6	ng/g					
E1668A	PCB-60	33025-41-1	ng/g					
E1668A	PCB-61	33284-53-6	ng/g					
E1668A	PCB-62	54230-22-7	ng/g					
E1668A	PCB-63	74472-34-7	ng/g					
E1668A	PCB-64	52663-58-8	ng/g					
E1668A	PCB-65	33284-54-7	ng/g					
E1668A	PCB-66	32598-10-0	ng/g					
E1668A	PCB-67	73575-53-8	ng/g					
E1668A	PCB-68	73575-52-7	ng/g					
E1668A	PCB-69	60233-24-1	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	l3-sc1b-20to30-82619	l3-sc1b-30to40-82619	R4-SC-0to1-102118	R4-SC-120to138-102118	r4-sc1b-100to110-82819
	Date Time			8/26/2019 10:30:00	8/26/2019 10:35:00	10/21/2018 18:40:00	10/21/2018 20:45:00	8/28/2019 17:00:00
	X			7634702	7634702	7635121	7635121	7635121
	Y			700623	700623	700172	700172	700172
	Top (cm)			61	91	0	366	305
	Bottom (cm)			91	122	30	421	335
E1668A	PCB-70	32598-11-1	ng/g					
E1668A	PCB-71	41464-46-4	ng/g					
E1668A	PCB-72	41464-42-0	ng/g					
E1668A	PCB-73	74338-23-1	ng/g					
E1668A	PCB-74	32690-93-0	ng/g					
E1668A	PCB-75	32598-12-2	ng/g					
E1668A	PCB-76	70362-48-0	ng/g					
E1668A	PCB-77	32598-13-3	ng/g					
E1668A	PCB-78	70362-49-1	ng/g					
E1668A	PCB-79	41464-48-6	ng/g					
E1668A	PCB-80	33284-52-5	ng/g					
E1668A	PCB-81	70362-50-4	ng/g					
E1668A	PCB-82	52663-62-4	ng/g					
E1668A	PCB-83	60145-20-2	ng/g					
E1668A	PCB-84	52663-60-2	ng/g					
E1668A	PCB-85	65510-45-4	ng/g					
E1668A	PCB-86	55312-69-1	ng/g					
E1668A	PCB-87	38380-02-8	ng/g					
E1668A	PCB-88	55215-17-3	ng/g					
E1668A	PCB-89	73575-57-2	ng/g					
E1668A	PCB-90	68194-07-0	ng/g					
E1668A	PCB-91	68194-05-8	ng/g					
E1668A	PCB-92	52663-61-3	ng/g					
E1668A	PCB-93	73575-56-1	ng/g					
E1668A	PCB-94	73575-55-0	ng/g					
E1668A	PCB-95	38379-99-6	ng/g					
E1668A	PCB-96	73575-54-9	ng/g					
E1668A	PCB-97	41464-51-1	ng/g					
E1668A	PCB-98	60233-25-2	ng/g					
E1668A	PCB-99	38380-01-7	ng/g					
E1668A	PCB-100	39485-83-1	ng/g					
E1668A	PCB-101	37680-73-2	ng/g					
E1668A	PCB-102	68194-06-9	ng/g					
E1668A	PCB-103	60145-21-3	ng/g					
E1668A	PCB-104	56558-16-8	ng/g					
E1668A	PCB-105	32598-14-4	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	l3-sc1b-20to30-82619	l3-sc1b-30to40-82619	R4-SC-0to1-102118	R4-SC-120to138-102118	r4-sc1b-100to110-82819
	Date Time			8/26/2019 10:30:00	8/26/2019 10:35:00	10/21/2018 18:40:00	10/21/2018 20:45:00	8/28/2019 17:00:00
	X			7634702	7634702	7635121	7635121	7635121
	Y			700623	700623	700172	700172	700172
	Top (cm)			61	91	0	366	305
	Bottom (cm)			91	122	30	421	335
E1668A	PCB-106	70424-69-0	ng/g					
E1668A	PCB-107	70424-68-9	ng/g					
E1668A	PCB-108	70362-41-3	ng/g					
E1668A	PCB-109	74472-35-8	ng/g					
E1668A	PCB-110	38380-03-9	ng/g					
E1668A	PCB-111	39635-32-0	ng/g					
E1668A	PCB-112	74472-36-9	ng/g					
E1668A	PCB-113	68194-10-5	ng/g					
E1668A	PCB-114	74472-37-0	ng/g					
E1668A	PCB-115	74472-38-1	ng/g					
E1668A	PCB-116	18259-05-7	ng/g					
E1668A	PCB-117	68194-11-6	ng/g					
E1668A	PCB-118	31508-00-6	ng/g					
E1668A	PCB-119	56558-17-9	ng/g					
E1668A	PCB-120	68194-12-7	ng/g					
E1668A	PCB-121	56558-18-0	ng/g					
E1668A	PCB-122	76842-07-4	ng/g					
E1668A	PCB-123	65510-44-3	ng/g					
E1668A	PCB-124	70424-70-3	ng/g					
E1668A	PCB-125	74472-39-2	ng/g					
E1668A	PCB-126	57465-28-8	ng/g					
E1668A	PCB-127	39635-33-1	ng/g					
E1668A	PCB-128	38380-07-3	ng/g					
E1668A	PCB-129	55215-18-4	ng/g					
E1668A	PCB-130	52663-66-8	ng/g					
E1668A	PCB-131	61798-70-7	ng/g					
E1668A	PCB-132	38380-05-1	ng/g					
E1668A	PCB-133	35694-04-3	ng/g					
E1668A	PCB-134	52704-70-8	ng/g					
E1668A	PCB-135	52744-13-5	ng/g					
E1668A	PCB-136	38411-22-2	ng/g					
E1668A	PCB-137	35694-06-5	ng/g					
E1668A	PCB-138	35065-28-2	ng/g					
E1668A	PCB-139	56030-56-9	ng/g					
E1668A	PCB-140	59291-64-4	ng/g					
E1668A	PCB-141	52712-04-6	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	l3-sc1b-20to30-82619	l3-sc1b-30to40-82619	R4-SC-0to1-102118	R4-SC-120to138-102118	r4-sc1b-100to110-82819
	Date Time			8/26/2019 10:30:00	8/26/2019 10:35:00	10/21/2018 18:40:00	10/21/2018 20:45:00	8/28/2019 17:00:00
	X			7634702	7634702	7635121	7635121	7635121
	Y			700623	700623	700172	700172	700172
	Top (cm)			61	91	0	366	305
	Bottom (cm)			91	122	30	421	335
E1668A	PCB-142	41411-61-4	ng/g					
E1668A	PCB-143	68194-15-0	ng/g					
E1668A	PCB-144	68194-14-9	ng/g					
E1668A	PCB-145	74472-40-5	ng/g					
E1668A	PCB-146	51908-16-8	ng/g					
E1668A	PCB-147	68194-13-8	ng/g					
E1668A	PCB-148	74472-41-6	ng/g					
E1668A	PCB-149	38380-04-0	ng/g					
E1668A	PCB-150	68194-08-1	ng/g					
E1668A	PCB-151	52663-63-5	ng/g					
E1668A	PCB-152	68194-09-2	ng/g					
E1668A	PCB-153	35065-27-1	ng/g					
E1668A	PCB-154	60145-22-4	ng/g					
E1668A	PCB-155	33979-03-2	ng/g					
E1668A	PCB-156	38380-08-4	ng/g					
E1668A	PCB-157	69782-90-7	ng/g					
E1668A	PCB-158	74472-42-7	ng/g					
E1668A	PCB-159	39635-35-3	ng/g					
E1668A	PCB-160	41411-62-5	ng/g					
E1668A	PCB-161	74472-43-8	ng/g					
E1668A	PCB-162	39635-34-2	ng/g					
E1668A	PCB-163	74472-44-9	ng/g					
E1668A	PCB-164	74472-45-0	ng/g					
E1668A	PCB-165	74472-46-1	ng/g					
E1668A	PCB-166	41411-63-6	ng/g					
E1668A	PCB-167	52663-72-6	ng/g					
E1668A	PCB-168	59291-65-5	ng/g					
E1668A	PCB-169	32774-16-6	ng/g					
E1668A	PCB-170	35065-30-6	ng/g					
E1668A	PCB-171	52663-71-5	ng/g					
E1668A	PCB-172	52663-74-8	ng/g					
E1668A	PCB-173	68194-16-1	ng/g					
E1668A	PCB-174	38411-25-5	ng/g					
E1668A	PCB-175	40186-70-7	ng/g					
E1668A	PCB-176	52663-65-7	ng/g					
E1668A	PCB-177	52663-70-4	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	l3-sc1b-20to30-82619	l3-sc1b-30to40-82619	R4-SC-0to1-102118	R4-SC-120to138-102118	r4-sc1b-100to110-82819
	Date Time			8/26/2019 10:30:00	8/26/2019 10:35:00	10/21/2018 18:40:00	10/21/2018 20:45:00	8/28/2019 17:00:00
	X			7634702	7634702	7635121	7635121	7635121
	Y			700623	700623	700172	700172	700172
	Top (cm)			61	91	0	366	305
	Bottom (cm)			91	122	30	421	335
E1668A	PCB-178	52663-67-9	ng/g					
E1668A	PCB-179	52663-64-6	ng/g					
E1668A	PCB-180	35065-29-3	ng/g					
E1668A	PCB-181	74472-47-2	ng/g					
E1668A	PCB-182	60145-23-5	ng/g					
E1668A	PCB-183	52663-69-1	ng/g					
E1668A	PCB-184	74472-48-3	ng/g					
E1668A	PCB-185	52712-05-7	ng/g					
E1668A	PCB-186	74472-49-4	ng/g					
E1668A	PCB-187	52663-68-0	ng/g					
E1668A	PCB-188	74487-85-7	ng/g					
E1668A	PCB-189	39635-31-9	ng/g					
E1668A	PCB-190	41411-64-7	ng/g					
E1668A	PCB-191	74472-50-7	ng/g					
E1668A	PCB-192	74472-51-8	ng/g					
E1668A	PCB-193	69782-91-8	ng/g					
E1668A	PCB-194	35694-08-7	ng/g					
E1668A	PCB-195	52663-78-2	ng/g					
E1668A	PCB-196	42740-50-1	ng/g					
E1668A	PCB-197	33091-17-7	ng/g					
E1668A	PCB-198	68194-17-2	ng/g					
E1668A	PCB-199	52663-75-9	ng/g					
E1668A	PCB-200	52663-73-7	ng/g					
E1668A	PCB-201	40186-71-8	ng/g					
E1668A	PCB-202	2136-99-4	ng/g					
E1668A	PCB-203	52663-76-0	ng/g					
E1668A	PCB-204	74472-52-9	ng/g					
E1668A	PCB-205	74472-53-0	ng/g					
E1668A	PCB-206	40186-72-9	ng/g					
E1668A	PCB-207	52663-79-3	ng/g					
E1668A	PCB-208	52663-77-1	ng/g					
E1668A	PCB-209	2051-24-3	ng/g					
E1668A	Total Dichlorobiphenyls		ng/g					
E1668A	Total Heptachlorobiphenyls		ng/g					
E1668A	Total Hexachlorobiphenyls		ng/g					
E1668A	Total Monochlorobiphenyls		ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	l3-sc1b-20to30-82619	l3-sc1b-30to40-82619	R4-SC-0to1-102118	R4-SC-120to138-102118	r4-sc1b-100to110-82819
	Date Time			8/26/2019 10:30:00	8/26/2019 10:35:00	10/21/2018 18:40:00	10/21/2018 20:45:00	8/28/2019 17:00:00
	X			7634702	7634702	7635121	7635121	7635121
	Y			700623	700623	700172	700172	700172
	Top (cm)			61	91	0	366	305
	Bottom (cm)			91	122	30	421	335
E1668A	Total Nonachlorobiphenyls		ng/g					
E1668A	Total Octachlorobiphenyls		ng/g					
E1668A	Total Pentachlorobiphenyls		ng/g					
E1668A	Total Tetrachlorobiphenyls		ng/g					
E1668A	Total Trichlorobiphenyls		ng/g					
E1668A	Polychlorinated biphenyls, Total	1336-36-3	ng/g					
PAHs								
SW8270D	2-Methylnaphthalene	91-57-6	ug/kg	0.64 J	0.7 J			18 J
SW8270D	Acenaphthene	83-32-9	ug/kg	0.67 J	0.35 J			11 J
SW8270D	Acenaphthylene	208-96-8	ug/kg	2.3 J	1.1 J			18 J
SW8270D	Anthracene	120-12-7	ug/kg	2 J	0.96 J			22
SW8270D	Benzo(a)anthracene	56-55-3	ug/kg	11	6.7			30
SW8270D	Benzo(a)pyrene	50-32-8	ug/kg	16	9.6			47
SW8270D	Benzo(b)fluoranthene	205-99-2	ug/kg	17	9.7			48
SW8270D	Benzo(g,h,i)perylene	191-24-2	ug/kg	13 J	8.2 J			47
SW8270D	Benzo(k)fluoranthene	207-08-9	ug/kg	6.4	3.1			15
SW8270D	Chrysene	218-01-9	ug/kg	14	8.8			41
SW8270D	Dibenzo(a,h)anthracene	53-70-3	ug/kg	1.8	1.1			6.4
SW8270D	Dibenzofuran	132-64-9	ug/kg	0.44 J	0.29 J			6.4 J
SW8270D	Fluoranthene	206-44-0	ug/kg	18 J	8.3 J			100 J
SW8270D	Fluorene	86-73-7	ug/kg	0.66 J	0.38 J			13 J
SW8270D	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	13	7.7			40
SW8270D	Naphthalene	91-20-3	ug/kg	1.4 J	1.1 J			34 J
SW8270D	Phenanthrene	85-01-8	ug/kg	13 J	7.8 J			83 J
SW8270D	Pyrene	129-00-0	ug/kg	33	22			120
Calculated Totals								
ALS SOP	CALC_TOTAL_DDD_ND_PDI		ug/kg	1.1 AT	1 AT			5.2 R
ALS SOP	CALC_TOTAL_DDE_ND_PDI		ug/kg	0.79 UT	0.79 UT			2.7 AT
ALS SOP	CALC_TOTAL_DDT_ND_PDI		ug/kg	0.94 UT	0.94 UT			5.3 AT
ALS SOP	CALC_TOTAL_DDx_ND_PDI		ug/kg	1.2 T	1.2 T			13 T
E1668A	CALC_TOTAL_PCB_ND_PDI		ug/kg					
SW8082A	CALC_TOTAL_AROCLORS_ND_PDI		ug/kg	23 AT	14 T	220 AT		160 JNT
SW8270D	CALC_TOTAL_CPAH_ND_PDI		ug/kg	22 T	13 T			65 T
SW8270D	CALC_TOTAL_HPAH_ND_PDI		ug/kg	120 JT	72 JT			430 JT
SW8270D	CALC_TOTAL_LPAH_ND_PDI		ug/kg	21 JT	12 JT			200 JT
SW8270D	CALC_TOTAL_PAH_ND_PDI		ug/kg	140 JT	85 JT			630 JT

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	l3-sc1b-20to30-82619	l3-sc1b-30to40-82619	R4-SC-0to1-102118	R4-SC-120to138-102118	r4-sc1b-100to110-82819
	Date Time			8/26/2019 10:30:00	8/26/2019 10:35:00	10/21/2018 18:40:00	10/21/2018 20:45:00	8/28/2019 17:00:00
	X			7634702	7634702	7635121	7635121	7635121
	Y			700623	700623	700172	700172	700172
	Top (cm)			61	91	0	366	305
	Bottom (cm)			91	122	30	421	335

DDx = dichlorodiphenyltrichloroethane and its derivatives

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyls

PeCDD = Pentachlorodibenzo-p-dioxin

PeCDF = Pentachlorodibenzofuran

TCDD = Tetrachlorodibenzo-p-dioxin

ug/kg = micrograms per kilogram

ng/g = nanograms per gram

% = percent

g/cm3 = grams per cubic centimeter

J = Reported result is an estimate

T = Total concentration from component analytes.

U = Analyte was not detected in sample

R = Rejected

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	r4-sc1b-10to20-82819	r4-sc1b-110to120-82819	r4-sc1b-120to130-82819	r4-sc1b-130to140-82819	r4-sc1b-140to150-82819
	Date Time			8/28/2019 13:55:00	8/28/2019 17:10:00	8/28/2019 18:20:00	8/28/2019 18:25:00	8/28/2019 18:30:00
	X			7635121	7635121	7635121	7635121	7635121
	Y			700172	700172	700172	700172	700172
	Top (cm)			30	335	366	396	427
	Bottom (cm)			61	366	396	427	457
Conventionals								
E160.3	Total Solids		%		55	57	65	77
PSEP	Total Solids		%					
SM2540G	Total Solids		%		54	55	65	77
SW9060A	Carbon, Total Organic	7440-044-0	mg/kg		36500	24900	7900	2400
Organochlorine Pesticides								
ALS SOP	o,p'-DDD	53-19-0	ug/kg		0.76 J	1.2	0.63 U	0.63 U
ALS SOP	o,p'-DDE	3424-82-6	ug/kg		0.79 U	0.79 U	0.79 U	0.79 U
ALS SOP	o,p'-DDT	789-02-6	ug/kg		3.1	4.8	0.94 U	0.94 U
ALS SOP	4,4'-DDD	72-54-8	ug/kg		2.6	4.2	0.55 J	0.35 U
ALS SOP	4,4'-DDE	72-55-9	ug/kg		1.9	4	0.79	0.7 U
ALS SOP	4,4'-DDT	50-29-3	ug/kg		0.47 U	0.47 U	0.47 U	0.47 U
Dioxins/Furans								
CWA1613B	1,2,3,4,6,7,8,9-OCDD	3268-87-9	ug/kg		0.13	0.12	0.062	0.2
CWA1613B	1,2,3,4,6,7,8,9-OCDF	39001-02-0	ug/kg		0.0077 J	0.0066 J	0.0046 J	0.052
CWA1613B	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg		0.0069	0.0073	0.0026 J	0.015
CWA1613B	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg		0.0099	0.0084	0.0045 J	0.017
CWA1613B	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg		0.00024 J	0.00028 J	0.0049 U	0.00032 J
CWA1613B	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg		0.005 U	0.005 U	0.0049 U	0.0049 U
CWA1613B	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg		0.00036 J	0.00047 J	0.00017 U	0.00026 J
CWA1613B	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg		0.00047 J	0.00052 J	0.00015 J	0.00056 U
CWA1613B	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg		0.0011 J	0.00093 J	0.00023 U	0.00044 J
CWA1613B	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg		0.00018 U	0.00022 J	0.0049 U	2e-04 U
CWA1613B	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg		2e-04 J	2e-04 U	0.0049 U	0.0049 U
CWA1613B	1,2,3,7,8-PeCDD	40321-76-4	ug/kg		0.00013 J	0.00017 J	0.0049 U	0.0049 U
CWA1613B	1,2,3,7,8-PeCDF	57117-41-6	ug/kg		0.00019 U	0.00032 U	0.0049 U	0.00014 U
CWA1613B	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg		0.00046 U	0.00042 J	0.00018 U	0.00025 J
CWA1613B	2,3,4,7,8-PeCDF	57117-31-4	ug/kg		0.00048 J	0.00053 U	0.0049 U	0.00019 J
CWA1613B	2,3,7,8-TCDD	1746-01-6	ug/kg		0.001 U	0.001 U	0.00098 U	0.00098 U
CWA1613B	2,3,7,8-TCDF	51207-31-9	ug/kg		0.00029 J	0.00045 J	0.00037 J	0.00026 J
CWA1613B	Total HpCDD	37871-00-4	ug/kg		0.02	0.019	0.007 J	0.051
CWA1613B	Total HpCDF	38998-75-3	ug/kg		0.021 J	0.018 J	0.0083 J	0.058 J
CWA1613B	Total HxCDD	34465-46-8	ug/kg		0.004 U	0.0039 J	0.0014 U	0.0037 U
CWA1613B	Total HxCDF	55684-94-1	ug/kg		0.011 U	0.01 U	0.0032 U	0.011 J
CWA1613B	Total PeCDD	36088-22-9	ug/kg		0.0011 U	0.0013 U	0.00031 U	5e-04 U
CWA1613B	Total PeCDF	30402-15-4	ug/kg		0.0096 U	0.0083 U	0.002 U	0.0037 U

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	r4-sc1b-10to20-82819	r4-sc1b-110to120-82819	r4-sc1b-120to130-82819	r4-sc1b-130to140-82819	r4-sc1b-140to150-82819
	Date Time			8/28/2019 13:55:00	8/28/2019 17:10:00	8/28/2019 18:20:00	8/28/2019 18:25:00	8/28/2019 18:30:00
	X			7635121	7635121	7635121	7635121	7635121
	Y			700172	700172	700172	700172	700172
	Top (cm)			30	335	366	396	427
	Bottom (cm)			61	366	396	427	457
CWA1613B	Total TCDD	41903-57-5	ug/kg		0.00062 U	0.0011 U	0.00026 U	0.00039 U
CWA1613B	Total TCDF	30402-14-3	ug/kg		0.0039 U	0.0039 U	0.0015 U	0.0018 U
Dioxins/Furans								
E1613	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg					
E1613	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg					
E1613	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg					
E1613	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg					
E1613	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg					
E1613	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg					
E1613	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg					
E1613	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg					
E1613	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg					
E1613	1,2,3,7,8-PeCDD	40321-76-4	ug/kg					
E1613	1,2,3,7,8-PeCDF	57117-41-6	ug/kg					
E1613	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg					
E1613	2,3,4,7,8-PeCDF	57117-31-4	ug/kg					
E1613	2,3,7,8-TCDD	1746-01-6	ug/kg					
E1613	2,3,7,8-TCDF	51207-31-9	ug/kg					
E1613	OCDD	3268-87-9	ug/kg					
E1613	OCDF	39001-02-0	ug/kg					
E1613	Total HpCDD	37871-00-4	ug/kg					
E1613	Total HpCDF	38998-75-3	ug/kg					
E1613	Total HxCDD	34465-46-8	ug/kg					
E1613	Total HxCDF	55684-94-1	ug/kg					
E1613	Total PeCDD	36088-22-9	ug/kg					
E1613	Total PeCDF	30402-15-4	ug/kg					
E1613	Total TCDD	41903-57-5	ug/kg					
E1613	Total TCDF	30402-14-3	ug/kg					
PCB Aroclors								
SW8082A	Aroclor 1016	12674-11-2	ug/kg	7.8 U	1.6 U	1.6 U	1.6 U	1.6 U
SW8082A	Aroclor 1221	11104-28-2	ug/kg	7.8 U	1.6 U	1.6 U	1.6 U	1.6 U
SW8082A	Aroclor 1232	11141-16-5	ug/kg	7.8 U	1.6 U	1.6 U	1.6 U	1.6 U
SW8082A	Aroclor 1242	53469-21-9	ug/kg	7.8 U	1.6 U	1.6 U	1.6 U	1.6 U
SW8082A	Aroclor 1248	12672-29-6	ug/kg	74.8	17 J	21 NJ	1.6 U	1.6 U
SW8082A	Aroclor 1254	11097-69-1	ug/kg	157 J	66	79 J	10 J	3.7 J
SW8082A	Aroclor 1260	11096-82-5	ug/kg	170	83	97	12	5.4

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	r4-sc1b-10to20-82819	r4-sc1b-110to120-82819	r4-sc1b-120to130-82819	r4-sc1b-130to140-82819	r4-sc1b-140to150-82819
	Date Time			8/28/2019 13:55:00	8/28/2019 17:10:00	8/28/2019 18:20:00	8/28/2019 18:25:00	8/28/2019 18:30:00
	X			7635121	7635121	7635121	7635121	7635121
	Y			700172	700172	700172	700172	700172
	Top (cm)			30	335	366	396	427
	Bottom (cm)			61	366	396	427	457
SW8082A	Aroclor 1262	37324-23-5	ug/kg	2.9 U	0.6 U	0.6 U	0.6 U	0.6 U
SW8082A	Aroclor 1268	11100-14-4	ug/kg	2.9 U	0.6 U	0.6 U	0.6 U	0.6 U
PCB Congeners								
E1668A	PCB-1	2051-60-7	ng/g					
E1668A	PCB-2	2051-61-8	ng/g					
E1668A	PCB-3	2051-62-9	ng/g					
E1668A	PCB-4	13029-08-8	ng/g					
E1668A	PCB-5	16605-91-7	ng/g					
E1668A	PCB-6	25569-80-6	ng/g					
E1668A	PCB-7	33284-50-3	ng/g					
E1668A	PCB-8	34883-43-7	ng/g					
E1668A	PCB-9	34883-39-1	ng/g					
E1668A	PCB-10	33146-45-1	ng/g					
E1668A	PCB-11	2050-67-1	ng/g					
E1668A	PCB-12	2974-92-7	ng/g					
E1668A	PCB-13	2974-90-5	ng/g					
E1668A	PCB-14	34883-41-5	ng/g					
E1668A	PCB-15	2050-68-2	ng/g					
E1668A	PCB-16	38444-78-9	ng/g					
E1668A	PCB-17	37680-66-3	ng/g					
E1668A	PCB-18	37680-65-2	ng/g					
E1668A	PCB-19	38444-73-4	ng/g					
E1668A	PCB-20	38444-84-7	ng/g					
E1668A	PCB-21	55702-46-0	ng/g					
E1668A	PCB-22	38444-85-8	ng/g					
E1668A	PCB-23	55720-44-0	ng/g					
E1668A	PCB-24	55702-45-9	ng/g					
E1668A	PCB-25	55712-37-3	ng/g					
E1668A	PCB-26	38444-81-4	ng/g					
E1668A	PCB-27	38444-76-7	ng/g					
E1668A	PCB-28	7012-37-5	ng/g					
E1668A	PCB-29	15862-07-4	ng/g					
E1668A	PCB-30	35693-92-6	ng/g					
E1668A	PCB-31	16606-02-3	ng/g					
E1668A	PCB-32	38444-77-8	ng/g					
E1668A	PCB-33	38444-86-9	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	r4-sc1b-10to20-82819	r4-sc1b-110to120-82819	r4-sc1b-120to130-82819	r4-sc1b-130to140-82819	r4-sc1b-140to150-82819
	Date Time			8/28/2019 13:55:00	8/28/2019 17:10:00	8/28/2019 18:20:00	8/28/2019 18:25:00	8/28/2019 18:30:00
	X			7635121	7635121	7635121	7635121	7635121
	Y			700172	700172	700172	700172	700172
	Top (cm)			30	335	366	396	427
	Bottom (cm)			61	366	396	427	457
E1668A	PCB-34	37680-68-5	ng/g					
E1668A	PCB-35	37680-69-6	ng/g					
E1668A	PCB-36	38444-87-0	ng/g					
E1668A	PCB-37	38444-90-5	ng/g					
E1668A	PCB-38	53555-66-1	ng/g					
E1668A	PCB-39	38444-88-1	ng/g					
E1668A	PCB-40	38444-93-8	ng/g					
E1668A	PCB-41	52663-59-9	ng/g					
E1668A	PCB-42	36559-22-5	ng/g					
E1668A	PCB-43	70362-46-8	ng/g					
E1668A	PCB-44	41464-39-5	ng/g					
E1668A	PCB-45	41464-39-5	ng/g					
E1668A	PCB-46	41464-47-5	ng/g					
E1668A	PCB-47	2437-79-8	ng/g					
E1668A	PCB-48	70362-47-9	ng/g					
E1668A	PCB-49	41464-40-8	ng/g					
E1668A	PCB-50	62796-65-0	ng/g					
E1668A	PCB-51	68194-04-7	ng/g					
E1668A	PCB-52	35693-99-3	ng/g					
E1668A	PCB-53	41464-41-9	ng/g					
E1668A	PCB-54	15968-05-5	ng/g					
E1668A	PCB-55	74338-24-2	ng/g					
E1668A	PCB-56	41464-43-1	ng/g					
E1668A	PCB-57	70424-67-8	ng/g					
E1668A	PCB-58	41464-49-7	ng/g					
E1668A	PCB-59	74472-33-6	ng/g					
E1668A	PCB-60	33025-41-1	ng/g					
E1668A	PCB-61	33284-53-6	ng/g					
E1668A	PCB-62	54230-22-7	ng/g					
E1668A	PCB-63	74472-34-7	ng/g					
E1668A	PCB-64	52663-58-8	ng/g					
E1668A	PCB-65	33284-54-7	ng/g					
E1668A	PCB-66	32598-10-0	ng/g					
E1668A	PCB-67	73575-53-8	ng/g					
E1668A	PCB-68	73575-52-7	ng/g					
E1668A	PCB-69	60233-24-1	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	r4-sc1b-10to20-82819	r4-sc1b-110to120-82819	r4-sc1b-120to130-82819	r4-sc1b-130to140-82819	r4-sc1b-140to150-82819
	Date Time			8/28/2019 13:55:00	8/28/2019 17:10:00	8/28/2019 18:20:00	8/28/2019 18:25:00	8/28/2019 18:30:00
	X			7635121	7635121	7635121	7635121	7635121
	Y			700172	700172	700172	700172	700172
	Top (cm)			30	335	366	396	427
	Bottom (cm)			61	366	396	427	457
E1668A	PCB-70	32598-11-1	ng/g					
E1668A	PCB-71	41464-46-4	ng/g					
E1668A	PCB-72	41464-42-0	ng/g					
E1668A	PCB-73	74338-23-1	ng/g					
E1668A	PCB-74	32690-93-0	ng/g					
E1668A	PCB-75	32598-12-2	ng/g					
E1668A	PCB-76	70362-48-0	ng/g					
E1668A	PCB-77	32598-13-3	ng/g					
E1668A	PCB-78	70362-49-1	ng/g					
E1668A	PCB-79	41464-48-6	ng/g					
E1668A	PCB-80	33284-52-5	ng/g					
E1668A	PCB-81	70362-50-4	ng/g					
E1668A	PCB-82	52663-62-4	ng/g					
E1668A	PCB-83	60145-20-2	ng/g					
E1668A	PCB-84	52663-60-2	ng/g					
E1668A	PCB-85	65510-45-4	ng/g					
E1668A	PCB-86	55312-69-1	ng/g					
E1668A	PCB-87	38380-02-8	ng/g					
E1668A	PCB-88	55215-17-3	ng/g					
E1668A	PCB-89	73575-57-2	ng/g					
E1668A	PCB-90	68194-07-0	ng/g					
E1668A	PCB-91	68194-05-8	ng/g					
E1668A	PCB-92	52663-61-3	ng/g					
E1668A	PCB-93	73575-56-1	ng/g					
E1668A	PCB-94	73575-55-0	ng/g					
E1668A	PCB-95	38379-99-6	ng/g					
E1668A	PCB-96	73575-54-9	ng/g					
E1668A	PCB-97	41464-51-1	ng/g					
E1668A	PCB-98	60233-25-2	ng/g					
E1668A	PCB-99	38380-01-7	ng/g					
E1668A	PCB-100	39485-83-1	ng/g					
E1668A	PCB-101	37680-73-2	ng/g					
E1668A	PCB-102	68194-06-9	ng/g					
E1668A	PCB-103	60145-21-3	ng/g					
E1668A	PCB-104	56558-16-8	ng/g					
E1668A	PCB-105	32598-14-4	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	r4-sc1b-10to20-82819	r4-sc1b-110to120-82819	r4-sc1b-120to130-82819	r4-sc1b-130to140-82819	r4-sc1b-140to150-82819
	Date Time			8/28/2019 13:55:00	8/28/2019 17:10:00	8/28/2019 18:20:00	8/28/2019 18:25:00	8/28/2019 18:30:00
	X			7635121	7635121	7635121	7635121	7635121
	Y			700172	700172	700172	700172	700172
	Top (cm)			30	335	366	396	427
	Bottom (cm)			61	366	396	427	457
E1668A	PCB-106	70424-69-0	ng/g					
E1668A	PCB-107	70424-68-9	ng/g					
E1668A	PCB-108	70362-41-3	ng/g					
E1668A	PCB-109	74472-35-8	ng/g					
E1668A	PCB-110	38380-03-9	ng/g					
E1668A	PCB-111	39635-32-0	ng/g					
E1668A	PCB-112	74472-36-9	ng/g					
E1668A	PCB-113	68194-10-5	ng/g					
E1668A	PCB-114	74472-37-0	ng/g					
E1668A	PCB-115	74472-38-1	ng/g					
E1668A	PCB-116	18259-05-7	ng/g					
E1668A	PCB-117	68194-11-6	ng/g					
E1668A	PCB-118	31508-00-6	ng/g					
E1668A	PCB-119	56558-17-9	ng/g					
E1668A	PCB-120	68194-12-7	ng/g					
E1668A	PCB-121	56558-18-0	ng/g					
E1668A	PCB-122	76842-07-4	ng/g					
E1668A	PCB-123	65510-44-3	ng/g					
E1668A	PCB-124	70424-70-3	ng/g					
E1668A	PCB-125	74472-39-2	ng/g					
E1668A	PCB-126	57465-28-8	ng/g					
E1668A	PCB-127	39635-33-1	ng/g					
E1668A	PCB-128	38380-07-3	ng/g					
E1668A	PCB-129	55215-18-4	ng/g					
E1668A	PCB-130	52663-66-8	ng/g					
E1668A	PCB-131	61798-70-7	ng/g					
E1668A	PCB-132	38380-05-1	ng/g					
E1668A	PCB-133	35694-04-3	ng/g					
E1668A	PCB-134	52704-70-8	ng/g					
E1668A	PCB-135	52744-13-5	ng/g					
E1668A	PCB-136	38411-22-2	ng/g					
E1668A	PCB-137	35694-06-5	ng/g					
E1668A	PCB-138	35065-28-2	ng/g					
E1668A	PCB-139	56030-56-9	ng/g					
E1668A	PCB-140	59291-64-4	ng/g					
E1668A	PCB-141	52712-04-6	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	r4-sc1b-10to20-82819	r4-sc1b-110to120-82819	r4-sc1b-120to130-82819	r4-sc1b-130to140-82819	r4-sc1b-140to150-82819
	Date Time			8/28/2019 13:55:00	8/28/2019 17:10:00	8/28/2019 18:20:00	8/28/2019 18:25:00	8/28/2019 18:30:00
	X			7635121	7635121	7635121	7635121	7635121
	Y			700172	700172	700172	700172	700172
	Top (cm)			30	335	366	396	427
	Bottom (cm)			61	366	396	427	457
E1668A	PCB-142	41411-61-4	ng/g					
E1668A	PCB-143	68194-15-0	ng/g					
E1668A	PCB-144	68194-14-9	ng/g					
E1668A	PCB-145	74472-40-5	ng/g					
E1668A	PCB-146	51908-16-8	ng/g					
E1668A	PCB-147	68194-13-8	ng/g					
E1668A	PCB-148	74472-41-6	ng/g					
E1668A	PCB-149	38380-04-0	ng/g					
E1668A	PCB-150	68194-08-1	ng/g					
E1668A	PCB-151	52663-63-5	ng/g					
E1668A	PCB-152	68194-09-2	ng/g					
E1668A	PCB-153	35065-27-1	ng/g					
E1668A	PCB-154	60145-22-4	ng/g					
E1668A	PCB-155	33979-03-2	ng/g					
E1668A	PCB-156	38380-08-4	ng/g					
E1668A	PCB-157	69782-90-7	ng/g					
E1668A	PCB-158	74472-42-7	ng/g					
E1668A	PCB-159	39635-35-3	ng/g					
E1668A	PCB-160	41411-62-5	ng/g					
E1668A	PCB-161	74472-43-8	ng/g					
E1668A	PCB-162	39635-34-2	ng/g					
E1668A	PCB-163	74472-44-9	ng/g					
E1668A	PCB-164	74472-45-0	ng/g					
E1668A	PCB-165	74472-46-1	ng/g					
E1668A	PCB-166	41411-63-6	ng/g					
E1668A	PCB-167	52663-72-6	ng/g					
E1668A	PCB-168	59291-65-5	ng/g					
E1668A	PCB-169	32774-16-6	ng/g					
E1668A	PCB-170	35065-30-6	ng/g					
E1668A	PCB-171	52663-71-5	ng/g					
E1668A	PCB-172	52663-74-8	ng/g					
E1668A	PCB-173	68194-16-1	ng/g					
E1668A	PCB-174	38411-25-5	ng/g					
E1668A	PCB-175	40186-70-7	ng/g					
E1668A	PCB-176	52663-65-7	ng/g					
E1668A	PCB-177	52663-70-4	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	r4-sc1b-10to20-82819	r4-sc1b-110to120-82819	r4-sc1b-120to130-82819	r4-sc1b-130to140-82819	r4-sc1b-140to150-82819
	Date Time			8/28/2019 13:55:00	8/28/2019 17:10:00	8/28/2019 18:20:00	8/28/2019 18:25:00	8/28/2019 18:30:00
	X			7635121	7635121	7635121	7635121	7635121
	Y			700172	700172	700172	700172	700172
	Top (cm)			30	335	366	396	427
	Bottom (cm)			61	366	396	427	457
E1668A	PCB-178	52663-67-9	ng/g					
E1668A	PCB-179	52663-64-6	ng/g					
E1668A	PCB-180	35065-29-3	ng/g					
E1668A	PCB-181	74472-47-2	ng/g					
E1668A	PCB-182	60145-23-5	ng/g					
E1668A	PCB-183	52663-69-1	ng/g					
E1668A	PCB-184	74472-48-3	ng/g					
E1668A	PCB-185	52712-05-7	ng/g					
E1668A	PCB-186	74472-49-4	ng/g					
E1668A	PCB-187	52663-68-0	ng/g					
E1668A	PCB-188	74487-85-7	ng/g					
E1668A	PCB-189	39635-31-9	ng/g					
E1668A	PCB-190	41411-64-7	ng/g					
E1668A	PCB-191	74472-50-7	ng/g					
E1668A	PCB-192	74472-51-8	ng/g					
E1668A	PCB-193	69782-91-8	ng/g					
E1668A	PCB-194	35694-08-7	ng/g					
E1668A	PCB-195	52663-78-2	ng/g					
E1668A	PCB-196	42740-50-1	ng/g					
E1668A	PCB-197	33091-17-7	ng/g					
E1668A	PCB-198	68194-17-2	ng/g					
E1668A	PCB-199	52663-75-9	ng/g					
E1668A	PCB-200	52663-73-7	ng/g					
E1668A	PCB-201	40186-71-8	ng/g					
E1668A	PCB-202	2136-99-4	ng/g					
E1668A	PCB-203	52663-76-0	ng/g					
E1668A	PCB-204	74472-52-9	ng/g					
E1668A	PCB-205	74472-53-0	ng/g					
E1668A	PCB-206	40186-72-9	ng/g					
E1668A	PCB-207	52663-79-3	ng/g					
E1668A	PCB-208	52663-77-1	ng/g					
E1668A	PCB-209	2051-24-3	ng/g					
E1668A	Total Dichlorobiphenyls		ng/g					
E1668A	Total Heptachlorobiphenyls		ng/g					
E1668A	Total Hexachlorobiphenyls		ng/g					
E1668A	Total Monochlorobiphenyls		ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units		r4-sc1b-10to20-82819	r4-sc1b-110to120-82819	r4-sc1b-120to130-82819	r4-sc1b-130to140-82819	r4-sc1b-140to150-82819
	Date Time				8/28/2019 13:55:00	8/28/2019 17:10:00	8/28/2019 18:20:00	8/28/2019 18:25:00	8/28/2019 18:30:00
	X				7635121	7635121	7635121	7635121	7635121
	Y				700172	700172	700172	700172	700172
	Top (cm)				30	335	366	396	427
	Bottom (cm)				61	366	396	427	457
E1668A	Total Nonachlorobiphenyls		ng/g						
E1668A	Total Octachlorobiphenyls		ng/g						
E1668A	Total Pentachlorobiphenyls		ng/g						
E1668A	Total Tetrachlorobiphenyls		ng/g						
E1668A	Total Trichlorobiphenyls		ng/g						
E1668A	Polychlorinated biphenyls, Total	1336-36-3	ng/g						
PAHs									
SW8270D	2-Methylnaphthalene	91-57-6	ug/kg			15 J	6.8 J	1.6 J	0.73 J
SW8270D	Acenaphthene	83-32-9	ug/kg			9.3 J	4.8 J	0.7 J	0.56 J
SW8270D	Acenaphthylene	208-96-8	ug/kg			15 J	8.8 J	3 J	0.94 J
SW8270D	Anthracene	120-12-7	ug/kg			16	11	2.6	1.1
SW8270D	Benzo(a)anthracene	56-55-3	ug/kg			20	17	7.3	2.1
SW8270D	Benzo(a)pyrene	50-32-8	ug/kg			30	28	13	3.5
SW8270D	Benzo(b)fluoranthene	205-99-2	ug/kg			31	30	14	3.9
SW8270D	Benzo(g,h,i)perylene	191-24-2	ug/kg			30	30	14	4.2
SW8270D	Benzo(k)fluoranthene	207-08-9	ug/kg			10	9.2	4.2	1.3
SW8270D	Chrysene	218-01-9	ug/kg			27	25	10	3.1
SW8270D	Dibenzo(a,h)anthracene	53-70-3	ug/kg			3.8	3.9	1.7	0.54
SW8270D	Dibenzofuran	132-64-9	ug/kg			5.6 J	3.3 J	0.57 J	0.33 J
SW8270D	Fluoranthene	206-44-0	ug/kg			77 J	55 J	15 J	4.8 J
SW8270D	Fluorene	86-73-7	ug/kg			11 J	5.7 J	0.89 J	0.53 J
SW8270D	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg			26	26	13	3.6
SW8270D	Naphthalene	91-20-3	ug/kg			38 J	17 J	3.3 J	1.6 J
SW8270D	Phenanthrene	85-01-8	ug/kg			67 J	42 J	8.3 J	3.7 J
SW8270D	Pyrene	129-00-0	ug/kg			88	67	24	8.2
Calculated Totals									
ALS SOP	CALC_TOTAL_DDD_ND_PDI		ug/kg			3.4 AJT	5.4 R	0.86 JT	0.63 UT
ALS SOP	CALC_TOTAL_DDE_ND_PDI		ug/kg			2.3 AT	4.4 AT	1.2 AT	0.79 UT
ALS SOP	CALC_TOTAL_DDT_ND_PDI		ug/kg			3.3 AT	5 AT	0.94 UT	0.94 UT
ALS SOP	CALC_TOTAL_DDx_ND_PDI		ug/kg			8.8 JT	15 T	1.8 JT	0.94 UT
E1668A	CALC_TOTAL_PCB_ND_PDI		ug/kg						
SW8082A	CALC_TOTAL_AROCLORS_ND_PDI		ug/kg	410 JT		170 JT	200 JNT	22 JT	9.9 JT
SW8270D	CALC_TOTAL_CPAH_ND_PDI		ug/kg			42 T	39 T	18 T	5 T
SW8270D	CALC_TOTAL_HPAH_ND_PDI		ug/kg			300 JT	250 JT	98 JT	30 JT
SW8270D	CALC_TOTAL_LPAH_ND_PDI		ug/kg			170 JT	96 JT	20 JT	9.2 JT
SW8270D	CALC_TOTAL_PAH_ND_PDI		ug/kg			470 JT	350 JT	120 JT	39 JT

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	r4-sc1b-10to20-82819	r4-sc1b-110to120-82819	r4-sc1b-120to130-82819	r4-sc1b-130to140-82819	r4-sc1b-140to150-82819
	Date Time			8/28/2019 13:55:00	8/28/2019 17:10:00	8/28/2019 18:20:00	8/28/2019 18:25:00	8/28/2019 18:30:00
	X			7635121	7635121	7635121	7635121	7635121
	Y			700172	700172	700172	700172	700172
	Top (cm)			30	335	366	396	427
	Bottom (cm)			61	366	396	427	457

DDx = dichlorodiphenyltrichloroethane and its derivatives

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyls

PeCDD = Pentachlorodibenzo-p-dioxin

PeCDF = Pentachlorodibenzofuran

TCDD = Tetrachlorodibenzo-p-dioxin

ug/kg = micrograms per kilogram

ng/g = nanograms per gram

% = percent

g/cm3 = grams per cubic centimeter

J = Reported result is an estimate

T = Total concentration from component analytes.

U = Analyte was not detected in sample

R = Rejected

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	r4-sc1b-20to30-82819	r4-sc1b-30to40-82819	r4-sc1b-40to50-82819	r4-sc1b-40to50-82819r1	r4-sc1b-50to60-82819
	Date Time			8/28/2019 14:00:00	8/28/2019 14:05:00	8/28/2019 15:10:00	8/28/2019 15:10:00	8/28/2019 15:20:00
	X			7635121	7635121	7635121	7635121	7635121
	Y			700172	700172	700172	700172	700172
	Top (cm)			61	91	122	122	152
	Bottom (cm)			91	122	152	152	183
Conventionals								
E160.3	Total Solids		%	54	57	54		55
PSEP	Total Solids		%					
SM2540G	Total Solids		%	53	55	53		55
SW9060A	Carbon, Total Organic	7440-044-0	mg/kg	31100	23800	25000		21300
Organochlorine Pesticides								
ALS SOP	o,p'-DDD	53-19-0	ug/kg	0.63 U	0.63 U	0.63 U		0.63 U
ALS SOP	o,p'-DDE	3424-82-6	ug/kg	0.79 U	0.79 U	0.98		0.79 U
ALS SOP	o,p'-DDT	789-02-6	ug/kg	0.94 U	0.94 U	0.94 U		0.94 U
ALS SOP	4,4'-DDD	72-54-8	ug/kg	2.1	2.3	2.1		1.3
ALS SOP	4,4'-DDE	72-55-9	ug/kg	3.6	4.2	8.2		3.3
ALS SOP	4,4'-DDT	50-29-3	ug/kg	0.47 U	0.56 J	1.7		0.47 U
Dioxins/Furans								
CWA1613B	1,2,3,4,6,7,8,9-OCDD	3268-87-9	ug/kg	0.59 J	0.27	2.4		0.9
CWA1613B	1,2,3,4,6,7,8,9-OCDF	39001-02-0	ug/kg	0.026	0.013	0.13		0.064
CWA1613B	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg	0.04 J	0.02	0.19		0.061
CWA1613B	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg	0.0088	0.005	0.05		0.024
CWA1613B	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg	0.00084 J	0.00044 J	0.0036 J		0.0014 J
CWA1613B	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg	0.00031 J	2e-04 J	0.0016 J		0.00054 U
CWA1613B	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg	8e-04 J	0.00063 J	0.0054		0.0014 J
CWA1613B	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg	0.0018 J	0.0011 J	0.0077		0.0025 J
CWA1613B	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg	0.00078 J	0.00044 J	0.0032 J		0.0013 J
CWA1613B	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg	0.001 J	0.00061 J	0.004 J		0.0014 J
CWA1613B	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg	3e-04 J	0.00029 U	0.0012 J		0.00047 U
CWA1613B	1,2,3,7,8-PeCDD	40321-76-4	ug/kg	0.00036 U	0.00024 J	0.0013 J		0.00044 J
CWA1613B	1,2,3,7,8-PeCDF	57117-41-6	ug/kg	0.00021 U	0.00026 U	0.00099 J		0.00038 U
CWA1613B	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg	0.00061 J	0.00035 U	0.0028 J		0.0011 U
CWA1613B	2,3,4,7,8-PeCDF	57117-31-4	ug/kg	0.00043 J	0.00038 J	0.0021 J		0.00063 U
CWA1613B	2,3,7,8-TCDD	1746-01-6	ug/kg	0.00016 U	0.00011 U	5e-04 J		2e-04 U
CWA1613B	2,3,7,8-TCDF	51207-31-9	ug/kg	0.00042 J	0.00032 U	0.0012 DNR	0.0014	0.00044 J
CWA1613B	Total HpCDD	37871-00-4	ug/kg	0.09	0.042	0.38		0.13
CWA1613B	Total HpCDF	38998-75-3	ug/kg	0.031 J	0.017 J	0.17 J		0.079 J
CWA1613B	Total HxCDD	34465-46-8	ug/kg	0.014 J	0.0076 U	0.057 U		0.02 U
CWA1613B	Total HxCDF	55684-94-1	ug/kg	0.014 J	0.0083 U	0.069 U		0.028 U
CWA1613B	Total PeCDD	36088-22-9	ug/kg	0.003 U	0.0014 U	0.011 U		0.0041 U
CWA1613B	Total PeCDF	30402-15-4	ug/kg	0.006 U	0.0038 U	0.03 U		0.011 U

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	r4-sc1b-20to30-82819	r4-sc1b-30to40-82819	r4-sc1b-40to50-82819	r4-sc1b-40to50-82819r1	r4-sc1b-50to60-82819
	Date Time			8/28/2019 14:00:00	8/28/2019 14:05:00	8/28/2019 15:10:00	8/28/2019 15:10:00	8/28/2019 15:20:00
	X			7635121	7635121	7635121	7635121	7635121
	Y			700172	700172	700172	700172	700172
	Top (cm)			61	91	122	122	152
	Bottom (cm)			91	122	152	152	183
CWA1613B	Total TCDD	41903-57-5	ug/kg	0.0011 U	0.00052 U	0.0051 U		0.0017 U
CWA1613B	Total TCDF	30402-14-3	ug/kg	0.0034 U	0.0021 U	0.016 U		0.0046 U
Dioxins/Furans								
E1613	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg					
E1613	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg					
E1613	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg					
E1613	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg					
E1613	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg					
E1613	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg					
E1613	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg					
E1613	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg					
E1613	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg					
E1613	1,2,3,7,8-PeCDD	40321-76-4	ug/kg					
E1613	1,2,3,7,8-PeCDF	57117-41-6	ug/kg					
E1613	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg					
E1613	2,3,4,7,8-PeCDF	57117-31-4	ug/kg					
E1613	2,3,7,8-TCDD	1746-01-6	ug/kg					
E1613	2,3,7,8-TCDF	51207-31-9	ug/kg					
E1613	OCDD	3268-87-9	ug/kg					
E1613	OCDF	39001-02-0	ug/kg					
E1613	Total HpCDD	37871-00-4	ug/kg					
E1613	Total HpCDF	38998-75-3	ug/kg					
E1613	Total HxCDD	34465-46-8	ug/kg					
E1613	Total HxCDF	55684-94-1	ug/kg					
E1613	Total PeCDD	36088-22-9	ug/kg					
E1613	Total PeCDF	30402-15-4	ug/kg					
E1613	Total TCDD	41903-57-5	ug/kg					
E1613	Total TCDF	30402-14-3	ug/kg					
PCB Aroclors								
SW8082A	Aroclor 1016	12674-11-2	ug/kg	1.6 U	7.8 U	7.8 U		7.8 U
SW8082A	Aroclor 1221	11104-28-2	ug/kg	1.6 U	7.8 U	7.8 U		7.8 U
SW8082A	Aroclor 1232	11141-16-5	ug/kg	1.6 U	7.8 U	7.8 U		7.8 U
SW8082A	Aroclor 1242	53469-21-9	ug/kg	1.6 U	7.8 U	7.8 U		7.8 U
SW8082A	Aroclor 1248	12672-29-6	ug/kg	58	82	110		40
SW8082A	Aroclor 1254	11097-69-1	ug/kg	79	150	250		71
SW8082A	Aroclor 1260	11096-82-5	ug/kg	83 NJ	170	220		72

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	r4-sc1b-20to30-82819	r4-sc1b-30to40-82819	r4-sc1b-40to50-82819	r4-sc1b-40to50-82819r1	r4-sc1b-50to60-82819
	Date Time			8/28/2019 14:00:00	8/28/2019 14:05:00	8/28/2019 15:10:00	8/28/2019 15:10:00	8/28/2019 15:20:00
	X			7635121	7635121	7635121	7635121	7635121
	Y			700172	700172	700172	700172	700172
	Top (cm)			61	91	122	122	152
	Bottom (cm)			91	122	152	152	183
SW8082A	Aroclor 1262	37324-23-5	ug/kg	0.6 U	2.9 U	2.9 U		2.9 U
SW8082A	Aroclor 1268	11100-14-4	ug/kg	0.6 U	2.9 U	2.9 U		2.9 U
PCB Congeners								
E1668A	PCB-1	2051-60-7	ng/g					
E1668A	PCB-2	2051-61-8	ng/g					
E1668A	PCB-3	2051-62-9	ng/g					
E1668A	PCB-4	13029-08-8	ng/g					
E1668A	PCB-5	16605-91-7	ng/g					
E1668A	PCB-6	25569-80-6	ng/g					
E1668A	PCB-7	33284-50-3	ng/g					
E1668A	PCB-8	34883-43-7	ng/g					
E1668A	PCB-9	34883-39-1	ng/g					
E1668A	PCB-10	33146-45-1	ng/g					
E1668A	PCB-11	2050-67-1	ng/g					
E1668A	PCB-12	2974-92-7	ng/g					
E1668A	PCB-13	2974-90-5	ng/g					
E1668A	PCB-14	34883-41-5	ng/g					
E1668A	PCB-15	2050-68-2	ng/g					
E1668A	PCB-16	38444-78-9	ng/g					
E1668A	PCB-17	37680-66-3	ng/g					
E1668A	PCB-18	37680-65-2	ng/g					
E1668A	PCB-19	38444-73-4	ng/g					
E1668A	PCB-20	38444-84-7	ng/g					
E1668A	PCB-21	55702-46-0	ng/g					
E1668A	PCB-22	38444-85-8	ng/g					
E1668A	PCB-23	55720-44-0	ng/g					
E1668A	PCB-24	55702-45-9	ng/g					
E1668A	PCB-25	55712-37-3	ng/g					
E1668A	PCB-26	38444-81-4	ng/g					
E1668A	PCB-27	38444-76-7	ng/g					
E1668A	PCB-28	7012-37-5	ng/g					
E1668A	PCB-29	15862-07-4	ng/g					
E1668A	PCB-30	35693-92-6	ng/g					
E1668A	PCB-31	16606-02-3	ng/g					
E1668A	PCB-32	38444-77-8	ng/g					
E1668A	PCB-33	38444-86-9	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	r4-sc1b-20to30-82819	r4-sc1b-30to40-82819	r4-sc1b-40to50-82819	r4-sc1b-40to50-82819r1	r4-sc1b-50to60-82819
	Date Time			8/28/2019 14:00:00	8/28/2019 14:05:00	8/28/2019 15:10:00	8/28/2019 15:10:00	8/28/2019 15:20:00
	X			7635121	7635121	7635121	7635121	7635121
	Y			700172	700172	700172	700172	700172
	Top (cm)			61	91	122	122	152
	Bottom (cm)			91	122	152	152	183
E1668A	PCB-34	37680-68-5	ng/g					
E1668A	PCB-35	37680-69-6	ng/g					
E1668A	PCB-36	38444-87-0	ng/g					
E1668A	PCB-37	38444-90-5	ng/g					
E1668A	PCB-38	53555-66-1	ng/g					
E1668A	PCB-39	38444-88-1	ng/g					
E1668A	PCB-40	38444-93-8	ng/g					
E1668A	PCB-41	52663-59-9	ng/g					
E1668A	PCB-42	36559-22-5	ng/g					
E1668A	PCB-43	70362-46-8	ng/g					
E1668A	PCB-44	41464-39-5	ng/g					
E1668A	PCB-45	41464-39-5	ng/g					
E1668A	PCB-46	41464-47-5	ng/g					
E1668A	PCB-47	2437-79-8	ng/g					
E1668A	PCB-48	70362-47-9	ng/g					
E1668A	PCB-49	41464-40-8	ng/g					
E1668A	PCB-50	62796-65-0	ng/g					
E1668A	PCB-51	68194-04-7	ng/g					
E1668A	PCB-52	35693-99-3	ng/g					
E1668A	PCB-53	41464-41-9	ng/g					
E1668A	PCB-54	15968-05-5	ng/g					
E1668A	PCB-55	74338-24-2	ng/g					
E1668A	PCB-56	41464-43-1	ng/g					
E1668A	PCB-57	70424-67-8	ng/g					
E1668A	PCB-58	41464-49-7	ng/g					
E1668A	PCB-59	74472-33-6	ng/g					
E1668A	PCB-60	33025-41-1	ng/g					
E1668A	PCB-61	33284-53-6	ng/g					
E1668A	PCB-62	54230-22-7	ng/g					
E1668A	PCB-63	74472-34-7	ng/g					
E1668A	PCB-64	52663-58-8	ng/g					
E1668A	PCB-65	33284-54-7	ng/g					
E1668A	PCB-66	32598-10-0	ng/g					
E1668A	PCB-67	73575-53-8	ng/g					
E1668A	PCB-68	73575-52-7	ng/g					
E1668A	PCB-69	60233-24-1	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	r4-sc1b-20to30-82819	r4-sc1b-30to40-82819	r4-sc1b-40to50-82819	r4-sc1b-40to50-82819r1	r4-sc1b-50to60-82819
	Date Time			8/28/2019 14:00:00	8/28/2019 14:05:00	8/28/2019 15:10:00	8/28/2019 15:10:00	8/28/2019 15:20:00
	X			7635121	7635121	7635121	7635121	7635121
	Y			700172	700172	700172	700172	700172
	Top (cm)			61	91	122	122	152
	Bottom (cm)			91	122	152	152	183
E1668A	PCB-70	32598-11-1	ng/g					
E1668A	PCB-71	41464-46-4	ng/g					
E1668A	PCB-72	41464-42-0	ng/g					
E1668A	PCB-73	74338-23-1	ng/g					
E1668A	PCB-74	32690-93-0	ng/g					
E1668A	PCB-75	32598-12-2	ng/g					
E1668A	PCB-76	70362-48-0	ng/g					
E1668A	PCB-77	32598-13-3	ng/g					
E1668A	PCB-78	70362-49-1	ng/g					
E1668A	PCB-79	41464-48-6	ng/g					
E1668A	PCB-80	33284-52-5	ng/g					
E1668A	PCB-81	70362-50-4	ng/g					
E1668A	PCB-82	52663-62-4	ng/g					
E1668A	PCB-83	60145-20-2	ng/g					
E1668A	PCB-84	52663-60-2	ng/g					
E1668A	PCB-85	65510-45-4	ng/g					
E1668A	PCB-86	55312-69-1	ng/g					
E1668A	PCB-87	38380-02-8	ng/g					
E1668A	PCB-88	55215-17-3	ng/g					
E1668A	PCB-89	73575-57-2	ng/g					
E1668A	PCB-90	68194-07-0	ng/g					
E1668A	PCB-91	68194-05-8	ng/g					
E1668A	PCB-92	52663-61-3	ng/g					
E1668A	PCB-93	73575-56-1	ng/g					
E1668A	PCB-94	73575-55-0	ng/g					
E1668A	PCB-95	38379-99-6	ng/g					
E1668A	PCB-96	73575-54-9	ng/g					
E1668A	PCB-97	41464-51-1	ng/g					
E1668A	PCB-98	60233-25-2	ng/g					
E1668A	PCB-99	38380-01-7	ng/g					
E1668A	PCB-100	39485-83-1	ng/g					
E1668A	PCB-101	37680-73-2	ng/g					
E1668A	PCB-102	68194-06-9	ng/g					
E1668A	PCB-103	60145-21-3	ng/g					
E1668A	PCB-104	56558-16-8	ng/g					
E1668A	PCB-105	32598-14-4	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	r4-sc1b-20to30-82819	r4-sc1b-30to40-82819	r4-sc1b-40to50-82819	r4-sc1b-40to50-82819r1	r4-sc1b-50to60-82819
	Date Time			8/28/2019 14:00:00	8/28/2019 14:05:00	8/28/2019 15:10:00	8/28/2019 15:10:00	8/28/2019 15:20:00
	X			7635121	7635121	7635121	7635121	7635121
	Y			700172	700172	700172	700172	700172
	Top (cm)			61	91	122	122	152
	Bottom (cm)			91	122	152	152	183
E1668A	PCB-106	70424-69-0	ng/g					
E1668A	PCB-107	70424-68-9	ng/g					
E1668A	PCB-108	70362-41-3	ng/g					
E1668A	PCB-109	74472-35-8	ng/g					
E1668A	PCB-110	38380-03-9	ng/g					
E1668A	PCB-111	39635-32-0	ng/g					
E1668A	PCB-112	74472-36-9	ng/g					
E1668A	PCB-113	68194-10-5	ng/g					
E1668A	PCB-114	74472-37-0	ng/g					
E1668A	PCB-115	74472-38-1	ng/g					
E1668A	PCB-116	18259-05-7	ng/g					
E1668A	PCB-117	68194-11-6	ng/g					
E1668A	PCB-118	31508-00-6	ng/g					
E1668A	PCB-119	56558-17-9	ng/g					
E1668A	PCB-120	68194-12-7	ng/g					
E1668A	PCB-121	56558-18-0	ng/g					
E1668A	PCB-122	76842-07-4	ng/g					
E1668A	PCB-123	65510-44-3	ng/g					
E1668A	PCB-124	70424-70-3	ng/g					
E1668A	PCB-125	74472-39-2	ng/g					
E1668A	PCB-126	57465-28-8	ng/g					
E1668A	PCB-127	39635-33-1	ng/g					
E1668A	PCB-128	38380-07-3	ng/g					
E1668A	PCB-129	55215-18-4	ng/g					
E1668A	PCB-130	52663-66-8	ng/g					
E1668A	PCB-131	61798-70-7	ng/g					
E1668A	PCB-132	38380-05-1	ng/g					
E1668A	PCB-133	35694-04-3	ng/g					
E1668A	PCB-134	52704-70-8	ng/g					
E1668A	PCB-135	52744-13-5	ng/g					
E1668A	PCB-136	38411-22-2	ng/g					
E1668A	PCB-137	35694-06-5	ng/g					
E1668A	PCB-138	35065-28-2	ng/g					
E1668A	PCB-139	56030-56-9	ng/g					
E1668A	PCB-140	59291-64-4	ng/g					
E1668A	PCB-141	52712-04-6	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	r4-sc1b-20to30-82819	r4-sc1b-30to40-82819	r4-sc1b-40to50-82819	r4-sc1b-40to50-82819r1	r4-sc1b-50to60-82819
	Date Time			8/28/2019 14:00:00	8/28/2019 14:05:00	8/28/2019 15:10:00	8/28/2019 15:10:00	8/28/2019 15:20:00
	X			7635121	7635121	7635121	7635121	7635121
	Y			700172	700172	700172	700172	700172
	Top (cm)			61	91	122	122	152
	Bottom (cm)			91	122	152	152	183
E1668A	PCB-142	41411-61-4	ng/g					
E1668A	PCB-143	68194-15-0	ng/g					
E1668A	PCB-144	68194-14-9	ng/g					
E1668A	PCB-145	74472-40-5	ng/g					
E1668A	PCB-146	51908-16-8	ng/g					
E1668A	PCB-147	68194-13-8	ng/g					
E1668A	PCB-148	74472-41-6	ng/g					
E1668A	PCB-149	38380-04-0	ng/g					
E1668A	PCB-150	68194-08-1	ng/g					
E1668A	PCB-151	52663-63-5	ng/g					
E1668A	PCB-152	68194-09-2	ng/g					
E1668A	PCB-153	35065-27-1	ng/g					
E1668A	PCB-154	60145-22-4	ng/g					
E1668A	PCB-155	33979-03-2	ng/g					
E1668A	PCB-156	38380-08-4	ng/g					
E1668A	PCB-157	69782-90-7	ng/g					
E1668A	PCB-158	74472-42-7	ng/g					
E1668A	PCB-159	39635-35-3	ng/g					
E1668A	PCB-160	41411-62-5	ng/g					
E1668A	PCB-161	74472-43-8	ng/g					
E1668A	PCB-162	39635-34-2	ng/g					
E1668A	PCB-163	74472-44-9	ng/g					
E1668A	PCB-164	74472-45-0	ng/g					
E1668A	PCB-165	74472-46-1	ng/g					
E1668A	PCB-166	41411-63-6	ng/g					
E1668A	PCB-167	52663-72-6	ng/g					
E1668A	PCB-168	59291-65-5	ng/g					
E1668A	PCB-169	32774-16-6	ng/g					
E1668A	PCB-170	35065-30-6	ng/g					
E1668A	PCB-171	52663-71-5	ng/g					
E1668A	PCB-172	52663-74-8	ng/g					
E1668A	PCB-173	68194-16-1	ng/g					
E1668A	PCB-174	38411-25-5	ng/g					
E1668A	PCB-175	40186-70-7	ng/g					
E1668A	PCB-176	52663-65-7	ng/g					
E1668A	PCB-177	52663-70-4	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	r4-sc1b-20to30-82819	r4-sc1b-30to40-82819	r4-sc1b-40to50-82819	r4-sc1b-40to50-82819r1	r4-sc1b-50to60-82819
	Date Time			8/28/2019 14:00:00	8/28/2019 14:05:00	8/28/2019 15:10:00	8/28/2019 15:10:00	8/28/2019 15:20:00
	X			7635121	7635121	7635121	7635121	7635121
	Y			700172	700172	700172	700172	700172
	Top (cm)			61	91	122	122	152
	Bottom (cm)			91	122	152	152	183
E1668A	PCB-178	52663-67-9	ng/g					
E1668A	PCB-179	52663-64-6	ng/g					
E1668A	PCB-180	35065-29-3	ng/g					
E1668A	PCB-181	74472-47-2	ng/g					
E1668A	PCB-182	60145-23-5	ng/g					
E1668A	PCB-183	52663-69-1	ng/g					
E1668A	PCB-184	74472-48-3	ng/g					
E1668A	PCB-185	52712-05-7	ng/g					
E1668A	PCB-186	74472-49-4	ng/g					
E1668A	PCB-187	52663-68-0	ng/g					
E1668A	PCB-188	74487-85-7	ng/g					
E1668A	PCB-189	39635-31-9	ng/g					
E1668A	PCB-190	41411-64-7	ng/g					
E1668A	PCB-191	74472-50-7	ng/g					
E1668A	PCB-192	74472-51-8	ng/g					
E1668A	PCB-193	69782-91-8	ng/g					
E1668A	PCB-194	35694-08-7	ng/g					
E1668A	PCB-195	52663-78-2	ng/g					
E1668A	PCB-196	42740-50-1	ng/g					
E1668A	PCB-197	33091-17-7	ng/g					
E1668A	PCB-198	68194-17-2	ng/g					
E1668A	PCB-199	52663-75-9	ng/g					
E1668A	PCB-200	52663-73-7	ng/g					
E1668A	PCB-201	40186-71-8	ng/g					
E1668A	PCB-202	2136-99-4	ng/g					
E1668A	PCB-203	52663-76-0	ng/g					
E1668A	PCB-204	74472-52-9	ng/g					
E1668A	PCB-205	74472-53-0	ng/g					
E1668A	PCB-206	40186-72-9	ng/g					
E1668A	PCB-207	52663-79-3	ng/g					
E1668A	PCB-208	52663-77-1	ng/g					
E1668A	PCB-209	2051-24-3	ng/g					
E1668A	Total Dichlorobiphenyls		ng/g					
E1668A	Total Heptachlorobiphenyls		ng/g					
E1668A	Total Hexachlorobiphenyls		ng/g					
E1668A	Total Monochlorobiphenyls		ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	r4-sc1b-20to30-82819	r4-sc1b-30to40-82819	r4-sc1b-40to50-82819	r4-sc1b-40to50-82819r1	r4-sc1b-50to60-82819
	Date Time			8/28/2019 14:00:00	8/28/2019 14:05:00	8/28/2019 15:10:00	8/28/2019 15:10:00	8/28/2019 15:20:00
	X			7635121	7635121	7635121	7635121	7635121
	Y			700172	700172	700172	700172	700172
	Top (cm)			61	91	122	122	152
	Bottom (cm)			91	122	152	152	183
E1668A	Total Nonachlorobiphenyls		ng/g					
E1668A	Total Octachlorobiphenyls		ng/g					
E1668A	Total Pentachlorobiphenyls		ng/g					
E1668A	Total Tetrachlorobiphenyls		ng/g					
E1668A	Total Trichlorobiphenyls		ng/g					
E1668A	Polychlorinated biphenyls, Total	1336-36-3	ng/g					
PAHs								
SW8270D	2-Methylnaphthalene	91-57-6	ug/kg	11 J	4.4 J	5.1 J		2.8 J
SW8270D	Acenaphthene	83-32-9	ug/kg	7.4 J	6 J	13 J		3.8 J
SW8270D	Acenaphthylene	208-96-8	ug/kg	9.3 J	3.6 J	5.5 J		3.3 J
SW8270D	Anthracene	120-12-7	ug/kg	12	7	14		5.1
SW8270D	Benzo(a)anthracene	56-55-3	ug/kg	52	25	46		16
SW8270D	Benzo(a)pyrene	50-32-8	ug/kg	86	35	53		23
SW8270D	Benzo(b)fluoranthene	205-99-2	ug/kg	89	39	66		26
SW8270D	Benzo(g,h,i)perylene	191-24-2	ug/kg	68	28	38		19
SW8270D	Benzo(k)fluoranthene	207-08-9	ug/kg	30	14	22		8.4
SW8270D	Chrysene	218-01-9	ug/kg	68	32	59		22
SW8270D	Dibenzo(a,h)anthracene	53-70-3	ug/kg	12	6	9.1		3.8
SW8270D	Dibenzofuran	132-64-9	ug/kg	3.6 J	2.4 J	3.9 J		1.5 J
SW8270D	Fluoranthene	206-44-0	ug/kg	83 J	53 J	91 J		35 J
SW8270D	Fluorene	86-73-7	ug/kg	8 J	5.2 J	11 J		3.3 J
SW8270D	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	68	28	39		18
SW8270D	Naphthalene	91-20-3	ug/kg	14 J	8.5 J	8.3 J		5.9 J
SW8270D	Phenanthrene	85-01-8	ug/kg	51 J	35 J	59 J		22 J
SW8270D	Pyrene	129-00-0	ug/kg	95	59	99		43
Calculated Totals								
ALS SOP	CALC_TOTAL_DDD_ND_PDI		ug/kg	2.4 AT	2.6 AT	2.4 AT		1.6 AT
ALS SOP	CALC_TOTAL_DDE_ND_PDI		ug/kg	4 AT	4.6 AT	9.2 R		3.7 AT
ALS SOP	CALC_TOTAL_DDT_ND_PDI		ug/kg	0.94 UT	1 JT	2.2 AT		0.94 UT
ALS SOP	CALC_TOTAL_DDx_ND_PDI		ug/kg	6.2 T	7.5 JT	13 T		5.1 T
E1668A	CALC_TOTAL_PCB_ND_PDI		ug/kg					
SW8082A	CALC_TOTAL_AROCLORS_ND_PDI		ug/kg	220 JNT	410 AT	580 AT		190 AT
SW8270D	CALC_TOTAL_CPAH_ND_PDI		ug/kg	120 T	50 T	77 T		33 T
SW8270D	CALC_TOTAL_HPAH_ND_PDI		ug/kg	530 JT	270 JT	430 JT		180 JT
SW8270D	CALC_TOTAL_LPAH_ND_PDI		ug/kg	110 JT	70 JT	120 JT		46 JT
SW8270D	CALC_TOTAL_PAH_ND_PDI		ug/kg	640 JT	340 JT	550 JT		230 JT

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	r4-sc1b-20to30-82819	r4-sc1b-30to40-82819	r4-sc1b-40to50-82819	r4-sc1b-40to50-82819r1	r4-sc1b-50to60-82819
	Date Time			8/28/2019 14:00:00	8/28/2019 14:05:00	8/28/2019 15:10:00	8/28/2019 15:10:00	8/28/2019 15:20:00
	X			7635121	7635121	7635121	7635121	7635121
	Y			700172	700172	700172	700172	700172
	Top (cm)			61	91	122	122	152
	Bottom (cm)			91	122	152	152	183

DDx = dichlorodiphenyltrichloroethane and its derivatives

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyls

PeCDD = Pentachlorodibenzo-p-dioxin

PeCDF = Pentachlorodibenzofuran

TCDD = Tetrachlorodibenzo-p-dioxin

ug/kg = micrograms per kilogram

ng/g = nanograms per gram

% = percent

g/cm3 = grams per cubic centimeter

J = Reported result is an estimate

T = Total concentration from component analytes.

U = Analyte was not detected in sample

R = Rejected

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	r4-sc1b-60to70-82819	r4-sc1b-70to80-82819	r4-sc1b-80to90-82819	r4-sc1b-90to100-82819	R4-SC-8to10-102118
	Date Time			8/28/2019 15:50:00	8/28/2019 15:55:00	8/28/2019 16:30:00	8/28/2019 16:40:00	10/21/2018 19:40:00
	X			7635121	7635121	7635121	7635121	7635121
	Y			700172	700172	700172	700172	700172
	Top (cm)			183	213	244	274	244
	Bottom (cm)			213	244	274	305	305
Conventionals								
E160.3	Total Solids		%	56	57	55	56	
PSEP	Total Solids		%					
SM2540G	Total Solids		%	55	56	54	55	
SW9060A	Carbon, Total Organic	7440-044-0	mg/kg	23800	29300	32100	31400	
Organochlorine Pesticides								
ALS SOP	o,p'-DDD	53-19-0	ug/kg	0.63 U	0.74 J	1.2	0.85 J	
ALS SOP	o,p'-DDE	3424-82-6	ug/kg	0.79 U	0.79 U	0.79 U	0.79 U	
ALS SOP	o,p'-DDT	789-02-6	ug/kg	0.94 U	0.94 U	0.94 U	0.94 U	
ALS SOP	4,4'-DDD	72-54-8	ug/kg	3.9	2.8	3	3.1	
ALS SOP	4,4'-DDE	72-55-9	ug/kg	6.9	3.1	4.1	3.5	
ALS SOP	4,4'-DDT	50-29-3	ug/kg	0.47 U	0.47 U	0.47 U	0.47 U	
Dioxins/Furans								
CWA1613B	1,2,3,4,6,7,8,9-OCDD	3268-87-9	ug/kg	0.39	0.25	0.12	0.084	
CWA1613B	1,2,3,4,6,7,8,9-OCDF	39001-02-0	ug/kg	0.029	0.017	0.0088 J	0.0048 J	
CWA1613B	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg	0.028	0.017	0.0068	0.005	
CWA1613B	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg	0.012	0.0092	0.0076	0.0033 J	
CWA1613B	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg	0.00088 J	6e-04 U	3e-04 J	0.00017 J	
CWA1613B	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg	0.0049 U	0.0049 U	0.005 U	0.005 U	
CWA1613B	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg	0.0013 J	0.00058 J	0.00046 J	0.00025 U	
CWA1613B	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg	0.0013 J	0.00084 U	0.00054 U	0.00028 J	
CWA1613B	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg	0.00095 U	0.00088 J	0.00071 J	0.00033 J	
CWA1613B	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg	0.00064 J	0.00042 J	0.00021 J	0.00014 J	
CWA1613B	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg	0.0049 U	0.0049 U	0.005 U	0.005 U	
CWA1613B	1,2,3,7,8-PeCDD	40321-76-4	ug/kg	0.00023 J	0.0049 U	0.005 U	0.005 U	
CWA1613B	1,2,3,7,8-PeCDF	57117-41-6	ug/kg	0.00028 U	0.00026 U	0.00026 U	0.005 U	
CWA1613B	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg	0.00072 J	0.00053 J	0.00037 J	0.00027 J	
CWA1613B	2,3,4,7,8-PeCDF	57117-31-4	ug/kg	0.00048 J	6e-04 J	0.00052 U	0.00031 J	
CWA1613B	2,3,7,8-TCDD	1746-01-6	ug/kg	0.00098 U	0.00099 U	7.8e-05 U	0.00099 U	
CWA1613B	2,3,7,8-TCDF	51207-31-9	ug/kg	0.00058 U	0.00041 J	0.00053 U	4e-04 J	
CWA1613B	Total HpCDD	37871-00-4	ug/kg	0.064	0.041	0.019	0.013	
CWA1613B	Total HpCDF	38998-75-3	ug/kg	0.041 J	0.027 U	0.018 J	0.0084 J	
CWA1613B	Total HxCDD	34465-46-8	ug/kg	0.0096 J	0.0071 U	0.004 U	0.0024 U	
CWA1613B	Total HxCDF	55684-94-1	ug/kg	0.018 U	0.013 J	0.0092 U	0.0051 U	
CWA1613B	Total PeCDD	36088-22-9	ug/kg	0.0021 U	0.0017 U	0.00083 J	0.00048 U	
CWA1613B	Total PeCDF	30402-15-4	ug/kg	0.0083 U	0.0093 U	0.0073 U	0.0048 J	

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	r4-sc1b-60to70-82819	r4-sc1b-70to80-82819	r4-sc1b-80to90-82819	r4-sc1b-90to100-82819	R4-SC-8to10-102118
	Date Time			8/28/2019 15:50:00	8/28/2019 15:55:00	8/28/2019 16:30:00	8/28/2019 16:40:00	10/21/2018 19:40:00
	X			7635121	7635121	7635121	7635121	7635121
	Y			700172	700172	700172	700172	700172
	Top (cm)			183	213	244	274	244
	Bottom (cm)			213	244	274	305	305
CWA1613B	Total TCDD	41903-57-5	ug/kg	0.00083 U	0.0011 U	0.00065 U	0.00052 U	
CWA1613B	Total TCDF	30402-14-3	ug/kg	0.0044 U	0.004 U	0.0042 U	0.0018 U	
Dioxins/Furans								
E1613	1,2,3,4,6,7,8-HpCDD	35822-46-9	ug/kg					0.34
E1613	1,2,3,4,6,7,8-HpCDF	67562-39-4	ug/kg					0.28 J
E1613	1,2,3,4,7,8,9-HpCDF	55673-89-7	ug/kg					0.01 J
E1613	1,2,3,4,7,8-HxCDD	39227-28-6	ug/kg					0.0031 J
E1613	1,2,3,4,7,8-HxCDF	70648-26-9	ug/kg					0.011
E1613	1,2,3,6,7,8-HxCDD	57653-85-7	ug/kg					0.016 J
E1613	1,2,3,6,7,8-HxCDF	57117-44-9	ug/kg					0.023
E1613	1,2,3,7,8,9-HxCDD	19408-74-3	ug/kg					0.0083
E1613	1,2,3,7,8,9-HxCDF	72918-21-9	ug/kg					0.00075 J
E1613	1,2,3,7,8-PeCDD	40321-76-4	ug/kg					0.0023 J
E1613	1,2,3,7,8-PeCDF	57117-41-6	ug/kg					0.0024 J
E1613	2,3,4,6,7,8-HxCDF	60851-34-5	ug/kg					0.0053
E1613	2,3,4,7,8-PeCDF	57117-31-4	ug/kg					0.0032 J
E1613	2,3,7,8-TCDD	1746-01-6	ug/kg					0.0012
E1613	2,3,7,8-TCDF	51207-31-9	ug/kg					0.0018 DNR
E1613	OCDD	3268-87-9	ug/kg					5
E1613	OCDF	39001-02-0	ug/kg					0.37 J
E1613	Total HpCDD	37871-00-4	ug/kg					0.82
E1613	Total HpCDF	38998-75-3	ug/kg					0.68
E1613	Total HxCDD	34465-46-8	ug/kg					0.12
E1613	Total HxCDF	55684-94-1	ug/kg					0.28
E1613	Total PeCDD	36088-22-9	ug/kg					0.028
E1613	Total PeCDF	30402-15-4	ug/kg					0.18
E1613	Total TCDD	41903-57-5	ug/kg					0.019
E1613	Total TCDF	30402-14-3	ug/kg					0.071
PCB Aroclors								
SW8082A	Aroclor 1016	12674-11-2	ug/kg	7.8 U	1.6 U	1.6 U	7.8 U	
SW8082A	Aroclor 1221	11104-28-2	ug/kg	7.8 U	1.6 U	1.6 U	7.8 U	
SW8082A	Aroclor 1232	11141-16-5	ug/kg	7.8 U	1.6 U	1.6 U	7.8 U	
SW8082A	Aroclor 1242	53469-21-9	ug/kg	7.8 U	1.6 U	1.6 U	7.8 U	
SW8082A	Aroclor 1248	12672-29-6	ug/kg	78	37 J	28 NJ	7.8 U	
SW8082A	Aroclor 1254	11097-69-1	ug/kg	190	97	91 J	130	
SW8082A	Aroclor 1260	11096-82-5	ug/kg	140	190	120	170	

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	r4-sc1b-60to70-82819	r4-sc1b-70to80-82819	r4-sc1b-80to90-82819	r4-sc1b-90to100-82819	R4-SC-8to10-102118
	Date Time			8/28/2019 15:50:00	8/28/2019 15:55:00	8/28/2019 16:30:00	8/28/2019 16:40:00	10/21/2018 19:40:00
	X			7635121	7635121	7635121	7635121	7635121
	Y			700172	700172	700172	700172	700172
	Top (cm)			183	213	244	274	244
	Bottom (cm)			213	244	274	305	305
SW8082A	Aroclor 1262	37324-23-5	ug/kg	2.9 U	0.6 U	0.6 U	2.9 U	
SW8082A	Aroclor 1268	11100-14-4	ug/kg	2.9 U	0.6 U	0.6 U	2.9 U	
PCB Congeners								
E1668A	PCB-1	2051-60-7	ng/g					
E1668A	PCB-2	2051-61-8	ng/g					
E1668A	PCB-3	2051-62-9	ng/g					
E1668A	PCB-4	13029-08-8	ng/g					
E1668A	PCB-5	16605-91-7	ng/g					
E1668A	PCB-6	25569-80-6	ng/g					
E1668A	PCB-7	33284-50-3	ng/g					
E1668A	PCB-8	34883-43-7	ng/g					
E1668A	PCB-9	34883-39-1	ng/g					
E1668A	PCB-10	33146-45-1	ng/g					
E1668A	PCB-11	2050-67-1	ng/g					
E1668A	PCB-12	2974-92-7	ng/g					
E1668A	PCB-13	2974-90-5	ng/g					
E1668A	PCB-14	34883-41-5	ng/g					
E1668A	PCB-15	2050-68-2	ng/g					
E1668A	PCB-16	38444-78-9	ng/g					
E1668A	PCB-17	37680-66-3	ng/g					
E1668A	PCB-18	37680-65-2	ng/g					
E1668A	PCB-19	38444-73-4	ng/g					
E1668A	PCB-20	38444-84-7	ng/g					
E1668A	PCB-21	55702-46-0	ng/g					
E1668A	PCB-22	38444-85-8	ng/g					
E1668A	PCB-23	55720-44-0	ng/g					
E1668A	PCB-24	55702-45-9	ng/g					
E1668A	PCB-25	55712-37-3	ng/g					
E1668A	PCB-26	38444-81-4	ng/g					
E1668A	PCB-27	38444-76-7	ng/g					
E1668A	PCB-28	7012-37-5	ng/g					
E1668A	PCB-29	15862-07-4	ng/g					
E1668A	PCB-30	35693-92-6	ng/g					
E1668A	PCB-31	16606-02-3	ng/g					
E1668A	PCB-32	38444-77-8	ng/g					
E1668A	PCB-33	38444-86-9	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	r4-sc1b-60to70-82819	r4-sc1b-70to80-82819	r4-sc1b-80to90-82819	r4-sc1b-90to100-82819	R4-SC-8to10-102118
	Date Time			8/28/2019 15:50:00	8/28/2019 15:55:00	8/28/2019 16:30:00	8/28/2019 16:40:00	10/21/2018 19:40:00
	X			7635121	7635121	7635121	7635121	7635121
	Y			700172	700172	700172	700172	700172
	Top (cm)			183	213	244	274	244
	Bottom (cm)			213	244	274	305	305
E1668A	PCB-34	37680-68-5	ng/g					
E1668A	PCB-35	37680-69-6	ng/g					
E1668A	PCB-36	38444-87-0	ng/g					
E1668A	PCB-37	38444-90-5	ng/g					
E1668A	PCB-38	53555-66-1	ng/g					
E1668A	PCB-39	38444-88-1	ng/g					
E1668A	PCB-40	38444-93-8	ng/g					
E1668A	PCB-41	52663-59-9	ng/g					
E1668A	PCB-42	36559-22-5	ng/g					
E1668A	PCB-43	70362-46-8	ng/g					
E1668A	PCB-44	41464-39-5	ng/g					
E1668A	PCB-45	41464-39-5	ng/g					
E1668A	PCB-46	41464-47-5	ng/g					
E1668A	PCB-47	2437-79-8	ng/g					
E1668A	PCB-48	70362-47-9	ng/g					
E1668A	PCB-49	41464-40-8	ng/g					
E1668A	PCB-50	62796-65-0	ng/g					
E1668A	PCB-51	68194-04-7	ng/g					
E1668A	PCB-52	35693-99-3	ng/g					
E1668A	PCB-53	41464-41-9	ng/g					
E1668A	PCB-54	15968-05-5	ng/g					
E1668A	PCB-55	74338-24-2	ng/g					
E1668A	PCB-56	41464-43-1	ng/g					
E1668A	PCB-57	70424-67-8	ng/g					
E1668A	PCB-58	41464-49-7	ng/g					
E1668A	PCB-59	74472-33-6	ng/g					
E1668A	PCB-60	33025-41-1	ng/g					
E1668A	PCB-61	33284-53-6	ng/g					
E1668A	PCB-62	54230-22-7	ng/g					
E1668A	PCB-63	74472-34-7	ng/g					
E1668A	PCB-64	52663-58-8	ng/g					
E1668A	PCB-65	33284-54-7	ng/g					
E1668A	PCB-66	32598-10-0	ng/g					
E1668A	PCB-67	73575-53-8	ng/g					
E1668A	PCB-68	73575-52-7	ng/g					
E1668A	PCB-69	60233-24-1	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	r4-sc1b-60to70-82819	r4-sc1b-70to80-82819	r4-sc1b-80to90-82819	r4-sc1b-90to100-82819	R4-SC-8to10-102118
	Date Time			8/28/2019 15:50:00	8/28/2019 15:55:00	8/28/2019 16:30:00	8/28/2019 16:40:00	10/21/2018 19:40:00
	X			7635121	7635121	7635121	7635121	7635121
	Y			700172	700172	700172	700172	700172
	Top (cm)			183	213	244	274	244
	Bottom (cm)			213	244	274	305	305
E1668A	PCB-70	32598-11-1	ng/g					
E1668A	PCB-71	41464-46-4	ng/g					
E1668A	PCB-72	41464-42-0	ng/g					
E1668A	PCB-73	74338-23-1	ng/g					
E1668A	PCB-74	32690-93-0	ng/g					
E1668A	PCB-75	32598-12-2	ng/g					
E1668A	PCB-76	70362-48-0	ng/g					
E1668A	PCB-77	32598-13-3	ng/g					
E1668A	PCB-78	70362-49-1	ng/g					
E1668A	PCB-79	41464-48-6	ng/g					
E1668A	PCB-80	33284-52-5	ng/g					
E1668A	PCB-81	70362-50-4	ng/g					
E1668A	PCB-82	52663-62-4	ng/g					
E1668A	PCB-83	60145-20-2	ng/g					
E1668A	PCB-84	52663-60-2	ng/g					
E1668A	PCB-85	65510-45-4	ng/g					
E1668A	PCB-86	55312-69-1	ng/g					
E1668A	PCB-87	38380-02-8	ng/g					
E1668A	PCB-88	55215-17-3	ng/g					
E1668A	PCB-89	73575-57-2	ng/g					
E1668A	PCB-90	68194-07-0	ng/g					
E1668A	PCB-91	68194-05-8	ng/g					
E1668A	PCB-92	52663-61-3	ng/g					
E1668A	PCB-93	73575-56-1	ng/g					
E1668A	PCB-94	73575-55-0	ng/g					
E1668A	PCB-95	38379-99-6	ng/g					
E1668A	PCB-96	73575-54-9	ng/g					
E1668A	PCB-97	41464-51-1	ng/g					
E1668A	PCB-98	60233-25-2	ng/g					
E1668A	PCB-99	38380-01-7	ng/g					
E1668A	PCB-100	39485-83-1	ng/g					
E1668A	PCB-101	37680-73-2	ng/g					
E1668A	PCB-102	68194-06-9	ng/g					
E1668A	PCB-103	60145-21-3	ng/g					
E1668A	PCB-104	56558-16-8	ng/g					
E1668A	PCB-105	32598-14-4	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	r4-sc1b-60to70-82819	r4-sc1b-70to80-82819	r4-sc1b-80to90-82819	r4-sc1b-90to100-82819	R4-SC-8to10-102118
	Date Time			8/28/2019 15:50:00	8/28/2019 15:55:00	8/28/2019 16:30:00	8/28/2019 16:40:00	10/21/2018 19:40:00
	X			7635121	7635121	7635121	7635121	7635121
	Y			700172	700172	700172	700172	700172
	Top (cm)			183	213	244	274	244
	Bottom (cm)			213	244	274	305	305
E1668A	PCB-106	70424-69-0	ng/g					
E1668A	PCB-107	70424-68-9	ng/g					
E1668A	PCB-108	70362-41-3	ng/g					
E1668A	PCB-109	74472-35-8	ng/g					
E1668A	PCB-110	38380-03-9	ng/g					
E1668A	PCB-111	39635-32-0	ng/g					
E1668A	PCB-112	74472-36-9	ng/g					
E1668A	PCB-113	68194-10-5	ng/g					
E1668A	PCB-114	74472-37-0	ng/g					
E1668A	PCB-115	74472-38-1	ng/g					
E1668A	PCB-116	18259-05-7	ng/g					
E1668A	PCB-117	68194-11-6	ng/g					
E1668A	PCB-118	31508-00-6	ng/g					
E1668A	PCB-119	56558-17-9	ng/g					
E1668A	PCB-120	68194-12-7	ng/g					
E1668A	PCB-121	56558-18-0	ng/g					
E1668A	PCB-122	76842-07-4	ng/g					
E1668A	PCB-123	65510-44-3	ng/g					
E1668A	PCB-124	70424-70-3	ng/g					
E1668A	PCB-125	74472-39-2	ng/g					
E1668A	PCB-126	57465-28-8	ng/g					
E1668A	PCB-127	39635-33-1	ng/g					
E1668A	PCB-128	38380-07-3	ng/g					
E1668A	PCB-129	55215-18-4	ng/g					
E1668A	PCB-130	52663-66-8	ng/g					
E1668A	PCB-131	61798-70-7	ng/g					
E1668A	PCB-132	38380-05-1	ng/g					
E1668A	PCB-133	35694-04-3	ng/g					
E1668A	PCB-134	52704-70-8	ng/g					
E1668A	PCB-135	52744-13-5	ng/g					
E1668A	PCB-136	38411-22-2	ng/g					
E1668A	PCB-137	35694-06-5	ng/g					
E1668A	PCB-138	35065-28-2	ng/g					
E1668A	PCB-139	56030-56-9	ng/g					
E1668A	PCB-140	59291-64-4	ng/g					
E1668A	PCB-141	52712-04-6	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	r4-sc1b-60to70-82819	r4-sc1b-70to80-82819	r4-sc1b-80to90-82819	r4-sc1b-90to100-82819	R4-SC-8to10-102118
	Date Time			8/28/2019 15:50:00	8/28/2019 15:55:00	8/28/2019 16:30:00	8/28/2019 16:40:00	10/21/2018 19:40:00
	X			7635121	7635121	7635121	7635121	7635121
	Y			700172	700172	700172	700172	700172
	Top (cm)			183	213	244	274	244
	Bottom (cm)			213	244	274	305	305
E1668A	PCB-142	41411-61-4	ng/g					
E1668A	PCB-143	68194-15-0	ng/g					
E1668A	PCB-144	68194-14-9	ng/g					
E1668A	PCB-145	74472-40-5	ng/g					
E1668A	PCB-146	51908-16-8	ng/g					
E1668A	PCB-147	68194-13-8	ng/g					
E1668A	PCB-148	74472-41-6	ng/g					
E1668A	PCB-149	38380-04-0	ng/g					
E1668A	PCB-150	68194-08-1	ng/g					
E1668A	PCB-151	52663-63-5	ng/g					
E1668A	PCB-152	68194-09-2	ng/g					
E1668A	PCB-153	35065-27-1	ng/g					
E1668A	PCB-154	60145-22-4	ng/g					
E1668A	PCB-155	33979-03-2	ng/g					
E1668A	PCB-156	38380-08-4	ng/g					
E1668A	PCB-157	69782-90-7	ng/g					
E1668A	PCB-158	74472-42-7	ng/g					
E1668A	PCB-159	39635-35-3	ng/g					
E1668A	PCB-160	41411-62-5	ng/g					
E1668A	PCB-161	74472-43-8	ng/g					
E1668A	PCB-162	39635-34-2	ng/g					
E1668A	PCB-163	74472-44-9	ng/g					
E1668A	PCB-164	74472-45-0	ng/g					
E1668A	PCB-165	74472-46-1	ng/g					
E1668A	PCB-166	41411-63-6	ng/g					
E1668A	PCB-167	52663-72-6	ng/g					
E1668A	PCB-168	59291-65-5	ng/g					
E1668A	PCB-169	32774-16-6	ng/g					
E1668A	PCB-170	35065-30-6	ng/g					
E1668A	PCB-171	52663-71-5	ng/g					
E1668A	PCB-172	52663-74-8	ng/g					
E1668A	PCB-173	68194-16-1	ng/g					
E1668A	PCB-174	38411-25-5	ng/g					
E1668A	PCB-175	40186-70-7	ng/g					
E1668A	PCB-176	52663-65-7	ng/g					
E1668A	PCB-177	52663-70-4	ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	r4-sc1b-60to70-82819	r4-sc1b-70to80-82819	r4-sc1b-80to90-82819	r4-sc1b-90to100-82819	R4-SC-8to10-102118
	Date Time			8/28/2019 15:50:00	8/28/2019 15:55:00	8/28/2019 16:30:00	8/28/2019 16:40:00	10/21/2018 19:40:00
	X			7635121	7635121	7635121	7635121	7635121
	Y			700172	700172	700172	700172	700172
	Top (cm)			183	213	244	274	244
	Bottom (cm)			213	244	274	305	305
E1668A	PCB-178	52663-67-9	ng/g					
E1668A	PCB-179	52663-64-6	ng/g					
E1668A	PCB-180	35065-29-3	ng/g					
E1668A	PCB-181	74472-47-2	ng/g					
E1668A	PCB-182	60145-23-5	ng/g					
E1668A	PCB-183	52663-69-1	ng/g					
E1668A	PCB-184	74472-48-3	ng/g					
E1668A	PCB-185	52712-05-7	ng/g					
E1668A	PCB-186	74472-49-4	ng/g					
E1668A	PCB-187	52663-68-0	ng/g					
E1668A	PCB-188	74487-85-7	ng/g					
E1668A	PCB-189	39635-31-9	ng/g					
E1668A	PCB-190	41411-64-7	ng/g					
E1668A	PCB-191	74472-50-7	ng/g					
E1668A	PCB-192	74472-51-8	ng/g					
E1668A	PCB-193	69782-91-8	ng/g					
E1668A	PCB-194	35694-08-7	ng/g					
E1668A	PCB-195	52663-78-2	ng/g					
E1668A	PCB-196	42740-50-1	ng/g					
E1668A	PCB-197	33091-17-7	ng/g					
E1668A	PCB-198	68194-17-2	ng/g					
E1668A	PCB-199	52663-75-9	ng/g					
E1668A	PCB-200	52663-73-7	ng/g					
E1668A	PCB-201	40186-71-8	ng/g					
E1668A	PCB-202	2136-99-4	ng/g					
E1668A	PCB-203	52663-76-0	ng/g					
E1668A	PCB-204	74472-52-9	ng/g					
E1668A	PCB-205	74472-53-0	ng/g					
E1668A	PCB-206	40186-72-9	ng/g					
E1668A	PCB-207	52663-79-3	ng/g					
E1668A	PCB-208	52663-77-1	ng/g					
E1668A	PCB-209	2051-24-3	ng/g					
E1668A	Total Dichlorobiphenyls		ng/g					
E1668A	Total Heptachlorobiphenyls		ng/g					
E1668A	Total Hexachlorobiphenyls		ng/g					
E1668A	Total Monochlorobiphenyls		ng/g					

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	r4-sc1b-60to70-82819	r4-sc1b-70to80-82819	r4-sc1b-80to90-82819	r4-sc1b-90to100-82819	R4-SC-8to10-102118
	Date Time			8/28/2019 15:50:00	8/28/2019 15:55:00	8/28/2019 16:30:00	8/28/2019 16:40:00	10/21/2018 19:40:00
	X			7635121	7635121	7635121	7635121	7635121
	Y			700172	700172	700172	700172	700172
	Top (cm)			183	213	244	274	244
	Bottom (cm)			213	244	274	305	305
E1668A	Total Nonachlorobiphenyls		ng/g					
E1668A	Total Octachlorobiphenyls		ng/g					
E1668A	Total Pentachlorobiphenyls		ng/g					
E1668A	Total Tetrachlorobiphenyls		ng/g					
E1668A	Total Trichlorobiphenyls		ng/g					
E1668A	Polychlorinated biphenyls, Total	1336-36-3	ng/g					
PAHs								
SW8270D	2-Methylnaphthalene	91-57-6	ug/kg	6.8 J	9.3 J	14 J	15 J	
SW8270D	Acenaphthene	83-32-9	ug/kg	9.4 J	7.7 J	10 J	9.6 J	
SW8270D	Acenaphthylene	208-96-8	ug/kg	7.9 J	8.7 J	15 J	13 J	
SW8270D	Anthracene	120-12-7	ug/kg	17	14	20	17	
SW8270D	Benzo(a)anthracene	56-55-3	ug/kg	45	40	34	25	
SW8270D	Benzo(a)pyrene	50-32-8	ug/kg	55	49	51	35	
SW8270D	Benzo(b)fluoranthene	205-99-2	ug/kg	67	56	54	36	
SW8270D	Benzo(g,h,i)perylene	191-24-2	ug/kg	46	40	52	33	
SW8270D	Benzo(k)fluoranthene	207-08-9	ug/kg	22	20	18	12	
SW8270D	Chrysene	218-01-9	ug/kg	58	52	46	34	
SW8270D	Dibenzo(a,h)anthracene	53-70-3	ug/kg	9.4	8.3	7.4	4.8	
SW8270D	Dibenzofuran	132-64-9	ug/kg	4.5 J	4 J	5.7 J	5.5 J	
SW8270D	Fluoranthene	206-44-0	ug/kg	110 J	87 J	96 J	80 J	
SW8270D	Fluorene	86-73-7	ug/kg	9.8 J	8.6 J	11 J	11 J	
SW8270D	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	45	38	45	30	
SW8270D	Naphthalene	91-20-3	ug/kg	14 J	17 J	30 J	25 J	
SW8270D	Phenanthrene	85-01-8	ug/kg	71 J	59 J	75 J	72 J	
SW8270D	Pyrene	129-00-0	ug/kg	120	99	120	95	
Calculated Totals								
ALS SOP	CALC_TOTAL_DDD_ND_PDI		ug/kg	4.2 AT	3.5 AJT	4.2 R	4 AJT	
ALS SOP	CALC_TOTAL_DDE_ND_PDI		ug/kg	7.3 AT	3.5 AT	4.5 AT	3.9 AT	
ALS SOP	CALC_TOTAL_DDT_ND_PDI		ug/kg	0.94 UT	0.94 UT	0.94 UT	0.94 UT	
ALS SOP	CALC_TOTAL_DDx_ND_PDI		ug/kg	11 T	7.1 JT	8.8 T	7.9 JT	
E1668A	CALC_TOTAL_PCB_ND_PDI		ug/kg					
SW8082A	CALC_TOTAL_AROCLORS_ND_PDI		ug/kg	410 AT	320 JT	240 JNT	300 T	
SW8270D	CALC_TOTAL_CPAH_ND_PDI		ug/kg	80 T	71 T	72 T	49 T	
SW8270D	CALC_TOTAL_HPAH_ND_PDI		ug/kg	490 JT	410 JT	450 JT	340 JT	
SW8270D	CALC_TOTAL_LPAH_ND_PDI		ug/kg	140 JT	120 JT	180 JT	160 JT	
SW8270D	CALC_TOTAL_PAH_ND_PDI		ug/kg	620 JT	540 JT	630 JT	500 JT	

Appendix F. Validated Results - Core Samples

Analysis Method	Parameter	CAS Number	Units	r4-sc1b-60to70-82819	r4-sc1b-70to80-82819	r4-sc1b-80to90-82819	r4-sc1b-90to100-82819	R4-SC-8to10-102118
	Date Time			8/28/2019 15:50:00	8/28/2019 15:55:00	8/28/2019 16:30:00	8/28/2019 16:40:00	10/21/2018 19:40:00
	X			7635121	7635121	7635121	7635121	7635121
	Y			700172	700172	700172	700172	700172
	Top (cm)			183	213	244	274	244
	Bottom (cm)			213	244	274	305	305

DDx = dichlorodiphenyltrichloroethane and its derivatives

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyls

PeCDD = Pentachlorodibenzo-p-dioxin

PeCDF = Pentachlorodibenzofuran

TCDD = Tetrachlorodibenzo-p-dioxin

ug/kg = micrograms per kilogram

ng/g = nanograms per gram

% = percent

g/cm3 = grams per cubic centimeter

J = Reported result is an estimate

T = Total concentration from component analytes.

U = Analyte was not detected in sample

R = Rejected

APPENDIX G
AROCLOR BIAS EVALUATION

February 17, 2021

Ms. Jennifer Sanscrainte
Ogden Murphy Wallace P.L.L.C.
901 Fifth Avenue, Suite 3500
Seattle, WA 98164

Re: Evaluation of Bias in Polychlorinated Biphenyl (PCB) Results for Swan Island Lagoon (SIL) Sediments

Dear Ms. Sanscrainte:

This letter transmits two evaluations of import to Portland Harbor Superfund Site data quality and data use. The two evaluations are:

1. Evaluation of Bias in Polychlorinated Biphenyl Results for Swan Island Lagoon Sediments Obtained by EPA Method 8082A for Aroclors by Pacific Groundwater Group (PGG) (May 2020)[1].

2. Preliminary Evaluation of SIL PCB/Aroclor Sediment Data Generated by TestAmerica of Seattle, Washington by D.M.D., Inc. (April 20, 2020)[2].

The purpose of the PGG evaluation is to assess low bias that PGG observed in Aroclor totals by TestAmerica Seattle relative to polychlorinated biphenyl (PCB) congener totals for homogenized split sediment samples in Swan Island Lagoon (SIL) collected as part of:

1. Daimler Trucks North America (DTNA) 2018 sediment investigation (PGG 2019a[3] and 2021[4]) and

2. de maximis, inc. 2018 Head of the SIL Sediment Characterization (PGG 2019b[5]).

[1] PGG, 2020 (attached). Evaluation of Bias in Polychlorinated Biphenyl Results for Swan Island Lagoon Sediments Obtained by EPA Method 8082A for Aroclors.
[2] D.M.D., Inc., 2020 (attached). Preliminary Evaluation of SIL PCB/Aroclor Sediment Data Generated by TestAmerica (TA) of Seattle, Washington.
[3] PGG, 2019a. Surface and Subsurface Sediment Field Sampling Data Report, Swan Island Lagoon, Portland Harbor Superfund Site. Prepared for Daimler Trucks North America LLC.
[4] PGG, 2021. Phase 1b Surface and Subsurface Sediment Field Sampling Data Report, Swan Island Lagoon, Portland Harbor Superfund Site. Prepared for Daimler Trucks North America LLC.
[5] PGG, 2019b. Surface and Subsurface Sediment Field Sampling Data Report, Head of Swan Island Lagoon, Portland Harbor Superfund Site. Prepared for de maximis, inc.

PGG performed this evaluation using existing 2018 and 2019 third-party validated data. The data were submitted to US Environmental Protection Agency (USEPA) by DTNA (PGG 2019a) and de maximis, inc. (PGG 2019b).

PGG used inter-method and inter-laboratory comparisons to assess bias in TestAmerica Seattle total Aroclors. PGG finds that the TestAmerica (Seattle) PCB Aroclor results suffer from a statistically significant negative (low) bias relative to PCB congener results (Exhibit 1). On average, TestAmerica's total Aroclor results are about six times lower than split total PCB congener results. Consequently, the false negative rate is 78% at the Remedial Action Level (75 micrograms per kilogram [ug/kg]) and 100% at the Principal Threat Waste (PTW) threshold (200 ug/kg). This means the TestAmerica (Seattle) total Aroclor data is unsuitable for concentration interpolations and Sediment Management Area (SMA) delineations.

The purpose of D.M.D, Inc.'s review (2020) is to identify possible causes of apparent consistent low bias in Aroclor results generated by TestAmerica (Seattle). This preliminary review identifies multiple deficiencies in data generation that result in biased reporting of total PCBs in sediment samples, such as erroneous target analyte identifications and/or low bias in reported concentrations. Factors identified as having potentially significant and adverse effects on data quality are:

1. Target analyte recovery indicators (surrogate compounds and matrix spikes) are typically at the low end of performance specifications.

2. Generally inadequate extract clean-ups to allow detection and identification of all target analytes.

3. Unreliable data processing algorithm for identification and quantitation of all target analytes, especially for mixtures of Aroclors.

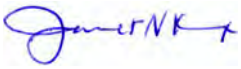
In the Swan Island Lagoon, TestAmerica Aroclor data for the Pre-Design Group Investigation (PDI) (AECOM and Geosyntec 2019[6]), DTNA (PGG 2019a and 2021), and de maximis (PGG 2019b) overwhelmingly quantify one Aroclor per sample for detections (98.7%), while the Portland Harbor Superfund Remedial Investigation data typically quantify more than one Aroclor (91.1%) (Exhibit 2). Further, surrogate recoveries, identified by D.M.D., Inc. (2020) as a potential indicator of systematic performance issues, are at the low end of performance specifications across TestAmerica Aroclor results for PDI, DTNA, and de maximis data (Exhibit 3).

Based on this work, we recommend that all TestAmerica (Seattle) Aroclor results be excluded from the SIL data set. The issues identified are not unique to SIL samples and likely extend to other TestAmerica (Seattle) Aroclor data such as in the PDI data set.

[6] AECOM and Geosyntec, 2019. Pre-Remedial Design Footprint Report, Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling, Portland Harbor Superfund Site.

Sincerely,

Pacific Groundwater Group



Janet N. Knox LG, President & Principal Environmental Geochemist

Attachments:

Exhibit 1. Total PCB Comparison, Values <750 ug/kg, Swan Island Lagoon

Exhibit 2. Number of Aroclors Detected, RI Data and TestAmerica (Seattle) Data, Swan Island Lagoon

Exhibit 3. Sample Surrogate Recoveries, TMCX vs DCB, SW8082A Aroclors, TestAmerica (Seattle)

Exhibit 1.

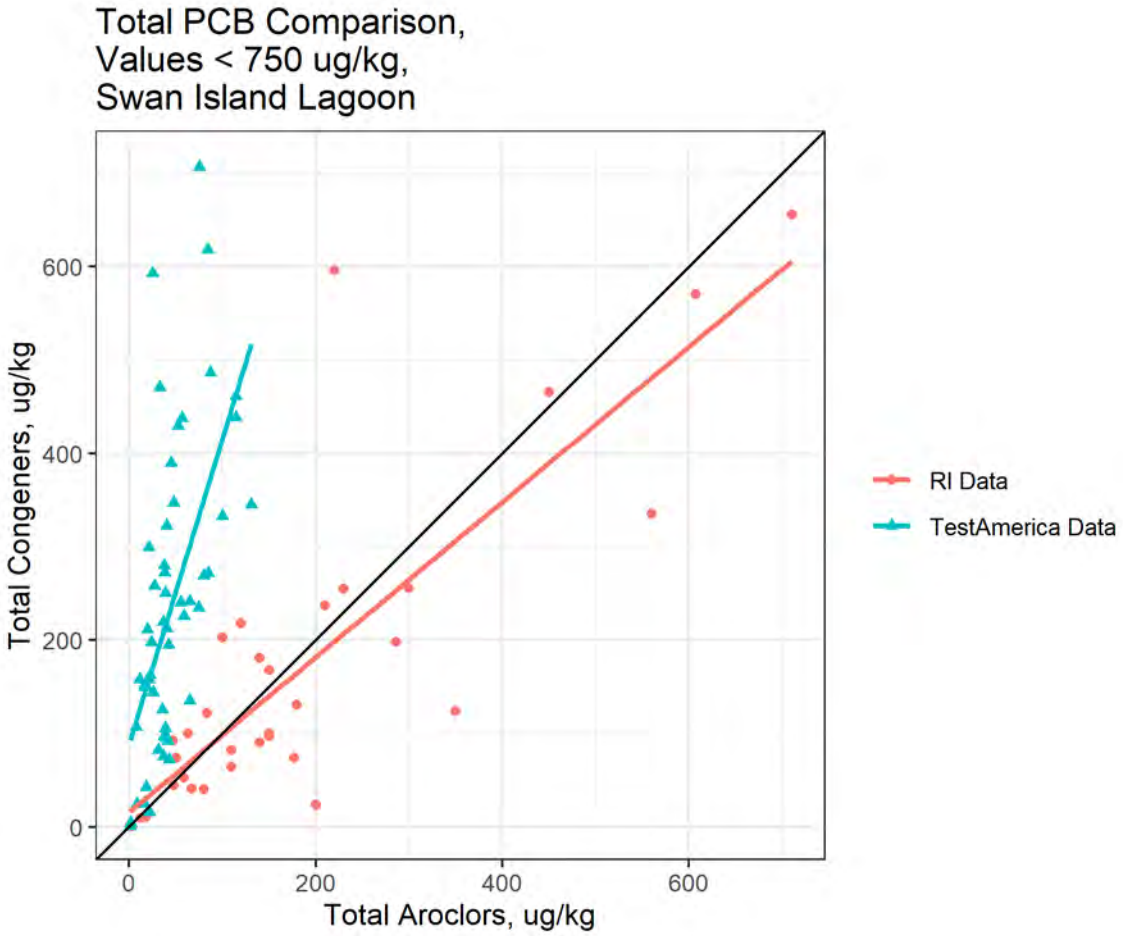

Total PCB Comparison,
Values < 750 ug/kg,
Swan Island Lagoon
Total Congeners, ug/kg
0
200
400
600
Total Aroclors, ug/kg
0
200
400
600
RI Data
TestAmerica Data

Exhibit 2.

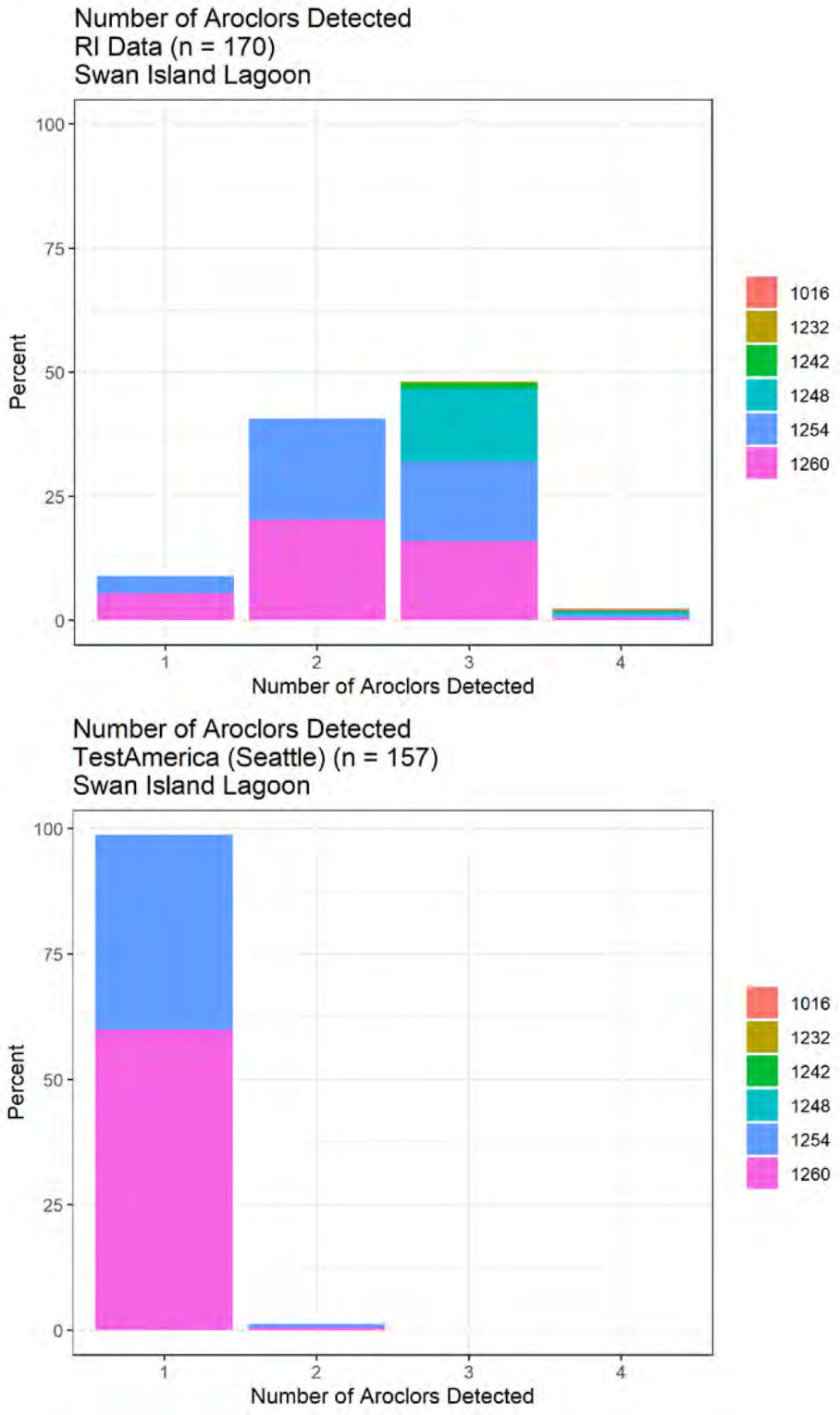
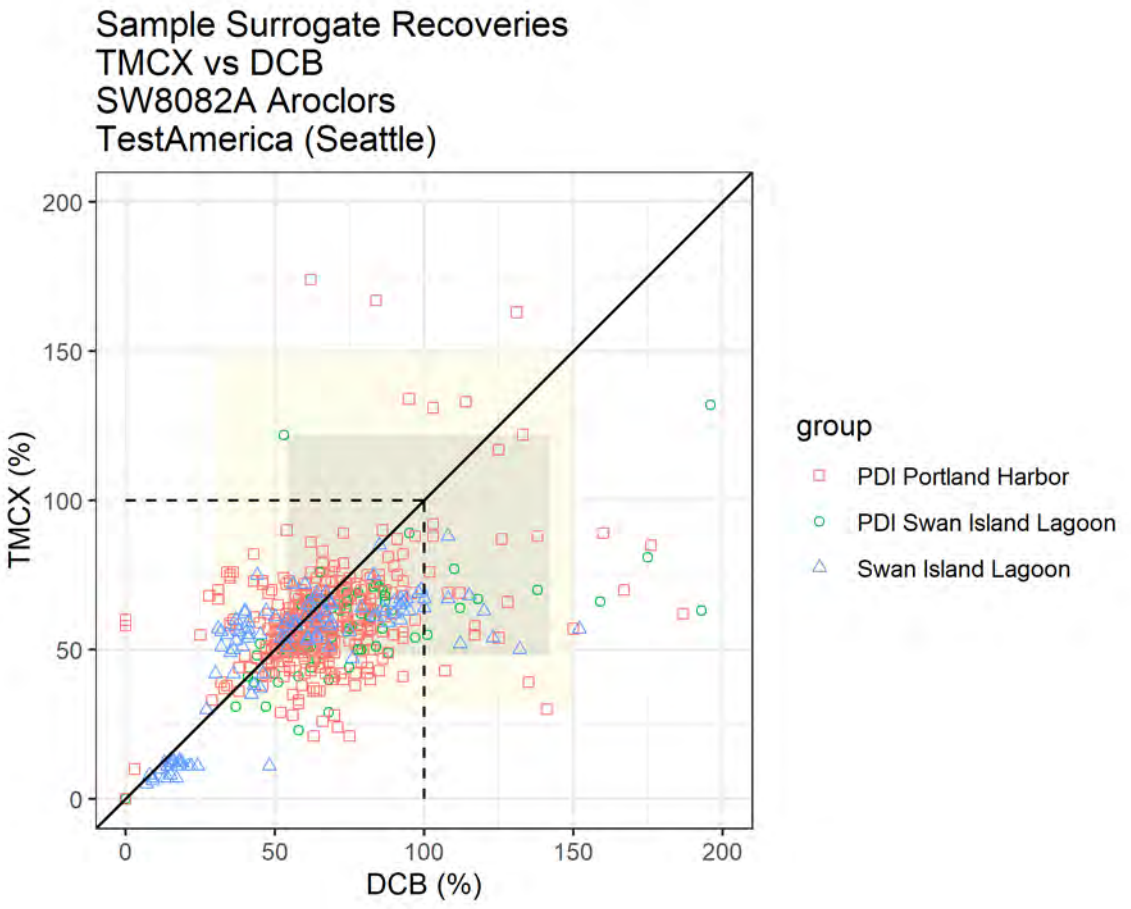

Number of Aroclors Detected
RI Data (n = 170)
Swan Island Lagoon
Percent
100
75
50
25
0
1
2
3
4
Number of Aroclors Detected
1016
1232
1242
1248
1254
1260
Number of Aroclors Detected
TestAmerica (Seattle) (n = 157)
Swan Island Lagoon
Percent
100
75
50
25
0
1
2
3
4
Number of Aroclors Detected
1016
1232
1242
1248
1254
1260

Exhibit 3.



Grey box shows the TestAmerica surrogate control limits. Yellow box shows the National Function Guidelines control limits. Dashed line indicates 100 percent surrogate recovery.

Technical Memorandum

To: Jennifer Sanscrainte, Ogden Murphy Wallace (OMW)

From: Jeffrey Parker, Janet Knox, and Nick Waldo, Pacific Groundwater Group (PGG)

Re: Evaluation of Bias in Polychlorinated Biphenyl Results for Swan Island Lagoon Sediments Obtained by EPA Method 8082A for Aroclors

Date: May 12, 2020 rev. February 17, 2021

EXECUTIVE SUMMARY

In 2018 and 2019 Daimler Trucks North America (DTNA) (PGG 2019a and 2021) and de maximis, inc. (de maximis) (PGG 2019b) collected surface and subsurface sediments in the Swan Island Lagoon (SIL) portion of the Portland Harbor Superfund Site (PHSS). The purpose of this sampling study was to determine whether the TestAmerica (Seattle) polychlorinated biphenyl (PCB) Aroclor sampling results collected during DTNA and de maximis investigations were suitable for use in remedial design (RD) for the SIL. As part of this study PGG performed a comparative analysis of those results with existing data from other studies. This memo describes PGG's inter-method and inter-laboratory evaluation for determining if there was any evidence of bias in the PCB sampling results obtained by US Environmental Protection Agency (EPA) method 8082A for Aroclors.

During the course of PGG's review of third-party validated data collected as part of DTNA's 2018 sediment investigation (PGG 2019a) and de maximis 2018 Head of the SIL Sediment Characterization (PGG 2019b), PGG observed low bias in Aroclor totals from TestAmerica Seattle relative to PCB congener totals for split and co-located samples. EPA's *Draft Remedial Design Guidelines and Considerations, Portland Harbor Superfund Site, Portland, Oregon* (EPA 2020) states that Aroclor and congener methods for estimating total PCB concentrations in sediments can be used interchangeably in some instances. The accuracy of the Aroclor results are important for the purpose of comparing them to threshold concentrations of the PHSS Remedial Action Level (RAL) of 75 micrograms per kilogram (ug/kg) or Cleanup Level (CUL) (9 ug/kg) (EPA 2019). In particular, the use of low-biased total PCB results in RD for the SIL (and for the rest of the PHSS) could lead to underestimating the extent of PCB contamination and produce a remedy that would not meet the Record of Decision's remedial action objectives.

For the purpose of this evaluation, PGG performed an inter-method comparison of total PCBs between EPA method 8082A (Aroclors) and EPA Method 1668A (congeners) using Remedial Investigation (RI) data for SIL from homogenized split sediment samples; DTNA and de maximis homogenized split sediment samples analyzed at TestAmerica (Seattle) (Aroclors) and TestAmerica (Knoxville) (congeners); and DTNA homogenized split sediment samples analyzed at Analytical Resources, Inc. (ARI) (Tukwila) (Aroclors) and TestAmerica (Knoxville)

(congeners). PGG also performed an inter-laboratory comparison of total PCBs between EPA method 8082A (Aroclors) that were analyzed by TestAmerica (Seattle) and ARI (Tukwila) from DTNA's homogenized split sediment samples and composited sample results. The data sets used for this evaluation are further discussed in Section 2.0 and the methods of comparison are provided in Section 3.0 of this memorandum.

Based on evaluation of five sample delivery groups (SDGs), PGG found that the TestAmerica (Seattle) PCB Aroclor results suffer from a statistically significant negative (low) bias relative to PCB congener results for the same samples. More specifically, PGG's analysis has found that, on average, the TestAmerica (Seattle) PCB Aroclor results are about six times lower than split total PCB congener results. In contrast, PGG determined that there was no bias between RI Aroclor and congener results and no bias between TestAmerica PCB congener results and ARI PCB Aroclor results. PGG's comparative analysis of homogenized split sediment samples found that the false negative rate was 78% at the RAL (75 ug/kg) and 100% at the Principal Threat Waste (PTW) threshold (200 ug/kg). Consequently, PGG has determined that most of the total PCB Aroclor concentrations reported by TestAmerica as below the RAL (75 ug/kg) are reported as above the RAL for total PCB congener concentrations.

Therefore, PGG has determined that there is low to no confidence that TestAmerica total PCB Aroclor concentrations below the RAL are true negatives, and it is very likely that many of these negatives have true values above the RAL. Moreover, when TestAmerica's total PCB Aroclor concentrations are shown to be above the RAL there is good confidence that the true value is also above the RAL even though the concentrations are likely biased low. These results are discussed in Section 4.0.

False negatives can result in inaccurate RD decision-making, in Section 5.0 we provide a list of recommendations for use of existing PCB data in RD for the SIL. Specifically, we recommend that all TestAmerica (Seattle) Aroclor results be excluded from SIL data sets. The issues identified are not unique to SIL samples and likely extend to other TestAmerica (Seattle) Aroclor data such as in the PDI data set.

1.0 BACKGROUND

The purpose of this inter-method and inter-laboratory comparison is to determine whether the TestAmerica (Seattle) Aroclor results from DTNA and de maximis investigations are suitable for use in RD.

In the DTNA and de maximis data sets, PGG observed disagreement between the TestAmerica total Aroclor and total congener results for the co-located and split sediment samples. This observation runs counter to the conclusions from Lower Willamette Group's (LWG's) Draft RI comparative analysis of Aroclors and congeners (Integral 2011). That report found "measured total PCB concentrations are fairly comparable between methods in most cases (especially when measurement error is considered)." The LWG report, as presented in Appendix D1.4 of the RI report (EPA 2016), is the basis of EPA's draft RD guidance statement that Aroclor and congener methods can be used interchangeably if reporting limits are below the Cleanup Level (CUL) of 9 ug/kg (EPA 2020). See Figure 1 below reproduced from the Integral 2011 report.

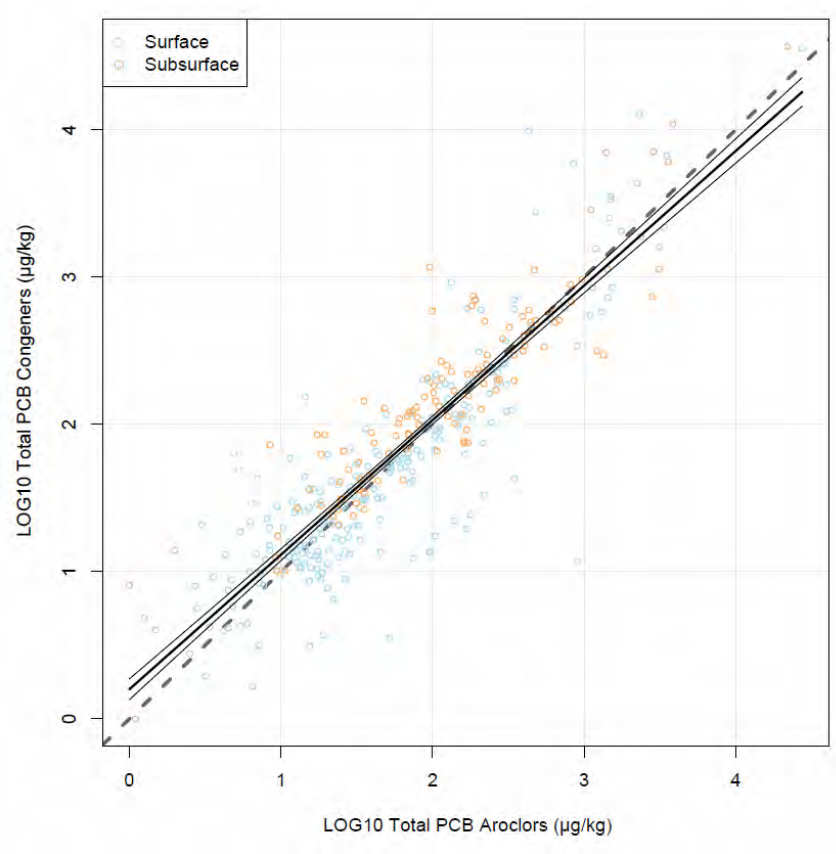


Figure 1. Comparison of total PCBs for Portland Harbor Remedial Investigation data (From Integral 2011 and EPA 2016). The 45-degree line (1:1 line) is shown dashed, and the solid lines show the regression fit line and 95% confidence intervals. Note that the data are log-transformed "to satisfy the assumptions of normality for linear regression."

PGG's scrutiny of the Aroclor data at this time, prior to RD, is timely for a number of reasons, including the following:

1) EPA's draft RD guidance (EPA 2020) states Aroclor and congener methods can be used interchangeably when Aroclor reporting limits are below the CUL (9 ug/kg) (EPA 2020).

2) The Pre-Remedial Design Group (Pre-RD Group) used the same laboratories as the DTNA and de maximis studies for both PCB methods (TestAmerica Seattle and Knoxville for Aroclors and congeners, respectively).

3) The absence of paired Aroclor and congener results (e.g. from homogenized split samples) in the Pre-RD Group's 2018 Portland Harbor Pre-Remedial Design Investigation (PDI) means the trueness of their TestAmerica Aroclor results in SIL cannot be directly verified using split congener results.

4) There are 10 sample delivery groups (SDGs) of PCB Aroclors from TestAmerica (Seattle) with SIL sediment samples across all three investigations (i.e. PDI, DTNA, and de maximis), allowing for data quality issues to be address within RD Sampling and Analysis Plans.

2.0 DESCRIPTION OF DATA SETS

This memo presents a comparative analysis that relies on three SIL data sets:

- SIL data from the RI Database (2016-02-08 Portland Harbor RI Appendix A3_RI-Dataset_RA-SummedParams.accdb, EPA 2016, Appendix A)
- DTNA's 2018 SIL Sediment Investigation (PGG 2019a and PGG 2021)
- de maximis 2018 Head of SIL Sediment Investigation (PGG 2019b)

The RI data for SIL were queried from the RI database for samples analyzed for both Aroclors and congeners. These data were collected between 2004 to 2008 as part of LWG's Round 2 and Round 3 investigations. Columbia Analytical Services in Kelso, WA (CAS now dba ALS Global) analyzed the bulk of the samples for PCB Aroclors.

The DTNA and de maximis data were collected in fall 2018 as part of two different SIL investigations (PGG 2019a and 2019b). Both of those data sets have been submitted to and approved for use in RD by EPA. The investigations closely followed the sampling and analysis protocols laid out in the Pre-Design Investigation plans (AECOM and Geosyntec 2018a-c). Accordingly, DTNA and de maximis used the same analytical laboratories as PDI. DTNA's sediment Sampling and Analysis Plan (SAP) provided for a second phase of sediment sample analyses from archived samples (PGG 2018). Data from this second phase of analyses are included here as well (PGG 2021).

As mentioned above, PGG's comparative analysis does not include data from Pre-RD Group's 2018 Portland Harbor Pre-Remedial Design Investigation (PDI) due to the absence of paired Aroclor and congener results (e.g. from homogenized split samples).

Note that the RI data set summation rules treat non-detects as zero concentrations. Whereas the post-ROD data summation rules, used for DTNA and de maximis data sets per EPA RD Guidance (EPA 2020), add to the detects half of the single highest non-detect value. These minor data summation differences do not affect the comparative analysis within a data set (e.g. RI database total Aroclors compared to total congeners.)

These data sets are included in Attachment A Tables A1-A4.

3.0 METHODS

PGG performed the following comparative analyses:

1) An inter-method comparison between PCBs by EPA method 8082A (Aroclors) and EPA Method 1668A (congeners) using

    a. RI data for SIL from homogenized split sediment samples (n = 44).

    b. DTNA and de maximis homogenized split sediment samples analyzed at TestAmerica (Seattle) (Aroclors) and TestAmerica (Knoxville) (congeners) (n = 57).

c. DTNA homogenized split sediment samples analyzed at Analytical Resources, Inc. (Tukwila) (Aroclors) and TestAmerica (Knoxville) (congeners) (n = 11).

2) An inter-laboratory comparison of total PCBs between EPA method 8082A (Aroclors) analyzed by TestAmerica (Seattle) and ARI (Tukwila) from DTNA's homogenized split sediment samples and composited sample results (n = 33).

We evaluated the paired samples for inter-method agreement using a handful of statistical methods including scatter plots with Lin's concordance correlation coefficient (CCC) (Lin 1989 and Lin et al. 2000) and Bland-Altman plots to evaluate a bias. Use of linear regressions and correlation coefficients (r^2 values) for this type of comparison is not advisable because it can lead to incorrect interpretations (e.g. Lin 1989) due to shifts in location or scale (Figure 2). Note, the inter-method comparison by Integral (2011) used a linear regression of log-transformed data, reported the r^2, and qualitatively described the scale shift.

We similarly plotted the data on scatter plots to show the observed relationship of total PCB Aroclor and congener concentrations. We then calculate Lin's CCC for agreement, which combines measures of both precision and accuracy to show how far the observed data deviate by location or scale shifts from the line of perfect concordance (that is, the line at 45 degrees on a square scatter plot) (Figure 2). Lin's CCC ranges from 0 to 1, increasing as a function of the accuracy and precision of the data. Lin's CCC does not describe the fine structure of agreement and disagreement, which is inspected using Bland-Altman plots. We perform the Lin's CCC calculation using the epi.ccc function implemented in the epiR R package (Stevenson et al 2013).

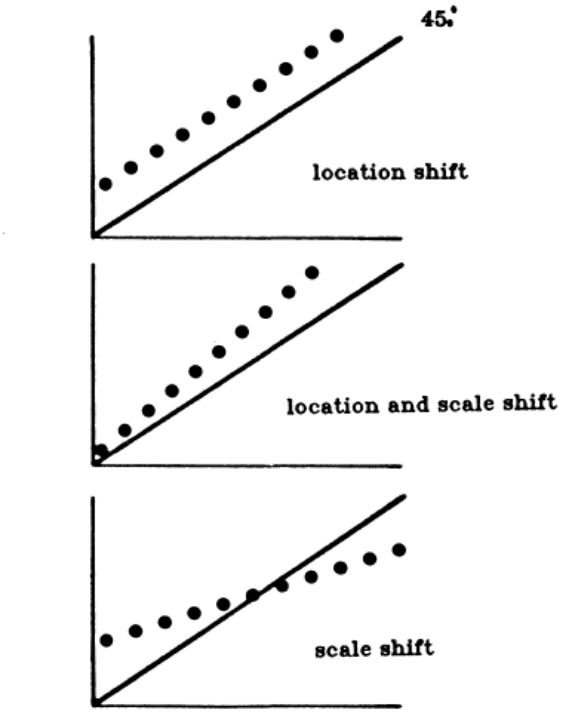


Figure 2. Lin's concordance coefficient, unlike Pearson's coefficient, considers location and scale shifts away from the 45-degree line (1:1 line) (From Lin (1989)).

We use qualitative guidelines for reliability measures by Cicchetti (1994) to describe Lin's coefficient for the method and each analyte:

- Less than 0.40 - poor
- Between 0.40 and 0.59 - fair
- Between 0.60 and 0.74 - good
- Between 0.75 and 1.00 - excellent

In Figure 3 (below) we use Bland-Altman plots (Altman and Bland 1983, Bland and Altman 2000) to graphically compare inter-method and inter-laboratory agreement. Bland-Altman plot analysis is a simple way to evaluate a bias between the mean differences between two methods and show differences between the pairs of readings (Giavarina 2015). Bland-Altman plots may show a pattern (e.g. increasing difference with concentration) or extent of the agreement (e.g. no agreement near the detection limit) (Figure 3).

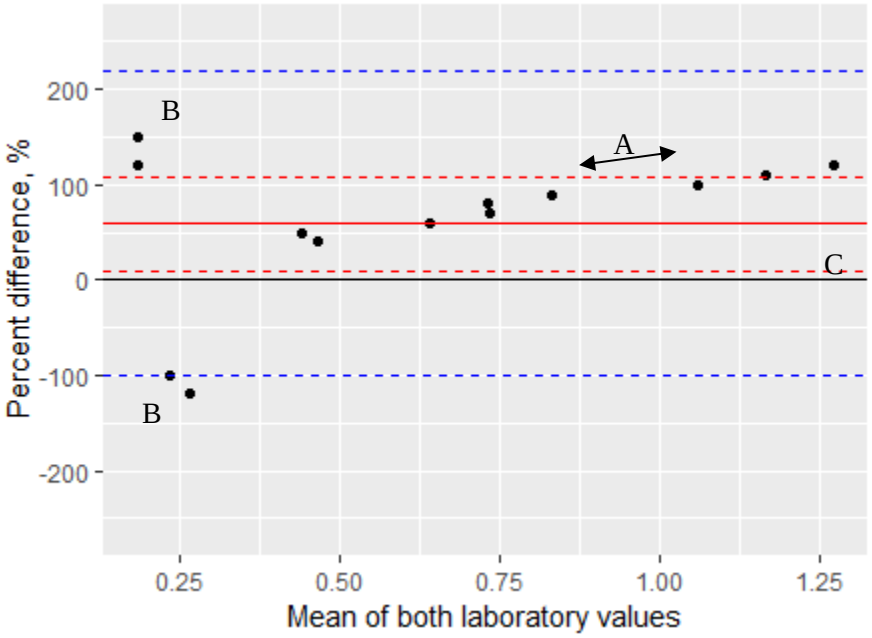


Figure 3. Example Bland-Altman plot showing A) a pattern of increasing percent difference with concentration, B) poorer agreement at low concentrations (e.g. near a detection limit), and C) significant positive bias. The plot shows observed percent difference (black circles), mean percent difference (red line) with 95% confidence interval (CI) (dashed red lines), and limits of agreement (LOA) (dashed blue line).

The mean of the paired differences (red line in Figure 3) tells us whether, on average, one method tends to underestimate or overestimate measurements relative to the measurements of the second method, which constitutes a bias between the methods for this study.

Typically, the x-axis values will be the mean of the compared results or the reference standard. Conventionally, PCB congener method 1668A is considered the "gold standard" method. EPA prefers PCB congeners analysis for sediment samples because it is "is less affected by

"weathering," non-PCB interferences, uncertainties associated with mixing of PCB sources, and subjective Aroclor identifications" (EPA 2019). Accordingly, PGG compared the percent difference (y-axis values) to the congener measurement rather than the average of both methods per sample pair (x-axis values). When interpreting the bias, the bias is statistically significant only if the line of zero difference is not within the 95% confidence limits of the bias (mean difference) as shown in Figure 3 above at "C". In all cases, PGG either confirmed or was unable to confirm the significance (p-value < 0.05) using paired Wilcoxon signed rank test, reporting the p-value for significant cases of bias. For each Bland-Altman plot PGG also reported the calculated bias and the 95% confidence limits of the bias.

4.0 RESULTS

4.1 INTER-METHOD COMPARISON BETWEEN PCBS BY EPA METHOD 8082A (AROCLORS) AND EPA METHOD 1668 (CONGENERS)

For each inter-method comparison, PGG showed scatter plots with Lin's Concordance Correlation Coefficient (CCC) to evaluate agreement and use Bland Altman plots to evaluate bias.

For each data set PGG illustrates a set of four different scatter plots (1) data with no modifications (upper left); (2) log-transformed data (upper right); (3) high concentrations above 2000 ug/kg total Aroclors removed (lower left); and (4) high concentrations above 750 ug/kg total Aroclors removed (lower right).

For consistency with the Integral 2011 analysis (Figure 1), PGG shows the data log transformed and found that the untransformed data more informative here because the absolute error (rather than proportional error) is of more practical importance for data uses such as interpolation (e.g. natural neighbor method), which was used to define Sediment Management Area (SMA) boundaries in the ROD (EPA 2017) and to calculate spatially weighted average concentrations or surface weighted average concentrations (SWACs).

Integral and EPA have described in the RI dataset that the Aroclor to congener overprediction/underprediction occurs around 750 ug/kg total Aroclors:

"*In addition, the analysis of sediment data indicated that total Aroclor data overpredict total PCB congeners in concentrations below ~750 µg/kg total Aroclors and may result in underprediction above this threshold.*" (Integral 2011)

"*The analysis of sediment data collected during the RI indicated that total Aroclor data overpredict total PCB congeners in concentrations below ~750 µg/kg total Aroclors, which should result in similar or more conservative site management decisions.*" (EPA 2019)

Accordingly, we evaluate this effect for all comparisons by using the 750 ug/kg and the 2000 ug/kg total PCBs as thresholds.

Note that the Lin's CCC does not assume the data are normally distributed. However, concordance correlation is like Pearson correlation in that it can be sensitive to skewness, long tails, and outliers.

We, therefore, show four different data treatments for Lin's CCC and 2 treatments for the Bland-Altman plots.

4.1.1 LWG split sediment samples located in SIL from the RI database

For the RI data in SIL (n = 44) we find the best agreement between total Aroclors and congeners when concentrations above 750 ug/kg total Aroclors are removed (Figure 4 and Table 1); the location shift is close to zero (-0.07), the scale shift near parity (0.99), and bias factor of 1 indicating no deviation from the 45-degree (1:1) line. The CCC metrics indicate reasonable interchangeability of the two analytical methods up to concentrations of ~750 ug/kg, as Integral and EPA observed for the full RI data set.

The Bland-Altman plots provide another comparison that can be used to evaluate bias between two methods. The Bland-Altman plots show the absolute difference vs. total congener concentration for the paired samples analyzed by TestAmerica (TA) (Seattle and Knoxville). The Bland-Altman plots show that there is no statistically significant bias between PCB methods (Figure 5). The line of zero difference is within the 95% level of confidence on the mean percent difference.

Table 1. Method Agreement Metrics for Total Aroclors and Total Congeners in SIL using RI Data

Data Treatment	Lin's CCC [95% CI]	Agreement Quality	Location Shift	Scale Shift	Bias Factor
unmodified	0.46 [0.37,0.53]	poor - fair	0.36	3.35	0.53
log-transformed	0.93 [0.88,0.96]	excellent	-0.07	1.15	0.99
values <2000 ug/kg	0.55 [0.38, 0.69]	poor-good	-0.32	0.51	0.78
values <750 ug/kg	0.84 [0.71,0.91]	good-excellent	-0.07	0.99	1.00

Lin's CCC = concordance correlation coefficient with 95% confidence interval [CI]. Agreement Quality from Cichetti (1994)

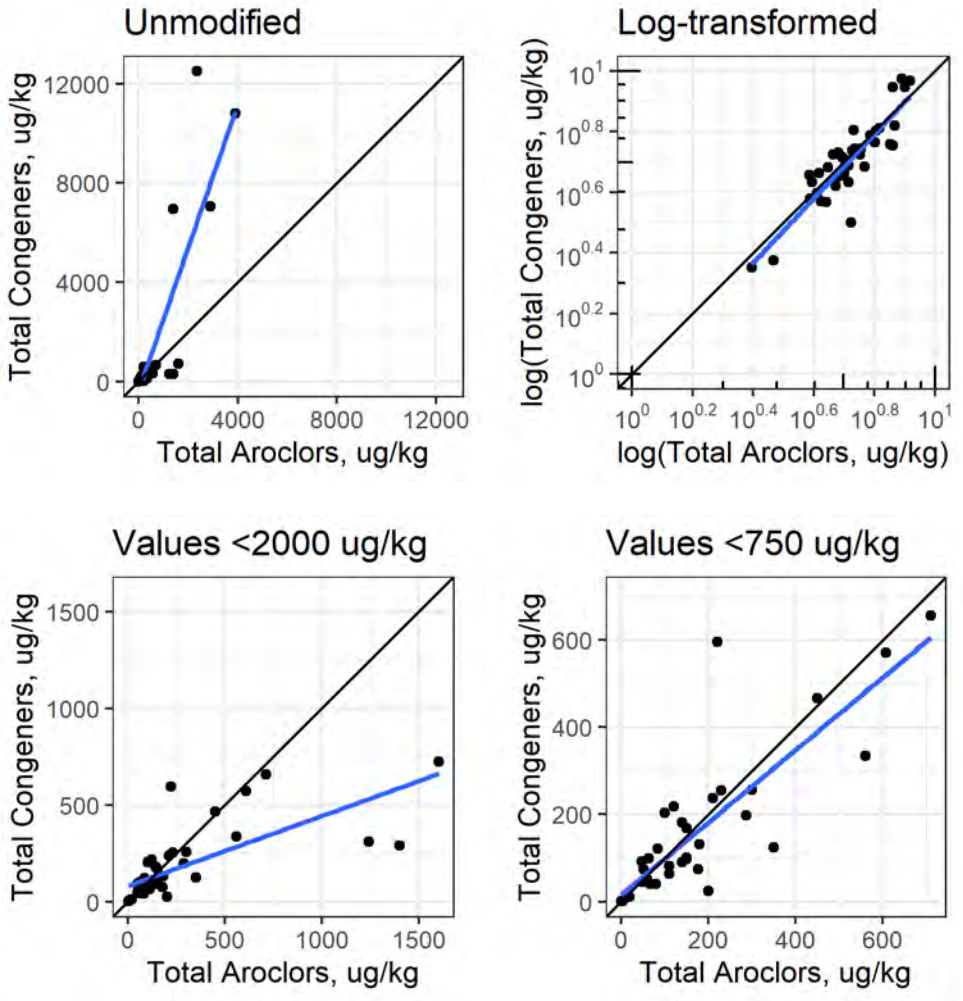
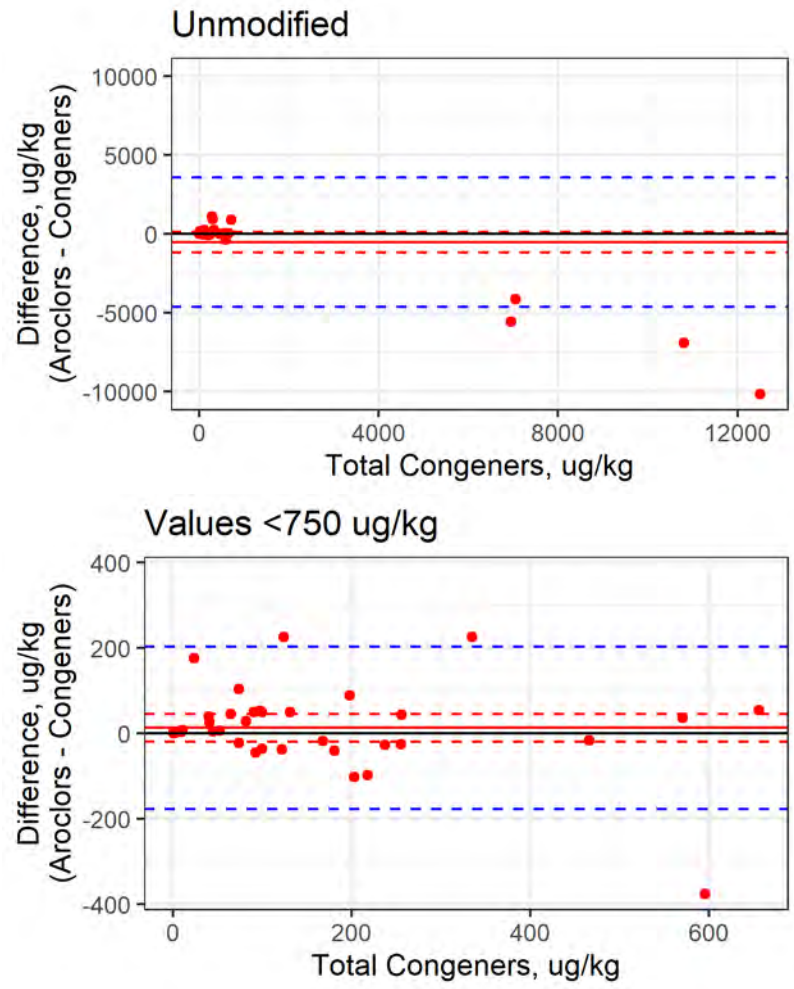


Figure 4. Scatter plots of observed RI PCB data in SIL with lines of best fit (blue) for four different data treatments. The unmodified data (top left) shows the line of best fit is shifted by the 4 highest total congener values. The log-transformed data (top right) have better agreement. Removal of high concentration data (bottom left and right), 4 highest total congener (> 2000 ug/kg) and 3 additional total Aroclor values (> 750 ug/kg), shows the best agreement for concentrations below 750 ug/kg.



No bias (n = 44):
-531 [-1169, 107 (95% CI)] ug/kg

No bias (n = 37):
13 [-20, 45 (95% CI)] ug/kg

Figure 5. Bland-Altman plots of absolute difference (total Aroclors – total congeners) vs. total congener concentration for RI data in the SIL with two data treatments: unmodified (top) and removing n = 7 values greater than 750 ug/kg (Bottom). The mean difference (solid red line) with 95% CI (dashed red) indicate the bias, while the limit of agreement (1.96*standard deviation) (blue dashed line) indicate the range within which approximately 95% of the difference are included. Because the zero difference is within the 95% level of confidence on the mean difference (red dashes) there is no statistically significant bias between methods in the RI data set.

4.1.2 TestAmerica Aroclors vs. TestAmerica Congeners

Next, we evaluate the homogenized split sediment samples from the DTNA (PGG 2019a and 2021) and de maximis investigations (PGG 2019b) analyzed for Aroclors by TestAmerica (Seattle) and PCB congeners by TestAmerica (Knoxville) (n = 57).

For this data set, we find poor agreement between total Aroclors and congeners for all the 4 different data treatments (unmodified, log-transformed, and removing high concentrations) (Figure 6 and Table 2). The large location shifts (1.65 – 2.69) and the scale shifts greater than one (1.43 – 9.11) indicate a systematic shift away from the line of agreement. These shifts can clearly be observed as relatively lower total Aroclors versus total congeners.

The Bland-Altman plots show that the total Aroclor results are systematically low-biased compared to total congeners (Figure 7). Both data treatments, unmodified and removing high values > 750 ug/kg, show there is statistically significant bias between methods. This bias is confirmed to be statistically significant using Wilcoxon signed rank test for both data treatments (p-values = 6.535e-11 and 2.093e-10, respectively). TestAmerica total Aroclor results are biased low on average -235 and -188 ug/kg (-71 and -70 percent difference), for the two data treatments, relative to the total congener results.

Table 2. Method Agreement Metrics for Total Aroclors and Total Congeners in SIL Analyzed by TestAmerica

Data Treatment	Lin's CCC [95% CI]	Agreement Quality[1]	Location Shift	Scale Shift	Bias Factor
unmodified	0.06 [0.03,0.09]	poor	2.69	9.11	0.12
log-transformed	0.34 [0.23,0.44]	poor-fair	1.57	1.48	0.43
values <2000 ug/kg	0.06 [0.03,0.09]	poor	2.69	9.11	0.12
values <750 ug/kg	0.09 [0.05,0.13]	poor	2.74	5.53	0.15

[1] Agreement Quality listed is for the 95% Confidence Interval. [a] – 'values < 2000 ug/kg' are the same data as 'unmodified' for this data set.

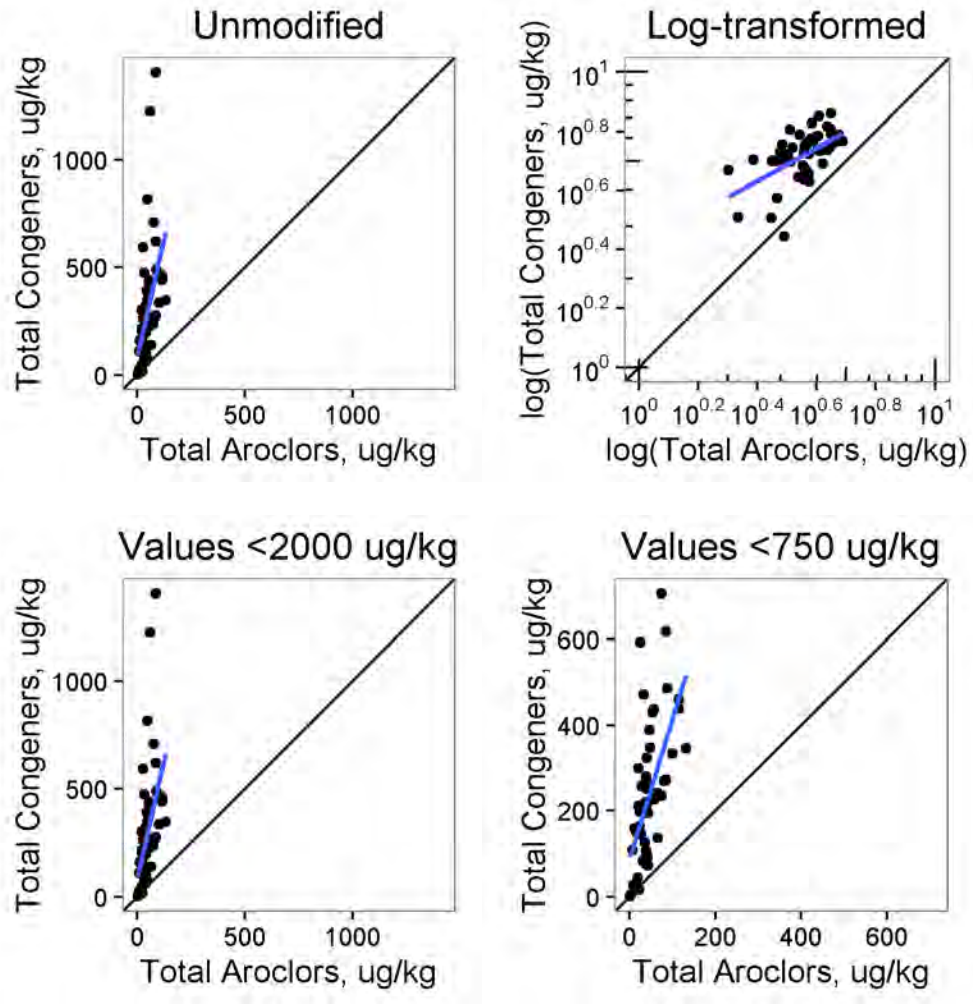
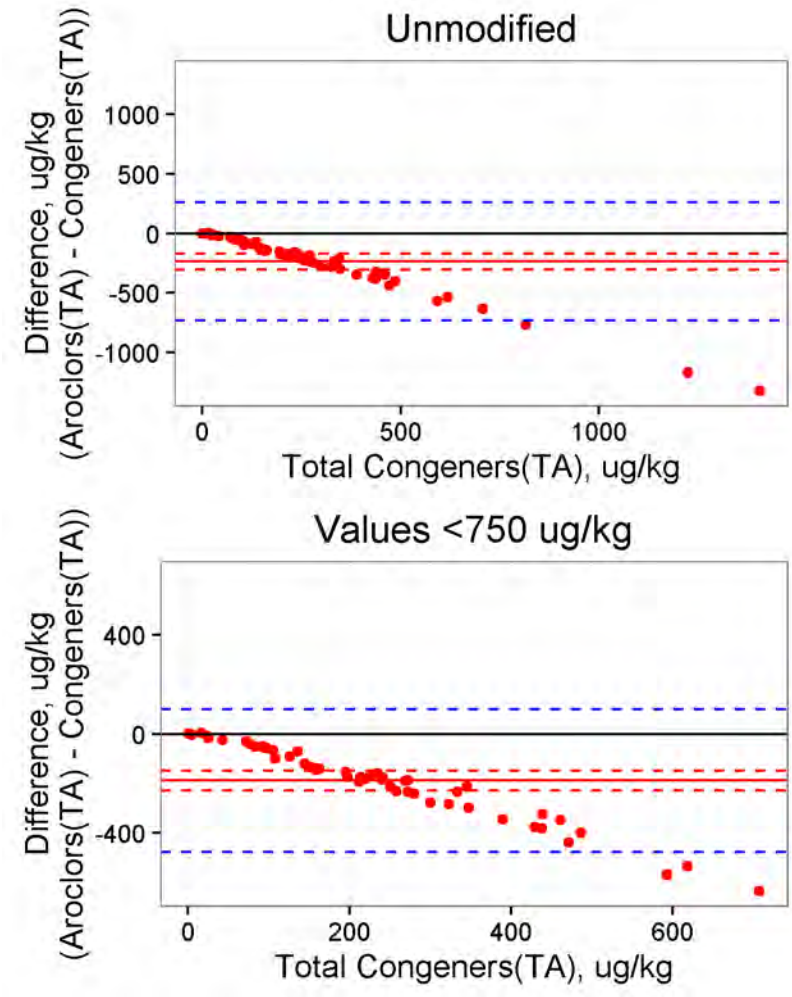


Figure 6. Scatter plots of TestAmerica generated PCB data in SIL with lines of best fit (blue) for four different data treatments. The unmodified data (top left) shows the line of best fit is location- and scale-shifted with poor agreement between the methods. The log-transformed data (top right) and removal of 3 total congener values > 750 ug/kg (bottom right) also have poor agreement. Note that the unmodified and values < 2000 ug/kg data sets (bottom left) are the same because no values are greater than 2000 ug/kg.



Aroclor negative bias (n = 61):
-235 [-302, -168 (95% CI)] ug/kg,

Aroclor negative bias (n = 58):
-188 [-228, -147 (95% CI)] ug/kg

Figure 7. Bland-Altman plots of absolute difference (total Aroclors – total congeners) vs. total congener concentration for TestAmerica generated PCB data in SIL with two data treatments: unmodified (Top) and removing n=3 values greater than 750 ug/kg (Bottom) makes little difference to the interpretation. Both data treatments show there is statistically significant bias between methods, where TestAmerica total Aroclor results are negatively biased (-235 and -188 ug/kg, on average) relative to the total congener results. The mean difference (solid red line) with 95% CI (dashed red) indicate the bias, while the limit of agreement (1.96*standard deviation) (blue dashed line) indicate the range within which approximately 95% of the difference are included.

4.1.3 ARI Aroclors vs. TestAmerica Congeners

We evaluated the homogenized split sediment samples from the DTNA (PGG 2019a and 2021) analyzed for Aroclors by ARI (Tukwila) and PCB congeners by TestAmerica (Knoxville) (n = 11). Although this data set is smaller than those presented above, there is good to excellent agreement between total Aroclors and congeners for all the 4 different data treatments than for the TestAmerica Aroclor to congener comparison (Section 4.1.2) (Table 3 and Figure 8). And in this data set there are no indications of systematic bias as shown in the Bland-Altman plots (Figure 9).

Lin's CCC for the ARI Aroclor to TestAmerica congener comparison is similar to the RI data set for both the log-transformed (0.98 vs. 0.93) and total PCBs less than 750 ug/kg (0.97 vs. 0.84) data treatments. Although the ARI data set is small (n = 11) and limited to homogenized split samples from one core location, the good-excellent agreement between PCB methods supports EPA's assessment that Aroclor analysis can be reliably used to meet RD Data Quality Objectives. Overall, the mean difference between methods for values < 750 ug/kg is small (-20 ug/kg) and is not statistically significant. Note that inclusion of 3 additional co-located samples results improves the agreement suggesting the agreement finding for ARI is robust.

Table 3. Method Agreement Metrics for Total Aroclors analyzed by ARI and Total Congeners Analyzed by TestAmerica in SIL sediments

Data Treatment	Lin's CCC [95% CI]	Agreement Quality[1]	Location Shift	Scale Shift	Bias Factor
unmodified	0.88 [0.61,0.96]	good-excellent	-0.05	0.92	0.99
log-transformed	0.98 [0.93,1]	excellent	-0.002	1.01	1.00
values <2000 ug/kg[a]	0.88 [0.61,0.96]	good-excellent	-0.05	0.92	0.99
values <750 ug/kg	0.97 [0.9,0.99]	excellent	0.13	1.17	0.98

[1] Agreement Quality listed is for the 95% Confidence Interval. [a] – 'values < 2000 ug/kg' are the same data as 'unmodified' for this data set.

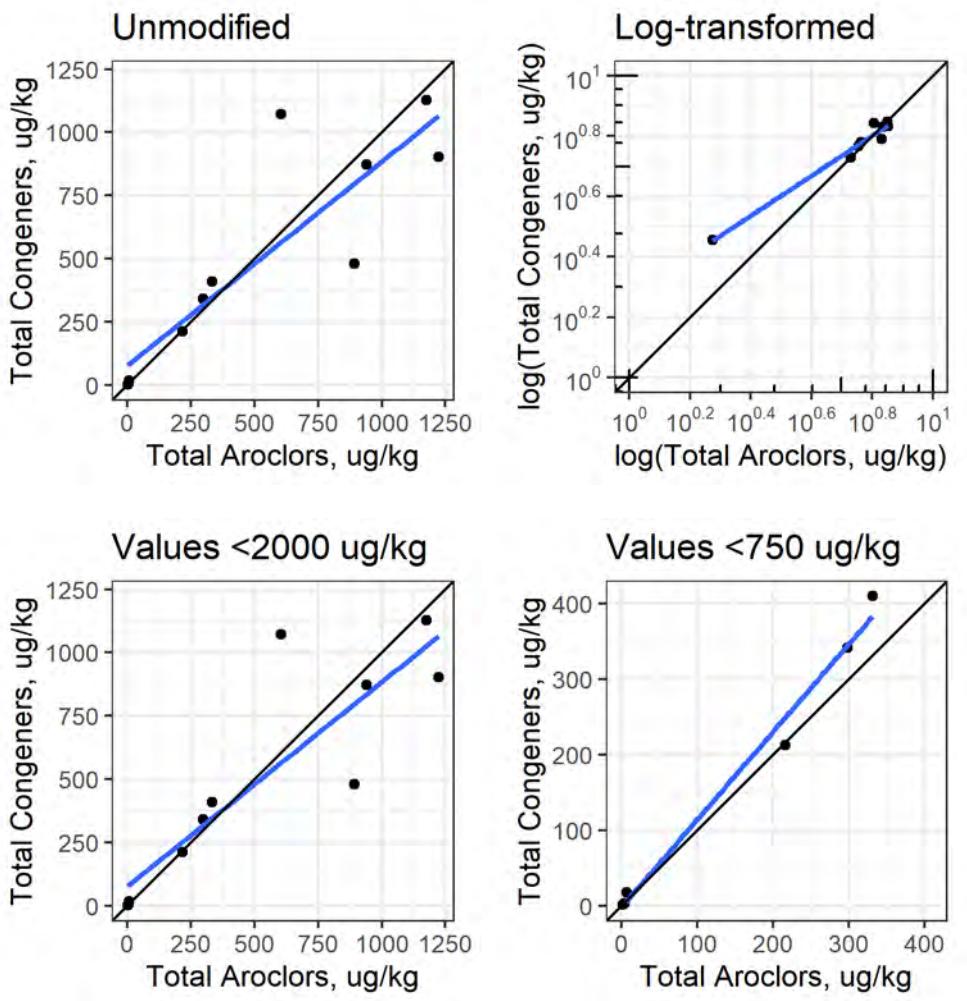
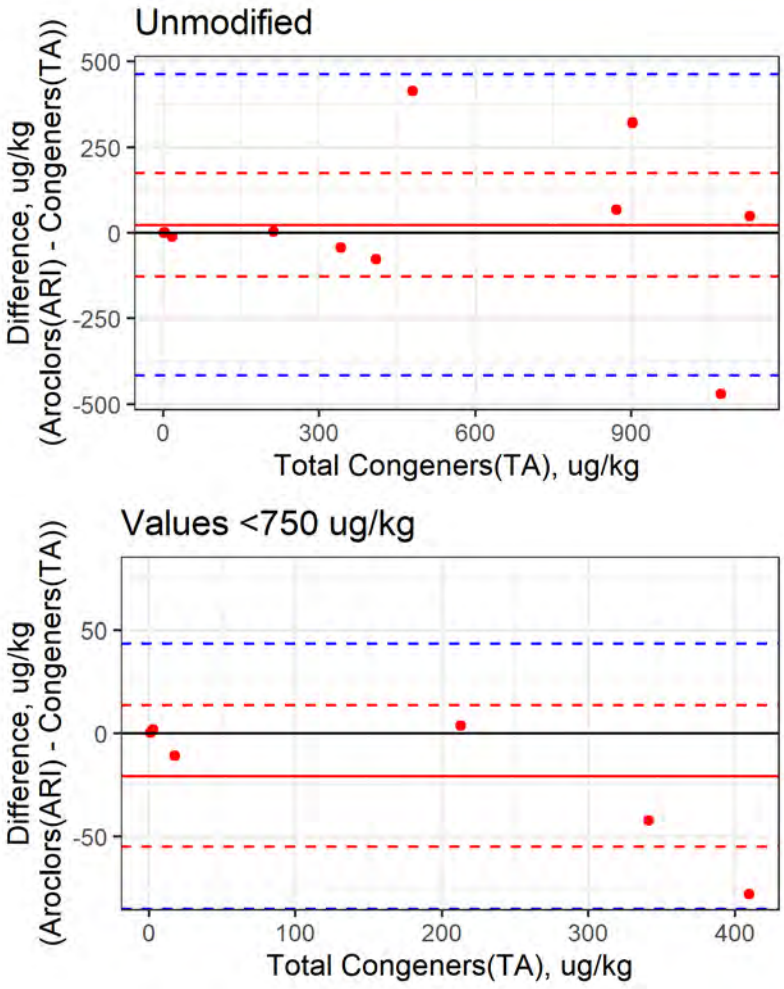


Figure 8. Scatter plots of paired ARI Aroclor and TestAmerica congener data in SIL with lines of best fit (blue) for four different data treatments. The unmodified data (top left) and values < 2000 ug/kg (bottom left) show the line of best fit is scale- but not location-shifted. The log-transformed data (top right) also suggests some scale shift but not location shift. The unmodified and values < 2000 ug/kg data sets are the same because all values are less than 2000 ug/kg.



Aroclor no bias (n = 11):
23 [-127, 174 (95% CI)] ug/kg

Aroclor no bias (n = 6):
-20 [-55, 14 (95% CI)] ug/kg

Figure 9. Bland-Altman plots of absolute difference (total Aroclors – total congeners) vs. total congener concentration for ARI Aroclor and TestAmerica PCB congener data in SIL with two data treatments: unmodified (top) and removing values greater than 750 ug/kg (bottom) both show no statistically significant bias. The data treatment makes little difference to the interpretation. ARI Aroclors provide unbiased results relative to the TestAmerica congener results. The mean difference (solid red line) with 95% CI (dashed red) indicate the bias, while the limit of agreement (1.96*standard deviation) (blue dashed line) indicate the range within which approximately 95% of the difference are included.

4.2 INTERLABORATORY COMPARISON OF AROCLOR DATA FOR ARI AND TESTAMERICA, SEATTLE

Last, we evaluated the DTNA sediment samples analyzed for Aroclors by ARI and TestAmerica (Seattle). Based on the foregoing results from Section 4.1, we would expect poor agreement between TestAmerica and ARI total Aroclor results, with TestAmerica results biased low.

Unlike the other data sets analyzed in Section 4.1 above, this data set includes a combination of homogenized splits, and composited results (Attachment A, Table A4). To create a comparable data set of spanning the same core interval, some ARI results are weighted averages of samples. For example, a 2-4 ft sample analyzed at TestAmerica (Seattle) is compared with the average of results for 2-3 ft and 3-4 ft samples analyzed at ARI. Of the n = 31 results in the paired data set, 15 of ARI results are averages of 2 intervals. One pair is the average of two TestAmerica results corresponding to the average of three ARI results.

Consistent with the analysis presented in Sections 4.1.2 and 4.1.3, there is poor agreement as indicated by Lin's CCC between the TestAmerica Seattle and ARI total Aroclor results, regardless of data treatment (Table 4 and Figure 10). This disagreement is due to the substantial negative bias observed in the TestAmerica Aroclor results as documented in Section 4.1.2. Again, this bias illustrated on the Bland-Altman plots (Figure 11) is confirmed using Wilcoxon signed rank test for both data treatments (p-values = 4.005e-05 and 0.0009413, respectively). The systematic negative bias has a mean difference of -393 and -168 ug/kg for the unmodified and values < 750 ug/kg, similar to the mean bias observed between TestAmerica total Aroclors and total congeners (-235 and -188 ug/kg).

Table 4. Method Agreement Metrics for Total Aroclors analyzed by ARI and TestAmerica in SIL sediments

Data Treatment	Lin's CCC [95% CI]	Agreement Quality[1]	Location Shift	Scale Shift	Bias Factor
unmodified	0.14 [-0.06,0.33]	poor	1.06	2.03	0.55
log-transformed	0.27 [0.02,0.48]	poor-fair	0.96	1.15	0.68
values <2000 ug/kg[a]	0.14 [-0.06,0.33]	poor	1.06	2.03	0.55
values <750 ug/kg	0.24 [-0.01,0.46]	poor-fair	1.07	1.77	0.57

[1] Agreement Quality listed is for the 95% Confidence Interval. [a] – 'values < 2000 ug/kg' are the same data as 'unmodified' for this data set.

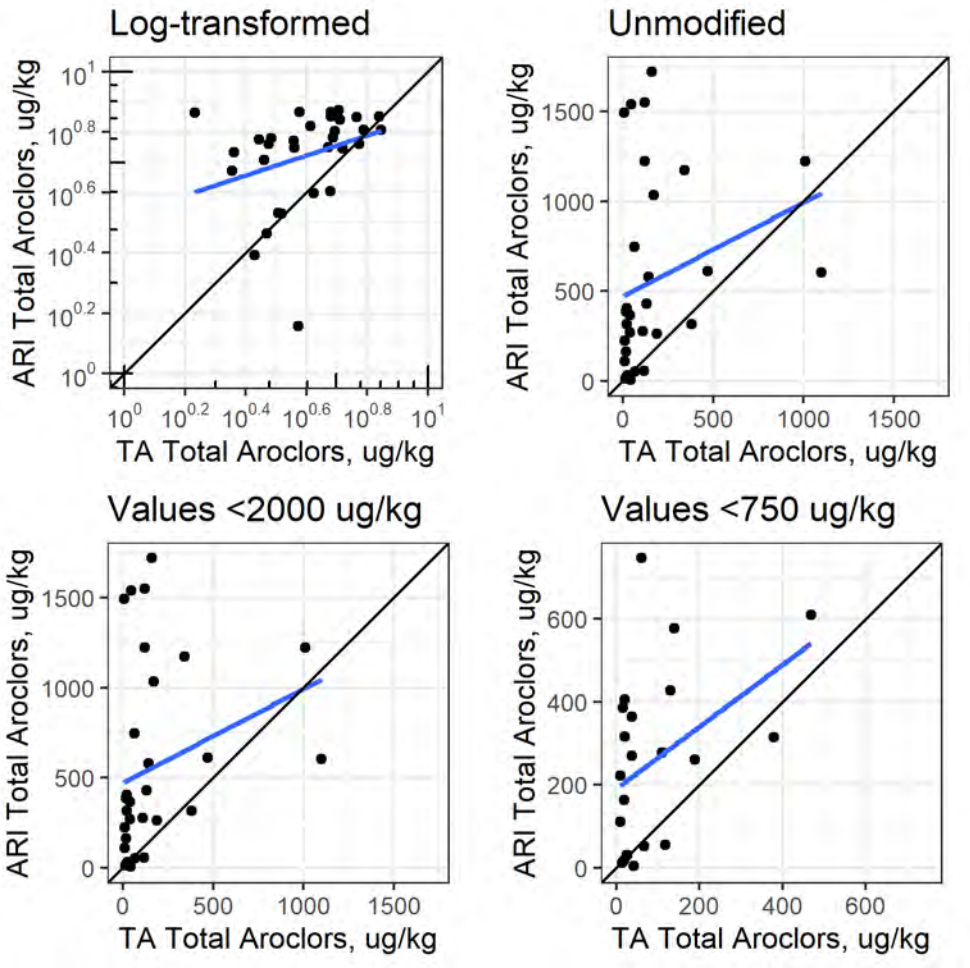
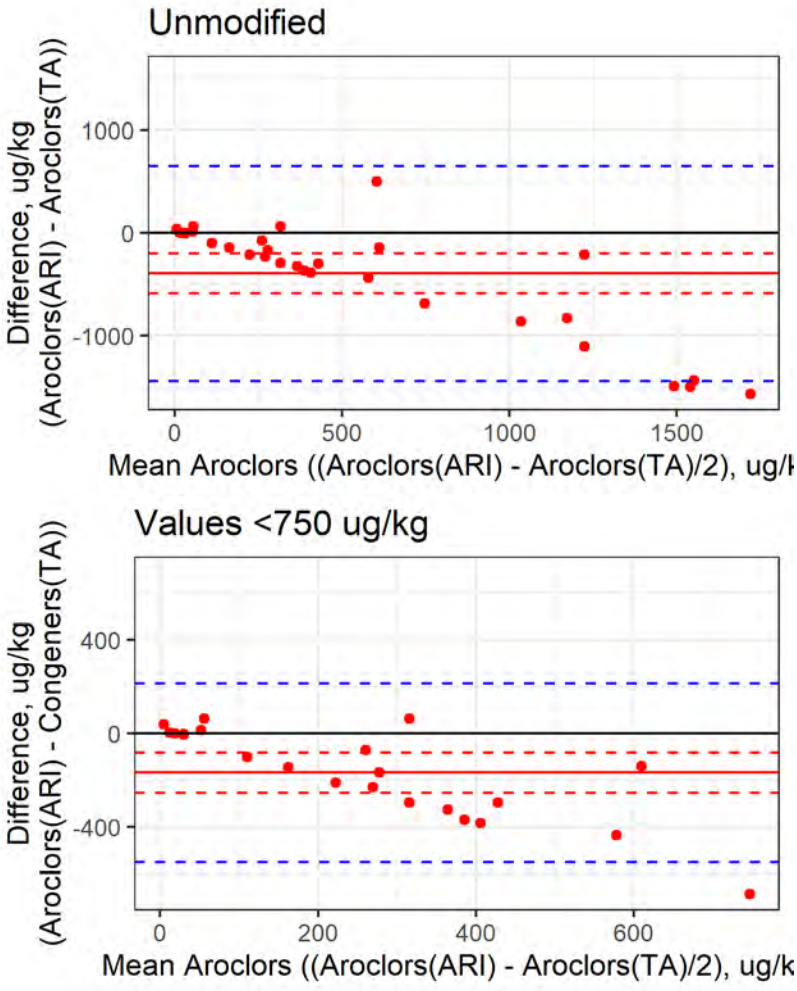


Figure 10. Scatter plots of TestAmerica Aroclor and ARI Aroclor data in SIL with lines of best fit (blue) for four different data treatments. The unmodified data (top left) shows the line of best fit is location and scale shifted with poor agreement between the laboratories. The log-transformed data (top right) and removal of values > 750 ug/kg (bottom right) also have poor agreement. Note that the unmodified and values < 2000 ug/kg data sets (bottom left) are the same because no values are greater than 2000 ug/kg. These results resemble the Figure 5 comparison between TestAmerica Aroclors and TestAmerica congeners.



TestAmerica negative bias (n = 31): -393 [-589, -198 (95% CI)] ug/kg

TestAmerica negative bias (n = 22): -168 [-254, -81 (95% CI)] ug/kg

Figure 11. Bland-Altman plots of absolute difference between TestAmerica and ARI total Aroclors from SIL with two data treatments: unmodified (Top) and removing values greater than 750 ug/kg (Bottom) make little difference to the interpretation. Both data treatments show there is statistically significant bias between methods, where TestAmerica Aroclor results are negatively biased (-393 and -168 ug/kg, on average) relative to the ARI Aroclor results. The mean difference (solid red line) with 95% CI (dashed red) indicates the bias, while the limit of agreement (1.96*standard deviation) (blue dashed line) indicates the range within which approximately 95% of the difference are included. These figures resemble Figure 6 comparison between TestAmerica Aroclors and congeners.

5.0 DISCUSSION AND RECOMMENDATIONS

5.1 DISCUSSION

We find that the TestAmerica (Seattle) PCB Aroclor results in the five SDGs that we evaluated have a statistically significant negative (low) bias relative to PCB congener results for the same samples. On average, the TestAmerica (Seattle) PCB Aroclor results are about six times lower than split total PCB congener results. In contrast, we find no bias between RI Aroclor and congener results as well as no bias between TestAmerica PCB congener results and ARI PCB Aroclor results, which indicates the low bias is not inherent in the Aroclor method EPA 8082A. The comparative analysis showing the low bias of the TestAmerica (Seattle) PCB Aroclor results spans multiple SDGs over time and samples throughout SIL sediment. The comparative analysis indicates the low biased TestAmerica (Seattle) PCB Aroclor results are not due to the sediment samples themselves or the SIL setting and is not inherent in the Aroclor method EPA 8082A.

Incorrect decisions occur from false negatives as well as false positives. Typically, because of uncertainty in unbiased data, some number of false negatives and false positives cannot be avoided but are assessed and controlled through a Data Quality Objectives (DQO) approach to investigation design and sampling (EPA 2006). EPA DQO guidance acknowledges that the potential for decision errors is larger near an Action Level in the so-called "gray region" even for un-biased data due to measurement uncertainty.

For the SIL, incorrect RD decisions such as determining the nature and extent of PCB contamination will occur if low-biased PCB concentrations are used in evaluations of SMAs and SWACs. For example, a false negative occurs when the measured sediment concentration is low biased below a threshold (e.g. RAL) but the true value is above the threshold. In this case, the decision error would be to falsely accept that true sediment concentration is below the RAL threshold. However, with systemically low-biased data, the number of false negative results can be large and the resulting decision errors can be numerous.

In Tables 5 and 6 below, we tabulate an error matrix (aka a confusion matrix) showing the true and false positive rates, and the true and false negative rates relative to the PCB RAL (75 ug/kg) threshold for the RI data set for SIL (Table 5) and SIL TestAmerica Aroclor and congener data set (Table 6). In this analysis, the congener data, which is considered the gold standard, is used for the actual condition and the Aroclor data is used for the predicted condition to assess true and false positive and negative rates.

In the SIL TestAmerica Aroclor and congener data set, there are 37 false negatives. The false negative rate (FNR) is 78% at the RAL (75 ug/kg) and accuracy is 31% compared to FNR of 9% FNR and 84% accuracy for the RI data set. This means that most of the TestAmerica total PCB Aroclor concentrations are below the RAL (75 ug/kg) when the total PCB congener concentrations are above the RAL. Additionally, when PTW (200 ug/kg) is used as the threshold, the FNR increases to 100% for the SIL TestAmerica data set because there are no total Aroclor results above 131 ug/kg (while there are 31 of 57 total congener results above 200 ug/kg).

As a result, there is low to no confidence that TestAmerica total PCB Aroclor concentrations below the RAL are true negatives, and it is very likely that many of these negatives have true values

above the RAL. Because the false positive rate for TestAmerica total Aroclors is low (0%), when TestAmerica total Aroclor concentrations are above the RAL there is good confidence that the true value is also above the RAL even when the concentrations are biased low.

Table 5. Error Matrix for RI Data Set - SIL, values < 750 ug/kg (n = 37)

		Total congener	
		Above RAL	**Below RAL**
Total Aroclors	**Above RAL**	True positive n = 20	False positive n = 4
	Below RAL	False negative n = 2	True negative n = 11

Table 6. Error Matrix for DTNA and de maximis SIL TestAmerica Data Set, values < 750 ug/kg (n = 54)

		Total congener	
		Above RAL	**Below RAL**
Total Aroclors	**Above RAL**	True positive n = 10	False positive n = 0
	Below RAL	False negative n = 37	True negative n = 7

5.2 RECOMMENDATIONS

Our recommendations are as follows for use of existing data:

1. Preferentially use PCB congener results when both Aroclor and congener results are available for a sample.

2. Do not use the low-biased TestAmerica (Seattle) Aroclor results or SDGs evaluated here for RD comparisons to CULs or to RALs or for concentration-based calculations (e.g. surface weighted area concentrations or interpolations).

3. Do not use other TestAmerica (Seattle) Aroclor results for samples in SIL (e.g. PDI results) for RD comparisons to CULs or to RALs or for concentration-based calculations (e.g. surface weighted area concentrations or interpolations) unless it can be demonstrated that those results are not low-biased.

4. Use TestAmerica (Seattle) Aroclor total PCB results that are greater than a threshold (e.g. CULs, RALs, and principal threat waste (PTW)) with discretion to indicate when a sample is above said threshold. However, concentrations should not be used for calculations and interpolations.

For future Aroclor analyses conducted during RD, our recommendations are as follows:

5. Incorporate routine analysis of paired Aroclor and PCB congener samples into the Quality Assurance Project Plan. For example, per laboratory batch of Aroclor results, analyze five percent of samples for congeners.

6. Consider using a sediment-matrix Certified Reference Material (CRM) containing a mixture of two to three Aroclors to evaluate the trueness of the Aroclor method.

7. Analyze future samples for Aroclors at ARI or alternative laboratories where Aroclor results have demonstrated lack of bias based on comparison with PCB congener results.

8. Select the PCB congener method for high concentrations samples when accurate total PCB concentrations are important Data Quality Objectives. Aroclor and congener differences increase when concentrations approach or exceed 1000 ug/kg. Both methods can accurately classify results >750 ug/kg as exceeding the RAL (true positives).

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ATTACHMENT A

SEDIMENT DATA

Table A1. Analytical Results (ug/kg) for RI/FS database (Aroclors and Total PCB Congeners)

Sample ID	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Aroclor 1262	Aroclor 1268	Total PCB Congeners (calc'd)	Total PCBs Aroclors (calc'd)
LW2-C382-B	16.2U	29.9U	27U	16.4U	**180**	**783**	**380J**	15.1U	13U	**291**	**1400**
LW2-C384-B	36.6U	67.7U	61.1U	37.2U	**517J**	**2220J**	**1100J**	34.1U	29.3U	**10800**	**3900**
LW2-C384-C	1.23U	2.27U	2.05U	1.25U	**13.1J**	**38.1J**	**8.91J**	1.15U	0.984U	**99.7**	**62.8**
LW2-C384-E	2.2U	2.2U	2.2U	2.2U	2.2U	2.2U	2.2U	NA	NA	**0.832**	2.2
LW2-C393-B	10.1U	18.7U	16.9U	10.3U	**95.1**	**664J**	**458J**	9.42U	8.09U	**310**	**1240**
LW2-C397-C	5.76U	10.7U	9.64U	5.86U	**98.6**	**234**	**262J**	5.38U	4.62U	**571**	**607**
LW2-C409-C	2.56U	4.74U	4.28U	2.6U	**47.1**	**123J**	**29.6**	2.39U	2.05U	**237**	**210**
LW2-C425-B1	1.26UT	2.33UT	2.1UT	1.28UT	**10.2T**	**32.9JT**	**21.5JT**	1.17UT	1.01UT	**40.8**	**67**
LW2-C425-C1	1.29UT	2.39UT	2.16UT	1.31UT	**16.2T**	**57JT**	**34.3JT**	1.21UT	1.04UT	**64.5**	**110**
LW2-C425-E1	2.48UJT	4.59UJT	4.15UJT	2.52UJT	**30.5JT**	**96.2JT**	**45.2JT**	2.32UJT	1.99UJT	**73.9**	**177**
LW2-C430-A	2.2U	2.2U	2.2U	2.2U	2.2U	**65**	**68**	2.2U	2.2U	**181**	**140**
LW2-C430-B	1.77U	3.28U	2.96U	1.8U	**24.7**	**76.2**	**40.2J**	1.65U	1.42U	**100**	**150**
LW2-C430-C	3.55U	6.57U	5.93U	3.61U	**60.5**	**145**	**72.2**	3.31U	2.84U	**198**	**286**
LW2-C430-E	6.36U	11.8U	10.6U	6.47U	**93.3J**	**315J**	**139**	5.94U	5.1U	**335**	**560**
LW2-G364	1.51U	2.79U	2.52U	1.53U	**8.5J**	**77J**	**62.5J**	1.41U	1.21U	**97.2**	**150**
LW2-G372-1	5.2UT	9.5UT	8.6UT	5.2UT	6.7UT	**133T**	**45.5JT**	4.8UT	10UJT	**23.6**	**200**
LW2-G380	2.5U	4.63U	4.19U	2.55U	**32.7**	**113**	**29.1**	2.34U	2.01U	**131**	**180**
LW2-G382	2.51U	4.65U	4.2U	2.56U	**46.6**	**184**	**215J**	2.35U	2.01U	**466**	**450**
LW2-G390	53UJ	53UJ	53UJ	53UJ	53UJ	**1100**	**330**	53UJ	53UJ	**725**	**1600**
LW2-G392	1.9U	3.51U	3.17U	1.93U	2.47U	**40.4J**	**34.1J**	1.77U	1.52U	**40.5**	**80**
LW2-G393	22.3U	41.3U	37.3U	22.7U	**283**	**667**	**1360**	20.8U	17.9U	**12500**	**2360**
LW2-G402	12.8U	23.7U	21.4U	13U	**45.6J**	**193**	**440**	12U	10.3U	**656**	**710**
LW2-G416	5.43U	10.1U	9.08U	5.52U	**27**	**137J**	**169**	5.07U	4.35U	**124**	**350**
LW2-G417	4.05U	7.49U	6.77U	4.11U	5.27U	42.1U	**107**	3.78U	3.24U	**90.2**	**140**
LW2-G425	1.31U	2.43U	2.19U	1.33U	1.71U	**8.86J**	**6.01**	1.22U	1.05U	**10.7**	**18.8**
LW2-G426	2.74U	5.08U	4.58U	2.79U	**27**	**101**	**165J**	2.56U	2.2U	**256**	**300**
LW2-GBT022	3.7U	3.7U	3.7U	3.7U	3.7U	**50**	**56**	3.7U	3.7U	**218**	**120**
LW2-GBT023	3.2U	3.2U	3.2U	3.2U	3.2U	**66J**	**38J**	3.2U	3.2U	**81.8**	**110**
LW2-GBT026	2.9U	2.9U	2.9U	2.9U	2.9U	2.9U	**210**	2.9U	2.9U	**596**	**220**
LW2-GBT029	2U	2U	2U	2U	2U	2U	**53J**	2U	2U	**52.6**	**59**
LW3-C702-B	3.8U	3.8U	3.8U	**13J**	3.8U	**74**	**53**	3.8U	3.8U	**168**	**150**
LW3-C702-C	3.7U	3.7U	3.7U	**27J**	3.7U	**110J**	**90NJ**	3.7U	3.7U	**255**	**230**
LW3-C702-D	3.7U	3.7U	3.7U	3.7U	3.7U	**19J**	**20**	3.7U	3.7U	**44.3**	**48**
LW3-C702-F	0.73U	0.73U	0.73U	1.3U	0.73U	0.73U	0.73U	0.73U	0.73U	**0.439**	1.3
LW3-C703-B	3.7U	3.7U	3.7U	3.7U	3.7U	**30J**	**45**	3.7U	3.7U	**122**	**84**
LW3-C703-C	3.7U	21U	3.7U	3.7U	3.7U	**14J**	**28**	3.7U	3.7U	**74.1**	**51**
LW3-C703-D	0.73U	0.73U	0.73U	0.78U	0.73U	0.73U	**0.88J**	0.73U	0.73U	**0.415**	**3.1**
LW3-C708-B	4.1U	4.1U	4.1U	**270**	4.1U	**2000**	**590NJ**	4.1U	4.1U	**7050**	**2900**
LW3-C708-C	5U	5U	5U	5U	5U	**1400**	5U	5U	5U	**6950**	**1400**
LW3-C708-D	3.7U	3.7U	3.7U	3.7U	3.7U	**93**	3.7U	3.7U	3.7U	**203**	**100**
LW3-C708-F	0.73U	0.73U	0.73U	0.73U	0.73U	0.73U	0.73U	0.73U	0.73U	**1.4**	0.73
LW3-C708-G	0.73U	0.73U	0.73U	0.73U	0.73U	0.73U	0.73U	0.73U	0.73U	**0.877**	0.73
LW3-GSP08E	1.5U	1.5U	1.5U	1.5U	1.5U	1.5U	**7.9**	1.5U	1.5U	**9.42**	**12**
LWG0108R003SDS015C00	4U	7.9U	4U	4U	4U	**22**	**15**	NA	NA	**92.6**	**47**

Table A1. Analytical Results (ug/kg) for RI/FS database (Aroclors and Total PCB Congeners)

Sample ID	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Aroclor 1262	Aroclor 1268	Total PCB Congeners (calc'd)	Total PCBs Aroclors (calc'd)

J = Reported result is an estimate.

U = Analyte was not detected in sample.

N = Tentatively identified

R = Rejected

NA = not analyzed

PCB = polychlorinated biphenyls

bold indicates result is detected

Note: Calculated results are as provided from the RI/FS Database, shown without qualifiers

Table A2. Analytical Results (ug/kg) for TestAmerica Seattle (Aroclors) and TestAmerica Sacramento (Total PCB Congeners)

Sample ID	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Aroclor 1262	Aroclor 1268	CALC_TOTAL AROCLORS_ND_PDI	CALC_TOTAL PCB_ND_PDI
511-20to40-102318	3.2UJ	8.9UJ	4.4UJ	4.6UJ	1.5UJ	7.4UJ	**17J**	NA	NA	**21.45**	**158.066**
512-0to29-102418	6.1U	17U	8.4U	8.7U	2.9U	14U	**35J**	NA	NA	**43.5**	**71.803**
515-0to26-101918	1.9U	2.4U	2.4U	1.2U	0.91U	**74**	1.9U	NA	NA	**75.2**	**706.872**
A-9.03-0to26-102418	5.8UJ	16UJ	8UJ	8.4UJ	2.7UJ	14UJ	**32J**	NA	NA	**40**	**97.0737**
A1-0to30-102018	1.3U	1.6U	1.6U	0.84U	0.62U	1.4U	1.3U	NA	NA	1.6	**0.716735**
a2-0to26-100818	2.2UJ	2.8UJ	2.8UJ	1.5UJ	1.1UJ	2.3UJ	**6J**	NA	NA	**7.4**	**107.39555**
a3-0to31-100818	2.1U	2.8U	2.8U	1.4U	1U	**44**	2.2U	NA	NA	**45.4**	**389.5572**
a4-0to25-100818	1.7UJ	2.2UJ	2.2UJ	1.1UJ	0.82UJ	**85J**	1.7UJ	NA	NA	**86.1**	**1404.4245**
a5-0to25-100818	2.1U	2.8U	2.8U	1.4U	1U	**45**	2.2U	NA	NA	**46.4**	**815.6575**
a6-0to23-100818	1.7UJ	2.1UJ	2.1UJ	1.1UJ	0.81UJ	**52J**	1.7UJ	NA	NA	**53.05**	**429.4126**
a7-0to26-100918	1.8UJ	2.3UJ	2.3UJ	1.2UJ	0.89UJ	**57J**	1.9UJ	NA	NA	**58.15**	**1223.8513**
B-9.00-0to29-102418	6.4U	18U	8.8U	9.2U	3U	15U	**28J**	NA	NA	**37**	**75.7994**
B-9.15-0to30-102418	3.7U	10U	5.2U	5.4U	1.8U	8.7U	**34**	NA	NA	**39**	**105.4936**
C-8.94-0to27-102418	5.5U	15U	7.6U	7.9U	2.6U	13U	**32**	NA	NA	**39.5**	**95.417**
c4-0to27-100918	1.8UJ	2.3UJ	2.3UJ	1.2UJ	0.86UJ	**130J**	1.8UJ	NA	NA	**131.15**	**345.1484**
D-8.83-0to25-102418	4.9U	14U	6.8U	7.1U	2.3U	11U	**58**	NA	NA	**65**	**135.3528**
D-8.90-0to27-102418	4.9UJ	14UJ	6.8UJ	7.1UJ	2.3UJ	11UJ	**31J**	NA	NA	**38**	**96.7015**
D-8.90-SC-00to10-102318	3.7U	10U	5.1U	5.3U	1.7U	8.6U	**32**	NA	NA	**37**	**219.2785**
D-8.90-SC-103to120-102318	3U	8.4U	4.2U	4.3U	1.4U	7U	**76**	NA	NA	**80.2**	**268.9625**
D-8.90-SC-10to20-102318	3.2U	8.9U	4.4U	4.6U	1.5U	7.4U	**80**	NA	NA	**84.45**	**618.022**
D-8.90-SC-120to140-102318	3.1U	8.7U	4.3U	4.5U	1.5U	7.3U	**38**	NA	NA	**42.35**	**194.927**
D-8.90-SC-140to160-102318	3.1U	8.8U	4.3U	4.5U	1.5U	**23**	3.1U	NA	NA	**27.4**	**257.814**
D-8.90-SC-20to40-102318	2.9UJ	8UJ	4UJ	4.1UJ	1.3UJ	6.6UJ	**44J**	NA	NA	**48**	**347.176**
D-8.90-SC-40to62-102318	3.4U	9.5U	4.7U	4.9U	1.6U	7.9U	**36**	NA	NA	**40.75**	**322.43**
D-8.90-SC-62to80-102318	0.64UJ	1.8UJ	0.88UJ	0.92UJ	0.3UJ	1.5UJ	**37J**	NA	NA	**37.9**	**279.972**
D-8.90-SC-80to103-102318	3.1U	8.7U	4.3U	4.5U	1.5U	7.2U	**110**	NA	NA	**114.35**	**461.042**
D-9.09-0to29-102418	5U	14U	6.9U	7.2U	2.4U	12U	**35**	NA	NA	**42**	**91.6582**
D-9.09-SC-00to10-102318	4.1U	12U	5.7U	6U	1.9U	9.6U	**20J**	NA	NA	**26**	**144.39**
D-9.09-SC-100to117-102318	2.9UJ	8.2UJ	4.1UJ	4.2UJ	1.4UJ	6.8UJ	**61J**	NA	NA	**65.1**	**241.281**
D-9.09-SC-10to20-102318	3.4UJ	9.6UJ	4.7UJ	4.9UJ	1.6UJ	8UJ	**12J**	NA	NA	**16.8**	**149.534**
D-9.09-SC-20to40-102318	3.5UJ	9.8UJ	4.8UJ	5UJ	1.6UJ	8.1UJ	**18J**	NA	NA	**22.9**	**162.769**
D-9.09-SC-40to60-102318	2.9UJ	8.2UJ	4UJ	4.2UJ	1.4UJ	6.8UJ	**16J**	NA	NA	**20.1**	**211.337**
D-9.09-SC-60to80-102318	3.1UJ	8.6UJ	4.3UJ	4.4UJ	1.5UJ	7.2UJ	**110J**	NA	NA	**114.3**	**438.389**
D-9.09-SC-80to100-102318	2.7UJ	7.5UJ	3.7UJ	3.9UJ	1.3UJ	6.2UJ	**55J**	NA	NA	**58.75**	**225.6293**
d2-0to19-101018	0.94UJ	1.2UJ	1.2UJ	0.62UJ	0.46UJ	1UJ	**8.1J**	NA	NA	**8.7**	**25.06795**
E-8.99-0to28-102418	5.3U	15U	7.4U	7.7U	2.5U	12U	**24J**	NA	NA	**31.5**	**82.6901**
E-9.02-0to26-102418	4.9UJ	14UJ	6.8UJ	7.1UJ	2.3UJ	11UJ	**29J**	NA	NA	**36**	**125.848**
E-9.02-SC-00to10-102318	0.82UJ	2.3UJ	1.1UJ	1.2UJ	0.38UJ	**23NJ**	0.82UJ	NA	NA	**24.15**	**197.3091**
E-9.02-SC-100to115-102318	3UJ	8.3UJ	4.1UJ	4.3UJ	1.4UJ	6.9UJ	**81J**	NA	NA	**85.15**	**271.881**
E-9.02-SC-10to20-102318	0.77UJ	2.2UJ	1.1UJ	1.1UJ	0.36UJ	**16NJ**	0.77UJ	NA	NA	**17.1**	**152.345**
E-9.02-SC-115to130-102318	2.9UJ	8.1UJ	4UJ	4.2UJ	1.4UJ	6.8UJ	**71J**	NA	NA	**75.05**	**234.3615**
E-9.02-SC-20to40-102318	0.69UJ	1.9UJ	0.95UJ	0.99UJ	0.32UJ	**56J**	0.69UJ	NA	NA	**56.95**	**437.771**
E-9.02-SC-40to60-102318	3.3UJ	9.3UJ	4.6UJ	4.8UJ	1.6UJ	7.7UJ	**51J**	NA	NA	**55.65**	**240.192**
E-9.02-SC-60to80-102318	0.61UJ	1.7UJ	0.85UJ	0.88UJ	0.29UJ	**38J**	0.61UJ	NA	NA	**38.85**	**250.5799**
E-9.02-SC-80to100-102318	2.9UJ	8.2UJ	4UJ	4.2UJ	1.4UJ	6.8UJ	**96J**	NA	NA	**100.1**	**333.017**
f2-0to19-101018	0.98UJ	1.3UJ	1.3UJ	0.65UJ	0.48UJ	**18J**	1UJ	NA	NA	**18.65**	**42.4686**
G-9.15-0to18-102418	2.2U	6U	3U	3.1U	1U	5U	**19**	NA	NA	**22**	**16.1226**
g6-0to27-101818	2.3U	2.9U	2.9U	1.5U	1.1U	2.4U	**86J**	NA	NA	**87.45**	**486.5783**

Table A2. Analytical Results (ug/kg) for TestAmerica Seattle (Aroclors) and TestAmerica Sacramento (Total PCB Congeners)

Sample ID	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Aroclor 1262	Aroclor 1268	CALC_TOTAL AROCLORS_ND_PDI	CALC_TOTAL PCB_ND_PDI
h2-0to30-101218	1.7U	2.1U	2.1U	1.1U	0.81U	1.8U	**20J**	NA	NA	**21.05**	**299.3911**
j2a3-0to18-101218	0.9U	1.2U	1.2U	0.6U	0.44U	0.97U	**16**	NA	NA	**16.6**	**24.68495**
M4-0to26-101918	1.7U	2.2U	2.2U	1.1U	0.81U	1.8U	**32NJ**	NA	NA	**33.1**	**470.958**
N5-0to28-101418	2.3U	3U	3U	1.6U	1.1U	2.5U	**24**	NA	NA	**25.5**	**592.7742**
N7-0to27-101418	2U	2.6U	2.6U	1.3U	0.99U	2.2U	**37NJ**	NA	NA	**38.3**	**272.2836**
O7-0to27-101918	2.2U	2.8U	2.8U	1.4U	1.1U	**39J**	2.2U	NA	NA	**40.4**	**213.06368**
q2-0to13-101818	0.96U	1.2U	1.2U	0.64U	0.47U	**1.4J**	1U	NA	NA	**2**	**4.4725**
q6-0to27-102018	2.3U	3U	3U	1.5U	1.1U	2.5U	**9.9**	NA	NA	**11.4**	**158.12415**
t6-0to29-101618	2.1U	2.7U	2.7U	1.4U	1U	2.3U	**17**	NA	NA	**18.35**	**150.05105**

J = Reported result is an estimate.

U = Analyte was not detected in sample.

R = Rejected

N = Tentatively identified

NA = not analyzed

PCB = polychlorinated biphenyls

bold indicates result is detected

Note: calculated results are shown with full precision without qualifiers. Calculated results are the sum of detections plus half the highest non-detect result.

Table A3. Analytical Results (ug/kg) for Analytical Resources Inc (Aroclors) and TestAmerica Sacramento (Total PCB Congeners)

Sample ID	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Aroclor 1262	Aroclor 1268	CALC_TOTAL AROCLORS_ND_PDI	CALC_TOTAL PCB_ND_PDI
j5-sc1b-00to10-82719	7.8U	7.8U	7.8U	7.8U	7.8U	**320**	**279J**	2.9U	2.9U	**602.9**	**1072.052**
j5-sc1b-10to20-82719	15.5U	15.5U	15.5U	15.5U	**268**	**681**	**266**	5.8U	5.8U	**1222.75**	**901.893**
j5-sc1b-20to30-82719	15.6U	15.6U	15.6U	15.6U	**150**	**369**	**413J**	5.9U	5.9U	**939.8**	**871.4385**
j5-sc1b-30to40-82719	1.5U	1.5U	1.5U	1.5U	**60.1**	**72.1J**	**83.5**	0.6U	0.6U	**216.45**	**212.6197**
j5-sc1b-40to50-82719	15.5U	15.5U	15.5U	15.5U	**174**	**469**	**241**	5.9U	5.9U	**891.75**	**479.13**
j5-sc1b-50to60-82719	15.4U	15.4U	15.4U	15.4U	**241**	**552**	**375**	5.8U	5.8U	**1175.7**	**1127.72**
j5-sc1b-60to70-82719	1.6U	1.6U	1.6U	1.6U	**64.2**	**144**	**123**	0.6U	0.6U	**332**	**409.7745**
j5-sc1b-70to80-82719	1.5U	1.5U	1.5U	1.5U	1.5U	**169**	**129**	0.6U	0.6U	**298.75**	**341.2342**
j5-sc1b-80to90-82719	1.6U	1.6U	1.6U	1.6U	1.6U	**2.1J**	**1.7J**	0.6U	0.6U	**4.6**	**2.6677**
j5-sc1b-90to100-82719	1.5U	1.5U	1.5U	1.5U	1.5U	**2.7J**	**3.1J**	0.6U	0.6U	**6.55**	**17.41666**
j5-sc1b-100to110-82719	1.5U	1.5U	1.5U	1.5U	1.5U	1.5U	0.6U	0.6U	0.6U	1.5	**1.0634**

J = Reported result is an estimate.

U = Analyte was not detected in sample.

R = Rejected

N = Tentatively identified

NA = not analyzed

PCB = polychlorinated biphenyls

bold indicates result is detected

Note: calculated results are shown with full precision without qualifiers. Calculated results are the sum of detections plus half the highest non-detect result.

Table A4. Analytical Results (ug/kg) for TestAmerica Seattle (Total Aroclors) and Analytical Resources Inc (Total Aroclors)

TestAmerica SampleIDs	TestAmerica TA_CALC_TOTAL AROCLORS_ND_PDI	ARI SampleIDs	ARI ARI_CALC_TOTAL AROCLORS_ND_PDI	Note
D6-SC-0to1-102118	**44**	D6-SC-0to1-102118	**1539.8**	
D6-SC-1to2-102118	**160**	d6-sc1b-10to20-82619	**1719.75**	
D6-SC-2to4-102118	**120**	d6-sc1b-20to30-82619 & d6-sc1b-30to40-82619	**1223.85**	ARI avg of 1041.9 and 1405.8
H3-SC-0to1-102118	**5.5**	h3-sc1b-00to10-82919	**1492.75**	
H3-SC-1to2-102118	**120**	h3-sc1b-10-20-82919	**1551.7**	
H3-SC-29to46-102118	**67**	h3-sc1b-30to40-82919 & h3-sc1b-40to50-82919	**52.1**	ARI avg 58 and 46.2
H3-SC-2to29-102118	**61**	h3-sc1b-20to30-82819	**746.9**	
J3-SC-00to10-102218	**117.5**	J3-SC-00to10-102218	**55.7**	
J3-SC-10to20-102218	**14.6**	j3-sc1b-10to20-82719	**11.8**	
J5-SC-00to10-102218	**1100**	j5-sc1b-00to10-82719	**602.9**	
J5-SC-10to20-102218	**1010.5**	j5-sc1b-10to20-82719	**1222.75**	
J5-SC-20to40-102218	**140**	j5-sc1b-20to30-82719 & j5-sc1b-30to40-82719	**578.125**	ARI avg of 939.8 and 216.45
J5-SC-40to60-102218	**168.5**	j5-sc1b-40to50-82719 & j5-sc1b-50to60-82719	**1033.725**	ARI avg of 891.75 and 1175.5
J5-SC-60to80-102218	**379.5**	j5-sc1b-60to70-82719 & j5-sc1b-70to80-82719	**315.375**	ARI avg of 332 and 298.75
J5-SC-80to95-102218 & J5-SC-95to110-102218	**42.25**	j5-sc1b-80to90-82719 & j5-sc1b-90to100-82719 & j5-sc1b-100to110-82719	**4.21**	TA avg of 69.5 and 15; ARI avg of 1.5, 4.6, & 6.55
J6-SC-00to10-102218	**340**	j6-sc1b-00to10-82719	**1171.8**	
J6-SC-10to20-102218	**130**	j6-sc1b-10to20-82719	**427.55**	
J6-SC-20to40-102218	**110.5**	j6-sc1b-20to30-82819 & j6-sc1b-30to40-82819	**277.65**	ARI avg of 187.2 &368.1
J6-SC-40to60-102218	**468.5**	j6-sc1b-40to50-82819 & j6-sc1b-50to60-82819	**609.8**	ARI avg of 478.7 & 740.9
J6-SC-60to80-102218	**188**	j6-sc1b-60to70-82819 & j6-sc1b-70to80-82819	**260.75**	ARI avg of 461.2 & 60.3
L3-SC-00to10-102218	**27**	l3-sc1b-00to10-82619	**29.75**	
L3-SC-10to20-102218	**25**	l3-sc1b-10to20-82619	**29.9**	
L3-SC-20to40-102218	**19**	l3-sc1b-20to30-82619 & l3-sc1b-30to40-82619	**18.4**	ARI avg of 22.8 and 14
R4-SC-0to1-102118	**10**	R4-SC-0to1-102118	**222.6**	
R4-SC-1to2-102118	**21**	r4-sc1b-10to20-82819	**405.7**	
R4-SC-2to4-102118	**20**	r4-sc1b-20to30-82819 & r4-sc1b-30to40-82819	**316.05**	ARI avg of 221.6 and 410.5
R4-SC-4to6-102118	**16**	r4-sc1b-40to50-82819 & r4-sc1b-50to60-82819	**385.9**	ARI avg of 584.9 and 186.9
R4-SC-6to8-102118	**37**	r4-sc1b-60to70-82819 & r4-sc1b-70to80-82819	**364.8**	ARI avg of 408.9 and 320.7
R4-SC-8to10-102118	**38**	r4-sc1b-80to90-82819 & r4-sc1b-90to100-82819	**269.75**	ARI avg of 235.6 & 303.9
R4-SC-10to12-102118	**18**	r4-sc1b-100to110-82819 & r4-sc1b-110to120-82819	**162.55**	ARI avg of 157.5 and 167.3
R4-SC-120to138-102118	**9.6**	r4-sc1b-120to130-82819 & r4-sc1b-130to140-82819	**110.15**	ARI avg of 197.8 and 22.5

PCB = polychlorinated biphenyls

bold indicates result is detected

Calculated results are shown with full precision without qualifiers. Calculated results are the sum of detections plus half the highest non-detect result.

Some total Aroclor values represent combined sample results in order to compare concentrations across the same depth intervals.

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MEMORANDUM

TO: Janet Knox (Pacific Groundwater Group [PGG])
Jeff Parker (PGG)

FROM: Raleigh Farlow

DATE: April 20, 2020

SUBJECT: Preliminary Evaluation of SIL PCB/Aroclor Sediment Data Generated by TestAmerica (TA) of Seattle, Washington

Per your request (JP on 3/3/20), a review was performed of the following two documents:

- [Level 4] Laboratory report (excerpt of 1102 pages) from Eurofins TestAmerica, Seattle, Washington, for Polychlorinated Biphenyls (PCBs) dated 08/30/2019 for analytical group (sample delivery group; SDG) 580-88125-(1-21).

- Data Validation Report [7-page report], Pacific Groundwater Group: PH Head of Swan Island Sediments, PCB Aroclors by EPA 8082A performed by EcoChem, Inc. Laboratory analyses of 21 sediments performed by Eurofins TestAmerica Laboratories, Inc., Tacoma, Washington SDG J88125-1 (580-88125-(1-21)).

The purpose of this review was to determine possible causes of apparent consistent low bias in Aroclor (commercial PCB mixtures) results generated by Eurofins TestAmerica (TA) compared to analyses and reporting of results from **a**) [homogenized-composite] split sample analyses performed by TestAmerica, Knoxville, TN, for PCB congeners in Swan Island Lagoon (SIL) sediments, and **b**) a third analytical laboratory (ARI of Tukwila, WA) analyzing and reporting PCBs as Aroclors (EPA Method 8082) on split [Swan Island] sediment samples. The amount of bias in TA total PCB results averages on the order of one-sixth (factor of ~6x) of total PCBs reported by the other two laboratories. This review of these two documents is limited to data generated and reported by TA for a single SDG only (580-88125-(1-21)). No other data sets were evaluated for this assessment. The following are my observations and findings.

Surrogate compound and matrix spike recoveries. A data validation performed by EcoChem noted generally low (lower than method and project specifications) surrogate compound and matrix spike recoveries. That report concluded with an overall assessment of: *Data were estimated due to surrogate and matrix spike accuracy outliers, a matrix spike precision outlier, and dual column confirmation RPD outliers. All data as qualified, are acceptable for use.* A review of surrogate compound recoveries shows a range of 31 – 85% and a mean of 59.6% for tetrachloro-*m*-xylene (TCMX) and 52.6% for decachlorobiphenyl (DCBP) for all samples within this SDG. This is notable since it is unusual to have surrogate recoveries consistently low without occasional excursions greater than 100%. Surrogate compound recoveries greater than 100% are expected in some samples due to presence of overlapping chromatographic peaks and

interfering compounds in complex environmental sample extracts. Also, DCBP recoveries can be expected to exceed 100% in samples reporting presence of selected PCB mixtures, such as Aroclor 1260, since DCBP is a normal constituent or component of these mixtures. It is unusual for reported DCBP surrogate recoveries to be consistently low for environmental samples contaminated with relatively high levels of Aroclor 1260, such as in this data set. Another notable observation is the apparent consistency of recoveries for the two surrogate compounds in half of the samples with a pair-wise correlation coefficient (R) of 0.95. The recoveries for the two surrogate compounds are reported as near the same (similar or near identical) in these samples. If these recoveries are accurate, this would suggest that matrix effects or sample interferences are negligible or near zero since the two surrogates are at opposite ends of the chromatographic profiles of concern and their recoveries are normally not dependent. This may indicate losses in extract volumes during processing/handling.

Extract clean-ups. Environmental sample extracts typically exhibit complex chromatographic profiles and consequently require clean-up steps to minimize interferences from nontarget species to improve confidence in target compound identifications and quantitations. The analytical method employed by TA (EPA Method 8082A) identifies various options for extract clean-up steps to minimize chemical interferences and improve confidence in reported results. The project Data Validation Report identifies sample clean-up procedures as optional, but does not indicate as to whether any clean-up options were employed for this SDG. An inspection of the (TA) laboratory documentation shows that tetrabutylammonium sulfite (TBAS) solution was reportedly used on all but two extracts to remove elemental sulfur (Sx) interferences (EPA Method 3660B). Many chromatographic profiles in this SDG, however, continued to exhibit characteristic interference from elemental sulfur with PCB mixtures or Aroclor profiles. Follow-up inquiries by PGG staff with TA representatives found that strong-acid digestion/oxidation cleanup (EPA Method 3665A) was employed on project extracts, but was not apparent in project documentation. An inspection of sample chromatographic profiles reveals multiple discrete and overlapping peaks present within Aroclor chromatographic profile envelopes that are not all attributed to or characteristic of commercial PCB mixtures. General lack of dual-column comparabilities and confirmation in Aroclor component responses, as exhibited here and noted in the Data Validation and laboratory reports, are likely indicative of chemical interferences. The identification and quantitation of Aroclors in project extracts could further benefit from the use of appropriate and effective clean-up steps (including GPC, silica gel and/or Florisil® chromatographies).

Identification of target analytes. Urban and mixed receiving environments normally show a variety of contaminants, especially in contaminated sediments, due to contributions from multiple sources. Urban-derived sediments with industrial, commercial and storm-water contaminant sources typically exhibit presence of several Aroclors. In other words, several Aroclor mixtures should be expected to be reported in many, if not most, of the project sediment samples. Aroclor analyses performed by ARI resulted in the reporting of multiple Aroclors in many project samples. Identification Summary Forms/Reports (Form X) from TA, however, show only one Aroclor present in 20 of 21 project samples. One sample reported no Aroclor (PCB) detections. An inspection of sample chromatograms clearly reveals more than one Aroclor mixture present in multiple samples (not just one Aroclor as the laboratory report indicates). It appears as though the most prominent Aroclor in a sample is reported while lesser [Aroclor] mixtures are reported as nondetected. This can significantly under-report (bias low)

the total amount of PCBs present. This yields false negative reporting of some Aroclors in project samples. It is difficult to estimate the level of under-reporting or bias present since the TA laboratory documentation selectively presents identification and quantitation summaries for the single positive "hit" and not for the remaining (unreported) target analytes. The lower reporting limits for the nondominant (reported as nondetected) Aroclors are artificially low – they are default limits assuming near-zero signal, when in fact, target analyte signal appears to be present in the chromatograms. For example, a chromatographic profile resembling Aroclor 1260 is evident in sample C4-0to27-100918, but only Aroclor 1254 is identified and reported with an associated concentration. Aroclor 1260 may be up to about one-half of the total PCBs present in sample C4-0to27-100918, but Aroclor 1260 is reported as nondetected. Similarly, the chromatographic profile for Aroclor 1254 is evident in samples G6-0to27-101818, H2-0to30-101218, and M4-0to26-101918 while only Aroclor 1260 is reported and Aroclor 1254 is indicated as nondetected. Characteristic profiles for Aroclor 1254 and 1260 are evident in sample 515-0to26-101918, but only Aroclor 1254 is reported. It is unclear what algorithm is employed for [PCB] mixture identification and quantitation, or if any assessment and interpretation by an "experienced analyst" is part of the analytical process, as the method requires and other EPA guidance recommends. The identification algorithm/process employed here does not appear to be sufficiently robust and reliable for this type of work. This results in false negative reporting and low bias in reported PCB concentrations, and is borne out by comparison of results from separate and independent analyses of [split] sediment samples from this site.

Laboratory report format and presentation. The TA [level 4] laboratory report submitted for review, while lengthy, is not comprehensive. Some information/data is repetitive, yet not sufficient to allow a determination of what procedures/methods were employed for generation of sample extracts, extract clean-up steps [i.e., complete bench sheets], source(s) and integrity of calibration and reference materials (calibration standards), and instrumental run conditions (such as GC column lengths, column film thicknesses, etc.). The laboratory report does not include data to allow a routine inspection and determination of potential for false negative reporting. Any further and comprehensive evaluation of this data set requires the submission, inspection and interpretation of instrumental [digital] raw data files for all samples, calibrations, and supporting QC runs associated with this SDG.

Summary. This preliminary evaluation of the subject data identifies multiple deficiencies in data generation that result in biased reporting of total PCBs in sediment samples, such as erroneous target analyte identifications and/or low bias in reported concentrations. Factors identified as having potentially significant and adverse effects on data quality are the following:

1. Target analyte recovery indicators (surrogate compounds and matrix spikes) are generally low and typically less than performance specifications.
2. Generally inadequate extract clean-ups to allow detection and identification of all target analytes.
3. Unreliable data processing algorithm for identification and quantitation of all target analytes, especially for mixtures of Aroclors.

This data set should be considered suspect until a more comprehensive evaluation determines otherwise and that the data quality is sufficient for its intended uses.

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