



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

June 22, 2018

Analytical Report for Service Request No: K1803850A

Amy Dahl
AECOM
1111 Third Avenue, Suite 1600
Seattle, WA 98101

RE: Portland Harbor Pre-Remedial Design Investigation / 60566335

Dear Amy,

Enclosed are the results of the sample(s) submitted to our laboratory April 25, 2018
For your reference, these analyses have been assigned our service request number **K1803850**.

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

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

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Howard Holmes
Project Manager



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

Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

Total Solids

Butyltins

Polynuclear Aromatic Hydrocarbons

Low Level Semivolatile OrganicCompounds by GC/MS

Raw Data

Total Solids

Butyl Tins

Polynuclear Aromatic Hydrocarbons

Low Level Semivolatile OrganicCompounds by GC/MS

Acronyms

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

Inorganic Data Qualifiers

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

Metals Data Qualifiers

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

Organic Data Qualifiers

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

Additional Petroleum Hydrocarbon Specific Qualifiers

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

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

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

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



Case Narrative

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

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation
Sample Matrix: Sediment, Water

Service Request: K1803850
Date Received: 04/25/2018

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt:

Twenty-nine sediment samples and two water samples were received for analysis at ALS Environmental on 04/25/2018. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Semivolatiles by GC/MS:

Insufficient sample volume was received to perform a Matrix Spike/Matrix Spike Duplicate (MS/MSD) with the extraction batch containing samples PDI-SG-RB-VV-042318-1730 and PDI-SG-RB-VV-180423-1730. A Laboratory Control Sample/Duplicate Laboratory Control Sample (LCS/DLCS) was analyzed and reported in lieu of the MS/MSD for these samples.

A Laboratory Control Sample/Duplicate Laboratory Control Sample (LCS/DLCS) was initially extracted with the extraction batch containing samples PDI-SG-RB-VV-042318-1730 and PDI-SG-RB-VV-180423-1730. During final volume, the extract designated as the LCS was broken and the entire extract was lost. The extract designated as the DLCS was finished successfully and is reported as the LCS.

Method 8270D, 05/05/2018: The Method Blank KQ1805496-03 contained low levels of Bis(2-ethylhexyl) Phthalate above the Method Reporting Limit (MRL). In accordance with ALS QA/QC policy, all sample results less than twenty times the level found in the Method Blank were flagged as estimated. The samples were not re-extracted and re-analyzed because the sample holding time had expired.

Method 8270D, 05/05/2018: Sample PDI-SG-B279-BL1 required dilution due to the presence of elevated levels of Bis(2-ethylhexyl) Phthalate. The reporting limits are adjusted to reflect the dilution.

The detection limits were elevated for several sediment samples due to less than optimal sample mass extracted for analysis. The samples contained low percent solids which prevented extraction of the sample mass necessary to achieve target detection limits.

Method 8270 SIM-PAH: Insufficient sample volume was received to perform a Matrix Spike/Matrix Spike Duplicate (MS/MSD) with this sample batch. A Laboratory Control Sample/Duplicate Laboratory Control Sample (LCS/DLCS) was analyzed and reported in lieu of the MS/MSD for these samples.

Method 8270D SIM-PAH, 04/30/18: The upper control criterion was exceeded by 2% for Pyrene in Laboratory Control Sample (LCS) KWG1802202-1. The analyte in question was not detected in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.

Method 8270D SIM-PAH, 05/02/2018: The internal standard recovery of Perylene-d12 in samples PDI-SG-B233-BL1 and PDI-SG-B243-BL1 was outside control criteria because of suspected matrix interference. The sample was reanalyzed at a dilution with acceptable results. All analytes associated with the affected internal standard were reported from the diluted analysis. The reporting limits were elevated accordingly. No further corrective action was taken.



Approved by _____

Date 06/22/2018

Method 8270D SIM-PAH, 06/01/2018 :The duplicate matrix spike recovery of Fluoranthene and Pyrene for sample PDI-SG-B288-BL1 was outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. The matrix spike outlier suggested a potential high bias in this matrix. No further corrective action was appropriate.

Semivoa GC:

Method ALS SOP, 05/30/2018:The matrix spike recovery of Tri-n-butyltin for sample PDI-SG-B288-BL1 was outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. The matrix spike outlier suggested a potential high bias in this matrix. No further corrective action was appropriate.



Approved by _____

Date 06/22/2018

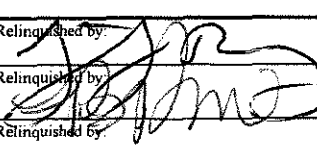
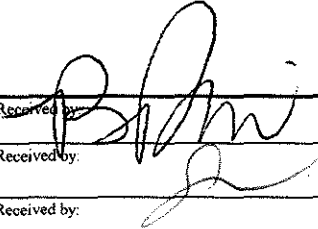
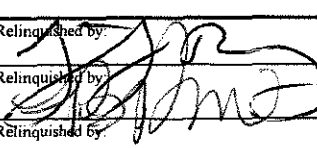


Chain of Custody

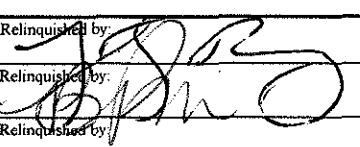
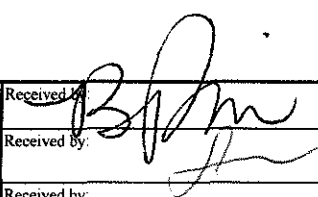
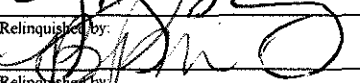
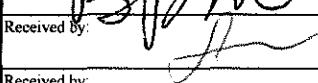
ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

21803850

SURFACE SEDIMENT CHAIN OF CUSTODY

ALS-Environmental-Kelso 1317-S-13th-Ave Kelso, WA 98626 Ph: 360-577-7222 Fax: 360-636-1068		Client Contact Project Contact: Amy Dahl / Chelsey Cook Tel: (206) 438-2261 / (206) 438-2010 Analysis Turnaround Time Calendar (C) or Work Days (W) ☒ 21 days ☐ Other _____										Site Contact: Jennifer Ray Laboratory Contact: Howard-Holmes Carrier: Courier 4/25/2018 COC No: _____ of 3 COCs																																																																																																																																																																																																																																																																			
AECOM 1111 3rd Ave Suite 1600 Seattle, WA 98101 Phone: (206) 438-2700 Fax: 1+(866) 495-5288 Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling Portland, OR Project #: 60566335 Study: Surface Sediment		Sample Identification <table border="1"> <thead> <tr> <th>Sample Date</th> <th>Sample Time</th> <th>Matrix</th> <th>QC Sample</th> <th>Sampler's Initials</th> <th>Total No. of Cont.</th> <th>Fraction</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6</th> <th>7</th> <th>8</th> <th>9</th> <th>10</th> <th>11</th> <th>12</th> <th>Sample Specific Notes:</th> </tr> </thead> <tbody> <tr><td>1</td><td>PDI-SG-B291-BL1</td><td>4/23/2018</td><td>9:56</td><td>SE</td><td></td><td>NM</td><td>1</td><td>X</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>2</td><td>PDI-SG-B292-BL1</td><td>4/23/2018</td><td>10:42</td><td>SE</td><td></td><td>NM</td><td>1</td><td>X</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>3</td><td>PDI-SG-B306-BL1</td><td>4/23/2018</td><td>11:33</td><td>SE</td><td></td><td>NM</td><td>1</td><td>X</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>4</td><td>PDI-SG-B323-BL1</td><td>4/23/2018</td><td>12:35</td><td>SE</td><td></td><td>NM</td><td>1</td><td>X</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>5</td><td>PDI-SG-B329-BL1</td><td>4/23/2018</td><td>14:06</td><td>SE</td><td></td><td>NM</td><td>1</td><td>X</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>6</td><td>PDI-SG-B334-BL1</td><td>4/23/2018</td><td>14:56</td><td>SE</td><td></td><td>NM</td><td>1</td><td>X</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>7</td><td>PDI-SG-B346-BL1</td><td>4/23/2018</td><td>16:00</td><td>SE</td><td></td><td>NM</td><td>1</td><td>X</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>8</td><td>PDI-SG-B265-BL1</td><td>4/23/2018</td><td>10:07</td><td>SE</td><td></td><td>MM</td><td>1</td><td>X</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>9</td><td>PDI-SG-B271-BL1</td><td>4/23/2018</td><td>11:27</td><td>SE</td><td></td><td>MM</td><td>1</td><td>X</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>10</td><td>PDI-SG-B273-BL1</td><td>4/23/2018</td><td>12:29</td><td>SE</td><td></td><td>MM</td><td>1</td><td>X</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>11</td><td>PDI-SG-B279-BL1</td><td>4/23/2018</td><td>14:49</td><td>SE</td><td></td><td>MM</td><td>1</td><td>X</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>12</td><td>PDI-SG-B280-BL1</td><td>4/23/2018</td><td>15:51</td><td>SE</td><td></td><td>MM</td><td>1</td><td>X</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table>										Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	1	2	3	4	5	6	7	8	9	10	11	12	Sample Specific Notes:	1	PDI-SG-B291-BL1	4/23/2018	9:56	SE		NM	1	X												2	PDI-SG-B292-BL1	4/23/2018	10:42	SE		NM	1	X												3	PDI-SG-B306-BL1	4/23/2018	11:33	SE		NM	1	X												4	PDI-SG-B323-BL1	4/23/2018	12:35	SE		NM	1	X												5	PDI-SG-B329-BL1	4/23/2018	14:06	SE		NM	1	X												6	PDI-SG-B334-BL1	4/23/2018	14:56	SE		NM	1	X												7	PDI-SG-B346-BL1	4/23/2018	16:00	SE		NM	1	X												8	PDI-SG-B265-BL1	4/23/2018	10:07	SE		MM	1	X												9	PDI-SG-B271-BL1	4/23/2018	11:27	SE		MM	1	X												10	PDI-SG-B273-BL1	4/23/2018	12:29	SE		MM	1	X												11	PDI-SG-B279-BL1	4/23/2018	14:49	SE		MM	1	X												12	PDI-SG-B280-BL1	4/23/2018	15:51	SE		MM	1	X											
Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	1	2	3	4	5	6	7	8	9	10	11	12	Sample Specific Notes:																																																																																																																																																																																																																																																												
1	PDI-SG-B291-BL1	4/23/2018	9:56	SE		NM	1	X																																																																																																																																																																																																																																																																							
2	PDI-SG-B292-BL1	4/23/2018	10:42	SE		NM	1	X																																																																																																																																																																																																																																																																							
3	PDI-SG-B306-BL1	4/23/2018	11:33	SE		NM	1	X																																																																																																																																																																																																																																																																							
4	PDI-SG-B323-BL1	4/23/2018	12:35	SE		NM	1	X																																																																																																																																																																																																																																																																							
5	PDI-SG-B329-BL1	4/23/2018	14:06	SE		NM	1	X																																																																																																																																																																																																																																																																							
6	PDI-SG-B334-BL1	4/23/2018	14:56	SE		NM	1	X																																																																																																																																																																																																																																																																							
7	PDI-SG-B346-BL1	4/23/2018	16:00	SE		NM	1	X																																																																																																																																																																																																																																																																							
8	PDI-SG-B265-BL1	4/23/2018	10:07	SE		MM	1	X																																																																																																																																																																																																																																																																							
9	PDI-SG-B271-BL1	4/23/2018	11:27	SE		MM	1	X																																																																																																																																																																																																																																																																							
10	PDI-SG-B273-BL1	4/23/2018	12:29	SE		MM	1	X																																																																																																																																																																																																																																																																							
11	PDI-SG-B279-BL1	4/23/2018	14:49	SE		MM	1	X																																																																																																																																																																																																																																																																							
12	PDI-SG-B280-BL1	4/23/2018	15:51	SE		MM	1	X																																																																																																																																																																																																																																																																							
Container Type: WMG=Wide Mouth Glass Jar, P=HDPE, PP=Polypropylene, AG=amber glass, G=glass, RC=Resin Column Preservative: HCl = Hydrochloric Acid, H3PO4 = Phosphoric Acid, HNO3 = Nitric Acid Fraction: D = Dissolved, PRT = Particulate, T = Total (unfiltered)																																																																																																																																																																																																																																																																															
Sample Disposal ☐ Return To Client ☒ Disposal By Lab ☒ Archive For 12 Months																																																																																																																																																																																																																																																																															
Special Instructions/QC Requirements & Comments:																																																																																																																																																																																																																																																																															
Relinquished by:  Company: AECOM Date/Time: 4/25/18 1208					Received by:  Company: ALS Date/Time: 4/25/18 1430					Relinquished by:  Company: ALS Date/Time: 4/25/18 1430																																																																																																																																																																																																																																																																					

K1803850

ALS-Environmental-Kelso 1317-S-13th-Ave Kelso, WA 98626 Ph: 360-577-7222 Fax: 360-636-1068		SURFACE SEDIMENT CHAIN OF CUSTODY																									
Client Contact AECOM 1111 3rd Ave Suite 1600 Seattle, WA 98101 Phone: (206) 438-2700 Fax: 1+(866) 495-5288 Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling Portland, OR Project #: 60566335 Study: Surface Sediment		Project Contact: Amy Dahl / Chelsey Cook Tel: (206) 438-2261 / (206) 438-2010 Analysis Turnaround Time Calendar (C) or Work Days (W) ☒ 21 days ☐ Other _____				Site Contact: Jennifer Ray Laboratory Contact: Howard-Holmes Carrier: Courier 4/25/2018				COC No: 2 of 3 COCs																	
Sample Identification		Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction											Sample Specific Notes:								
13 PDI-SG-B260-BL1		4/23/2018	17:24	SE		MM	1	X																			
14 PDI-SG-B352-BL1		4/24/2018	10:00	SE		AM	1	X																			
15 PDI-SG-B366-BL1		4/24/2018	11:40	SE		AM	1	X																			
16 PDI-SG-B366-BL1-D		4/24/2018	11:40	SE		AM	1	X																			
17 PDI-SG-B357-BL1		4/24/2018	10:50	SE		AM	1	X																			
18 PDI-SG-B384-BL1		4/24/2018	14:55	SE		AM	1	X																			
19 PDI-SG-B378-BL1		4/24/2018	13:03	SE		AM	1	X																			
20 PDI-SG-B284-BL1		4/24/2018	9:55	SE		MM	1	X																			
21 PDI-SG-B288-BL1		4/24/2018	11:02	SE	MS/MSD	MM	3	X																			
22 PDI-SG-B294-BL1		4/24/2018	12:24	SE		MM	1	X																			
23 PDI-SG-B296-BL1		4/24/2018	14:14	SE		MM	1	X																			
24 PDI-SG-B302-BL1		4/24/2018	15:12	SE		MM	1	X																			
Container Type: WMG=Wide Mouth Glass Jar, P=HDPE, PP=Polypropylene, AG=amber glass, G=glass, RC=Resin Column Preservative: HCl = Hydrochloric Acid, H3PO4 = Phosphoric Acid, HNO3 = Nitric Acid Fraction: D = Dissolved, PRT = Particulate, T = Total (unfiltered)																		Sample Disposal ☐ Return To Client ☒ Disposal By Lab ☒ Archive For 12 Months									
Special Instructions/QC Requirements & Comments:																											
Relinquished by: 		Company: AECOM		Date/Time: 4/25/18 1208		Received by: 		Company: ALV		Date/Time: 4/25/18 120																	
Relinquished by: 		Company: ALS		Date/Time: 4/25/18 1430		Received by: 		Company: ALS		Date/Time: 4/25/18 1430																	
Relinquished by:		Company:		Date/Time:		Received by:		Company:		Date/Time:																	

[illegible]

PC H2

Cooler Receipt and Preservation Form

Client AECOM Service Request K18 03850
 Received: 4/25/18 Opened: 4/25/18 By: [Signature] Unloaded: 4/25/18 By: [Signature]

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

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
0.2	0.2	1.0	0.9	-0.1	349			NA	
1.7	1.9	5.9	6.1	-0.2	356				

4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
 5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
 6. Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA Y N
 If applicable, tissue samples were received: Frozen Partially Thawed Thawed
 7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
 8. Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Y N
 9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
 10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below NA Y N
 11. Were VOA vials received without headspace? Indicate in the table below. NA Y N
 12. Was CI2/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

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

Notes, Discrepancies, & Resolutions:

Did not receive "PDI-SG-B204-BLI-D"



Total Solids

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

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment
Analysis Method: 160.3 Modified
Prep Method: None

Service Request: K1803850
Date Collected: 04/20/18 - 04/24/18
Date Received: 04/25/18
Units: Percent
Basis: As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
PDI-SG-B291-BL1	K1803850-001	42.4	-	-	1	04/26/18 15:30	
PDI-SG-B292-BL1	K1803850-002	39.8	-	-	1	04/26/18 15:30	
PDI-SG-B306-BL1	K1803850-003	41.1	-	-	1	04/26/18 15:30	
PDI-SG-B323-BL1	K1803850-004	44.8	-	-	1	04/26/18 15:30	
PDI-SG-B329-BL1	K1803850-005	37.6	-	-	1	04/26/18 15:30	
PDI-SG-B334-BL1	K1803850-006	41.1	-	-	1	04/26/18 15:30	
PDI-SG-B346-BL1	K1803850-007	48.9	-	-	1	04/26/18 15:30	
PDI-SG-B265-BL1	K1803850-008	46.4	-	-	1	04/26/18 15:30	
PDI-SG-B271-BL1	K1803850-009	35.1	-	-	1	04/26/18 15:30	
PDI-SG-B273-BL1	K1803850-010	37.4	-	-	1	04/26/18 15:30	
PDI-SG-B279-BL1	K1803850-011	38.0	-	-	1	04/26/18 15:30	
PDI-SG-B280-BL1	K1803850-012	32.8	-	-	1	04/26/18 15:30	
PDI-SG-B260-BL1	K1803850-013	48.1	-	-	1	04/26/18 15:30	
PDI-SG-B352-BL1	K1803850-014	51.6	-	-	1	04/26/18 15:30	
PDI-SG-B366-BL1	K1803850-015	56.1	-	-	1	04/26/18 15:30	
PDI-SG-B366-BL1-D	K1803850-016	56.2	-	-	1	04/26/18 15:30	
PDI-SG-B357-BL1	K1803850-017	42.2	-	-	1	04/26/18 15:30	
PDI-SG-B384-BL1	K1803850-018	41.5	-	-	1	04/26/18 15:30	
PDI-SG-B378-BL1	K1803850-019	58.0	-	-	1	04/26/18 17:04	
PDI-SG-B284-BL1	K1803850-020	33.9	-	-	1	04/26/18 17:04	
PDI-SG-B288-BL1	K1803850-021	32.1	-	-	1	04/26/18 17:04	
PDI-SG-B294-BL1	K1803850-022	35.6	-	-	1	04/26/18 17:04	
PDI-SG-B296-BL1	K1803850-023	35.8	-	-	1	04/26/18 17:04	
PDI-SG-B302-BL1	K1803850-024	37.4	-	-	1	04/26/18 17:04	
PDI-SG-B303-BL1	K1803850-025	34.8	-	-	1	04/26/18 17:04	
PDI-SG-B237-BL1	K1803850-028	43.0	-	-	1	04/26/18 17:04	
PDI-SG-B240-BL1	K1803850-029	59.6	-	-	1	04/26/18 17:04	
PDI-SG-B233-BL1	K1803850-030	65.7	-	-	1	04/26/18 17:04	
PDI-SG-B243-BL1	K1803850-031	47.8	-	-	1	04/26/18 17:04	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Analysis Method: 160.3 Modified
Prep Method: None

Service Request:K1803850
Date Collected:04/20/18 - 04/24/18
Date Received:04/25/18

Units:Percent
Basis:As Received

Replicate Sample Summary
Inorganic Parameters

Sample Name:	Lab Code:	MRL	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
PDI-SG-B271-BL1	K1803850-009DUP	-	-	35.1	35.0	35.1	<1	20	04/26/18
PDI-SG-B288-BL1	K1803850-021DUP	-	-	32.1	31.6	31.9	2	20	04/26/18
PDI-SG-B243-BL1	K1803850-031DUP	-	-	47.8	47.9	47.9	<1	20	04/26/18

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

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

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



Butyltins

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

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment
Sample Name: PDI-SG-B291-BL1
Lab Code: K1803850-001

Service Request: K1803850
Date Collected: 04/23/18 09:56
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	1.5 J	2.3	1.0	1	05/30/18 12:16	5/7/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	64	10 - 120	05/30/18 12:16	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment
Sample Name: PDI-SG-B292-BL1
Lab Code: K1803850-002

Service Request: K1803850
Date Collected: 04/23/18 10:42
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	2.5	1.1	1	05/30/18 13:11	5/7/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	75	10 - 120	05/30/18 13:11	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: PDI-SG-B306-BL1
Lab Code: K1803850-003

Service Request: K1803850
Date Collected: 04/23/18 11:33
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	2.4	1.1	1	05/30/18 13:30	5/7/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	65	10 - 120	05/30/18 13:30	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: PDI-SG-B323-BL1
Lab Code: K1803850-004

Service Request: K1803850
Date Collected: 04/23/18 12:35
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	2.2	0.96	1	05/30/18 13:48	5/7/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	65	10 - 120	05/30/18 13:48	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: PDI-SG-B329-BL1
Lab Code: K1803850-005

Service Request: K1803850
Date Collected: 04/23/18 14:06
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	2.6	1.2	1	05/30/18 14:43	5/7/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	78	10 - 120	05/30/18 14:43	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment
Sample Name: PDI-SG-B334-BL1
Lab Code: K1803850-006

Service Request: K1803850
Date Collected: 04/23/18 14:56
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	2.4	1.1	1	05/30/18 15:01	5/7/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	80	10 - 120	05/30/18 15:01	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment
Sample Name: PDI-SG-B346-BL1
Lab Code: K1803850-007

Service Request: K1803850
Date Collected: 04/23/18 16:00
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	2.0	0.86	1	05/30/18 15:20	5/7/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	73	10 - 120	05/30/18 15:20	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: PDI-SG-B265-BL1
Lab Code: K1803850-008

Service Request: K1803850
Date Collected: 04/23/18 10:07
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	960	43	19	20	05/31/18 13:12	5/7/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	94	10 - 120	05/30/18 15:38	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: PDI-SG-B271-BL1
Lab Code: K1803850-009

Service Request: K1803850
Date Collected: 04/23/18 11:27
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	230	2.8	1.3	1	05/30/18 15:57	5/7/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	85	10 - 120	05/30/18 15:57	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: PDI-SG-B273-BL1
Lab Code: K1803850-010

Service Request: K1803850
Date Collected: 04/23/18 12:29
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	300	13	5.8	5	05/31/18 12:22	5/7/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	39	10 - 120	05/30/18 16:15	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: PDI-SG-B279-BL1
Lab Code: K1803850-011

Service Request: K1803850
Date Collected: 04/23/18 14:49
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	120	2.6	1.2	1	05/30/18 16:34	5/7/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	73	10 - 120	05/30/18 16:34	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: PDI-SG-B280-BL1
Lab Code: K1803850-012

Service Request: K1803850
Date Collected: 04/23/18 15:51
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	130	3.0	1.4	1	05/30/18 16:52	5/7/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	72	10 - 120	05/30/18 16:52	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: PDI-SG-B260-BL1
Lab Code: K1803850-013

Service Request: K1803850
Date Collected: 04/23/18 17:24
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	1100	41	18	20	05/31/18 14:34	5/7/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	81	10 - 120	05/30/18 17:10	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: PDI-SG-B352-BL1
Lab Code: K1803850-014

Service Request: K1803850
Date Collected: 04/24/18 10:00
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	1.9	0.84	1	05/30/18 17:29	5/7/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	69	10 - 120	05/30/18 17:29	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: PDI-SG-B366-BL1
Lab Code: K1803850-015

Service Request: K1803850
Date Collected: 04/24/18 11:40
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	2.6	1.8	0.77	1	05/30/18 18:24	5/7/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	72	10 - 120	05/30/18 18:24	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment
Sample Name: PDI-SG-B366-BL1-D
Lab Code: K1803850-016

Service Request: K1803850
Date Collected: 04/24/18 11:40
Date Received: 04/25/18 14:30
Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	2.9	1.7	0.76	1	05/30/18 18:42	5/7/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	71	10 - 120	05/30/18 18:42	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment
Sample Name: PDI-SG-B357-BL1
Lab Code: K1803850-017

Service Request: K1803850
Date Collected: 04/24/18 10:50
Date Received: 04/25/18 14:30
Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	2.3	1.1	1	05/30/18 19:01	5/7/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	72	10 - 120	05/30/18 19:01	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: PDI-SG-B384-BL1
Lab Code: K1803850-018

Service Request: K1803850
Date Collected: 04/24/18 14:55
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	2.4	1.1	1	05/30/18 19:19	5/7/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	75	10 - 120	05/30/18 19:19	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: PDI-SG-B378-BL1
Lab Code: K1803850-019

Service Request: K1803850
Date Collected: 04/24/18 13:03
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	1.7	0.73	1	05/30/18 19:38	5/7/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	75	10 - 120	05/30/18 19:38	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment
Sample Name: PDI-SG-B284-BL1
Lab Code: K1803850-020

Service Request: K1803850
Date Collected: 04/24/18 09:55
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	220	2.9	1.3	1	05/30/18 19:56	5/7/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	80	10 - 120	05/30/18 19:56	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: PDI-SG-B288-BL1
Lab Code: K1803850-021

Service Request: K1803850
Date Collected: 04/24/18 11:02
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	86	3.1	1.4	1	05/30/18 20:15	5/3/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	49	10 - 120	05/30/18 20:15	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: PDI-SG-B294-BL1
Lab Code: K1803850-022

Service Request: K1803850
Date Collected: 04/24/18 12:24
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	35	2.8	1.3	1	05/30/18 21:10	5/3/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	19	10 - 120	05/30/18 21:10	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: PDI-SG-B296-BL1
Lab Code: K1803850-023

Service Request: K1803850
Date Collected: 04/24/18 14:14
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	190	2.8	1.3	1	05/30/18 22:45	5/3/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	72	10 - 120	05/30/18 22:45	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: PDI-SG-B302-BL1
Lab Code: K1803850-024

Service Request: K1803850
Date Collected: 04/24/18 15:12
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	400	13	5.7	5	06/07/18 15:06	5/3/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	68	10 - 120	05/30/18 23:04	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: PDI-SG-B303-BL1
Lab Code: K1803850-025

Service Request: K1803850
Date Collected: 04/24/18 16:01
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	220	2.8	1.3	1	05/30/18 23:23	5/3/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	65	10 - 120	05/30/18 23:23	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Water

Sample Name: PDI-SG-RB-VV-042318-1730
Lab Code: K1803850-026

Service Request: K1803850
Date Collected: 04/23/18 17:30
Date Received: 04/25/18 14:30

Units: ug/L
Basis: NA

Butyltins

Analysis Method: ALS SOP
Prep Method: EPA 3520C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	0.050	0.012	1	05/17/18 20:24	4/30/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	79	31 - 137	05/17/18 20:24	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Water

Sample Name: PDI-SG-RB-VV-180423-1700
Lab Code: K1803850-027

Service Request: K1803850
Date Collected: 04/23/18 17:00
Date Received: 04/25/18 14:30

Units: ug/L
Basis: NA

Butyltins

Analysis Method: ALS SOP
Prep Method: EPA 3520C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	0.050	0.012	1	05/17/18 20:43	4/30/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	57	31 - 137	05/17/18 20:43	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: PDI-SG-B237-BL1
Lab Code: K1803850-028

Service Request: K1803850
Date Collected: 04/20/18 17:04
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	1.7 J	2.3	1.0	1	06/07/18 15:25	5/3/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	52	10 - 120	06/07/18 15:25	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: PDI-SG-B240-BL1
Lab Code: K1803850-029

Service Request: K1803850
Date Collected: 04/20/18 16:40
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	37	1.6	0.71	1	05/31/18 00:01	5/3/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	69	10 - 120	05/31/18 00:01	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: PDI-SG-B233-BL1
Lab Code: K1803850-030

Service Request: K1803850
Date Collected: 04/20/18 14:45
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	2.6	1.5	0.65	1	05/31/18 00:20	5/3/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	78	10 - 120	05/31/18 00:20	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: PDI-SG-B243-BL1
Lab Code: K1803850-031

Service Request: K1803850
Date Collected: 04/20/18 17:40
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	130	2.1	0.90	1	05/31/18 00:39	5/3/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	56	10 - 120	05/31/18 00:39	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: Method Blank
Lab Code: KQ1805438-04

Service Request: K1803850
Date Collected: NA
Date Received: NA

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	0.98	0.43	1	05/30/18 11:57	5/7/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	58	10 - 120	05/30/18 11:57	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: Method Blank
Lab Code: KQ1805439-04

Service Request: K1803850
Date Collected: NA
Date Received: NA

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	0.98	0.43	1	05/30/18 21:48	5/3/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	55	10 - 120	05/30/18 21:48	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Water

Sample Name: Method Blank
Lab Code: KQ1805585-03

Service Request: K1803850
Date Collected: NA
Date Received: NA

Units: ug/L
Basis: NA

Butyltins

Analysis Method: ALS SOP
Prep Method: EPA 3520C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	0.050	0.012	1	05/17/18 21:38	4/30/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	75	31 - 137	05/17/18 21:38	

ALS Group USA, Corp.
dba ALS Environmental

Confirmation Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design
SRM Matrix: Sediment
Sample Name: PDI-SG-B291-BL1
Lab Code: K1803850-001

Service Request: K1803850
Date Collected: 04/23/18 09:56
Date Received: 4/25/18

Units: ug/Kg
Basis: Dry
Percent Solids: 42.4

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	1.0	1.5	1.6	6	J	1	05/30/18 12:16

ALS Group USA, Corp.
dba ALS Environmental

Confirmation Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design
SRM Matrix: Sediment
Sample Name: PDI-SG-B265-BL1
Lab Code: K1803850-008

Service Request: K1803850
Date Collected: 04/23/18 10:07
Date Received: 4/25/18

Units: ug/Kg
Basis: Dry
Percent Solids: 46.4

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	19	960	980	2		20	05/31/18 13:12

ALS Group USA, Corp.
dba ALS Environmental

Confirmation Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design
SRM Matrix: Sediment
Sample Name: PDI-SG-B271-BL1
Lab Code: K1803850-009

Service Request: K1803850
Date Collected: 04/23/18 11:27
Date Received: 4/25/18

Units: ug/Kg
Basis: Dry
Percent Solids: 35.1

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	1.3	230	250	8		1	05/30/18 15:57

ALS Group USA, Corp.
dba ALS Environmental

Confirmation Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design
SRM Matrix: Sediment
Sample Name: PDI-SG-B273-BL1
Lab Code: K1803850-010

Service Request: K1803850
Date Collected: 04/23/18 12:29
Date Received: 4/25/18

Units: ug/Kg
Basis: Dry
Percent Solids: 37.4

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	5.8	300	330	10		5	05/31/18 12:22

ALS Group USA, Corp.
dba ALS Environmental

Confirmation Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design
SRM Matrix: Sediment
Sample Name: PDI-SG-B279-BL1
Lab Code: K1803850-011

Service Request: K1803850
Date Collected: 04/23/18 14:49
Date Received: 4/25/18

Units: ug/Kg
Basis: Dry
Percent Solids: 38.0

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	1.2	120	140	15		1	05/30/18 16:34

ALS Group USA, Corp.
dba ALS Environmental

Confirmation Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design
SRM Matrix: Sediment
Sample Name: PDI-SG-B280-BL1
Lab Code: K1803850-012

Service Request: K1803850
Date Collected: 04/23/18 15:51
Date Received: 4/25/18

Units: ug/Kg
Basis: Dry
Percent Solids: 32.8

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	1.4	130	150	14		1	05/30/18 16:52

ALS Group USA, Corp.
dba ALS Environmental

Confirmation Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design
SRM Matrix: Sediment
Sample Name: PDI-SG-B260-BL1
Lab Code: K1803850-013

Service Request: K1803850
Date Collected: 04/23/18 17:24
Date Received: 4/25/18

Units: ug/Kg
Basis: Dry
Percent Solids: 48.1

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	18	1100	1200	9		20	05/31/18 14:34

ALS Group USA, Corp.
dba ALS Environmental

Confirmation Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design
SRM Matrix: Sediment
Sample Name: PDI-SG-B366-BL1
Lab Code: K1803850-015

Service Request: K1803850
Date Collected: 04/24/18 11:40
Date Received: 4/25/18

Units: ug/Kg
Basis: Dry
Percent Solids: 56.1

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	0.77	2.6	2.8	7		1	05/30/18 18:24

ALS Group USA, Corp.
dba ALS Environmental

Confirmation Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design
SRM Matrix: Sediment
Sample Name: PDI-SG-B366-BL1-D
Lab Code: K1803850-016

Service Request: K1803850
Date Collected: 04/24/18 11:40
Date Received: 4/25/18

Units: ug/Kg
Basis: Dry
Percent Solids: 56.2

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	0.76	2.9	3.1	7		1	05/30/18 18:42

ALS Group USA, Corp.
dba ALS Environmental

Confirmation Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design
SRM Matrix: Sediment
Sample Name: PDI-SG-B284-BL1
Lab Code: K1803850-020

Service Request: K1803850
Date Collected: 04/24/18 09:55
Date Received: 4/25/18

Units: ug/Kg
Basis: Dry
Percent Solids: 33.9

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	1.3	220	260	17		1	05/30/18 19:56

ALS Group USA, Corp.
dba ALS Environmental

Confirmation Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design
SRM Matrix: Sediment
Sample Name: PDI-SG-B288-BL1
Lab Code: K1803850-021

Service Request: K1803850
Date Collected: 04/24/18 11:02
Date Received: 4/25/18

Units: ug/Kg
Basis: Dry
Percent Solids: 32.1

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	1.4	86	100	15		1	05/30/18 20:15

ALS Group USA, Corp.
dba ALS Environmental

Confirmation Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design
SRM Matrix: Sediment
Sample Name: PDI-SG-B294-BL1
Lab Code: K1803850-022

Service Request: K1803850
Date Collected: 04/24/18 12:24
Date Received: 4/25/18

Units: ug/Kg
Basis: Dry
Percent Solids: 35.6

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	1.3	35	41	16		1	05/30/18 21:10

ALS Group USA, Corp.
dba ALS Environmental

Confirmation Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design
SRM Matrix: Sediment
Sample Name: PDI-SG-B296-BL1
Lab Code: K1803850-023

Service Request: K1803850
Date Collected: 04/24/18 14:14
Date Received: 4/25/18

Units: ug/Kg
Basis: Dry
Percent Solids: 35.8

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	1.3	190	220	15		1	05/30/18 22:45

ALS Group USA, Corp.
dba ALS Environmental

Confirmation Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design
SRM Matrix: Sediment
Sample Name: PDI-SG-B302-BL1
Lab Code: K1803850-024

Service Request: K1803850
Date Collected: 04/24/18 15:12
Date Received: 4/25/18

Units: ug/Kg
Basis: Dry
Percent Solids: 37.4

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	5.7	400	470	16		5	06/07/18 15:06

ALS Group USA, Corp.
dba ALS Environmental

Confirmation Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design
SRM Matrix: Sediment
Sample Name: PDI-SG-B303-BL1
Lab Code: K1803850-025

Service Request: K1803850
Date Collected: 04/24/18 16:01
Date Received: 4/25/18

Units: ug/Kg
Basis: Dry
Percent Solids: 34.8

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	1.3	220	250	13		1	05/30/18 23:23

ALS Group USA, Corp.
dba ALS Environmental

Confirmation Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design
SRM Matrix: Sediment
Sample Name: PDI-SG-B237-BL1
Lab Code: K1803850-028

Service Request: K1803850
Date Collected: 04/20/18 17:04
Date Received: 4/25/18

Units: ug/Kg
Basis: Dry
Percent Solids: 43.0

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	1.0	1.7	1.9	11	J	1	06/07/18 15:25

ALS Group USA, Corp.
dba ALS Environmental

Confirmation Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design
SRM Matrix: Sediment
Sample Name: PDI-SG-B240-BL1
Lab Code: K1803850-029

Service Request: K1803850
Date Collected: 04/20/18 16:40
Date Received: 4/25/18

Units: ug/Kg
Basis: Dry
Percent Solids: 59.6

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	0.71	37	39	5		1	05/31/18 00:01

ALS Group USA, Corp.
dba ALS Environmental

Confirmation Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design
SRM Matrix: Sediment
Sample Name: PDI-SG-B233-BL1
Lab Code: K1803850-030

Service Request: K1803850
Date Collected: 04/20/18 14:45
Date Received: 4/25/18

Units: ug/Kg
Basis: Dry
Percent Solids: 65.7

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	0.65	2.6	3.0	14		1	05/31/18 00:20

ALS Group USA, Corp.
dba ALS Environmental

Confirmation Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design
SRM Matrix: Sediment
Sample Name: PDI-SG-B243-BL1
Lab Code: K1803850-031

Service Request: K1803850
Date Collected: 04/20/18 17:40
Date Received: 4/25/18

Units: ug/Kg
Basis: Dry
Percent Solids: 47.8

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	0.90	130	160	21		1	05/31/18 00:39

ALS Group USA, Corp.
dba ALS Environmental

Confirmation Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design
SRM Matrix: Sediment
Sample Name: PDI-SG-B291-BL1
Lab Code: KQ1805438-01

Service Request: K1803850
Date Collected: 04/23/18 09:56
Date Received: 4/25/18

Units: ug/Kg
Basis: Dry
Percent Solids: 42.4

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	1.0	49.6	44.6	11		1	05/30/18 12:34

ALS Group USA, Corp.
dba ALS Environmental

Confirmation Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design
SRM Matrix: Sediment
Sample Name: PDI-SG-B291-BL1
Lab Code: KQ1805438-02

Service Request: K1803850
Date Collected: 04/23/18 09:56
Date Received: 4/25/18

Units: ug/Kg
Basis: Dry
Percent Solids: 42.4

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	1.1	48.7	55.5	13		1	05/30/18 12:53

ALS Group USA, Corp.
dba ALS Environmental

Confirmation Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design
SRM Matrix: Sediment
Sample Name: Lab Control Sample
Lab Code: KQ1805438-03

Service Request: K1803850
Date Collected: NA
Date Received:

Units: ug/Kg
Basis: Dry

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	0.43	15.9	18.8	17		1	05/30/18 11:39

ALS Group USA, Corp.
dba ALS Environmental

Confirmation Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design
SRM Matrix: Sediment
Sample Name: PDI-SG-B288-BL1
Lab Code: KQ1805439-01

Service Request: K1803850
Date Collected: 04/24/18 11:02
Date Received: 4/25/18

Units: ug/Kg
Basis: Dry
Percent Solids: 32.1

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	1.4	251	286	13		1	05/30/18 20:33

ALS Group USA, Corp.
dba ALS Environmental

Confirmation Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design
SRM Matrix: Sediment
Sample Name: PDI-SG-B288-BL1
Lab Code: KQ1805439-02

Service Request: K1803850
Date Collected: 04/24/18 11:02
Date Received: 4/25/18

Units: ug/Kg
Basis: Dry
Percent Solids: 32.1

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	1.4	188	218	15		1	05/30/18 20:51

ALS Group USA, Corp.
dba ALS Environmental

Confirmation Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design
SRM Matrix: Sediment
Sample Name: Lab Control Sample
Lab Code: KQ1805439-03

Service Request: K1803850
Date Collected: NA
Date Received:

Units: ug/Kg
Basis: Dry

Butyltins

Analytical Method: ALS SOP
Prep Method: Method

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	0.43	16.5	17.3	5		1	05/30/18 21:29

ALS Group USA, Corp.
dba ALS Environmental

Confirmation Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design
SRM Matrix: Water
Sample Name: Lab Control Sample
Lab Code: KQ1805585-01

Service Request: K1803850
Date Collected: NA
Date Received:

Units: ug/L
Basis: NA

Butyltins

Analytical Method: ALS SOP
Prep Method: EPA 3520C

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	0.012	0.354	0.383	8		1	05/17/18 21:01

ALS Group USA, Corp.
dba ALS Environmental

Confirmation Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design
SRM Matrix: Water
Sample Name: Duplicate Lab Control Sample
Lab Code: KQ1805585-02

Service Request: K1803850
Date Collected: NA
Date Received:

Units: ug/L
Basis: NA

Butyltins

Analytical Method: ALS SOP
Prep Method: EPA 3520C

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Tri-n-butyltin Cation	0.012	0.275	0.344	22		1	05/17/18 21:20

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850

SURROGATE RECOVERY SUMMARY

Butyltins

Analysis Method: ALS SOP

Extraction Method: Method

Sample Name	Lab Code	Tri-n-propyltin		
		10-120		
PDI-SG-B291-BL1	K1803850-001	64	NA	NA
PDI-SG-B292-BL1	K1803850-002	75	NA	NA
PDI-SG-B306-BL1	K1803850-003	65	NA	NA
PDI-SG-B323-BL1	K1803850-004	65	NA	NA
PDI-SG-B329-BL1	K1803850-005	78	NA	NA
PDI-SG-B334-BL1	K1803850-006	80	NA	NA
PDI-SG-B346-BL1	K1803850-007	73	NA	NA
PDI-SG-B265-BL1	K1803850-008	94	NA	NA
PDI-SG-B271-BL1	K1803850-009	85	NA	NA
PDI-SG-B273-BL1	K1803850-010	39	NA	NA
PDI-SG-B279-BL1	K1803850-011	73	NA	NA
PDI-SG-B280-BL1	K1803850-012	72	NA	NA
PDI-SG-B260-BL1	K1803850-013	81	NA	NA
PDI-SG-B352-BL1	K1803850-014	69	NA	NA
PDI-SG-B366-BL1	K1803850-015	72	NA	NA
PDI-SG-B366-BL1-D	K1803850-016	71	NA	NA
PDI-SG-B357-BL1	K1803850-017	72	NA	NA
PDI-SG-B384-BL1	K1803850-018	75	NA	NA
PDI-SG-B378-BL1	K1803850-019	75	NA	NA
PDI-SG-B284-BL1	K1803850-020	80	NA	NA
PDI-SG-B288-BL1	K1803850-021	49	NA	NA
PDI-SG-B294-BL1	K1803850-022	19	NA	NA
PDI-SG-B296-BL1	K1803850-023	72	NA	NA
PDI-SG-B302-BL1	K1803850-024	68	NA	NA
PDI-SG-B303-BL1	K1803850-025	65	NA	NA
PDI-SG-B237-BL1	K1803850-028	52	NA	NA
PDI-SG-B240-BL1	K1803850-029	69	NA	NA
PDI-SG-B233-BL1	K1803850-030	78	NA	NA
PDI-SG-B243-BL1	K1803850-031	56	NA	NA
Method Blank	KQ1805438-04	58	NA	NA
Method Blank	KQ1805439-04	55	NA	NA
Lab Control Sample	KQ1805438-03	48	NA	NA
Lab Control Sample	KQ1805439-03	53	NA	NA
PDI-SG-B291-BL1	KQ1805438-01	63	NA	NA
PDI-SG-B291-BL1	KQ1805438-02	83	NA	NA
PDI-SG-B288-BL1	KQ1805439-01	71	NA	NA
PDI-SG-B288-BL1	KQ1805439-02	60	NA	NA

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: 04/23/18
Date Received: 04/25/18
Date Analyzed: 05/30/18
Date Extracted: 05/7/18

Duplicate Matrix Spike Summary
Butyltins

Sample Name: PDI-SG-B291-BL1
Lab Code: K1803850-001
Analysis Method: ALS SOP
Prep Method: Method

Units: ug/Kg
Basis: Dry

Analyte Name	Sample Result	Result	Matrix Spike		Result	Duplicate Matrix Spike		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Tri-n-butyltin Cation	1.5 J	49.6	51.5	93	55.5	52.3	103	10-115	11	40

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

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

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

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: 04/24/18
Date Received: 04/25/18
Date Analyzed: 05/30/18
Date Extracted: 05/3/18

Duplicate Matrix Spike Summary
Butyltins

Sample Name: PDI-SG-B288-BL1
Lab Code: K1803850-021
Analysis Method: ALS SOP
Prep Method: Method

Units: ug/Kg
Basis: Dry

Analyte Name	Sample Result	Result	Matrix Spike		Result	Duplicate Matrix Spike		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Tri-n-butyltin Cation	86	251	69.0	240 *	188	68.2	150 *	10-115	29	40

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

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

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

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	AECOM	Service Request:	K1803850
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	Date Analyzed:	05/30/18
Sample Matrix:	Sediment	Date Extracted:	05/07/18

Lab Control Sample Summary
Butyltins

Analysis Method:	ALS SOP	Units:	ug/Kg
Prep Method:	Method	Basis:	Dry
		Analysis Lot:	592825

Lab Control Sample
KQ1805438-03

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Tri-n-butyltin Cation	15.9	22.3	71	10-122

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	AECOM	Service Request:	K1803850
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	Date Analyzed:	05/30/18
Sample Matrix:	Sediment	Date Extracted:	05/03/18

Lab Control Sample Summary
Butyltins

Analysis Method:	ALS SOP	Units:	ug/Kg
Prep Method:	Method	Basis:	Dry
		Analysis Lot:	592825

Lab Control Sample
KQ1805439-03

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Tri-n-butyltin Cation	16.5	22.3	74	10-122

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	AECOM	Service Request:	K1803850
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	Date Analyzed:	05/17/18
Sample Matrix:	Water	Date Extracted:	04/30/18

Duplicate Lab Control Sample Summary
Butyltins

Analysis Method:	ALS SOP	Units:	ug/L
Prep Method:	EPA 3520C	Basis:	NA
		Analysis Lot:	592329

Lab Control Sample
KQ1805585-01

Duplicate Lab Control Sample
KQ1805585-02

Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Tri-n-butyltin Cation	0.354	0.446	79	0.275	0.446	62	32-122	25	30

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Analyzed: 05/30/18 11:57
Date Extracted: 05/07/18

Method Blank Summary

Butyltins

Sample Name: Method Blank **Instrument ID:** K-GC-26
Lab Code: KQ1805438-04 **File ID:** J:\GC26\DATA\053018\0530F010.D\
Analysis Method: ALS SOP **Analysis Lot:** 592825,592975
Prep Method: Method **Extraction Lot:** 312761

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ1805438-03	J:\GC26\DATA\053018\0530F009.D\	05/30/18 11:39
PDI-SG-B291-BL1	K1803850-001	J:\GC26\DATA\053018\0530F011.D\	05/30/18 12:16
PDI-SG-B291-BL1MS	KQ1805438-01	J:\GC26\DATA\053018\0530F012.D\	05/30/18 12:34
PDI-SG-B291-BL1DMS	KQ1805438-02	J:\GC26\DATA\053018\0530F013.D\	05/30/18 12:53
PDI-SG-B292-BL1	K1803850-002	J:\GC26\DATA\053018\0530F014.D\	05/30/18 13:11
PDI-SG-B306-BL1	K1803850-003	J:\GC26\DATA\053018\0530F015.D\	05/30/18 13:30
PDI-SG-B323-BL1	K1803850-004	J:\GC26\DATA\053018\0530F016.D\	05/30/18 13:48
PDI-SG-B329-BL1	K1803850-005	J:\GC26\DATA\053018\0530F019.D\	05/30/18 14:43
PDI-SG-B334-BL1	K1803850-006	J:\GC26\DATA\053018\0530F020.D\	05/30/18 15:01
PDI-SG-B346-BL1	K1803850-007	J:\GC26\DATA\053018\0530F021.D\	05/30/18 15:20
PDI-SG-B265-BL1	K1803850-008	J:\GC26\DATA\053018\0530F022.D\	05/30/18 15:38
PDI-SG-B271-BL1	K1803850-009	J:\GC26\DATA\053018\0530F023.D\	05/30/18 15:57
PDI-SG-B273-BL1	K1803850-010	J:\GC26\DATA\053018\0530F024.D\	05/30/18 16:15
PDI-SG-B279-BL1	K1803850-011	J:\GC26\DATA\053018\0530F025.D\	05/30/18 16:34
PDI-SG-B280-BL1	K1803850-012	J:\GC26\DATA\053018\0530F026.D\	05/30/18 16:52
PDI-SG-B260-BL1	K1803850-013	J:\GC26\DATA\053018\0530F027.D\	05/30/18 17:10
PDI-SG-B352-BL1	K1803850-014	J:\GC26\DATA\053018\0530F028.D\	05/30/18 17:29
PDI-SG-B366-BL1	K1803850-015	J:\GC26\DATA\053018\0530F031.D\	05/30/18 18:24
PDI-SG-B366-BL1-D	K1803850-016	J:\GC26\DATA\053018\0530F032.D\	05/30/18 18:42
PDI-SG-B357-BL1	K1803850-017	J:\GC26\DATA\053018\0530F033.D\	05/30/18 19:01
PDI-SG-B384-BL1	K1803850-018	J:\GC26\DATA\053018\0530F034.D\	05/30/18 19:19
PDI-SG-B378-BL1	K1803850-019	J:\GC26\DATA\053018\0530F035.D\	05/30/18 19:38
PDI-SG-B284-BL1	K1803850-020	J:\GC26\DATA\053018\0530F036.D\	05/30/18 19:56
PDI-SG-B273-BL1	K1803850-010	J:\GC26\DATA\053118\0531F013.D\	05/31/18 12:22
PDI-SG-B265-BL1	K1803850-008	J:\GC26\DATA\053118\0531F015.D\	05/31/18 13:12
PDI-SG-B260-BL1	K1803850-013	J:\GC26\DATA\053118\0531F016.D\	05/31/18 14:34

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: AECOM**Project:** Portland Harbor Pre-Remedial Design Investigation/60566335**Sample Matrix:** Sediment**Service Request:** K1803850**Date Analyzed:** 05/30/18 21:48**Date Extracted:** 05/03/18**Method Blank Summary****Butyltins****Sample Name:** Method Blank**Instrument ID:** K-GC-26**Lab Code:** KQ1805439-04**File ID:** J:\GC26\DATA\053018\0530F042.D**Analysis Method:** ALS SOP**Analysis Lot:** 592825,592975**Prep Method:** Method**Extraction Lot:** 312762

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
PDI-SG-B288-BL1	K1803850-021	J:\GC26\DATA\053018\0530F037.D\	05/30/18 20:15
PDI-SG-B288-BL1MS	KQ1805439-01	J:\GC26\DATA\053018\0530F038.D\	05/30/18 20:33
PDI-SG-B288-BL1DMS	KQ1805439-02	J:\GC26\DATA\053018\0530F039.D\	05/30/18 20:51
PDI-SG-B294-BL1	K1803850-022	J:\GC26\DATA\053018\0530F040.D\	05/30/18 21:10
Lab Control Sample	KQ1805439-03	J:\GC26\DATA\053018\0530F041.D\	05/30/18 21:29
PDI-SG-B296-BL1	K1803850-023	J:\GC26\DATA\053018\0530F045.D\	05/30/18 22:45
PDI-SG-B302-BL1	K1803850-024	J:\GC26\DATA\053018\0530F046.D\	05/30/18 23:04
PDI-SG-B303-BL1	K1803850-025	J:\GC26\DATA\053018\0530F047.D\	05/30/18 23:23
PDI-SG-B240-BL1	K1803850-029	J:\GC26\DATA\053018\0530F049.D\	05/31/18 00:01
PDI-SG-B233-BL1	K1803850-030	J:\GC26\DATA\053018\0530F050.D\	05/31/18 00:20
PDI-SG-B243-BL1	K1803850-031	J:\GC26\DATA\053018\0530F051.D\	05/31/18 00:39

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Analyzed: 05/30/18 11:57
Date Extracted: 05/07/18

Method Blank Summary
Butyltins

Sample Name: Method Blank
Lab Code: KQ1805438-04
Analysis Method: ALS SOP
Prep Method: Method

Instrument ID: K-GC-26
File ID: J:\GC26\DATA\053018\0530F010.D\
Analysis Lot: 592825,593340
Extraction Lot: 312761

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ1805438-03	J:\GC26\DATA\053018\0530F009.D\	05/30/18 11:39
PDI-SG-B291-BL1	K1803850-001	J:\GC26\DATA\053018\0530F011.D\	05/30/18 12:16
PDI-SG-B291-BL1MS	KQ1805438-01	J:\GC26\DATA\053018\0530F012.D\	05/30/18 12:34
PDI-SG-B291-BL1DMS	KQ1805438-02	J:\GC26\DATA\053018\0530F013.D\	05/30/18 12:53
PDI-SG-B292-BL1	K1803850-002	J:\GC26\DATA\053018\0530F014.D\	05/30/18 13:11
PDI-SG-B306-BL1	K1803850-003	J:\GC26\DATA\053018\0530F015.D\	05/30/18 13:30
PDI-SG-B323-BL1	K1803850-004	J:\GC26\DATA\053018\0530F016.D\	05/30/18 13:48
PDI-SG-B329-BL1	K1803850-005	J:\GC26\DATA\053018\0530F019.D\	05/30/18 14:43
PDI-SG-B334-BL1	K1803850-006	J:\GC26\DATA\053018\0530F020.D\	05/30/18 15:01
PDI-SG-B346-BL1	K1803850-007	J:\GC26\DATA\053018\0530F021.D\	05/30/18 15:20
PDI-SG-B265-BL1	K1803850-008	J:\GC26\DATA\053018\0530F022.D\	05/30/18 15:38
PDI-SG-B271-BL1	K1803850-009	J:\GC26\DATA\053018\0530F023.D\	05/30/18 15:57
PDI-SG-B273-BL1	K1803850-010	J:\GC26\DATA\053018\0530F024.D\	05/30/18 16:15
PDI-SG-B279-BL1	K1803850-011	J:\GC26\DATA\053018\0530F025.D\	05/30/18 16:34
PDI-SG-B280-BL1	K1803850-012	J:\GC26\DATA\053018\0530F026.D\	05/30/18 16:52
PDI-SG-B260-BL1	K1803850-013	J:\GC26\DATA\053018\0530F027.D\	05/30/18 17:10
PDI-SG-B352-BL1	K1803850-014	J:\GC26\DATA\053018\0530F028.D\	05/30/18 17:29
PDI-SG-B366-BL1	K1803850-015	J:\GC26\DATA\053018\0530F031.D\	05/30/18 18:24
PDI-SG-B366-BL1-D	K1803850-016	J:\GC26\DATA\053018\0530F032.D\	05/30/18 18:42
PDI-SG-B357-BL1	K1803850-017	J:\GC26\DATA\053018\0530F033.D\	05/30/18 19:01
PDI-SG-B384-BL1	K1803850-018	J:\GC26\DATA\053018\0530F034.D\	05/30/18 19:19
PDI-SG-B378-BL1	K1803850-019	J:\GC26\DATA\053018\0530F035.D\	05/30/18 19:38
PDI-SG-B284-BL1	K1803850-020	J:\GC26\DATA\053018\0530F036.D\	05/30/18 19:56

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Analyzed: 05/30/18 21:48
Date Extracted: 05/03/18

Method Blank Summary**Butyltins**

Sample Name: Method Blank **Instrument ID:** K-GC-26
Lab Code: KQ1805439-04 **File ID:** J:\GC26\DATA\053018\0530F042.D\
Analysis Method: ALS SOP **Analysis Lot:** 592825,593340
Prep Method: Method **Extraction Lot:** 312762

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
PDI-SG-B288-BL1	K1803850-021	J:\GC26\DATA\053018\0530F037.D\	05/30/18 20:15
PDI-SG-B288-BL1MS	KQ1805439-01	J:\GC26\DATA\053018\0530F038.D\	05/30/18 20:33
PDI-SG-B288-BL1DMS	KQ1805439-02	J:\GC26\DATA\053018\0530F039.D\	05/30/18 20:51
PDI-SG-B294-BL1	K1803850-022	J:\GC26\DATA\053018\0530F040.D\	05/30/18 21:10
Lab Control Sample	KQ1805439-03	J:\GC26\DATA\053018\0530F041.D\	05/30/18 21:29
PDI-SG-B296-BL1	K1803850-023	J:\GC26\DATA\053018\0530F045.D\	05/30/18 22:45
PDI-SG-B302-BL1	K1803850-024	J:\GC26\DATA\053018\0530F046.D\	05/30/18 23:04
PDI-SG-B303-BL1	K1803850-025	J:\GC26\DATA\053018\0530F047.D\	05/30/18 23:23
PDI-SG-B240-BL1	K1803850-029	J:\GC26\DATA\053018\0530F049.D\	05/31/18 00:01
PDI-SG-B233-BL1	K1803850-030	J:\GC26\DATA\053018\0530F050.D\	05/31/18 00:20
PDI-SG-B243-BL1	K1803850-031	J:\GC26\DATA\053018\0530F051.D\	05/31/18 00:39
PDI-SG-B302-BL1	K1803850-024	J:\GC26\DATA\060718\0607F024.D\	06/07/18 15:06
PDI-SG-B237-BL1	K1803850-028	J:\GC26\DATA\060718\0607F025.D\	06/07/18 15:25

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: AECOM**Project:** Portland Harbor Pre-Remedial Design Investigation/60566335**Sample Matrix:** Water**Service Request:** K1803850**Date Analyzed:** 05/17/18 21:38**Date Extracted:** 04/30/18**Method Blank Summary****Butyltins****Sample Name:** Method Blank**Instrument ID:**K-GC-26**Lab Code:** KQ1805585-03**File ID:**J:\GC26\DATA\051718\051735.D**Analysis Method:** ALS SOP**Analysis Lot:**592329**Prep Method:** EPA 3520C**Extraction Lot:**312921

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
PDI-SG-RB-VV-042318-1730	K1803850-026	J:\GC26\DATA\051718\051731.D\	05/17/18 20:24
PDI-SG-RB-VV-180423-1700	K1803850-027	J:\GC26\DATA\051718\051732.D\	05/17/18 20:43
Lab Control Sample	KQ1805585-01	J:\GC26\DATA\051718\051733.D\	05/17/18 21:01
Duplicate Lab Control Sample	KQ1805585-02	J:\GC26\DATA\051718\051734.D\	05/17/18 21:20

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: AECOM

Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Sample Matrix: Sediment

Service Request: K1803850

Date Analyzed: 05/30/18 11:39

Date Extracted: 05/07/18

Lab Control Sample Summary

Butyltins

Sample Name: Lab Control Sample

Instrument ID: K-GC-26

Lab Code: KQ1805438-03

File ID: J:\GC26\DATA\053018\0530F009.D\

Analysis Method: ALS SOP

Analysis Lot: 592825,592975

Prep Method: Method

Extraction Lot: 312761

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1805438-04	J:\GC26\DATA\053018\0530F010.D\	05/30/18 11:57
PDI-SG-B291-BL1	K1803850-001	J:\GC26\DATA\053018\0530F011.D\	05/30/18 12:16
PDI-SG-B291-BL1MS	KQ1805438-01	J:\GC26\DATA\053018\0530F012.D\	05/30/18 12:34
PDI-SG-B291-BL1DMS	KQ1805438-02	J:\GC26\DATA\053018\0530F013.D\	05/30/18 12:53
PDI-SG-B292-BL1	K1803850-002	J:\GC26\DATA\053018\0530F014.D\	05/30/18 13:11
PDI-SG-B306-BL1	K1803850-003	J:\GC26\DATA\053018\0530F015.D\	05/30/18 13:30
PDI-SG-B323-BL1	K1803850-004	J:\GC26\DATA\053018\0530F016.D\	05/30/18 13:48
PDI-SG-B329-BL1	K1803850-005	J:\GC26\DATA\053018\0530F019.D\	05/30/18 14:43
PDI-SG-B334-BL1	K1803850-006	J:\GC26\DATA\053018\0530F020.D\	05/30/18 15:01
PDI-SG-B346-BL1	K1803850-007	J:\GC26\DATA\053018\0530F021.D\	05/30/18 15:20
PDI-SG-B265-BL1	K1803850-008	J:\GC26\DATA\053018\0530F022.D\	05/30/18 15:38
PDI-SG-B271-BL1	K1803850-009	J:\GC26\DATA\053018\0530F023.D\	05/30/18 15:57
PDI-SG-B273-BL1	K1803850-010	J:\GC26\DATA\053018\0530F024.D\	05/30/18 16:15
PDI-SG-B279-BL1	K1803850-011	J:\GC26\DATA\053018\0530F025.D\	05/30/18 16:34
PDI-SG-B280-BL1	K1803850-012	J:\GC26\DATA\053018\0530F026.D\	05/30/18 16:52
PDI-SG-B260-BL1	K1803850-013	J:\GC26\DATA\053018\0530F027.D\	05/30/18 17:10
PDI-SG-B352-BL1	K1803850-014	J:\GC26\DATA\053018\0530F028.D\	05/30/18 17:29
PDI-SG-B366-BL1	K1803850-015	J:\GC26\DATA\053018\0530F031.D\	05/30/18 18:24
PDI-SG-B366-BL1-D	K1803850-016	J:\GC26\DATA\053018\0530F032.D\	05/30/18 18:42
PDI-SG-B357-BL1	K1803850-017	J:\GC26\DATA\053018\0530F033.D\	05/30/18 19:01
PDI-SG-B384-BL1	K1803850-018	J:\GC26\DATA\053018\0530F034.D\	05/30/18 19:19
PDI-SG-B378-BL1	K1803850-019	J:\GC26\DATA\053018\0530F035.D\	05/30/18 19:38
PDI-SG-B284-BL1	K1803850-020	J:\GC26\DATA\053018\0530F036.D\	05/30/18 19:56
PDI-SG-B273-BL1	K1803850-010	J:\GC26\DATA\053118\0531F013.D\	05/31/18 12:22
PDI-SG-B265-BL1	K1803850-008	J:\GC26\DATA\053118\0531F015.D\	05/31/18 13:12
PDI-SG-B260-BL1	K1803850-013	J:\GC26\DATA\053118\0531F016.D\	05/31/18 14:34

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: AECOM**Project:** Portland Harbor Pre-Remedial Design Investigation/60566335**Sample Matrix:** Sediment**Service Request:** K1803850**Date Analyzed:** 05/30/18 21:29**Date Extracted:** 05/03/18**Lab Control Sample Summary****Butyltins****Sample Name:** Lab Control Sample**Instrument ID:**K-GC-26**Lab Code:** KQ1805439-03**File ID:**J:\GC26\DATA\053018\0530F041.D**Analysis Method:** ALS SOP**Analysis Lot:**592825,592975**Prep Method:** Method**Extraction Lot:**312762

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
PDI-SG-B288-BL1	K1803850-021	J:\GC26\DATA\053018\0530F037.D\	05/30/18 20:15
PDI-SG-B288-BL1MS	KQ1805439-01	J:\GC26\DATA\053018\0530F038.D\	05/30/18 20:33
PDI-SG-B288-BL1DMS	KQ1805439-02	J:\GC26\DATA\053018\0530F039.D\	05/30/18 20:51
PDI-SG-B294-BL1	K1803850-022	J:\GC26\DATA\053018\0530F040.D\	05/30/18 21:10
Method Blank	KQ1805439-04	J:\GC26\DATA\053018\0530F042.D\	05/30/18 21:48
PDI-SG-B296-BL1	K1803850-023	J:\GC26\DATA\053018\0530F045.D\	05/30/18 22:45
PDI-SG-B302-BL1	K1803850-024	J:\GC26\DATA\053018\0530F046.D\	05/30/18 23:04
PDI-SG-B303-BL1	K1803850-025	J:\GC26\DATA\053018\0530F047.D\	05/30/18 23:23
PDI-SG-B240-BL1	K1803850-029	J:\GC26\DATA\053018\0530F049.D\	05/31/18 00:01
PDI-SG-B233-BL1	K1803850-030	J:\GC26\DATA\053018\0530F050.D\	05/31/18 00:20
PDI-SG-B243-BL1	K1803850-031	J:\GC26\DATA\053018\0530F051.D\	05/31/18 00:39

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Analyzed: 05/30/18 11:39
Date Extracted: 05/07/18

Lab Control Sample Summary
Butyltins

Sample Name: Lab Control Sample
Lab Code: KQ1805438-03
Analysis Method: ALS SOP
Prep Method: Method

Instrument ID: K-GC-26
File ID: J:\GC26\DATA\053018\0530F009.D\
Analysis Lot: 592825,593340
Extraction Lot: 312761

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1805438-04	J:\GC26\DATA\053018\0530F010.D\	05/30/18 11:57
PDI-SG-B291-BL1	K1803850-001	J:\GC26\DATA\053018\0530F011.D\	05/30/18 12:16
PDI-SG-B291-BL1MS	KQ1805438-01	J:\GC26\DATA\053018\0530F012.D\	05/30/18 12:34
PDI-SG-B291-BL1DMS	KQ1805438-02	J:\GC26\DATA\053018\0530F013.D\	05/30/18 12:53
PDI-SG-B292-BL1	K1803850-002	J:\GC26\DATA\053018\0530F014.D\	05/30/18 13:11
PDI-SG-B306-BL1	K1803850-003	J:\GC26\DATA\053018\0530F015.D\	05/30/18 13:30
PDI-SG-B323-BL1	K1803850-004	J:\GC26\DATA\053018\0530F016.D\	05/30/18 13:48
PDI-SG-B329-BL1	K1803850-005	J:\GC26\DATA\053018\0530F019.D\	05/30/18 14:43
PDI-SG-B334-BL1	K1803850-006	J:\GC26\DATA\053018\0530F020.D\	05/30/18 15:01
PDI-SG-B346-BL1	K1803850-007	J:\GC26\DATA\053018\0530F021.D\	05/30/18 15:20
PDI-SG-B265-BL1	K1803850-008	J:\GC26\DATA\053018\0530F022.D\	05/30/18 15:38
PDI-SG-B271-BL1	K1803850-009	J:\GC26\DATA\053018\0530F023.D\	05/30/18 15:57
PDI-SG-B273-BL1	K1803850-010	J:\GC26\DATA\053018\0530F024.D\	05/30/18 16:15
PDI-SG-B279-BL1	K1803850-011	J:\GC26\DATA\053018\0530F025.D\	05/30/18 16:34
PDI-SG-B280-BL1	K1803850-012	J:\GC26\DATA\053018\0530F026.D\	05/30/18 16:52
PDI-SG-B260-BL1	K1803850-013	J:\GC26\DATA\053018\0530F027.D\	05/30/18 17:10
PDI-SG-B352-BL1	K1803850-014	J:\GC26\DATA\053018\0530F028.D\	05/30/18 17:29
PDI-SG-B366-BL1	K1803850-015	J:\GC26\DATA\053018\0530F031.D\	05/30/18 18:24
PDI-SG-B366-BL1-D	K1803850-016	J:\GC26\DATA\053018\0530F032.D\	05/30/18 18:42
PDI-SG-B357-BL1	K1803850-017	J:\GC26\DATA\053018\0530F033.D\	05/30/18 19:01
PDI-SG-B384-BL1	K1803850-018	J:\GC26\DATA\053018\0530F034.D\	05/30/18 19:19
PDI-SG-B378-BL1	K1803850-019	J:\GC26\DATA\053018\0530F035.D\	05/30/18 19:38
PDI-SG-B284-BL1	K1803850-020	J:\GC26\DATA\053018\0530F036.D\	05/30/18 19:56

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: AECOM**Project:** Portland Harbor Pre-Remedial Design Investigation/60566335**Sample Matrix:** Sediment**Service Request:** K1803850**Date Analyzed:** 05/30/18 21:29**Date Extracted:** 05/03/18**Lab Control Sample Summary****Butyltins****Sample Name:** Lab Control Sample**Instrument ID:**K-GC-26**Lab Code:** KQ1805439-03**File ID:**J:\GC26\DATA\053018\0530F041.D**Analysis Method:** ALS SOP**Analysis Lot:**592825,593340**Prep Method:** Method**Extraction Lot:**312762

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
PDI-SG-B288-BL1	K1803850-021	J:\GC26\DATA\053018\0530F037.D\	05/30/18 20:15
PDI-SG-B288-BL1MS	KQ1805439-01	J:\GC26\DATA\053018\0530F038.D\	05/30/18 20:33
PDI-SG-B288-BL1DMS	KQ1805439-02	J:\GC26\DATA\053018\0530F039.D\	05/30/18 20:51
PDI-SG-B294-BL1	K1803850-022	J:\GC26\DATA\053018\0530F040.D\	05/30/18 21:10
Method Blank	KQ1805439-04	J:\GC26\DATA\053018\0530F042.D\	05/30/18 21:48
PDI-SG-B296-BL1	K1803850-023	J:\GC26\DATA\053018\0530F045.D\	05/30/18 22:45
PDI-SG-B302-BL1	K1803850-024	J:\GC26\DATA\053018\0530F046.D\	05/30/18 23:04
PDI-SG-B303-BL1	K1803850-025	J:\GC26\DATA\053018\0530F047.D\	05/30/18 23:23
PDI-SG-B240-BL1	K1803850-029	J:\GC26\DATA\053018\0530F049.D\	05/31/18 00:01
PDI-SG-B233-BL1	K1803850-030	J:\GC26\DATA\053018\0530F050.D\	05/31/18 00:20
PDI-SG-B243-BL1	K1803850-031	J:\GC26\DATA\053018\0530F051.D\	05/31/18 00:39
PDI-SG-B302-BL1	K1803850-024	J:\GC26\DATA\060718\0607F024.D\	06/07/18 15:06
PDI-SG-B237-BL1	K1803850-028	J:\GC26\DATA\060718\0607F025.D\	06/07/18 15:25

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: AECOM**Project:** Portland Harbor Pre-Remedial Design Investigation/60566335**Sample Matrix:** Water**Service Request:** K1803850**Date Analyzed:** 05/17/18 21:01**Date Extracted:** 04/30/18**Lab Control Sample Summary****Butyltins****Sample Name:** Lab Control Sample**Instrument ID:**K-GC-26**Lab Code:** KQ1805585-01**File ID:**J:\GC26\DATA\051718\051733.D**Analysis Method:** ALS SOP**Analysis Lot:**592329**Prep Method:** EPA 3520C**Extraction Lot:**312921

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
PDI-SG-RB-VV-042318-1730	K1803850-026	J:\GC26\DATA\051718\051731.D\	05/17/18 20:24
PDI-SG-RB-VV-180423-1700	K1803850-027	J:\GC26\DATA\051718\051732.D\	05/17/18 20:43
Duplicate Lab Control Sample	KQ1805585-02	J:\GC26\DATA\051718\051734.D\	05/17/18 21:20
Method Blank	KQ1805585-03	J:\GC26\DATA\051718\051735.D\	05/17/18 21:38

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation

Service Request: K1803850
Calibration Date: 3/28/2018

Initial Calibration Summary
Butyltins

Calibration ID: KC1800124
Instrument ID: K-GC-26

Signal ID: RTX-1

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1800124-01	TINS @ 2PPB OT5-08G	J:\GC26\DATA\032818\0328F004.D	03/28/2018 15:31
02	KC1800124-02	TINS @ 5PPB OT5-08H	J:\GC26\DATA\032818\0328F005.D	03/28/2018 15:50
03	KC1800124-03	TINS @ 10PPB OT5-08I	J:\GC26\DATA\032818\0328F006.D	03/28/2018 16:08
04	KC1800124-04	TINS @ 20PPB OT5-08J	J:\GC26\DATA\032818\0328F007.D	03/28/2018 16:26
05	KC1800124-05	TINS @ 50PPB OT5-09F	J:\GC26\DATA\032818\0328F008.D	03/28/2018 16:45
06	KC1800124-06	TINS @200PPB OT5-08K	J:\GC26\DATA\032818\0328F009.D	03/28/2018 17:04
07	KC1800124-07	TINS @ 500PPB OT5-08L	J:\GC26\DATA\032818\0328F010.D	03/28/2018 17:22

Analyte

Tri-n-butyltin Cation

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	1.782	3.367E4	02	4.455	4.676E4	03	8.910	4.232E4	04	17.820	4.65E4
05	44.550	4.548E4	06	178.200	5.115E4	07	445.500	5.022E4			

Tri-n-propyltin

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	2.000	4.85E4	02	5.000	3.195E4	03	10.000	3.891E4	04	20.000	3.309E4
05	50.000	3.588E4	06	200.000	4.008E4	07	500.000	4.05E4			

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation

Service Request: K1803850
Calibration Date: 3/28/2018

Initial Calibration Summary
Butyltins

Calibration ID: KC1800124
Instrument ID: K-GC-26

Signal ID: RTX-1

Analyte Name	Compound Type	Calibration Evaluation				Calibration Evaluation	
		Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
Tri-n-butyltin Cation	TRG	Average RF	% RSD	13.0	≤20	4.516E4	
Tri-n-propyltin	SURR	Average RF	% RSD	14.5	≤20	3.841E4	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation

Service Request: K1803850
Calibration Date: 3/28/2018

Initial Calibration Summary
Butyltins

Calibration ID: KC1800124
Instrument ID: K-GC-26

Signal ID: RTX-35

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1800124-01	TINS @ 2PPB OT5-08G	J:\GC26\DATA\032818\0328F004.D	03/28/2018 15:31
02	KC1800124-02	TINS @ 5PPB OT5-08H	J:\GC26\DATA\032818\0328F005.D	03/28/2018 15:50
03	KC1800124-03	TINS @ 10PPB OT5-08I	J:\GC26\DATA\032818\0328F006.D	03/28/2018 16:08
04	KC1800124-04	TINS @ 20PPB OT5-08J	J:\GC26\DATA\032818\0328F007.D	03/28/2018 16:26
05	KC1800124-05	TINS @ 50PPB OT5-09F	J:\GC26\DATA\032818\0328F008.D	03/28/2018 16:45
06	KC1800124-06	TINS @200PPB OT5-08K	J:\GC26\DATA\032818\0328F009.D	03/28/2018 17:04
07	KC1800124-07	TINS @ 500PPB OT5-08L	J:\GC26\DATA\032818\0328F010.D	03/28/2018 17:22

Analyte

Tri-n-butyltin Cation

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	1.782	1.092E5	02	4.455	7.768E4	03	8.910	7.892E4	04	17.820	8.518E4
05	44.550	7.699E4	06	178.200	8.05E4	07	445.500	7.882E4			

Tri-n-propyltin

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	2.000	6.999E4	02	5.000	6.724E4	03	10.000	5.689E4	04	20.000	6.633E4
05	50.000	6.723E4	06	200.000	6.537E4	07	500.000	6.415E4			

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation

Service Request: K1803850
Calibration Date: 3/28/2018

Initial Calibration Summary
Butyltins

Calibration ID: KC1800124
Instrument ID: K-GC-26

Signal ID: RTX-35

Analyte Name	Compound Type	Calibration Evaluation				Calibration Evaluation	
		Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
Tri-n-butyltin Cation	TRG	Average RF	% RSD	13.7	≤20	8.39E4	
Tri-n-propyltin	SURR	Average RF	% RSD	6.3	≤20	6.531E4	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation

Service Request: K1803850
Calibration Date: 6/7/2018

Initial Calibration Summary
Butyltins

Calibration ID: KC1800242
Instrument ID: K-GC-26

Signal ID: RTX-1

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1800242-01	OT5-010A 2PPB	J:\GC26\DATA\060718\0607F011.D	06/07/2018 09:49
02	KC1800242-02	OT5-010B 5PPB	J:\GC26\DATA\060718\0607F012.D	06/07/2018 10:08
03	KC1800242-03	OT5-010C 10 PPB	J:\GC26\DATA\060718\0607F013.D	06/07/2018 10:26
04	KC1800242-04	OT5-010D 20 PPB	J:\GC26\DATA\060718\0607F014.D	06/07/2018 10:45
05	KC1800242-05	OT5-090 50 PPB	J:\GC26\DATA\060718\0607F015.D	06/07/2018 11:04
06	KC1800242-06	OT5-010E 200 PPB	J:\GC26\DATA\060718\0607F016.D	06/07/2018 11:22
07	KC1800242-07	OT5-010F 500 PPB	J:\GC26\DATA\060718\0607F017.D	06/07/2018 11:41

Analyte

Tri-n-butyltin Cation

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	1.782	4.116E4	02	4.455	3.983E4	03	8.910	4.337E4	04	17.820	4.171E4
05	44.550	4.619E4	06	178.200	4.378E4	07	445.500	4.202E4			

Tri-n-propyltin

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	2.000	3.481E4	02	5.000	3.36E4	03	10.000	3.686E4	04	20.000	3.208E4
05	50.000	3.429E4	06	200.000	3.467E4	07	500.000	3.409E4			

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation

Service Request: K1803850
Calibration Date: 6/7/2018

Initial Calibration Summary
Butyltins

Calibration ID: KC1800242
Instrument ID: K-GC-26

Signal ID: RTX-1

Analyte Name	Compound Type	Calibration Evaluation				Calibration Evaluation	
		Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
Tri-n-butyltin Cation	TRG	Average RF	% RSD	4.9	≤20	4.258E4	
Tri-n-propyltin	SURR	Average RF	% RSD	4.2	≤20	3.434E4	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation

Service Request: K1803850
Calibration Date: 6/7/2018

Initial Calibration Summary
Butyltins

Calibration ID: KC1800242
Instrument ID: K-GC-26

Signal ID: RTX-35

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1800242-01	OT5-010A 2PPB	J:\GC26\DATA\060718\0607F011.D	06/07/2018 09:49
02	KC1800242-02	OT5-010B 5PPB	J:\GC26\DATA\060718\0607F012.D	06/07/2018 10:08
03	KC1800242-03	OT5-010C 10 PPB	J:\GC26\DATA\060718\0607F013.D	06/07/2018 10:26
04	KC1800242-04	OT5-010D 20 PPB	J:\GC26\DATA\060718\0607F014.D	06/07/2018 10:45
05	KC1800242-05	OT5-090 50 PPB	J:\GC26\DATA\060718\0607F015.D	06/07/2018 11:04
06	KC1800242-06	OT5-010E 200 PPB	J:\GC26\DATA\060718\0607F016.D	06/07/2018 11:22
07	KC1800242-07	OT5-010F 500 PPB	J:\GC26\DATA\060718\0607F017.D	06/07/2018 11:41

Analyte

Tri-n-butyltin Cation

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	1.782	1.129E5	02	4.455	1.146E5	03	8.910	1.123E5	04	17.820	1.186E5
05	44.550	1.136E5	06	178.200	1.125E5	07	445.500	1.07E5			

Tri-n-propyltin

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	2.000	1.508E5	02	5.000	8.335E4	03	10.000	9.444E4	04	20.000	9.268E4
05	50.000	9.379E4	06	200.000	9.02E4	07	500.000	8.504E4			

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation

Service Request: K1803850
Calibration Date: 6/7/2018

Initial Calibration Summary
Butyltins

Calibration ID: KC1800242
Instrument ID: K-GC-26

Signal ID: RTX-35

Analyte Name	Compound Type	Calibration Evaluation				Calibration Evaluation	
		Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
Tri-n-butyltin Cation	TRG	Average RF	% RSD	3.0	≤20	1.131E5	
Tri-n-propyltin	SURR	Linear	R2	0.9994	≥0.99	9.861E4	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation

Service Request: K1803850
Calibration Date: 3/28/2018

Initial Calibration Verification Summary
Butyltins

Calibration ID: KC1800124
Instrument ID: K-GC-26

Signal ID: RTX-1

#	Lab Code	Sample Name	File Location	Acquisition Date
08	KC1800124-08	TINS @ 500PPB OT5-09C	J:\GC26\DATA\032818\0328F011.D	03/28/2018 17:41

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	50.6	4.516E4	5.13E4	13.60	±25	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation

Service Request: K1803850
Calibration Date: 3/28/2018

Initial Calibration Verification Summary
Butyltins

Calibration ID: KC1800124
Instrument ID: K-GC-26

Signal ID: RTX-35

#	Lab Code	Sample Name	File Location	Acquisition Date
08	KC1800124-08	TINS @ 500PPB OT5-09C	J:\GC26\DATA\032818\0328F011.D	03/28/2018 17:41

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	44.4	8.39E4	8.369E4	-0.260	±25	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation

Service Request: K1803850
Calibration Date: 6/7/2018

Initial Calibration Verification Summary
Butyltins

Calibration ID: KC1800242
Instrument ID: K-GC-26

Signal ID: RTX-1

#	Lab Code	Sample Name	File Location	Acquisition Date
08	KC1800242-08	OT5-09P ICV	J:\GC26\DATA\060718\0607F019.D	06/07/2018 12:18

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	41.4	4.258E4	3.956E4	-7.084	±25	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation

Service Request: K1803850
Calibration Date: 6/7/2018

Initial Calibration Verification Summary
Butyltins

Calibration ID: KC1800242
Instrument ID: K-GC-26

Signal ID: RTX-35

#	Lab Code	Sample Name	File Location	Acquisition Date
08	KC1800242-08	OT5-09P ICV	J:\GC26\DATA\060718\0607F019.D	06/07/2018 12:18

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	50.3	1.131E5	1.277E5	12.89	±25	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM

Service Request: K1803850

Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Date Analyzed: 05/30/18 09:48

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method: ALS SOP

Calibration Date: 3/28/2018

File ID: J:\GC26\DATA\053018\0530F003.D\

Calibration ID: KC1800124

Signal ID: RTX-35

Analysis Lot: 592825

Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	44.1	8.39E4	8.309E4	-1.0	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	49.6	6.531E4	6.483E4	-0.7	NA	±25	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 05/30/18 09:48

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method: ALS SOP
File ID: J:\GC26\DATA\053018\0530F003.D\
Signal ID: RTX-1

Calibration Date: 3/28/2018
Calibration ID: KC1800124
Analysis Lot: 592825
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	45.5	4.516E4	4.616E4	2.2	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	44.7	3.841E4	3.437E4	-10.5	NA	±25	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 05/30/18 14:06

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method: ALS SOP
File ID: J:\GC26\DATA\053018\0530F017.D\
Signal ID: RTX-35

Calibration Date: 3/28/2018
Calibration ID: KC1800124
Analysis Lot: 592825
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	41.9	8.39E4	7.885E4	-6.0	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	50.6	6.531E4	6.616E4	1.3	NA	±25	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 05/30/18 14:06

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method: ALS SOP
File ID: J:\GC26\DATA\053018\0530F017.D\
Signal ID: RTX-1

Calibration Date: 3/28/2018
Calibration ID: KC1800124
Analysis Lot: 592825
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	44.7	4.516E4	4.532E4	0.4	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	48.3	3.841E4	3.709E4	-3.4	NA	±25	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 05/30/18 17:47

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method: ALS SOP
File ID: J:\GC26\DATA\053018\0530F029.D\
Signal ID: RTX-35

Calibration Date: 3/28/2018
Calibration ID: KC1800124
Analysis Lot: 592825
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	41.9	8.39E4	7.884E4	-6.0	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	48.1	6.531E4	6.281E4	-3.8	NA	±25	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM

Service Request: K1803850

Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Date Analyzed: 05/30/18 17:47

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method: ALS SOP

Calibration Date: 3/28/2018

File ID: J:\GC26\DATA\053018\0530F029.D\

Calibration ID: KC1800124

Signal ID: RTX-1

Analysis Lot: 592825

Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	48.0	4.516E4	4.869E4	7.8	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	44.9	3.841E4	3.447E4	-10.3	NA	±25	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM

Service Request: K1803850

Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Date Analyzed: 05/30/18 22:07

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method: ALS SOP

Calibration Date: 3/28/2018

File ID: J:\GC26\DATA\053018\0530F043.D\

Calibration ID: KC1800124

Signal ID: RTX-35

Analysis Lot: 592825

Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	45.2	8.39E4	8.51E4	1.4	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	48.3	6.531E4	6.314E4	-3.3	NA	±25	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 05/30/18 22:07

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method: ALS SOP
File ID: J:\GC26\DATA\053018\0530F043.D\
Signal ID: RTX-1

Calibration Date: 3/28/2018
Calibration ID: KC1800124
Analysis Lot: 592825
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	45.7	4.516E4	4.636E4	2.7	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	45.9	3.841E4	3.525E4	-8.2	NA	±25	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM

Service Request: K1803850

Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Date Analyzed: 05/31/18 01:17

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method: ALS SOP

Calibration Date: 3/28/2018

File ID: J:\GC26\DATA\053018\0530F053.D\

Calibration ID: KC1800124

Signal ID: RTX-35

Analysis Lot: 592825

Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	44.1	8.39E4	8.307E4	-1.0	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	48.7	6.531E4	6.368E4	-2.5	NA	±25	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM

Service Request: K1803850

Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Date Analyzed: 05/31/18 01:17

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method: ALS SOP

Calibration Date: 3/28/2018

File ID: J:\GC26\DATA\053018\0530F053.D\

Calibration ID: KC1800124

Signal ID: RTX-1

Analysis Lot: 592825

Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	45.7	4.516E4	4.629E4	2.5	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	46.5	3.841E4	3.574E4	-7.0	NA	±25	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 05/31/18 08:59

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method: ALS SOP
File ID: J:\GC26\DATA\053118\0531F003.D\
Signal ID: RTX-35

Calibration Date: 3/28/2018
Calibration ID: KC1800124
Analysis Lot: 592975
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	41.0	8.39E4	7.727E4	-7.9	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	49.7	6.531E4	6.496E4	-0.5	NA	±25	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM

Service Request: K1803850

Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Date Analyzed: 05/31/18 08:59

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method: ALS SOP

Calibration Date: 3/28/2018

File ID: J:\GC26\DATA\053118\0531F003.D\

Calibration ID: KC1800124

Signal ID: RTX-1

Analysis Lot: 592975

Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	45.3	4.516E4	4.588E4	1.6	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	45.1	3.841E4	3.465E4	-9.8	NA	±25	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 05/31/18 14:53

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method: ALS SOP
File ID: J:\GC26\DATA\053118\0531F017.D\
Signal ID: RTX-35

Calibration Date: 3/28/2018
Calibration ID: KC1800124
Analysis Lot: 592975
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	41.6	8.39E4	7.828E4	-6.7	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	49.6	6.531E4	6.485E4	-0.7	NA	±25	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 05/31/18 14:53

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method: ALS SOP
File ID: J:\GC26\DATA\053118\0531F017.D\
Signal ID: RTX-1

Calibration Date: 3/28/2018
Calibration ID: KC1800124
Analysis Lot: 592975
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	44.1	4.516E4	4.474E4	-0.9	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	48.1	3.841E4	3.699E4	-3.7	NA	±25	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 06/07/18 14:28

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method: ALS SOP
File ID: J:\GC26\DATA\060718\0607F022.D\
Signal ID: RTX-1

Calibration Date: 6/7/2018
Calibration ID: KC1800242
Analysis Lot: 593340
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	36.1	4.258E4	3.451E4	-19.0	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	40.0	3.434E4	2.745E4	-20.1	NA	±25	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM

Service Request: K1803850

Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Date Analyzed: 06/07/18 14:28

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method: ALS SOP

Calibration Date: 6/7/2018

File ID: J:\GC26\DATA\060718\0607F022.D\

Calibration ID: KC1800242

Signal ID: RTX-35

Analysis Lot: 593340

Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	45.8	1.131E5	1.163E5	2.9	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	52.4	9.861E4	9.419E4	NA	4.8	±25	Linear

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 06/07/18 18:48

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method: ALS SOP
File ID: J:\GC26\DATA\060718\0607F036.D\
Signal ID: RTX-1

Calibration Date: 6/7/2018
Calibration ID: KC1800242
Analysis Lot: 593340
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	39.5	4.258E4	3.776E4	-11.3	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	41.8	3.434E4	2.87E4	-16.4	NA	±25	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM

Service Request: K1803850

Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Date Analyzed: 06/07/18 18:48

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method: ALS SOP

Calibration Date: 6/7/2018

File ID: J:\GC26\DATA\060718\0607F036.D\

Calibration ID: KC1800242

Signal ID: RTX-35

Analysis Lot: 593340

Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	46.3	1.131E5	1.175E5	3.9	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	53.8	9.861E4	9.653E4	NA	7.5	±25	Linear

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request:K1803850

Analysis Run Log
Butyltins

Analysis Method:

Analysis Lot:592329
Instrument ID:K-GC-26

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\GC26\DATA\051718\051703.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	11:40:00	
J:\GC26\DATA\051718\051704.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	11:59:00	
J:\GC26\DATA\051718\051705.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	12:17:00	
J:\GC26\DATA\051718\051706.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	12:35:00	
J:\GC26\DATA\051718\051707.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	12:54:00	
J:\GC26\DATA\051718\051708.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	13:14:00	
J:\GC26\DATA\051718\051709.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	13:32:00	
J:\GC26\DATA\051718\051710.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	13:51:00	
J:\GC26\DATA\051718\051711.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	14:09:00	
J:\GC26\DATA\051718\051712.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	14:28:00	
J:\GC26\DATA\051718\051713.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	14:46:00	
J:\GC26\DATA\051718\051714.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	15:06:00	
J:\GC26\DATA\051718\051715.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	15:24:00	
J:\GC26\DATA\051718\051716.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	15:42:00	
J:\GC26\DATA\051718\051717.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	16:01:00	
J:\GC26\DATA\051718\051718.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	16:19:00	
J:\GC26\DATA\051718\051719.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	16:39:00	
J:\GC26\DATA\051718\051720.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	16:58:00	
J:\GC26\DATA\051718\051721.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	17:17:00	
J:\GC26\DATA\051718\051722.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	17:35:00	
J:\GC26\DATA\051718\051723.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	17:55:00	
J:\GC26\DATA\051718\051724.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	18:13:00	
J:\GC26\DATA\051718\051725.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	18:32:00	
J:\GC26\DATA\051718\051726.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	18:50:00	
J:\GC26\DATA\051718\051727.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	19:08:00	
J:\GC26\DATA\051718\051727.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	19:08:00	
J:\GC26\DATA\051718\051728.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	19:28:00	
J:\GC26\DATA\051718\051728.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	19:28:00	
J:\GC26\DATA\051718\051729.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	19:46:00	
J:\GC26\DATA\051718\051730.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	20:05:00	
J:\GC26\DATA\051718\051731.D\	PDI-SG-RB-VV-042318-1730	K1803850-026	5/17/2018	20:24:00	
J:\GC26\DATA\051718\051732.D\	PDI-SG-RB-VV-180423-1700	K1803850-027	5/17/2018	20:43:00	
J:\GC26\DATA\051718\051733.D\	Lab Control Sample	KQ1805585-01	5/17/2018	21:01:00	
J:\GC26\DATA\051718\051734.D\	Duplicate Lab Control Sample	KQ1805585-02	5/17/2018	21:20:00	
J:\GC26\DATA\051718\051735.D\	Method Blank	KQ1805585-03	5/17/2018	21:38:00	
J:\GC26\DATA\051718\051736.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	21:57:00	
J:\GC26\DATA\051718\051737.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	22:15:00	
J:\GC26\DATA\051718\051738.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	22:34:00	
J:\GC26\DATA\051718\051739.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	22:52:00	
J:\GC26\DATA\051718\051740.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	23:10:00	
J:\GC26\DATA\051718\051741.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	23:29:00	
J:\GC26\DATA\051718\051742.D\	ZZZZZZZZ	ZZZZZZZZ	5/17/2018	23:48:00	
J:\GC26\DATA\051718\051743.D\	ZZZZZZZZ	ZZZZZZZZ	5/18/2018	00:08:00	
J:\GC26\DATA\051718\051750.D\	ZZZZZZZZ	ZZZZZZZZ	5/18/2018	02:00:00	
J:\GC26\DATA\051718\051750.D\	ZZZZZZZZ	ZZZZZZZZ	5/18/2018	02:00:00	
J:\GC26\DATA\051718\051751.D\	ZZZZZZZZ	ZZZZZZZZ	5/18/2018	02:20:00	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: AECOM**Service Request:**K1803850**Project:** Portland Harbor Pre-Remedial Design Investigation/60566335**Analysis Run Log****Butyltins****Analysis Method:****Analysis Lot:**592329**Instrument ID:**K-GC-26

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\GC26\DATA\051718\051751.D\	ZZZZZZZ	ZZZZZZZ	5/18/2018	02:20:00	
J:\GC26\DATA\051718\051757.D\	ZZZZZZZ	ZZZZZZZ	5/18/2018	04:49:00	
J:\GC26\DATA\051718\051758.D\	ZZZZZZZ	ZZZZZZZ	5/18/2018	05:07:00	
J:\GC26\DATA\051718\051759.D\	ZZZZZZZ	ZZZZZZZ	5/18/2018	05:26:00	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850

Analysis Run Log
Butyltins

Analysis Method: ALS SOP

Analysis Lot: 592825
Instrument ID: K-GC-26

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\GC26\DATA\053018\0530F003.D\	Continuing Calibration Verification	KQ1807160-01	5/30/2018	09:48:00	
J:\GC26\DATA\053018\0530F004.D\	ZZZZZZZ	ZZZZZZZ	5/30/2018	10:07:00	
J:\GC26\DATA\053018\0530F007.D\	ZZZZZZZ	ZZZZZZZ	5/30/2018	11:02:00	
J:\GC26\DATA\053018\0530F009.D\	Lab Control Sample	KQ1805438-03	5/30/2018	11:39:00	
J:\GC26\DATA\053018\0530F010.D\	Method Blank	KQ1805438-04	5/30/2018	11:57:00	
J:\GC26\DATA\053018\0530F011.D\	PDI-SG-B291-BL1	K1803850-001	5/30/2018	12:16:00	
J:\GC26\DATA\053018\0530F012.D\	PDI-SG-B291-BL1 MS	KQ1805438-01	5/30/2018	12:34:00	
J:\GC26\DATA\053018\0530F013.D\	PDI-SG-B291-BL1 DMS	KQ1805438-02	5/30/2018	12:53:00	
J:\GC26\DATA\053018\0530F014.D\	PDI-SG-B292-BL1	K1803850-002	5/30/2018	13:11:00	
J:\GC26\DATA\053018\0530F015.D\	PDI-SG-B306-BL1	K1803850-003	5/30/2018	13:30:00	
J:\GC26\DATA\053018\0530F016.D\	PDI-SG-B323-BL1	K1803850-004	5/30/2018	13:48:00	
J:\GC26\DATA\053018\0530F017.D\	Continuing Calibration Verification	KQ1807160-02	5/30/2018	14:06:00	
J:\GC26\DATA\053018\0530F018.D\	ZZZZZZZ	ZZZZZZZ	5/30/2018	14:25:00	
J:\GC26\DATA\053018\0530F019.D\	PDI-SG-B329-BL1	K1803850-005	5/30/2018	14:43:00	
J:\GC26\DATA\053018\0530F020.D\	PDI-SG-B334-BL1	K1803850-006	5/30/2018	15:01:00	
J:\GC26\DATA\053018\0530F021.D\	PDI-SG-B346-BL1	K1803850-007	5/30/2018	15:20:00	
J:\GC26\DATA\053018\0530F022.D\	PDI-SG-B265-BL1	K1803850-008	5/30/2018	15:38:00	
J:\GC26\DATA\053018\0530F023.D\	PDI-SG-B271-BL1	K1803850-009	5/30/2018	15:57:00	
J:\GC26\DATA\053018\0530F024.D\	PDI-SG-B273-BL1	K1803850-010	5/30/2018	16:15:00	
J:\GC26\DATA\053018\0530F025.D\	PDI-SG-B279-BL1	K1803850-011	5/30/2018	16:34:00	
J:\GC26\DATA\053018\0530F026.D\	PDI-SG-B280-BL1	K1803850-012	5/30/2018	16:52:00	
J:\GC26\DATA\053018\0530F027.D\	PDI-SG-B260-BL1	K1803850-013	5/30/2018	17:10:00	
J:\GC26\DATA\053018\0530F028.D\	PDI-SG-B352-BL1	K1803850-014	5/30/2018	17:29:00	
J:\GC26\DATA\053018\0530F029.D\	Continuing Calibration Verification	KQ1807160-03	5/30/2018	17:47:00	
J:\GC26\DATA\053018\0530F030.D\	ZZZZZZZ	ZZZZZZZ	5/30/2018	18:06:00	
J:\GC26\DATA\053018\0530F031.D\	PDI-SG-B366-BL1	K1803850-015	5/30/2018	18:24:00	
J:\GC26\DATA\053018\0530F032.D\	PDI-SG-B366-BL1-D	K1803850-016	5/30/2018	18:42:00	
J:\GC26\DATA\053018\0530F033.D\	PDI-SG-B357-BL1	K1803850-017	5/30/2018	19:01:00	
J:\GC26\DATA\053018\0530F034.D\	PDI-SG-B384-BL1	K1803850-018	5/30/2018	19:19:00	
J:\GC26\DATA\053018\0530F035.D\	PDI-SG-B378-BL1	K1803850-019	5/30/2018	19:38:00	
J:\GC26\DATA\053018\0530F036.D\	PDI-SG-B284-BL1	K1803850-020	5/30/2018	19:56:00	
J:\GC26\DATA\053018\0530F037.D\	PDI-SG-B288-BL1	K1803850-021	5/30/2018	20:15:00	
J:\GC26\DATA\053018\0530F038.D\	PDI-SG-B288-BL1 MS	KQ1805439-01	5/30/2018	20:33:00	
J:\GC26\DATA\053018\0530F039.D\	PDI-SG-B288-BL1 DMS	KQ1805439-02	5/30/2018	20:51:00	
J:\GC26\DATA\053018\0530F040.D\	PDI-SG-B294-BL1	K1803850-022	5/30/2018	21:10:00	
J:\GC26\DATA\053018\0530F041.D\	Lab Control Sample	KQ1805439-03	5/30/2018	21:29:00	
J:\GC26\DATA\053018\0530F042.D\	Method Blank	KQ1805439-04	5/30/2018	21:48:00	
J:\GC26\DATA\053018\0530F043.D\	Continuing Calibration Verification	KQ1807160-04	5/30/2018	22:07:00	
J:\GC26\DATA\053018\0530F044.D\	ZZZZZZZ	ZZZZZZZ	5/30/2018	22:26:00	
J:\GC26\DATA\053018\0530F045.D\	PDI-SG-B296-BL1	K1803850-023	5/30/2018	22:45:00	
J:\GC26\DATA\053018\0530F046.D\	PDI-SG-B302-BL1	K1803850-024	5/30/2018	23:04:00	
J:\GC26\DATA\053018\0530F047.D\	PDI-SG-B303-BL1	K1803850-025	5/30/2018	23:23:00	
J:\GC26\DATA\053018\0530F048.D\	ZZZZZZZ	ZZZZZZZ	5/30/2018	23:42:00	
J:\GC26\DATA\053018\0530F049.D\	PDI-SG-B240-BL1	K1803850-029	5/31/2018	00:01:00	
J:\GC26\DATA\053018\0530F050.D\	PDI-SG-B233-BL1	K1803850-030	5/31/2018	00:20:00	
J:\GC26\DATA\053018\0530F051.D\	PDI-SG-B243-BL1	K1803850-031	5/31/2018	00:39:00	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM

Service Request:K1803850

Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Analysis Run Log
Butyltins

Analysis Method: ALS SOP

Analysis Lot:592825
Instrument ID:K-GC-26

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\GC26\DATA\053018\0530F052.D\	ZZZZZZZ	ZZZZZZZ	5/31/2018	00:58:00	
J:\GC26\DATA\053018\0530F053.D\	Continuing Calibration Verification	KQ1807160-05	5/31/2018	01:17:00	
J:\GC26\DATA\053018\0530F054.D\	ZZZZZZZ	ZZZZZZZ	5/31/2018	01:36:00	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: AECOM**Service Request:**K1803850**Project:** Portland Harbor Pre-Remedial Design Investigation/60566335**Analysis Run Log****Butyltins****Analysis Method:** ALS SOP**Analysis Lot:**592975**Instrument ID:**K-GC-26

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\GC26\DATA\053118\0531F003.D\	Continuing Calibration Verification	KQ1807228-01	5/31/2018	08:59:00	
J:\GC26\DATA\053118\0531F004.D\	ZZZZZZZ	ZZZZZZZ	5/31/2018	09:18:00	
J:\GC26\DATA\053118\0531F005.D\	ZZZZZZZ	ZZZZZZZ	5/31/2018	09:38:00	
J:\GC26\DATA\053118\0531F006.D\	ZZZZZZZ	ZZZZZZZ	5/31/2018	09:57:00	
J:\GC26\DATA\053118\0531F007.D\	ZZZZZZZ	ZZZZZZZ	5/31/2018	10:17:00	
J:\GC26\DATA\053118\0531F008.D\	ZZZZZZZ	ZZZZZZZ	5/31/2018	10:37:00	
J:\GC26\DATA\053118\0531F009.D\	ZZZZZZZ	ZZZZZZZ	5/31/2018	10:58:00	
J:\GC26\DATA\053118\0531F010.D\	ZZZZZZZ	ZZZZZZZ	5/31/2018	11:18:00	
J:\GC26\DATA\053118\0531F011.D\	ZZZZZZZ	ZZZZZZZ	5/31/2018	11:39:00	
J:\GC26\DATA\053118\0531F012.D\	ZZZZZZZ	ZZZZZZZ	5/31/2018	12:00:00	
J:\GC26\DATA\053118\0531F013.D\	PDI-SG-B273-BL1	K1803850-010	5/31/2018	12:22:00	
J:\GC26\DATA\053118\0531F015.D\	PDI-SG-B265-BL1	K1803850-008	5/31/2018	13:12:00	
J:\GC26\DATA\053118\0531F016.D\	PDI-SG-B260-BL1	K1803850-013	5/31/2018	14:34:00	
J:\GC26\DATA\053118\0531F017.D\	Continuing Calibration Verification	KQ1807228-02	5/31/2018	14:53:00	
J:\GC26\DATA\053118\0531F018.D\	ZZZZZZZ	ZZZZZZZ	5/31/2018	15:12:00	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: AECOM

Service Request:K1803850

Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Analysis Run Log

Butyltins

Analysis Method: ALS SOP

Analysis Lot:593340

Instrument ID:K-GC-26

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\GC26\DATA\060718\0607F022.D\	Continuing Calibration Verification	KQ1807678-01	6/7/2018	14:28:00	
J:\GC26\DATA\060718\0607F023.D\	ZZZZZZZZ	ZZZZZZZZ	6/7/2018	14:48:00	
J:\GC26\DATA\060718\0607F024.D\	PDI-SG-B302-BL1	K1803850-024	6/7/2018	15:06:00	
J:\GC26\DATA\060718\0607F025.D\	PDI-SG-B237-BL1	K1803850-028	6/7/2018	15:25:00	
J:\GC26\DATA\060718\0607F026.D\	ZZZZZZZZ	ZZZZZZZZ	6/7/2018	15:43:00	
J:\GC26\DATA\060718\0607F027.D\	ZZZZZZZZ	ZZZZZZZZ	6/7/2018	16:02:00	
J:\GC26\DATA\060718\0607F028.D\	ZZZZZZZZ	ZZZZZZZZ	6/7/2018	16:20:00	
J:\GC26\DATA\060718\0607F029.D\	ZZZZZZZZ	ZZZZZZZZ	6/7/2018	16:38:00	
J:\GC26\DATA\060718\0607F030.D\	ZZZZZZZZ	ZZZZZZZZ	6/7/2018	16:57:00	
J:\GC26\DATA\060718\0607F031.D\	ZZZZZZZZ	ZZZZZZZZ	6/7/2018	17:15:00	
J:\GC26\DATA\060718\0607F032.D\	ZZZZZZZZ	ZZZZZZZZ	6/7/2018	17:35:00	
J:\GC26\DATA\060718\0607F033.D\	ZZZZZZZZ	ZZZZZZZZ	6/7/2018	17:53:00	
J:\GC26\DATA\060718\0607F034.D\	ZZZZZZZZ	ZZZZZZZZ	6/7/2018	18:12:00	
J:\GC26\DATA\060718\0607F035.D\	ZZZZZZZZ	ZZZZZZZZ	6/7/2018	18:30:00	
J:\GC26\DATA\060718\0607F036.D\	Continuing Calibration Verification	KQ1807678-02	6/7/2018	18:48:00	
J:\GC26\DATA\060718\0607F037.D\	ZZZZZZZZ	ZZZZZZZZ	6/7/2018	19:07:00	
J:\GC26\DATA\060718\0607F038.D\	ZZZZZZZZ	ZZZZZZZZ	6/7/2018	19:25:00	
J:\GC26\DATA\060718\0607F039.D\	ZZZZZZZZ	ZZZZZZZZ	6/7/2018	19:43:00	
J:\GC26\DATA\060718\0607F041.D\	ZZZZZZZZ	ZZZZZZZZ	6/7/2018	20:20:00	
J:\GC26\DATA\060718\0607F042.D\	ZZZZZZZZ	ZZZZZZZZ	6/7/2018	20:39:00	
J:\GC26\DATA\060718\0607F043.D\	ZZZZZZZZ	ZZZZZZZZ	6/7/2018	20:57:00	
J:\GC26\DATA\060718\0607F044.D\	ZZZZZZZZ	ZZZZZZZZ	6/7/2018	21:16:00	
J:\GC26\DATA\060718\0607F045.D\	ZZZZZZZZ	ZZZZZZZZ	6/7/2018	21:34:00	
J:\GC26\DATA\060718\0607F046.D\	ZZZZZZZZ	ZZZZZZZZ	6/7/2018	21:53:00	

ALS Group USA, Corp.
dba ALS Environmental

Prep Summary Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request:K1803850

Butyltins

Prep Method: Method
Analytical Method: ALS SOP

Extraction Lot: 312761
Extraction Date: 05/07/18 13:24

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
PDI-SG-B291-BL1	K1803850-001	4/23/18	4/25/18	20.451 g	4 mL	42.4
PDI-SG-B292-BL1	K1803850-002	4/23/18	4/25/18	20.250 g	4 mL	39.8
PDI-SG-B306-BL1	K1803850-003	4/23/18	4/25/18	20.086 g	4 mL	41.1
PDI-SG-B323-BL1	K1803850-004	4/23/18	4/25/18	20.016 g	4 mL	44.8
PDI-SG-B329-BL1	K1803850-005	4/23/18	4/25/18	20.202 g	4 mL	37.6
PDI-SG-B334-BL1	K1803850-006	4/23/18	4/25/18	20.276 g	4 mL	41.1
PDI-SG-B346-BL1	K1803850-007	4/23/18	4/25/18	20.473 g	4 mL	48.9
PDI-SG-B265-BL1	K1803850-008	4/23/18	4/25/18	20.216 g	4 mL	46.4
PDI-SG-B271-BL1	K1803850-009	4/23/18	4/25/18	20.151 g	4 mL	35.1
PDI-SG-B273-BL1	K1803850-010	4/23/18	4/25/18	20.074 g	4 mL	37.4
PDI-SG-B279-BL1	K1803850-011	4/23/18	4/25/18	20.444 g	4 mL	38.0
PDI-SG-B280-BL1	K1803850-012	4/23/18	4/25/18	20.123 g	4 mL	32.8
PDI-SG-B260-BL1	K1803850-013	4/23/18	4/25/18	20.106 g	4 mL	48.1
PDI-SG-B352-BL1	K1803850-014	4/24/18	4/25/18	20.042 g	4 mL	51.6
PDI-SG-B366-BL1	K1803850-015	4/24/18	4/25/18	20.075 g	4 mL	56.1
PDI-SG-B366-BL1-D	K1803850-016	4/24/18	4/25/18	20.338 g	4 mL	56.2
PDI-SG-B357-BL1	K1803850-017	4/24/18	4/25/18	20.267 g	4 mL	42.2
PDI-SG-B384-BL1	K1803850-018	4/24/18	4/25/18	20.067 g	4 mL	41.5
PDI-SG-B378-BL1	K1803850-019	4/24/18	4/25/18	20.439 g	4 mL	58.0
PDI-SG-B284-BL1	K1803850-020	4/24/18	4/25/18	20.043 g	4 mL	33.9
Matrix Spike	KQ1805438-01MS	4/23/18	4/25/18	20.406 g	4 mL	42.4
Duplicate Matrix Spike	KQ1805438-02DMS	4/23/18	4/25/18	20.090 g	4 mL	42.4
Lab Control Sample	KQ1805438-03LCS	NA	NA	20.00 g	4 mL	
Method Blank	KQ1805438-04MB	NA	NA	20.4730 g	4 mL	

ALS Group USA, Corp.
dba ALS Environmental

Prep Summary Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850

Butyltins

Prep Method: Method
Analytical Method: ALS SOP

Extraction Lot: 312762
Extraction Date: 05/03/18 17:44

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
PDI-SG-B288-BL1	K1803850-021	4/24/18	4/25/18	20.118 g	4 mL	32.1
PDI-SG-B294-BL1	K1803850-022	4/24/18	4/25/18	20.031 g	4 mL	35.6
PDI-SG-B296-BL1	K1803850-023	4/24/18	4/25/18	20.005 g	4 mL	35.8
PDI-SG-B302-BL1	K1803850-024	4/24/18	4/25/18	20.441 g	4 mL	37.4
PDI-SG-B303-BL1	K1803850-025	4/24/18	4/25/18	20.405 g	4 mL	34.8
PDI-SG-B237-BL1	K1803850-028	4/20/18	4/25/18	20.003 g	4 mL	43.0
PDI-SG-B240-BL1	K1803850-029	4/20/18	4/25/18	20.371 g	4 mL	59.6
PDI-SG-B233-BL1	K1803850-030	4/20/18	4/25/18	20.202 g	4 mL	65.7
PDI-SG-B243-BL1	K1803850-031	4/20/18	4/25/18	20.085 g	4 mL	47.8
Matrix Spike	KQ1805439-01MS	4/24/18	4/25/18	20.113 g	4 mL	32.1
Duplicate Matrix Spike	KQ1805439-02DMS	4/24/18	4/25/18	20.351 g	4 mL	32.1
Lab Control Sample	KQ1805439-03LCS	NA	NA	20.00 g	4 mL	
Method Blank	KQ1805439-04MB	NA	NA	20.4410 g	4 mL	

ALS Group USA, Corp.
dba ALS Environmental

Prep Summary Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Water

Service Request:K1803850

Butyltins

Prep Method: EPA 3520C
Analytical Method: ALS SOP

Extraction Lot: 312921
Extraction Date: 04/30/18 16:51

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
PDI-SG-RB-VV-042318-1730	K1803850-026	4/23/18	4/25/18	500 mL	1 mL	
PDI-SG-RB-VV-180423-1700	K1803850-027	4/23/18	4/25/18	500 mL	1 mL	
Lab Control Sample	KQ1805585-01LCS	NA	NA	500 mL	1 mL	
Duplicate Lab Control Sample	KQ1805585-02DLCS	NA	NA	500 mL	1 mL	
Method Blank	KQ1805585-03MB	NA	NA	500 mL	1 mL	



Polynuclear Aromatic Hydrocarbons

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

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850

**Cover Page - Organic Analysis Data Package
 Polynuclear Aromatic Hydrocarbons**

Sample Name	Lab Code	Date Collected	Date Received
PDI-SG-B291-BL1	K1803850-001	04/23/2018	04/25/2018
PDI-SG-B292-BL1	K1803850-002	04/23/2018	04/25/2018
PDI-SG-B306-BL1	K1803850-003	04/23/2018	04/25/2018
PDI-SG-B323-BL1	K1803850-004	04/23/2018	04/25/2018
PDI-SG-B329-BL1	K1803850-005	04/23/2018	04/25/2018
PDI-SG-B334-BL1	K1803850-006	04/23/2018	04/25/2018
PDI-SG-B346-BL1	K1803850-007	04/23/2018	04/25/2018
PDI-SG-B265-BL1	K1803850-008	04/23/2018	04/25/2018
PDI-SG-B271-BL1	K1803850-009	04/23/2018	04/25/2018
PDI-SG-B273-BL1	K1803850-010	04/23/2018	04/25/2018
PDI-SG-B279-BL1	K1803850-011	04/23/2018	04/25/2018
PDI-SG-B280-BL1	K1803850-012	04/23/2018	04/25/2018
PDI-SG-B260-BL1	K1803850-013	04/23/2018	04/25/2018
PDI-SG-B352-BL1	K1803850-014	04/24/2018	04/25/2018
PDI-SG-B366-BL1	K1803850-015	04/24/2018	04/25/2018
PDI-SG-B366-BL1-D	K1803850-016	04/24/2018	04/25/2018
PDI-SG-B357-BL1	K1803850-017	04/24/2018	04/25/2018
PDI-SG-B384-BL1	K1803850-018	04/24/2018	04/25/2018
PDI-SG-B378-BL1	K1803850-019	04/24/2018	04/25/2018
PDI-SG-B284-BL1	K1803850-020	04/24/2018	04/25/2018
PDI-SG-B288-BL1	K1803850-021	04/24/2018	04/25/2018
PDI-SG-B294-BL1	K1803850-022	04/24/2018	04/25/2018
PDI-SG-B296-BL1	K1803850-023	04/24/2018	04/25/2018
PDI-SG-B302-BL1	K1803850-024	04/24/2018	04/25/2018
PDI-SG-B303-BL1	K1803850-025	04/24/2018	04/25/2018
PDI-SG-B237-BL1	K1803850-028	04/20/2018	04/25/2018
PDI-SG-B240-BL1	K1803850-029	04/20/2018	04/25/2018
PDI-SG-B233-BL1	K1803850-030	04/20/2018	04/25/2018
PDI-SG-B243-BL1	K1803850-031	04/20/2018	04/25/2018
PDI-SG-B288-BL1MS	KWG1802248-1	04/24/2018	04/25/2018
PDI-SG-B288-BL1DMS	KWG1802248-2	04/24/2018	04/25/2018
PDI-SG-B306-BL1MS	KWG1802260-1	04/23/2018	04/25/2018
PDI-SG-B306-BL1DMS	KWG1802260-2	04/23/2018	04/25/2018

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: 04/23/2018
Date Received: 04/25/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: PDI-SG-B291-BL1
Lab Code: K1803850-001
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	7.8		1.2	0.18	1	05/03/18	06/01/18	KWG1802260	
2-Methylnaphthalene	5.1		1.2	0.15	1	05/03/18	06/01/18	KWG1802260	
Acenaphthylene	6.7		0.59	0.055	1	05/03/18	06/01/18	KWG1802260	
Acenaphthene	8.9		0.59	0.056	1	05/03/18	06/01/18	KWG1802260	
Fluorene	12		0.59	0.062	1	05/03/18	06/01/18	KWG1802260	
Phenanthrene	77		0.59	0.078	1	05/03/18	06/01/18	KWG1802260	
Anthracene	22		0.59	0.045	1	05/03/18	06/01/18	KWG1802260	
Fluoranthene	260	D	1.2	0.12	2	05/03/18	06/04/18	KWG1802260	
Pyrene	220		0.59	0.059	1	05/03/18	06/01/18	KWG1802260	
Benz(a)anthracene	85		0.59	0.045	1	05/03/18	06/01/18	KWG1802260	
Chrysene	170		0.59	0.065	1	05/03/18	06/01/18	KWG1802260	
Benzo(b)fluoranthene†	110		0.59	0.078	1	05/03/18	06/01/18	KWG1802260	
Benzo(k)fluoranthene	38		0.59	0.068	1	05/03/18	06/01/18	KWG1802260	
Benzo(a)pyrene	59		0.59	0.086	1	05/03/18	06/01/18	KWG1802260	
Indeno(1,2,3-cd)pyrene	37		0.59	0.12	1	05/03/18	06/01/18	KWG1802260	
Dibenz(a,h)anthracene	9.5		0.59	0.11	1	05/03/18	06/01/18	KWG1802260	
Benzo(g,h,i)perylene	36		0.59	0.12	1	05/03/18	06/01/18	KWG1802260	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	61	42-106	06/01/18	Acceptable
Fluoranthene-d10	70	45-109	06/01/18	Acceptable
Terphenyl-d14	75	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments: _____

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: 04/23/2018
Date Received: 04/25/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: PDI-SG-B292-BL1
Lab Code: K1803850-002
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	1.8		1.3	0.19	1	05/03/18	06/01/18	KWG1802260	
2-Methylnaphthalene	1.3	J	1.3	0.15	1	05/03/18	06/01/18	KWG1802260	
Acenaphthylene	0.97		0.63	0.058	1	05/03/18	06/01/18	KWG1802260	
Acenaphthene	0.64		0.63	0.059	1	05/03/18	06/01/18	KWG1802260	
Fluorene	1.1		0.63	0.065	1	05/03/18	06/01/18	KWG1802260	
Phenanthrene	8.3		0.63	0.083	1	05/03/18	06/01/18	KWG1802260	
Anthracene	2.7		0.63	0.048	1	05/03/18	06/01/18	KWG1802260	
Fluoranthene	19		0.63	0.062	1	05/03/18	06/01/18	KWG1802260	
Pyrene	22		0.63	0.063	1	05/03/18	06/01/18	KWG1802260	
Benz(a)anthracene	8.3		0.63	0.048	1	05/03/18	06/01/18	KWG1802260	
Chrysene	13		0.63	0.069	1	05/03/18	06/01/18	KWG1802260	
Benzo(b)fluoranthene†	13		0.63	0.083	1	05/03/18	06/01/18	KWG1802260	
Benzo(k)fluoranthene	4.0		0.63	0.071	1	05/03/18	06/01/18	KWG1802260	
Benzo(a)pyrene	10		0.63	0.091	1	05/03/18	06/01/18	KWG1802260	
Indeno(1,2,3-cd)pyrene	8.9		0.63	0.12	1	05/03/18	06/01/18	KWG1802260	
Dibenz(a,h)anthracene	1.8		0.63	0.11	1	05/03/18	06/01/18	KWG1802260	
Benzo(g,h,i)perylene	11		0.63	0.12	1	05/03/18	06/01/18	KWG1802260	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	64	42-106	06/01/18	Acceptable
Fluoranthene-d10	73	45-109	06/01/18	Acceptable
Terphenyl-d14	83	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: 04/23/2018
Date Received: 04/25/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: PDI-SG-B306-BL1
Lab Code: K1803850-003
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	1.6		1.3	0.19	1	05/03/18	06/01/18	KWG1802260	
2-Methylnaphthalene	1.3	J	1.3	0.15	1	05/03/18	06/01/18	KWG1802260	
Acenaphthylene	0.75		0.61	0.056	1	05/03/18	06/01/18	KWG1802260	
Acenaphthene	0.49	J	0.61	0.057	1	05/03/18	06/01/18	KWG1802260	
Fluorene	0.91		0.61	0.063	1	05/03/18	06/01/18	KWG1802260	
Phenanthrene	8.1		0.61	0.080	1	05/03/18	06/01/18	KWG1802260	
Anthracene	2.8		0.61	0.046	1	05/03/18	06/01/18	KWG1802260	
Fluoranthene	16		0.61	0.060	1	05/03/18	06/01/18	KWG1802260	
Pyrene	18		0.61	0.061	1	05/03/18	06/01/18	KWG1802260	
Benz(a)anthracene	6.8		0.61	0.046	1	05/03/18	06/01/18	KWG1802260	
Chrysene	11		0.61	0.067	1	05/03/18	06/01/18	KWG1802260	
Benzo(b)fluoranthene†	11		0.61	0.080	1	05/03/18	06/01/18	KWG1802260	
Benzo(k)fluoranthene	3.1		0.61	0.069	1	05/03/18	06/01/18	KWG1802260	
Benzo(a)pyrene	7.6		0.61	0.088	1	05/03/18	06/01/18	KWG1802260	
Indeno(1,2,3-cd)pyrene	6.5		0.61	0.12	1	05/03/18	06/01/18	KWG1802260	
Dibenz(a,h)anthracene	1.6		0.61	0.11	1	05/03/18	06/01/18	KWG1802260	
Benzo(g,h,i)perylene	7.9		0.61	0.12	1	05/03/18	06/01/18	KWG1802260	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	62	42-106	06/01/18	Acceptable
Fluoranthene-d10	69	45-109	06/01/18	Acceptable
Terphenyl-d14	79	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: 04/23/2018
Date Received: 04/25/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: PDI-SG-B323-BL1
Lab Code: K1803850-004
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	4.2		1.2	0.17	1	05/03/18	06/01/18	KWG1802260	
2-Methylnaphthalene	2.1		1.2	0.14	1	05/03/18	06/01/18	KWG1802260	
Acenaphthylene	1.1		0.56	0.052	1	05/03/18	06/01/18	KWG1802260	
Acenaphthene	0.57		0.56	0.053	1	05/03/18	06/01/18	KWG1802260	
Fluorene	1.0		0.56	0.058	1	05/03/18	06/01/18	KWG1802260	
Phenanthrene	7.5		0.56	0.074	1	05/03/18	06/01/18	KWG1802260	
Anthracene	2.5		0.56	0.043	1	05/03/18	06/01/18	KWG1802260	
Fluoranthene	13		0.56	0.055	1	05/03/18	06/01/18	KWG1802260	
Pyrene	15		0.56	0.056	1	05/03/18	06/01/18	KWG1802260	
Benz(a)anthracene	6.3		0.56	0.043	1	05/03/18	06/01/18	KWG1802260	
Chrysene	10		0.56	0.062	1	05/03/18	06/01/18	KWG1802260	
Benzo(b)fluoranthene†	11		0.56	0.074	1	05/03/18	06/01/18	KWG1802260	
Benzo(k)fluoranthene	3.9		0.56	0.064	1	05/03/18	06/01/18	KWG1802260	
Benzo(a)pyrene	7.5		0.56	0.082	1	05/03/18	06/01/18	KWG1802260	
Indeno(1,2,3-cd)pyrene	6.3		0.56	0.11	1	05/03/18	06/01/18	KWG1802260	
Dibenz(a,h)anthracene	1.5		0.56	0.096	1	05/03/18	06/01/18	KWG1802260	
Benzo(g,h,i)perylene	7.5		0.56	0.11	1	05/03/18	06/01/18	KWG1802260	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	63	42-106	06/01/18	Acceptable
Fluoranthene-d10	72	45-109	06/01/18	Acceptable
Terphenyl-d14	80	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: 04/23/2018
Date Received: 04/25/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: PDI-SG-B329-BL1
Lab Code: K1803850-005
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	1.7		1.4	0.20	1	05/03/18	06/01/18	KWG1802260	
2-Methylnaphthalene	1.2	J	1.4	0.16	1	05/03/18	06/01/18	KWG1802260	
Acenaphthylene	0.87		0.67	0.061	1	05/03/18	06/01/18	KWG1802260	
Acenaphthene	0.75		0.67	0.063	1	05/03/18	06/01/18	KWG1802260	
Fluorene	1.0		0.67	0.069	1	05/03/18	06/01/18	KWG1802260	
Phenanthrene	8.7		0.67	0.088	1	05/03/18	06/01/18	KWG1802260	
Anthracene	3.3		0.67	0.051	1	05/03/18	06/01/18	KWG1802260	
Fluoranthene	15		0.67	0.065	1	05/03/18	06/01/18	KWG1802260	
Pyrene	19		0.67	0.067	1	05/03/18	06/01/18	KWG1802260	
Benz(a)anthracene	6.7		0.67	0.051	1	05/03/18	06/01/18	KWG1802260	
Chrysene	12		0.67	0.073	1	05/03/18	06/01/18	KWG1802260	
Benzo(b)fluoranthene†	12		0.67	0.088	1	05/03/18	06/01/18	KWG1802260	
Benzo(k)fluoranthene	3.9		0.67	0.076	1	05/03/18	06/01/18	KWG1802260	
Benzo(a)pyrene	8.5		0.67	0.097	1	05/03/18	06/01/18	KWG1802260	
Indeno(1,2,3-cd)pyrene	8.0		0.67	0.13	1	05/03/18	06/01/18	KWG1802260	
Dibenz(a,h)anthracene	1.7		0.67	0.12	1	05/03/18	06/01/18	KWG1802260	
Benzo(g,h,i)perylene	10		0.67	0.13	1	05/03/18	06/01/18	KWG1802260	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	63	42-106	06/01/18	Acceptable
Fluoranthene-d10	73	45-109	06/01/18	Acceptable
Terphenyl-d14	81	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: 04/23/2018
Date Received: 04/25/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: PDI-SG-B334-BL1
Lab Code: K1803850-006
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	1.8		1.3	0.19	1	05/03/18	06/01/18	KWG1802260	
2-Methylnaphthalene	1.0	J	1.3	0.15	1	05/03/18	06/01/18	KWG1802260	
Acenaphthylene	0.78		0.61	0.056	1	05/03/18	06/01/18	KWG1802260	
Acenaphthene	0.69		0.61	0.058	1	05/03/18	06/01/18	KWG1802260	
Fluorene	1.1		0.61	0.064	1	05/03/18	06/01/18	KWG1802260	
Phenanthrene	6.3		0.61	0.081	1	05/03/18	06/01/18	KWG1802260	
Anthracene	2.1		0.61	0.047	1	05/03/18	06/01/18	KWG1802260	
Fluoranthene	12		0.61	0.060	1	05/03/18	06/01/18	KWG1802260	
Pyrene	14		0.61	0.061	1	05/03/18	06/01/18	KWG1802260	
Benz(a)anthracene	5.0		0.61	0.047	1	05/03/18	06/01/18	KWG1802260	
Chrysene	8.8		0.61	0.067	1	05/03/18	06/01/18	KWG1802260	
Benzo(b)fluoranthene†	9.2		0.61	0.081	1	05/03/18	06/01/18	KWG1802260	
Benzo(k)fluoranthene	2.5		0.61	0.070	1	05/03/18	06/01/18	KWG1802260	
Benzo(a)pyrene	6.5		0.61	0.089	1	05/03/18	06/01/18	KWG1802260	
Indeno(1,2,3-cd)pyrene	6.1		0.61	0.12	1	05/03/18	06/01/18	KWG1802260	
Dibenz(a,h)anthracene	1.3		0.61	0.11	1	05/03/18	06/01/18	KWG1802260	
Benzo(g,h,i)perylene	7.5		0.61	0.12	1	05/03/18	06/01/18	KWG1802260	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	63	42-106	06/01/18	Acceptable
Fluoranthene-d10	72	45-109	06/01/18	Acceptable
Terphenyl-d14	80	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: 04/23/2018
Date Received: 04/25/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: PDI-SG-B346-BL1
Lab Code: K1803850-007
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	1.3		1.1	0.16	1	05/03/18	06/01/18	KWG1802260	
2-Methylnaphthalene	0.80	J	1.1	0.13	1	05/03/18	06/01/18	KWG1802260	
Acenaphthylene	0.57		0.51	0.047	1	05/03/18	06/01/18	KWG1802260	
Acenaphthene	0.69		0.51	0.048	1	05/03/18	06/01/18	KWG1802260	
Fluorene	0.92		0.51	0.053	1	05/03/18	06/01/18	KWG1802260	
Phenanthrene	6.6		0.51	0.068	1	05/03/18	06/01/18	KWG1802260	
Anthracene	1.7		0.51	0.039	1	05/03/18	06/01/18	KWG1802260	
Fluoranthene	16		0.51	0.050	1	05/03/18	06/01/18	KWG1802260	
Pyrene	17		0.51	0.051	1	05/03/18	06/01/18	KWG1802260	
Benz(a)anthracene	5.5		0.51	0.039	1	05/03/18	06/01/18	KWG1802260	
Chrysene	9.5		0.51	0.056	1	05/03/18	06/01/18	KWG1802260	
Benzo(b)fluoranthene†	9.4		0.51	0.068	1	05/03/18	06/01/18	KWG1802260	
Benzo(k)fluoranthene	3.4		0.51	0.058	1	05/03/18	06/01/18	KWG1802260	
Benzo(a)pyrene	6.3		0.51	0.075	1	05/03/18	06/01/18	KWG1802260	
Indeno(1,2,3-cd)pyrene	5.7		0.51	0.098	1	05/03/18	06/01/18	KWG1802260	
Dibenz(a,h)anthracene	1.3		0.51	0.088	1	05/03/18	06/01/18	KWG1802260	
Benzo(g,h,i)perylene	6.7		0.51	0.097	1	05/03/18	06/01/18	KWG1802260	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	60	42-106	06/01/18	Acceptable
Fluoranthene-d10	70	45-109	06/01/18	Acceptable
Terphenyl-d14	76	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: 04/23/2018
Date Received: 04/25/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: PDI-SG-B265-BL1
Lab Code: K1803850-008
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	54	D	5.4	0.81	5	05/03/18	06/01/18	KWG1802260	
2-Methylnaphthalene	31	D	5.4	0.65	5	05/03/18	06/01/18	KWG1802260	
Acenaphthylene	22	D	2.7	0.25	5	05/03/18	06/01/18	KWG1802260	
Acenaphthene	32	D	2.7	0.26	5	05/03/18	06/01/18	KWG1802260	
Fluorene	30	D	2.7	0.28	5	05/03/18	06/01/18	KWG1802260	
Phenanthrene	280	D	2.7	0.36	5	05/03/18	06/01/18	KWG1802260	
Anthracene	59	D	2.7	0.21	5	05/03/18	06/01/18	KWG1802260	
Fluoranthene	410	D	2.7	0.27	5	05/03/18	06/01/18	KWG1802260	
Pyrene	520	D	2.7	0.27	5	05/03/18	06/01/18	KWG1802260	
Benz(a)anthracene	210	D	2.7	0.21	5	05/03/18	06/01/18	KWG1802260	
Chrysene	280	D	2.7	0.30	5	05/03/18	06/01/18	KWG1802260	
Benzo(b)fluoranthene†	270	D	2.7	0.36	5	05/03/18	06/01/18	KWG1802260	
Benzo(k)fluoranthene	91	D	2.7	0.31	5	05/03/18	06/01/18	KWG1802260	
Benzo(a)pyrene	230	D	2.7	0.40	5	05/03/18	06/01/18	KWG1802260	
Indeno(1,2,3-cd)pyrene	160	D	2.7	0.52	5	05/03/18	06/01/18	KWG1802260	
Dibenz(a,h)anthracene	38	D	2.7	0.47	5	05/03/18	06/01/18	KWG1802260	
Benzo(g,h,i)perylene	160	D	2.7	0.52	5	05/03/18	06/01/18	KWG1802260	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	51	42-106	06/01/18	Acceptable
Fluoranthene-d10	56	45-109	06/01/18	Acceptable
Terphenyl-d14	62	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: 04/23/2018
Date Received: 04/25/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: PDI-SG-B271-BL1
Lab Code: K1803850-009
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	14	D	7.1	1.1	5	05/03/18	06/02/18	KWG1802260	
2-Methylnaphthalene	7.6	D	7.1	0.85	5	05/03/18	06/02/18	KWG1802260	
Acenaphthylene	11	D	3.6	0.33	5	05/03/18	06/02/18	KWG1802260	
Acenaphthene	8.0	D	3.6	0.34	5	05/03/18	06/02/18	KWG1802260	
Fluorene	12	D	3.6	0.37	5	05/03/18	06/02/18	KWG1802260	
Phenanthrene	82	D	3.6	0.47	5	05/03/18	06/02/18	KWG1802260	
Anthracene	24	D	3.6	0.27	5	05/03/18	06/02/18	KWG1802260	
Fluoranthene	230	D	3.6	0.35	5	05/03/18	06/02/18	KWG1802260	
Pyrene	240	D	3.6	0.36	5	05/03/18	06/02/18	KWG1802260	
Benz(a)anthracene	110	D	3.6	0.27	5	05/03/18	06/02/18	KWG1802260	
Chrysene	210	D	3.6	0.39	5	05/03/18	06/02/18	KWG1802260	
Benzo(b)fluoranthene†	180	D	3.6	0.47	5	05/03/18	06/02/18	KWG1802260	
Benzo(k)fluoranthene	60	D	3.6	0.41	5	05/03/18	06/02/18	KWG1802260	
Benzo(a)pyrene	110	D	3.6	0.52	5	05/03/18	06/02/18	KWG1802260	
Indeno(1,2,3-cd)pyrene	90	D	3.6	0.68	5	05/03/18	06/02/18	KWG1802260	
Dibenz(a,h)anthracene	21	D	3.6	0.61	5	05/03/18	06/02/18	KWG1802260	
Benzo(g,h,i)perylene	93	D	3.6	0.67	5	05/03/18	06/02/18	KWG1802260	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	65	42-106	06/02/18	Acceptable
Fluoranthene-d10	74	45-109	06/02/18	Acceptable
Terphenyl-d14	83	41-102	06/02/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: 04/23/2018
Date Received: 04/25/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: PDI-SG-B273-BL1
Lab Code: K1803850-010
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	27	D	6.7	1.1	5	05/03/18	06/02/18	KWG1802260	
2-Methylnaphthalene	9.5	D	6.7	0.81	5	05/03/18	06/02/18	KWG1802260	
Acenaphthylene	14	D	3.4	0.31	5	05/03/18	06/02/18	KWG1802260	
Acenaphthene	13	D	3.4	0.32	5	05/03/18	06/02/18	KWG1802260	
Fluorene	17	D	3.4	0.35	5	05/03/18	06/02/18	KWG1802260	
Phenanthrene	110	D	3.4	0.45	5	05/03/18	06/02/18	KWG1802260	
Anthracene	30	D	3.4	0.26	5	05/03/18	06/02/18	KWG1802260	
Fluoranthene	350	D	3.4	0.33	5	05/03/18	06/02/18	KWG1802260	
Pyrene	380	D	3.4	0.34	5	05/03/18	06/02/18	KWG1802260	
Benz(a)anthracene	130	D	3.4	0.26	5	05/03/18	06/02/18	KWG1802260	
Chrysene	240	D	3.4	0.37	5	05/03/18	06/02/18	KWG1802260	
Benzo(b)fluoranthene†	210	D	3.4	0.45	5	05/03/18	06/02/18	KWG1802260	
Benzo(k)fluoranthene	74	D	3.4	0.39	5	05/03/18	06/02/18	KWG1802260	
Benzo(a)pyrene	140	D	3.4	0.49	5	05/03/18	06/02/18	KWG1802260	
Indeno(1,2,3-cd)pyrene	110	D	3.4	0.65	5	05/03/18	06/02/18	KWG1802260	
Dibenz(a,h)anthracene	25	D	3.4	0.58	5	05/03/18	06/02/18	KWG1802260	
Benzo(g,h,i)perylene	120	D	3.4	0.64	5	05/03/18	06/02/18	KWG1802260	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	64	42-106	06/02/18	Acceptable
Fluoranthene-d10	74	45-109	06/02/18	Acceptable
Terphenyl-d14	82	41-102	06/02/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: 04/23/2018
Date Received: 04/25/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: PDI-SG-B279-BL1
Lab Code: K1803850-011
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	21	D	6.6	0.99	5	05/03/18	06/02/18	KWG1802260	
2-Methylnaphthalene	19	D	6.6	0.79	5	05/03/18	06/02/18	KWG1802260	
Acenaphthylene	18	D	3.3	0.31	5	05/03/18	06/02/18	KWG1802260	
Acenaphthene	16	D	3.3	0.31	5	05/03/18	06/02/18	KWG1802260	
Fluorene	21	D	3.3	0.34	5	05/03/18	06/02/18	KWG1802260	
Phenanthrene	160	D	3.3	0.44	5	05/03/18	06/02/18	KWG1802260	
Anthracene	40	D	3.3	0.25	5	05/03/18	06/02/18	KWG1802260	
Fluoranthene	520	D	3.3	0.33	5	05/03/18	06/02/18	KWG1802260	
Pyrene	540	D	3.3	0.33	5	05/03/18	06/02/18	KWG1802260	
Benz(a)anthracene	220	D	3.3	0.25	5	05/03/18	06/02/18	KWG1802260	
Chrysene	350	D	3.3	0.36	5	05/03/18	06/02/18	KWG1802260	
Benzo(b)fluoranthene†	360	D	3.3	0.44	5	05/03/18	06/02/18	KWG1802260	
Benzo(k)fluoranthene	120	D	3.3	0.38	5	05/03/18	06/02/18	KWG1802260	
Benzo(a)pyrene	210	D	3.3	0.48	5	05/03/18	06/02/18	KWG1802260	
Indeno(1,2,3-cd)pyrene	160	D	3.3	0.63	5	05/03/18	06/02/18	KWG1802260	
Dibenz(a,h)anthracene	37	D	3.3	0.57	5	05/03/18	06/02/18	KWG1802260	
Benzo(g,h,i)perylene	160	D	3.3	0.63	5	05/03/18	06/02/18	KWG1802260	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	63	42-106	06/02/18	Acceptable
Fluoranthene-d10	71	45-109	06/02/18	Acceptable
Terphenyl-d14	80	41-102	06/02/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: 04/23/2018
Date Received: 04/25/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: PDI-SG-B280-BL1
Lab Code: K1803850-012
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	16	D	7.6	1.2	5	05/03/18	06/02/18	KWG1802260	
2-Methylnaphthalene	9.0	D	7.6	0.91	5	05/03/18	06/02/18	KWG1802260	
Acenaphthylene	15	D	3.8	0.35	5	05/03/18	06/02/18	KWG1802260	
Acenaphthene	8.6	D	3.8	0.36	5	05/03/18	06/02/18	KWG1802260	
Fluorene	17	D	3.8	0.40	5	05/03/18	06/02/18	KWG1802260	
Phenanthrene	120	D	3.8	0.50	5	05/03/18	06/02/18	KWG1802260	
Anthracene	30	D	3.8	0.29	5	05/03/18	06/02/18	KWG1802260	
Fluoranthene	320	D	3.8	0.37	5	05/03/18	06/02/18	KWG1802260	
Pyrene	340	D	3.8	0.38	5	05/03/18	06/02/18	KWG1802260	
Benz(a)anthracene	130	D	3.8	0.29	5	05/03/18	06/02/18	KWG1802260	
Chrysene	230	D	3.8	0.42	5	05/03/18	06/02/18	KWG1802260	
Benzo(b)fluoranthene†	210	D	3.8	0.50	5	05/03/18	06/02/18	KWG1802260	
Benzo(k)fluoranthene	72	D	3.8	0.43	5	05/03/18	06/02/18	KWG1802260	
Benzo(a)pyrene	130	D	3.8	0.55	5	05/03/18	06/02/18	KWG1802260	
Indeno(1,2,3-cd)pyrene	110	D	3.8	0.73	5	05/03/18	06/02/18	KWG1802260	
Dibenz(a,h)anthracene	25	D	3.8	0.65	5	05/03/18	06/02/18	KWG1802260	
Benzo(g,h,i)perylene	120	D	3.8	0.72	5	05/03/18	06/02/18	KWG1802260	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	62	42-106	06/02/18	Acceptable
Fluoranthene-d10	71	45-109	06/02/18	Acceptable
Terphenyl-d14	79	41-102	06/02/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: 04/23/2018
Date Received: 04/25/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: PDI-SG-B260-BL1
Lab Code: K1803850-013
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	45	D	5.2	0.78	5	05/03/18	06/02/18	KWG1802260	
2-Methylnaphthalene	19	D	5.2	0.62	5	05/03/18	06/02/18	KWG1802260	
Acenaphthylene	19	D	2.6	0.24	5	05/03/18	06/02/18	KWG1802260	
Acenaphthene	17	D	2.6	0.25	5	05/03/18	06/02/18	KWG1802260	
Fluorene	20	D	2.6	0.27	5	05/03/18	06/02/18	KWG1802260	
Phenanthrene	160	D	2.6	0.34	5	05/03/18	06/02/18	KWG1802260	
Anthracene	34	D	2.6	0.20	5	05/03/18	06/02/18	KWG1802260	
Fluoranthene	260	D	2.6	0.26	5	05/03/18	06/02/18	KWG1802260	
Pyrene	320	D	2.6	0.26	5	05/03/18	06/02/18	KWG1802260	
Benz(a)anthracene	110	D	2.6	0.20	5	05/03/18	06/02/18	KWG1802260	
Chrysene	160	D	2.6	0.29	5	05/03/18	06/02/18	KWG1802260	
Benzo(b)fluoranthene†	160	D	2.6	0.34	5	05/03/18	06/02/18	KWG1802260	
Benzo(k)fluoranthene	54	D	2.6	0.30	5	05/03/18	06/02/18	KWG1802260	
Benzo(a)pyrene	130	D	2.6	0.38	5	05/03/18	06/02/18	KWG1802260	
Indeno(1,2,3-cd)pyrene	98	D	2.6	0.50	5	05/03/18	06/02/18	KWG1802260	
Dibenz(a,h)anthracene	20	D	2.6	0.45	5	05/03/18	06/02/18	KWG1802260	
Benzo(g,h,i)perylene	110	D	2.6	0.49	5	05/03/18	06/02/18	KWG1802260	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	71	42-106	06/02/18	Acceptable
Fluoranthene-d10	78	45-109	06/02/18	Acceptable
Terphenyl-d14	85	41-102	06/02/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: 04/24/2018
Date Received: 04/25/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: PDI-SG-B352-BL1
Lab Code: K1803850-014
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	4.7		0.96	0.15	1	05/03/18	06/01/18	KWG1802260	
2-Methylnaphthalene	3.2		0.96	0.12	1	05/03/18	06/01/18	KWG1802260	
Acenaphthylene	1.7		0.48	0.046	1	05/03/18	06/01/18	KWG1802260	
Acenaphthene	2.2		0.48	0.047	1	05/03/18	06/01/18	KWG1802260	
Fluorene	3.8		0.48	0.052	1	05/03/18	06/01/18	KWG1802260	
Phenanthrene	19		0.48	0.066	1	05/03/18	06/01/18	KWG1802260	
Anthracene	3.0		0.48	0.038	1	05/03/18	06/01/18	KWG1802260	
Fluoranthene	28		0.48	0.049	1	05/03/18	06/01/18	KWG1802260	
Pyrene	30		0.48	0.050	1	05/03/18	06/01/18	KWG1802260	
Benz(a)anthracene	8.5		0.48	0.038	1	05/03/18	06/01/18	KWG1802260	
Chrysene	12		0.48	0.055	1	05/03/18	06/01/18	KWG1802260	
Benzo(b)fluoranthene†	13		0.48	0.066	1	05/03/18	06/01/18	KWG1802260	
Benzo(k)fluoranthene	3.5		0.48	0.057	1	05/03/18	06/01/18	KWG1802260	
Benzo(a)pyrene	10		0.48	0.073	1	05/03/18	06/01/18	KWG1802260	
Indeno(1,2,3-cd)pyrene	8.6		0.48	0.096	1	05/03/18	06/01/18	KWG1802260	
Dibenz(a,h)anthracene	1.6		0.48	0.086	1	05/03/18	06/01/18	KWG1802260	
Benzo(g,h,i)perylene	10		0.48	0.095	1	05/03/18	06/01/18	KWG1802260	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	59	42-106	06/01/18	Acceptable
Fluoranthene-d10	69	45-109	06/01/18	Acceptable
Terphenyl-d14	75	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: 04/24/2018
Date Received: 04/25/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: PDI-SG-B366-BL1
Lab Code: K1803850-015
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	3.8		0.89	0.15	1	05/03/18	06/01/18	KWG1802260	
2-Methylnaphthalene	1.5		0.89	0.12	1	05/03/18	06/01/18	KWG1802260	
Acenaphthylene	3.4		0.45	0.046	1	05/03/18	06/01/18	KWG1802260	
Acenaphthene	2.4		0.45	0.047	1	05/03/18	06/01/18	KWG1802260	
Fluorene	2.9		0.45	0.052	1	05/03/18	06/01/18	KWG1802260	
Phenanthrene	34		0.45	0.066	1	05/03/18	06/01/18	KWG1802260	
Anthracene	11		0.45	0.038	1	05/03/18	06/01/18	KWG1802260	
Fluoranthene	150		0.45	0.049	1	05/03/18	06/01/18	KWG1802260	
Pyrene	170		0.45	0.050	1	05/03/18	06/01/18	KWG1802260	
Benz(a)anthracene	130		0.45	0.038	1	05/03/18	06/01/18	KWG1802260	
Chrysene	140		0.45	0.055	1	05/03/18	06/01/18	KWG1802260	
Benzo(b)fluoranthene†	140		0.45	0.066	1	05/03/18	06/01/18	KWG1802260	
Benzo(k)fluoranthene	52		0.45	0.057	1	05/03/18	06/01/18	KWG1802260	
Benzo(a)pyrene	120		0.45	0.073	1	05/03/18	06/01/18	KWG1802260	
Indeno(1,2,3-cd)pyrene	70		0.45	0.096	1	05/03/18	06/01/18	KWG1802260	
Dibenz(a,h)anthracene	19		0.45	0.086	1	05/03/18	06/01/18	KWG1802260	
Benzo(g,h,i)perylene	60		0.45	0.095	1	05/03/18	06/01/18	KWG1802260	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	57	42-106	06/01/18	Acceptable
Fluoranthene-d10	66	45-109	06/01/18	Acceptable
Terphenyl-d14	77	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments: _____

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: 04/24/2018
Date Received: 04/25/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: PDI-SG-B366-BL1-D
Lab Code: K1803850-016
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	19		0.88	0.15	1	05/03/18	06/01/18	KWG1802260	
2-Methylnaphthalene	12		0.88	0.12	1	05/03/18	06/01/18	KWG1802260	
Acenaphthylene	2.4		0.44	0.046	1	05/03/18	06/01/18	KWG1802260	
Acenaphthene	4.0		0.44	0.047	1	05/03/18	06/01/18	KWG1802260	
Fluorene	8.7		0.44	0.052	1	05/03/18	06/01/18	KWG1802260	
Phenanthrene	31		0.44	0.066	1	05/03/18	06/01/18	KWG1802260	
Anthracene	8.3		0.44	0.038	1	05/03/18	06/01/18	KWG1802260	
Fluoranthene	34		0.44	0.049	1	05/03/18	06/01/18	KWG1802260	
Pyrene	37		0.44	0.050	1	05/03/18	06/01/18	KWG1802260	
Benz(a)anthracene	15		0.44	0.038	1	05/03/18	06/01/18	KWG1802260	
Chrysene	18		0.44	0.055	1	05/03/18	06/01/18	KWG1802260	
Benzo(b)fluoranthene†	19		0.44	0.066	1	05/03/18	06/01/18	KWG1802260	
Benzo(k)fluoranthene	6.4		0.44	0.057	1	05/03/18	06/01/18	KWG1802260	
Benzo(a)pyrene	15		0.44	0.073	1	05/03/18	06/01/18	KWG1802260	
Indeno(1,2,3-cd)pyrene	11		0.44	0.096	1	05/03/18	06/01/18	KWG1802260	
Dibenz(a,h)anthracene	2.3		0.44	0.086	1	05/03/18	06/01/18	KWG1802260	
Benzo(g,h,i)perylene	11		0.44	0.095	1	05/03/18	06/01/18	KWG1802260	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	63	42-106	06/01/18	Acceptable
Fluoranthene-d10	73	45-109	06/01/18	Acceptable
Terphenyl-d14	80	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments: _____

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: 04/24/2018
Date Received: 04/25/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: PDI-SG-B357-BL1
Lab Code: K1803850-017
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	4.4		1.2	0.18	1	05/03/18	06/01/18	KWG1802260	
2-Methylnaphthalene	1.7		1.2	0.15	1	05/03/18	06/01/18	KWG1802260	
Acenaphthylene	1.2		0.60	0.055	1	05/03/18	06/01/18	KWG1802260	
Acenaphthene	1.5		0.60	0.056	1	05/03/18	06/01/18	KWG1802260	
Fluorene	1.8		0.60	0.062	1	05/03/18	06/01/18	KWG1802260	
Phenanthrene	11		0.60	0.078	1	05/03/18	06/01/18	KWG1802260	
Anthracene	2.9		0.60	0.045	1	05/03/18	06/01/18	KWG1802260	
Fluoranthene	23		0.60	0.058	1	05/03/18	06/01/18	KWG1802260	
Pyrene	24		0.60	0.060	1	05/03/18	06/01/18	KWG1802260	
Benz(a)anthracene	9.3		0.60	0.045	1	05/03/18	06/01/18	KWG1802260	
Chrysene	14		0.60	0.065	1	05/03/18	06/01/18	KWG1802260	
Benzo(b)fluoranthene†	15		0.60	0.078	1	05/03/18	06/01/18	KWG1802260	
Benzo(k)fluoranthene	4.2		0.60	0.068	1	05/03/18	06/01/18	KWG1802260	
Benzo(a)pyrene	10		0.60	0.087	1	05/03/18	06/01/18	KWG1802260	
Indeno(1,2,3-cd)pyrene	9.1		0.60	0.12	1	05/03/18	06/01/18	KWG1802260	
Dibenz(a,h)anthracene	2.0		0.60	0.11	1	05/03/18	06/01/18	KWG1802260	
Benzo(g,h,i)perylene	11		0.60	0.12	1	05/03/18	06/01/18	KWG1802260	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	65	42-106	06/01/18	Acceptable
Fluoranthene-d10	75	45-109	06/01/18	Acceptable
Terphenyl-d14	81	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: 04/24/2018
Date Received: 04/25/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: PDI-SG-B384-BL1
Lab Code: K1803850-018
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	2.2		1.2	0.18	1	05/03/18	06/01/18	KWG1802260	
2-Methylnaphthalene	1.2	J	1.2	0.15	1	05/03/18	06/01/18	KWG1802260	
Acenaphthylene	0.90		0.60	0.055	1	05/03/18	06/01/18	KWG1802260	
Acenaphthene	0.69		0.60	0.056	1	05/03/18	06/01/18	KWG1802260	
Fluorene	1.2		0.60	0.062	1	05/03/18	06/01/18	KWG1802260	
Phenanthrene	7.7		0.60	0.079	1	05/03/18	06/01/18	KWG1802260	
Anthracene	2.3		0.60	0.046	1	05/03/18	06/01/18	KWG1802260	
Fluoranthene	16		0.60	0.059	1	05/03/18	06/01/18	KWG1802260	
Pyrene	18		0.60	0.060	1	05/03/18	06/01/18	KWG1802260	
Benz(a)anthracene	6.1		0.60	0.046	1	05/03/18	06/01/18	KWG1802260	
Chrysene	11		0.60	0.066	1	05/03/18	06/01/18	KWG1802260	
Benzo(b)fluoranthene†	11		0.60	0.079	1	05/03/18	06/01/18	KWG1802260	
Benzo(k)fluoranthene	3.0		0.60	0.068	1	05/03/18	06/01/18	KWG1802260	
Benzo(a)pyrene	8.0		0.60	0.087	1	05/03/18	06/01/18	KWG1802260	
Indeno(1,2,3-cd)pyrene	7.3		0.60	0.12	1	05/03/18	06/01/18	KWG1802260	
Dibenz(a,h)anthracene	1.5		0.60	0.11	1	05/03/18	06/01/18	KWG1802260	
Benzo(g,h,i)perylene	9.2		0.60	0.12	1	05/03/18	06/01/18	KWG1802260	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	63	42-106	06/01/18	Acceptable
Fluoranthene-d10	72	45-109	06/01/18	Acceptable
Terphenyl-d14	79	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: 04/24/2018
Date Received: 04/25/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: PDI-SG-B378-BL1
Lab Code: K1803850-019
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	3.2		0.86	0.15	1	05/03/18	06/01/18	KWG1802260	
2-Methylnaphthalene	2.2		0.86	0.12	1	05/03/18	06/01/18	KWG1802260	
Acenaphthylene	0.98		0.43	0.046	1	05/03/18	06/01/18	KWG1802260	
Acenaphthene	7.0		0.43	0.047	1	05/03/18	06/01/18	KWG1802260	
Fluorene	4.6		0.43	0.052	1	05/03/18	06/01/18	KWG1802260	
Phenanthrene	14		0.43	0.066	1	05/03/18	06/01/18	KWG1802260	
Anthracene	3.2		0.43	0.038	1	05/03/18	06/01/18	KWG1802260	
Fluoranthene	19		0.43	0.049	1	05/03/18	06/01/18	KWG1802260	
Pyrene	19		0.43	0.050	1	05/03/18	06/01/18	KWG1802260	
Benz(a)anthracene	7.3		0.43	0.038	1	05/03/18	06/01/18	KWG1802260	
Chrysene	9.9		0.43	0.055	1	05/03/18	06/01/18	KWG1802260	
Benzo(b)fluoranthene†	11		0.43	0.066	1	05/03/18	06/01/18	KWG1802260	
Benzo(k)fluoranthene	3.2		0.43	0.057	1	05/03/18	06/01/18	KWG1802260	
Benzo(a)pyrene	8.3		0.43	0.073	1	05/03/18	06/01/18	KWG1802260	
Indeno(1,2,3-cd)pyrene	6.8		0.43	0.096	1	05/03/18	06/01/18	KWG1802260	
Dibenz(a,h)anthracene	1.5		0.43	0.086	1	05/03/18	06/01/18	KWG1802260	
Benzo(g,h,i)perylene	8.0		0.43	0.095	1	05/03/18	06/01/18	KWG1802260	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	55	42-106	06/01/18	Acceptable
Fluoranthene-d10	70	45-109	06/01/18	Acceptable
Terphenyl-d14	74	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: 04/24/2018
Date Received: 04/25/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: PDI-SG-B284-BL1
Lab Code: K1803850-020
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	25	D	7.3	1.1	5	05/03/18	06/02/18	KWG1802260	
2-Methylnaphthalene	10	D	7.3	0.88	5	05/03/18	06/02/18	KWG1802260	
Acenaphthylene	15	D	3.7	0.34	5	05/03/18	06/02/18	KWG1802260	
Acenaphthene	13	D	3.7	0.35	5	05/03/18	06/02/18	KWG1802260	
Fluorene	20	D	3.7	0.38	5	05/03/18	06/02/18	KWG1802260	
Phenanthrene	150	D	3.7	0.49	5	05/03/18	06/02/18	KWG1802260	
Anthracene	42	D	3.7	0.28	5	05/03/18	06/02/18	KWG1802260	
Fluoranthene	440	D	3.7	0.36	5	05/03/18	06/02/18	KWG1802260	
Pyrene	460	D	3.7	0.37	5	05/03/18	06/02/18	KWG1802260	
Benz(a)anthracene	240	D	3.7	0.28	5	05/03/18	06/02/18	KWG1802260	
Chrysene	310	D	3.7	0.41	5	05/03/18	06/02/18	KWG1802260	
Benzo(b)fluoranthene†	290	D	3.7	0.49	5	05/03/18	06/02/18	KWG1802260	
Benzo(k)fluoranthene	110	D	3.7	0.42	5	05/03/18	06/02/18	KWG1802260	
Benzo(a)pyrene	190	D	3.7	0.54	5	05/03/18	06/02/18	KWG1802260	
Indeno(1,2,3-cd)pyrene	150	D	3.7	0.71	5	05/03/18	06/02/18	KWG1802260	
Dibenz(a,h)anthracene	34	D	3.7	0.63	5	05/03/18	06/02/18	KWG1802260	
Benzo(g,h,i)perylene	150	D	3.7	0.70	5	05/03/18	06/02/18	KWG1802260	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	68	42-106	06/02/18	Acceptable
Fluoranthene-d10	77	45-109	06/02/18	Acceptable
Terphenyl-d14	84	41-102	06/02/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: 04/24/2018
Date Received: 04/25/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: PDI-SG-B288-BL1
Lab Code: K1803850-021
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	11	D	7.8	1.2	5	05/02/18	06/01/18	KWG1802248	
2-Methylnaphthalene	9.0	D	7.8	0.93	5	05/02/18	06/01/18	KWG1802248	
Acenaphthylene	11	D	3.9	0.36	5	05/02/18	06/01/18	KWG1802248	
Acenaphthene	8.9	D	3.9	0.37	5	05/02/18	06/01/18	KWG1802248	
Fluorene	13	D	3.9	0.41	5	05/02/18	06/01/18	KWG1802248	
Phenanthrene	80	D	3.9	0.51	5	05/02/18	06/01/18	KWG1802248	
Anthracene	19	D	3.9	0.30	5	05/02/18	06/01/18	KWG1802248	
Fluoranthene	230	D	3.9	0.38	5	05/02/18	06/01/18	KWG1802248	
Pyrene	240	D	3.9	0.39	5	05/02/18	06/01/18	KWG1802248	
Benz(a)anthracene	95	D	3.9	0.30	5	05/02/18	06/01/18	KWG1802248	
Chrysene	160	D	3.9	0.43	5	05/02/18	06/01/18	KWG1802248	
Benzo(b)fluoranthene†	170	D	3.9	0.51	5	05/02/18	06/01/18	KWG1802248	
Benzo(k)fluoranthene	64	D	3.9	0.44	5	05/02/18	06/01/18	KWG1802248	
Benzo(a)pyrene	100	D	3.9	0.57	5	05/02/18	06/01/18	KWG1802248	
Indeno(1,2,3-cd)pyrene	100	D	3.9	0.75	5	05/02/18	06/01/18	KWG1802248	
Dibenz(a,h)anthracene	25	D	3.9	0.67	5	05/02/18	06/01/18	KWG1802248	
Benzo(g,h,i)perylene	110	D	3.9	0.74	5	05/02/18	06/01/18	KWG1802248	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	59	42-106	06/01/18	Acceptable
Fluoranthene-d10	64	45-109	06/01/18	Acceptable
Terphenyl-d14	68	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: 04/24/2018
Date Received: 04/25/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: PDI-SG-B294-BL1
Lab Code: K1803850-022
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	11	D	7.1	1.1	5	05/02/18	06/01/18	KWG1802248	
2-Methylnaphthalene	6.3	JD	7.1	0.85	5	05/02/18	06/01/18	KWG1802248	
Acenaphthylene	8.8	D	3.6	0.33	5	05/02/18	06/01/18	KWG1802248	
Acenaphthene	7.4	D	3.6	0.33	5	05/02/18	06/01/18	KWG1802248	
Fluorene	10	D	3.6	0.37	5	05/02/18	06/01/18	KWG1802248	
Phenanthrene	81	D	3.6	0.47	5	05/02/18	06/01/18	KWG1802248	
Anthracene	17	D	3.6	0.27	5	05/02/18	06/01/18	KWG1802248	
Fluoranthene	280	D	3.6	0.35	5	05/02/18	06/01/18	KWG1802248	
Pyrene	290	D	3.6	0.36	5	05/02/18	06/01/18	KWG1802248	
Benz(a)anthracene	88	D	3.6	0.27	5	05/02/18	06/01/18	KWG1802248	
Chrysene	130	D	3.6	0.39	5	05/02/18	06/01/18	KWG1802248	
Benzo(b)fluoranthene†	170	D	3.6	0.47	5	05/02/18	06/01/18	KWG1802248	
Benzo(k)fluoranthene	61	D	3.6	0.40	5	05/02/18	06/01/18	KWG1802248	
Benzo(a)pyrene	93	D	3.6	0.52	5	05/02/18	06/01/18	KWG1802248	
Indeno(1,2,3-cd)pyrene	91	D	3.6	0.68	5	05/02/18	06/01/18	KWG1802248	
Dibenz(a,h)anthracene	21	D	3.6	0.61	5	05/02/18	06/01/18	KWG1802248	
Benzo(g,h,i)perylene	100	D	3.6	0.67	5	05/02/18	06/01/18	KWG1802248	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	63	42-106	06/01/18	Acceptable
Fluoranthene-d10	68	45-109	06/01/18	Acceptable
Terphenyl-d14	70	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: 04/24/2018
Date Received: 04/25/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: PDI-SG-B296-BL1
Lab Code: K1803850-023
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	23	D	7.0	1.1	5	05/02/18	06/01/18	KWG1802248	
2-Methylnaphthalene	13	D	7.0	0.84	5	05/02/18	06/01/18	KWG1802248	
Acenaphthylene	14	D	3.5	0.33	5	05/02/18	06/01/18	KWG1802248	
Acenaphthene	13	D	3.5	0.33	5	05/02/18	06/01/18	KWG1802248	
Fluorene	19	D	3.5	0.37	5	05/02/18	06/01/18	KWG1802248	
Phenanthrene	180	D	3.5	0.46	5	05/02/18	06/01/18	KWG1802248	
Anthracene	38	D	3.5	0.27	5	05/02/18	06/01/18	KWG1802248	
Fluoranthene	730	D	3.5	0.35	5	05/02/18	06/01/18	KWG1802248	
Pyrene	620	D	3.5	0.35	5	05/02/18	06/01/18	KWG1802248	
Benz(a)anthracene	210	D	3.5	0.27	5	05/02/18	06/01/18	KWG1802248	
Chrysene	360	D	3.5	0.39	5	05/02/18	06/01/18	KWG1802248	
Benzo(b)fluoranthene†	360	D	3.5	0.46	5	05/02/18	06/01/18	KWG1802248	
Benzo(k)fluoranthene	130	D	3.5	0.40	5	05/02/18	06/01/18	KWG1802248	
Benzo(a)pyrene	210	D	3.5	0.51	5	05/02/18	06/01/18	KWG1802248	
Indeno(1,2,3-cd)pyrene	200	D	3.5	0.67	5	05/02/18	06/01/18	KWG1802248	
Dibenz(a,h)anthracene	48	D	3.5	0.60	5	05/02/18	06/01/18	KWG1802248	
Benzo(g,h,i)perylene	210	D	3.5	0.67	5	05/02/18	06/01/18	KWG1802248	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	65	42-106	06/01/18	Acceptable
Fluoranthene-d10	76	45-109	06/01/18	Acceptable
Terphenyl-d14	70	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: 04/24/2018
Date Received: 04/25/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: PDI-SG-B302-BL1
Lab Code: K1803850-024
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	32	D	6.7	1.0	5	05/02/18	06/01/18	KWG1802248	
2-Methylnaphthalene	19	D	6.7	0.80	5	05/02/18	06/01/18	KWG1802248	
Acenaphthylene	14	D	3.4	0.31	5	05/02/18	06/01/18	KWG1802248	
Acenaphthene	13	D	3.4	0.32	5	05/02/18	06/01/18	KWG1802248	
Fluorene	17	D	3.4	0.35	5	05/02/18	06/01/18	KWG1802248	
Phenanthrene	110	D	3.4	0.44	5	05/02/18	06/01/18	KWG1802248	
Anthracene	30	D	3.4	0.26	5	05/02/18	06/01/18	KWG1802248	
Fluoranthene	340	D	3.4	0.33	5	05/02/18	06/01/18	KWG1802248	
Pyrene	400	D	3.4	0.34	5	05/02/18	06/01/18	KWG1802248	
Benz(a)anthracene	140	D	3.4	0.26	5	05/02/18	06/01/18	KWG1802248	
Chrysene	170	D	3.4	0.37	5	05/02/18	06/01/18	KWG1802248	
Benzo(b)fluoranthene†	240	D	3.4	0.44	5	05/02/18	06/01/18	KWG1802248	
Benzo(k)fluoranthene	85	D	3.4	0.38	5	05/02/18	06/01/18	KWG1802248	
Benzo(a)pyrene	150	D	3.4	0.49	5	05/02/18	06/01/18	KWG1802248	
Indeno(1,2,3-cd)pyrene	150	D	3.4	0.64	5	05/02/18	06/01/18	KWG1802248	
Dibenz(a,h)anthracene	33	D	3.4	0.57	5	05/02/18	06/01/18	KWG1802248	
Benzo(g,h,i)perylene	170	D	3.4	0.63	5	05/02/18	06/01/18	KWG1802248	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	64	42-106	06/01/18	Acceptable
Fluoranthene-d10	82	45-109	06/01/18	Acceptable
Terphenyl-d14	73	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: 04/24/2018
Date Received: 04/25/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: PDI-SG-B303-BL1
Lab Code: K1803850-025
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	37		1.5	0.22	1	05/02/18	05/31/18	KWG1802248	
2-Methylnaphthalene	15		1.5	0.18	1	05/02/18	05/31/18	KWG1802248	
Acenaphthylene	15		0.72	0.066	1	05/02/18	05/31/18	KWG1802248	
Acenaphthene	15		0.72	0.068	1	05/02/18	05/31/18	KWG1802248	
Fluorene	20		0.72	0.075	1	05/02/18	05/31/18	KWG1802248	
Phenanthrene	160		0.72	0.095	1	05/02/18	05/31/18	KWG1802248	
Anthracene	34		0.72	0.055	1	05/02/18	05/31/18	KWG1802248	
Fluoranthene	320	D	7.2	0.71	10	05/02/18	06/01/18	KWG1802248	
Pyrene	350	D	7.2	0.72	10	05/02/18	06/01/18	KWG1802248	
Benz(a)anthracene	110		0.72	0.055	1	05/02/18	05/31/18	KWG1802248	
Chrysene	180		0.72	0.079	1	05/02/18	05/31/18	KWG1802248	
Benzo(b)fluoranthene†	220		0.72	0.095	1	05/02/18	05/31/18	KWG1802248	
Benzo(k)fluoranthene	61		0.72	0.082	1	05/02/18	05/31/18	KWG1802248	
Benzo(a)pyrene	140		0.72	0.11	1	05/02/18	05/31/18	KWG1802248	
Indeno(1,2,3-cd)pyrene	130		0.72	0.14	1	05/02/18	05/31/18	KWG1802248	
Dibenz(a,h)anthracene	30		0.72	0.13	1	05/02/18	05/31/18	KWG1802248	
Benzo(g,h,i)perylene	150		0.72	0.14	1	05/02/18	05/31/18	KWG1802248	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	56	42-106	05/31/18	Acceptable
Fluoranthene-d10	95	45-109	05/31/18	Acceptable
Terphenyl-d14	68	41-102	05/31/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: 04/20/2018
Date Received: 04/25/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: PDI-SG-B237-BL1
Lab Code: K1803850-028
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	5.2		1.2	0.18	1	05/02/18	06/01/18	KWG1802248	
2-Methylnaphthalene	6.8		1.2	0.14	1	05/02/18	06/01/18	KWG1802248	
Acenaphthylene	3.2		0.59	0.054	1	05/02/18	06/01/18	KWG1802248	
Acenaphthene	6.5		0.59	0.055	1	05/02/18	06/01/18	KWG1802248	
Fluorene	9.2		0.59	0.061	1	05/02/18	06/01/18	KWG1802248	
Phenanthrene	57		0.59	0.077	1	05/02/18	06/01/18	KWG1802248	
Anthracene	8.5		0.59	0.045	1	05/02/18	06/01/18	KWG1802248	
Fluoranthene	160		0.59	0.057	1	05/02/18	06/01/18	KWG1802248	
Pyrene	130		0.59	0.059	1	05/02/18	06/01/18	KWG1802248	
Benz(a)anthracene	30		0.59	0.045	1	05/02/18	06/01/18	KWG1802248	
Chrysene	60		0.59	0.064	1	05/02/18	06/01/18	KWG1802248	
Benzo(b)fluoranthene†	52		0.59	0.077	1	05/02/18	06/01/18	KWG1802248	
Benzo(k)fluoranthene	17		0.59	0.067	1	05/02/18	06/01/18	KWG1802248	
Benzo(a)pyrene	33		0.59	0.085	1	05/02/18	06/01/18	KWG1802248	
Indeno(1,2,3-cd)pyrene	31		0.59	0.12	1	05/02/18	06/01/18	KWG1802248	
Dibenz(a,h)anthracene	6.0		0.59	0.10	1	05/02/18	06/01/18	KWG1802248	
Benzo(g,h,i)perylene	32		0.59	0.12	1	05/02/18	06/01/18	KWG1802248	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	57	42-106	06/01/18	Acceptable
Fluoranthene-d10	82	45-109	06/01/18	Acceptable
Terphenyl-d14	76	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments: _____

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: 04/20/2018
Date Received: 04/25/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: PDI-SG-B240-BL1
Lab Code: K1803850-029
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	7.3		0.84	0.15	1	05/02/18	06/01/18	KWG1802248	
2-Methylnaphthalene	3.3		0.84	0.12	1	05/02/18	06/01/18	KWG1802248	
Acenaphthylene	2.7		0.42	0.046	1	05/02/18	06/01/18	KWG1802248	
Acenaphthene	2.2		0.42	0.047	1	05/02/18	06/01/18	KWG1802248	
Fluorene	2.7		0.42	0.052	1	05/02/18	06/01/18	KWG1802248	
Phenanthrene	23		0.42	0.066	1	05/02/18	06/01/18	KWG1802248	
Anthracene	4.1		0.42	0.038	1	05/02/18	06/01/18	KWG1802248	
Fluoranthene	61		0.42	0.049	1	05/02/18	06/01/18	KWG1802248	
Pyrene	52		0.42	0.050	1	05/02/18	06/01/18	KWG1802248	
Benz(a)anthracene	21		0.42	0.038	1	05/02/18	06/01/18	KWG1802248	
Chrysene	31		0.42	0.055	1	05/02/18	06/01/18	KWG1802248	
Benzo(b)fluoranthene†	33		0.42	0.066	1	05/02/18	06/01/18	KWG1802248	
Benzo(k)fluoranthene	12		0.42	0.057	1	05/02/18	06/01/18	KWG1802248	
Benzo(a)pyrene	26		0.42	0.073	1	05/02/18	06/01/18	KWG1802248	
Indeno(1,2,3-cd)pyrene	25		0.42	0.096	1	05/02/18	06/01/18	KWG1802248	
Dibenz(a,h)anthracene	4.8		0.42	0.086	1	05/02/18	06/01/18	KWG1802248	
Benzo(g,h,i)perylene	27		0.42	0.095	1	05/02/18	06/01/18	KWG1802248	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	54	42-106	06/01/18	Acceptable
Fluoranthene-d10	72	45-109	06/01/18	Acceptable
Terphenyl-d14	67	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: 04/20/2018
Date Received: 04/25/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: PDI-SG-B233-BL1
Lab Code: K1803850-030
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	3.8		0.76	0.15	1	05/02/18	05/31/18	KWG1802248	
2-Methylnaphthalene	5.0		0.76	0.12	1	05/02/18	05/31/18	KWG1802248	
Acenaphthylene	12		0.38	0.046	1	05/02/18	05/31/18	KWG1802248	
Acenaphthene	7.0		0.38	0.047	1	05/02/18	05/31/18	KWG1802248	
Fluorene	16		0.38	0.052	1	05/02/18	05/31/18	KWG1802248	
Phenanthrene	300	D	3.8	0.66	10	05/02/18	06/01/18	KWG1802248	
Anthracene	37		0.38	0.038	1	05/02/18	05/31/18	KWG1802248	
Fluoranthene	190	D	3.8	0.49	10	05/02/18	06/01/18	KWG1802248	
Pyrene	260	D	3.8	0.50	10	05/02/18	06/01/18	KWG1802248	
Benz(a)anthracene	110	D	3.8	0.38	10	05/02/18	06/01/18	KWG1802248	
Chrysene	150	D	3.8	0.55	10	05/02/18	06/01/18	KWG1802248	
Benzo(b)fluoranthene†	88	D	3.8	0.66	10	05/02/18	06/01/18	KWG1802248	
Benzo(k)fluoranthene	33	D	3.8	0.57	10	05/02/18	06/01/18	KWG1802248	
Benzo(a)pyrene	78	D	3.8	0.73	10	05/02/18	06/01/18	KWG1802248	
Indeno(1,2,3-cd)pyrene	47	D	3.8	0.96	10	05/02/18	06/01/18	KWG1802248	
Dibenz(a,h)anthracene	14	D	3.8	0.86	10	05/02/18	06/01/18	KWG1802248	
Benzo(g,h,i)perylene	45	D	3.8	0.95	10	05/02/18	06/01/18	KWG1802248	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	63	42-106	05/31/18	Acceptable
Fluoranthene-d10	68	45-109	05/31/18	Acceptable
Terphenyl-d14	68	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments: _____

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: 04/20/2018
Date Received: 04/25/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: PDI-SG-B243-BL1
Lab Code: K1803850-031
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	36		1.1	0.16	1	05/02/18	05/31/18	KWG1802248	
2-Methylnaphthalene	21		1.1	0.13	1	05/02/18	05/31/18	KWG1802248	
Acenaphthylene	6.9		0.53	0.049	1	05/02/18	05/31/18	KWG1802248	
Acenaphthene	7.5		0.53	0.050	1	05/02/18	05/31/18	KWG1802248	
Fluorene	7.9		0.53	0.055	1	05/02/18	05/31/18	KWG1802248	
Phenanthrene	170		0.53	0.069	1	05/02/18	05/31/18	KWG1802248	
Anthracene	19		0.53	0.040	1	05/02/18	05/31/18	KWG1802248	
Fluoranthene	200	D	2.7	0.26	5	05/02/18	06/01/18	KWG1802248	
Pyrene	190	D	2.7	0.27	5	05/02/18	06/01/18	KWG1802248	
Benz(a)anthracene	94	D	2.7	0.20	5	05/02/18	06/01/18	KWG1802248	
Chrysene	140	D	2.7	0.29	5	05/02/18	06/01/18	KWG1802248	
Benzo(b)fluoranthene†	150	D	2.7	0.35	5	05/02/18	06/01/18	KWG1802248	
Benzo(k)fluoranthene	50	D	2.7	0.30	5	05/02/18	06/01/18	KWG1802248	
Benzo(a)pyrene	100	D	2.7	0.39	5	05/02/18	06/01/18	KWG1802248	
Indeno(1,2,3-cd)pyrene	82	D	2.7	0.51	5	05/02/18	06/01/18	KWG1802248	
Dibenz(a,h)anthracene	19	D	2.7	0.45	5	05/02/18	06/01/18	KWG1802248	
Benzo(g,h,i)perylene	85	D	2.7	0.50	5	05/02/18	06/01/18	KWG1802248	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	66	42-106	05/31/18	Acceptable
Fluoranthene-d10	77	45-109	05/31/18	Acceptable
Terphenyl-d14	76	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments: _____

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: NA
Date Received: NA

Polynuclear Aromatic Hydrocarbons

Sample Name: Method Blank
Lab Code: KWG1802248-4
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	ND	U	0.50	0.15	1	05/02/18	05/31/18	KWG1802248	
2-Methylnaphthalene	ND	U	0.50	0.12	1	05/02/18	05/31/18	KWG1802248	
Acenaphthylene	ND	U	0.25	0.046	1	05/02/18	05/31/18	KWG1802248	
Acenaphthene	ND	U	0.25	0.047	1	05/02/18	05/31/18	KWG1802248	
Fluorene	ND	U	0.25	0.052	1	05/02/18	05/31/18	KWG1802248	
Phenanthrene	ND	U	0.25	0.066	1	05/02/18	05/31/18	KWG1802248	
Anthracene	ND	U	0.25	0.038	1	05/02/18	05/31/18	KWG1802248	
Fluoranthene	ND	U	0.25	0.049	1	05/02/18	05/31/18	KWG1802248	
Pyrene	ND	U	0.25	0.050	1	05/02/18	05/31/18	KWG1802248	
Benz(a)anthracene	ND	U	0.25	0.038	1	05/02/18	05/31/18	KWG1802248	
Chrysene	ND	U	0.25	0.055	1	05/02/18	05/31/18	KWG1802248	
Benzo(b)fluoranthene†	ND	U	0.25	0.066	1	05/02/18	05/31/18	KWG1802248	
Benzo(k)fluoranthene	ND	U	0.25	0.057	1	05/02/18	05/31/18	KWG1802248	
Benzo(a)pyrene	ND	U	0.25	0.073	1	05/02/18	05/31/18	KWG1802248	
Indeno(1,2,3-cd)pyrene	ND	U	0.25	0.096	1	05/02/18	05/31/18	KWG1802248	
Dibenz(a,h)anthracene	ND	U	0.25	0.086	1	05/02/18	05/31/18	KWG1802248	
Benzo(g,h,i)perylene	ND	U	0.25	0.095	1	05/02/18	05/31/18	KWG1802248	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	66	42-106	05/31/18	Acceptable
Fluoranthene-d10	74	45-109	05/31/18	Acceptable
Terphenyl-d14	73	41-102	05/31/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: NA
Date Received: NA

Polynuclear Aromatic Hydrocarbons

Sample Name: Method Blank
Lab Code: KWG1802260-4
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	ND	U	0.50	0.15	1	05/03/18	06/01/18	KWG1802260	
2-Methylnaphthalene	ND	U	0.50	0.12	1	05/03/18	06/01/18	KWG1802260	
Acenaphthylene	ND	U	0.25	0.046	1	05/03/18	06/01/18	KWG1802260	
Acenaphthene	ND	U	0.25	0.047	1	05/03/18	06/01/18	KWG1802260	
Fluorene	ND	U	0.25	0.052	1	05/03/18	06/01/18	KWG1802260	
Phenanthrene	ND	U	0.25	0.066	1	05/03/18	06/01/18	KWG1802260	
Anthracene	ND	U	0.25	0.038	1	05/03/18	06/01/18	KWG1802260	
Fluoranthene	ND	U	0.25	0.049	1	05/03/18	06/01/18	KWG1802260	
Pyrene	ND	U	0.25	0.050	1	05/03/18	06/01/18	KWG1802260	
Benz(a)anthracene	ND	U	0.25	0.038	1	05/03/18	06/01/18	KWG1802260	
Chrysene	ND	U	0.25	0.055	1	05/03/18	06/01/18	KWG1802260	
Benzo(b)fluoranthene†	ND	U	0.25	0.066	1	05/03/18	06/01/18	KWG1802260	
Benzo(k)fluoranthene	ND	U	0.25	0.057	1	05/03/18	06/01/18	KWG1802260	
Benzo(a)pyrene	ND	U	0.25	0.073	1	05/03/18	06/01/18	KWG1802260	
Indeno(1,2,3-cd)pyrene	ND	U	0.25	0.096	1	05/03/18	06/01/18	KWG1802260	
Dibenz(a,h)anthracene	ND	U	0.25	0.086	1	05/03/18	06/01/18	KWG1802260	
Benzo(g,h,i)perylene	ND	U	0.25	0.095	1	05/03/18	06/01/18	KWG1802260	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	75	42-106	06/01/18	Acceptable
Fluoranthene-d10	85	45-109	06/01/18	Acceptable
Terphenyl-d14	90	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850

Surrogate Recovery Summary
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: Percent
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>	<u>Sur2</u>	<u>Sur3</u>
PDI-SG-B291-BL1	K1803850-001	61	70	75
PDI-SG-B292-BL1	K1803850-002	64	73	83
PDI-SG-B306-BL1	K1803850-003	62	69	79
PDI-SG-B323-BL1	K1803850-004	63	72	80
PDI-SG-B329-BL1	K1803850-005	63	73	81
PDI-SG-B334-BL1	K1803850-006	63	72	80
PDI-SG-B346-BL1	K1803850-007	60	70	76
PDI-SG-B265-BL1	K1803850-008	51 D	56 D	62 D
PDI-SG-B271-BL1	K1803850-009	65 D	74 D	83 D
PDI-SG-B273-BL1	K1803850-010	64 D	74 D	82 D
PDI-SG-B279-BL1	K1803850-011	63 D	71 D	80 D
PDI-SG-B280-BL1	K1803850-012	62 D	71 D	79 D
PDI-SG-B260-BL1	K1803850-013	71 D	78 D	85 D
PDI-SG-B352-BL1	K1803850-014	59	69	75
PDI-SG-B366-BL1	K1803850-015	57	66	77
PDI-SG-B366-BL1-D	K1803850-016	63	73	80
PDI-SG-B357-BL1	K1803850-017	65	75	81
PDI-SG-B384-BL1	K1803850-018	63	72	79
PDI-SG-B378-BL1	K1803850-019	55	70	74
PDI-SG-B284-BL1	K1803850-020	68 D	77 D	84 D
PDI-SG-B288-BL1	K1803850-021	59 D	64 D	68 D
PDI-SG-B294-BL1	K1803850-022	63 D	68 D	70 D
PDI-SG-B296-BL1	K1803850-023	65 D	76 D	70 D
PDI-SG-B302-BL1	K1803850-024	64 D	82 D	73 D
PDI-SG-B303-BL1	K1803850-025	56	95	68
PDI-SG-B237-BL1	K1803850-028	57	82	76
PDI-SG-B240-BL1	K1803850-029	54	72	67
PDI-SG-B233-BL1	K1803850-030	63	68	68 D
PDI-SG-B243-BL1	K1803850-031	66	77	76 D
Method Blank	KWG1802248-4	66	74	73
Method Blank	KWG1802260-4	75	85	90
PDI-SG-B288-BL1MS	KWG1802248-1	59 D	70 D	71 D
PDI-SG-B288-BL1DMS	KWG1802248-2	65 D	76 D	76 D
PDI-SG-B306-BL1MS	KWG1802260-1	66	74	86
PDI-SG-B306-BL1DMS	KWG1802260-2	66	76	88

Surrogate Recovery Control Limits (%)

Sur1 = Fluorene-d10	42-106
Sur2 = Fluoranthene-d10	45-109
Sur3 = Terphenyl-d14	41-102

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

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

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850

Surrogate Recovery Summary
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: Percent
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>	<u>Sur2</u>	<u>Sur3</u>
Lab Control Sample	KWG1802248-3	60	73	72
Lab Control Sample	KWG1802260-3	77	85	95

Surrogate Recovery Control Limits (%)

Sur1 = Fluorene-d10	42-106
Sur2 = Fluoranthene-d10	45-109
Sur3 = Terphenyl-d14	41-102

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

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

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 05/31/2018
Time Analyzed: 05:29

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS14\DATA\053118\0531F002.D
Instrument ID: MS14
Analysis Method: 8270D SIM

Lab Code: KWG1802760-2
Analysis Lot: KWG1802760

		Naphthalene-d8		Acenaphthene-d10		Phenanthrene-d10	
		<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>		34,920	4.65	17,938	6.23	38,382	7.47
Upper Limit ==>		69,840	5.15	35,876	6.73	76,764	7.97
Lower Limit ==>		17,460	4.15	8,969	5.73	19,191	6.97
ICAL Result ==>		45,603	4.78	23,247	6.33	49,507	7.56
<i>Associated Analyses</i>							
Method Blank	KWG1802248-4	33,221	4.65	18,529	6.23	38,780	7.47
Lab Control Sample	KWG1802248-3	34,327	4.64	17,854	6.23	38,464	7.47
PDI-SG-B303-BL1	K1803850-025	34,392	4.64	20,254	6.23	54,331	7.48
PDI-SG-B233-BL1	K1803850-030	28,861	4.67	18,216	6.24	39,204	7.48
PDI-SG-B243-BL1	K1803850-031	29,389	4.67	18,429	6.24	39,764	7.49

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

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 05/31/2018
Time Analyzed: 05:29

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS14\DATA\053118\0531F002.D
Instrument ID: MS14
Analysis Method: 8270D SIM

Lab Code: KWG1802760-2
Analysis Lot: KWG1802760

	Chrysene-d12		Perylene-d12	
	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>	54,565	9.97	60,993	13.00
Upper Limit ==>	109,130	10.47	121,986	13.50
Lower Limit ==>	27,283	9.47	30,497	12.50
ICAL Result ==>	64,481	10.08	65,038	13.14

Associated Analyses

Method Blank	KWG1802248-4	49,172	9.96	60,352	12.99
Lab Control Sample	KWG1802248-3	48,294	9.96	56,239	13.00
PDI-SG-B303-BL1	K1803850-025	103,615	10.01	75,662	13.19
PDI-SG-B233-BL1	K1803850-030	42,190	10.19	46,713	13.68*
PDI-SG-B243-BL1	K1803850-031	44,120	10.22	46,596	13.74*

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

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 06/01/2018
Time Analyzed: 06:45

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS14\DATA\060118\0601F002.D
Instrument ID: MS14
Analysis Method: 8270D SIM

Lab Code: KWG1802860-2
Analysis Lot: KWG1802860

		Naphthalene-d8		Acenaphthene-d10		Phenanthrene-d10	
		<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>		27,667	4.63	17,898	6.22	38,922	7.46
Upper Limit ==>		55,334	5.13	35,796	6.72	77,844	7.96
Lower Limit ==>		13,834	4.13	8,949	5.72	19,461	6.96
ICAL Result ==>		45,603	4.78	23,247	6.33	49,507	7.56
<i>Associated Analyses</i>							
PDI-SG-B237-BL1	K1803850-028	27,829	4.61	18,718	6.21	43,290	7.46
PDI-SG-B240-BL1	K1803850-029	26,981	4.61	18,988	6.21	41,031	7.46
PDI-SG-B233-BL1DL	K1803850-030	24,160	4.63	19,088	6.22	41,952	7.46
PDI-SG-B243-BL1DL	K1803850-031	24,845	4.63	19,072	6.22	44,761	7.46
PDI-SG-B288-BL1MS	KWG1802248-1	26,130	4.62	19,612	6.22	48,946	7.46
PDI-SG-B288-BL1DMS	KWG1802248-2	27,224	4.63	20,374	6.22	49,141	7.46
PDI-SG-B288-BL1	K1803850-021	26,211	4.63	20,910	6.22	48,495	7.46
PDI-SG-B294-BL1	K1803850-022	25,498	4.63	20,878	6.22	46,511	7.46
PDI-SG-B296-BL1	K1803850-023	24,945	4.63	19,788	6.22	47,702	7.46
PDI-SG-B302-BL1	K1803850-024	24,309	4.63	19,619	6.22	48,547	7.46
PDI-SG-B303-BL1DL	K1803850-025	21,752	4.63	19,926	6.22	40,248	7.46

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

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 06/01/2018
Time Analyzed: 06:45

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS14\DATA\060118\0601F002.D
Instrument ID: MS14
Analysis Method: 8270D SIM

Lab Code: KWG1802860-2
Analysis Lot: KWG1802860

	Chrysene-d12		Perylene-d12	
	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>	49,059	9.95	58,664	12.97
Upper Limit ==>	98,118	10.45	117,328	13.47
Lower Limit ==>	24,530	9.45	29,332	12.47
ICAL Result ==>	64,481	10.08	65,038	13.14

Associated Analyses

PDI-SG-B237-BL1	K1803850-028	59,167	9.96	55,748	13.02
PDI-SG-B240-BL1	K1803850-029	57,047	9.96	56,177	13.03
PDI-SG-B233-BL1DL	K1803850-030	45,654	9.95	56,154	12.98
PDI-SG-B243-BL1DL	K1803850-031	48,465	9.95	54,654	12.99
PDI-SG-B288-BL1MS	KWG1802248-1	57,642	9.95	61,308	12.99
PDI-SG-B288-BL1DMS	KWG1802248-2	59,872	9.96	61,094	13.01
PDI-SG-B288-BL1	K1803850-021	56,561	9.95	61,478	13.00
PDI-SG-B294-BL1	K1803850-022	56,998	9.96	60,387	13.01
PDI-SG-B296-BL1	K1803850-023	65,406	9.96	63,241	13.03
PDI-SG-B302-BL1	K1803850-024	70,748	9.97	65,817	13.05
PDI-SG-B303-BL1DL	K1803850-025	48,746	9.96	53,392	13.01

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

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 06/01/2018
Time Analyzed: 07:40

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS20\DATA\060118\0601F002.D
Instrument ID: MS20
Analysis Method: 8270D SIM

Lab Code: KWG1802863-2
Analysis Lot: KWG1802863

	Naphthalene-d8		Acenaphthene-d10		Phenanthrene-d10	
	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>	61,199	5.95	34,054	8.27	71,928	11.45
Upper Limit ==>	122,398	6.45	68,108	8.77	143,856	11.95
Lower Limit ==>	30,600	5.45	17,027	7.77	35,964	10.95
ICAL Result ==>	90,101	6.06	44,197	8.42	87,517	11.64

Associated Analyses

Method Blank	KWG1802260-4	58,400	5.94	32,727	8.27	67,397	11.45
Lab Control Sample	KWG1802260-3	58,957	5.94	31,804	8.26	67,994	11.44
PDI-SG-B306-BL1MS	KWG1802260-1	57,235	5.94	30,906	8.26	65,162	11.44
PDI-SG-B306-BL1DMS	KWG1802260-2	58,761	5.94	32,091	8.26	67,250	11.44
PDI-SG-B306-BL1	K1803850-003	59,621	5.94	33,898	8.27	69,138	11.44
PDI-SG-B291-BL1	K1803850-001	58,404	5.94	31,782	8.26	63,722	11.45
PDI-SG-B292-BL1	K1803850-002	57,972	5.95	33,413	8.27	67,799	11.45
PDI-SG-B323-BL1	K1803850-004	58,734	5.95	33,813	8.27	68,019	11.45
PDI-SG-B329-BL1	K1803850-005	57,716	5.95	32,771	8.26	66,175	11.45
PDI-SG-B334-BL1	K1803850-006	58,826	5.94	33,221	8.27	67,641	11.45
PDI-SG-B346-BL1	K1803850-007	56,528	5.94	31,932	8.27	64,201	11.45
PDI-SG-B352-BL1	K1803850-014	57,347	5.94	32,566	8.26	65,165	11.44
PDI-SG-B366-BL1	K1803850-015	55,887	5.94	32,348	8.26	65,141	11.44
PDI-SG-B366-BL1-D	K1803850-016	59,161	5.94	32,760	8.27	66,566	11.45
PDI-SG-B357-BL1	K1803850-017	59,540	5.94	33,730	8.27	67,090	11.45
PDI-SG-B384-BL1	K1803850-018	55,814	5.94	32,402	8.27	64,759	11.45
PDI-SG-B378-BL1	K1803850-019	58,115	5.94	32,705	8.27	64,517	11.45

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

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 06/01/2018
Time Analyzed: 07:40

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS20\DATA\060118\0601F002.D
Instrument ID: MS20
Analysis Method: 8270D SIM

Lab Code: KWG1802863-2
Analysis Lot: KWG1802863

	Chrysene-d12		Perylene-d12	
	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>	79,534	18.80	89,105	23.09
Upper Limit ==>	159,068	19.30	178,210	23.59
Lower Limit ==>	39,767	18.30	44,553	22.59
ICAL Result ==>	105,110	19.00	102,151	23.35

Associated Analyses

Method Blank	KWG1802260-4	78,427	18.81	88,680	23.09
Lab Control Sample	KWG1802260-3	74,953	18.80	87,184	23.08
PDI-SG-B306-BL1MS	KWG1802260-1	68,380	18.80	80,928	23.10
PDI-SG-B306-BL1DMS	KWG1802260-2	70,921	18.80	84,645	23.10
PDI-SG-B306-BL1	K1803850-003	75,636	18.80	85,906	23.10
PDI-SG-B291-BL1	K1803850-001	70,365	18.82	82,858	23.13
PDI-SG-B292-BL1	K1803850-002	73,469	18.81	84,385	23.11
PDI-SG-B323-BL1	K1803850-004	76,078	18.81	86,669	23.10
PDI-SG-B329-BL1	K1803850-005	72,716	18.81	83,171	23.11
PDI-SG-B334-BL1	K1803850-006	74,838	18.81	85,387	23.11
PDI-SG-B346-BL1	K1803850-007	72,205	18.81	81,975	23.10
PDI-SG-B352-BL1	K1803850-014	73,113	18.81	85,041	23.11
PDI-SG-B366-BL1	K1803850-015	69,124	18.81	82,906	23.10
PDI-SG-B366-BL1-D	K1803850-016	74,163	18.81	85,156	23.11
PDI-SG-B357-BL1	K1803850-017	75,961	18.81	86,541	23.11
PDI-SG-B384-BL1	K1803850-018	72,803	18.81	83,524	23.11
PDI-SG-B378-BL1	K1803850-019	74,642	18.81	83,844	23.11

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

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 06/01/2018
Time Analyzed: 20:09

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS20\DATA\060118\0601F021.D
Instrument ID: MS20
Analysis Method: 8270D SIM

Lab Code: KWG1802867-2
Analysis Lot: KWG1802867

		Naphthalene-d8		Acenaphthene-d10		Phenanthrene-d10	
		<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>		60,395	5.95	34,091	8.26	71,794	11.44
Upper Limit ==>		120,790	6.45	68,182	8.76	143,588	11.94
Lower Limit ==>		30,198	5.45	17,046	7.76	35,897	10.94
ICAL Result ==>		90,101	6.06	44,197	8.42	87,517	11.64
<i>Associated Analyses</i>							
PDI-SG-B265-BL1	K1803850-008	63,353	5.94	35,090	8.26	68,293	11.44
PDI-SG-B271-BL1	K1803850-009	61,366	5.94	35,677	8.26	71,211	11.44
PDI-SG-B273-BL1	K1803850-010	61,989	5.94	35,150	8.26	70,830	11.44
PDI-SG-B279-BL1	K1803850-011	61,519	5.94	35,163	8.26	70,290	11.44
PDI-SG-B280-BL1	K1803850-012	61,876	5.94	35,153	8.26	69,590	11.44
PDI-SG-B260-BL1	K1803850-013	63,024	5.94	34,454	8.26	68,868	11.44
PDI-SG-B284-BL1	K1803850-020	61,301	5.94	34,326	8.26	68,143	11.44

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

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 06/01/2018
Time Analyzed: 20:09

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS20\DATA\060118\0601F021.D
Instrument ID: MS20
Analysis Method: 8270D SIM

Lab Code: KWG1802867-2
Analysis Lot: KWG1802867

	Chrysene-d12		Perylene-d12	
	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>	80,428	18.80	90,892	23.09
Upper Limit ==>	160,856	19.30	181,784	23.59
Lower Limit ==>	40,214	18.30	45,446	22.59
ICAL Result ==>	105,110	19.00	102,151	23.35

Associated Analyses

PDI-SG-B265-BL1	K1803850-008	75,865	18.80	87,665	23.10
PDI-SG-B271-BL1	K1803850-009	77,165	18.80	90,365	23.09
PDI-SG-B273-BL1	K1803850-010	77,233	18.80	88,849	23.09
PDI-SG-B279-BL1	K1803850-011	73,861	18.80	86,347	23.09
PDI-SG-B280-BL1	K1803850-012	75,827	18.80	88,672	23.09
PDI-SG-B260-BL1	K1803850-013	75,226	18.81	88,908	23.10
PDI-SG-B284-BL1	K1803850-020	73,840	18.81	87,502	23.10

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

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 06/04/2018
Time Analyzed: 06:58

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS20\DATA\060418\0604F002.D
Instrument ID: MS20
Analysis Method: 8270D SIM

Lab Code: KWG1802872-2
Analysis Lot: KWG1802872

		Naphthalene-d8		Acenaphthene-d10		Phenanthrene-d10	
		<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>		61,387	5.95	33,515	8.26	72,390	11.44
Upper Limit ==>		122,774	6.45	67,030	8.76	144,780	11.94
Lower Limit ==>		30,694	5.45	16,758	7.76	36,195	10.94
ICAL Result ==>		90,101	6.06	44,197	8.42	87,517	11.64
<i>Associated Analyses</i>							
PDI-SG-B291-BL1DL	K1803850-001	63,501	5.94	33,719	8.26	66,874	11.44

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

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 06/04/2018
Time Analyzed: 06:58

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS20\DATA\060418\0604F002.D
Instrument ID: MS20
Analysis Method: 8270D SIM

Lab Code: KWG1802872-2
Analysis Lot: KWG1802872

	Chrysene-d12		Perylene-d12	
	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>	81,154	18.80	91,080	23.09
Upper Limit ==>	162,308	19.30	182,160	23.59
Lower Limit ==>	40,577	18.30	45,540	22.59
ICAL Result ==>	105,110	19.00	102,151	23.35

Associated Analyses

PDI-SG-B291-BL1DL	K1803850-001	74,329	18.81	87,075	23.11
-------------------	--------------	--------	-------	--------	-------

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

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Extracted: 05/02/2018
Date Analyzed: 06/01/2018

Matrix Spike/Duplicate Matrix Spike Summary
Polynuclear Aromatic Hydrocarbons

Sample Name: PDI-SG-B288-BL1
Lab Code: K1803850-021
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low
Extraction Lot: KWG1802248

Analyte Name	Sample Result	PDI-SG-B288-BL1MS KWG1802248-1 Matrix Spike			PDI-SG-B288-BL1DMS KWG1802248-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Spike Amount	%Rec	Result	Spike Amount	%Rec			
Naphthalene	11	78.4	154	44	85.2	155	48	37-104	8	40
2-Methylnaphthalene	9.0	99.5	154	59	111	155	66	39-115	11	40
Acenaphthylene	11	88.3	154	50	99.4	155	57	39-115	12	40
Acenaphthene	8.9	98.5	154	58	107	155	63	41-116	8	40
Fluorene	13	109	154	63	122	155	70	43-117	11	40
Phenanthrene	80	221	154	92	243	155	105	42-119	10	40
Anthracene	19	121	154	66	130	155	71	42-124	7	40
Fluoranthene	230	391	154	105	523	155	189 *	42-130	29	40
Pyrene	240	401	154	104	513	155	175 *	33-125	25	40
Benz(a)anthracene	95	218	154	80	262	155	107	42-123	18	40
Chrysene	160	284	154	78	349	155	120	40-134	21	40
Benzo(b)fluoranthene	170	280	154	71	358	155	121	27-139	24	40
Benzo(k)fluoranthene	64	167	154	67	202	155	89	40-125	19	40
Benzo(a)pyrene	100	216	154	73	259	155	100	39-130	18	40
Indeno(1,2,3-cd)pyrene	100	239	154	90	298	155	128	37-143	22	40
Dibenz(a,h)anthracene	25	135	154	72	165	155	90	39-141	20	40
Benzo(g,h,i)perylene	110	214	154	68	270	155	104	35-140	23	40

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

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

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

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Extracted: 05/03/2018
Date Analyzed: 06/01/2018

Matrix Spike/Duplicate Matrix Spike Summary
Polynuclear Aromatic Hydrocarbons

Sample Name: PDI-SG-B306-BL1
Lab Code: K1803850-003
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low
Extraction Lot: KWG1802260

Analyte Name	Sample Result	PDI-SG-B306-BL1MS KWG1802260-1 Matrix Spike			PDI-SG-B306-BL1DMS KWG1802260-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Spike Amount	%Rec	Result	Spike Amount	%Rec			
Naphthalene	1.6	70.9	121	58	67.8	120	55	37-104	5	40
2-Methylnaphthalene	1.3	77.9	121	64	75.1	120	61	39-115	4	40
Acenaphthylene	0.75	88.1	121	72	83.7	120	69	39-115	5	40
Acenaphthene	0.49	83.7	121	69	80.2	120	66	41-116	4	40
Fluorene	0.91	90.2	121	74	86.6	120	71	43-117	4	40
Phenanthrene	8.1	94.5	121	72	91.7	120	69	42-119	3	40
Anthracene	2.8	93.3	121	75	91.1	120	73	42-124	2	40
Fluoranthene	16	114	121	81	109	120	77	42-130	5	40
Pyrene	18	133	121	95	126	120	90	33-125	5	40
Benz(a)anthracene	6.8	122	121	96	120	120	94	42-123	2	40
Chrysene	11	119	121	90	116	120	87	40-134	3	40
Benzo(b)fluoranthene	11	112	121	84	108	120	81	27-139	3	40
Benzo(k)fluoranthene	3.1	102	121	82	98.9	120	80	40-125	3	40
Benzo(a)pyrene	7.6	114	121	89	111	120	85	39-130	3	40
Indeno(1,2,3-cd)pyrene	6.5	115	121	90	112	120	87	37-143	3	40
Dibenz(a,h)anthracene	1.6	110	121	90	106	120	87	39-141	3	40
Benzo(g,h,i)perylene	7.9	101	121	77	97.4	120	74	35-140	4	40

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

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

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

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Extracted: 05/02/2018
Date Analyzed: 05/31/2018

Lab Control Spike Summary
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low
Extraction Lot: KWG1802248

Lab Control Sample
 KWG1802248-3
Lab Control Spike

Analyte Name	Result	Spike Amount	%Rec	%Rec Limits
Naphthalene	56.9	100	57	42-107
2-Methylnaphthalene	57.0	100	57	40-116
Acenaphthylene	61.1	100	61	41-112
Acenaphthene	62.9	100	63	43-113
Fluorene	64.4	100	64	44-114
Phenanthrene	68.0	100	68	44-115
Anthracene	68.6	100	69	45-121
Fluoranthene	74.2	100	74	47-123
Pyrene	76.7	100	77	41-121
Benz(a)anthracene	89.5	100	89	42-123
Chrysene	85.8	100	86	46-130
Benzo(b)fluoranthene	82.6	100	83	46-125
Benzo(k)fluoranthene	79.3	100	79	47-125
Benzo(a)pyrene	81.7	100	82	45-128
Indeno(1,2,3-cd)pyrene	88.0	100	88	45-128
Dibenz(a,h)anthracene	80.4	100	80	44-128
Benzo(g,h,i)perylene	76.8	100	77	43-125

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

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

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Extracted: 05/03/2018
Date Analyzed: 06/01/2018

Lab Control Spike Summary
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low
Extraction Lot: KWG1802260

Lab Control Sample
 KWG1802260-3
Lab Control Spike

Analyte Name	Result	Spike Amount	%Rec	%Rec Limits
Naphthalene	75.3	100	75	42-107
2-Methylnaphthalene	77.0	100	77	40-116
Acenaphthylene	79.7	100	80	41-112
Acenaphthene	75.2	100	75	43-113
Fluorene	76.5	100	77	44-114
Phenanthrene	73.7	100	74	44-115
Anthracene	78.4	100	78	45-121
Fluoranthene	82.1	100	82	47-123
Pyrene	91.9	100	92	41-121
Benz(a)anthracene	99.5	100	99	42-123
Chrysene	91.2	100	91	46-130
Benzo(b)fluoranthene	88.8	100	89	46-125
Benzo(k)fluoranthene	84.3	100	84	47-125
Benzo(a)pyrene	90.8	100	91	45-128
Indeno(1,2,3-cd)pyrene	93.9	100	94	45-128
Dibenz(a,h)anthracene	92.7	100	93	44-128
Benzo(g,h,i)perylene	80.1	100	80	43-125

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

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

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Extracted: 05/02/2018
Date Analyzed: 05/31/2018
Time Analyzed: 05:52

Method Blank Summary
Polynuclear Aromatic Hydrocarbons

Sample Name:	Method Blank	Instrument ID:	MS14
Lab Code:	KWG1802248-4	File ID:	J:\MS14\DATA\053118\0531F003.D
Extraction Method:	EPA 3541	Level:	Low
Analysis Method:	8270D SIM	Extraction Lot:	KWG1802248

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG1802248-3	J:\MS14\DATA\053118\0531F004.D	05/31/18	06:17
PDI-SG-B303-BL1	K1803850-025	J:\MS14\DATA\053118\0531F005.D	05/31/18	06:41
PDI-SG-B233-BL1	K1803850-030	J:\MS14\DATA\053118\0531F008.D	05/31/18	09:04
PDI-SG-B243-BL1	K1803850-031	J:\MS14\DATA\053118\0531F009.D	05/31/18	09:30
PDI-SG-B237-BL1	K1803850-028	J:\MS14\DATA\060118\0601F004.D	06/01/18	07:38
PDI-SG-B240-BL1	K1803850-029	J:\MS14\DATA\060118\0601F005.D	06/01/18	08:03
PDI-SG-B233-BL1	K1803850-030	J:\MS14\DATA\060118\0601F006.D	06/01/18	08:28
PDI-SG-B243-BL1	K1803850-031	J:\MS14\DATA\060118\0601F007.D	06/01/18	08:54
PDI-SG-B288-BL1MS	KWG1802248-1	J:\MS14\DATA\060118\0601F008.D	06/01/18	09:19
PDI-SG-B288-BL1DMS	KWG1802248-2	J:\MS14\DATA\060118\0601F009.D	06/01/18	09:45
PDI-SG-B288-BL1	K1803850-021	J:\MS14\DATA\060118\0601F010.D	06/01/18	10:11
PDI-SG-B294-BL1	K1803850-022	J:\MS14\DATA\060118\0601F013.D	06/01/18	11:28
PDI-SG-B296-BL1	K1803850-023	J:\MS14\DATA\060118\0601F014.D	06/01/18	11:53
PDI-SG-B302-BL1	K1803850-024	J:\MS14\DATA\060118\0601F015.D	06/01/18	12:18
PDI-SG-B303-BL1	K1803850-025	J:\MS14\DATA\060118\0601F024.D	06/01/18	16:01

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Extracted: 05/03/2018
Date Analyzed: 06/01/2018
Time Analyzed: 08:20

Method Blank Summary
Polynuclear Aromatic Hydrocarbons

Sample Name:	Method Blank	Instrument ID:	MS20
Lab Code:	KWG1802260-4	File ID:	J:\MS20\DATA\060118\0601F003.D
Extraction Method:	EPA 3541	Level:	Low
Analysis Method:	8270D SIM	Extraction Lot:	KWG1802260

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG1802260-3	J:\MS20\DATA\060118\0601F004.D	06/01/18	08:59
PDI-SG-B306-BL1MS	KWG1802260-1	J:\MS20\DATA\060118\0601F005.D	06/01/18	09:39
PDI-SG-B306-BL1DMS	KWG1802260-2	J:\MS20\DATA\060118\0601F006.D	06/01/18	10:18
PDI-SG-B306-BL1	K1803850-003	J:\MS20\DATA\060118\0601F007.D	06/01/18	10:57
PDI-SG-B291-BL1	K1803850-001	J:\MS20\DATA\060118\0601F008.D	06/01/18	11:37
PDI-SG-B292-BL1	K1803850-002	J:\MS20\DATA\060118\0601F009.D	06/01/18	12:16
PDI-SG-B323-BL1	K1803850-004	J:\MS20\DATA\060118\0601F010.D	06/01/18	12:56
PDI-SG-B329-BL1	K1803850-005	J:\MS20\DATA\060118\0601F011.D	06/01/18	13:35
PDI-SG-B334-BL1	K1803850-006	J:\MS20\DATA\060118\0601F012.D	06/01/18	14:14
PDI-SG-B346-BL1	K1803850-007	J:\MS20\DATA\060118\0601F013.D	06/01/18	14:54
PDI-SG-B352-BL1	K1803850-014	J:\MS20\DATA\060118\0601F014.D	06/01/18	15:33
PDI-SG-B366-BL1	K1803850-015	J:\MS20\DATA\060118\0601F015.D	06/01/18	16:12
PDI-SG-B366-BL1-D	K1803850-016	J:\MS20\DATA\060118\0601F016.D	06/01/18	16:52
PDI-SG-B357-BL1	K1803850-017	J:\MS20\DATA\060118\0601F017.D	06/01/18	17:31
PDI-SG-B384-BL1	K1803850-018	J:\MS20\DATA\060118\0601F018.D	06/01/18	18:10
PDI-SG-B378-BL1	K1803850-019	J:\MS20\DATA\060118\0601F019.D	06/01/18	18:50
PDI-SG-B265-BL1	K1803850-008	J:\MS20\DATA\060118\0601F026.D	06/01/18	23:26
PDI-SG-B271-BL1	K1803850-009	J:\MS20\DATA\060118\0601F027.D	06/02/18	00:06
PDI-SG-B273-BL1	K1803850-010	J:\MS20\DATA\060118\0601F028.D	06/02/18	00:45
PDI-SG-B279-BL1	K1803850-011	J:\MS20\DATA\060118\0601F029.D	06/02/18	01:24
PDI-SG-B280-BL1	K1803850-012	J:\MS20\DATA\060118\0601F030.D	06/02/18	02:04
PDI-SG-B260-BL1	K1803850-013	J:\MS20\DATA\060118\0601F031.D	06/02/18	02:43
PDI-SG-B284-BL1	K1803850-020	J:\MS20\DATA\060118\0601F032.D	06/02/18	03:22
PDI-SG-B291-BL1	K1803850-001	J:\MS20\DATA\060418\0604F011.D	06/04/18	12:54

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Extracted: 05/02/2018
Date Analyzed: 05/31/2018
Time Analyzed: 06:17

Lab Control Sample Summary
Polynuclear Aromatic Hydrocarbons

Sample Name:	Lab Control Sample	Instrument ID:	MS14
Lab Code:	KWG1802248-3	File ID:	J:\MS14\DATA\053118\0531F004.D
Extraction Method:	EPA 3541	Level:	Low
Analysis Method:	8270D SIM	Extraction Lot:	KWG1802248

This Lab Control Sample applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG1802248-4	J:\MS14\DATA\053118\0531F003.D	05/31/18	05:52
PDI-SG-B303-BL1	K1803850-025	J:\MS14\DATA\053118\0531F005.D	05/31/18	06:41
PDI-SG-B233-BL1	K1803850-030	J:\MS14\DATA\053118\0531F008.D	05/31/18	09:04
PDI-SG-B243-BL1	K1803850-031	J:\MS14\DATA\053118\0531F009.D	05/31/18	09:30
PDI-SG-B237-BL1	K1803850-028	J:\MS14\DATA\060118\0601F004.D	06/01/18	07:38
PDI-SG-B240-BL1	K1803850-029	J:\MS14\DATA\060118\0601F005.D	06/01/18	08:03
PDI-SG-B233-BL1	K1803850-030	J:\MS14\DATA\060118\0601F006.D	06/01/18	08:28
PDI-SG-B243-BL1	K1803850-031	J:\MS14\DATA\060118\0601F007.D	06/01/18	08:54
PDI-SG-B288-BL1MS	KWG1802248-1	J:\MS14\DATA\060118\0601F008.D	06/01/18	09:19
PDI-SG-B288-BL1DMS	KWG1802248-2	J:\MS14\DATA\060118\0601F009.D	06/01/18	09:45
PDI-SG-B288-BL1	K1803850-021	J:\MS14\DATA\060118\0601F010.D	06/01/18	10:11
PDI-SG-B294-BL1	K1803850-022	J:\MS14\DATA\060118\0601F013.D	06/01/18	11:28
PDI-SG-B296-BL1	K1803850-023	J:\MS14\DATA\060118\0601F014.D	06/01/18	11:53
PDI-SG-B302-BL1	K1803850-024	J:\MS14\DATA\060118\0601F015.D	06/01/18	12:18
PDI-SG-B303-BL1	K1803850-025	J:\MS14\DATA\060118\0601F024.D	06/01/18	16:01

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Extracted: 05/03/2018
Date Analyzed: 06/01/2018
Time Analyzed: 08:59

Lab Control Sample Summary
Polynuclear Aromatic Hydrocarbons

Sample Name:	Lab Control Sample	Instrument ID:	MS20
Lab Code:	KWG1802260-3	File ID:	J:\MS20\DATA\060118\0601F004.D
Extraction Method:	EPA 3541	Level:	Low
Analysis Method:	8270D SIM	Extraction Lot:	KWG1802260

This Lab Control Sample applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG1802260-4	J:\MS20\DATA\060118\0601F003.D	06/01/18	08:20
PDI-SG-B306-BL1MS	KWG1802260-1	J:\MS20\DATA\060118\0601F005.D	06/01/18	09:39
PDI-SG-B306-BL1DMS	KWG1802260-2	J:\MS20\DATA\060118\0601F006.D	06/01/18	10:18
PDI-SG-B306-BL1	K1803850-003	J:\MS20\DATA\060118\0601F007.D	06/01/18	10:57
PDI-SG-B291-BL1	K1803850-001	J:\MS20\DATA\060118\0601F008.D	06/01/18	11:37
PDI-SG-B292-BL1	K1803850-002	J:\MS20\DATA\060118\0601F009.D	06/01/18	12:16
PDI-SG-B323-BL1	K1803850-004	J:\MS20\DATA\060118\0601F010.D	06/01/18	12:56
PDI-SG-B329-BL1	K1803850-005	J:\MS20\DATA\060118\0601F011.D	06/01/18	13:35
PDI-SG-B334-BL1	K1803850-006	J:\MS20\DATA\060118\0601F012.D	06/01/18	14:14
PDI-SG-B346-BL1	K1803850-007	J:\MS20\DATA\060118\0601F013.D	06/01/18	14:54
PDI-SG-B352-BL1	K1803850-014	J:\MS20\DATA\060118\0601F014.D	06/01/18	15:33
PDI-SG-B366-BL1	K1803850-015	J:\MS20\DATA\060118\0601F015.D	06/01/18	16:12
PDI-SG-B366-BL1-D	K1803850-016	J:\MS20\DATA\060118\0601F016.D	06/01/18	16:52
PDI-SG-B357-BL1	K1803850-017	J:\MS20\DATA\060118\0601F017.D	06/01/18	17:31
PDI-SG-B384-BL1	K1803850-018	J:\MS20\DATA\060118\0601F018.D	06/01/18	18:10
PDI-SG-B378-BL1	K1803850-019	J:\MS20\DATA\060118\0601F019.D	06/01/18	18:50
PDI-SG-B265-BL1	K1803850-008	J:\MS20\DATA\060118\0601F026.D	06/01/18	23:26
PDI-SG-B271-BL1	K1803850-009	J:\MS20\DATA\060118\0601F027.D	06/02/18	00:06
PDI-SG-B273-BL1	K1803850-010	J:\MS20\DATA\060118\0601F028.D	06/02/18	00:45
PDI-SG-B279-BL1	K1803850-011	J:\MS20\DATA\060118\0601F029.D	06/02/18	01:24
PDI-SG-B280-BL1	K1803850-012	J:\MS20\DATA\060118\0601F030.D	06/02/18	02:04
PDI-SG-B260-BL1	K1803850-013	J:\MS20\DATA\060118\0601F031.D	06/02/18	02:43
PDI-SG-B284-BL1	K1803850-020	J:\MS20\DATA\060118\0601F032.D	06/02/18	03:22
PDI-SG-B291-BL1	K1803850-001	J:\MS20\DATA\060418\0604F011.D	06/04/18	12:54

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 05/31/2018
Time Analyzed: 05:04

Tune Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS14\DATA\053118\0531F001.D
Instrument ID: MS14
Column:

Analysis Method: 8270D SIM
Analysis Lot: KWG1802760

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	45.0	118434	PASS
68	69	0	2	1.8	2002	PASS
69	198	0	100	41.9	110336	PASS
70	69	0	2	0.4	452	PASS
127	198	10	80	51.0	134173	PASS
197	198	0	2	0.5	1368	PASS
198	442	30	100	42.9	263125	PASS
199	198	5	9	6.9	18106	PASS
275	198	10	60	36.8	96821	PASS
365	442	1	50	4.3	26248	PASS
441	443	0	100	74.3	88629	PASS
442	442	100	100	100.0	612736	PASS
443	442	15	24	19.5	119333	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG1802760-2	J:\MS14\DATA\053118\0531F002.D	05/31/2018	05:29	
Method Blank	KWG1802248-4	J:\MS14\DATA\053118\0531F003.D	05/31/2018	05:52	
Lab Control Sample	KWG1802248-3	J:\MS14\DATA\053118\0531F004.D	05/31/2018	06:17	
PDI-SG-B303-BL1	K1803850-025	J:\MS14\DATA\053118\0531F005.D	05/31/2018	06:41	
PDI-SG-B233-BL1	K1803850-030	J:\MS14\DATA\053118\0531F008.D	05/31/2018	09:04	
PDI-SG-B243-BL1	K1803850-031	J:\MS14\DATA\053118\0531F009.D	05/31/2018	09:30	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 06/01/2018
Time Analyzed: 06:20

Tune Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS14\DATA\060118\0601F001.D
Instrument ID: MS14
Column:

Analysis Method: 8270D SIM
Analysis Lot: KWG1802860

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	44.0	118517	PASS
68	69	0	2	1.7	1986	PASS
69	198	0	100	42.2	113664	PASS
70	69	0	2	0.4	469	PASS
127	198	10	80	53.0	142842	PASS
197	198	0	2	0.5	1287	PASS
198	442	30	100	43.9	269568	PASS
199	198	5	9	7.0	18823	PASS
275	198	10	60	36.8	99288	PASS
365	442	1	50	4.1	25026	PASS
441	443	0	100	74.4	86848	PASS
442	442	100	100	100.0	614314	PASS
443	442	15	24	19.0	116709	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG1802860-2	J:\MS14\DATA\060118\0601F002.D	06/01/2018	06:45	
PDI-SG-B237-BL1	K1803850-028	J:\MS14\DATA\060118\0601F004.D	06/01/2018	07:38	
PDI-SG-B240-BL1	K1803850-029	J:\MS14\DATA\060118\0601F005.D	06/01/2018	08:03	
PDI-SG-B233-BL1	K1803850-030	J:\MS14\DATA\060118\0601F006.D	06/01/2018	08:28	
PDI-SG-B243-BL1	K1803850-031	J:\MS14\DATA\060118\0601F007.D	06/01/2018	08:54	
PDI-SG-B288-BL1MS	KWG1802248-1	J:\MS14\DATA\060118\0601F008.D	06/01/2018	09:19	
PDI-SG-B288-BL1DMS	KWG1802248-2	J:\MS14\DATA\060118\0601F009.D	06/01/2018	09:45	
PDI-SG-B288-BL1	K1803850-021	J:\MS14\DATA\060118\0601F010.D	06/01/2018	10:11	
PDI-SG-B294-BL1	K1803850-022	J:\MS14\DATA\060118\0601F013.D	06/01/2018	11:28	
PDI-SG-B296-BL1	K1803850-023	J:\MS14\DATA\060118\0601F014.D	06/01/2018	11:53	
PDI-SG-B302-BL1	K1803850-024	J:\MS14\DATA\060118\0601F015.D	06/01/2018	12:18	
PDI-SG-B303-BL1	K1803850-025	J:\MS14\DATA\060118\0601F024.D	06/01/2018	16:01	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 06/01/2018
Time Analyzed: 07:01

Tune Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS20\DATA\060118\0601F001.D
Instrument ID: MS20
Column:

Analysis Method: 8270D SIM
Analysis Lot: KWG1802863

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	22.9	58200	PASS
68	69	0	2	0.0	0	PASS
69	198	0	100	24.5	62492	PASS
70	69	0	2	0.6	391	PASS
127	198	10	80	36.2	92285	PASS
197	198	0	2	0.0	0	PASS
198	442	30	100	39.7	254698	PASS
199	198	5	9	6.7	17001	PASS
275	198	10	60	35.8	91146	PASS
365	442	1	50	2.2	14307	PASS
441	443	0	100	81.7	103818	PASS
442	442	100	100	100.0	641024	PASS
443	442	15	24	19.8	127056	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG1802863-2	J:\MS20\DATA\060118\0601F002.D	06/01/2018	07:40	
Method Blank	KWG1802260-4	J:\MS20\DATA\060118\0601F003.D	06/01/2018	08:20	
Lab Control Sample	KWG1802260-3	J:\MS20\DATA\060118\0601F004.D	06/01/2018	08:59	
PDI-SG-B306-BL1MS	KWG1802260-1	J:\MS20\DATA\060118\0601F005.D	06/01/2018	09:39	
PDI-SG-B306-BL1DMS	KWG1802260-2	J:\MS20\DATA\060118\0601F006.D	06/01/2018	10:18	
PDI-SG-B306-BL1	K1803850-003	J:\MS20\DATA\060118\0601F007.D	06/01/2018	10:57	
PDI-SG-B291-BL1	K1803850-001	J:\MS20\DATA\060118\0601F008.D	06/01/2018	11:37	
PDI-SG-B292-BL1	K1803850-002	J:\MS20\DATA\060118\0601F009.D	06/01/2018	12:16	
PDI-SG-B323-BL1	K1803850-004	J:\MS20\DATA\060118\0601F010.D	06/01/2018	12:56	
PDI-SG-B329-BL1	K1803850-005	J:\MS20\DATA\060118\0601F011.D	06/01/2018	13:35	
PDI-SG-B334-BL1	K1803850-006	J:\MS20\DATA\060118\0601F012.D	06/01/2018	14:14	
PDI-SG-B346-BL1	K1803850-007	J:\MS20\DATA\060118\0601F013.D	06/01/2018	14:54	
PDI-SG-B352-BL1	K1803850-014	J:\MS20\DATA\060118\0601F014.D	06/01/2018	15:33	
PDI-SG-B366-BL1	K1803850-015	J:\MS20\DATA\060118\0601F015.D	06/01/2018	16:12	
PDI-SG-B366-BL1-D	K1803850-016	J:\MS20\DATA\060118\0601F016.D	06/01/2018	16:52	
PDI-SG-B357-BL1	K1803850-017	J:\MS20\DATA\060118\0601F017.D	06/01/2018	17:31	
PDI-SG-B384-BL1	K1803850-018	J:\MS20\DATA\060118\0601F018.D	06/01/2018	18:10	
PDI-SG-B378-BL1	K1803850-019	J:\MS20\DATA\060118\0601F019.D	06/01/2018	18:50	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 06/01/2018
Time Analyzed: 19:30

Tune Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS20\DATA\060118\0601F020.D
Instrument ID: MS20
Column:

Analysis Method: 8270D SIM
Analysis Lot: KWG1802867

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	22.2	53394	PASS
68	69	0	2	0.0	0	PASS
69	198	0	100	24.0	57527	PASS
70	69	0	2	0.7	402	PASS
127	198	10	80	36.1	86738	PASS
197	198	0	2	0.0	0	PASS
198	442	30	100	37.3	240149	PASS
199	198	5	9	6.7	16007	PASS
275	198	10	60	37.7	90616	PASS
365	442	1	50	2.2	14355	PASS
441	443	0	100	84.4	105282	PASS
442	442	100	100	100.0	644309	PASS
443	442	15	24	19.4	124738	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG1802867-2	J:\MS20\DATA\060118\0601F021.D	06/01/2018	20:09	
PDI-SG-B265-BL1	K1803850-008	J:\MS20\DATA\060118\0601F026.D	06/01/2018	23:26	
PDI-SG-B271-BL1	K1803850-009	J:\MS20\DATA\060118\0601F027.D	06/02/2018	00:06	
PDI-SG-B273-BL1	K1803850-010	J:\MS20\DATA\060118\0601F028.D	06/02/2018	00:45	
PDI-SG-B279-BL1	K1803850-011	J:\MS20\DATA\060118\0601F029.D	06/02/2018	01:24	
PDI-SG-B280-BL1	K1803850-012	J:\MS20\DATA\060118\0601F030.D	06/02/2018	02:04	
PDI-SG-B260-BL1	K1803850-013	J:\MS20\DATA\060118\0601F031.D	06/02/2018	02:43	
PDI-SG-B284-BL1	K1803850-020	J:\MS20\DATA\060118\0601F032.D	06/02/2018	03:22	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 06/04/2018
Time Analyzed: 06:19

Tune Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS20\DATA\060418\0604F001.D
Instrument ID: MS20
Column:

Analysis Method: 8270D SIM
Analysis Lot: KWG1802872

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	23.0	60552	PASS
68	69	0	2	0.0	0	PASS
69	198	0	100	24.7	64880	PASS
70	69	0	2	0.4	248	PASS
127	198	10	80	37.0	97261	PASS
197	198	0	2	0.0	0	PASS
198	442	30	100	38.8	262784	PASS
199	198	5	9	6.7	17536	PASS
275	198	10	60	36.1	94986	PASS
365	442	1	50	2.2	15201	PASS
441	443	0	100	82.1	107778	PASS
442	442	100	100	100.0	676714	PASS
443	442	15	24	19.4	131338	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG1802872-2	J:\MS20\DATA\060418\0604F002.D	06/04/2018	06:58	
PDI-SG-B291-BL1	K1803850-001	J:\MS20\DATA\060418\0604F011.D	06/04/2018	12:54	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Calibration Date: 10/13/2017

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL15579
Instrument ID: MS14

Column: MS

Level ID **File ID**
A J:\MS14\DATA\101317\1013F003.D
B J:\MS14\DATA\101317\1013F004.D
C J:\MS14\DATA\101317\1013F005.D
D J:\MS14\DATA\101317\1013F006.D
E J:\MS14\DATA\101317\1013F007.D

Level ID **File ID**
F J:\MS14\DATA\101317\1013F008.D
G J:\MS14\DATA\101317\1013F009.D
H J:\MS14\DATA\101317\1013F010.D
I J:\MS14\DATA\101317\1013F011.D

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Naphthalene	A	4.0	1.18	B	8.0	1.19	C	20	1.14	D	100	1.10	E	200	1.11
	F	400	1.15	G	1000	1.13	H	1600	1.13	I	2000	1.12			
2-Methylnaphthalene	A	4.0	0.984	B	8.0	0.814	C	20	0.820	D	100	0.773	E	200	0.768
	F	400	0.768	G	1000	0.737	H	1600	0.739	I	2000	0.736			
Acenaphthylene	A	4.0	2.48	B	8.0	2.37	C	20	2.40	D	100	2.32	E	200	2.36
	F	400	2.47	G	1000	2.51	H	1600	2.56	I	2000	2.57			
Acenaphthene	A	4.0	1.34	B	8.0	1.36	C	20	1.34	D	100	1.31	E	200	1.33
	F	400	1.38	G	1000	1.41	H	1600	1.45	I	2000	1.46			
Fluorene	A	4.0	1.73	B	8.0	1.67	C	20	1.65	D	100	1.63	E	200	1.65
	F	400	1.70	G	1000	1.71	H	1600	1.75	I	2000	1.77			
Phenanthrene	A	4.0	1.33	B	8.0	1.25	C	20	1.21	D	100	1.17	E	200	1.18
	F	400	1.22	G	1000	1.24	H	1600	1.27	I	2000	1.29			
Anthracene	A	4.0	1.23	B	8.0	1.19	C	20	1.20	D	100	1.17	E	200	1.20
	F	400	1.23	G	1000	1.25	H	1600	1.27	I	2000	1.28			
Fluoranthene	A	4.0	1.48	B	8.0	1.41	C	20	1.44	D	100	1.41	E	200	1.41
	F	400	1.48	G	1000	1.53	H	1600	1.54	I	2000	1.55			
Pyrene	A	4.0	1.21	B	8.0	1.17	C	20	1.17	D	100	1.14	E	200	1.15
	F	400	1.20	G	1000	1.24	H	1600	1.28	I	2000	1.29			
Benz(a)anthracene	A	4.0	1.30	B	8.0	1.21	C	20	1.17	D	100	1.12	E	200	1.14
	F	400	1.20	G	1000	1.23	H	1600	1.25	I	2000	1.25			
Chrysene	A	4.0	1.13	B	8.0	1.14	C	20	1.10	D	100	1.08	E	200	1.09
	F	400	1.12	G	1000	1.14	H	1600	1.17	I	2000	1.17			
Benzo(b)fluoranthene	A	4.0	1.37	B	8.0	1.19	C	20	1.21	D	100	1.18	E	200	1.23
	F	400	1.28	G	1000	1.30	H	1600	1.31	I	2000	1.30			
Benzo(k)fluoranthene	A	4.0	1.29	B	8.0	1.22	C	20	1.19	D	100	1.19	E	200	1.22
	F	400	1.28	G	1000	1.25	H	1600	1.27	I	2000	1.26			
Benzo(a)pyrene	A	4.0	1.11	B	8.0	1.07	C	20	1.08	D	100	1.05	E	200	1.07
	F	400	1.12	G	1000	1.13	H	1600	1.15	I	2000	1.14			
Indeno(1,2,3-cd)pyrene	A	4.0	1.07	B	8.0	0.946	C	20	0.945	D	100	0.956	E	200	0.969
	F	400	1.02	G	1000	1.00	H	1600	1.01	I	2000	1.00			

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

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Calibration Date: 10/13/2017

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL15579
Instrument ID: MS14

Column: MS

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Dibenz(a,h)anthracene	A	4.0	1.14	B	8.0	1.13	C	20	0.979	D	100	0.947	E	200	0.961
	F	400	0.975	G	1000	0.975	H	1600	0.993	I	2000	0.983			
Benzo(g,h,i)perylene	A	4.0	1.28	B	8.0	1.15	C	20	1.07	D	100	1.07	E	200	1.08
	F	400	1.11	G	1000	1.07	H	1600	1.06	I	2000	1.04			
Fluorene-d10	A	4.0	1.65	B	8.0	1.44	C	20	1.31	D	100	1.26	E	200	1.27
	F	400	1.31	G	1000	1.33	H	1600	1.37	I	2000	1.38			
Fluoranthene-d10	A	4.0	1.21	B	8.0	1.18	C	20	1.19	D	100	1.19	E	200	1.20
	F	400	1.27	G	1000	1.34	H	1600	1.37	I	2000	1.36			
Terphenyl-d14	A	4.0	0.889	B	8.0	0.855	C	20	0.825	D	100	0.800	E	200	0.814
	F	400	0.833	G	1000	0.845	H	1600	0.864	I	2000	0.864			

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

† SPCC Compound

‡ CCC Compound

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Calibration Date: 10/13/2017

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL15579
Instrument ID: MS14

Column: MS

Analyte Name	Compound Type	Calibration Evaluation					RRF Evaluation		
		Fit Type	Eval.	Eval. Result	Q	Control Criteria	Average RRF	Q	Minimum RRF
Naphthalene	MS	AverageRF	% RSD	2.6		≤ 20	1.14		0.70
2-Methylnaphthalene	MS	AverageRF	% RSD	9.8		≤ 20	0.793		0.40
Acenaphthylene	MS	AverageRF	% RSD	3.6		≤ 20	2.45		0.90
Acenaphthene	MS	AverageRF	% RSD	3.8		≤ 20	1.38		0.90
Fluorene	MS	AverageRF	% RSD	2.8		≤ 20	1.70		0.90
Phenanthrene	MS	AverageRF	% RSD	4.1		≤ 20	1.24		0.70
Anthracene	MS	AverageRF	% RSD	3.0		≤ 20	1.22		0.70
Fluoranthene	MS	AverageRF	% RSD	4.0		≤ 20	1.47		0.60
Pyrene	MS	AverageRF	% RSD	4.6		≤ 20	1.21		0.60
Benz(a)anthracene	MS	AverageRF	% RSD	4.8		≤ 20	1.21		0.80
Chrysene	MS	AverageRF	% RSD	2.9		≤ 20	1.13		0.70
Benzo(b)fluoranthene	MS	AverageRF	% RSD	4.9		≤ 20	1.26		0.70
Benzo(k)fluoranthene	MS	AverageRF	% RSD	3.1		≤ 20	1.24		0.70
Benzo(a)pyrene	MS	AverageRF	% RSD	3.3		≤ 20	1.10		0.70
Indeno(1,2,3-cd)pyrene	MS	AverageRF	% RSD	4.1		≤ 20	0.992		0.50
Dibenz(a,h)anthracene	MS	AverageRF	% RSD	7.2		≤ 20	1.01		0.40
Benzo(g,h,i)perylene	MS	AverageRF	% RSD	6.5		≤ 20	1.10		0.50
Fluorene-d10	SURR	AverageRF	% RSD	8.8		≤ 20	1.37		0.01
Fluoranthene-d10	SURR	AverageRF	% RSD	6.5		≤ 20	1.26		0.01
Terphenyl-d14	SURR	AverageRF	% RSD	3.3		≤ 20	0.843		0.01

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

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Calibration Date: 10/13/2017
Date Analyzed: 10/13/2017

Second Source Calibration Verification
Polynuclear Aromatic Hydrocarbons

Calibration Type: Internal Standard
Analysis Method: 8270D SIM

Calibration ID: CAL15579
Units: ng/ml

File ID: J:\MS14\DATA\101317\1013F013.D

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	380	1.14	1.08	-6	NA	± 30 %	AverageRF
2-Methylnaphthalene	400	360	0.793	0.716	-10	NA	± 30 %	AverageRF
Acenaphthylene	400	380	2.45	2.30	-6	NA	± 30 %	AverageRF
Acenaphthene	400	380	1.38	1.32	-4	NA	± 30 %	AverageRF
Fluorene	400	380	1.70	1.60	-6	NA	± 30 %	AverageRF
Phenanthrene	400	370	1.24	1.14	-8	NA	± 30 %	AverageRF
Anthracene	400	380	1.22	1.15	-6	NA	± 30 %	AverageRF
Fluoranthene	400	390	1.47	1.44	-2	NA	± 30 %	AverageRF
Pyrene	400	380	1.21	1.14	-6	NA	± 30 %	AverageRF
Benz(a)anthracene	400	380	1.21	1.15	-5	NA	± 30 %	AverageRF
Chrysene	400	380	1.13	1.08	-4	NA	± 30 %	AverageRF
Benzo(b)fluoranthene	400	390	1.26	1.22	-3	NA	± 30 %	AverageRF
Benzo(k)fluoranthene	400	390	1.24	1.20	-3	NA	± 30 %	AverageRF
Benzo(a)pyrene	400	380	1.10	1.05	-5	NA	± 30 %	AverageRF
Indeno(1,2,3-cd)pyrene	400	370	0.992	0.913	-8	NA	± 30 %	AverageRF
Dibenz(a,h)anthracene	400	370	1.01	0.924	-8	NA	± 30 %	AverageRF
Benzo(g,h,i)perylene	400	370	1.10	1.02	-7	NA	± 30 %	AverageRF

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

† SPCC Compound

‡ CCC Compound

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Calibration Date: 11/02/2017

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL15594
Instrument ID: MS20

Column: MS

Level ID **File ID**
A J:\MS20\DATA\110217\1102F003.D
B J:\MS20\DATA\110217\1102F004.D
C J:\MS20\DATA\110217\1102F005.D
D J:\MS20\DATA\110217\1102F006.D
E J:\MS20\DATA\110217\1102F007.D
F J:\MS20\DATA\110217\1102F008.D

Level ID **File ID**
G J:\MS20\DATA\110217\1102F009.D
H J:\MS20\DATA\110217\1102F010.D
I J:\MS20\DATA\110217\1102F011.D
J J:\MS20\DATA\110217\1102F012.D

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Naphthalene	A	2.0	1.21	B	4.0	1.04	C	8.0	1.03	D	20	0.996	E	100	0.990
	F	200	0.989	G	400	1.02	H	1000	1.01	I	1600	0.972	J	2000	0.967
2-Methylnaphthalene	A	2.0	0.781	B	4.0	0.671	C	8.0	0.661	D	20	0.679	E	100	0.678
	F	200	0.694	G	400	0.692	H	1000	0.678	I	1600	0.645	J	2000	0.644
Acenaphthylene	A	2.0	2.23	B	4.0	1.95	C	8.0	1.92	D	20	1.97	E	100	1.97
	F	200	2.00	G	400	2.07	H	1000	2.08	I	1600	2.05	J	2000	2.02
Acenaphthene	A	2.0	1.45	B	4.0	1.25	C	8.0	1.25	D	20	1.24	E	100	1.21
	F	200	1.22	G	400	1.25	H	1000	1.23	I	1600	1.21	J	2000	1.19
Fluorene	A	2.0	1.81	B	4.0	1.46	C	8.0	1.44	D	20	1.44	E	100	1.46
	F	200	1.47	G	400	1.51	H	1000	1.48	I	1600	1.45	J	2000	1.44
Phenanthrene	A	2.0	1.50	B	4.0	1.16	C	8.0	1.16	D	20	1.16	E	100	1.12
	F	200	1.13	G	400	1.15	H	1000	1.14	I	1600	1.10	J	2000	1.09
Anthracene	A	2.0	1.32	B	4.0	1.05	C	8.0	1.04	D	20	1.03	E	100	1.03
	F	200	1.06	G	400	1.10	H	1000	1.11	I	1600	1.08	J	2000	1.06
Fluoranthene	A	2.0	1.51	B	4.0	1.20	C	8.0	1.19	D	20	1.24	E	100	1.23
	F	200	1.27	G	400	1.32	H	1000	1.30	I	1600	1.25	J	2000	1.24
Pyrene	A	2.0	1.34	B	4.0	1.10	C	8.0	1.09	D	20	1.10	E	100	1.08
	F	200	1.09	G	400	1.12	H	1000	1.13	I	1600	1.12	J	2000	1.11
Benz(a)anthracene	A	2.0	1.36	B	4.0	1.13	C	8.0	1.03	D	20	1.02	E	100	0.986
	F	200	1.01	G	400	1.05	H	1000	1.09	I	1600	1.09	J	2000	1.10
Chrysene	A	2.0	1.26	B	4.0	1.06	C	8.0	1.08	D	20	1.07	E	100	1.06
	F	200	1.06	G	400	1.07	H	1000	1.06	I	1600	1.06	J	2000	1.04
Benzo(b)fluoranthene	A	2.0	1.22	B	4.0	1.06	C	8.0	1.06	D	20	1.10	E	100	1.10
	F	200	1.12	G	400	1.17	H	1000	1.19	I	1600	1.20	J	2000	1.18
Benzo(k)fluoranthene	A	2.0	1.19	B	4.0	1.07	C	8.0	1.09	D	20	1.09	E	100	1.15
	F	200	1.18	G	400	1.20	H	1000	1.19	I	1600	1.19	J	2000	1.18
Benzo(a)pyrene	A	2.0	0.956	B	4.0	0.883	C	8.0	0.866	D	20	0.903	E	100	0.955
	F	200	1.00	G	400	1.06	H	1000	1.06	I	1600	1.08	J	2000	1.08

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

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Calibration Date: 11/02/2017

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL15594
Instrument ID: MS20

Column: MS

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Indeno(1,2,3-cd)pyrene	A	2.0	1.05	B	4.0	0.927	C	8.0	0.901	D	20	0.943	E	100	0.987
	F	200	1.03	G	400	1.10	H	1000	1.08	I	1600	1.07	J	2000	1.07
Dibenz(a,h)anthracene	A	2.0	1.02	B	4.0	0.967	C	8.0	0.953	D	20	1.01	E	100	1.05
	F	200	1.08	G	400	1.13	H	1000	1.11	I	1600	1.10	J	2000	1.10
Benzo(g,h,i)perylene	A	2.0	1.36	B	4.0	1.19	C	8.0	1.17	D	20	1.25	E	100	1.21
	F	200	1.23	G	400	1.27	H	1000	1.18	I	1600	1.17	J	2000	1.16
Fluorene-d10				B	4.0	1.51	C	8.0	1.31	D	20	1.26	E	100	1.23
	F	200	1.23	G	400	1.27	H	1000	1.25	I	1600	1.23	J	2000	1.21
Fluoranthene-d10	A	2.0	1.49	B	4.0	1.12	C	8.0	1.07	D	20	1.08	E	100	1.06
	F	200	1.10	G	400	1.15	H	1000	1.17	I	1600	1.16	J	2000	1.15
Terphenyl-d14	A	2.0	1.04	B	4.0	0.848	C	8.0	0.825	D	20	0.837	E	100	0.817
	F	200	0.826	G	400	0.831	H	1000	0.840	I	1600	0.837	J	2000	0.829

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

† SPCC Compound

‡ CCC Compound

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Calibration Date: 11/02/2017

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL15594
Instrument ID: MS20

Column: MS

Analyte Name	Compound Type	Calibration Evaluation					RRF Evaluation		
		Fit Type	Eval.	Eval. Result	Q	Control Criteria	Average RRF	Q	Minimum RRF
Naphthalene	MS	AverageRF	% RSD	6.8		≤ 20	1.02		0.70
2-Methylnaphthalene	MS	AverageRF	% RSD	5.7		≤ 20	0.682		0.40
Acenaphthylene	MS	AverageRF	% RSD	4.4		≤ 20	2.03		0.90
Acenaphthene	MS	AverageRF	% RSD	5.8		≤ 20	1.25		0.90
Fluorene	MS	AverageRF	% RSD	7.5		≤ 20	1.50		0.90
Phenanthrene	MS	AverageRF	% RSD	10.0		≤ 20	1.17		0.70
Anthracene	MS	AverageRF	% RSD	7.9		≤ 20	1.09		0.70
Fluoranthene	MS	AverageRF	% RSD	7.2		≤ 20	1.27		0.60
Pyrene	MS	AverageRF	% RSD	6.7		≤ 20	1.13		0.60
Benz(a)anthracene	MS	AverageRF	% RSD	9.8		≤ 20	1.09		0.80
Chrysene	MS	AverageRF	% RSD	5.7		≤ 20	1.08		0.70
Benzo(b)fluoranthene	MS	AverageRF	% RSD	5.0		≤ 20	1.14		0.70
Benzo(k)fluoranthene	MS	AverageRF	% RSD	4.4		≤ 20	1.15		0.70
Benzo(a)pyrene	MS	AverageRF	% RSD	8.4		≤ 20	0.984		0.70
Indeno(1,2,3-cd)pyrene	MS	AverageRF	% RSD	7.1		≤ 20	1.02		0.50
Dibenz(a,h)anthracene	MS	AverageRF	% RSD	5.9		≤ 20	1.05		0.40
Benzo(g,h,i)perylene	MS	AverageRF	% RSD	5.1		≤ 20	1.22		0.50
Fluorene-d10	SURR	AverageRF	% RSD	7.1		≤ 20	1.28		0.01
Fluoranthene-d10	SURR	AverageRF	% RSD	10.7		≤ 20	1.15		0.01
Terphenyl-d14	SURR	AverageRF	% RSD	7.7		≤ 20	0.853		0.01

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

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Calibration Date: 11/02/2017
Date Analyzed: 11/02/2017

Second Source Calibration Verification
Polynuclear Aromatic Hydrocarbons

Calibration Type: Internal Standard
Analysis Method: 8270D SIM

Calibration ID: CAL15594
Units: ng/ml

File ID: J:\MS20\DATA\110217\1102F013.D

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	360	1.02	0.924	-10	NA	± 30 %	AverageRF
2-Methylnaphthalene	400	380	0.682	0.644	-6	NA	± 30 %	AverageRF
Acenaphthylene	400	380	2.03	1.93	-5	NA	± 30 %	AverageRF
Acenaphthene	400	380	1.25	1.17	-6	NA	± 30 %	AverageRF
Fluorene	400	370	1.50	1.39	-7	NA	± 30 %	AverageRF
Phenanthrene	400	370	1.17	1.08	-8	NA	± 30 %	AverageRF
Anthracene	400	380	1.09	1.03	-6	NA	± 30 %	AverageRF
Fluoranthene	400	400	1.27	1.28	0	NA	± 30 %	AverageRF
Pyrene	400	380	1.13	1.08	-5	NA	± 30 %	AverageRF
Benz(a)anthracene	400	370	1.09	0.996	-8	NA	± 30 %	AverageRF
Chrysene	400	380	1.08	1.03	-5	NA	± 30 %	AverageRF
Benzo(b)fluoranthene	400	380	1.14	1.10	-4	NA	± 30 %	AverageRF
Benzo(k)fluoranthene	400	390	1.15	1.13	-2	NA	± 30 %	AverageRF
Benzo(a)pyrene	400	400	0.984	0.973	-1	NA	± 30 %	AverageRF
Indeno(1,2,3-cd)pyrene	400	370	1.02	0.946	-7	NA	± 30 %	AverageRF
Dibenz(a,h)anthracene	400	380	1.05	1.00	-5	NA	± 30 %	AverageRF
Benzo(g,h,i)perylene	400	360	1.22	1.11	-9	NA	± 30 %	AverageRF

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

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 05/31/2018

Continuing Calibration Verification Summary
Polynuclear Aromatic Hydrocarbons

Calibration Type: Internal Standard
Analysis Method: 8270D SIM

Calibration Date: 10/13/2017
Calibration ID: CAL15579
Analysis Lot: KWG1802760
Units: ng/ml

File ID: J:\MS14\DATA\053118\0531F002.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	360	0.70	1.14	1.02	-11	NA	± 20	AverageRF
2-Methylnaphthalene	400	350	0.40	0.793	0.698	-12	NA	± 20	AverageRF
Acenaphthylene	400	360	0.90	2.45	2.21	-10	NA	± 20	AverageRF
Acenaphthene	400	380	0.90	1.38	1.29	-6	NA	± 20	AverageRF
Fluorene	400	380	0.90	1.70	1.59	-6	NA	± 20	AverageRF
Phenanthrene	400	370	0.70	1.24	1.16	-6	NA	± 20	AverageRF
Anthracene	400	350	0.70	1.22	1.07	-12	NA	± 20	AverageRF
Fluoranthene	400	400	0.60	1.47	1.47	0	NA	± 20	AverageRF
Pyrene	400	370	0.60	1.21	1.10	-9	NA	± 20	AverageRF
Benz(a)anthracene	400	430	0.80	1.21	1.31	9	NA	± 20	AverageRF
Chrysene	400	430	0.70	1.13	1.20	7	NA	± 20	AverageRF
Benzo(b)fluoranthene	400	420	0.70	1.26	1.32	4	NA	± 20	AverageRF
Benzo(k)fluoranthene	400	410	0.70	1.24	1.28	3	NA	± 20	AverageRF
Benzo(a)pyrene	400	420	0.70	1.10	1.15	4	NA	± 20	AverageRF
Indeno(1,2,3-cd)pyrene	400	430	0.50	0.992	1.06	7	NA	± 20	AverageRF
Dibenz(a,h)anthracene	400	400	0.40	1.01	1.01	0	NA	± 20	AverageRF
Benzo(g,h,i)perylene	400	390	0.50	1.10	1.07	-3	NA	± 20	AverageRF
Fluorene-d10	400	400	0.01	1.37	1.38	1	NA	± 20	AverageRF
Fluoranthene-d10	400	440	0.01	1.26	1.39	11	NA	± 20	AverageRF
Terphenyl-d14	400	370	0.01	0.843	0.784	-7	NA	± 20	AverageRF

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

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 06/01/2018

Continuing Calibration Verification Summary
Polynuclear Aromatic Hydrocarbons

Calibration Type: Internal Standard
Analysis Method: 8270D SIM

Calibration Date: 10/13/2017
Calibration ID: CAL15579
Analysis Lot: KWG1802860
Units: ng/ml

File ID: J:\MS14\DATA\060118\0601F002.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	360	0.70	1.14	1.03	-10	NA	± 20	AverageRF
2-Methylnaphthalene	400	410	0.40	0.793	0.807	2	NA	± 20	AverageRF
Acenaphthylene	400	350	0.90	2.45	2.16	-12	NA	± 20	AverageRF
Acenaphthene	400	370	0.90	1.38	1.27	-8	NA	± 20	AverageRF
Fluorene	400	370	0.90	1.70	1.58	-7	NA	± 20	AverageRF
Phenanthrene	400	370	0.70	1.24	1.16	-6	NA	± 20	AverageRF
Anthracene	400	350	0.70	1.22	1.07	-13	NA	± 20	AverageRF
Fluoranthene	400	380	0.60	1.47	1.39	-5	NA	± 20	AverageRF
Pyrene	400	380	0.60	1.21	1.16	-4	NA	± 20	AverageRF
Benz(a)anthracene	400	430	0.80	1.21	1.28	6	NA	± 20	AverageRF
Chrysene	400	420	0.70	1.13	1.18	4	NA	± 20	AverageRF
Benzo(b)fluoranthene	400	400	0.70	1.26	1.26	0	NA	± 20	AverageRF
Benzo(k)fluoranthene	400	390	0.70	1.24	1.20	-3	NA	± 20	AverageRF
Benzo(a)pyrene	400	400	0.70	1.10	1.11	1	NA	± 20	AverageRF
Indeno(1,2,3-cd)pyrene	400	390	0.50	0.992	0.969	-2	NA	± 20	AverageRF
Dibenz(a,h)anthracene	400	350	0.40	1.01	0.895	-11	NA	± 20	AverageRF
Benzo(g,h,i)perylene	400	340	0.50	1.10	0.938	-15	NA	± 20	AverageRF
Fluorene-d10	400	400	0.01	1.37	1.38	1	NA	± 20	AverageRF
Fluoranthene-d10	400	420	0.01	1.26	1.31	4	NA	± 20	AverageRF
Terphenyl-d14	400	380	0.01	0.843	0.807	-4	NA	± 20	AverageRF

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

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 06/01/2018

**Continuing Calibration Verification Summary
 Polynuclear Aromatic Hydrocarbons**

Calibration Type: Internal Standard
Analysis Method: 8270D SIM

Calibration Date: 11/02/2017
Calibration ID: CAL15594
Analysis Lot: KWG1802863
Units: ng/ml

File ID: J:\MS20\DATA\060118\0601F002.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	410	0.70	1.02	1.05	3	NA	± 20	AverageRF
2-Methylnaphthalene	400	420	0.40	0.682	0.710	4	NA	± 20	AverageRF
Acenaphthylene	400	410	0.90	2.03	2.07	2	NA	± 20	AverageRF
Acenaphthene	400	390	0.90	1.25	1.22	-3	NA	± 20	AverageRF
Fluorene	400	400	0.90	1.50	1.50	1	NA	± 20	AverageRF
Phenanthrene	400	390	0.70	1.17	1.13	-4	NA	± 20	AverageRF
Anthracene	400	370	0.70	1.09	1.00	-8	NA	± 20	AverageRF
Fluoranthene	400	420	0.60	1.27	1.33	4	NA	± 20	AverageRF
Pyrene	400	450	0.60	1.13	1.28	13	NA	± 20	AverageRF
Benz(a)anthracene	400	460	0.80	1.09	1.24	14	NA	± 20	AverageRF
Chrysene	400	430	0.70	1.08	1.16	7	NA	± 20	AverageRF
Benzo(b)fluoranthene	400	420	0.70	1.14	1.19	5	NA	± 20	AverageRF
Benzo(k)fluoranthene	400	400	0.70	1.15	1.16	1	NA	± 20	AverageRF
Benzo(a)pyrene	400	440	0.70	0.984	1.07	9	NA	± 20	AverageRF
Indeno(1,2,3-cd)pyrene	400	440	0.50	1.02	1.13	11	NA	± 20	AverageRF
Dibenz(a,h)anthracene	400	440	0.40	1.05	1.17	11	NA	± 20	AverageRF
Benzo(g,h,i)perylene	400	390	0.50	1.22	1.19	-2	NA	± 20	AverageRF
Fluorene-d10	400	410	0.01	1.28	1.32	3	NA	± 20	AverageRF
Fluoranthene-d10	400	440	0.01	1.15	1.26	9	NA	± 20	AverageRF
Terphenyl-d14	400	450	0.01	0.853	0.951	12	NA	± 20	AverageRF

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

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 06/01/2018

Continuing Calibration Verification Summary
Polynuclear Aromatic Hydrocarbons

Calibration Type: Internal Standard
Analysis Method: 8270D SIM

Calibration Date: 11/02/2017
Calibration ID: CAL15594
Analysis Lot: KWG1802867
Units: ng/ml

File ID: J:\MS20\DATA\060118\0601F021.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	420	0.70	1.02	1.08	6	NA	± 20	AverageRF
2-Methylnaphthalene	400	420	0.40	0.682	0.722	6	NA	± 20	AverageRF
Acenaphthylene	400	410	0.90	2.03	2.07	2	NA	± 20	AverageRF
Acenaphthene	400	390	0.90	1.25	1.22	-2	NA	± 20	AverageRF
Fluorene	400	400	0.90	1.50	1.50	0	NA	± 20	AverageRF
Phenanthrene	400	390	0.70	1.17	1.13	-4	NA	± 20	AverageRF
Anthracene	400	370	0.70	1.09	1.01	-8	NA	± 20	AverageRF
Fluoranthene	400	420	0.60	1.27	1.34	5	NA	± 20	AverageRF
Pyrene	400	450	0.60	1.13	1.27	12	NA	± 20	AverageRF
Benz(a)anthracene	400	460	0.80	1.09	1.25	15	NA	± 20	AverageRF
Chrysene	400	430	0.70	1.08	1.17	8	NA	± 20	AverageRF
Benzo(b)fluoranthene	400	420	0.70	1.14	1.19	4	NA	± 20	AverageRF
Benzo(k)fluoranthene	400	410	0.70	1.15	1.17	2	NA	± 20	AverageRF
Benzo(a)pyrene	400	440	0.70	0.984	1.08	9	NA	± 20	AverageRF
Indeno(1,2,3-cd)pyrene	400	440	0.50	1.02	1.12	11	NA	± 20	AverageRF
Dibenz(a,h)anthracene	400	440	0.40	1.05	1.15	9	NA	± 20	AverageRF
Benzo(g,h,i)perylene	400	390	0.50	1.22	1.18	-3	NA	± 20	AverageRF
Fluorene-d10	400	410	0.01	1.28	1.31	3	NA	± 20	AverageRF
Fluoranthene-d10	400	440	0.01	1.15	1.27	10	NA	± 20	AverageRF
Terphenyl-d14	400	440	0.01	0.853	0.945	11	NA	± 20	AverageRF

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

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 06/04/2018

Continuing Calibration Verification Summary
Polynuclear Aromatic Hydrocarbons

Calibration Type: Internal Standard
Analysis Method: 8270D SIM

Calibration Date: 11/02/2017
Calibration ID: CAL15594
Analysis Lot: KWG1802872
Units: ng/ml

File ID: J:\MS20\DATA\060418\0604F002.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	420	0.70	1.02	1.07	5	NA	± 20	AverageRF
2-Methylnaphthalene	400	420	0.40	0.682	0.719	5	NA	± 20	AverageRF
Acenaphthylene	400	420	0.90	2.03	2.12	4	NA	± 20	AverageRF
Acenaphthene	400	400	0.90	1.25	1.24	-1	NA	± 20	AverageRF
Fluorene	400	410	0.90	1.50	1.52	2	NA	± 20	AverageRF
Phenanthrene	400	380	0.70	1.17	1.12	-4	NA	± 20	AverageRF
Anthracene	400	370	0.70	1.09	1.01	-7	NA	± 20	AverageRF
Fluoranthene	400	420	0.60	1.27	1.34	5	NA	± 20	AverageRF
Pyrene	400	450	0.60	1.13	1.26	12	NA	± 20	AverageRF
Benz(a)anthracene	400	450	0.80	1.09	1.23	14	NA	± 20	AverageRF
Chrysene	400	430	0.70	1.08	1.16	7	NA	± 20	AverageRF
Benzo(b)fluoranthene	400	410	0.70	1.14	1.18	3	NA	± 20	AverageRF
Benzo(k)fluoranthene	400	410	0.70	1.15	1.18	2	NA	± 20	AverageRF
Benzo(a)pyrene	400	440	0.70	0.984	1.07	9	NA	± 20	AverageRF
Indeno(1,2,3-cd)pyrene	400	440	0.50	1.02	1.13	11	NA	± 20	AverageRF
Dibenz(a,h)anthracene	400	440	0.40	1.05	1.16	10	NA	± 20	AverageRF
Benzo(g,h,i)perylene	400	390	0.50	1.22	1.18	-3	NA	± 20	AverageRF
Fluorene-d10	400	420	0.01	1.28	1.33	4	NA	± 20	AverageRF
Fluoranthene-d10	400	440	0.01	1.15	1.28	11	NA	± 20	AverageRF
Terphenyl-d14	400	440	0.01	0.853	0.945	11	NA	± 20	AverageRF

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

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850

Analysis Run Log
Polynuclear Aromatic Hydrocarbons

Analysis Method: 8270D SIM**Analysis Lot:** KWG1802760**Instrument ID:** MS14

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0531F001.D	GC/MS Tuning - Decafluorotriphenylphosph	KWG1802760-1	5/31/2018	05:04		5/31/2018	05:24
0531F002.D	Continuing Calibration Verification	KWG1802760-2	5/31/2018	05:29		5/31/2018	05:48
0531F003.D	Method Blank	KWG1802248-4	5/31/2018	05:52		5/31/2018	06:11
0531F004.D	Lab Control Sample	KWG1802248-3	5/31/2018	06:17		5/31/2018	06:36
0531F005.D	PDI-SG-B303-BL1	K1803850-025	5/31/2018	06:41		5/31/2018	07:00
0531F006.D	ZZZZZZ	ZZZZZZ	5/31/2018	08:15		5/31/2018	08:34
0531F007.D	ZZZZZZ	ZZZZZZ	5/31/2018	08:39		5/31/2018	08:58
0531F008.D	PDI-SG-B233-BL1	K1803850-030	5/31/2018	09:04		5/31/2018	09:23
0531F009.D	PDI-SG-B243-BL1	K1803850-031	5/31/2018	09:30		5/31/2018	09:49

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850

Analysis Run Log
Polynuclear Aromatic Hydrocarbons

Analysis Method: 8270D SIM**Analysis Lot:** KWG1802860**Instrument ID:** MS14

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0601F001.D	GC/MS Tuning - Decafluorotriphenylphosph	KWG1802860-1	6/1/2018	06:20		6/1/2018	06:40
0601F002.D	Continuing Calibration Verification	KWG1802860-2	6/1/2018	06:45		6/1/2018	07:04
0601F004.D	PDI-SG-B237-BL1	K1803850-028	6/1/2018	07:38		6/1/2018	07:57
0601F005.D	PDI-SG-B240-BL1	K1803850-029	6/1/2018	08:03		6/1/2018	08:22
0601F006.D	PDI-SG-B233-BL1	K1803850-030	6/1/2018	08:28		6/1/2018	08:47
0601F007.D	PDI-SG-B243-BL1	K1803850-031	6/1/2018	08:54		6/1/2018	09:13
0601F008.D	PDI-SG-B288-BL1MS	KWG1802248-1	6/1/2018	09:19		6/1/2018	09:38
0601F009.D	PDI-SG-B288-BL1DMS	KWG1802248-2	6/1/2018	09:45		6/1/2018	10:04
0601F010.D	PDI-SG-B288-BL1	K1803850-021	6/1/2018	10:11		6/1/2018	10:30
0601F011.D	ZZZZZZ	ZZZZZZ	6/1/2018	10:36		6/1/2018	10:55
0601F012.D	ZZZZZZ	ZZZZZZ	6/1/2018	11:02		6/1/2018	11:21
0601F013.D	PDI-SG-B294-BL1	K1803850-022	6/1/2018	11:28		6/1/2018	11:47
0601F014.D	PDI-SG-B296-BL1	K1803850-023	6/1/2018	11:53		6/1/2018	12:12
0601F015.D	PDI-SG-B302-BL1	K1803850-024	6/1/2018	12:18		6/1/2018	12:37
0601F016.D	ZZZZZZ	ZZZZZZ	6/1/2018	12:44		6/1/2018	13:03
0601F017.D	ZZZZZZ	ZZZZZZ	6/1/2018	13:09		6/1/2018	13:28
0601F018.D	ZZZZZZ	ZZZZZZ	6/1/2018	13:34		6/1/2018	13:53
0601F019.D	ZZZZZZ	ZZZZZZ	6/1/2018	13:58		6/1/2018	14:17
0601F020.D	ZZZZZZ	ZZZZZZ	6/1/2018	14:23		6/1/2018	14:42
0601F021.D	ZZZZZZ	ZZZZZZ	6/1/2018	14:48		6/1/2018	15:07
0601F022.D	ZZZZZZ	ZZZZZZ	6/1/2018	15:12		6/1/2018	15:31
0601F023.D	ZZZZZZ	ZZZZZZ	6/1/2018	15:37		6/1/2018	15:56
0601F024.D	PDI-SG-B303-BL1	K1803850-025	6/1/2018	16:01		6/1/2018	16:20
0601F025.D	ZZZZZZ	ZZZZZZ	6/1/2018	16:26		6/1/2018	16:45
0601F026.D	ZZZZZZ	ZZZZZZ	6/1/2018	16:49		6/1/2018	17:08
0601F027.D	ZZZZZZ	ZZZZZZ	6/1/2018	17:14		6/1/2018	17:33
0601F028.D	ZZZZZZ	ZZZZZZ	6/1/2018	17:38		6/1/2018	17:57

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850

Analysis Run Log
Polynuclear Aromatic Hydrocarbons

Analysis Method: 8270D SIM

Analysis Lot: KWG1802863
Instrument ID: MS20

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0601F001.D	GC/MS Tuning - Decafluorotriphenylphosph	KWG1802863-1	6/1/2018	07:01		6/1/2018	07:31
0601F002.D	Continuing Calibration Verification	KWG1802863-2	6/1/2018	07:40		6/1/2018	08:09
0601F003.D	Method Blank	KWG1802260-4	6/1/2018	08:20		6/1/2018	08:49
0601F004.D	Lab Control Sample	KWG1802260-3	6/1/2018	08:59		6/1/2018	09:28
0601F005.D	PDI-SG-B306-BL1MS	KWG1802260-1	6/1/2018	09:39		6/1/2018	10:08
0601F006.D	PDI-SG-B306-BL1DMS	KWG1802260-2	6/1/2018	10:18		6/1/2018	10:47
0601F007.D	PDI-SG-B306-BL1	K1803850-003	6/1/2018	10:57		6/1/2018	11:26
0601F008.D	PDI-SG-B291-BL1	K1803850-001	6/1/2018	11:37		6/1/2018	12:06
0601F009.D	PDI-SG-B292-BL1	K1803850-002	6/1/2018	12:16		6/1/2018	12:45
0601F010.D	PDI-SG-B323-BL1	K1803850-004	6/1/2018	12:56		6/1/2018	13:25
0601F011.D	PDI-SG-B329-BL1	K1803850-005	6/1/2018	13:35		6/1/2018	14:04
0601F012.D	PDI-SG-B334-BL1	K1803850-006	6/1/2018	14:14		6/1/2018	14:43
0601F013.D	PDI-SG-B346-BL1	K1803850-007	6/1/2018	14:54		6/1/2018	15:23
0601F014.D	PDI-SG-B352-BL1	K1803850-014	6/1/2018	15:33		6/1/2018	16:02
0601F015.D	PDI-SG-B366-BL1	K1803850-015	6/1/2018	16:12		6/1/2018	16:41
0601F016.D	PDI-SG-B366-BL1-D	K1803850-016	6/1/2018	16:52		6/1/2018	17:21
0601F017.D	PDI-SG-B357-BL1	K1803850-017	6/1/2018	17:31		6/1/2018	18:00
0601F018.D	PDI-SG-B384-BL1	K1803850-018	6/1/2018	18:10		6/1/2018	18:39
0601F019.D	PDI-SG-B378-BL1	K1803850-019	6/1/2018	18:50		6/1/2018	19:19

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850

Analysis Run Log
Polynuclear Aromatic Hydrocarbons

Analysis Method: 8270D SIM

Analysis Lot: KWG1802867
Instrument ID: MS20

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0601F020.D	GC/MS Tuning - Decafluorotriphenylphosph	KWG1802867-1	6/1/2018	19:30		6/1/2018	20:00
0601F021.D	Continuing Calibration Verification	KWG1802867-2	6/1/2018	20:09		6/1/2018	20:38
0601F022.D	ZZZZZZ	ZZZZZZ	6/1/2018	20:49		6/1/2018	21:18
0601F023.D	ZZZZZZ	ZZZZZZ	6/1/2018	21:28		6/1/2018	21:57
0601F024.D	ZZZZZZ	ZZZZZZ	6/1/2018	22:07		6/1/2018	22:36
0601F025.D	ZZZZZZ	ZZZZZZ	6/1/2018	22:47		6/1/2018	23:16
0601F026.D	PDI-SG-B265-BL1	K1803850-008	6/1/2018	23:26		6/1/2018	23:55
0601F027.D	PDI-SG-B271-BL1	K1803850-009	6/2/2018	00:06		6/2/2018	00:35
0601F028.D	PDI-SG-B273-BL1	K1803850-010	6/2/2018	00:45		6/2/2018	01:14
0601F029.D	PDI-SG-B279-BL1	K1803850-011	6/2/2018	01:24		6/2/2018	01:53
0601F030.D	PDI-SG-B280-BL1	K1803850-012	6/2/2018	02:04		6/2/2018	02:33
0601F031.D	PDI-SG-B260-BL1	K1803850-013	6/2/2018	02:43		6/2/2018	03:12
0601F032.D	PDI-SG-B284-BL1	K1803850-020	6/2/2018	03:22		6/2/2018	03:51
0601F033.D	ZZZZZZ	ZZZZZZ	6/2/2018	04:02		6/2/2018	04:31
0601F034.D	ZZZZZZ	ZZZZZZ	6/2/2018	04:41		6/2/2018	05:10
0601F035.D	ZZZZZZ	ZZZZZZ	6/2/2018	05:20		6/2/2018	05:49
0601F036.D	ZZZZZZ	ZZZZZZ	6/2/2018	06:00		6/2/2018	06:29
0601F037.D	ZZZZZZ	ZZZZZZ	6/2/2018	06:39		6/2/2018	07:08
0601F038.D	ZZZZZZ	ZZZZZZ	6/2/2018	07:19		6/2/2018	07:48

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850

Analysis Run Log
Polynuclear Aromatic Hydrocarbons

Analysis Method: 8270D SIM**Analysis Lot:** KWG1802872**Instrument ID:** MS20

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0604F001.D	GC/MS Tuning - Decafluorotriphenylphosph	KWG1802872-1	6/4/2018	06:19		6/4/2018	06:49
0604F002.D	Continuing Calibration Verification	KWG1802872-2	6/4/2018	06:58		6/4/2018	07:27
0604F004.D	ZZZZZZ	ZZZZZZ	6/4/2018	08:17		6/4/2018	08:46
0604F005.D	ZZZZZZ	ZZZZZZ	6/4/2018	08:57		6/4/2018	09:26
0604F006.D	ZZZZZZ	ZZZZZZ	6/4/2018	09:36		6/4/2018	10:05
0604F007.D	ZZZZZZ	ZZZZZZ	6/4/2018	10:16		6/4/2018	10:45
0604F008.D	ZZZZZZ	ZZZZZZ	6/4/2018	10:55		6/4/2018	11:24
0604F009.D	ZZZZZZ	ZZZZZZ	6/4/2018	11:35		6/4/2018	12:04
0604F010.D	ZZZZZZ	ZZZZZZ	6/4/2018	12:15		6/4/2018	12:44
0604F011.D	PDI-SG-B291-BL1	K1803850-001	6/4/2018	12:54		6/4/2018	13:23
0604F012.D	ZZZZZZ	ZZZZZZ	6/4/2018	13:33		6/4/2018	14:02
0604F013.D	ZZZZZZ	ZZZZZZ	6/4/2018	14:13		6/4/2018	14:42
0604F014.D	ZZZZZZ	ZZZZZZ	6/4/2018	14:52		6/4/2018	15:21
0604F015.D	ZZZZZZ	ZZZZZZ	6/4/2018	15:32		6/4/2018	16:01
0604F016.D	ZZZZZZ	ZZZZZZ	6/4/2018	16:11		6/4/2018	16:40
0604F017.D	ZZZZZZ	ZZZZZZ	6/4/2018	16:51		6/4/2018	17:20
0604F018.D	ZZZZZZ	ZZZZZZ	6/4/2018	17:30		6/4/2018	17:59
0604F019.D	ZZZZZZ	ZZZZZZ	6/4/2018	18:10		6/4/2018	18:39

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Extracted: 05/02/2018

Extraction Prep Log
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Extraction Lot: KWG1802248
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
PDI-SG-B288-BL1	K1803850-021	04/24/18	04/25/18	40.377g	2mL	32.1	
PDI-SG-B294-BL1	K1803850-022	04/24/18	04/25/18	40.071g	2mL	35.6	
PDI-SG-B296-BL1	K1803850-023	04/24/18	04/25/18	40.137g	2mL	35.8	
PDI-SG-B302-BL1	K1803850-024	04/24/18	04/25/18	40.345g	2mL	37.4	
PDI-SG-B303-BL1DL	K1803850-025	04/24/18	04/25/18	40.160g	2mL	34.8	
PDI-SG-B303-BL1	K1803850-025	04/24/18	04/25/18	40.160g	2mL	34.8	
PDI-SG-B237-BL1	K1803850-028	04/20/18	04/25/18	40.017g	2mL	43	
PDI-SG-B240-BL1	K1803850-029	04/20/18	04/25/18	40.239g	2mL	59.6	
PDI-SG-B233-BL1	K1803850-030	04/20/18	04/25/18	40.474g	2mL	65.7	
PDI-SG-B233-BL1DL	K1803850-030	04/20/18	04/25/18	40.474g	2mL	65.7	
PDI-SG-B243-BL1DL	K1803850-031	04/20/18	04/25/18	40.072g	2mL	47.8	
PDI-SG-B243-BL1	K1803850-031	04/20/18	04/25/18	40.072g	2mL	47.8	
Method Blank	KWG1802248-4	NA	NA	40.474g	2mL	NA	
PDI-SG-B288-BL1MS	KWG1802248-1	04/24/18	04/25/18	40.456g	2mL	32.1	
PDI-SG-B288-BL1DMS	KWG1802248-2	04/24/18	04/25/18	40.162g	2mL	32.1	
Lab Control Sample	KWG1802248-3	NA	NA	20.000g	2mL	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Extracted: 05/03/2018

Extraction Prep Log
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Extraction Lot: KWG1802260
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
PDI-SG-B291-BL1	K1803850-001	04/23/18	04/25/18	40.047g	2mL	42.4	
PDI-SG-B291-BL1DL	K1803850-001	04/23/18	04/25/18	40.047g	2mL	42.4	
PDI-SG-B292-BL1	K1803850-002	04/23/18	04/25/18	40.361g	2mL	39.8	
PDI-SG-B306-BL1	K1803850-003	04/23/18	04/25/18	40.379g	2mL	41.1	
PDI-SG-B323-BL1	K1803850-004	04/23/18	04/25/18	40.138g	2mL	44.8	
PDI-SG-B329-BL1	K1803850-005	04/23/18	04/25/18	40.291g	2mL	37.6	
PDI-SG-B334-BL1	K1803850-006	04/23/18	04/25/18	40.111g	2mL	41.1	
PDI-SG-B346-BL1	K1803850-007	04/23/18	04/25/18	40.234g	2mL	48.9	
PDI-SG-B265-BL1	K1803850-008	04/23/18	04/25/18	40.040g	2mL	46.4	
PDI-SG-B271-BL1	K1803850-009	04/23/18	04/25/18	40.423g	2mL	35.1	
PDI-SG-B273-BL1	K1803850-010	04/23/18	04/25/18	40.082g	2mL	37.4	
PDI-SG-B279-BL1	K1803850-011	04/23/18	04/25/18	40.276g	2mL	38	
PDI-SG-B280-BL1	K1803850-012	04/23/18	04/25/18	40.496g	2mL	32.8	
PDI-SG-B260-BL1	K1803850-013	04/23/18	04/25/18	40.474g	2mL	48.1	
PDI-SG-B352-BL1	K1803850-014	04/24/18	04/25/18	40.483g	2mL	51.6	
PDI-SG-B366-BL1	K1803850-015	04/24/18	04/25/18	40.380g	2mL	56.1	
PDI-SG-B366-BL1-D	K1803850-016	04/24/18	04/25/18	40.463g	2mL	56.2	
PDI-SG-B357-BL1	K1803850-017	04/24/18	04/25/18	40.137g	2mL	42.2	
PDI-SG-B384-BL1	K1803850-018	04/24/18	04/25/18	40.477g	2mL	41.5	
PDI-SG-B378-BL1	K1803850-019	04/24/18	04/25/18	40.116g	2mL	58	
PDI-SG-B284-BL1	K1803850-020	04/24/18	04/25/18	40.455g	2mL	33.9	
Method Blank	KWG1802260-4	NA	NA	40.496g	2mL	NA	
PDI-SG-B306-BL1MS	KWG1802260-1	04/23/18	04/25/18	40.381g	2mL	41.1	
PDI-SG-B306-BL1DMS	KWG1802260-2	04/23/18	04/25/18	40.413g	2mL	41.1	
Lab Control Sample	KWG1802260-3	NA	NA	20.000g	2mL	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850

Cover Page - Organic Analysis Data Package
Polynuclear Aromatic Hydrocarbons

Sample Name	Lab Code	Date Collected	Date Received
PDI-SG-RB-VV-042318-1730	K1803850-026	04/23/2018	04/25/2018
PDI-SG-RB-VV-180423-1700	K1803850-027	04/23/2018	04/25/2018

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Water

Service Request: K1803850
Date Collected: 04/23/2018
Date Received: 04/25/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: PDI-SG-RB-VV-042318-1730
Lab Code: K1803850-026
Extraction Method: EPA 3511
Analysis Method: 8270D SIM

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	0.0054	J	0.020	0.0014	1	04/30/18	04/30/18	KWG1802202	
2-Methylnaphthalene	0.0029	J	0.020	0.0013	1	04/30/18	04/30/18	KWG1802202	
Acenaphthylene	ND	U	0.020	0.0011	1	04/30/18	04/30/18	KWG1802202	
Acenaphthene	ND	U	0.020	0.0012	1	04/30/18	04/30/18	KWG1802202	
Fluorene	ND	U	0.020	0.0011	1	04/30/18	04/30/18	KWG1802202	
Phenanthrene	0.0032	J	0.020	0.0011	1	04/30/18	04/30/18	KWG1802202	
Anthracene	ND	U	0.020	0.00082	1	04/30/18	04/30/18	KWG1802202	
Fluoranthene	0.0022	J	0.020	0.00082	1	04/30/18	04/30/18	KWG1802202	
Pyrene	0.0040	J	0.020	0.0010	1	04/30/18	04/30/18	KWG1802202	*
Benz(a)anthracene	0.0026	J	0.020	0.00097	1	04/30/18	04/30/18	KWG1802202	
Chrysene	0.0010	J	0.020	0.00076	1	04/30/18	04/30/18	KWG1802202	
Benzo(b)fluoranthene†	ND	U	0.020	0.00083	1	04/30/18	04/30/18	KWG1802202	
Benzo(k)fluoranthene	ND	U	0.020	0.00094	1	04/30/18	04/30/18	KWG1802202	
Benzo(a)pyrene	ND	U	0.020	0.0011	1	04/30/18	04/30/18	KWG1802202	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	0.00089	1	04/30/18	04/30/18	KWG1802202	
Dibenz(a,h)anthracene	ND	U	0.020	0.0013	1	04/30/18	04/30/18	KWG1802202	
Benzo(g,h,i)perylene	ND	U	0.020	0.00086	1	04/30/18	04/30/18	KWG1802202	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	123	42-131	04/30/18	Acceptable
Fluoranthene-d10	119	42-133	04/30/18	Acceptable
Terphenyl-d14	102	32-129	04/30/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Water

Service Request: K1803850
Date Collected: 04/23/2018
Date Received: 04/25/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: PDI-SG-RB-VV-180423-1700
Lab Code: K1803850-027
Extraction Method: EPA 3511
Analysis Method: 8270D SIM

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	0.0040	J	0.020	0.0014	1	04/30/18	05/01/18	KWG1802202	
2-Methylnaphthalene	0.0017	J	0.020	0.0013	1	04/30/18	05/01/18	KWG1802202	
Acenaphthylene	ND	U	0.020	0.0011	1	04/30/18	05/01/18	KWG1802202	
Acenaphthene	ND	U	0.020	0.0012	1	04/30/18	05/01/18	KWG1802202	
Fluorene	ND	U	0.020	0.0011	1	04/30/18	05/01/18	KWG1802202	
Phenanthrene	0.0021	J	0.020	0.0011	1	04/30/18	05/01/18	KWG1802202	
Anthracene	ND	U	0.020	0.00082	1	04/30/18	05/01/18	KWG1802202	
Fluoranthene	ND	U	0.020	0.00082	1	04/30/18	05/01/18	KWG1802202	
Pyrene	0.0011	J	0.020	0.0010	1	04/30/18	05/01/18	KWG1802202	*
Benz(a)anthracene	0.0028	J	0.020	0.00097	1	04/30/18	05/01/18	KWG1802202	
Chrysene	ND	U	0.020	0.00076	1	04/30/18	05/01/18	KWG1802202	
Benzo(b)fluoranthene†	ND	U	0.020	0.00083	1	04/30/18	05/01/18	KWG1802202	
Benzo(k)fluoranthene	ND	U	0.020	0.00094	1	04/30/18	05/01/18	KWG1802202	
Benzo(a)pyrene	ND	U	0.020	0.0011	1	04/30/18	05/01/18	KWG1802202	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	0.00089	1	04/30/18	05/01/18	KWG1802202	
Dibenz(a,h)anthracene	ND	U	0.020	0.0013	1	04/30/18	05/01/18	KWG1802202	
Benzo(g,h,i)perylene	ND	U	0.020	0.00086	1	04/30/18	05/01/18	KWG1802202	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	93	42-131	05/01/18	Acceptable
Fluoranthene-d10	94	42-133	05/01/18	Acceptable
Terphenyl-d14	72	32-129	05/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Water

Service Request: K1803850
Date Collected: NA
Date Received: NA

Polynuclear Aromatic Hydrocarbons

Sample Name: Method Blank
Lab Code: KWG1802202-3
Extraction Method: EPA 3511
Analysis Method: 8270D SIM

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	0.0026	J	0.020	0.0014	1	04/30/18	04/30/18	KWG1802202	
2-Methylnaphthalene	ND	U	0.020	0.0013	1	04/30/18	04/30/18	KWG1802202	
Acenaphthylene	ND	U	0.020	0.0011	1	04/30/18	04/30/18	KWG1802202	
Acenaphthene	ND	U	0.020	0.0012	1	04/30/18	04/30/18	KWG1802202	
Fluorene	ND	U	0.020	0.0011	1	04/30/18	04/30/18	KWG1802202	
Phenanthrene	0.0019	J	0.020	0.0011	1	04/30/18	04/30/18	KWG1802202	
Anthracene	ND	U	0.020	0.00082	1	04/30/18	04/30/18	KWG1802202	
Fluoranthene	ND	U	0.020	0.00082	1	04/30/18	04/30/18	KWG1802202	
Pyrene	0.0014	J	0.020	0.0010	1	04/30/18	04/30/18	KWG1802202	*
Benz(a)anthracene	0.0025	J	0.020	0.00097	1	04/30/18	04/30/18	KWG1802202	
Chrysene	ND	U	0.020	0.00076	1	04/30/18	04/30/18	KWG1802202	
Benzo(b)fluoranthene†	ND	U	0.020	0.00083	1	04/30/18	04/30/18	KWG1802202	
Benzo(k)fluoranthene	ND	U	0.020	0.00094	1	04/30/18	04/30/18	KWG1802202	
Benzo(a)pyrene	ND	U	0.020	0.0011	1	04/30/18	04/30/18	KWG1802202	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	0.00089	1	04/30/18	04/30/18	KWG1802202	
Dibenz(a,h)anthracene	ND	U	0.020	0.0013	1	04/30/18	04/30/18	KWG1802202	
Benzo(g,h,i)perylene	ND	U	0.020	0.00086	1	04/30/18	04/30/18	KWG1802202	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	92	42-131	04/30/18	Acceptable
Fluoranthene-d10	100	42-133	04/30/18	Acceptable
Terphenyl-d14	93	32-129	04/30/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Water

Service Request: K1803850

Surrogate Recovery Summary
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3511
Analysis Method: 8270D SIM

Units: Percent
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>	<u>Sur2</u>	<u>Sur3</u>
PDI-SG-RB-VV-042318-1730	K1803850-026	123	119	102
PDI-SG-RB-VV-180423-1700	K1803850-027	93	94	72
Method Blank	KWG1802202-3	92	100	93
Lab Control Sample	KWG1802202-1	89	98	95
Duplicate Lab Control Sample	KWG1802202-2	86	95	92

Surrogate Recovery Control Limits (%)

Sur1 = Fluorene-d10	42-131
Sur2 = Fluoranthene-d10	42-133
Sur3 = Terphenyl-d14	32-129

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

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

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 04/30/2018
Time Analyzed: 15:53

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS14\DATA\043018\0430F024.D
Instrument ID: MS14
Analysis Method: 8270D SIM

Lab Code: KWG1802259-2
Analysis Lot: KWG1802259

		Naphthalene-d8		Acenaphthene-d10		Phenanthrene-d10	
		<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>		56,544	4.69	26,377	6.26	54,719	7.50
Upper Limit ==>		113,088	5.19	52,754	6.76	109,438	8.00
Lower Limit ==>		28,272	4.19	13,189	5.76	27,360	7.00
ICAL Result ==>		45,603	4.78	23,247	6.33	49,507	7.56
<i>Associated Analyses</i>							
Method Blank	KWG1802202-3	55,388	4.69	26,838	6.26	55,267	7.50
Lab Control Sample	KWG1802202-1	54,743	4.69	24,542	6.26	51,065	7.50
Duplicate Lab Control Sample	KWG1802202-2	56,589	4.69	25,455	6.26	53,059	7.50
PDI-SG-RB-VV-042318-1730	K1803850-026	50,133	4.69	23,584	6.26	49,303	7.50
PDI-SG-RB-VV-180423-1700	K1803850-027	52,590	4.69	25,194	6.26	51,836	7.50

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

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 04/30/2018
Time Analyzed: 15:53

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS14\DATA\043018\0430F024.D
Instrument ID: MS14
Analysis Method: 8270D SIM

Lab Code: KWG1802259-2
Analysis Lot: KWG1802259

	Chrysene-d12		Perylene-d12	
	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>	57,283	10.01	60,929	13.07
Upper Limit ==>	114,566	10.51	121,858	13.57
Lower Limit ==>	28,642	9.51	30,465	12.57
ICAL Result ==>	64,481	10.08	65,038	13.14

Associated Analyses

Method Blank	KWG1802202-3	55,585	10.01	58,810	13.07
Lab Control Sample	KWG1802202-1	52,538	10.01	54,796	13.07
Duplicate Lab Control Sample	KWG1802202-2	54,632	10.01	56,902	13.07
PDI-SG-RB-VV-042318-1730	K1803850-026	50,409	10.01	54,888	13.06
PDI-SG-RB-VV-180423-1700	K1803850-027	51,770	10.01	54,272	13.07

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

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Water

Service Request: K1803850
Date Extracted: 04/30/2018
Date Analyzed: 04/30/2018

Lab Control Spike/Duplicate Lab Control Spike Summary
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3511
Analysis Method: 8270D SIM

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1802202

Analyte Name	Lab Control Sample KWG1802202-1 Lab Control Spike			Duplicate Lab Control Sample KWG1802202-2 Duplicate Lab Control Spike			%Rec Limits	RPD	RPD Limit
	Result	Spike Amount	%Rec	Result	Spike Amount	%Rec			
Naphthalene	2.63	2.78	95	2.28	2.78	82	52-115	14	30
2-Methylnaphthalene	2.30	2.78	83	2.01	2.78	73	48-120	13	30
Acenaphthylene	2.84	2.78	102	2.47	2.78	89	58-124	14	30
Acenaphthene	2.83	2.78	102	2.46	2.78	89	63-121	14	30
Fluorene	2.84	2.78	102	2.44	2.78	88	68-121	15	30
Phenanthrene	2.90	2.78	104	2.45	2.78	88	64-126	17	30
Anthracene	3.04	2.78	109	2.54	2.78	91	68-127	18	30
Fluoranthene	2.80	2.78	101	2.38	2.78	86	70-127	16	30
Pyrene	3.59	2.78	129 *	3.04	2.78	109	72-127	16	30
Benz(a)anthracene	3.37	2.78	121	2.85	2.78	103	74-124	17	30
Chrysene	3.35	2.78	121	2.85	2.78	102	74-132	16	30
Benzo(b)fluoranthene	3.21	2.78	116	2.69	2.78	97	73-136	17	30
Benzo(k)fluoranthene	3.20	2.78	115	2.71	2.78	98	74-134	17	30
Benzo(a)pyrene	3.23	2.78	116	2.70	2.78	97	75-131	18	30
Indeno(1,2,3-cd)pyrene	3.26	2.78	117	2.74	2.78	99	63-136	17	30
Dibenz(a,h)anthracene	3.18	2.78	115	2.73	2.78	98	59-135	15	30
Benzo(g,h,i)perylene	3.21	2.78	115	2.73	2.78	98	63-127	16	30

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

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

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Water

Service Request: K1803850
Date Extracted: 04/30/2018
Date Analyzed: 04/30/2018
Time Analyzed: 16:20

Method Blank Summary
Polynuclear Aromatic Hydrocarbons

Sample Name: Method Blank
Lab Code: KWG1802202-3
Extraction Method: EPA 3511
Analysis Method: 8270D SIM

Instrument ID: MS14
File ID: J:\MS14\DATA\043018\0430F025.D
Level: Low
Extraction Lot: KWG1802202

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG1802202-1	J:\MS14\DATA\043018\0430F026.D	04/30/18	16:46
Duplicate Lab Control Sample	KWG1802202-2	J:\MS14\DATA\043018\0430F027.D	04/30/18	17:12
PDI-SG-RB-VV-042318-1730	K1803850-026	J:\MS14\DATA\043018\0430F042.D	04/30/18	23:39
PDI-SG-RB-VV-180423-1700	K1803850-027	J:\MS14\DATA\043018\0430F043.D	05/01/18	00:06

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Water

Service Request: K1803850
Date Extracted: 04/30/2018
Date Analyzed: 04/30/2018
Time Analyzed: 16:46

Lab Control Sample Summary
Polynuclear Aromatic Hydrocarbons

Sample Name: Lab Control Sample
Lab Code: KWG1802202-1
Extraction Method: EPA 3511
Analysis Method: 8270D SIM

Instrument ID: MS14
File ID: J:\MS14\DATA\043018\0430F026.D
Level: Low
Extraction Lot: KWG1802202

This Lab Control Sample applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG1802202-3	J:\MS14\DATA\043018\0430F025.D	04/30/18	16:20
PDI-SG-RB-VV-042318-1730	K1803850-026	J:\MS14\DATA\043018\0430F042.D	04/30/18	23:39
PDI-SG-RB-VV-180423-1700	K1803850-027	J:\MS14\DATA\043018\0430F043.D	05/01/18	00:06

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 04/30/2018
Time Analyzed: 15:26

Tune Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS14\DATA\043018\0430F023.D
Instrument ID: MS14
Column:

Analysis Method: 8270D SIM
Analysis Lot: KWG1802259

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	59.4	102160	PASS
68	69	0	2	0.0	0	PASS
69	198	0	100	54.9	94448	PASS
70	69	0	2	0.9	835	PASS
127	198	10	80	52.1	89506	PASS
197	198	0	2	0.0	0	PASS
198	442	30	100	63.8	171930	PASS
199	198	5	9	6.5	11158	PASS
275	198	10	60	33.4	57496	PASS
365	442	1	50	3.7	9911	PASS
441	443	0	100	78.4	40890	PASS
442	442	100	100	100.0	269589	PASS
443	442	15	24	19.4	52178	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG1802259-2	J:\MS14\DATA\043018\0430F024.D	04/30/2018	15:53	
Method Blank	KWG1802202-3	J:\MS14\DATA\043018\0430F025.D	04/30/2018	16:20	
Lab Control Sample	KWG1802202-1	J:\MS14\DATA\043018\0430F026.D	04/30/2018	16:46	
Duplicate Lab Control Sample	KWG1802202-2	J:\MS14\DATA\043018\0430F027.D	04/30/2018	17:12	
PDI-SG-RB-VV-042318-1730	K1803850-026	J:\MS14\DATA\043018\0430F042.D	04/30/2018	23:39	
PDI-SG-RB-VV-180423-1700	K1803850-027	J:\MS14\DATA\043018\0430F043.D	05/01/2018	00:06	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Calibration Date: 10/13/2017

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL15579
Instrument ID: MS14

Column: MS

Level ID **File ID**
A J:\MS14\DATA\101317\1013F003.D
B J:\MS14\DATA\101317\1013F004.D
C J:\MS14\DATA\101317\1013F005.D
D J:\MS14\DATA\101317\1013F006.D
E J:\MS14\DATA\101317\1013F007.D

Level ID **File ID**
F J:\MS14\DATA\101317\1013F008.D
G J:\MS14\DATA\101317\1013F009.D
H J:\MS14\DATA\101317\1013F010.D
I J:\MS14\DATA\101317\1013F011.D

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Naphthalene	A	4.0	1.18	B	8.0	1.19	C	20	1.14	D	100	1.10	E	200	1.11
	F	400	1.15	G	1000	1.13	H	1600	1.13	I	2000	1.12			
2-Methylnaphthalene	A	4.0	0.984	B	8.0	0.814	C	20	0.820	D	100	0.773	E	200	0.768
	F	400	0.768	G	1000	0.737	H	1600	0.739	I	2000	0.736			
Acenaphthylene	A	4.0	2.48	B	8.0	2.37	C	20	2.40	D	100	2.32	E	200	2.36
	F	400	2.47	G	1000	2.51	H	1600	2.56	I	2000	2.57			
Acenaphthene	A	4.0	1.34	B	8.0	1.36	C	20	1.34	D	100	1.31	E	200	1.33
	F	400	1.38	G	1000	1.41	H	1600	1.45	I	2000	1.46			
Fluorene	A	4.0	1.73	B	8.0	1.67	C	20	1.65	D	100	1.63	E	200	1.65
	F	400	1.70	G	1000	1.71	H	1600	1.75	I	2000	1.77			
Phenanthrene	A	4.0	1.33	B	8.0	1.25	C	20	1.21	D	100	1.17	E	200	1.18
	F	400	1.22	G	1000	1.24	H	1600	1.27	I	2000	1.29			
Anthracene	A	4.0	1.23	B	8.0	1.19	C	20	1.20	D	100	1.17	E	200	1.20
	F	400	1.23	G	1000	1.25	H	1600	1.27	I	2000	1.28			
Fluoranthene	A	4.0	1.48	B	8.0	1.41	C	20	1.44	D	100	1.41	E	200	1.41
	F	400	1.48	G	1000	1.53	H	1600	1.54	I	2000	1.55			
Pyrene	A	4.0	1.21	B	8.0	1.17	C	20	1.17	D	100	1.14	E	200	1.15
	F	400	1.20	G	1000	1.24	H	1600	1.28	I	2000	1.29			
Benz(a)anthracene	A	4.0	1.30	B	8.0	1.21	C	20	1.17	D	100	1.12	E	200	1.14
	F	400	1.20	G	1000	1.23	H	1600	1.25	I	2000	1.25			
Chrysene	A	4.0	1.13	B	8.0	1.14	C	20	1.10	D	100	1.08	E	200	1.09
	F	400	1.12	G	1000	1.14	H	1600	1.17	I	2000	1.17			
Benzo(b)fluoranthene	A	4.0	1.37	B	8.0	1.19	C	20	1.21	D	100	1.18	E	200	1.23
	F	400	1.28	G	1000	1.30	H	1600	1.31	I	2000	1.30			
Benzo(k)fluoranthene	A	4.0	1.29	B	8.0	1.22	C	20	1.19	D	100	1.19	E	200	1.22
	F	400	1.28	G	1000	1.25	H	1600	1.27	I	2000	1.26			
Benzo(a)pyrene	A	4.0	1.11	B	8.0	1.07	C	20	1.08	D	100	1.05	E	200	1.07
	F	400	1.12	G	1000	1.13	H	1600	1.15	I	2000	1.14			
Indeno(1,2,3-cd)pyrene	A	4.0	1.07	B	8.0	0.946	C	20	0.945	D	100	0.956	E	200	0.969
	F	400	1.02	G	1000	1.00	H	1600	1.01	I	2000	1.00			

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

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Calibration Date: 10/13/2017

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL15579
Instrument ID: MS14

Column: MS

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Dibenz(a,h)anthracene	A	4.0	1.14	B	8.0	1.13	C	20	0.979	D	100	0.947	E	200	0.961
	F	400	0.975	G	1000	0.975	H	1600	0.993	I	2000	0.983			
Benzo(g,h,i)perylene	A	4.0	1.28	B	8.0	1.15	C	20	1.07	D	100	1.07	E	200	1.08
	F	400	1.11	G	1000	1.07	H	1600	1.06	I	2000	1.04			
Fluorene-d10	A	4.0	1.65	B	8.0	1.44	C	20	1.31	D	100	1.26	E	200	1.27
	F	400	1.31	G	1000	1.33	H	1600	1.37	I	2000	1.38			
Fluoranthene-d10	A	4.0	1.21	B	8.0	1.18	C	20	1.19	D	100	1.19	E	200	1.20
	F	400	1.27	G	1000	1.34	H	1600	1.37	I	2000	1.36			
Terphenyl-d14	A	4.0	0.889	B	8.0	0.855	C	20	0.825	D	100	0.800	E	200	0.814
	F	400	0.833	G	1000	0.845	H	1600	0.864	I	2000	0.864			

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

† SPCC Compound

‡ CCC Compound

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Calibration Date: 10/13/2017

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL15579
Instrument ID: MS14

Column: MS

Analyte Name	Compound Type	Calibration Evaluation					RRF Evaluation		
		Fit Type	Eval.	Eval. Result	Q	Control Criteria	Average RRF	Q	Minimum RRF
Naphthalene	MS	AverageRF	% RSD	2.6		≤ 20	1.14		0.70
2-Methylnaphthalene	MS	AverageRF	% RSD	9.8		≤ 20	0.793		0.40
Acenaphthylene	MS	AverageRF	% RSD	3.6		≤ 20	2.45		0.90
Acenaphthene	MS	AverageRF	% RSD	3.8		≤ 20	1.38		0.90
Fluorene	MS	AverageRF	% RSD	2.8		≤ 20	1.70		0.90
Phenanthrene	MS	AverageRF	% RSD	4.1		≤ 20	1.24		0.70
Anthracene	MS	AverageRF	% RSD	3.0		≤ 20	1.22		0.70
Fluoranthene	MS	AverageRF	% RSD	4.0		≤ 20	1.47		0.60
Pyrene	MS	AverageRF	% RSD	4.6		≤ 20	1.21		0.60
Benz(a)anthracene	MS	AverageRF	% RSD	4.8		≤ 20	1.21		0.80
Chrysene	MS	AverageRF	% RSD	2.9		≤ 20	1.13		0.70
Benzo(b)fluoranthene	MS	AverageRF	% RSD	4.9		≤ 20	1.26		0.70
Benzo(k)fluoranthene	MS	AverageRF	% RSD	3.1		≤ 20	1.24		0.70
Benzo(a)pyrene	MS	AverageRF	% RSD	3.3		≤ 20	1.10		0.70
Indeno(1,2,3-cd)pyrene	MS	AverageRF	% RSD	4.1		≤ 20	0.992		0.50
Dibenz(a,h)anthracene	MS	AverageRF	% RSD	7.2		≤ 20	1.01		0.40
Benzo(g,h,i)perylene	MS	AverageRF	% RSD	6.5		≤ 20	1.10		0.50
Fluorene-d10	SURR	AverageRF	% RSD	8.8		≤ 20	1.37		0.01
Fluoranthene-d10	SURR	AverageRF	% RSD	6.5		≤ 20	1.26		0.01
Terphenyl-d14	SURR	AverageRF	% RSD	3.3		≤ 20	0.843		0.01

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

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Calibration Date: 10/13/2017
Date Analyzed: 10/13/2017

Second Source Calibration Verification
Polynuclear Aromatic Hydrocarbons

Calibration Type: Internal Standard
Analysis Method: 8270D SIM

Calibration ID: CAL15579
Units: ng/ml

File ID: J:\MS14\DATA\101317\1013F013.D

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	380	1.14	1.08	-6	NA	± 30 %	AverageRF
2-Methylnaphthalene	400	360	0.793	0.716	-10	NA	± 30 %	AverageRF
Acenaphthylene	400	380	2.45	2.30	-6	NA	± 30 %	AverageRF
Acenaphthene	400	380	1.38	1.32	-4	NA	± 30 %	AverageRF
Fluorene	400	380	1.70	1.60	-6	NA	± 30 %	AverageRF
Phenanthrene	400	370	1.24	1.14	-8	NA	± 30 %	AverageRF
Anthracene	400	380	1.22	1.15	-6	NA	± 30 %	AverageRF
Fluoranthene	400	390	1.47	1.44	-2	NA	± 30 %	AverageRF
Pyrene	400	380	1.21	1.14	-6	NA	± 30 %	AverageRF
Benz(a)anthracene	400	380	1.21	1.15	-5	NA	± 30 %	AverageRF
Chrysene	400	380	1.13	1.08	-4	NA	± 30 %	AverageRF
Benzo(b)fluoranthene	400	390	1.26	1.22	-3	NA	± 30 %	AverageRF
Benzo(k)fluoranthene	400	390	1.24	1.20	-3	NA	± 30 %	AverageRF
Benzo(a)pyrene	400	380	1.10	1.05	-5	NA	± 30 %	AverageRF
Indeno(1,2,3-cd)pyrene	400	370	0.992	0.913	-8	NA	± 30 %	AverageRF
Dibenz(a,h)anthracene	400	370	1.01	0.924	-8	NA	± 30 %	AverageRF
Benzo(g,h,i)perylene	400	370	1.10	1.02	-7	NA	± 30 %	AverageRF

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

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 04/30/2018

**Continuing Calibration Verification Summary
 Polynuclear Aromatic Hydrocarbons**

Calibration Type: Internal Standard
Analysis Method: 8270D SIM

Calibration Date: 10/13/2017
Calibration ID: CAL15579
Analysis Lot: KWG1802259
Units: ng/ml

File ID: J:\MS14\DATA\043018\0430F024.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	370	0.70	1.14	1.05	-7	NA	± 20	AverageRF
2-Methylnaphthalene	400	330	0.40	0.793	0.657	-17	NA	± 20	AverageRF
Acenaphthylene	400	380	0.90	2.45	2.35	-4	NA	± 20	AverageRF
Acenaphthene	400	390	0.90	1.38	1.33	-3	NA	± 20	AverageRF
Fluorene	400	380	0.90	1.70	1.63	-4	NA	± 20	AverageRF
Phenanthrene	400	380	0.70	1.24	1.18	-5	NA	± 20	AverageRF
Anthracene	400	350	0.70	1.22	1.08	-12	NA	± 20	AverageRF
Fluoranthene	400	370	0.60	1.47	1.36	-8	NA	± 20	AverageRF
Pyrene	400	460	0.60	1.21	1.38	14	NA	± 20	AverageRF
Benz(a)anthracene	400	430	0.80	1.21	1.29	7	NA	± 20	AverageRF
Chrysene	400	430	0.70	1.13	1.22	8	NA	± 20	AverageRF
Benzo(b)fluoranthene	400	410	0.70	1.26	1.30	3	NA	± 20	AverageRF
Benzo(k)fluoranthene	400	410	0.70	1.24	1.27	3	NA	± 20	AverageRF
Benzo(a)pyrene	400	410	0.70	1.10	1.14	3	NA	± 20	AverageRF
Indeno(1,2,3-cd)pyrene	400	440	0.50	0.992	1.09	10	NA	± 20	AverageRF
Dibenz(a,h)anthracene	400	440	0.40	1.01	1.10	9	NA	± 20	AverageRF
Benzo(g,h,i)perylene	400	430	0.50	1.10	1.19	8	NA	± 20	AverageRF
Fluorene-d10	400	360	0.01	1.37	1.24	-10	NA	± 20	AverageRF
Fluoranthene-d10	400	370	0.01	1.26	1.16	-8	NA	± 20	AverageRF
Terphenyl-d14	400	390	0.01	0.843	0.818	-3	NA	± 20	AverageRF

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

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850

Analysis Run Log
Polynuclear Aromatic Hydrocarbons

Analysis Method: 8270D SIM**Analysis Lot:** KWG1802259**Instrument ID:** MS14

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0430F023.D	GC/MS Tuning - Decafluorotriphenylphosph	KWG1802259-1	4/30/2018	15:26		4/30/2018	15:46
0430F024.D	Continuing Calibration Verification	KWG1802259-2	4/30/2018	15:53		4/30/2018	16:12
0430F025.D	Method Blank	KWG1802202-3	4/30/2018	16:20		4/30/2018	16:39
0430F026.D	Lab Control Sample	KWG1802202-1	4/30/2018	16:46		4/30/2018	17:05
0430F027.D	Duplicate Lab Control Sample	KWG1802202-2	4/30/2018	17:12		4/30/2018	17:31
0430F028.D	ZZZZZZ	ZZZZZZ	4/30/2018	17:38		4/30/2018	17:57
0430F029.D	ZZZZZZ	ZZZZZZ	4/30/2018	18:04		4/30/2018	18:23
0430F030.D	ZZZZZZ	ZZZZZZ	4/30/2018	18:30		4/30/2018	18:49
0430F031.D	ZZZZZZ	ZZZZZZ	4/30/2018	18:55		4/30/2018	19:14
0430F032.D	ZZZZZZ	ZZZZZZ	4/30/2018	19:21		4/30/2018	19:40
0430F033.D	ZZZZZZ	ZZZZZZ	4/30/2018	19:47		4/30/2018	20:06
0430F034.D	ZZZZZZ	ZZZZZZ	4/30/2018	20:13		4/30/2018	20:32
0430F035.D	ZZZZZZ	ZZZZZZ	4/30/2018	20:39		4/30/2018	20:58
0430F036.D	ZZZZZZ	ZZZZZZ	4/30/2018	21:04		4/30/2018	21:23
0430F037.D	ZZZZZZ	ZZZZZZ	4/30/2018	21:30		4/30/2018	21:49
0430F038.D	ZZZZZZ	ZZZZZZ	4/30/2018	21:56		4/30/2018	22:15
0430F039.D	ZZZZZZ	ZZZZZZ	4/30/2018	22:21		4/30/2018	22:40
0430F040.D	ZZZZZZ	ZZZZZZ	4/30/2018	22:47		4/30/2018	23:06
0430F041.D	ZZZZZZ	ZZZZZZ	4/30/2018	23:13		4/30/2018	23:32
0430F042.D	PDI-SG-RB-VV-042318-1730	K1803850-026	4/30/2018	23:39		4/30/2018	23:58
0430F043.D	PDI-SG-RB-VV-180423-1700	K1803850-027	5/1/2018	00:06		5/1/2018	00:25

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Water

Service Request: K1803850
Date Extracted: 04/30/2018

Extraction Prep Log
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3511
Analysis Method: 8270D SIM

Extraction Lot: KWG1802202
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
PDI-SG-RB-VV-042318-1730	K1803850-026	04/23/18	04/25/18	455ml	2ml	NA	
PDI-SG-RB-VV-180423-1700	K1803850-027	04/23/18	04/25/18	450ml	2ml	NA	
Method Blank	KWG1802202-3	NA	NA	460ml	2ml	NA	
Lab Control Sample	KWG1802202-1	NA	NA	450ml	2ml	NA	
Duplicate Lab Control Sample	KWG1802202-2	NA	NA	450ml	2ml	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis



Low Level Semivolatile Organic Compounds by GC/MS

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

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment
Sample Name: PDI-SG-B291-BL1
Lab Code: K1803850-001

Service Request: K1803850
Date Collected: 04/23/18 09:56
Date Received: 04/25/18 14:30
Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	170	120	11	1	05/16/18 16:50	4/27/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	81	30 - 102	05/16/18 16:50	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: PDI-SG-B292-BL1
Lab Code: K1803850-002

Service Request: K1803850
Date Collected: 04/23/18 10:42
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	93 J	120	12	1	05/16/18 17:19	4/27/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	81	30 - 102	05/16/18 17:19	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: PDI-SG-B306-BL1
Lab Code: K1803850-003

Service Request: K1803850
Date Collected: 04/23/18 11:33
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	80 J	120	11	1	05/16/18 17:47	4/27/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	79	30 - 102	05/16/18 17:47	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: PDI-SG-B323-BL1
Lab Code: K1803850-004

Service Request: K1803850
Date Collected: 04/23/18 12:35
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	100 J	110	9.9	1	05/16/18 16:22	4/27/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	76	30 - 102	05/16/18 16:22	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: PDI-SG-B329-BL1
Lab Code: K1803850-005

Service Request: K1803850
Date Collected: 04/23/18 14:06
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	130 J	130	12	1	05/16/18 18:16	4/27/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	82	30 - 102	05/16/18 18:16	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment
Sample Name: PDI-SG-B334-BL1
Lab Code: K1803850-006

Service Request: K1803850
Date Collected: 04/23/18 14:56
Date Received: 04/25/18 14:30
Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	82 J	120	11	1	05/16/18 18:44	4/27/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	84	30 - 102	05/16/18 18:44	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: PDI-SG-B346-BL1
Lab Code: K1803850-007

Service Request: K1803850
Date Collected: 04/23/18 16:00
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	59 J	100	9.1	1	05/16/18 19:13	4/27/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	77	30 - 102	05/16/18 19:13	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment
Sample Name: PDI-SG-B265-BL1
Lab Code: K1803850-008

Service Request: K1803850
Date Collected: 04/23/18 10:07
Date Received: 04/25/18 14:30
Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	860	110	9.6	1	05/16/18 19:41	4/27/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	82	30 - 102	05/16/18 19:41	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment
Sample Name: PDI-SG-B271-BL1
Lab Code: K1803850-009

Service Request: K1803850
Date Collected: 04/23/18 11:27
Date Received: 04/25/18 14:30
Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	390	140	13	1	05/16/18 20:10	4/27/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	77	30 - 102	05/16/18 20:10	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment
Sample Name: PDI-SG-B273-BL1
Lab Code: K1803850-010

Service Request: K1803850
Date Collected: 04/23/18 12:29
Date Received: 04/25/18 14:30
Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	750	130	12	1	05/16/18 20:39	4/27/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	88	30 - 102	05/16/18 20:39	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment
Sample Name: PDI-SG-B279-BL1
Lab Code: K1803850-011

Service Request: K1803850
Date Collected: 04/23/18 14:49
Date Received: 04/25/18 14:30
Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	1600	260	24	2	05/22/18 22:16	4/27/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	75	30 - 102	05/16/18 21:07	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment
Sample Name: PDI-SG-B280-BL1
Lab Code: K1803850-012

Service Request: K1803850
Date Collected: 04/23/18 15:51
Date Received: 04/25/18 14:30
Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	720	150	14	1	05/16/18 21:36	4/27/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	64	30 - 102	05/16/18 21:36	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment
Sample Name: PDI-SG-B260-BL1
Lab Code: K1803850-013

Service Request: K1803850
Date Collected: 04/23/18 17:24
Date Received: 04/25/18 14:30
Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	320	100	9.2	1	05/16/18 22:04	4/27/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	76	30 - 102	05/16/18 22:04	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment
Sample Name: PDI-SG-B352-BL1
Lab Code: K1803850-014

Service Request: K1803850
Date Collected: 04/24/18 10:00
Date Received: 04/25/18 14:30
Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	43 J	96	8.9	1	05/16/18 22:33	4/27/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	81	30 - 102	05/16/18 22:33	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment
Sample Name: PDI-SG-B366-BL1
Lab Code: K1803850-015

Service Request: K1803850
Date Collected: 04/24/18 11:40
Date Received: 04/25/18 14:30
Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	210	89	8.9	1	05/16/18 23:01	4/27/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	77	30 - 102	05/16/18 23:01	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment
Sample Name: PDI-SG-B366-BL1-D
Lab Code: K1803850-016

Service Request: K1803850
Date Collected: 04/24/18 11:40
Date Received: 04/25/18 14:30
Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	38 J	89	8.9	1	05/16/18 23:30	4/27/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	69	30 - 102	05/16/18 23:30	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment
Sample Name: PDI-SG-B357-BL1
Lab Code: K1803850-017

Service Request: K1803850
Date Collected: 04/24/18 10:50
Date Received: 04/25/18 14:30
Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	84 J	120	11	1	05/16/18 23:58	4/27/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	80	30 - 102	05/16/18 23:58	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment
Sample Name: PDI-SG-B384-BL1
Lab Code: K1803850-018

Service Request: K1803850
Date Collected: 04/24/18 14:55
Date Received: 04/25/18 14:30
Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	92 J	120	11	1	05/17/18 00:27	4/27/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	78	30 - 102	05/17/18 00:27	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment
Sample Name: PDI-SG-B378-BL1
Lab Code: K1803850-019

Service Request: K1803850
Date Collected: 04/24/18 13:03
Date Received: 04/25/18 14:30
Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	62 J	86	8.9	1	05/17/18 00:55	4/27/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	75	30 - 102	05/17/18 00:55	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment
Sample Name: PDI-SG-B284-BL1
Lab Code: K1803850-020

Service Request: K1803850
Date Collected: 04/24/18 09:55
Date Received: 04/25/18 14:30
Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	1100	150	14	1	05/17/18 01:24	4/27/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	81	30 - 102	05/17/18 01:24	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment
Sample Name: PDI-SG-B288-BL1
Lab Code: K1803850-021

Service Request: K1803850
Date Collected: 04/24/18 11:02
Date Received: 04/25/18 14:30
Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	620	160	14	1	05/12/18 16:26	4/27/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	67	30 - 102	05/12/18 16:26	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment
Sample Name: PDI-SG-B294-BL1
Lab Code: K1803850-022

Service Request: K1803850
Date Collected: 04/24/18 12:24
Date Received: 04/25/18 14:30
Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	450	140	13	1	05/12/18 16:54	4/27/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	64	30 - 102	05/12/18 16:54	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: PDI-SG-B296-BL1
Lab Code: K1803850-023

Service Request: K1803850
Date Collected: 04/24/18 14:14
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	720	140	13	1	05/12/18 17:23	4/27/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	61	30 - 102	05/12/18 17:23	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: PDI-SG-B302-BL1
Lab Code: K1803850-024

Service Request: K1803850
Date Collected: 04/24/18 15:12
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	640	130	12	1	05/12/18 17:52	4/27/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	64	30 - 102	05/12/18 17:52	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: PDI-SG-B303-BL1
Lab Code: K1803850-025

Service Request: K1803850
Date Collected: 04/24/18 16:01
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	430	140	13	1	05/12/18 20:42	4/27/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	30	30 - 102	05/12/18 20:42	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Water
Sample Name: PDI-SG-RB-VV-042318-1730
Lab Code: K1803850-026

Service Request: K1803850
Date Collected: 04/23/18 17:30
Date Received: 04/25/18 14:30

Units: ug/L
Basis: NA

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3520C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	0.22 BJ	0.94	0.13	1	05/05/18 02:07	4/30/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	89	48 - 109	05/05/18 02:07	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Water
Sample Name: PDI-SG-RB-VV-180423-1700
Lab Code: K1803850-027

Service Request: K1803850
Date Collected: 04/23/18 17:00
Date Received: 04/25/18 14:30

Units: ug/L
Basis: NA

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3520C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	1.1 B	1.0	0.13	1	05/05/18 02:35	4/30/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	101	48 - 109	05/05/18 02:35	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment
Sample Name: PDI-SG-B237-BL1
Lab Code: K1803850-028

Service Request: K1803850
Date Collected: 04/20/18 17:04
Date Received: 04/25/18 14:30
Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	92 J	120	11	1	05/12/18 13:35	4/27/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	65	30 - 102	05/12/18 13:35	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment
Sample Name: PDI-SG-B240-BL1
Lab Code: K1803850-029

Service Request: K1803850
Date Collected: 04/20/18 16:40
Date Received: 04/25/18 14:30
Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	30 J	84	8.9	1	05/12/18 14:03	4/27/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	62	30 - 102	05/12/18 14:03	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment
Sample Name: PDI-SG-B233-BL1
Lab Code: K1803850-030

Service Request: K1803850
Date Collected: 04/20/18 14:45
Date Received: 04/25/18 14:30
Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	25 J	76	8.9	1	05/12/18 14:32	4/27/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	64	30 - 102	05/12/18 14:32	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: PDI-SG-B243-BL1
Lab Code: K1803850-031

Service Request: K1803850
Date Collected: 04/20/18 17:40
Date Received: 04/25/18 14:30

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	160	100	9.3	1	05/12/18 15:01	4/27/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	79	30 - 102	05/12/18 15:01	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: Method Blank
Lab Code: KQ1805444-04

Service Request: K1803850
Date Collected: NA
Date Received: NA

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	ND U	49	8.9	1	05/16/18 14:27	4/27/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	71	30 - 102	05/16/18 14:27	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Sample Name: Method Blank
Lab Code: KQ1805445-04

Service Request: K1803850
Date Collected: NA
Date Received: NA

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	ND U	50	8.9	1	05/12/18 06:54	4/27/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	76	30 - 102	05/12/18 06:54	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Water

Sample Name: Method Blank
Lab Code: KQ1805496-03

Service Request: K1803850
Date Collected: NA
Date Received: NA

Units: ug/L
Basis: NA

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3520C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	1.2	0.94	0.13	1	05/04/18 18:30	4/30/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	85	48 - 109	05/04/18 18:30	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850

SURROGATE RECOVERY SUMMARY
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Extraction Method: EPA 3541

Sample Name	Lab Code	p-Terphenyl-d14
		30 - 102
PDI-SG-B291-BL1	K1803850-001	81
PDI-SG-B292-BL1	K1803850-002	81
PDI-SG-B306-BL1	K1803850-003	79
PDI-SG-B323-BL1	K1803850-004	76
PDI-SG-B329-BL1	K1803850-005	82
PDI-SG-B334-BL1	K1803850-006	84
PDI-SG-B346-BL1	K1803850-007	77
PDI-SG-B265-BL1	K1803850-008	82
PDI-SG-B271-BL1	K1803850-009	77
PDI-SG-B273-BL1	K1803850-010	88
PDI-SG-B279-BL1	K1803850-011	75
PDI-SG-B280-BL1	K1803850-012	64
PDI-SG-B260-BL1	K1803850-013	76
PDI-SG-B352-BL1	K1803850-014	81
PDI-SG-B366-BL1	K1803850-015	77
PDI-SG-B366-BL1-D	K1803850-016	69
PDI-SG-B357-BL1	K1803850-017	80
PDI-SG-B384-BL1	K1803850-018	78
PDI-SG-B378-BL1	K1803850-019	75
PDI-SG-B284-BL1	K1803850-020	81
PDI-SG-B288-BL1	K1803850-021	67
PDI-SG-B294-BL1	K1803850-022	64
PDI-SG-B296-BL1	K1803850-023	61
PDI-SG-B302-BL1	K1803850-024	64
PDI-SG-B303-BL1	K1803850-025	30
PDI-SG-B237-BL1	K1803850-028	65
PDI-SG-B240-BL1	K1803850-029	62
PDI-SG-B233-BL1	K1803850-030	64
PDI-SG-B243-BL1	K1803850-031	79
PDI-SG-B323-BL1 MS	KQ1805444-01	77
PDI-SG-B323-BL1 DMS	KQ1805444-02	75
Lab Control Sample	KQ1805444-03	69
Method Blank	KQ1805444-04	71
PDI-SG-B288-BL1 MS	KQ1805445-01	63
PDI-SG-B288-BL1 DMS	KQ1805445-02	65
Lab Control Sample	KQ1805445-03	57
Method Blank	KQ1805445-04	76

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Water

Service Request: K1803850

SURROGATE RECOVERY SUMMARY
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Extraction Method: EPA 3520C

Sample Name	Lab Code	p-Terphenyl-d14
		30 - 102
PDI-SG-RB-VV-042318-1730	K1803850-026	89
PDI-SG-RB-VV-180423-1700	K1803850-027	101
Lab Control Sample	KQ1805496-01	83
Method Blank	KQ1805496-03	85

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 05/04/18 18:02

Internal Standard Area and RT SUMMARY
Low Level Semivolatile Organic Compounds by GC/MS

File ID: J:\MS29\DATA\050418\0504F002.D\
Instrument ID: K-MS-29
Analysis Method: 8270D

Lab Code: KQ1805899-02
Analysis Lot: 589963
Signal ID: 1

	Chrysene-d12	
	Area	RT
ICAL Result ==>	329,476	15.39
Upper Limit ==>	658,952	15.89
Lower Limit ==>	164,738	14.89

Associated Analyses

Method Blank	KQ1805496-03	334166	15.39
Lab Control Sample	KQ1805496-01	316844	15.39
PDI-SG-RB-VV-042318-1730	K1803850-026	278452	15.39
PDI-SG-RB-VV-180423-1700	K1803850-027	287950	15.39

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 05/12/18 06:26

Internal Standard Area and RT SUMMARY
Low Level Semivolatile Organic Compounds by GC/MS

File ID: J:\MS29\DATA\051218\0512F002.D\
Instrument ID: K-MS-29
Analysis Method: 8270D

Lab Code: KQ1806239-02
Analysis Lot: 590794
Signal ID: 1

	Chrysene-d12	
	Area	RT
ICAL Result ==>	292,531	15.43
Upper Limit ==>	585,062	15.93
Lower Limit ==>	146,266	14.93

Associated Analyses

Method Blank	KQ1805445-04	217711	15.44
Lab Control Sample	KQ1805445-03	237961	15.43
PDI-SG-B237-BL1	K1803850-028	271702	15.44
PDI-SG-B240-BL1	K1803850-029	271703	15.44
PDI-SG-B233-BL1	K1803850-030	273903	15.44
PDI-SG-B243-BL1	K1803850-031	281205	15.44
PDI-SG-B288-BL1	KQ1805445-01	265881	15.45
PDI-SG-B288-BL1	KQ1805445-02	273191	15.45
PDI-SG-B288-BL1	K1803850-021	258500	15.45
PDI-SG-B294-BL1	K1803850-022	273270	15.45
PDI-SG-B296-BL1	K1803850-023	274128	15.45
PDI-SG-B302-BL1	K1803850-024	263652	15.46

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 05/12/18 19:17

Internal Standard Area and RT SUMMARY
Low Level Semivolatile Organic Compounds by GC/MS

File ID: J:\MS29\DATA\051218\0512F029.D\
Instrument ID: K-MS-29
Analysis Method: 8270D

Lab Code: KQ1806240-02
Analysis Lot: 590797
Signal ID:

	Chrysene-d12	
	Area	RT
ICAL Result ==>	255,763	15.44
Upper Limit ==>	511,526	15.94
Lower Limit ==>	127,882	14.94

Associated Analyses

PDI-SG-B303-BL1	K1803850-025	273836	15.45
-----------------	--------------	--------	-------

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 05/16/18 13:58

Internal Standard Area and RT SUMMARY
Low Level Semivolatile Organic Compounds by GC/MS

File ID: J:\MS29\DATA\051618\0516F002.D\
Instrument ID: K-MS-29
Analysis Method: 8270D

Lab Code: KQ1806477-02
Analysis Lot: 591236
Signal ID:

	Chrysene-d12	
	Area	RT
ICAL Result ==>	263,330	15.47
Upper Limit ==>	526,660	15.97
Lower Limit ==>	131,665	14.97

Associated Analyses

Method Blank	KQ1805444-04	246307	15.47
Lab Control Sample	KQ1805444-03	256500	15.47
PDI-SG-B323-BL1	KQ1805444-01	307413	15.47
PDI-SG-B323-BL1	KQ1805444-02	293973	15.47
PDI-SG-B323-BL1	K1803850-004	301653	15.47
PDI-SG-B291-BL1	K1803850-001	295466	15.47
PDI-SG-B292-BL1	K1803850-002	296856	15.47
PDI-SG-B306-BL1	K1803850-003	307261	15.47
PDI-SG-B329-BL1	K1803850-005	303557	15.47
PDI-SG-B334-BL1	K1803850-006	291118	15.48
PDI-SG-B346-BL1	K1803850-007	302759	15.48
PDI-SG-B265-BL1	K1803850-008	299097	15.51
PDI-SG-B271-BL1	K1803850-009	304115	15.48
PDI-SG-B273-BL1	K1803850-010	292552	15.49
PDI-SG-B279-BL1	K1803850-011.R01	293521	15.49
PDI-SG-B280-BL1	K1803850-012	298332	15.49
PDI-SG-B260-BL1	K1803850-013	293190	15.49
PDI-SG-B352-BL1	K1803850-014	303606	15.49
PDI-SG-B366-BL1	K1803850-015	301156	15.48
PDI-SG-B366-BL1-D	K1803850-016	301149	15.48
PDI-SG-B357-BL1	K1803850-017	304615	15.48
PDI-SG-B384-BL1	K1803850-018	304008	15.48
PDI-SG-B378-BL1	K1803850-019	299005	15.48
PDI-SG-B284-BL1	K1803850-020	300438	15.49

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 05/22/18 17:59

Internal Standard Area and RT SUMMARY
Low Level Semivolatile Organic Compounds by GC/MS

File ID: J:\MS29\DATA\052218\0522F002.D\
Instrument ID: K-MS-29
Analysis Method: 8270D

Lab Code: KQ1806821-02
Analysis Lot: 592046
Signal ID:

	Chrysene-d12	
	Area	RT
ICAL Result ==>	236,183	15.49
Upper Limit ==>	472,366	15.99
Lower Limit ==>	118,092	14.99

Associated Analyses

PDI-SG-B279-BL1	K1803850-011	306971	15.50
-----------------	--------------	--------	-------

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: 04/23/18
Date Received: 04/25/18
Date Analyzed: 05/16/18
Date Extracted: 04/27/18

Duplicate Matrix Spike Summary
Low Level Semivolatile Organic Compounds by GC/MS

Sample Name: PDI-SG-B323-BL1
Lab Code: K1803850-004
Analysis Method: 8270D
Prep Method: EPA 3541

Units: ug/Kg
Basis: Dry

Analyte Name	Sample Result	Matrix Spike KQ1805444-01			Duplicate Matrix Spike KQ1805444-02			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Bis(2-ethylhexyl) Phthalate	100 J	276	276	63	258	278	56	23-123	7	40

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

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

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

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803850
Date Collected: 04/24/18
Date Received: 04/25/18
Date Analyzed: 05/12/18
Date Extracted: 04/27/18

Duplicate Matrix Spike Summary
Low Level Semivolatile Organic Compounds by GC/MS

Sample Name: PDI-SG-B288-BL1
Lab Code: K1803850-021
Analysis Method: 8270D
Prep Method: EPA 3541

Units: ug/Kg
Basis: Dry

Analyte Name	Sample Result	Matrix Spike KQ1805445-01			Duplicate Matrix Spike KQ1805445-02			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Bis(2-ethylhexyl) Phthalate	620	846	386	59	807	388	49	23-123	5	40

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

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

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

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	AECOM	Service Request:	K1803850
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	Date Analyzed:	05/16/18
Sample Matrix:	Sediment	Date Extracted:	04/27/18

Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method:	8270D	Units:	ug/Kg
Prep Method:	EPA 3541	Basis:	Dry
		Analysis Lot:	591236

Lab Control Sample
KQ1805444-03

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Bis(2-ethylhexyl) Phthalate	168	250	67	39-113

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	AECOM	Service Request:	K1803850
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	Date Analyzed:	05/12/18
Sample Matrix:	Sediment	Date Extracted:	04/27/18

Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method:	8270D	Units:	ug/Kg
Prep Method:	EPA 3541	Basis:	Dry
		Analysis Lot:	590794

Lab Control Sample
KQ1805445-03

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Bis(2-ethylhexyl) Phthalate	153	250	61	39-113

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	AECOM	Service Request:	K1803850
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	Date Analyzed:	05/04/18
Sample Matrix:	Water	Date Extracted:	04/30/18

Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method:	8270D	Units:	ug/L
Prep Method:	EPA 3520C	Basis:	NA
		Analysis Lot:	589963

Lab Control Sample
KQ1805496-01

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Bis(2-ethylhexyl) Phthalate	3.98	5.00	80	42-147

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	AECOM	Service Request:	K1803850
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	Date Analyzed:	05/16/18 14:27
Sample Matrix:	Sediment	Date Extracted:	04/27/18

Method Blank Summary
Low Level Semivolatile Organic Compounds by GC/MS

Sample Name:	Method Blank	Instrument ID:	K-MS-29
Lab Code:	KQ1805444-04	File ID:	J:\MS29\DATA\051618\0516F003.D\
Analysis Method:	8270D	Analysis Lot:	591236,592046
Prep Method:	EPA 3541	Extraction Lot:	312766

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ1805444-03	J:\MS29\DATA\051618\0516F004.D\	05/16/18 14:56
PDI-SG-B323-BL1MS	KQ1805444-01	J:\MS29\DATA\051618\0516F005.D\	05/16/18 15:24
PDI-SG-B323-BL1DMS	KQ1805444-02	J:\MS29\DATA\051618\0516F006.D\	05/16/18 15:53
PDI-SG-B323-BL1	K1803850-004	J:\MS29\DATA\051618\0516F007.D\	05/16/18 16:22
PDI-SG-B291-BL1	K1803850-001	J:\MS29\DATA\051618\0516F008.D\	05/16/18 16:50
PDI-SG-B292-BL1	K1803850-002	J:\MS29\DATA\051618\0516F009.D\	05/16/18 17:19
PDI-SG-B306-BL1	K1803850-003	J:\MS29\DATA\051618\0516F010.D\	05/16/18 17:47
PDI-SG-B329-BL1	K1803850-005	J:\MS29\DATA\051618\0516F011.D\	05/16/18 18:16
PDI-SG-B334-BL1	K1803850-006	J:\MS29\DATA\051618\0516F012.D\	05/16/18 18:44
PDI-SG-B346-BL1	K1803850-007	J:\MS29\DATA\051618\0516F013.D\	05/16/18 19:13
PDI-SG-B265-BL1	K1803850-008	J:\MS29\DATA\051618\0516F014.D\	05/16/18 19:41
PDI-SG-B271-BL1	K1803850-009	J:\MS29\DATA\051618\0516F015.D\	05/16/18 20:10
PDI-SG-B273-BL1	K1803850-010	J:\MS29\DATA\051618\0516F016.D\	05/16/18 20:39
PDI-SG-B279-BL1	K1803850-011	J:\MS29\DATA\051618\0516F017.D\	05/16/18 21:07
PDI-SG-B280-BL1	K1803850-012	J:\MS29\DATA\051618\0516F018.D\	05/16/18 21:36
PDI-SG-B260-BL1	K1803850-013	J:\MS29\DATA\051618\0516F019.D\	05/16/18 22:04
PDI-SG-B352-BL1	K1803850-014	J:\MS29\DATA\051618\0516F020.D\	05/16/18 22:33
PDI-SG-B366-BL1	K1803850-015	J:\MS29\DATA\051618\0516F021.D\	05/16/18 23:01
PDI-SG-B366-BL1-D	K1803850-016	J:\MS29\DATA\051618\0516F022.D\	05/16/18 23:30
PDI-SG-B357-BL1	K1803850-017	J:\MS29\DATA\051618\0516F023.D\	05/16/18 23:58
PDI-SG-B384-BL1	K1803850-018	J:\MS29\DATA\051618\0516F024.D\	05/17/18 00:27
PDI-SG-B378-BL1	K1803850-019	J:\MS29\DATA\051618\0516F025.D\	05/17/18 00:55
PDI-SG-B284-BL1	K1803850-020	J:\MS29\DATA\051618\0516F026.D\	05/17/18 01:24
PDI-SG-B279-BL1	K1803850-011	J:\MS29\DATA\052218\0522F011.D\	05/22/18 22:16

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: AECOM**Project:** Portland Harbor Pre-Remedial Design Investigation/60566335**Sample Matrix:** Sediment**Service Request:** K1803850**Date Analyzed:** 05/12/18 06:54**Date Extracted:** 04/27/18**Method Blank Summary****Low Level Semivolatile Organic Compounds by GC/MS****Sample Name:** Method Blank**Instrument ID:**K-MS-29**Lab Code:** KQ1805445-04**File ID:**J:\MS29\DATA\051218\0512F003.D**Analysis Method:** 8270D**Analysis Lot:**590794,590797**Prep Method:** EPA 3541**Extraction Lot:**312767

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ1805445-03	J:\MS29\DATA\051218\0512F004.D\	05/12/18 07:23
PDI-SG-B237-BL1	K1803850-028	J:\MS29\DATA\051218\0512F017.D\	05/12/18 13:35
PDI-SG-B240-BL1	K1803850-029	J:\MS29\DATA\051218\0512F018.D\	05/12/18 14:03
PDI-SG-B233-BL1	K1803850-030	J:\MS29\DATA\051218\0512F019.D\	05/12/18 14:32
PDI-SG-B243-BL1	K1803850-031	J:\MS29\DATA\051218\0512F020.D\	05/12/18 15:01
PDI-SG-B288-BL1MS	KQ1805445-01	J:\MS29\DATA\051218\0512F021.D\	05/12/18 15:29
PDI-SG-B288-BL1DMS	KQ1805445-02	J:\MS29\DATA\051218\0512F022.D\	05/12/18 15:58
PDI-SG-B288-BL1	K1803850-021	J:\MS29\DATA\051218\0512F023.D\	05/12/18 16:26
PDI-SG-B294-BL1	K1803850-022	J:\MS29\DATA\051218\0512F024.D\	05/12/18 16:54
PDI-SG-B296-BL1	K1803850-023	J:\MS29\DATA\051218\0512F025.D\	05/12/18 17:23
PDI-SG-B302-BL1	K1803850-024	J:\MS29\DATA\051218\0512F026.D\	05/12/18 17:52
PDI-SG-B303-BL1	K1803850-025	J:\MS29\DATA\051218\0512F032.D\	05/12/18 20:42

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: AECOM**Project:** Portland Harbor Pre-Remedial Design Investigation/60566335**Sample Matrix:** Water**Service Request:** K1803850**Date Analyzed:** 05/04/18 18:30**Date Extracted:** 04/30/18**Method Blank Summary****Low Level Semivolatile Organic Compounds by GC/MS****Sample Name:** Method Blank**Instrument ID:** K-MS-29**Lab Code:** KQ1805496-03**File ID:** J:\MS29\DATA\050418\0504F003.D**Analysis Method:** 8270D**Analysis Lot:** 589963**Prep Method:** EPA 3520C**Extraction Lot:** 312824

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ1805496-01	J:\MS29\DATA\050418\0504F004.D\	05/04/18 18:59
PDI-SG-RB-VV-042318-1730	K1803850-026	J:\MS29\DATA\050418\0504F019.D\	05/05/18 02:07
PDI-SG-RB-VV-180423-1700	K1803850-027	J:\MS29\DATA\050418\0504F020.D\	05/05/18 02:35

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM

Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Sample Matrix: Sediment

Service Request: K1803850

Date Analyzed: 05/16/18 14:56

Date Extracted: 04/27/18

Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Sample Name: Lab Control Sample

Instrument ID:K-MS-29

Lab Code: KQ1805444-03

File ID:J:\MS29\DATA\051618\0516F004.D\

Analysis Method: 8270D

Analysis Lot:591236,592046

Prep Method: EPA 3541

Extraction Lot:312766

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1805444-04	J:\MS29\DATA\051618\0516F003.D\	05/16/18 14:27
PDI-SG-B323-BL1MS	KQ1805444-01	J:\MS29\DATA\051618\0516F005.D\	05/16/18 15:24
PDI-SG-B323-BL1DMS	KQ1805444-02	J:\MS29\DATA\051618\0516F006.D\	05/16/18 15:53
PDI-SG-B323-BL1	K1803850-004	J:\MS29\DATA\051618\0516F007.D\	05/16/18 16:22
PDI-SG-B291-BL1	K1803850-001	J:\MS29\DATA\051618\0516F008.D\	05/16/18 16:50
PDI-SG-B292-BL1	K1803850-002	J:\MS29\DATA\051618\0516F009.D\	05/16/18 17:19
PDI-SG-B306-BL1	K1803850-003	J:\MS29\DATA\051618\0516F010.D\	05/16/18 17:47
PDI-SG-B329-BL1	K1803850-005	J:\MS29\DATA\051618\0516F011.D\	05/16/18 18:16
PDI-SG-B334-BL1	K1803850-006	J:\MS29\DATA\051618\0516F012.D\	05/16/18 18:44
PDI-SG-B346-BL1	K1803850-007	J:\MS29\DATA\051618\0516F013.D\	05/16/18 19:13
PDI-SG-B265-BL1	K1803850-008	J:\MS29\DATA\051618\0516F014.D\	05/16/18 19:41
PDI-SG-B271-BL1	K1803850-009	J:\MS29\DATA\051618\0516F015.D\	05/16/18 20:10
PDI-SG-B273-BL1	K1803850-010	J:\MS29\DATA\051618\0516F016.D\	05/16/18 20:39
PDI-SG-B279-BL1	K1803850-011	J:\MS29\DATA\051618\0516F017.D\	05/16/18 21:07
PDI-SG-B280-BL1	K1803850-012	J:\MS29\DATA\051618\0516F018.D\	05/16/18 21:36
PDI-SG-B260-BL1	K1803850-013	J:\MS29\DATA\051618\0516F019.D\	05/16/18 22:04
PDI-SG-B352-BL1	K1803850-014	J:\MS29\DATA\051618\0516F020.D\	05/16/18 22:33
PDI-SG-B366-BL1	K1803850-015	J:\MS29\DATA\051618\0516F021.D\	05/16/18 23:01
PDI-SG-B366-BL1-D	K1803850-016	J:\MS29\DATA\051618\0516F022.D\	05/16/18 23:30
PDI-SG-B357-BL1	K1803850-017	J:\MS29\DATA\051618\0516F023.D\	05/16/18 23:58
PDI-SG-B384-BL1	K1803850-018	J:\MS29\DATA\051618\0516F024.D\	05/17/18 00:27
PDI-SG-B378-BL1	K1803850-019	J:\MS29\DATA\051618\0516F025.D\	05/17/18 00:55
PDI-SG-B284-BL1	K1803850-020	J:\MS29\DATA\051618\0516F026.D\	05/17/18 01:24
PDI-SG-B279-BL1	K1803850-011	J:\MS29\DATA\052218\0522F011.D\	05/22/18 22:16

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: AECOM**Project:** Portland Harbor Pre-Remedial Design Investigation/60566335**Sample Matrix:** Sediment**Service Request:** K1803850**Date Analyzed:** 05/12/18 07:23**Date Extracted:** 04/27/18**Lab Control Sample Summary**
Low Level Semivolatile Organic Compounds by GC/MS**Sample Name:** Lab Control Sample**Instrument ID:**K-MS-29**Lab Code:** KQ1805445-03**File ID:**J:\MS29\DATA\051218\0512F004.D**Analysis Method:** 8270D**Analysis Lot:**590794,590797**Prep Method:** EPA 3541**Extraction Lot:**312767

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1805445-04	J:\MS29\DATA\051218\0512F003.D\	05/12/18 06:54
PDI-SG-B237-BL1	K1803850-028	J:\MS29\DATA\051218\0512F017.D\	05/12/18 13:35
PDI-SG-B240-BL1	K1803850-029	J:\MS29\DATA\051218\0512F018.D\	05/12/18 14:03
PDI-SG-B233-BL1	K1803850-030	J:\MS29\DATA\051218\0512F019.D\	05/12/18 14:32
PDI-SG-B243-BL1	K1803850-031	J:\MS29\DATA\051218\0512F020.D\	05/12/18 15:01
PDI-SG-B288-BL1MS	KQ1805445-01	J:\MS29\DATA\051218\0512F021.D\	05/12/18 15:29
PDI-SG-B288-BL1DMS	KQ1805445-02	J:\MS29\DATA\051218\0512F022.D\	05/12/18 15:58
PDI-SG-B288-BL1	K1803850-021	J:\MS29\DATA\051218\0512F023.D\	05/12/18 16:26
PDI-SG-B294-BL1	K1803850-022	J:\MS29\DATA\051218\0512F024.D\	05/12/18 16:54
PDI-SG-B296-BL1	K1803850-023	J:\MS29\DATA\051218\0512F025.D\	05/12/18 17:23
PDI-SG-B302-BL1	K1803850-024	J:\MS29\DATA\051218\0512F026.D\	05/12/18 17:52
PDI-SG-B303-BL1	K1803850-025	J:\MS29\DATA\051218\0512F032.D\	05/12/18 20:42

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: AECOM**Project:** Portland Harbor Pre-Remedial Design Investigation/60566335**Sample Matrix:** Water**Service Request:** K1803850**Date Analyzed:** 05/04/18 18:59**Date Extracted:** 04/30/18**Lab Control Sample Summary****Low Level Semivolatile Organic Compounds by GC/MS****Sample Name:** Lab Control Sample**Instrument ID:**K-MS-29**Lab Code:** KQ1805496-01**File ID:**J:\MS29\DATA\050418\0504F004.D**Analysis Method:** 8270D**Analysis Lot:**589963**Prep Method:** EPA 3520C**Extraction Lot:**312824

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1805496-03	J:\MS29\DATA\050418\0504F003.D\	05/04/18 18:30
PDI-SG-RB-VV-042318-1730	K1803850-026	J:\MS29\DATA\050418\0504F019.D\	05/05/18 02:07
PDI-SG-RB-VV-180423-1700	K1803850-027	J:\MS29\DATA\050418\0504F020.D\	05/05/18 02:35

ALS Group USA, Corp.
dba ALS Environmental

QC/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 05/04/18 17:33

Tune Summary
Low Level Semivolatile Organic Compounds by GC/MS

File ID: J:\MS29\DATA\050418\0504F001.D\
Instrument ID: K-MS-29

Analytical Method: 8270D
Analysis Lot: 589963

Target Mass	Relative to Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	26.65	576149	Pass
68	69	0	2	1.70	11955	Pass
69	198	0	100	32.52	702901	Pass
70	69	0	2	0.46	3200	Pass
127	198	10	80	43.52	940693	Pass
197	198	0	2	0.00	0	Pass
198	442	30	100	70.13	2161664	Pass
199	198	5	9	6.65	143834	Pass
275	198	10	60	30.18	652330	Pass
365	442	1	50	2.38	73216	Pass
441	443	0.01	100	78.03	471232	Pass
442	442	30	100	100.00	3082581	Pass
443	442	15	24	19.59	603925	Pass

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1805899-02	J:\MS29\DATA\050418\0504F002.D\	05/04/18 18:02	
Method Blank	KQ1805496-03	J:\MS29\DATA\050418\0504F003.D\	05/04/18 18:30	
Lab Control Sample	KQ1805496-01	J:\MS29\DATA\050418\0504F004.D\	05/04/18 18:59	
PDI-SG-RB-VV-042318-1730	K1803850-026	J:\MS29\DATA\050418\0504F019.D\	05/05/18 02:07	
PDI-SG-RB-VV-180423-1700	K1803850-027	J:\MS29\DATA\050418\0504F020.D\	05/05/18 02:35	

ALS Group USA, Corp.
dba ALS Environmental

QC/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 05/12/18 05:57

Tune Summary
Low Level Semivolatile Organic Compounds by GC/MS

File ID: J:\MS29\DATA\051218\0512F001.D\
Instrument ID: K-MS-29

Analytical Method: 8270D
Analysis Lot: 590794

Target Mass	Relative to Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	24.92	453674	Pass
68	69	0	2	1.76	9843	Pass
69	198	0	100	30.67	558275	Pass
70	69	0	2	0.47	2649	Pass
127	198	10	80	42.16	767466	Pass
197	198	0	2	0.00	0	Pass
198	442	30	100	62.04	1820501	Pass
199	198	5	9	6.64	120960	Pass
275	198	10	60	31.33	570368	Pass
365	442	1	50	2.24	65618	Pass
441	443	0.01	100	78.67	445952	Pass
442	442	30	100	100.00	2934272	Pass
443	442	15	24	19.32	566848	Pass

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1806239-02	J:\MS29\DATA\051218\0512F002.D\	05/12/18 06:26	
Method Blank	KQ1805445-04	J:\MS29\DATA\051218\0512F003.D\	05/12/18 06:54	
Lab Control Sample	KQ1805445-03	J:\MS29\DATA\051218\0512F004.D\	05/12/18 07:23	
PDI-SG-B237-BL1	K1803850-028	J:\MS29\DATA\051218\0512F017.D\	05/12/18 13:35	
PDI-SG-B240-BL1	K1803850-029	J:\MS29\DATA\051218\0512F018.D\	05/12/18 14:03	
PDI-SG-B233-BL1	K1803850-030	J:\MS29\DATA\051218\0512F019.D\	05/12/18 14:32	
PDI-SG-B243-BL1	K1803850-031	J:\MS29\DATA\051218\0512F020.D\	05/12/18 15:01	
PDI-SG-B288-BL1	KQ1805445-01	J:\MS29\DATA\051218\0512F021.D\	05/12/18 15:29	
PDI-SG-B288-BL1	KQ1805445-02	J:\MS29\DATA\051218\0512F022.D\	05/12/18 15:58	
PDI-SG-B288-BL1	K1803850-021	J:\MS29\DATA\051218\0512F023.D\	05/12/18 16:26	
PDI-SG-B294-BL1	K1803850-022	J:\MS29\DATA\051218\0512F024.D\	05/12/18 16:54	
PDI-SG-B296-BL1	K1803850-023	J:\MS29\DATA\051218\0512F025.D\	05/12/18 17:23	
PDI-SG-B302-BL1	K1803850-024	J:\MS29\DATA\051218\0512F026.D\	05/12/18 17:52	

ALS Group USA, Corp.
dba ALS Environmental

QC/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 05/12/18 18:49

Tune Summary
Low Level Semivolatile Organic Compounds by GC/MS

File ID: J:\MS29\DATA\051218\0512F028.D\
Instrument ID: K-MS-29

Analytical Method: 8270D
Analysis Lot: 590797

Target Mass	Relative to Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	26.36	496576	Pass
68	69	0	2	1.83	11144	Pass
69	198	0	100	32.32	608772	Pass
70	69	0	2	0.47	2885	Pass
127	198	10	80	43.51	819477	Pass
197	198	0	2	0.00	0	Pass
198	442	30	100	69.49	1883477	Pass
199	198	5	9	6.72	126488	Pass
275	198	10	60	30.15	567829	Pass
365	442	1	50	2.32	62866	Pass
441	443	0.01	100	77.00	412010	Pass
442	442	30	100	100.00	2710357	Pass
443	442	15	24	19.74	535082	Pass

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1806240-02	J:\MS29\DATA\051218\0512F029.D\	05/12/18 19:17	
PDI-SG-B303-BL1	K1803850-025	J:\MS29\DATA\051218\0512F032.D\	05/12/18 20:42	

ALS Group USA, Corp.
dba ALS Environmental

QC/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 05/16/18 13:30

Tune Summary
Low Level Semivolatile Organic Compounds by GC/MS

File ID: J:\MS29\DATA\051618\0516F001.D\
Instrument ID: K-MS-29

Analytical Method: 8270D
Analysis Lot: 591236

Target Mass	Relative to Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	25.43	569258	Pass
68	69	0	2	1.92	13312	Pass
69	198	0	100	30.91	691812	Pass
70	69	0	2	0.47	3278	Pass
127	198	10	80	42.14	943338	Pass
197	198	0	2	0.00	0	Pass
198	442	30	100	62.72	2238464	Pass
199	198	5	9	6.64	148709	Pass
275	198	10	60	31.00	693930	Pass
365	442	1	50	2.19	78040	Pass
441	443	0.01	100	78.29	535402	Pass
442	442	30	100	100.00	3568981	Pass
443	442	15	24	19.16	683904	Pass

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1806477-02	J:\MS29\DATA\051618\0516F002.D\	05/16/18 13:58	
Method Blank	KQ1805444-04	J:\MS29\DATA\051618\0516F003.D\	05/16/18 14:27	
Lab Control Sample	KQ1805444-03	J:\MS29\DATA\051618\0516F004.D\	05/16/18 14:56	
PDI-SG-B323-BL1	KQ1805444-01	J:\MS29\DATA\051618\0516F005.D\	05/16/18 15:24	
PDI-SG-B323-BL1	KQ1805444-02	J:\MS29\DATA\051618\0516F006.D\	05/16/18 15:53	
PDI-SG-B323-BL1	K1803850-004	J:\MS29\DATA\051618\0516F007.D\	05/16/18 16:22	
PDI-SG-B291-BL1	K1803850-001	J:\MS29\DATA\051618\0516F008.D\	05/16/18 16:50	
PDI-SG-B292-BL1	K1803850-002	J:\MS29\DATA\051618\0516F009.D\	05/16/18 17:19	
PDI-SG-B306-BL1	K1803850-003	J:\MS29\DATA\051618\0516F010.D\	05/16/18 17:47	
PDI-SG-B329-BL1	K1803850-005	J:\MS29\DATA\051618\0516F011.D\	05/16/18 18:16	
PDI-SG-B334-BL1	K1803850-006	J:\MS29\DATA\051618\0516F012.D\	05/16/18 18:44	
PDI-SG-B346-BL1	K1803850-007	J:\MS29\DATA\051618\0516F013.D\	05/16/18 19:13	
PDI-SG-B265-BL1	K1803850-008	J:\MS29\DATA\051618\0516F014.D\	05/16/18 19:41	
PDI-SG-B271-BL1	K1803850-009	J:\MS29\DATA\051618\0516F015.D\	05/16/18 20:10	
PDI-SG-B273-BL1	K1803850-010	J:\MS29\DATA\051618\0516F016.D\	05/16/18 20:39	
PDI-SG-B279-BL1	K1803850-011	J:\MS29\DATA\051618\0516F017.D\	05/16/18 21:07	
PDI-SG-B280-BL1	K1803850-012	J:\MS29\DATA\051618\0516F018.D\	05/16/18 21:36	
PDI-SG-B260-BL1	K1803850-013	J:\MS29\DATA\051618\0516F019.D\	05/16/18 22:04	
PDI-SG-B352-BL1	K1803850-014	J:\MS29\DATA\051618\0516F020.D\	05/16/18 22:33	

ALS Group USA, Corp.
dba ALS Environmental

QC/QC Report

PDI-SG-B366-BL1	K1803850-015	J:\MS29\DATA\051618\0516F021.D\	05/16/18 23:01
PDI-SG-B366-BL1-D	K1803850-016	J:\MS29\DATA\051618\0516F022.D\	05/16/18 23:30
PDI-SG-B357-BL1	K1803850-017	J:\MS29\DATA\051618\0516F023.D\	05/16/18 23:58
PDI-SG-B384-BL1	K1803850-018	J:\MS29\DATA\051618\0516F024.D\	05/17/18 00:27
PDI-SG-B378-BL1	K1803850-019	J:\MS29\DATA\051618\0516F025.D\	05/17/18 00:55
PDI-SG-B284-BL1	K1803850-020	J:\MS29\DATA\051618\0516F026.D\	05/17/18 01:24

ALS Group USA, Corp.
dba ALS Environmental

QC/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 05/22/18 17:31

Tune Summary
Low Level Semivolatile Organic Compounds by GC/MS

File ID: J:\MS29\DATA\052218\0522F001.D\
Instrument ID: K-MS-29

Analytical Method: 8270D
Analysis Lot: 592046

Target Mass	Relative to Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	24.83	554786	Pass
68	69	0	2	1.94	13211	Pass
69	198	0	100	30.45	680450	Pass
70	69	0	2	0.47	3212	Pass
127	198	10	80	41.67	931178	Pass
197	198	0	2	0.00	0	Pass
198	442	30	100	57.49	2234458	Pass
199	198	5	9	6.58	147130	Pass
275	198	10	60	32.00	715008	Pass
365	442	1	50	2.07	80594	Pass
441	443	0.01	100	79.28	589333	Pass
442	442	30	100	100.00	3886783	Pass
443	442	15	24	19.12	743317	Pass

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1806821-02	J:\MS29\DATA\052218\0522F002.D\	05/22/18 17:59	
PDI-SG-B279-BL1	K1803850-011	J:\MS29\DATA\052218\0522F011.D\	05/22/18 22:16	

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation

Service Request: K1803850
Calibration Date: 2/27/2018

Initial Calibration Summary
Low Level Semivolatile Organic Compounds by GC/MS

Calibration ID: KC1800181
Instrument ID: K-MS-29

Signal ID: 1

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1800181-01	SVO_LL ICAL @ 0.05ug/mL SVM57-73A	J:\MS29\DATA\022718A\0227A003.D	02/27/2018 09:27
02	KC1800181-02	SVO_LL ICAL @ 0.10ug/mL SVM57-73B	J:\MS29\DATA\022718A\0227A004.D	02/27/2018 09:55
03	KC1800181-03	SVO_LL ICAL @ 0.20ug/mL SVM57-73C	J:\MS29\DATA\022718A\0227A005.D	02/27/2018 10:24
04	KC1800181-04	SVO_LL ICAL @ 0.50ug/mL SVM57-73D	J:\MS29\DATA\022718A\0227A006.D	02/27/2018 10:52
05	KC1800181-05	SVO_LL ICAL @ 1.0ug/mL SVM57-73E	J:\MS29\DATA\022718A\0227A007.D	02/27/2018 11:21
06	KC1800181-06	SVO_LL ICAL @ 2.0ug/mL SVM57-73F	J:\MS29\DATA\022718A\0227A008.D	02/27/2018 11:50
07	KC1800181-07	SVO_LL ICAL @ 3.0ug/mL SVM57-73G	J:\MS29\DATA\022718A\0227A009.D	02/27/2018 12:18
08	KC1800181-08	SVO_LL ICAL @ 5.0ug/mL SVM57-73H	J:\MS29\DATA\022718A\0227A010.D	02/27/2018 12:47
09	KC1800181-09	SVO_LL ICAL @ 7.0ug/mL SVM57-73I	J:\MS29\DATA\022718A\0227A011.D	02/27/2018 13:15
10	KC1800181-10	SVO_LL ICAL @ 10ug/mL SVM57-73J	J:\MS29\DATA\022718A\0227A012.D	02/27/2018 13:44

Analyte

Bis(2-ethylhexyl) Phthalate

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
02	100.000	0.6474	03	200.000	0.5702	04	500.000	0.6761	05	1000.000	0.7395
06	2000.000	0.8035	07	3000.000	0.8376	08	5000.000	0.8421	09	7000.000	0.8761
10	10000.000	0.8523									

p-Terphenyl-d14

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	0.9129	02	100.000	0.8792	03	200.000	0.9298	04	500.000	0.9017
05	1000.000	0.8251	06	2000.000	0.866	07	3000.000	0.854	08	5000.000	0.8188
09	7000.000	0.8877	10	10000.000	0.8579						

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation

Service Request: K1803850
Calibration Date: 2/27/2018

Initial Calibration Summary
Low Level Semivolatile Organic Compounds by GC/MS

Calibration ID: KC1800181

Signal ID: 1

Instrument ID: K-MS-29

Analyte Name	Compound Type	Calibration Evaluation				Calibration Evaluation	
		Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
Bis(2-ethylhexyl) Phthalate	TRG	Average RF	% RSD	14.2	≤20	0.7605	0.010
p-Terphenyl-d14	SURR	Average RF	% RSD	4.1	≤20	0.8733	0.010

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation

Service Request: K1803850
Calibration Date: 2/27/2018

Initial Calibration Summary

Low Level Semivolatile Organic Compounds by GC/MS

Calibration ID: KC1800085
Instrument ID: K-MS-29

Signal ID: 1

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1800085-01	SVO_LL ICAL @ 0.05ug/mL SVM57-73A	J:\MS29\DATA\022718\0227F003.D	02/27/2018 09:27
02	KC1800085-02	SVO_LL ICAL @ 0.10ug/mL SVM57-73B	J:\MS29\DATA\022718\0227F004.D	02/27/2018 09:55
03	KC1800085-03	SVO_LL ICAL @ 0.20ug/mL SVM57-73C	J:\MS29\DATA\022718\0227F005.D	02/27/2018 10:24
04	KC1800085-04	SVO_LL ICAL @ 0.50ug/mL SVM57-73D	J:\MS29\DATA\022718\0227F006.D	02/27/2018 10:52
05	KC1800085-05	SVO_LL ICAL @ 1.0ug/mL SVM57-73E	J:\MS29\DATA\022718\0227F007.D	02/27/2018 11:21
06	KC1800085-06	SVO_LL ICAL @ 2.0ug/mL SVM57-73F	J:\MS29\DATA\022718\0227F008.D	02/27/2018 11:50
07	KC1800085-07	SVO_LL ICAL @ 3.0ug/mL SVM57-73G	J:\MS29\DATA\022718\0227F009.D	02/27/2018 12:18
08	KC1800085-08	SVO_LL ICAL @ 5.0ug/mL SVM57-73H	J:\MS29\DATA\022718\0227F010.D	02/27/2018 12:47
09	KC1800085-09	SVO_LL ICAL @ 7.0ug/mL SVM57-73I	J:\MS29\DATA\022718\0227F011.D	02/27/2018 13:15
10	KC1800085-10	SVO_LL ICAL @ 10ug/mL SVM57-73J	J:\MS29\DATA\022718\0227F012.D	02/27/2018 13:44

Analyte

Bis(2-ethylhexyl) Phthalate

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
02	100.000	0.6474	03	200.000	0.5702	04	500.000	0.6761	05	1000.000	0.7395
06	2000.000	0.8035	07	3000.000	0.8376	08	5000.000	0.8421	09	7000.000	0.8761
10	10000.000	0.8523									

p-Terphenyl-d14

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	0.9129	02	100.000	0.8792	03	200.000	0.9298	04	500.000	0.9017
05	1000.000	0.8251	06	2000.000	0.866	07	3000.000	0.854	08	5000.000	0.8188
09	7000.000	0.8877	10	10000.000	0.8579						

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation

Service Request: K1803850
Calibration Date: 2/27/2018

Initial Calibration Summary
Low Level Semivolatile Organic Compounds by GC/MS

Calibration ID: KC1800085
Instrument ID: K-MS-29

Signal ID: 1

Analyte Name	Compound Type	Calibration Evaluation				Calibration Evaluation	
		Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
Bis(2-ethylhexyl) Phthalate	TRG	Average RF	% RSD	14.2	≤20	0.7605	0.010
p-Terphenyl-d14	SURR	Average RF	% RSD	4.1	≤20	0.8733	0.010

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation

Service Request: K1803850
Calibration Date: 2/27/2018

Initial Calibration Verification Summary
Low Level Semivolatile Organic Compounds by GC/MS

Calibration ID: KC1800181
Instrument ID: K-MS-29

Signal ID: 1

#	Lab Code	Sample Name	File Location	Acquisition Date
11	KC1800181-11	SVO_LL ICV @ 3.0ug/mL SVM57-77C	J:\MS29\DATA\022718A\0227A013.D	02/27/2018 14:12

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
Bis(2-ethylhexyl) Phthalate	3000	3350	7.605E-1	8.486E-1	11.58	±30	Average RF
p-Terphenyl-d14	3000	3770	8.733E-1	1.096E0	25.51	±30	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation

Service Request: K1803850
Calibration Date: 2/27/2018

Initial Calibration Verification Summary
Low Level Semivolatile Organic Compounds by GC/MS

Calibration ID: KC1800085
Instrument ID: K-MS-29

Signal ID: 1

#	Lab Code	Sample Name	File Location	Acquisition Date
11	KC1800085-11	SVO_LL ICV @ 3.0ug/mL SVM57-77C	J:\MS29\DATA\022718\0227F013.D	02/27/2018 14:12

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
Bis(2-ethylhexyl) Phthalate	3000	3350	7.605E-1	8.486E-1	11.58	±30	Average RF
p-Terphenyl-d14	3000	3770	8.733E-1	1.096E0	25.51	±30	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM

Service Request: K1803850

Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Date Analyzed: 05/04/18 18:02

Continuing Calibration Verification (CCV) Summary
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D

Calibration Date: 2/27/2018

File ID: J:\MS29\DATA\050418\0504F002.D\

Calibration ID: KC1800085

Signal ID: 1

Analysis Lot: 589963

Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Bis(2-ethylhexyl) Phthalate	3000	2940	0.7605	0.7463	-1.9	NA	±20	Average RF
p-Terphenyl-d14	3000	3060	0.8733	0.8904	2.0	NA	±20	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 05/12/18 06:26

Continuing Calibration Verification (CCV) Summary
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
File ID: J:\MS29\DATA\051218\0512F002.D\
Signal ID: 1

Calibration Date: 2/27/2018
Calibration ID: KC1800181
Analysis Lot: 590794
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Bis(2-ethylhexyl) Phthalate	3000	2800	0.7605	0.7111	-6.5	NA	±20	Average RF
p-Terphenyl-d14	3000	2830	0.8733	0.8235	-5.7	NA	±20	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 05/12/18 19:17

Continuing Calibration Verification (CCV) Summary
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
File ID: J:\MS29\DATA\051218\0512F029.D\
Signal ID: 1

Calibration Date: 2/27/2018
Calibration ID: KC1800181
Analysis Lot: 590797
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Bis(2-ethylhexyl) Phthalate	3000	3270	0.7605	0.8292	9.0	NA	±20	Average RF
p-Terphenyl-d14	3000	3030	0.8733	0.8819	1.0	NA	±20	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 05/16/18 13:58

Continuing Calibration Verification (CCV) Summary
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
File ID: J:\MS29\DATA\051618\0516F002.D\
Signal ID: 1

Calibration Date: 2/27/2018
Calibration ID: KC1800181
Analysis Lot: 591236
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Bis(2-ethylhexyl) Phthalate	3000	3210	0.7605	0.813	6.9	NA	±20	Average RF
p-Terphenyl-d14	3000	3160	0.8733	0.9204	5.4	NA	±20	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803850
Date Analyzed: 05/22/18 17:59

Continuing Calibration Verification (CCV) Summary
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
File ID: J:\MS29\DATA\052218\0522F002.D\
Signal ID: 1

Calibration Date: 2/27/2018
Calibration ID: KC1800181
Analysis Lot: 592046
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Bis(2-ethylhexyl) Phthalate	3000	3480	0.7605	0.8817	15.9	NA	±20	Average RF
p-Terphenyl-d14	3000	3470	0.8733	1.0107	15.7	NA	±20	Average RF

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: AECOM

Service Request:K1803850

Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Analysis Run Log

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method:

Analysis Lot:589963

Instrument ID:K-MS-29

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS29\DATA\050418\0504F001.D\	ZZZZZZZZ	ZZZZZZZZ	5/4/2018	17:33:00	
J:\MS29\DATA\050418\0504F002.D\	Continuing Calibration Verification	KQ1805899-02	5/4/2018	18:02:00	
J:\MS29\DATA\050418\0504F003.D\	Method Blank	KQ1805496-03	5/4/2018	18:30:00	
J:\MS29\DATA\050418\0504F004.D\	Lab Control Sample	KQ1805496-01	5/4/2018	18:59:00	
J:\MS29\DATA\050418\0504F005.D\	ZZZZZZZZ	ZZZZZZZZ	5/4/2018	19:27:00	
J:\MS29\DATA\050418\0504F006.D\	ZZZZZZZZ	ZZZZZZZZ	5/4/2018	19:56:00	
J:\MS29\DATA\050418\0504F007.D\	ZZZZZZZZ	ZZZZZZZZ	5/4/2018	20:24:00	
J:\MS29\DATA\050418\0504F008.D\	ZZZZZZZZ	ZZZZZZZZ	5/4/2018	20:53:00	
J:\MS29\DATA\050418\0504F009.D\	ZZZZZZZZ	ZZZZZZZZ	5/4/2018	21:21:00	
J:\MS29\DATA\050418\0504F010.D\	ZZZZZZZZ	ZZZZZZZZ	5/4/2018	21:50:00	
J:\MS29\DATA\050418\0504F011.D\	ZZZZZZZZ	ZZZZZZZZ	5/4/2018	22:18:00	
J:\MS29\DATA\050418\0504F012.D\	ZZZZZZZZ	ZZZZZZZZ	5/4/2018	22:47:00	
J:\MS29\DATA\050418\0504F013.D\	ZZZZZZZZ	ZZZZZZZZ	5/4/2018	23:15:00	
J:\MS29\DATA\050418\0504F014.D\	ZZZZZZZZ	ZZZZZZZZ	5/4/2018	23:44:00	
J:\MS29\DATA\050418\0504F015.D\	ZZZZZZZZ	ZZZZZZZZ	5/5/2018	00:12:00	
J:\MS29\DATA\050418\0504F016.D\	ZZZZZZZZ	ZZZZZZZZ	5/5/2018	00:41:00	
J:\MS29\DATA\050418\0504F017.D\	ZZZZZZZZ	ZZZZZZZZ	5/5/2018	01:09:00	
J:\MS29\DATA\050418\0504F018.D\	ZZZZZZZZ	ZZZZZZZZ	5/5/2018	01:38:00	
J:\MS29\DATA\050418\0504F019.D\	PDI-SG-RB-VV-042318-1730	K1803850-026	5/5/2018	02:07:00	
J:\MS29\DATA\050418\0504F020.D\	PDI-SG-RB-VV-180423-1700	K1803850-027	5/5/2018	02:35:00	
J:\MS29\DATA\050418\0504F021.D\	ZZZZZZZZ	ZZZZZZZZ	5/5/2018	03:04:00	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: AECOM

Service Request: K1803850

Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Analysis Run Log
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method:

Analysis Lot: 590794

Instrument ID: K-MS-29

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS29\DATA\051218\0512F001.D\	ZZZZZZZ	ZZZZZZZ	5/12/2018	05:57:00	
J:\MS29\DATA\051218\0512F002.D\	Continuing Calibration Verification	KQ1806239-02	5/12/2018	06:26:00	
J:\MS29\DATA\051218\0512F003.D\	Method Blank	KQ1805445-04	5/12/2018	06:54:00	
J:\MS29\DATA\051218\0512F004.D\	Lab Control Sample	KQ1805445-03	5/12/2018	07:23:00	
J:\MS29\DATA\051218\0512F005.D\	ZZZZZZZ	ZZZZZZZ	5/12/2018	07:52:00	
J:\MS29\DATA\051218\0512F006.D\	ZZZZZZZ	ZZZZZZZ	5/12/2018	08:20:00	
J:\MS29\DATA\051218\0512F007.D\	ZZZZZZZ	ZZZZZZZ	5/12/2018	08:49:00	
J:\MS29\DATA\051218\0512F008.D\	ZZZZZZZ	ZZZZZZZ	5/12/2018	09:18:00	
J:\MS29\DATA\051218\0512F009.D\	ZZZZZZZ	ZZZZZZZ	5/12/2018	09:46:00	
J:\MS29\DATA\051218\0512F010.D\	ZZZZZZZ	ZZZZZZZ	5/12/2018	10:15:00	
J:\MS29\DATA\051218\0512F011.D\	ZZZZZZZ	ZZZZZZZ	5/12/2018	10:44:00	
J:\MS29\DATA\051218\0512F012.D\	ZZZZZZZ	ZZZZZZZ	5/12/2018	11:12:00	
J:\MS29\DATA\051218\0512F013.D\	ZZZZZZZ	ZZZZZZZ	5/12/2018	11:41:00	
J:\MS29\DATA\051218\0512F014.D\	ZZZZZZZ	ZZZZZZZ	5/12/2018	12:09:00	
J:\MS29\DATA\051218\0512F015.D\	ZZZZZZZ	ZZZZZZZ	5/12/2018	12:38:00	
J:\MS29\DATA\051218\0512F016.D\	ZZZZZZZ	ZZZZZZZ	5/12/2018	13:06:00	
J:\MS29\DATA\051218\0512F017.D\	PDI-SG-B237-BL1	K1803850-028	5/12/2018	13:35:00	
J:\MS29\DATA\051218\0512F018.D\	PDI-SG-B240-BL1	K1803850-029	5/12/2018	14:03:00	
J:\MS29\DATA\051218\0512F019.D\	PDI-SG-B233-BL1	K1803850-030	5/12/2018	14:32:00	
J:\MS29\DATA\051218\0512F020.D\	PDI-SG-B243-BL1	K1803850-031	5/12/2018	15:01:00	
J:\MS29\DATA\051218\0512F021.D\	PDI-SG-B288-BL1 MS	KQ1805445-01	5/12/2018	15:29:00	
J:\MS29\DATA\051218\0512F022.D\	PDI-SG-B288-BL1 DMS	KQ1805445-02	5/12/2018	15:58:00	
J:\MS29\DATA\051218\0512F023.D\	PDI-SG-B288-BL1	K1803850-021	5/12/2018	16:26:00	
J:\MS29\DATA\051218\0512F024.D\	PDI-SG-B294-BL1	K1803850-022	5/12/2018	16:54:00	
J:\MS29\DATA\051218\0512F025.D\	PDI-SG-B296-BL1	K1803850-023	5/12/2018	17:23:00	
J:\MS29\DATA\051218\0512F026.D\	PDI-SG-B302-BL1	K1803850-024	5/12/2018	17:52:00	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: AECOM

Service Request: K1803850

Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Analysis Run Log
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method:

Analysis Lot: 590797

Instrument ID: K-MS-29

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS29\DATA\051218\0512F028.D\	ZZZZZZZZ	ZZZZZZZZ	5/12/2018	18:49:00	
J:\MS29\DATA\051218\0512F029.D\	Continuing Calibration Verification	KQ1806240-02	5/12/2018	19:17:00	
J:\MS29\DATA\051218\0512F030.D\	ZZZZZZZZ	ZZZZZZZZ	5/12/2018	19:45:00	
J:\MS29\DATA\051218\0512F031.D\	ZZZZZZZZ	ZZZZZZZZ	5/12/2018	20:14:00	
J:\MS29\DATA\051218\0512F032.D\	PDI-SG-B303-BL1	K1803850-025	5/12/2018	20:42:00	
J:\MS29\DATA\051218\0512F033.D\	ZZZZZZZZ	ZZZZZZZZ	5/12/2018	21:11:00	
J:\MS29\DATA\051218\0512F034.D\	ZZZZZZZZ	ZZZZZZZZ	5/12/2018	21:39:00	
J:\MS29\DATA\051218\0512F035.D\	ZZZZZZZZ	ZZZZZZZZ	5/12/2018	22:08:00	
J:\MS29\DATA\051218\0512F036.D\	ZZZZZZZZ	ZZZZZZZZ	5/12/2018	22:36:00	
J:\MS29\DATA\051218\0512F037.D\	ZZZZZZZZ	ZZZZZZZZ	5/12/2018	23:05:00	
J:\MS29\DATA\051218\0512F038.D\	ZZZZZZZZ	ZZZZZZZZ	5/12/2018	23:33:00	
J:\MS29\DATA\051218\0512F039.D\	ZZZZZZZZ	ZZZZZZZZ	5/13/2018	00:02:00	
J:\MS29\DATA\051218\0512F040.D\	ZZZZZZZZ	ZZZZZZZZ	5/13/2018	00:31:00	
J:\MS29\DATA\051218\0512F041.D\	ZZZZZZZZ	ZZZZZZZZ	5/13/2018	00:59:00	
J:\MS29\DATA\051218\0512F042.D\	ZZZZZZZZ	ZZZZZZZZ	5/13/2018	01:28:00	
J:\MS29\DATA\051218\0512F043.D\	ZZZZZZZZ	ZZZZZZZZ	5/13/2018	01:56:00	
J:\MS29\DATA\051218\0512F044.D\	ZZZZZZZZ	ZZZZZZZZ	5/13/2018	02:25:00	
J:\MS29\DATA\051218\0512F045.D\	ZZZZZZZZ	ZZZZZZZZ	5/13/2018	02:53:00	
J:\MS29\DATA\051218\0512F046.D\	ZZZZZZZZ	ZZZZZZZZ	5/13/2018	03:22:00	
J:\MS29\DATA\051218\0512F047.D\	ZZZZZZZZ	ZZZZZZZZ	5/13/2018	03:50:00	
J:\MS29\DATA\051218\0512F048.D\	ZZZZZZZZ	ZZZZZZZZ	5/13/2018	04:19:00	
J:\MS29\DATA\051218\0512F049.D\	ZZZZZZZZ	ZZZZZZZZ	5/13/2018	04:47:00	
J:\MS29\DATA\051218\0512F050.D\	ZZZZZZZZ	ZZZZZZZZ	5/13/2018	05:16:00	
J:\MS29\DATA\051218\0512F051.D\	ZZZZZZZZ	ZZZZZZZZ	5/13/2018	05:45:00	
J:\MS29\DATA\051218\0512F052.D\	ZZZZZZZZ	ZZZZZZZZ	5/13/2018	06:13:00	
J:\MS29\DATA\051218\0512F053.D\	ZZZZZZZZ	ZZZZZZZZ	5/13/2018	06:42:00	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: AECOM

Service Request: K1803850

Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Analysis Run Log
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method:

Analysis Lot: 591236

Instrument ID: K-MS-29

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS29\DATA\051618\0516F001.D\	ZZZZZZZ	ZZZZZZZ	5/16/2018	13:30:00	
J:\MS29\DATA\051618\0516F002.D\	Continuing Calibration Verification	KQ1806477-02	5/16/2018	13:58:00	
J:\MS29\DATA\051618\0516F003.D\	Method Blank	KQ1805444-04	5/16/2018	14:27:00	
J:\MS29\DATA\051618\0516F004.D\	Lab Control Sample	KQ1805444-03	5/16/2018	14:56:00	
J:\MS29\DATA\051618\0516F005.D\	PDI-SG-B323-BL1 MS	KQ1805444-01	5/16/2018	15:24:00	
J:\MS29\DATA\051618\0516F006.D\	PDI-SG-B323-BL1 DMS	KQ1805444-02	5/16/2018	15:53:00	
J:\MS29\DATA\051618\0516F007.D\	PDI-SG-B323-BL1	K1803850-004	5/16/2018	16:22:00	
J:\MS29\DATA\051618\0516F008.D\	PDI-SG-B291-BL1	K1803850-001	5/16/2018	16:50:00	
J:\MS29\DATA\051618\0516F009.D\	PDI-SG-B292-BL1	K1803850-002	5/16/2018	17:19:00	
J:\MS29\DATA\051618\0516F010.D\	PDI-SG-B306-BL1	K1803850-003	5/16/2018	17:47:00	
J:\MS29\DATA\051618\0516F011.D\	PDI-SG-B329-BL1	K1803850-005	5/16/2018	18:16:00	
J:\MS29\DATA\051618\0516F012.D\	PDI-SG-B334-BL1	K1803850-006	5/16/2018	18:44:00	
J:\MS29\DATA\051618\0516F013.D\	PDI-SG-B346-BL1	K1803850-007	5/16/2018	19:13:00	
J:\MS29\DATA\051618\0516F014.D\	PDI-SG-B265-BL1	K1803850-008	5/16/2018	19:41:00	
J:\MS29\DATA\051618\0516F015.D\	PDI-SG-B271-BL1	K1803850-009	5/16/2018	20:10:00	
J:\MS29\DATA\051618\0516F016.D\	PDI-SG-B273-BL1	K1803850-010	5/16/2018	20:39:00	
J:\MS29\DATA\051618\0516F017.D\	PDI-SG-B279-BL1	K1803850-011	5/16/2018	21:07:00	
J:\MS29\DATA\051618\0516F018.D\	PDI-SG-B280-BL1	K1803850-012	5/16/2018	21:36:00	
J:\MS29\DATA\051618\0516F019.D\	PDI-SG-B260-BL1	K1803850-013	5/16/2018	22:04:00	
J:\MS29\DATA\051618\0516F020.D\	PDI-SG-B352-BL1	K1803850-014	5/16/2018	22:33:00	
J:\MS29\DATA\051618\0516F021.D\	PDI-SG-B366-BL1	K1803850-015	5/16/2018	23:01:00	
J:\MS29\DATA\051618\0516F022.D\	PDI-SG-B366-BL1-D	K1803850-016	5/16/2018	23:30:00	
J:\MS29\DATA\051618\0516F023.D\	PDI-SG-B357-BL1	K1803850-017	5/16/2018	23:58:00	
J:\MS29\DATA\051618\0516F024.D\	PDI-SG-B384-BL1	K1803850-018	5/17/2018	00:27:00	
J:\MS29\DATA\051618\0516F025.D\	PDI-SG-B378-BL1	K1803850-019	5/17/2018	00:55:00	
J:\MS29\DATA\051618\0516F026.D\	PDI-SG-B284-BL1	K1803850-020	5/17/2018	01:24:00	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: AECOM**Service Request:**K1803850**Project:** Portland Harbor Pre-Remedial Design Investigation/60566335**Analysis Run Log****Low Level Semivolatile Organic Compounds by GC/MS****Analysis Method:****Analysis Lot:**592046**Instrument ID:**K-MS-29

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS29\DATA\052218\0522F001.D\	ZZZZZZZ	ZZZZZZZ	5/22/2018	17:31:00	
J:\MS29\DATA\052218\0522F001.D\	ZZZZZZZ	ZZZZZZZ	5/22/2018	17:31:00	
J:\MS29\DATA\052218\0522F002.D\	ZZZZZZZ	ZZZZZZZ	5/22/2018	17:59:00	
J:\MS29\DATA\052218\0522F002.D\	Continuing Calibration Verification	KQ1806821-02	5/22/2018	17:59:00	
J:\MS29\DATA\052218\0522F008.D\	ZZZZZZZ	ZZZZZZZ	5/22/2018	20:51:00	
J:\MS29\DATA\052218\0522F009.D\	ZZZZZZZ	ZZZZZZZ	5/22/2018	21:19:00	
J:\MS29\DATA\052218\0522F011.D\	PDI-SG-B279-BL1	K1803850-011	5/22/2018	22:16:00	
J:\MS29\DATA\052218\0522F012.D\	ZZZZZZZ	ZZZZZZZ	5/22/2018	22:45:00	
J:\MS29\DATA\052218\0522F013.D\	ZZZZZZZ	ZZZZZZZ	5/22/2018	23:13:00	

ALS Group USA, Corp.
dba ALS Environmental

Prep Summary Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request:K1803850

Low Level Semivolatile Organic Compounds by GC/MS

Prep Method: EPA 3541
Analytical Method: 8270D

Extraction Lot: 312766
Extraction Date: 04/27/18 10:10

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
PDI-SG-B291-BL1	K1803850-001	4/23/18	4/25/18	40.315 g	2 mL	42.4
PDI-SG-B292-BL1	K1803850-002	4/23/18	4/25/18	40.302 g	2 mL	39.8
PDI-SG-B306-BL1	K1803850-003	4/23/18	4/25/18	40.071 g	2 mL	41.1
PDI-SG-B323-BL1	K1803850-004	4/23/18	4/25/18	40.244 g	2 mL	44.8
PDI-SG-B329-BL1	K1803850-005	4/23/18	4/25/18	40.218 g	2 mL	37.6
PDI-SG-B334-BL1	K1803850-006	4/23/18	4/25/18	40.143 g	2 mL	41.1
PDI-SG-B346-BL1	K1803850-007	4/23/18	4/25/18	40.116 g	2 mL	48.9
PDI-SG-B265-BL1	K1803850-008	4/23/18	4/25/18	40.038 g	2 mL	46.4
PDI-SG-B271-BL1	K1803850-009	4/23/18	4/25/18	40.405 g	2 mL	35.1
PDI-SG-B273-BL1	K1803850-010	4/23/18	4/25/18	40.192 g	2 mL	37.4
PDI-SG-B279-BL1	K1803850-011	4/23/18	4/25/18	40.254 g	2 mL	38.0
PDI-SG-B280-BL1	K1803850-012	4/23/18	4/25/18	40.121 g	2 mL	32.8
PDI-SG-B260-BL1	K1803850-013	4/23/18	4/25/18	40.229 g	2 mL	48.1
PDI-SG-B352-BL1	K1803850-014	4/24/18	4/25/18	40.274 g	2 mL	51.6
PDI-SG-B366-BL1	K1803850-015	4/24/18	4/25/18	40.012 g	2 mL	56.1
PDI-SG-B366-BL1-D	K1803850-016	4/24/18	4/25/18	40.187 g	2 mL	56.2
PDI-SG-B357-BL1	K1803850-017	4/24/18	4/25/18	40.060 g	2 mL	42.2
PDI-SG-B384-BL1	K1803850-018	4/24/18	4/25/18	40.061 g	2 mL	41.5
PDI-SG-B378-BL1	K1803850-019	4/24/18	4/25/18	40.228 g	2 mL	58.0
PDI-SG-B284-BL1	K1803850-020	4/24/18	4/25/18	40.034 g	2 mL	33.9
Matrix Spike	KQ1805444-01MS	4/23/18	4/25/18	40.481 g	2 mL	44.8
Duplicate Matrix Spike	KQ1805444-02DMS	4/23/18	4/25/18	40.112 g	2 mL	44.8
Lab Control Sample	KQ1805444-03LCS	NA	NA	20.00 g	2 mL	
Method Blank	KQ1805444-04MB	NA	NA	40.4810 g	2 mL	

ALS Group USA, Corp.
dba ALS Environmental

Prep Summary Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request:K1803850

Low Level Semivolatile Organic Compounds by GC/MS

Prep Method: EPA 3541
Analytical Method: 8270D

Extraction Lot: 312767
Extraction Date: 04/27/18 10:11

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
PDI-SG-B288-BL1	K1803850-021	4/24/18	4/25/18	40.142 g	2 mL	32.1
PDI-SG-B294-BL1	K1803850-022	4/24/18	4/25/18	40.159 g	2 mL	35.6
PDI-SG-B296-BL1	K1803850-023	4/24/18	4/25/18	40.288 g	2 mL	35.8
PDI-SG-B302-BL1	K1803850-024	4/24/18	4/25/18	40.102 g	2 mL	37.4
PDI-SG-B303-BL1	K1803850-025	4/24/18	4/25/18	40.122 g	2 mL	34.8
PDI-SG-B237-BL1	K1803850-028	4/20/18	4/25/18	40.292 g	2 mL	43.0
PDI-SG-B240-BL1	K1803850-029	4/20/18	4/25/18	40.044 g	2 mL	59.6
PDI-SG-B233-BL1	K1803850-030	4/20/18	4/25/18	40.093 g	2 mL	65.7
PDI-SG-B243-BL1	K1803850-031	4/20/18	4/25/18	40.350 g	2 mL	47.8
Matrix Spike	KQ1805445-01MS	4/24/18	4/25/18	40.335 g	2 mL	32.1
Duplicate Matrix Spike	KQ1805445-02DMS	4/24/18	4/25/18	40.130 g	2 mL	32.1
Lab Control Sample	KQ1805445-03LCS	NA	NA	20.00 g	2 mL	
Method Blank	KQ1805445-04MB	NA	NA	40.3350 g	2 mL	

ALS Group USA, Corp.
dba ALS Environmental

Prep Summary Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Water

Service Request:K1803850

Low Level Semivolatile Organic Compounds by GC/MS

Prep Method: EPA 3520C
Analytical Method: 8270D

Extraction Lot: 312824
Extraction Date: 04/30/18 08:43

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
PDI-SG-RB-VV-042318-1730	K1803850-026	4/23/18	4/25/18	1060.0000	2 mL	
PDI-SG-RB-VV-180423-1700	K1803850-027	4/23/18	4/25/18	1000 mL	2 mL	
Lab Control Sample	KQ1805496-01LCS	NA	NA	1000 mL	2 mL	
Method Blank	KQ1805496-03MB	NA	NA	1060.0000	2 mL	