



ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
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www.alsglobal.com

December 28, 2018

Analytical Report for Service Request No: K1810421

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

RE: Portland Harbor Tissue 2018 / 60566335

Dear Amy,

Enclosed are the results of the sample(s) submitted to our laboratory October 24, 2018
For your reference, these analyses have been assigned our service request number **K1810421**.

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
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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 Tissue 2018
Sample Matrix: Animal Tissue

Service Request: K1810421
Date Received: 10/24/2018

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 animal tissue samples were received for analysis at ALS Environmental on 10/24/2018. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored frozen at -20°C upon receipt at the laboratory.

Semivolatiles by GC/MS:

Method 8270D SIM, Semi-Volatile Organic Compounds by GC/MS 12/15/18: The control criteria were exceeded for 2,4,6-Tribromophenol in sample PDI-TF-SMB063 and Terphenyl-d14 in a few samples due to matrix interference. The presence of non-target background components prevented adequate resolution of the surrogate. Accurate quantitation was not possible. No further corrective action was appropriate.

Method 8270D SIM, Semi-Volatile Organic Compounds by GC/MS 12/15/18: The internal standard recovery of Phenanthrene-d10 in sample PDI-TF-SMB063 was outside control criteria because of suspected matrix interference. The results quantified using this internal standard were flagged to indicate the problem.

Metals:

No significant anomalies were noted with this analysis.

Approved by



Date

12/28/2018



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

SGS AXYS Analytical Services Ltd.

Release Chain Of Custody

SHIP TO : ALS Environmental

Telephone : 360-577-7222

Contact Person : Sample Receiving

K1810421
Project Chemist : Sean Campbell

Alys Contract No. : 4972

WG65713 (REQ9574)

SGS AXYS Analytical Services Ltd., 2045 Mills Road, Sidney, BC, Canada V8L 5X2 Tel.(250) 655-5800 Fax.(250) 655-5811

AXYS ID	CLIENT ID	MATRIX	QUANTITY
1 L29887-1	PDI-TF-SMB125	Tissue	
2 L29887-2	PDI-TF-SMB114	Tissue	
3 L29887-3	PDI-TF-SMB073	Tissue	
4 L29887-4	PDI-TF-SMB126	Tissue	
5 L29887-5	PDI-TF-SMB127	Tissue	
6 L29887-6	PDI-TF-SMB123	Tissue	
7 L29887-7	PDI-TF-SMB134	Tissue	
8 L29887-8	PDI-TF-SMB116	Tissue	
9 L29887-9	PDI-TF-SMB063	Tissue	
10 L29887-10	PDI-TF-SMB131	Tissue	
11 L29887-11	PDI-TF-SMB124	Tissue	
12 L29887-12	PDI-TF-SMB115	Tissue	
13 L29887-13	PDI-TF-SMB121	Tissue	
14 L29887-14	PDI-TF-SMB122	Tissue	
15 L29887-15	PDI-TF-SMB135	Tissue	
16 L29887-16	PDI-TF-SMB118	Tissue	
17 L29915-1	PDI-TF-SMB049	Tissue	
18 L29915-2	PDI-TF-SMB085	Tissue	
19 L29915-3	PDI-TF-SMB089	Tissue	
20 L29915-4	PDI-TF-SMB092	Tissue	
L29915-5	PDI-TF-SMB075	Tissue	
L29915-6	PDI-TF-SMB046	Tissue	
L29915-7	PDI-TF-SMB052	Tissue	
L29915-8	PDI-TF-SMB093	Tissue	
L29915-9	PDI-TF-SMB087	Tissue	
L29915-10	PDI-TF-SMB091	Tissue	
L29915-11	PDI-TF-SMB067	Tissue	
L29915-12	PDI-TF-SMB077	Tissue	
L29915-13	PDI-TF-SMB079	Tissue	
L29915-14	PDI-TF-SMB086	Tissue	
L29915-15	PDI-TF-SMB057	Tissue	

Rec'd: *Tran Blair*
10/24/18 0920

PC 111

Cooler Receipt and Preservation Form

Client Aecom Service Request K18 10421
Received: 10124118 Opened: 10124118 By: BR Unloaded: 10124118 By: BR

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? _____
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
4.0	4.0	—	—	0.0	386		18712067N6648882757		
-15.4	-15.5	—	—	-0.1	356		18712067N6647783		
-9.7	-9.4	—	—	+0.3	323		18712067N6646698		

4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves Boxes
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.
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 C12/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: _____

From: Howard Holmes
Sent: Sunday, October 28, 2018 1:49 PM
To: Brittany Rickman; Cody Graves; Daniel Plimpton; Fran Adair; Kristin Morrow; Sydney Wolf; Carol Spaulding; Jon Daggett
Subject: FW: AECOM Tissue Samples moving samples to satisfy QC requirements
Importance: High

SMO

For the AECOM PH Tissue samples, we need to switch some samples for QC purposes.
All of the samples that have enough mass for QC are in K180428.
Here is a suggested scenario

K1810428-002 switch K1810421-002 QC

K1810428-006 switch K1810422-006 QC

K1810428-009 switch K1810424-009 QC

K1810428-011 switch K1810425-011 QC

K1810428-012 switch K1810427-012 QC

K1810428-014 switch K1810429-014 QC

QC K1810428-0016 QC for K1810428

Feel free to switch with the first or last sample of each SDG if you don't like the above.

Please let Jon & Carol know which samples you want them to pull.
Please let me know when the SRs have been changed and the affected samples have been relabeled.

Thanks....H2

Please note that I will be on medical leave from Nov 12 through Dec 2.

Regards,

Howard Holmes
Project Manager, Environmental Services
Kelso Laboratory



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3364
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Howard.Holmes@alsglobal.com
1317 S. 13th Avenue
Kelso, WA 98626

Release Chain Of Custody

SHIP TO : ALS Environmental

Telephone : 360-577-7222

Contact Person : Sample Receiving

Project Chemist : Sean Campbell

Axyx Contract No. : 4972

WG65713 (REQ9574)

SGS AXYS Analytical Services Ltd., 2045 Mills Road, Sidney, BC, Canada V8L 5X2 Tel (250) 655-5800 Fax (250) 655-5811

AXYS ID	CLIENT ID	MATRIX
L29961-22	PDI-TF-SMB055	Tissue
L29961-23	PDI-TF-SMB001	Tissue
L29961-24	PDI-TF-SMB068	Tissue
L29961-25	PDI-TF-SMB005	Tissue
L29961-26	PDI-TF-SMB081	Tissue
L29961-27	PDI-TF-SMB070	Tissue
L29961-28	PDI-TF-SMB065	Tissue
L30042-1	PDI-TF-SMB117	Tissue
L30042-2	PDI-TF-SMB082	Tissue
L30042-3	PDI-TF-SMB102	Tissue
L30042-4	PDI-TF-SMB120	Tissue
L30042-5	PDI-TF-SMB113	Tissue
L30042-6	PDI-TF-SMB060	Tissue
L30042-7	PDI-TF-SMB071	Tissue
L30042-8	PDI-TF-SMB132	Tissue
L30042-9	PDI-TF-SMB019	Tissue
L30042-10	PDI-TF-SMB047	Tissue
L30042-11	PDI-TF-SMB037	Tissue
L30042-12	PDI-TF-SMB026	Tissue
L30042-13	PDI-TF-SMB033	Tissue
L30042-14	PDI-TF-SMB027	Tissue
L30042-15	PDI-TF-SMB041	Tissue
L30042-16	PDI-TF-SMB059	Tissue
L30042-17	PDI-TF-SMB017	Tissue
L30042-18	PDI-TF-SMB012	Tissue
L30042-19	PDI-TF-SMB045	Tissue
L30097-1	PDI-TF-SMB002	Tissue
L30097-2	PDI-TF-SMB110	Tissue
L30097-3	PDI-TF-SMB133	Tissue
L30097-4	PDI-TF-SMB130	Tissue
L30097-5	PDI-TF-SMB034	Tissue



K1810421

PC

H2

Cooler Receipt and Preservation Form

Client

AKYS - SGS

Service Request

K18 10421, 422, 424, 425, 428

Received:

11/15/18

Opened:

11/15/18

By:

km

Unloaded:

11/15/18

By:

km 429

1. Samples were received via? **USPS** Red 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? _____
- 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
1.0	0.0	N/A	N/A	-0.1	349		1272067V6647658	04	
-4.0	-4.2	N/A	N/A	-0.2	380		1272067V6646036	15	
-0.7	-0.7	N/A	N/A	0	376		1272067V6689308	29	

4. Packing material: **Inserts** **Baggies** **Bubble Wrap** **Gel Packs** **Wet Ice** Dry Ice **Sleeves** Paper Packing Boxes
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 C12/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:

Release Chain Of Custody

SHIP TO : ALS Environmental

Telephone : 360-577-7222

Contact Person : Sample Receiving

Project Chemist : Sean Campbell

Alys Contract No. : 4972

WG66069 (REQ9598)

SGS AXYS Analytical Services Ltd., 2045 Mills Road, Sidney, BC, Canada V8L 5X2 Tel.(250) 655-5800 Fax.(250) 655-5811

AXYS ID	CLIENT ID	MATRIX	QUANTITY
L29887-1	PDI-TF-SMB125	Tissue	1
L29887-2	PDI-TF-SMB114	Tissue	
L29887-3	PDI-TF-SMB073	Tissue	
L29887-4	PDI-TF-SMB126	Tissue	
L29887-5	PDI-TF-SMB127	Tissue	
L29887-6	PDI-TF-SMB123	Tissue	
L29887-7	PDI-TF-SMB134	Tissue	
L29887-8	PDI-TF-SMB116	Tissue	
L29887-9	PDI-TF-SMB063	Tissue	
L29887-10	PDI-TF-SMB131	Tissue	
L29887-11	PDI-TF-SMB124	Tissue	
L29887-12	PDI-TF-SMB115	Tissue	
L29887-13	PDI-TF-SMB121	Tissue	
L29887-14	PDI-TF-SMB122	Tissue	
L29887-15	PDI-TF-SMB135	Tissue	
L29887-16	PDI-TF-SMB118	Tissue	
L29915-1	PDI-TF-SMB049	Tissue	
L29915-2	PDI-TF-SMB085	Tissue	
L29915-3	PDI-TF-SMB089	Tissue	
L29915-4	PDI-TF-SMB092	Tissue	
L29915-5	PDI-TF-SMB075	Tissue	
L29915-6	PDI-TF-SMB046	Tissue	
L29915-7	PDI-TF-SMB052	Tissue	
L29915-8	PDI-TF-SMB093	Tissue	
L29915-9	PDI-TF-SMB087	Tissue	
L29915-10	PDI-TF-SMB091	Tissue	
L29915-11	PDI-TF-SMB067	Tissue	
L29915-12	PDI-TF-SMB077	Tissue	
L29915-13	PDI-TF-SMB079	Tissue	
L29915-14	PDI-TF-SMB086	Tissue	
L29915-15	PDI-TF-SMB057	Tissue	

Release Chain Of Custody

SHIP TO : ALS Environmental

Telephone : 360-577-7222

Contact Person : Sample Receiving

Project Chemist : Sean Campbell

Axys Contract No. : 4972

WG66069 (REQ9598)

SGS AXYS Analytical Services Ltd., 2045 Mills Road, Sidney, BC, Canada V8L 5X2 Tel.(250) 655-5800 Fax.(250) 655-5811

AXYS ID	CLIENT ID	MATRIX
L29915-16	PDI-TF-SMB090	Tissue
L29915-17	PDI-TF-SMB105	Tissue
L29915-18	PDI-TF-SMB103	Tissue
L29915-19	PDI-TF-SMB101	Tissue
L29915-20	PDI-TF-SMB099	Tissue
L29915-21	PDI-TF-SMB088	Tissue
L29915-22	PDI-TF-SMB074	Tissue
L29915-23	PDI-TF-SMB072	Tissue
L29915-24	PDI-TF-SMB107	Tissue
L29915-25	PDI-TF-SMB111	Tissue
L29915-26	PDI-TF-SMB112	Tissue
L29915-27	PDI-TF-SMB097	Tissue
L29915-28	PDI-TF-SMB084	Tissue
L29915-29	PDI-TF-SMB094	Tissue
L29915-30	PDI-TF-SMB096	Tissue
L29915-31	PDI-TF-SMB100	Tissue
L29915-32	PDI-TF-SMB104	Tissue
L29915-33	PDI-TF-SMB108	Tissue
L29915-34	PDI-TF-SMB078	Tissue
L29915-35	PDI-TF-SMB106	Tissue
L29935-1	PDI-TF-SMB043	Tissue
L29935-2	PDI-TF-SMB032	Tissue
L29935-3	PDI-TF-SMB029	Tissue
L29935-4	PDI-TF-SMB042	Tissue
L29935-5	PDI-TF-SMB030	Tissue
L29935-6	PDI-TF-SMB036	Tissue
L29935-7	PDI-TF-SMB044	Tissue
L29935-8	PDI-TF-SMB014	Tissue
L29935-9	PDI-TF-SMB038	Tissue
L29935-10	PDI-TF-SMB028	Tissue
L29935-11	PDI-TF-SMB039	Tissue

SGS AXYS Analytical Services Ltd.

Release Chain Of Custody

SHIP TO : ALS Environmental

Telephone : 360-577-7222

Contact Person : Sample Receiving

Project Chemist : Sean Campbell

Axs Contract No. : 4972

WG66069 (REQ9598)

SGS AXYS Analytical Services Ltd., 2045 Mills Road, Sidney, BC, Canada V8L 5X2 Tel.(250) 655-5800 Fax.(250) 655-5811

AXYS ID	CLIENT ID	MATRIX
L29935-12	PDI-TF-SMB040	Tissue
L29935-13	PDI-TF-SMB020	Tissue
L29935-14	PDI-TF-SMB010	Tissue
L29935-15	PDI-TF-SMB022	Tissue
L29935-16	PDI-TF-SMB024	Tissue
L29935-17	PDI-TF-SMB021	Tissue
L29935-18	PDI-TF-SMB023	Tissue
L29935-19	PDI-TF-SMB015	Tissue
L29935-20	PDI-TF-SMB025	Tissue
L29935-21	PDI-TF-SMB011	Tissue
L29961-1	PDI-TF-SMB128	Tissue
L29961-2	PDI-TF-SMB053	Tissue
L29961-3	PDI-TF-SMB009	Tissue
L29961-4	PDI-TF-SMB058	Tissue
L29961-5	PDI-TF-SMB066	Tissue
L29961-6	PDI-TF-SMB109	Tissue
L29961-7	PDI-TF-SMB069	Tissue
L29961-8	PDI-TF-SMB056	Tissue
L29961-9	PDI-TF-SMB007	Tissue
L29961-10	PDI-TF-SMB008	Tissue
L29961-11	PDI-TF-SMB003	Tissue
L29961-12	PDI-TF-SMB098	Tissue
L29961-13	PDI-TF-SMB076	Tissue
L29961-14	PDI-TF-SMB083	Tissue
L29961-15	PDI-TF-SMB051	Tissue
L29961-16	PDI-TF-SMB048	Tissue
L29961-17	PDI-TF-SMB129	Tissue
L29961-18	PDI-TF-SMB050	Tissue
L29961-19	PDI-TF-SMB095	Tissue
L29961-20	PDI-TF-SMB054	Tissue
L29961-21	PDI-TF-SMB119	Tissue

Release Chain Of Custody

SHIP TO : ALS Environmental

Telephone : 360-577-7222

Contact Person : Sample Receiving

Project Chemist : Sean Campbell

Axs Contract No. : 4972

WG66069 (REQ9598)

SGS AXYS Analytical Services Ltd., 2045 Mills Road, Sidney, BC, Canada V8L 5X2 Tel.(250) 655-5800 Fax.(250) 655-5811

AXYS ID	CLIENT ID	MATRIX
L29961-22	PDI-TF-SMB055	Tissue
L29961-23	PDI-TF-SMB001	Tissue
L29961-24	PDI-TF-SMB068	Tissue
L29961-25	PDI-TF-SMB005	Tissue
L29961-26	PDI-TF-SMB081	Tissue
L29961-27	PDI-TF-SMB070	Tissue
L29961-28	PDI-TF-SMB065	Tissue
L30042-1	PDI-TF-SMB117	Tissue
L30042-2	PDI-TF-SMB082	Tissue
L30042-3	PDI-TF-SMB102	Tissue
L30042-4	PDI-TF-SMB120	Tissue
L30042-5	PDI-TF-SMB113	Tissue
L30042-6	PDI-TF-SMB060	Tissue
L30042-7	PDI-TF-SMB071	Tissue
L30042-8	PDI-TF-SMB132	Tissue
L30042-9	PDI-TF-SMB019	Tissue
L30042-10	PDI-TF-SMB047	Tissue
L30042-11	PDI-TF-SMB037	Tissue
L30042-12	PDI-TF-SMB026	Tissue
L30042-13	PDI-TF-SMB033	Tissue
L30042-14	PDI-TF-SMB027	Tissue
L30042-15	PDI-TF-SMB041	Tissue
L30042-16	PDI-TF-SMB059	Tissue
L30042-17	PDI-TF-SMB017	Tissue
L30042-18	PDI-TF-SMB012	Tissue
L30042-19	PDI-TF-SMB045	Tissue
L30097-1	PDI-TF-SMB002	Tissue
L30097-2	PDI-TF-SMB110	Tissue
L30097-3	PDI-TF-SMB133	Tissue
L30097-4	PDI-TF-SMB130	Tissue
L30097-5	PDI-TF-SMB034	Tissue

Release Chain Of Custody

SHIP TO : ALS Environmental

Telephone : 360-577-7222

Contact Person : Sample Receiving

Project Chemist : Sean Campbell

Axys Contract No. : 4972

WG66069 (REQ9598)

SGS AXYS Analytical Services Ltd., 2045 Mills Road, Sidney, BC, Canada V8L 5X2 Tel.(250) 655-5800 Fax.(250) 655-5811

AXYS ID	CLIENT ID	MATRIX
L30097-6	PDI-TF-SMB062	Tissue
L30097-7	PDI-TF-SMB031	Tissue
L30097-8	PDI-TF-SMB006	Tissue
L30097-9	PDI-TF-SMB080	Tissue
L30097-10	PDI-TF-SMB016	Tissue
L30097-11	PDI-TF-SMB018	Tissue
L30097-12	PDI-TF-SMB035	Tissue
L30097-13	PDI-TF-SMB064	Tissue
L30097-14	PDI-TF-SMB013	Tissue
L30097-15	PDI-TF-SMB061	Tissue
L30097-16	PDI-TF-SMB004	Tissue

No. Item(s): 135		Date Shipped: 13-NOV-2018		Shipper's Name: M. WILMAN		WAY Bill #: see below		Signature: M. Wilman	
Relinquished by (Signature) Date		Received by (Signature) Date		Courier		Waybill No.			
Relinquished by (Signature) Date		Received by (Signature) Date 11/15/18		Time 10:02		Sample Receipt			
		ALS							
						Coolers			
						#1 #2 #3			
						Temp C			
						Custody Seal #			
						Seal Intact Y/N			
						Sample Tag Y/N			

Notes : 1Z7R067V6647658804, 1Z7R067V6646036415,
1Z7R067V6648930829

Toxic Substance Control Act (TSCA) Certification

Date: 13-NOV-2018

Waybill or reference number: UPS shipment to be picked up on 13-NOV-2018

Check only one

Positive Certification

☒ I certify that all chemical substances in this shipment comply with all applicable rules or orders under TSCA and that I am not offering a chemical substance for entry in violation of TSCA or any applicable rule or order thereunder.

or

Negative Certification

☐ I certify that all chemicals in this shipment are not subject to TSCA.

Company name: SGS AXYS Analytical Services, LTD.

Company address: 2045 Mills Rd, Sidney BC, V8L-5X2

Certifier name: Megan Wilman

Certifier title: Shipper

Certifier phone number: 250-655-5831

Certifier email address: megan.wilman@sgs.com

Certifier signature: *M. Wilman*

Product description

1.	Dry Ice. HS Code 2811.21.
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

If the certifier is unsure if their chemical substance is subject to TSCA compliance, contact the Environmental Protection Agency, TSCA Assistance Office at 1.202.554.1404 between 8:30 a.m. and 5:00 p.m.



U.S. FISH AND WILDLIFE SERVICE
DECLARATION FOR IMPORTATION
OR EXPORTATION OF
FISH OR WILDLIFE

1. Date of Import/Export: (mm/dd/yyyy) 11/13/2018
2. Import/Export License Number: 30207B
3. Indicate One: ☒ Import ☐ Export
4. Port of Clearance: _____
5. Purpose Code: <u>S</u>
6. Customs Document Number (s)

7. Name of Carrier: <u>FedEx</u>
8. Air Waybill or Bill of Lading Number: Master: House:
9. Transportation Code: <u>A</u> License # _____ State or Province _____
10. Bonded Location for Inspection:
11. Number of Cartons Containing Wildlife:
12. Markings on Cartons Containing Wildlife:

13a. (Indicate One) (Complete name/U.S. address/telephone number/e-mail address)
☒ U.S. Importer
☐ U.S. Exporter
ALS GROUP USA CORP
1317 SO 13TH AVE
KELSO, WA 98626 US
360-577-7222

14a. (Indicate One) (Complete name/foreign address/telephone number/e-mail address)
☐ Foreign Importer
☒ Foreign Exporter
AXYS Analytical Services Ltd.
2045 Mills Road West
Sidney, BC, V8L 5X2, Canada
(250) 655-5800
14b. Country Code
CA

13b. Identifier Number: _____ ID Type: _____

14c. Identifier Number: _____ ID Type: _____

15a. Customs Broker, Shipping Agent or Freight Forwarder:
(Complete business name/address/telephone and fax number/e-mail address)
FedEx International
Phone # 1-866-967-5500 ext. 45
Email: shiggerty@FedEx.com

15b. Identifier Number: _____ ID Type: _____

15c. Contact Name: Susan Higgerty

Species Code (Official Use Only)	16a. Scientific Name	17a. Foreign CITES Permit Number	18a. Description Code	19a. Quantity/Unit	20. Country of Species Origin Code (ISO Code)	21. Venomous Live Wildlife Indicator ☒ (Check if yes)
	16b. Common Name	17b. U.S. CITES Permit Number	18b. Source Code	19b. Total Monetary Value		
	Micropterus dolomieu		SPE	135	US	☐
	Small Mouth Bass		W	\$55		
						☐
						☐
						☐

Knowingly making a false statement in a Declaration for Importation or Exportation of Fish or Wildlife may subject the declarant to the penalty provided by 18 U.S.C. 1001 and 16 U.S.C. 3372(d)

22. I certify under penalty of perjury that the information furnished is true and correct:

For Official Use Only
Action/Comments:

Wildlife Declared: Yes No

Wildlife Inspected:
None / Partial / Full

Sean Campbell 11/07/2018
Signature Date
Sean Campbell
Type or Print Name



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 Tissue 2018/60566335
Sample Matrix: Animal Tissue
Analysis Method: Freeze Dry
Prep Method: None

Service Request: K1810421
Date Collected: NA
Date Received: 10/24/18
Units: Percent
Basis: Wet

Total Solids

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
PDI-TF-SMB125	K1810421-001	24.5	-	-	1	11/01/18 11:17	
PDI-TF-SMB082	K1810421-002	27.8	-	-	1	11/01/18 11:17	
PDI-TF-SMB073	K1810421-003	27.8	-	-	1	11/01/18 11:17	
PDI-TF-SMB126	K1810421-004	25.9	-	-	1	11/01/18 11:17	
PDI-TF-SMB127	K1810421-005	25.6	-	-	1	11/01/18 11:17	
PDI-TF-SMB123	K1810421-006	25.4	-	-	1	11/01/18 11:17	
PDI-TF-SMB134	K1810421-007	25.9	-	-	1	11/01/18 11:17	
PDI-TF-SMB116	K1810421-008	23.8	-	-	1	11/01/18 11:17	
PDI-TF-SMB063	K1810421-009	27.2	-	-	1	11/01/18 11:17	
PDI-TF-SMB131	K1810421-010	28.4	-	-	1	11/01/18 11:17	
PDI-TF-SMB124	K1810421-011	27.7	-	-	1	11/01/18 11:17	
PDI-TF-SMB115	K1810421-012	24.8	-	-	1	11/01/18 11:17	
PDI-TF-SMB121	K1810421-013	26.2	-	-	1	11/01/18 11:17	
PDI-TF-SMB122	K1810421-014	26.5	-	-	1	11/01/18 11:17	
PDI-TF-SMB135	K1810421-015	26.4	-	-	1	11/01/18 11:17	
PDI-TF-SMB118	K1810421-016	26.7	-	-	1	11/01/18 11:17	
PDI-TF-SMB049	K1810421-017	27.8	-	-	1	11/01/18 11:17	
PDI-TF-SMB085	K1810421-018	27.4	-	-	1	11/01/18 11:17	
PDI-TF-SMB089	K1810421-019	27.4	-	-	1	11/01/18 11:17	
PDI-TF-SMB092	K1810421-020	28.8	-	-	1	11/01/18 11:17	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: AECOM
Project Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal Tissue

Service Request: K1810421
Date Collected: NA
Date Received: 10/24/18
Date Analyzed: 11/01/18

Replicate Sample Summary**Inorganic Parameters**

Sample Name: PDI-TF-SMB082
Lab Code: K1810421-002

Units: Percent
Basis: Wet

					Duplicate Sample K1810421- 002DUP			
Analyte Name	Analysis Method	MRL	MDL	Sample Result	Result	Average	RPD	RPD Limit
Total Solids	Freeze Dry	-	-	27.8	27.3	27.6	2	20

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.



Metals

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 Tissue 2018/60566335
Sample Matrix: Animal Tissue
Sample Name: PDI-TF-SMB125
Lab Code: K1810421-001

Service Request: K1810421
Date Collected: NA
Date Received: 10/24/18 09:20
Basis: Wet

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	0.15	mg/Kg	0.12	0.005	5	11/15/18 11:11	11/07/18	
Mercury	7471B	0.127	mg/Kg	0.0098	0.0020	4	11/19/18 08:56	11/13/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal Tissue
Sample Name: PDI-TF-SMB082
Lab Code: K1810421-002

Service Request: K1810421
Date Collected: NA
Date Received: 10/24/18 09:20
Basis: Wet

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	0.19	mg/Kg	0.14	0.006	5	11/15/18 11:03	11/07/18	
Mercury	7471B	0.155	mg/Kg	0.011	0.002	4	11/19/18 08:57	11/13/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal Tissue
Sample Name: PDI-TF-SMB073
Lab Code: K1810421-003

Service Request: K1810421
Date Collected: NA
Date Received: 10/24/18 09:20
Basis: Wet

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	0.15	mg/Kg	0.14	0.006	5	11/15/18 11:16	11/07/18	
Mercury	7471B	0.102	mg/Kg	0.011	0.002	4	11/19/18 09:04	11/13/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal Tissue
Sample Name: PDI-TF-SMB126
Lab Code: K1810421-004

Service Request: K1810421
Date Collected: NA
Date Received: 10/24/18 09:20
Basis: Wet

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	0.18	mg/Kg	0.13	0.005	5	11/15/18 11:17	11/07/18	
Mercury	7471B	0.342	mg/Kg	0.010	0.002	4	11/19/18 09:09	11/13/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal Tissue
Sample Name: PDI-TF-SMB127
Lab Code: K1810421-005

Service Request: K1810421
Date Collected: NA
Date Received: 10/24/18 09:20
Basis: Wet

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	0.14	mg/Kg	0.13	0.005	5	11/15/18 11:19	11/07/18	
Mercury	7471B	0.112	mg/Kg	0.010	0.002	4	11/19/18 09:10	11/13/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal Tissue
Sample Name: PDI-TF-SMB123
Lab Code: K1810421-006

Service Request: K1810421
Date Collected: NA
Date Received: 10/24/18 09:20
Basis: Wet

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	0.09 J	mg/Kg	0.13	0.005	5	11/15/18 11:20	11/07/18	
Mercury	7471B	0.132	mg/Kg	0.010	0.002	4	11/19/18 09:12	11/13/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal Tissue
Sample Name: PDI-TF-SMB134
Lab Code: K1810421-007

Service Request: K1810421
Date Collected: NA
Date Received: 10/24/18 09:20
Basis: Wet

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	0.18	mg/Kg	0.13	0.005	5	11/15/18 11:22	11/07/18	
Mercury	7471B	0.145	mg/Kg	0.010	0.002	4	11/19/18 09:14	11/13/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal Tissue
Sample Name: PDI-TF-SMB116
Lab Code: K1810421-008

Service Request: K1810421
Date Collected: NA
Date Received: 10/24/18 09:20
Basis: Wet

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	0.12	mg/Kg	0.12	0.005	5	11/15/18 11:24	11/07/18	
Mercury	7471B	0.161	mg/Kg	0.0095	0.0019	4	11/19/18 09:15	11/13/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal Tissue
Sample Name: PDI-TF-SMB063
Lab Code: K1810421-009

Service Request: K1810421
Date Collected: NA
Date Received: 10/24/18 09:20
Basis: Wet

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	0.21	mg/Kg	0.14	0.005	5	11/15/18 11:25	11/07/18	
Mercury	7471B	0.141	mg/Kg	0.011	0.002	4	11/19/18 09:17	11/13/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal Tissue
Sample Name: PDI-TF-SMB131
Lab Code: K1810421-010

Service Request: K1810421
Date Collected: NA
Date Received: 10/24/18 09:20
Basis: Wet

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	0.08 J	mg/Kg	0.14	0.006	5	11/15/18 11:27	11/07/18	
Mercury	7471B	0.113	mg/Kg	0.011	0.002	4	11/19/18 09:18	11/13/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal Tissue
Sample Name: PDI-TF-SMB124
Lab Code: K1810421-011

Service Request: K1810421
Date Collected: NA
Date Received: 10/24/18 09:20
Basis: Wet

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	0.10 J	mg/Kg	0.14	0.006	5	11/15/18 11:28	11/07/18	
Mercury	7471B	0.111	mg/Kg	0.011	0.002	4	11/19/18 09:20	11/13/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal Tissue
Sample Name: PDI-TF-SMB115
Lab Code: K1810421-012

Service Request: K1810421
Date Collected: NA
Date Received: 10/24/18 09:20
Basis: Wet

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	0.12	mg/Kg	0.12	0.005	5	11/15/18 11:30	11/07/18	
Mercury	7471B	0.0982	mg/Kg	0.0099	0.0020	4	11/19/18 09:22	11/13/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal Tissue
Sample Name: PDI-TF-SMB121
Lab Code: K1810421-013

Service Request: K1810421
Date Collected: NA
Date Received: 10/24/18 09:20
Basis: Wet

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	0.08 J	mg/Kg	0.13	0.005	5	11/15/18 11:35	11/07/18	
Mercury	7471B	0.095	mg/Kg	0.010	0.002	4	11/19/18 09:23	11/13/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal Tissue
Sample Name: PDI-TF-SMB122
Lab Code: K1810421-014

Service Request: K1810421
Date Collected: NA
Date Received: 10/24/18 09:20
Basis: Wet

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	0.09 J	mg/Kg	0.13	0.005	5	11/15/18 11:36	11/07/18	
Mercury	7471B	0.106	mg/Kg	0.011	0.002	4	11/19/18 09:28	11/13/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal Tissue
Sample Name: PDI-TF-SMB135
Lab Code: K1810421-015

Service Request: K1810421
Date Collected: NA
Date Received: 10/24/18 09:20
Basis: Wet

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	0.29	mg/Kg	0.13	0.005	5	11/15/18 11:38	11/07/18	
Mercury	7471B	0.137	mg/Kg	0.011	0.002	4	11/19/18 09:30	11/13/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal Tissue
Sample Name: PDI-TF-SMB118
Lab Code: K1810421-016

Service Request: K1810421
Date Collected: NA
Date Received: 10/24/18 09:20
Basis: Wet

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	0.11 J	mg/Kg	0.13	0.005	5	11/15/18 11:40	11/07/18	
Mercury	7471B	0.224	mg/Kg	0.011	0.002	4	11/19/18 09:31	11/13/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal Tissue
Sample Name: PDI-TF-SMB049
Lab Code: K1810421-017

Service Request: K1810421
Date Collected: NA
Date Received: 10/24/18 09:20
Basis: Wet

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	0.19	mg/Kg	0.14	0.006	5	11/15/18 11:41	11/07/18	
Mercury	7471B	0.122	mg/Kg	0.011	0.002	4	11/19/18 09:33	11/13/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal Tissue
Sample Name: PDI-TF-SMB085
Lab Code: K1810421-018

Service Request: K1810421
Date Collected: NA
Date Received: 10/24/18 09:20
Basis: Wet

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	0.20	mg/Kg	0.14	0.005	5	11/15/18 11:43	11/07/18	
Mercury	7471B	0.107	mg/Kg	0.011	0.002	4	11/19/18 09:35	11/13/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal Tissue
Sample Name: PDI-TF-SMB089
Lab Code: K1810421-019

Service Request: K1810421
Date Collected: NA
Date Received: 10/24/18 09:20
Basis: Wet

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	0.19	mg/Kg	0.14	0.005	5	11/15/18 11:44	11/07/18	
Mercury	7471B	0.185	mg/Kg	0.011	0.002	4	11/19/18 09:36	11/13/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal Tissue
Sample Name: PDI-TF-SMB092
Lab Code: K1810421-020

Service Request: K1810421
Date Collected: NA
Date Received: 10/24/18 09:20
Basis: Wet

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	0.29	mg/Kg	0.14	0.006	5	11/15/18 11:46	11/07/18	
Mercury	7471B	0.098	mg/Kg	0.011	0.002	4	11/19/18 09:38	11/13/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal Tissue
Sample Name: Method Blank
Lab Code: KQ1816242-01

Service Request: K1810421
Date Collected: NA
Date Received: NA
Basis: Wet

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	ND U	mg/Kg	0.1	0.005	5	11/15/18 10:56	11/07/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal Tissue
Sample Name: Method Blank
Lab Code: KQ1816522-01

Service Request: K1810421
Date Collected: NA
Date Received: NA
Basis: Wet

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Mercury	7471B	ND U	mg/Kg	0.01	0.002	4	11/19/18 08:49	11/13/18	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal Tissue

Service Request: K1810421
Date Collected: N/A
Date Received: 10/24/18
Date Analyzed: 11/15/18
Date Extracted: 11/7/18

Duplicate Matrix Spike Summary
Total Metals

Sample Name: PDI-TF-SMB082
Lab Code: K1810421-002
Analysis Method: 6020A
Prep Method: PSEP Metals

Units: mg/Kg
Basis: Wet

Analyte Name	Sample Result	Matrix Spike KQ1816242-05			Duplicate Matrix Spike KQ1816242-06			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Arsenic	0.19	4.99	4.61	104	4.91	4.61	103	75-125	1	20

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 Tissue 2018/60566335
Sample Matrix: Animal Tissue

Service Request: K1810421
Date Collected: N/A
Date Received: 10/24/18
Date Analyzed: 11/19/18
Date Extracted: 11/13/18

Duplicate Matrix Spike Summary
Total Metals

Sample Name: PDI-TF-SMB082
Lab Code: K1810421-002
Analysis Method: 7471B
Prep Method: Method

Units: mg/Kg
Basis: Wet

Analyte Name	Sample Result	Matrix Spike KQ1816522-05			Duplicate Matrix Spike KQ1816522-06			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Mercury	0.155	0.676	0.553	94	0.652	0.553	90	80-120	4	20

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 Tissue 2018/60566335
Sample Matrix: Animal Tissue

Service Request: K1810421
Date Analyzed: 11/15/18

Lab Control Sample Summary
Total Metals

Units:mg/Kg
Basis:Wet

Lab Control Sample
KQ1816242-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6020A	16.2	16.7	97	80-120

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal Tissue

Service Request: K1810421
Date Analyzed: 11/19/18

Lab Control Sample Summary
Total Metals

Units:mg/Kg
Basis:Wet

Lab Control Sample
KQ1816522-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Mercury	7471B	1.76	2.00	88	80-120

ALS Group USA, Corp.
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QA/QC Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
LCS Matrix: Tissue

Service Request: K1810421
Date Collected: NA
Date Received: NA
Date Extracted: 11/07/18
Date Analyzed: 11/15/18

Standard Reference Material Summary
Total Metals

Sample Name: Standard Reference Material
Lab Code: KQ1816242-03
Test Notes: Dorm-4 Solids = 94.5%
Source: N.R.C.C. Dorm-4

Units: mg/Kg (ppm)
Basis: Dry

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	Control Limits	Result Notes
Arsenic	PSEP Tissue	6020A	6.8	6.8	100	0.28-0.56	

ALS Group USA, Corp.
dba ALS Environmental
QA/QC Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
LCS Matrix: Tissue

Service Request: K1810421
Date Collected: NA
Date Received: NA
Date Extracted: 11/07/18
Date Analyzed: 11/15/18

Standard Reference Material Summary
Total Metals

Sample Name: Standard Reference Material
Lab Code: KQ1816242-04
Test Notes: Tort-3 Solids = 99.1%

Units: mg/Kg (ppm)
Basis: Dry

Source: N.R.C.C. Tort-3

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	Control Limits	Result Notes
Arsenic	PSEP Tissue	6020A	59.5	63.0	106	11.7-19.9	

ALS Group USA, Corp.
dba ALS Environmental
QA/QC Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
LCS Matrix: Tissue

Service Request: K1810421
Date Collected: NA
Date Received: NA
Date Extracted: 11/07/18
Date Analyzed: 11/19/18

Standard Reference Material Summary
Total Metals

Sample Name: Standard Reference Material
Lab Code: KQ1816522-03
Test Notes: Dorm-4 Solids = 94.5%
Source: N.R.C.C. Dorm-4

Units: mg/Kg (ppm)
Basis: Dry

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	Control Limits	Result Notes
Mercury	PSEP Tissue	7471B	0.41	0.32	78	0.233 - 0.385	

ALS Group USA, Corp.
dba ALS Environmental
QA/QC Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
LCS Matrix: Tissue

Service Request: K1810421
Date Collected: NA
Date Received: NA
Date Extracted: 11/07/18
Date Analyzed: 11/19/18

Standard Reference Material Summary
Total Metals

Sample Name: Standard Reference Material
Lab Code: KQ1816522-04
Test Notes: Tort-3 Solids = 99.1%

Units: mg/Kg (ppm)
Basis: Dry

Source: N.R.C.C. Tort-3

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	Control Limits	Result Notes
Mercury	PSEP Tissue	7471B	0.292	0.217	74	0.216-0.377	

ALS Group USA, Corp.
dba ALS Environmental

Prep Summary Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal Tissue

Service Request: K1810421

Metals

Prep Method: PSEP Metals
Analytical Method: 6020A

Extraction Lot: 325831
Extraction Date: 11/07/18 16:55

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
PDI-TF-SMB125	K1810421-001	NA	10/24/18	0.300 g	30 mL	
PDI-TF-SMB082	K1810421-002	NA	10/24/18	0.301 g	30 mL	
PDI-TF-SMB073	K1810421-003	NA	10/24/18	0.302 g	30 mL	
PDI-TF-SMB126	K1810421-004	NA	10/24/18	0.300 g	30 mL	
PDI-TF-SMB127	K1810421-005	NA	10/24/18	0.301 g	30 mL	
PDI-TF-SMB123	K1810421-006	NA	10/24/18	0.300 g	30 mL	
PDI-TF-SMB134	K1810421-007	NA	10/24/18	0.300 g	30 mL	
PDI-TF-SMB116	K1810421-008	NA	10/24/18	0.302 g	30 mL	
PDI-TF-SMB063	K1810421-009	NA	10/24/18	0.302 g	30 mL	
PDI-TF-SMB131	K1810421-010	NA	10/24/18	0.301 g	30 mL	
PDI-TF-SMB124	K1810421-011	NA	10/24/18	0.300 g	30 mL	
PDI-TF-SMB115	K1810421-012	NA	10/24/18	0.300 g	30 mL	
PDI-TF-SMB121	K1810421-013	NA	10/24/18	0.300 g	30 mL	
PDI-TF-SMB122	K1810421-014	NA	10/24/18	0.301 g	30 mL	
PDI-TF-SMB135	K1810421-015	NA	10/24/18	0.300 g	30 mL	
PDI-TF-SMB118	K1810421-016	NA	10/24/18	0.300 g	30 mL	
PDI-TF-SMB049	K1810421-017	NA	10/24/18	0.301 g	30 mL	
PDI-TF-SMB085	K1810421-018	NA	10/24/18	0.300 g	30 mL	
PDI-TF-SMB089	K1810421-019	NA	10/24/18	0.302 g	30 mL	
PDI-TF-SMB092	K1810421-020	NA	10/24/18	0.302 g	30 mL	
Method Blank	KQ1816242-01MB	NA	NA	1.2000 g	30 mL	
Lab Control Sample	KQ1816242-02LCS	NA	NA	0.300 g	30 mL	
Matrix Spike	KQ1816242-05MS	NA	10/24/18	0.301 g	30 mL	
Duplicate Matrix Spike	KQ1816242-06DMS	NA	10/24/18	0.302 g	30 mL	
Standard Reference Material	KQ1816242-03SRM	NA	NA	0.301 g	30 mL	
Standard Reference Material	KQ1816242-04SRM	NA	NA	0.301 g	30 mL	

ALS Group USA, Corp.
dba ALS Environmental

Prep Summary Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal Tissue

Service Request:K1810421

Metals

Prep Method: Method
Analytical Method: 7471B

Extraction Lot: 326160
Extraction Date: 11/13/18 10:30

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
PDI-TF-SMB125	K1810421-001	NA	10/24/18	0.300 g	30 mL	
PDI-TF-SMB082	K1810421-002	NA	10/24/18	0.301 g	30 mL	
PDI-TF-SMB073	K1810421-003	NA	10/24/18	0.302 g	30 mL	
PDI-TF-SMB126	K1810421-004	NA	10/24/18	0.300 g	30 mL	
PDI-TF-SMB127	K1810421-005	NA	10/24/18	0.301 g	30 mL	
PDI-TF-SMB123	K1810421-006	NA	10/24/18	0.300 g	30 mL	
PDI-TF-SMB134	K1810421-007	NA	10/24/18	0.300 g	30 mL	
PDI-TF-SMB116	K1810421-008	NA	10/24/18	0.302 g	30 mL	
PDI-TF-SMB063	K1810421-009	NA	10/24/18	0.302 g	30 mL	
PDI-TF-SMB131	K1810421-010	NA	10/24/18	0.301 g	30 mL	
PDI-TF-SMB124	K1810421-011	NA	10/24/18	0.300 g	30 mL	
PDI-TF-SMB115	K1810421-012	NA	10/24/18	0.300 g	30 mL	
PDI-TF-SMB121	K1810421-013	NA	10/24/18	0.300 g	30 mL	
PDI-TF-SMB122	K1810421-014	NA	10/24/18	0.301 g	30 mL	
PDI-TF-SMB135	K1810421-015	NA	10/24/18	0.300 g	30 mL	
PDI-TF-SMB118	K1810421-016	NA	10/24/18	0.300 g	30 mL	
PDI-TF-SMB049	K1810421-017	NA	10/24/18	0.301 g	30 mL	
PDI-TF-SMB085	K1810421-018	NA	10/24/18	0.300 g	30 mL	
PDI-TF-SMB089	K1810421-019	NA	10/24/18	0.302 g	30 mL	
PDI-TF-SMB092	K1810421-020	NA	10/24/18	0.302 g	30 mL	
Method Blank	KQ1816522-01MB	NA	NA	1.2000 g	30 mL	
Lab Control Sample	KQ1816522-02LCS	NA	NA	0.300 g	30 mL	
Matrix Spike	KQ1816522-05MS	NA	10/24/18	0.301 g	30 mL	
Duplicate Matrix Spike	KQ1816522-06DMS	NA	10/24/18	0.302 g	30 mL	
Standard Reference Material	KQ1816522-03SRM	NA	NA	0.301 g	30 mL	
Standard Reference Material	KQ1816522-04SRM	NA	NA	0.301 g	30 mL	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335

Service Request: K1810421

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits
ICV 11/15/18 10:43	Arsenic	6020A	615323	24.7	25.0	99	90-110
CCV 11/15/18 10:45	Arsenic	6020A	615323	25.0	25.0	100	90-110
CCV 11/15/18 11:12	Arsenic	6020A	615323	25.0	25.0	100	90-110
CCV 11/15/18 11:32	Arsenic	6020A	615323	25.3	25.0	101	90-110
CCV 11/15/18 11:48	Arsenic	6020A	615323	25.2	25.0	101	90-110
ICV 11/19/18 08:41	Mercury	7471B	615700	5.20	5.00	104	90-110
CCV 11/19/18 08:46	Mercury	7471B	615700	5.20	5.00	104	90-110
CCV 11/19/18 09:05	Mercury	7471B	615700	5.30	5.00	106	90-110
CCV 11/19/18 09:25	Mercury	7471B	615700	5.20	5.00	104	90-110
CCV 11/19/18 09:44	Mercury	7471B	615700	5.20	5.00	104	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335

Service Request: K1810421

INITIAL AND CONTINUING CALIBRATION BLANKS

Concentration Units: ug/L

Sample ID		Method	Analysis Batch:	Result	C
Analyte					
ICB 11/15/18 10:47					
Arsenic		6020A	615323	0.04	U
CCB 11/15/18 10:48					
Arsenic		6020A	615323	0.04	U
CCB 11/15/18 11:14					
Arsenic		6020A	615323	0.04	U
CCB 11/15/18 11:33					
Arsenic		6020A	615323	0.04	U
CCB 11/15/18 11:49					
Arsenic		6020A	615323	0.04	U
ICB 11/19/18 08:43					
Mercury		7471B	615700	-0.0400	J
CCB 11/19/18 08:48					
Mercury		7471B	615700	-0.0200	J
CCB 11/19/18 09:07					
Mercury		7471B	615700	-0.0300	J
CCB 11/19/18 09:26					
Mercury		7471B	615700	-0.0300	J
CCB 11/19/18 09:46					
Mercury		7471B	615700	-0.0200	J

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335

Service Request: K1810421

LOW LEVEL INITIAL AND LOW LEVEL CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
LLICVT	Arsenic	6020A	615323	1.1	1.0	105	70-130	11/15/18 10:50
LLCCVT	Arsenic	6020A	615323	1.1	1.0	107	70-130	11/15/18 11:51
LLICVT	Mercury	7471B	615700	0.080	0.1	80	50-150	11/19/18 08:44

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM

Service Request: K1810421

Project: Portland Harbor Tissue 2018/60566335

ICP INTERFERENCE CHECK SAMPLE

Sample ID ICSA

Concentration Units: ug/L

Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
Arsenic	6020A	615323	0.3	-	-	-	11/15/18 10:51

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM

Service Request: K1810421

Project: Portland Harbor Tissue 2018/60566335

ICP INTERFERENCE CHECK SAMPLE

Sample ID ICSAB

Concentration Units: ug/L

Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
Arsenic	6020A	615323	24.6	25.0	98	80-120	11/15/18 10:53

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335

Service Request: K1810421

POST SPIKE SAMPLE RECOVERY

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Initial Sample Result	Post Spike Result	True Value	% Rec	% Rec. Limits	Analysis Date
K1810421-002A	Arsenic	6020A	615323	1.4	53.3	50.0	104	80-120	11/15/18 11:06
K1810421-002A	Mercury	7471B	615700	1.40	6.00	5.00	92	80-120	11/19/18 08:59

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

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335

Service Request: K1810421

ICP SERIAL DILUTIONS

Concentration Units: ug/L

Sample ID			Initial Sample Result	Serial Dilution Result	% Diff	% Diff. Limit	Analysis Date
Analyte	Method	Analysis Batch:					
K1810421-002SDL							
Arsenic	6020A	615323	7	6 J	7	10	11/15/18 11:04

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM

Service Request: K1810421

Project: Portland Harbor Tissue 2018/60566335

Detection Limits

Instrument: K-CVAA-02

Matrix: Animal Tissue

Analyte	Wavelength (nm)	Units	MRL	MDL	Method
Mercury	253	ug/L	0.1	0.02	7471B

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM

Service Request: K1810421

Project: Portland Harbor Tissue 2018/60566335

Detection Limits

Instrument: K-ICP-MS-06

Matrix: Animal Tissue

Analyte	Mass	Units	MRL	MDL	Method
Arsenic	75	ug/L	1	0.04	6020A

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM

Service Request: K1810421

Project: Portland Harbor Tissue 2018/60566335

ICP Linear Range (Quarterly)

Instrument: K-ICP-MS-06

Analyte	Concentration (ug/L)	Method
Arsenic 75	4500	6020A

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335

Service Request: K1810421

Analysis Run Log

Instrument ID: K-ICP-MS-06

Analytical BatchID: 615323

Sample	Dilution Factor	Date/Time	As
ZZZZZZ	1	11/15/18 10:40	
ZZZZZZ	1	11/15/18 10:42	
ICV	1	11/15/18 10:43	X
CCV	1	11/15/18 10:45	X
ICB	1	11/15/18 10:47	X
CCB	1	11/15/18 10:48	X
LLICVT	1	11/15/18 10:50	X
ICSA	1	11/15/18 10:51	X
ICSAB	1	11/15/18 10:53	X
ZZZZZZ	1	11/15/18 10:55	
KQ1816242-01MB	5	11/15/18 10:56	X
KQ1816242-02LCS	5	11/15/18 10:58	X
KQ1816242-03SRM	5	11/15/18 10:59	X
KQ1816242-04SRM	5	11/15/18 11:01	X
K1810421-002	5	11/15/18 11:03	X
K1810421-002SDL	25	11/15/18 11:04	X
K1810421-002PS	5	11/15/18 11:06	X
K1810421-002MS	5	11/15/18 11:07	X
K1810421-002DMS	5	11/15/18 11:09	X
K1810421-001	5	11/15/18 11:11	X
CCV	1	11/15/18 11:12	X
CCB	1	11/15/18 11:14	X
K1810421-003	5	11/15/18 11:16	X
K1810421-004	5	11/15/18 11:17	X
K1810421-005	5	11/15/18 11:19	X
K1810421-006	5	11/15/18 11:20	X
K1810421-007	5	11/15/18 11:22	X
K1810421-008	5	11/15/18 11:24	X
K1810421-009	5	11/15/18 11:25	X
K1810421-010	5	11/15/18 11:27	X
K1810421-011	5	11/15/18 11:28	X
K1810421-012	5	11/15/18 11:30	X
CCV	1	11/15/18 11:32	X
CCB	1	11/15/18 11:33	X
K1810421-013	5	11/15/18 11:35	X
K1810421-014	5	11/15/18 11:36	X
K1810421-015	5	11/15/18 11:38	X

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335

Service Request: K1810421

Analysis Run Log

Instrument ID: K-ICP-MS-06

Analytical BatchID: 615323

Sample	Dilution Factor	Date/Time	As
K1810421-016	5	11/15/18 11:40	X
K1810421-017	5	11/15/18 11:41	X
K1810421-018	5	11/15/18 11:43	X
K1810421-019	5	11/15/18 11:44	X
K1810421-020	5	11/15/18 11:46	X
CCV	1	11/15/18 11:48	X
CCB	1	11/15/18 11:49	X
LLCCVT	1	11/15/18 11:51	X
ZZZZZZ	5	11/15/18 11:53	
ZZZZZZ	5	11/15/18 11:54	
ZZZZZZ	5	11/15/18 11:56	
ZZZZZZ	5	11/15/18 11:57	
ZZZZZZ	5	11/15/18 11:59	
ZZZZZZ	25	11/15/18 12:01	
ZZZZZZ	5	11/15/18 12:02	
ZZZZZZ	5	11/15/18 12:04	
ZZZZZZ	5	11/15/18 12:05	
ZZZZZZ	5	11/15/18 12:07	
ZZZZZZ	1	11/15/18 12:09	
ZZZZZZ	1	11/15/18 12:10	
ZZZZZZ	5	11/15/18 12:12	
ZZZZZZ	5	11/15/18 12:13	
ZZZZZZ	5	11/15/18 12:15	
ZZZZZZ	5	11/15/18 12:17	
ZZZZZZ	5	11/15/18 12:18	
ZZZZZZ	5	11/15/18 12:20	
ZZZZZZ	5	11/15/18 12:21	
ZZZZZZ	5	11/15/18 12:23	
ZZZZZZ	5	11/15/18 12:25	
ZZZZZZ	5	11/15/18 12:26	
ZZZZZZ	1	11/15/18 12:28	
ZZZZZZ	1	11/15/18 12:29	
ZZZZZZ	5	11/15/18 12:31	
ZZZZZZ	5	11/15/18 12:33	
ZZZZZZ	5	11/15/18 12:34	
ZZZZZZ	5	11/15/18 12:36	
ZZZZZZ	5	11/15/18 12:37	

ALS Group USA, Corp.
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QA/QC Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335

Service Request: K1810421

Analysis Run Log

Instrument ID: K-CVAA-02

Analytical BatchID: 615700

Sample	Dilution Factor	Date/Time	H g
ZZZZZZ	1	11/19/18 08:30	
ZZZZZZ	1	11/19/18 08:31	
ZZZZZZ	1	11/19/18 08:33	
ZZZZZZ	1	11/19/18 08:35	
ZZZZZZ	1	11/19/18 08:36	
ZZZZZZ	1	11/19/18 08:38	
ZZZZZZ	1	11/19/18 08:40	
ICV1	1	11/19/18 08:41	X
ICB1	1	11/19/18 08:43	X
LLICVT1	1	11/19/18 08:44	X
CCV1	1	11/19/18 08:46	X
CCB1	1	11/19/18 08:48	X
KQ1816522-01MB	4	11/19/18 08:49	X
KQ1816522-02LCS	4	11/19/18 08:51	X
KQ1816522-03SRM	4	11/19/18 08:52	X
KQ1816522-04SRM	4	11/19/18 08:54	X
K1810421-001	4	11/19/18 08:56	X
K1810421-002	4	11/19/18 08:57	X
K1810421-002PS	4	11/19/18 08:59	X
K1810421-002MS	4	11/19/18 09:01	X
K1810421-002DMS	4	11/19/18 09:02	X
K1810421-003	4	11/19/18 09:04	X
CCV2	1	11/19/18 09:05	X
CCB2	1	11/19/18 09:07	X
K1810421-004	4	11/19/18 09:09	X
K1810421-005	4	11/19/18 09:10	X
K1810421-006	4	11/19/18 09:12	X
K1810421-007	4	11/19/18 09:14	X
K1810421-008	4	11/19/18 09:15	X
K1810421-009	4	11/19/18 09:17	X
K1810421-010	4	11/19/18 09:18	X
K1810421-011	4	11/19/18 09:20	X
K1810421-012	4	11/19/18 09:22	X
K1810421-013	4	11/19/18 09:23	X
CCV3	1	11/19/18 09:25	X
CCB3	1	11/19/18 09:26	X
K1810421-014	4	11/19/18 09:28	X

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335

Service Request: K1810421

Analysis Run Log

Instrument ID: K-CVAA-02

Analytical BatchID: 615700

Sample	Dilution Factor	Date/Time	H g
K1810421-015	4	11/19/18 09:30	X
K1810421-016	4	11/19/18 09:31	X
K1810421-017	4	11/19/18 09:33	X
K1810421-018	4	11/19/18 09:35	X
K1810421-019	4	11/19/18 09:36	X
K1810421-020	4	11/19/18 09:38	X
ZZZZZZ	4	11/19/18 09:39	
ZZZZZZ	4	11/19/18 09:41	
ZZZZZZ	4	11/19/18 09:43	
CCV4	1	11/19/18 09:44	X
CCB4	1	11/19/18 09:46	X
ZZZZZZ	4	11/19/18 09:47	
ZZZZZZ	4	11/19/18 09:49	
ZZZZZZ	4	11/19/18 09:51	
ZZZZZZ	4	11/19/18 09:52	
ZZZZZZ	4	11/19/18 09:54	
ZZZZZZ	4	11/19/18 09:56	
ZZZZZZ	4	11/19/18 09:57	
ZZZZZZ	4	11/19/18 09:59	
ZZZZZZ	4	11/19/18 10:00	
ZZZZZZ	4	11/19/18 10:02	
ZZZZZZ	1	11/19/18 10:04	
ZZZZZZ	1	11/19/18 10:05	
ZZZZZZ	4	11/19/18 10:07	
ZZZZZZ	4	11/19/18 10:08	
ZZZZZZ	4	11/19/18 10:10	
ZZZZZZ	4	11/19/18 10:12	
ZZZZZZ	4	11/19/18 10:13	
ZZZZZZ	4	11/19/18 10:15	
ZZZZZZ	4	11/19/18 10:17	
ZZZZZZ	4	11/19/18 10:18	
ZZZZZZ	4	11/19/18 10:20	
ZZZZZZ	4	11/19/18 10:21	
ZZZZZZ	1	11/19/18 10:23	
ZZZZZZ	1	11/19/18 10:25	
ZZZZZZ	4	11/19/18 10:26	
ZZZZZZ	4	11/19/18 10:28	

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335

Service Request: K1810421

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Instrument ID: K-ICP-MS-06

Analytical BatchID: 615323

Sample	Date/Time	Ge72He
ZZZZZZ	11/15/18 10:40	
ZZZZZZ	11/15/18 10:42	
ICV	11/15/18 10:43	100
CCV	11/15/18 10:45	101
ICB	11/15/18 10:47	100
CCB	11/15/18 10:48	100
LLICVT	11/15/18 10:50	99
ICSA	11/15/18 10:51	96
ICSAB	11/15/18 10:53	97
ZZZZZZ	11/15/18 10:55	
KQ1816242-01MB	11/15/18 10:56	101
KQ1816242-02LCS	11/15/18 10:58	101
KQ1816242-03SRM	11/15/18 10:59	
KQ1816242-04SRM	11/15/18 11:01	
K1810421-002	11/15/18 11:03	100
K1810421-002SDL	11/15/18 11:04	103
K1810421-002PS	11/15/18 11:06	101
K1810421-002MS	11/15/18 11:07	101
K1810421-002DMS	11/15/18 11:09	102
K1810421-001	11/15/18 11:11	102
CCV	11/15/18 11:12	104
CCB	11/15/18 11:14	103
K1810421-003	11/15/18 11:16	100
K1810421-004	11/15/18 11:17	101
K1810421-005	11/15/18 11:19	103
K1810421-006	11/15/18 11:20	102
K1810421-007	11/15/18 11:22	102
K1810421-008	11/15/18 11:24	103
K1810421-009	11/15/18 11:25	103
K1810421-010	11/15/18 11:27	103
K1810421-011	11/15/18 11:28	103
K1810421-012	11/15/18 11:30	104
CCV	11/15/18 11:32	104
CCB	11/15/18 11:33	104
K1810421-013	11/15/18 11:35	102
K1810421-014	11/15/18 11:36	104
K1810421-015	11/15/18 11:38	105

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335

Service Request: K1810421

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Instrument ID: K-ICP-MS-06

Analytical BatchID: 615323

Sample	Date/Time	Ge72He
K1810421-016	11/15/18 11:40	103
K1810421-017	11/15/18 11:41	105
K1810421-018	11/15/18 11:43	102
K1810421-019	11/15/18 11:44	103
K1810421-020	11/15/18 11:46	104
CCV	11/15/18 11:48	104
CCB	11/15/18 11:49	103
LLCCVT	11/15/18 11:51	102
ZZZZZZ	11/15/18 11:53	
ZZZZZZ	11/15/18 11:54	
ZZZZZZ	11/15/18 11:56	
ZZZZZZ	11/15/18 11:57	
ZZZZZZ	11/15/18 11:59	
ZZZZZZ	11/15/18 12:01	
ZZZZZZ	11/15/18 12:02	
ZZZZZZ	11/15/18 12:04	
ZZZZZZ	11/15/18 12:05	
ZZZZZZ	11/15/18 12:07	
ZZZZZZ	11/15/18 12:09	
ZZZZZZ	11/15/18 12:10	
ZZZZZZ	11/15/18 12:12	
ZZZZZZ	11/15/18 12:13	
ZZZZZZ	11/15/18 12:15	
ZZZZZZ	11/15/18 12:17	
ZZZZZZ	11/15/18 12:18	
ZZZZZZ	11/15/18 12:20	
ZZZZZZ	11/15/18 12:21	
ZZZZZZ	11/15/18 12:23	
ZZZZZZ	11/15/18 12:25	
ZZZZZZ	11/15/18 12:26	
ZZZZZZ	11/15/18 12:28	
ZZZZZZ	11/15/18 12:29	
ZZZZZZ	11/15/18 12:31	
ZZZZZZ	11/15/18 12:33	
ZZZZZZ	11/15/18 12:34	
ZZZZZZ	11/15/18 12:36	
ZZZZZZ	11/15/18 12:37	



Semi-Volatile 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

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335

Service Request: K1810421

**Cover Page - Organic Analysis Data Package
Semi-Volatile Organic Compounds by GC/MS**

Sample Name	Lab Code	Date Collected	Date Received
PDI-TF-SMB125	K1810421-001		10/24/2018
PDI-TF-SMB082	K1810421-002		10/24/2018
PDI-TF-SMB073	K1810421-003		10/24/2018
PDI-TF-SMB126	K1810421-004		10/24/2018
PDI-TF-SMB127	K1810421-005		10/24/2018
PDI-TF-SMB123	K1810421-006		10/24/2018
PDI-TF-SMB134	K1810421-007		10/24/2018
PDI-TF-SMB116	K1810421-008		10/24/2018
PDI-TF-SMB063	K1810421-009		10/24/2018
PDI-TF-SMB131	K1810421-010		10/24/2018
PDI-TF-SMB124	K1810421-011		10/24/2018
PDI-TF-SMB115	K1810421-012		10/24/2018
PDI-TF-SMB121	K1810421-013		10/24/2018
PDI-TF-SMB122	K1810421-014		10/24/2018
PDI-TF-SMB135	K1810421-015		10/24/2018
PDI-TF-SMB118	K1810421-016		10/24/2018
PDI-TF-SMB049	K1810421-017		10/24/2018
PDI-TF-SMB085	K1810421-018		10/24/2018
PDI-TF-SMB089	K1810421-019		10/24/2018
PDI-TF-SMB092	K1810421-020		10/24/2018
PDI-TF-SMB082MS	KWG1805838-1		10/24/2018
PDI-TF-SMB082DMS	KWG1805838-2		10/24/2018

Analytical Results

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal tissue

Service Request: K1810421
Date Collected:
Date Received: 10/24/2018

Semi-Volatile Organic Compounds by GC/MS

Sample Name: PDI-TF-SMB125
Lab Code: K1810421-001
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Wet
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	1000	76	10	11/08/18	12/15/18	KWG1805838	
Bis(2-ethylhexyl) Phthalate	580	JD	20000	120	10	11/08/18	12/15/18	KWG1805838	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4,6-Tribromophenol	78	44-125	12/15/18	Acceptable
Terphenyl-d14	62	53-137	12/15/18	Acceptable

Comments: _____

Analytical Results

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal tissue

Service Request: K1810421
Date Collected:
Date Received: 10/24/2018

Semi-Volatile Organic Compounds by GC/MS

Sample Name: PDI-TF-SMB082
Lab Code: K1810421-002
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Wet
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	1000	76	10	11/08/18	12/15/18	KWG1805838	
Bis(2-ethylhexyl) Phthalate	660	JD	20000	120	10	11/08/18	12/15/18	KWG1805838	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4,6-Tribromophenol	71	44-125	12/15/18	Acceptable
Terphenyl-d14	52	53-137	12/15/18	Outside Control Limits

Comments: _____

Analytical Results

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal tissue

Service Request: K1810421
Date Collected:
Date Received: 10/24/2018

Semi-Volatile Organic Compounds by GC/MS

Sample Name: PDI-TF-SMB073
Lab Code: K1810421-003
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Wet
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	990	76	10	11/08/18	12/15/18	KWG1805838	
Bis(2-ethylhexyl) Phthalate	ND	U	20000	120	10	11/08/18	12/15/18	KWG1805838	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4,6-Tribromophenol	74	44-125	12/15/18	Acceptable
Terphenyl-d14	65	53-137	12/15/18	Acceptable

Comments: _____

Analytical Results

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal tissue

Service Request: K1810421
Date Collected:
Date Received: 10/24/2018

Semi-Volatile Organic Compounds by GC/MS

Sample Name: PDI-TF-SMB126
Lab Code: K1810421-004
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Wet
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	990	76	10	11/08/18	12/15/18	KWG1805838	
Bis(2-ethylhexyl) Phthalate	ND	U	20000	120	10	11/08/18	12/15/18	KWG1805838	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4,6-Tribromophenol	73	44-125	12/15/18	Acceptable
Terphenyl-d14	61	53-137	12/15/18	Acceptable

Comments: _____

Analytical Results

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal tissue

Service Request: K1810421
Date Collected:
Date Received: 10/24/2018

Semi-Volatile Organic Compounds by GC/MS

Sample Name: PDI-TF-SMB127
Lab Code: K1810421-005
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Wet
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	990	76	10	11/08/18	12/15/18	KWG1805838	
Bis(2-ethylhexyl) Phthalate	720	JD	20000	120	10	11/08/18	12/15/18	KWG1805838	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4,6-Tribromophenol	69	44-125	12/15/18	Acceptable
Terphenyl-d14	54	53-137	12/15/18	Acceptable

Comments: _____

Analytical Results

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal tissue

Service Request: K1810421
Date Collected:
Date Received: 10/24/2018

Semi-Volatile Organic Compounds by GC/MS

Sample Name: PDI-TF-SMB123
Lab Code: K1810421-006
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Wet
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	1000	76	10	11/08/18	12/15/18	KWG1805838	
Bis(2-ethylhexyl) Phthalate	ND	U	20000	120	10	11/08/18	12/15/18	KWG1805838	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4,6-Tribromophenol	74	44-125	12/15/18	Acceptable
Terphenyl-d14	65	53-137	12/15/18	Acceptable

Comments: _____

Analytical Results

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal tissue

Service Request: K1810421
Date Collected:
Date Received: 10/24/2018

Semi-Volatile Organic Compounds by GC/MS

Sample Name: PDI-TF-SMB134
Lab Code: K1810421-007
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Wet
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	1000	76	10	11/08/18	12/15/18	KWG1805838	
Bis(2-ethylhexyl) Phthalate	930	JD	20000	120	10	11/08/18	12/15/18	KWG1805838	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4,6-Tribromophenol	74	44-125	12/15/18	Acceptable
Terphenyl-d14	38	53-137	12/15/18	Outside Control Limits

Comments: _____

Analytical Results

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal tissue

Service Request: K1810421
Date Collected:
Date Received: 10/24/2018

Semi-Volatile Organic Compounds by GC/MS

Sample Name: PDI-TF-SMB116
Lab Code: K1810421-008
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Wet
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	1000	76	10	11/08/18	12/15/18	KWG1805838	
Bis(2-ethylhexyl) Phthalate	ND	U	20000	120	10	11/08/18	12/15/18	KWG1805838	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4,6-Tribromophenol	84	44-125	12/15/18	Acceptable
Terphenyl-d14	72	53-137	12/15/18	Acceptable

Comments: _____

Analytical Results

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal tissue

Service Request: K1810421
Date Collected:
Date Received: 10/24/2018

Semi-Volatile Organic Compounds by GC/MS

Sample Name: PDI-TF-SMB063
Lab Code: K1810421-009
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Wet
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	990	76	10	11/08/18	12/15/18	KWG1805838	*
Bis(2-ethylhexyl) Phthalate	ND	U	20000	120	10	11/08/18	12/15/18	KWG1805838	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4,6-Tribromophenol	26	44-125	12/15/18	Outside Control Limits
Terphenyl-d14	59	53-137	12/15/18	Acceptable

Comments: _____

Analytical Results

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal tissue

Service Request: K1810421
Date Collected:
Date Received: 10/24/2018

Semi-Volatile Organic Compounds by GC/MS

Sample Name: PDI-TF-SMB131
Lab Code: K1810421-010
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Wet
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	990	76	10	11/08/18	12/15/18	KWG1805838	
Bis(2-ethylhexyl) Phthalate	1100	JD	20000	120	10	11/08/18	12/15/18	KWG1805838	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4,6-Tribromophenol	82	44-125	12/15/18	Acceptable
Terphenyl-d14	48	53-137	12/15/18	Outside Control Limits

Comments: _____

Analytical Results

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal tissue

Service Request: K1810421
Date Collected:
Date Received: 10/24/2018

Semi-Volatile Organic Compounds by GC/MS

Sample Name: PDI-TF-SMB124
Lab Code: K1810421-011
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Wet
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	990	76	10	11/08/18	12/15/18	KWG1805838	
Bis(2-ethylhexyl) Phthalate	640	JD	20000	120	10	11/08/18	12/15/18	KWG1805838	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4,6-Tribromophenol	65	44-125	12/15/18	Acceptable
Terphenyl-d14	52	53-137	12/15/18	Outside Control Limits

Comments: _____

Analytical Results

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal tissue

Service Request: K1810421
Date Collected:
Date Received: 10/24/2018

Semi-Volatile Organic Compounds by GC/MS

Sample Name: PDI-TF-SMB115
Lab Code: K1810421-012
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Wet
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	1000	76	10	11/08/18	12/15/18	KWG1805838	
Bis(2-ethylhexyl) Phthalate	ND	U	20000	120	10	11/08/18	12/15/18	KWG1805838	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4,6-Tribromophenol	65	44-125	12/15/18	Acceptable
Terphenyl-d14	53	53-137	12/15/18	Acceptable

Comments: _____

Analytical Results

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal tissue

Service Request: K1810421
Date Collected:
Date Received: 10/24/2018

Semi-Volatile Organic Compounds by GC/MS

Sample Name: PDI-TF-SMB121
Lab Code: K1810421-013
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Wet
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	1000	76	10	11/08/18	12/15/18	KWG1805838	
Bis(2-ethylhexyl) Phthalate	ND	U	20000	120	10	11/08/18	12/15/18	KWG1805838	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4,6-Tribromophenol	77	44-125	12/15/18	Acceptable
Terphenyl-d14	65	53-137	12/15/18	Acceptable

Comments: _____

Analytical Results

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal tissue

Service Request: K1810421
Date Collected:
Date Received: 10/24/2018

Semi-Volatile Organic Compounds by GC/MS

Sample Name: PDI-TF-SMB122
Lab Code: K1810421-014
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Wet
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	1000	76	10	11/08/18	12/15/18	KWG1805838	
Bis(2-ethylhexyl) Phthalate	880	JD	20000	120	10	11/08/18	12/15/18	KWG1805838	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4,6-Tribromophenol	76	44-125	12/15/18	Acceptable
Terphenyl-d14	57	53-137	12/15/18	Acceptable

Comments: _____

Analytical Results

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal tissue

Service Request: K1810421
Date Collected:
Date Received: 10/24/2018

Semi-Volatile Organic Compounds by GC/MS

Sample Name: PDI-TF-SMB135
Lab Code: K1810421-015
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Wet
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	1000	76	10	11/08/18	12/15/18	KWG1805838	
Bis(2-ethylhexyl) Phthalate	820	JD	20000	120	10	11/08/18	12/15/18	KWG1805838	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4,6-Tribromophenol	85	44-125	12/15/18	Acceptable
Terphenyl-d14	52	53-137	12/15/18	Outside Control Limits

Comments: _____

Analytical Results

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal tissue

Service Request: K1810421
Date Collected:
Date Received: 10/24/2018

Semi-Volatile Organic Compounds by GC/MS

Sample Name: PDI-TF-SMB118
Lab Code: K1810421-016
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Wet
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	1000	76	10	11/08/18	12/15/18	KWG1805838	
Bis(2-ethylhexyl) Phthalate	ND	U	20000	120	10	11/08/18	12/15/18	KWG1805838	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4,6-Tribromophenol	72	44-125	12/15/18	Acceptable
Terphenyl-d14	59	53-137	12/15/18	Acceptable

Comments: _____

Analytical Results

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal tissue

Service Request: K1810421
Date Collected:
Date Received: 10/24/2018

Semi-Volatile Organic Compounds by GC/MS

Sample Name: PDI-TF-SMB049
Lab Code: K1810421-017
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Wet
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	1000	76	10	11/08/18	12/15/18	KWG1805838	
Bis(2-ethylhexyl) Phthalate	ND	U	20000	120	10	11/08/18	12/15/18	KWG1805838	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4,6-Tribromophenol	75	44-125	12/15/18	Acceptable
Terphenyl-d14	64	53-137	12/15/18	Acceptable

Comments: _____

Analytical Results

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal tissue

Service Request: K1810421
Date Collected:
Date Received: 10/24/2018

Semi-Volatile Organic Compounds by GC/MS

Sample Name: PDI-TF-SMB085
Lab Code: K1810421-018
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Wet
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	990	76	10	11/08/18	12/15/18	KWG1805838	
Bis(2-ethylhexyl) Phthalate	720	JD	20000	120	10	11/08/18	12/15/18	KWG1805838	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4,6-Tribromophenol	108	44-125	12/15/18	Acceptable
Terphenyl-d14	78	53-137	12/15/18	Acceptable

Comments: _____

Analytical Results

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal tissue

Service Request: K1810421
Date Collected:
Date Received: 10/24/2018

Semi-Volatile Organic Compounds by GC/MS

Sample Name: PDI-TF-SMB089
Lab Code: K1810421-019
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Wet
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	1000	76	10	11/08/18	12/15/18	KWG1805838	
Bis(2-ethylhexyl) Phthalate	ND	U	20000	120	10	11/08/18	12/15/18	KWG1805838	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4,6-Tribromophenol	71	44-125	12/15/18	Acceptable
Terphenyl-d14	61	53-137	12/15/18	Acceptable

Comments: _____

Analytical Results

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal tissue

Service Request: K1810421
Date Collected:
Date Received: 10/24/2018

Semi-Volatile Organic Compounds by GC/MS

Sample Name: PDI-TF-SMB092
Lab Code: K1810421-020
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Wet
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	1000	76	10	11/08/18	12/15/18	KWG1805838	
Bis(2-ethylhexyl) Phthalate	ND	U	20000	120	10	11/08/18	12/15/18	KWG1805838	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4,6-Tribromophenol	72	44-125	12/15/18	Acceptable
Terphenyl-d14	60	53-137	12/15/18	Acceptable

Comments: _____

Analytical Results

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal tissue

Service Request: K1810421
Date Collected: NA
Date Received: NA

Semi-Volatile Organic Compounds by GC/MS

Sample Name: Method Blank
Lab Code: KWG1805838-4
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Wet
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	99	7.6	1	11/08/18	12/15/18	KWG1805838	
Bis(2-ethylhexyl) Phthalate	ND	U	2000	12	1	11/08/18	12/15/18	KWG1805838	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4,6-Tribromophenol	68	44-125	12/15/18	Acceptable
Terphenyl-d14	70	53-137	12/15/18	Acceptable

Comments: _____

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal tissue

Service Request: K1810421

Surrogate Recovery Summary
Semi-Volatile Organic Compounds by GC/MS

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>
PDI-TF-SMB125	K1810421-001	78 D	62 D
PDI-TF-SMB082	K1810421-002	71 D	52 D *
PDI-TF-SMB073	K1810421-003	74 D	65 D
PDI-TF-SMB126	K1810421-004	73 D	61 D
PDI-TF-SMB127	K1810421-005	69 D	54 D
PDI-TF-SMB123	K1810421-006	74 D	65 D
PDI-TF-SMB134	K1810421-007	74 D	38 D *
PDI-TF-SMB116	K1810421-008	84 D	72 D
PDI-TF-SMB063	K1810421-009	26 D *	59 D
PDI-TF-SMB131	K1810421-010	82 D	48 D *
PDI-TF-SMB124	K1810421-011	65 D	52 D *
PDI-TF-SMB115	K1810421-012	65 D	53 D
PDI-TF-SMB121	K1810421-013	77 D	65 D
PDI-TF-SMB122	K1810421-014	76 D	57 D
PDI-TF-SMB135	K1810421-015	85 D	52 D *
PDI-TF-SMB118	K1810421-016	72 D	59 D
PDI-TF-SMB049	K1810421-017	75 D	64 D
PDI-TF-SMB085	K1810421-018	108 D	78 D
PDI-TF-SMB089	K1810421-019	71 D	61 D
PDI-TF-SMB092	K1810421-020	72 D	60 D
Method Blank	KWG1805838-4	68	70
PDI-TF-SMB082MS	KWG1805838-1	77 D	58 D
PDI-TF-SMB082DMS	KWG1805838-2	72 D	57 D
Lab Control Sample	KWG1805838-3	84	68

Surrogate Recovery Control Limits (%)

Sur1 = 2,4,6-Tribromophenol	44-125
Sur2 = Terphenyl-d14	53-137

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 Tissue 2018/60566335

Service Request: K1810421
Date Analyzed: 12/15/2018
Time Analyzed: 09:37

**Internal Standard Area and RT Summary
Semi-Volatile Organic Compounds by GC/MS**

File ID: J:\MS28\DATA\121518\1215F002.D
Instrument ID: MS28
Analysis Method: 8270D SIM

Lab Code: KWG1806539-1
Analysis Lot: KWG1806539

	Phenanthrene-d10	
	<u>Area</u>	<u>RT</u>
Results ==>	3,895,126	11.78
Upper Limit ==>	7,790,252	12.28
Lower Limit ==>	1,947,563	11.28
ICAL Result ==>	3,154,189	11.78

Associated Analyses

Method Blank	KWG1805838-4	3,477,576	11.78
Lab Control Sample	KWG1805838-3	3,819,347	11.78
PDI-TF-SMB082MS	KWG1805838-1	4,005,787	11.78
PDI-TF-SMB082DMS	KWG1805838-2	4,063,868	11.78
PDI-TF-SMB125	K1810421-001	4,074,979	11.78
PDI-TF-SMB082	K1810421-002	3,931,265	11.78
PDI-TF-SMB073	K1810421-003	3,968,554	11.78
PDI-TF-SMB126	K1810421-004	3,144,131	11.78
PDI-TF-SMB127	K1810421-005	3,683,291	11.78
PDI-TF-SMB123	K1810421-006	3,742,746	11.78
PDI-TF-SMB134	K1810421-007	3,471,965	11.78
PDI-TF-SMB116	K1810421-008	3,717,389	11.78
PDI-TF-SMB063	K1810421-009	9,125,196*	11.78
PDI-TF-SMB131	K1810421-010	2,721,042	11.78
PDI-TF-SMB124	K1810421-011	3,680,456	11.78
PDI-TF-SMB115	K1810421-012	3,582,152	11.78
PDI-TF-SMB121	K1810421-013	3,861,955	11.78
PDI-TF-SMB122	K1810421-014	3,168,830	11.78
PDI-TF-SMB135	K1810421-015	2,868,606	11.78
PDI-TF-SMB118	K1810421-016	3,576,535	11.78
PDI-TF-SMB049	K1810421-017	3,758,333	11.78
PDI-TF-SMB085	K1810421-018	4,049,381	11.78
PDI-TF-SMB089	K1810421-019	3,803,215	11.78
PDI-TF-SMB092	K1810421-020	3,781,356	11.78

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

QA/QC Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335

Service Request: K1810421
Date Analyzed: 12/15/2018
Time Analyzed: 11:03

**Internal Standard Area and RT Summary
Semi-Volatile Organic Compounds by GC/MS**

File ID: J:\MS17\DATA\121518\1215F002.D
Instrument ID: MS17
Analysis Method: 8270D SIM

Lab Code: KWG1806561-2
Analysis Lot: KWG1806561

	Chrysene-d12	
	<u>Area</u>	<u>RT</u>
Results ==>	778,454	16.89
Upper Limit ==>	1,556,908	17.39
Lower Limit ==>	389,227	16.39
ICAL Result ==>	1,481,512	16.92

Associated Analyses

Method Blank	KWG1805838-4	551,616	16.89
Lab Control Sample	KWG1805838-3	682,096	16.89
PDI-TF-SMB082MS	KWG1805838-1	917,202	16.89
PDI-TF-SMB082DMS	KWG1805838-2	847,934	16.89
PDI-TF-SMB125RE	K1810421-001	863,003	16.89
PDI-TF-SMB082RE	K1810421-002	922,282	16.89
PDI-TF-SMB073RE	K1810421-003	685,186	16.89
PDI-TF-SMB126RE	K1810421-004	732,657	16.89
PDI-TF-SMB127RE	K1810421-005	871,889	16.89
PDI-TF-SMB123RE	K1810421-006	745,824	16.89
PDI-TF-SMB134RE	K1810421-007	1,290,945	16.89
PDI-TF-SMB116RE	K1810421-008	756,925	16.89
PDI-TF-SMB063RE	K1810421-009	733,343	16.89
PDI-TF-SMB131RE	K1810421-010	982,754	16.89
PDI-TF-SMB124RE	K1810421-011	822,949	16.89
PDI-TF-SMB115RE	K1810421-012	744,065	16.89
PDI-TF-SMB121RE	K1810421-013	740,992	16.89
PDI-TF-SMB122RE	K1810421-014	816,110	16.89
PDI-TF-SMB135RE	K1810421-015	862,089	16.89
PDI-TF-SMB118RE	K1810421-016	659,661	16.89
PDI-TF-SMB049RE	K1810421-017	643,554	16.89
PDI-TF-SMB085RE	K1810421-018	863,273	16.89
PDI-TF-SMB089RE	K1810421-019	672,070	16.89
PDI-TF-SMB092RE	K1810421-020	640,808	16.89

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

QA/QC Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal tissue

Service Request: K1810421
Date Extracted: 11/08/2018
Date Analyzed: 12/15/2018

Matrix Spike/Duplicate Matrix Spike Summary
Semi-Volatile Organic Compounds by GC/MS

Sample Name: PDI-TF-SMB082
Lab Code: K1810421-002
Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Wet
Level: Low
Extraction Lot: KWG1805838

Analyte Name	Sample Result	PDI-TF-SMB082MS KWG1805838-1 Matrix Spike			PDI-TF-SMB082DMS KWG1805838-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Spike Amount	%Rec	Result	Spike Amount	%Rec			
Pentachlorophenol	ND	1980	2960	67	1870	2990	62	41-105	6	40
Bis(2-ethylhexyl) Phthalate	660	2560	2960	64	2390	2990	58	56-136	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.

QA/QC Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal tissue

Service Request: K1810421
Date Extracted: 11/08/2018
Date Analyzed: 12/15/2018

Lab Control Spike Summary
Semi-Volatile Organic Compounds by GC/MS

Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Wet
Level: Low
Extraction Lot: KWG1805838

Lab Control Sample KWG1805838-3 Lab Control Spike				
Analyte Name	Result	Spike Amount	%Rec	%Rec Limits
Pentachlorophenol	2180	3000	73	41-105
Bis(2-ethylhexyl) Phthalate	2830	3000	94	56-136

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 Tissue 2018/60566335
Sample Matrix: Animal tissue

Service Request: K1810421
Date Extracted: 11/08/2018
Date Analyzed: 12/15/2018
Time Analyzed: 11:32

Method Blank Summary
Semi-Volatile Organic Compounds by GC/MS

Sample Name:	Method Blank	Instrument ID:	MS17
Lab Code:	KWG1805838-4	File ID:	J:\MS17\DATA\121518\1215F003.D
Extraction Method:	EPA 3541	Level:	Low
Analysis Method:	8270D SIM	Extraction Lot:	KWG1805838

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG1805838-3	J:\MS17\DATA\121518\1215F004.D	12/15/18	12:00
PDI-TF-SMB082MS	KWG1805838-1	J:\MS17\DATA\121518\1215F005.D	12/15/18	12:29
PDI-TF-SMB082DMS	KWG1805838-2	J:\MS17\DATA\121518\1215F006.D	12/15/18	12:57
PDI-TF-SMB125	K1810421-001	J:\MS17\DATA\121518\1215F007.D	12/15/18	13:26
PDI-TF-SMB082	K1810421-002	J:\MS17\DATA\121518\1215F008.D	12/15/18	13:54
PDI-TF-SMB073	K1810421-003	J:\MS17\DATA\121518\1215F009.D	12/15/18	14:22
PDI-TF-SMB126	K1810421-004	J:\MS17\DATA\121518\1215F010.D	12/15/18	14:51
PDI-TF-SMB127	K1810421-005	J:\MS17\DATA\121518\1215F011.D	12/15/18	15:19
PDI-TF-SMB123	K1810421-006	J:\MS17\DATA\121518\1215F012.D	12/15/18	15:48
PDI-TF-SMB134	K1810421-007	J:\MS17\DATA\121518\1215F013.D	12/15/18	16:16
PDI-TF-SMB116	K1810421-008	J:\MS17\DATA\121518\1215F014.D	12/15/18	16:44
PDI-TF-SMB063	K1810421-009	J:\MS17\DATA\121518\1215F015.D	12/15/18	17:13
PDI-TF-SMB131	K1810421-010	J:\MS17\DATA\121518\1215F016.D	12/15/18	17:41
PDI-TF-SMB124	K1810421-011	J:\MS17\DATA\121518\1215F017.D	12/15/18	18:10
PDI-TF-SMB115	K1810421-012	J:\MS17\DATA\121518\1215F018.D	12/15/18	18:38
PDI-TF-SMB121	K1810421-013	J:\MS17\DATA\121518\1215F019.D	12/15/18	19:06
PDI-TF-SMB122	K1810421-014	J:\MS17\DATA\121518\1215F020.D	12/15/18	19:35
PDI-TF-SMB135	K1810421-015	J:\MS17\DATA\121518\1215F021.D	12/15/18	20:03
PDI-TF-SMB118	K1810421-016	J:\MS17\DATA\121518\1215F022.D	12/15/18	20:32
PDI-TF-SMB049	K1810421-017	J:\MS17\DATA\121518\1215F023.D	12/15/18	21:00
PDI-TF-SMB085	K1810421-018	J:\MS17\DATA\121518\1215F024.D	12/15/18	21:28
PDI-TF-SMB089	K1810421-019	J:\MS17\DATA\121518\1215F025.D	12/15/18	21:57
PDI-TF-SMB092	K1810421-020	J:\MS17\DATA\121518\1215F026.D	12/15/18	22:25

QA/QC Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal tissue

Service Request: K1810421
Date Extracted: 11/08/2018
Date Analyzed: 12/15/2018
Time Analyzed: 10:46

Method Blank Summary
Semi-Volatile Organic Compounds by GC/MS

Sample Name:	Method Blank	Instrument ID:	MS28
Lab Code:	KWG1805838-4	File ID:	J:\MS28\DATA\121518\1215F004.D
Extraction Method:	EPA 3541	Level:	Low
Analysis Method:	8270D SIM	Extraction Lot:	KWG1805838

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG1805838-3	J:\MS28\DATA\121518\1215F005.D	12/15/18	11:06
PDI-TF-SMB082MS	KWG1805838-1	J:\MS28\DATA\121518\1215F006.D	12/15/18	11:26
PDI-TF-SMB082DMS	KWG1805838-2	J:\MS28\DATA\121518\1215F007.D	12/15/18	11:48
PDI-TF-SMB125	K1810421-001	J:\MS28\DATA\121518\1215F009.D	12/15/18	12:32
PDI-TF-SMB082	K1810421-002	J:\MS28\DATA\121518\1215F010.D	12/15/18	12:54
PDI-TF-SMB073	K1810421-003	J:\MS28\DATA\121518\1215F011.D	12/15/18	13:15
PDI-TF-SMB126	K1810421-004	J:\MS28\DATA\121518\1215F012.D	12/15/18	13:37
PDI-TF-SMB127	K1810421-005	J:\MS28\DATA\121518\1215F013.D	12/15/18	13:59
PDI-TF-SMB123	K1810421-006	J:\MS28\DATA\121518\1215F014.D	12/15/18	14:21
PDI-TF-SMB134	K1810421-007	J:\MS28\DATA\121518\1215F015.D	12/15/18	14:42
PDI-TF-SMB116	K1810421-008	J:\MS28\DATA\121518\1215F016.D	12/15/18	15:04
PDI-TF-SMB063	K1810421-009	J:\MS28\DATA\121518\1215F017.D	12/15/18	15:26
PDI-TF-SMB131	K1810421-010	J:\MS28\DATA\121518\1215F018.D	12/15/18	15:47
PDI-TF-SMB124	K1810421-011	J:\MS28\DATA\121518\1215F019.D	12/15/18	16:09
PDI-TF-SMB115	K1810421-012	J:\MS28\DATA\121518\1215F020.D	12/15/18	16:31
PDI-TF-SMB121	K1810421-013	J:\MS28\DATA\121518\1215F021.D	12/15/18	16:53
PDI-TF-SMB122	K1810421-014	J:\MS28\DATA\121518\1215F022.D	12/15/18	17:14
PDI-TF-SMB135	K1810421-015	J:\MS28\DATA\121518\1215F023.D	12/15/18	17:36
PDI-TF-SMB118	K1810421-016	J:\MS28\DATA\121518\1215F024.D	12/15/18	17:58
PDI-TF-SMB049	K1810421-017	J:\MS28\DATA\121518\1215F025.D	12/15/18	18:20
PDI-TF-SMB085	K1810421-018	J:\MS28\DATA\121518\1215F026.D	12/15/18	18:41
PDI-TF-SMB089	K1810421-019	J:\MS28\DATA\121518\1215F027.D	12/15/18	19:03
PDI-TF-SMB092	K1810421-020	J:\MS28\DATA\121518\1215F028.D	12/15/18	19:25

QA/QC Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal tissue

Service Request: K1810421
Date Extracted: 11/08/2018
Date Analyzed: 12/15/2018
Time Analyzed: 12:00

Lab Control Sample Summary
Semi-Volatile Organic Compounds by GC/MS

Sample Name:	Lab Control Sample	Instrument ID:	MS17
Lab Code:	KWG1805838-3	File ID:	J:\MS17\DATA\121518\1215F004.D
Extraction Method:	EPA 3541	Level:	Low
Analysis Method:	8270D SIM	Extraction Lot:	KWG1805838

This Lab Control Sample applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG1805838-4	J:\MS28\DATA\121518\1215F004.D	12/15/18	10:46
PDI-TF-SMB082MS	KWG1805838-1	J:\MS28\DATA\121518\1215F006.D	12/15/18	11:26
Method Blank	KWG1805838-4	J:\MS17\DATA\121518\1215F003.D	12/15/18	11:32
PDI-TF-SMB082DMS	KWG1805838-2	J:\MS28\DATA\121518\1215F007.D	12/15/18	11:48
PDI-TF-SMB082MS	KWG1805838-1	J:\MS17\DATA\121518\1215F005.D	12/15/18	12:29
PDI-TF-SMB125	K1810421-001	J:\MS28\DATA\121518\1215F009.D	12/15/18	12:32
PDI-TF-SMB082	K1810421-002	J:\MS28\DATA\121518\1215F010.D	12/15/18	12:54
PDI-TF-SMB082DMS	KWG1805838-2	J:\MS17\DATA\121518\1215F006.D	12/15/18	12:57
PDI-TF-SMB073	K1810421-003	J:\MS28\DATA\121518\1215F011.D	12/15/18	13:15
PDI-TF-SMB125	K1810421-001	J:\MS17\DATA\121518\1215F007.D	12/15/18	13:26
PDI-TF-SMB126	K1810421-004	J:\MS28\DATA\121518\1215F012.D	12/15/18	13:37
PDI-TF-SMB082	K1810421-002	J:\MS17\DATA\121518\1215F008.D	12/15/18	13:54
PDI-TF-SMB127	K1810421-005	J:\MS28\DATA\121518\1215F013.D	12/15/18	13:59
PDI-TF-SMB123	K1810421-006	J:\MS28\DATA\121518\1215F014.D	12/15/18	14:21
PDI-TF-SMB073	K1810421-003	J:\MS17\DATA\121518\1215F009.D	12/15/18	14:22
PDI-TF-SMB134	K1810421-007	J:\MS28\DATA\121518\1215F015.D	12/15/18	14:42
PDI-TF-SMB126	K1810421-004	J:\MS17\DATA\121518\1215F010.D	12/15/18	14:51
PDI-TF-SMB116	K1810421-008	J:\MS28\DATA\121518\1215F016.D	12/15/18	15:04
PDI-TF-SMB127	K1810421-005	J:\MS17\DATA\121518\1215F011.D	12/15/18	15:19
PDI-TF-SMB063	K1810421-009	J:\MS28\DATA\121518\1215F017.D	12/15/18	15:26
PDI-TF-SMB131	K1810421-010	J:\MS28\DATA\121518\1215F018.D	12/15/18	15:47
PDI-TF-SMB123	K1810421-006	J:\MS17\DATA\121518\1215F012.D	12/15/18	15:48
PDI-TF-SMB124	K1810421-011	J:\MS28\DATA\121518\1215F019.D	12/15/18	16:09
PDI-TF-SMB134	K1810421-007	J:\MS17\DATA\121518\1215F013.D	12/15/18	16:16
PDI-TF-SMB115	K1810421-012	J:\MS28\DATA\121518\1215F020.D	12/15/18	16:31
PDI-TF-SMB116	K1810421-008	J:\MS17\DATA\121518\1215F014.D	12/15/18	16:44
PDI-TF-SMB121	K1810421-013	J:\MS28\DATA\121518\1215F021.D	12/15/18	16:53
PDI-TF-SMB063	K1810421-009	J:\MS17\DATA\121518\1215F015.D	12/15/18	17:13
PDI-TF-SMB122	K1810421-014	J:\MS28\DATA\121518\1215F022.D	12/15/18	17:14
PDI-TF-SMB135	K1810421-015	J:\MS28\DATA\121518\1215F023.D	12/15/18	17:36
PDI-TF-SMB131	K1810421-010	J:\MS17\DATA\121518\1215F016.D	12/15/18	17:41
PDI-TF-SMB118	K1810421-016	J:\MS28\DATA\121518\1215F024.D	12/15/18	17:58
PDI-TF-SMB124	K1810421-011	J:\MS17\DATA\121518\1215F017.D	12/15/18	18:10
PDI-TF-SMB049	K1810421-017	J:\MS28\DATA\121518\1215F025.D	12/15/18	18:20
PDI-TF-SMB115	K1810421-012	J:\MS17\DATA\121518\1215F018.D	12/15/18	18:38
PDI-TF-SMB085	K1810421-018	J:\MS28\DATA\121518\1215F026.D	12/15/18	18:41
PDI-TF-SMB089	K1810421-019	J:\MS28\DATA\121518\1215F027.D	12/15/18	19:03

QA/QC Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal tissue

Service Request: K1810421
Date Extracted: 11/08/2018
Date Analyzed: 12/15/2018
Time Analyzed: 12:00

Lab Control Sample Summary
Semi-Volatile Organic Compounds by GC/MS

Sample Name:	Lab Control Sample	Instrument ID:	MS17
Lab Code:	KWG1805838-3	File ID:	J:\MS17\DATA\121518\1215F004.D
Extraction Method:	EPA 3541	Level:	Low
Analysis Method:	8270D SIM	Extraction Lot:	KWG1805838

This Lab Control Sample applies to the following analyses:

PDI-TF-SMB121	K1810421-013	J:\MS17\DATA\121518\1215F019.D	12/15/18	19:06
PDI-TF-SMB092	K1810421-020	J:\MS28\DATA\121518\1215F028.D	12/15/18	19:25
PDI-TF-SMB122	K1810421-014	J:\MS17\DATA\121518\1215F020.D	12/15/18	19:35
PDI-TF-SMB135	K1810421-015	J:\MS17\DATA\121518\1215F021.D	12/15/18	20:03
PDI-TF-SMB118	K1810421-016	J:\MS17\DATA\121518\1215F022.D	12/15/18	20:32
PDI-TF-SMB049	K1810421-017	J:\MS17\DATA\121518\1215F023.D	12/15/18	21:00
PDI-TF-SMB085	K1810421-018	J:\MS17\DATA\121518\1215F024.D	12/15/18	21:28
PDI-TF-SMB089	K1810421-019	J:\MS17\DATA\121518\1215F025.D	12/15/18	21:57
PDI-TF-SMB092	K1810421-020	J:\MS17\DATA\121518\1215F026.D	12/15/18	22:25

QA/QC Report

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal tissue

Service Request: K1810421
Date Extracted: 11/08/2018
Date Analyzed: 12/15/2018
Time Analyzed: 11:06

Lab Control Sample Summary
Semi-Volatile Organic Compounds by GC/MS

Sample Name:	Lab Control Sample	Instrument ID:	MS28
Lab Code:	KWG1805838-3	File ID:	J:\MS28\DATA\121518\1215F005.D
Extraction Method:	EPA 3541	Level:	Low
Analysis Method:	8270D SIM	Extraction Lot:	KWG1805838

This Lab Control Sample applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG1805838-4	J:\MS28\DATA\121518\1215F004.D	12/15/18	10:46
PDI-TF-SMB082MS	KWG1805838-1	J:\MS28\DATA\121518\1215F006.D	12/15/18	11:26
PDI-TF-SMB082DMS	KWG1805838-2	J:\MS28\DATA\121518\1215F007.D	12/15/18	11:48
PDI-TF-SMB125	K1810421-001	J:\MS28\DATA\121518\1215F009.D	12/15/18	12:32
PDI-TF-SMB082	K1810421-002	J:\MS28\DATA\121518\1215F010.D	12/15/18	12:54
PDI-TF-SMB073	K1810421-003	J:\MS28\DATA\121518\1215F011.D	12/15/18	13:15
PDI-TF-SMB126	K1810421-004	J:\MS28\DATA\121518\1215F012.D	12/15/18	13:37
PDI-TF-SMB127	K1810421-005	J:\MS28\DATA\121518\1215F013.D	12/15/18	13:59
PDI-TF-SMB123	K1810421-006	J:\MS28\DATA\121518\1215F014.D	12/15/18	14:21
PDI-TF-SMB134	K1810421-007	J:\MS28\DATA\121518\1215F015.D	12/15/18	14:42
PDI-TF-SMB116	K1810421-008	J:\MS28\DATA\121518\1215F016.D	12/15/18	15:04
PDI-TF-SMB063	K1810421-009	J:\MS28\DATA\121518\1215F017.D	12/15/18	15:26
PDI-TF-SMB131	K1810421-010	J:\MS28\DATA\121518\1215F018.D	12/15/18	15:47
PDI-TF-SMB124	K1810421-011	J:\MS28\DATA\121518\1215F019.D	12/15/18	16:09
PDI-TF-SMB115	K1810421-012	J:\MS28\DATA\121518\1215F020.D	12/15/18	16:31
PDI-TF-SMB121	K1810421-013	J:\MS28\DATA\121518\1215F021.D	12/15/18	16:53
PDI-TF-SMB122	K1810421-014	J:\MS28\DATA\121518\1215F022.D	12/15/18	17:14
PDI-TF-SMB135	K1810421-015	J:\MS28\DATA\121518\1215F023.D	12/15/18	17:36
PDI-TF-SMB118	K1810421-016	J:\MS28\DATA\121518\1215F024.D	12/15/18	17:58
PDI-TF-SMB049	K1810421-017	J:\MS28\DATA\121518\1215F025.D	12/15/18	18:20
PDI-TF-SMB085	K1810421-018	J:\MS28\DATA\121518\1215F026.D	12/15/18	18:41
PDI-TF-SMB089	K1810421-019	J:\MS28\DATA\121518\1215F027.D	12/15/18	19:03
PDI-TF-SMB092	K1810421-020	J:\MS28\DATA\121518\1215F028.D	12/15/18	19:25

QA/QC Results

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335

Service Request: K1810421
Date Analyzed: 12/15/2018
Time Analyzed: 09:17

Tune Summary
Semi-Volatile Organic Compounds by GC/MS

File ID: J:\MS28\DATA\121518\1215F001.D
Instrument ID: MS28
Column:

Analysis Method: 8270D SIM
Analysis Lot: KWG1806539

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	31.1	1507376	PASS
68	69	0	2	1.3	24393	PASS
69	198	0	100	39.5	1915153	PASS
70	69	0	2	0.4	7602	PASS
127	198	10	80	49.7	2408534	PASS
197	198	0	2	0.0	0	PASS
198	442	30	100	77.9	4846080	PASS
199	198	5	9	6.3	307520	PASS
275	198	10	60	21.4	1034705	PASS
365	442	1	50	1.6	98872	PASS
441	443	0	100	82.4	954432	PASS
442	442	100	100	100.0	6224384	PASS
443	442	15	24	18.6	1158144	PASS

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

QA/QC Results

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335

Service Request: K1810421
Date Analyzed: 12/15/2018
Time Analyzed: 09:17

Tune Summary
Semi-Volatile Organic Compounds by GC/MS

File ID: J:\MS28\DATA\121518\1215F001.D
Instrument ID: MS28
Column:

Analysis Method: 8270D SIM
Analysis Lot: KWG1806539

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
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Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG1806539-1	J:\MS28\DATA\121518\1215F002.D	12/15/2018	09:37	
Method Blank	KWG1805838-4	J:\MS28\DATA\121518\1215F004.D	12/15/2018	10:46	
Lab Control Sample	KWG1805838-3	J:\MS28\DATA\121518\1215F005.D	12/15/2018	11:06	
PDI-TF-SMB082MS	KWG1805838-1	J:\MS28\DATA\121518\1215F006.D	12/15/2018	11:26	
PDI-TF-SMB082DMS	KWG1805838-2	J:\MS28\DATA\121518\1215F007.D	12/15/2018	11:48	
PDI-TF-SMB125	K1810421-001	J:\MS28\DATA\121518\1215F009.D	12/15/2018	12:32	
PDI-TF-SMB082	K1810421-002	J:\MS28\DATA\121518\1215F010.D	12/15/2018	12:54	
PDI-TF-SMB073	K1810421-003	J:\MS28\DATA\121518\1215F011.D	12/15/2018	13:15	
PDI-TF-SMB126	K1810421-004	J:\MS28\DATA\121518\1215F012.D	12/15/2018	13:37	
PDI-TF-SMB127	K1810421-005	J:\MS28\DATA\121518\1215F013.D	12/15/2018	13:59	
PDI-TF-SMB123	K1810421-006	J:\MS28\DATA\121518\1215F014.D	12/15/2018	14:21	
PDI-TF-SMB134	K1810421-007	J:\MS28\DATA\121518\1215F015.D	12/15/2018	14:42	
PDI-TF-SMB116	K1810421-008	J:\MS28\DATA\121518\1215F016.D	12/15/2018	15:04	
PDI-TF-SMB063	K1810421-009	J:\MS28\DATA\121518\1215F017.D	12/15/2018	15:26	
PDI-TF-SMB131	K1810421-010	J:\MS28\DATA\121518\1215F018.D	12/15/2018	15:47	
PDI-TF-SMB124	K1810421-011	J:\MS28\DATA\121518\1215F019.D	12/15/2018	16:09	
PDI-TF-SMB115	K1810421-012	J:\MS28\DATA\121518\1215F020.D	12/15/2018	16:31	
PDI-TF-SMB121	K1810421-013	J:\MS28\DATA\121518\1215F021.D	12/15/2018	16:53	
PDI-TF-SMB122	K1810421-014	J:\MS28\DATA\121518\1215F022.D	12/15/2018	17:14	
PDI-TF-SMB135	K1810421-015	J:\MS28\DATA\121518\1215F023.D	12/15/2018	17:36	
PDI-TF-SMB118	K1810421-016	J:\MS28\DATA\121518\1215F024.D	12/15/2018	17:58	
PDI-TF-SMB049	K1810421-017	J:\MS28\DATA\121518\1215F025.D	12/15/2018	18:20	
PDI-TF-SMB085	K1810421-018	J:\MS28\DATA\121518\1215F026.D	12/15/2018	18:41	
PDI-TF-SMB089	K1810421-019	J:\MS28\DATA\121518\1215F027.D	12/15/2018	19:03	
PDI-TF-SMB092	K1810421-020	J:\MS28\DATA\121518\1215F028.D	12/15/2018	19:25	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

QA/QC Results

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335

Service Request: K1810421
Date Analyzed: 12/15/2018
Time Analyzed: 10:35

Tune Summary
Semi-Volatile Organic Compounds by GC/MS

File ID: J:\MS17\DATA\121518\1215F001.D
Instrument ID: MS17
Column:

Analysis Method: 8270D SIM
Analysis Lot: KWG1806561

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	47.7	676193	PASS
68	69	0	2	1.1	5629	PASS
69	198	0	100	37.8	535857	PASS
70	69	0	2	0.7	3670	PASS
127	198	10	80	46.4	658133	PASS
197	198	0	2	0.0	0	PASS
198	442	30	100	50.2	1417898	PASS
199	198	5	9	6.9	97856	PASS
275	198	10	60	39.8	564032	PASS
365	442	1	50	5.5	154634	PASS
441	443	0	100	86.3	457642	PASS
442	442	100	100	100.0	2826581	PASS
443	442	15	24	18.8	530560	PASS

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

QA/QC Results

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335

Service Request: K1810421
Date Analyzed: 12/15/2018
Time Analyzed: 10:35

Tune Summary
Semi-Volatile Organic Compounds by GC/MS

File ID: J:\MS17\DATA\121518\1215F001.D
Instrument ID: MS17
Column:

Analysis Method: 8270D SIM
Analysis Lot: KWG1806561

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
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Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG1806561-2	J:\MS17\DATA\121518\1215F002.D	12/15/2018	11:03	
Method Blank	KWG1805838-4	J:\MS17\DATA\121518\1215F003.D	12/15/2018	11:32	
Lab Control Sample	KWG1805838-3	J:\MS17\DATA\121518\1215F004.D	12/15/2018	12:00	
PDI-TF-SMB082MS	KWG1805838-1	J:\MS17\DATA\121518\1215F005.D	12/15/2018	12:29	
PDI-TF-SMB082DMS	KWG1805838-2	J:\MS17\DATA\121518\1215F006.D	12/15/2018	12:57	
PDI-TF-SMB125	K1810421-001	J:\MS17\DATA\121518\1215F007.D	12/15/2018	13:26	
PDI-TF-SMB082	K1810421-002	J:\MS17\DATA\121518\1215F008.D	12/15/2018	13:54	
PDI-TF-SMB073	K1810421-003	J:\MS17\DATA\121518\1215F009.D	12/15/2018	14:22	
PDI-TF-SMB126	K1810421-004	J:\MS17\DATA\121518\1215F010.D	12/15/2018	14:51	
PDI-TF-SMB127	K1810421-005	J:\MS17\DATA\121518\1215F011.D	12/15/2018	15:19	
PDI-TF-SMB123	K1810421-006	J:\MS17\DATA\121518\1215F012.D	12/15/2018	15:48	
PDI-TF-SMB134	K1810421-007	J:\MS17\DATA\121518\1215F013.D	12/15/2018	16:16	
PDI-TF-SMB116	K1810421-008	J:\MS17\DATA\121518\1215F014.D	12/15/2018	16:44	
PDI-TF-SMB063	K1810421-009	J:\MS17\DATA\121518\1215F015.D	12/15/2018	17:13	
PDI-TF-SMB131	K1810421-010	J:\MS17\DATA\121518\1215F016.D	12/15/2018	17:41	
PDI-TF-SMB124	K1810421-011	J:\MS17\DATA\121518\1215F017.D	12/15/2018	18:10	
PDI-TF-SMB115	K1810421-012	J:\MS17\DATA\121518\1215F018.D	12/15/2018	18:38	
PDI-TF-SMB121	K1810421-013	J:\MS17\DATA\121518\1215F019.D	12/15/2018	19:06	
PDI-TF-SMB122	K1810421-014	J:\MS17\DATA\121518\1215F020.D	12/15/2018	19:35	
PDI-TF-SMB135	K1810421-015	J:\MS17\DATA\121518\1215F021.D	12/15/2018	20:03	
PDI-TF-SMB118	K1810421-016	J:\MS17\DATA\121518\1215F022.D	12/15/2018	20:32	
PDI-TF-SMB049	K1810421-017	J:\MS17\DATA\121518\1215F023.D	12/15/2018	21:00	
PDI-TF-SMB085	K1810421-018	J:\MS17\DATA\121518\1215F024.D	12/15/2018	21:28	
PDI-TF-SMB089	K1810421-019	J:\MS17\DATA\121518\1215F025.D	12/15/2018	21:57	
PDI-TF-SMB092	K1810421-020	J:\MS17\DATA\121518\1215F026.D	12/15/2018	22:25	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335

Service Request: K1810421
Calibration Date: 11/16/2018

Initial Calibration Summary
Semi-Volatile Organic Compounds by GC/MS

Calibration ID: CAL15888
Instrument ID: MS17

Column: MS

Level ID	File ID	Level ID	File ID
A	J:\MS17\DATA\111618\1116F005.D	G	J:\MS17\DATA\111618\1116F011.D
B	J:\MS17\DATA\111618\1116F006.D	H	J:\MS17\DATA\111618\1116F012.D
C	J:\MS17\DATA\111618\1116F007.D	I	J:\MS17\DATA\111618\1116F013.D
D	J:\MS17\DATA\111618\1116F008.D	J	J:\MS17\DATA\111618\1116F014.D
E	J:\MS17\DATA\111618\1116F009.D		
F	J:\MS17\DATA\111618\1116F010.D		

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Bis(2-ethylhexyl) Phthalate	A	20	0.606	B	50	0.625	C	100	0.578	D	200	0.578	E	500	0.579
	F	1000	0.619	G	2000	0.628	H	4000	0.675	I	8000	0.680	J	10000	0.653
Terphenyl-d14	A	20	0.948	B	50	1.01	C	100	0.970	D	200	0.940	E	500	0.942
	F	1000	0.976	G	2000	0.979	H	4000	1.02	I	8000	0.930	J	10000	0.890

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

† SPCC Compound

‡ CCC Compound

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335

Service Request: K1810421
Calibration Date: 11/16/2018

Initial Calibration Summary
Semi-Volatile Organic Compounds by GC/MS

Calibration ID: CAL15888
Instrument ID: MS17

Column: MS

Analyte Name	Compound Type	Calibration Evaluation					RRF Evaluation		
		Fit Type	Eval.	Eval. Result	Q	Control Criteria	Average RRF	Q	Minimum RRF
Bis(2-ethylhexyl) Phthalate	MS	AverageRF	% RSD	6.2		≤ 20	0.622		0.01
Terphenyl-d14	SURR	AverageRF	% RSD	4.0		≤ 20	0.960		0.01

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

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335

Service Request: K1810421
Calibration Date: 11/16/2018
Date Analyzed: 11/16/2018

Second Source Calibration Verification
Semi-Volatile Organic Compounds by GC/MS

Calibration Type: Internal Standard
Analysis Method: 8270D SIM

Calibration ID: CAL15888
Units: ng/ml

File ID: J:\MS17\DATA\111618\1116F015.D

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Bis(2-ethylhexyl) Phthalate	1000	1000	0.622	0.625	0	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 Tissue 2018/60566335

Service Request: K1810421
Calibration Date: 12/14/2018

Initial Calibration Summary
Semi-Volatile Organic Compounds by GC/MS

Calibration ID: CAL15916
Instrument ID: MS28

Column: MS

Level ID	File ID	Level ID	File ID
A	J:\MS28\DATA\121418\1214F003.D	F	J:\MS28\DATA\121418\1214F008.D
B	J:\MS28\DATA\121418\1214F004.D	G	J:\MS28\DATA\121418\1214F009.D
C	J:\MS28\DATA\121418\1214F005.D	H	J:\MS28\DATA\121418\1214F010.D
D	J:\MS28\DATA\121418\1214F006.D	I	J:\MS28\DATA\121418\1214F011.D
E	J:\MS28\DATA\121418\1214F007.D		

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Pentachlorophenol	A	20	0.128	B	50	0.124	C	100	0.131	D	300	0.137	E	500	0.148
	F	800	0.161	G	1000	0.161	H	1500	0.159	I	2000	0.168			
2,4,6-Tribromophenol	A	20	0.0670	B	50	0.0682	C	100	0.0720	D	300	0.0778	E	500	0.0867
	F	800	0.0914	G	1000	0.0948	H	1500	0.0966	I	2000	0.101			

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

† SPCC Compound

‡ CCC Compound

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335

Service Request: K1810421
Calibration Date: 12/14/2018

Initial Calibration Summary
Semi-Volatile Organic Compounds by GC/MS

Calibration ID: CAL15916
Instrument ID: MS28

Column: MS

Analyte Name	Compound Type	Calibration Evaluation					RRF Evaluation		
		Fit Type	Eval.	Eval. Result	Q	Control Criteria	Average RRF	Q	Minimum RRF
Pentachlorophenol	MS	AverageRF	% RSD	11.5		≤ 20	0.146		0.05
2,4,6-Tribromophenol	SURR	AverageRF	% RSD	15.5		≤ 20	0.0840		0.05

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

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335

Service Request: K1810421
Calibration Date: 12/14/2018
Date Analyzed: 12/14/2018

Second Source Calibration Verification
Semi-Volatile Organic Compounds by GC/MS

Calibration Type: Internal Standard
Analysis Method: 8270D SIM

Calibration ID: CAL15916
Units: ng/ml

File ID: J:\MS28\DATA\121418\1214F012.D

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Pentachlorophenol	1000	1100	0.146	0.157	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 Tissue 2018/60566335

Service Request: K1810421
Date Analyzed: 12/15/2018

Continuing Calibration Verification Summary
Semi-Volatile Organic Compounds by GC/MS

Calibration Type: Internal Standard
Analysis Method: 8270D SIM

Calibration Date: 12/14/2018
Calibration ID: CAL15916
Analysis Lot: KWG1806539
Units: ng/ml

File ID: J:\MS28\DATA\121518\1215F002.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Pentachlorophenol	1000	1100	0.05	0.146	0.161	10	NA	± 20	AverageRF
2,4,6-Tribromophenol	1000	1100	0.05	0.0840	0.0959	14	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 Tissue 2018/60566335

Service Request: K1810421
Date Analyzed: 12/15/2018

Continuing Calibration Verification Summary
Semi-Volatile Organic Compounds by GC/MS

Calibration Type: Internal Standard
Analysis Method: 8270D SIM

Calibration Date: 11/16/2018
Calibration ID: CAL15888
Analysis Lot: KWG1806561
Units: ng/ml

File ID: J:\MS17\DATA\121518\1215F002.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Bis(2-ethylhexyl) Phthalate	1000	1100	0.01	0.622	0.656	5	NA	± 20	AverageRF
Terphenyl-d14	1000	910	0.01	0.960	0.871	-9	NA	± 20	AverageRF

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

† SPCC Compound

‡ CCC Compound

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335

Service Request: K1810421

Analysis Run Log
Semi-Volatile Organic Compounds by GC/MS

Analysis Method: 8270D SIM

Analysis Lot: KWG1806561
Instrument ID: MS17

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
1215F001.D	GC/MS Tuning - Decafluorotriphenylphosph	KWG1806561-1	12/15/2018	10:35		12/15/2018	10:56
1215F002.D	Continuing Calibration Verification	KWG1806561-2	12/15/2018	11:03		12/15/2018	11:24
1215F003.D	Method Blank	KWG1805838-4	12/15/2018	11:32		12/15/2018	11:53
1215F004.D	Lab Control Sample	KWG1805838-3	12/15/2018	12:00		12/15/2018	12:21
1215F005.D	PDI-TF-SMB082MS	KWG1805838-1	12/15/2018	12:29		12/15/2018	12:50
1215F006.D	PDI-TF-SMB082DMS	KWG1805838-2	12/15/2018	12:57		12/15/2018	13:18
1215F007.D	PDI-TF-SMB125	K1810421-001	12/15/2018	13:26		12/15/2018	13:47
1215F008.D	PDI-TF-SMB082	K1810421-002	12/15/2018	13:54		12/15/2018	14:15
1215F009.D	PDI-TF-SMB073	K1810421-003	12/15/2018	14:22		12/15/2018	14:43
1215F010.D	PDI-TF-SMB126	K1810421-004	12/15/2018	14:51		12/15/2018	15:12
1215F011.D	PDI-TF-SMB127	K1810421-005	12/15/2018	15:19		12/15/2018	15:40
1215F012.D	PDI-TF-SMB123	K1810421-006	12/15/2018	15:48		12/15/2018	16:09
1215F013.D	PDI-TF-SMB134	K1810421-007	12/15/2018	16:16		12/15/2018	16:37
1215F014.D	PDI-TF-SMB116	K1810421-008	12/15/2018	16:44		12/15/2018	17:05
1215F015.D	PDI-TF-SMB063	K1810421-009	12/15/2018	17:13		12/15/2018	17:34
1215F016.D	PDI-TF-SMB131	K1810421-010	12/15/2018	17:41		12/15/2018	18:02
1215F017.D	PDI-TF-SMB124	K1810421-011	12/15/2018	18:10		12/15/2018	18:31
1215F018.D	PDI-TF-SMB115	K1810421-012	12/15/2018	18:38		12/15/2018	18:59
1215F019.D	PDI-TF-SMB121	K1810421-013	12/15/2018	19:06		12/15/2018	19:27
1215F020.D	PDI-TF-SMB122	K1810421-014	12/15/2018	19:35		12/15/2018	19:56
1215F021.D	PDI-TF-SMB135	K1810421-015	12/15/2018	20:03		12/15/2018	20:24
1215F022.D	PDI-TF-SMB118	K1810421-016	12/15/2018	20:32		12/15/2018	20:53
1215F023.D	PDI-TF-SMB049	K1810421-017	12/15/2018	21:00		12/15/2018	21:21
1215F024.D	PDI-TF-SMB085	K1810421-018	12/15/2018	21:28		12/15/2018	21:49
1215F025.D	PDI-TF-SMB089	K1810421-019	12/15/2018	21:57		12/15/2018	22:18
1215F026.D	PDI-TF-SMB092	K1810421-020	12/15/2018	22:25		12/15/2018	22:46

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335

Service Request: K1810421

Analysis Run Log
Semi-Volatile Organic Compounds by GC/MS

Analysis Method: 8270D SIM

Analysis Lot: KWG1806539

Instrument ID: MS28

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
1215F001.D	GC/MS Tuning - Decafluorotriphenylphosph	KWG1806539-2	12/15/2018	09:17		12/15/2018	09:31
1215F002.D	Continuing Calibration Verification	KWG1806539-1	12/15/2018	09:37		12/15/2018	09:51
1215F004.D	Method Blank	KWG1805838-4	12/15/2018	10:46		12/15/2018	11:00
1215F005.D	Lab Control Sample	KWG1805838-3	12/15/2018	11:06		12/15/2018	11:20
1215F006.D	PDI-TF-SMB082MS	KWG1805838-1	12/15/2018	11:26		12/15/2018	11:42
1215F007.D	PDI-TF-SMB082DMS	KWG1805838-2	12/15/2018	11:48		12/15/2018	12:04
1215F009.D	PDI-TF-SMB125	K1810421-001	12/15/2018	12:32		12/15/2018	12:48
1215F010.D	PDI-TF-SMB082	K1810421-002	12/15/2018	12:54		12/15/2018	13:10
1215F011.D	PDI-TF-SMB073	K1810421-003	12/15/2018	13:15		12/15/2018	13:31
1215F012.D	PDI-TF-SMB126	K1810421-004	12/15/2018	13:37		12/15/2018	13:53
1215F013.D	PDI-TF-SMB127	K1810421-005	12/15/2018	13:59		12/15/2018	14:15
1215F014.D	PDI-TF-SMB123	K1810421-006	12/15/2018	14:21		12/15/2018	14:37
1215F015.D	PDI-TF-SMB134	K1810421-007	12/15/2018	14:42		12/15/2018	14:58
1215F016.D	PDI-TF-SMB116	K1810421-008	12/15/2018	15:04		12/15/2018	15:20
1215F017.D	PDI-TF-SMB063	K1810421-009	12/15/2018	15:26		12/15/2018	15:42
1215F018.D	PDI-TF-SMB131	K1810421-010	12/15/2018	15:47		12/15/2018	16:03
1215F019.D	PDI-TF-SMB124	K1810421-011	12/15/2018	16:09		12/15/2018	16:25
1215F020.D	PDI-TF-SMB115	K1810421-012	12/15/2018	16:31		12/15/2018	16:47
1215F021.D	PDI-TF-SMB121	K1810421-013	12/15/2018	16:53		12/15/2018	17:09
1215F022.D	PDI-TF-SMB122	K1810421-014	12/15/2018	17:14		12/15/2018	17:30
1215F023.D	PDI-TF-SMB135	K1810421-015	12/15/2018	17:36		12/15/2018	17:52
1215F024.D	PDI-TF-SMB118	K1810421-016	12/15/2018	17:58		12/15/2018	18:14
1215F025.D	PDI-TF-SMB049	K1810421-017	12/15/2018	18:20		12/15/2018	18:36
1215F026.D	PDI-TF-SMB085	K1810421-018	12/15/2018	18:41		12/15/2018	18:57
1215F027.D	PDI-TF-SMB089	K1810421-019	12/15/2018	19:03		12/15/2018	19:19
1215F028.D	PDI-TF-SMB092	K1810421-020	12/15/2018	19:25		12/15/2018	19:41

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal tissue

Service Request: K1810421
Date Extracted: 11/08/2018

Extraction Prep Log
Semi-Volatile Organic Compounds by GC/MS

Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Extraction Lot: KWG1805838
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
PDI-TF-SMB125	K1810421-001		10/24/18	5.021g	10ml	NA	
PDI-TF-SMB125RE	K1810421-001		10/24/18	5.021g	10ml	NA	
PDI-TF-SMB082RE	K1810421-002		10/24/18	5.032g	10ml	NA	
PDI-TF-SMB082	K1810421-002		10/24/18	5.032g	10ml	NA	
PDI-TF-SMB073RE	K1810421-003		10/24/18	5.052g	10ml	NA	
PDI-TF-SMB073	K1810421-003		10/24/18	5.052g	10ml	NA	
PDI-TF-SMB126RE	K1810421-004		10/24/18	5.053g	10ml	NA	
PDI-TF-SMB126	K1810421-004		10/24/18	5.053g	10ml	NA	
PDI-TF-SMB127RE	K1810421-005		10/24/18	5.070g	10ml	NA	
PDI-TF-SMB127	K1810421-005		10/24/18	5.070g	10ml	NA	
PDI-TF-SMB123RE	K1810421-006		10/24/18	5.002g	10ml	NA	
PDI-TF-SMB123	K1810421-006		10/24/18	5.002g	10ml	NA	
PDI-TF-SMB134	K1810421-007		10/24/18	5.006g	10ml	NA	
PDI-TF-SMB134RE	K1810421-007		10/24/18	5.006g	10ml	NA	
PDI-TF-SMB116RE	K1810421-008		10/24/18	5.028g	10ml	NA	
PDI-TF-SMB116	K1810421-008		10/24/18	5.028g	10ml	NA	
PDI-TF-SMB063RE	K1810421-009		10/24/18	5.064g	10ml	NA	
PDI-TF-SMB063	K1810421-009		10/24/18	5.064g	10ml	NA	
PDI-TF-SMB131RE	K1810421-010		10/24/18	5.068g	10ml	NA	
PDI-TF-SMB131	K1810421-010		10/24/18	5.068g	10ml	NA	
PDI-TF-SMB124RE	K1810421-011		10/24/18	5.059g	10ml	NA	
PDI-TF-SMB124	K1810421-011		10/24/18	5.059g	10ml	NA	
PDI-TF-SMB115	K1810421-012		10/24/18	5.011g	10ml	NA	
PDI-TF-SMB115RE	K1810421-012		10/24/18	5.011g	10ml	NA	
PDI-TF-SMB121RE	K1810421-013		10/24/18	5.006g	10ml	NA	
PDI-TF-SMB121	K1810421-013		10/24/18	5.006g	10ml	NA	
PDI-TF-SMB122RE	K1810421-014		10/24/18	5.035g	10ml	NA	
PDI-TF-SMB122	K1810421-014		10/24/18	5.035g	10ml	NA	
PDI-TF-SMB135RE	K1810421-015		10/24/18	5.011g	10ml	NA	
PDI-TF-SMB135	K1810421-015		10/24/18	5.011g	10ml	NA	
PDI-TF-SMB118RE	K1810421-016		10/24/18	5.033g	10ml	NA	
PDI-TF-SMB118	K1810421-016		10/24/18	5.033g	10ml	NA	
PDI-TF-SMB049RE	K1810421-017		10/24/18	5.009g	10ml	NA	
PDI-TF-SMB049	K1810421-017		10/24/18	5.009g	10ml	NA	
PDI-TF-SMB085	K1810421-018		10/24/18	5.062g	10ml	NA	
PDI-TF-SMB085RE	K1810421-018		10/24/18	5.062g	10ml	NA	
PDI-TF-SMB089RE	K1810421-019		10/24/18	5.028g	10ml	NA	
PDI-TF-SMB089	K1810421-019		10/24/18	5.028g	10ml	NA	
PDI-TF-SMB092RE	K1810421-020		10/24/18	5.034g	10ml	NA	
PDI-TF-SMB092	K1810421-020		10/24/18	5.034g	10ml	NA	
Method Blank	KWG1805838-4	NA	NA	5.070g	10ml	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: AECOM
Project: Portland Harbor Tissue 2018/60566335
Sample Matrix: Animal tissue

Service Request: K1810421
Date Extracted: 11/08/2018

Extraction Prep Log
Semi-Volatile Organic Compounds by GC/MS

Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Extraction Lot: KWG1805838
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
PDI-TF-SMB082MS	KWG1805838-1		10/24/18	5.061g	10ml	NA	
PDI-TF-SMB082DMS	KWG1805838-2		10/24/18	5.019g	10ml	NA	
Lab Control Sample	KWG1805838-3	NA	NA	5.000g	10ml	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis