



ALS Environmental
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www.alsglobal.com

August 10, 2018

Analytical Report for Service Request No: K1804876B

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

RE: Portland Harbor Pre-Remedial Design Investigation / 60566335

Dear Amy,

Enclosed are the results of the sample(s) submitted to our laboratory May 23, 2018
For your reference, these analyses have been assigned our service request number **K1804876**.

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



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

Service Request: K1804876
Date Received: 05/23/2018

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:

Thirteen sediment samples and one water sample were received for analysis at ALS Environmental on 05/23/2018. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Semivolatiles by GC/MS:

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

Method 8270D, 06/20/2018: The following analytes were flagged as outside the control criterion for Continuing Calibration Verification (CCV) MS14\0620F033.D: Dibenzo(a,h)anthracene and Benzo(g,h,i)perylene. In accordance with the EPA Method, 80% or more of the CCV analytes must pass within 20% of the true value. The ALS SOP allows for 40% difference for the remaining analytes. The CCV met these criteria. The quality of the sample data was not significantly affected. No further corrective action was required.

Method 8270D, 06/20/2018: The detection limit was elevated for all analytes in samples PDI-SG-B299-BL1, PDI-SG-B298-BL1, and PDI-SG-B398-BL1. The sample extract was diluted prior to instrumental analysis due to relatively high levels of non-target background components. The extract was highly colored and viscous, which indicated the need to perform a dilution prior to injection into the instrument. Clean-up of the extract was performed within the scope of the method, but did not eliminate enough of the background components to prevent dilution. The reporting limits were adjusted to reflect the dilution.

Method 8270D, 06/20/2018: The control criteria were exceeded for all surrogates in sample PDI-SG-B305-BL1. Since the problem may indicate a potential bias in the analytical batch, the sample was re-extracted and re-analyzed 21 days past the recommended hold time. The surrogates also failed the lower control limits, which confirmed that the problem of surrogate recovery is due to matrix interference in the sample. Note the results for the field samples were comparable for both determinations. Therefore, the results from the original analysis were reported. The data was flagged to indicate the problem.

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

Insufficient sample volume was received to perform a Matrix Spike/Matrix Spike Duplicate (MS/MSD) with the sample batch containing sample PDI-RB-VV-182105. A Laboratory Control Sample/Duplicate Laboratory Control Sample (LCS/DLCS) was analyzed and reported in lieu of the MS/MSD for this sample.

The detection limits were slightly elevated for sample PDI-RB-VV-182105 due to less than optimal sample volume received for analysis.

The detection limits were slightly elevated for sample Batch QC due to less than optimal sample volume received for analysis. Method ALS SOP, Organochlorine Pesticides by GC/MS/MS 07/03,09/2018: The spike recoveries of cis-Nonachlor (66, 69-134) for Laboratory Control Sample (LCS) KQ1807024-03; and 2,4'-DDE (62, 67, 75-117) and 4,4'-DDE (74, 76-115) for Laboratory Control Samples (LCS/DLCS) KQ1807075-01/02 were slightly outside the lower control criterion. The analytes in question were not detected in the associated field samples. The error associated with reduced recovery indicated a potential low bias. The data



Approved by _____

Date 08/10/2018

was flagged to indicate the problem.

Method ALS SOP, Organochlorine Pesticides by GC/MS/MS 07/03/2018: The upper control criterion was exceeded for alpha-Chlordane (134, 69-130), cis-Nonachlor (238, 224, 59-138), gamma-Chlordane (140, 131, 72-127), and trans-Nonachlor (147, 129, 72-127) in Laboratory Control Samples (LCS/DLCS) KQ1807075-01/02. The analytes in question were not detected in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.

Method ALS SOP, Organochlorine Pesticides by GC/MS/MS 07/03/2018: The upper control criterion was exceeded for S_4,4'DDD-d4 in sample PDI-RB-VV-182105 and the Method Blank. No target analytes were detected above the MRL in the sample. The error associated with an elevated recovery equated to a high bias. The quality of the sample data was not significantly affected. No further corrective action was appropriate.

Method ALS SOP, Organochlorine Pesticides by GC/MS/MS 07/08/2018: The upper control and RPD criteria was exceeded for 4,4'-DDT in the Batch QC Matrix Spike (MS) KQ1807024-01. The analyte in question was not detected above the MRL in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.

Semivoa GC:

No significant anomalies were noted with this analysis.

SMO:

No significant anomalies were noted with this analysis.



Approved by _____

Date 08/10/2018



Chain of Custody

ALS Environmental—Kelso Laboratory
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K1804876

[illegible]

K1804876

[illegible]

PC HH

Cooler Receipt and Preservation Form

Client AECOM Service Request K18 04876
 Received: 5/23/18 Opened: 5/23/18 By: BR Unloaded: 5/23/18 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? 1 front
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	Filed
<u>5.3</u>	<u>5.2</u>	<u>5.8</u>	<u>5.7</u>	<u>-0.1</u>	<u>322</u>	<u>NA</u>	<u>NA</u>	
<u>1.8</u>	<u>1.7</u>	<u>3.1</u>	<u>3.0</u>	<u>-0.1</u>	<u>323</u>			

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



Total Solids

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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: K1804876
Date Collected: 05/21/18 - 05/22/18
Date Received: 05/23/18
Units: Percent
Basis: As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
PDI-SG-B299-BL1	K1804876-001	40.8	-	-	1	05/25/18 15:30	
PDI-SG-B298-BL1	K1804876-002	73.1	-	-	1	05/25/18 15:30	
PDI-SG-B305-BL1	K1804876-003	56.6	-	-	1	05/25/18 15:30	
PDI-SG-B214-BL1	K1804876-004	73.8	-	-	1	05/25/18 15:30	
PDI-SG-B234-BL1	K1804876-005	39.5	-	-	1	05/25/18 15:30	
PDI-SG-B234-BL1-D	K1804876-006	38.8	-	-	1	05/25/18 15:30	
PDI-SG-B246-BL1	K1804876-007	53.5	-	-	1	05/25/18 15:30	
PDI-SG-B251-BL1	K1804876-008	40.2	-	-	1	05/25/18 15:30	
PDI-SG-B257-BL1	K1804876-009	84.3	-	-	1	05/25/18 15:30	
PDI-SG-B315-BL1	K1804876-010	70.7	-	-	1	05/25/18 15:30	
PDI-SG-B315-BL1-D	K1804876-011	71.0	-	-	1	05/25/18 15:30	
PDI-SG-B398-BL1	K1804876-012	39.0	-	-	1	05/25/18 15:30	
PDI-SG-B417-BL1	K1804876-013	73.8	-	-	1	05/25/18 15:30	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

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

Service Request: K1804876**Date Collected:** 05/21/18**Date Received:** 05/23/18**Date Analyzed:** 05/25/18**Replicate Sample Summary****Inorganic Parameters****Sample Name:** PDI-SG-B214-BL1**Units:** Percent**Lab Code:** K1804876-004**Basis:** As Received

					Duplicate Sample K1804876- 004DUP			
Analyte Name	Analysis Method	MRL	MDL	Sample Result	Result	Average	RPD	RPD Limit
Solids, Total	160.3 Modified	-	-	73.8	74.4	74.1	<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.



Organochlorine Pesticides By GC/MS/MS

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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Sample Name: PDI-SG-B299-BL1
Lab Code: K1804876-001

Service Request: K1804876
Date Collected: 05/21/18 10:28
Date Received: 05/23/18 13:30

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	1.2	0.78	10	07/08/18 20:09	5/31/18	
2,4'-DDE	ND U	1.2	0.97	10	07/08/18 20:09	5/31/18	
2,4'-DDT	ND U	1.2	1.2	10	07/08/18 20:09	5/31/18	
4,4'-DDD	2.4	1.2	0.43	10	07/08/18 20:09	5/31/18	
4,4'-DDE	7.1	1.2	0.86	10	07/08/18 20:09	5/31/18	
4,4'-DDT	1.0 J	1.2	0.58	10	07/08/18 20:09	5/31/18	
Aldrin	ND U	1.2	0.97	10	07/08/18 20:09	5/31/18	
alpha-Chlordane	ND U	2.4	0.76	10	07/08/18 20:09	5/31/18	
cis-Nonachlor	ND U	1.2	1.2	10	07/08/18 20:09	5/31/18	*
Dieldrin	ND U	2.4	0.95	10	07/08/18 20:09	5/31/18	
gamma-BHC (Lindane)	ND U	1.2	0.38	10	07/08/18 20:09	5/31/18	
gamma-Chlordane	ND U	2.4	0.79	10	07/08/18 20:09	5/31/18	
Heptachlor	ND U	1.2	0.48	10	07/08/18 20:09	5/31/18	
trans-Nonachlor	ND U	2.4	0.71	10	07/08/18 20:09	5/31/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	59	5 - 120	07/08/18 20:09	
S_4,4'-DDT-d4	52	13 - 200	07/08/18 20:09	
S_Aldrin-13C12	65	10 - 143	07/08/18 20:09	
S_Endrin-13C12	47	20 - 157	07/08/18 20:09	
S_GBHC6	35	5 - 124	07/08/18 20:09	
S_Heptachlor-13C10	53	10 - 177	07/08/18 20:09	
S_Heptachlrepox13C10	42	8 - 146	07/08/18 20:09	
S_Oxychlordane-13C10	51	5 - 144	07/08/18 20:09	

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dba ALS Environmental

Analytical Report

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

Sample Name: PDI-SG-B298-BL1
Lab Code: K1804876-002

Service Request: K1804876
Date Collected: 05/21/18 14:46
Date Received: 05/23/18 13:30

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	3.4	0.67	0.63	10	07/08/18 20:36	5/31/18	
2,4'-DDE	0.83	0.79	0.79	10	07/08/18 20:36	5/31/18	
2,4'-DDT	ND U	0.94	0.94	10	07/08/18 20:36	5/31/18	
4,4'-DDD	10	0.67	0.35	10	07/08/18 20:36	5/31/18	
4,4'-DDE	13	0.70	0.70	10	07/08/18 20:36	5/31/18	
4,4'-DDT	ND U	0.67	0.47	10	07/08/18 20:36	5/31/18	
Aldrin	ND U	0.79	0.79	10	07/08/18 20:36	5/31/18	
alpha-Chlordane	2.0	1.3	0.62	10	07/08/18 20:36	5/31/18	
cis-Nonachlor	ND U	0.97	0.97	10	07/08/18 20:36	5/31/18	*
Dieldrin	1.6 J	2.0	0.77	10	07/08/18 20:36	5/31/18	
gamma-BHC (Lindane)	ND U	0.67	0.31	10	07/08/18 20:36	5/31/18	
gamma-Chlordane	3.6	1.3	0.64	10	07/08/18 20:36	5/31/18	
Heptachlor	ND U	0.67	0.39	10	07/08/18 20:36	5/31/18	
trans-Nonachlor	0.95 J	1.3	0.58	10	07/08/18 20:36	5/31/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	63	5 - 120	07/08/18 20:36	
S_4,4'-DDT-d4	57	13 - 200	07/08/18 20:36	
S_Aldrin-13C12	61	10 - 143	07/08/18 20:36	
S_Endrin-13C12	63	20 - 157	07/08/18 20:36	
S_GBHC6	59	5 - 124	07/08/18 20:36	
S_Heptachlor-13C10	69	10 - 177	07/08/18 20:36	
S_Heptachlrepx13C10	50	8 - 146	07/08/18 20:36	
S_Oxychlordane-13C10	49	5 - 144	07/08/18 20:36	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Sample Name: PDI-SG-B305-BL1
Lab Code: K1804876-003

Service Request: K1804876
Date Collected: 05/21/18 16:57
Date Received: 05/23/18 13:30

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.88	0.63	10	07/08/18 21:03	5/31/18	
2,4'-DDE	ND U	0.88	0.79	10	07/08/18 21:03	5/31/18	
2,4'-DDT	ND U	0.94	0.94	10	07/08/18 21:03	5/31/18	
4,4'-DDD	0.80 J	0.88	0.35	10	07/08/18 21:03	5/31/18	
4,4'-DDE	1.7	0.88	0.70	10	07/08/18 21:03	5/31/18	
4,4'-DDT	ND U	0.88	0.47	10	07/08/18 21:03	5/31/18	
Aldrin	ND U	0.88	0.79	10	07/08/18 21:03	5/31/18	
alpha-Chlordane	ND U	1.8	0.62	10	07/08/18 21:03	5/31/18	
cis-Nonachlor	ND U	0.97	0.97	10	07/08/18 21:03	5/31/18	*
Dieldrin	ND U	2.0	0.77	10	07/08/18 21:03	5/31/18	
gamma-BHC (Lindane)	ND U	0.88	0.31	10	07/08/18 21:03	5/31/18	
gamma-Chlordane	ND U	1.8	0.64	10	07/08/18 21:03	5/31/18	
Heptachlor	ND U	0.88	0.39	10	07/08/18 21:03	5/31/18	
trans-Nonachlor	ND U	1.8	0.58	10	07/08/18 21:03	5/31/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	71	5 - 120	07/08/18 21:03	
S_4,4'-DDT-d4	69	13 - 200	07/08/18 21:03	
S_Aldrin-13C12	47	10 - 143	07/08/18 21:03	
S_Endrin-13C12	72	20 - 157	07/08/18 21:03	
S_GBHC6	40	5 - 124	07/08/18 21:03	
S_Heptachlor-13C10	60	10 - 177	07/08/18 21:03	
S_Heptachlrepox13C10	51	8 - 146	07/08/18 21:03	
S_Oxychlordane-13C10	47	5 - 144	07/08/18 21:03	

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Analytical Report

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

Sample Name: PDI-SG-B214-BL1
Lab Code: K1804876-004

Service Request: K1804876
Date Collected: 05/21/18 10:00
Date Received: 05/23/18 13:30

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.66	0.63	10	07/08/18 21:31	5/31/18	
2,4'-DDE	ND U	0.79	0.79	10	07/08/18 21:31	5/31/18	
2,4'-DDT	ND U	0.94	0.94	10	07/08/18 21:31	5/31/18	
4,4'-DDD	ND U	0.66	0.35	10	07/08/18 21:31	5/31/18	
4,4'-DDE	ND U	0.70	0.70	10	07/08/18 21:31	5/31/18	
4,4'-DDT	ND U	0.66	0.47	10	07/08/18 21:31	5/31/18	
Aldrin	ND U	0.79	0.79	10	07/08/18 21:31	5/31/18	
alpha-Chlordane	ND U	1.3	0.62	10	07/08/18 21:31	5/31/18	
cis-Nonachlor	ND U	0.97	0.97	10	07/08/18 21:31	5/31/18	*
Dieldrin	ND U	2.0	0.77	10	07/08/18 21:31	5/31/18	
gamma-BHC (Lindane)	ND U	0.66	0.31	10	07/08/18 21:31	5/31/18	
gamma-Chlordane	ND U	1.3	0.64	10	07/08/18 21:31	5/31/18	
Heptachlor	ND U	0.66	0.39	10	07/08/18 21:31	5/31/18	
trans-Nonachlor	ND U	1.3	0.58	10	07/08/18 21:31	5/31/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	54	5 - 120	07/08/18 21:31	
S_4,4'-DDT-d4	43	13 - 200	07/08/18 21:31	
S_Aldrin-13C12	50	10 - 143	07/08/18 21:31	
S_Endrin-13C12	51	20 - 157	07/08/18 21:31	
S_GBHC6	41	5 - 124	07/08/18 21:31	
S_Heptachlor-13C10	41	10 - 177	07/08/18 21:31	
S_Heptachlrepox13C10	32	8 - 146	07/08/18 21:31	
S_Oxychlordane-13C10	35	5 - 144	07/08/18 21:31	

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Analytical Report

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

Service Request: K1804876
Date Collected: 05/22/18 12:20
Date Received: 05/23/18 13:30

Sample Name: PDI-SG-B234-BL1
Lab Code: K1804876-005

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	1.3	0.79	10	07/08/18 21:58	5/31/18	
2,4'-DDE	ND U	1.3	1.0	10	07/08/18 21:58	5/31/18	
2,4'-DDT	ND U	1.3	1.2	10	07/08/18 21:58	5/31/18	
4,4'-DDD	0.88 J	1.3	0.44	10	07/08/18 21:58	5/31/18	
4,4'-DDE	2.3	1.3	0.88	10	07/08/18 21:58	5/31/18	
4,4'-DDT	0.71 J	1.3	0.59	10	07/08/18 21:58	5/31/18	
Aldrin	ND U	1.3	1.0	10	07/08/18 21:58	5/31/18	
alpha-Chlordane	ND U	2.5	0.78	10	07/08/18 21:58	5/31/18	
cis-Nonachlor	ND U	1.3	1.3	10	07/08/18 21:58	5/31/18	*
Dieldrin	ND U	2.5	0.97	10	07/08/18 21:58	5/31/18	
gamma-BHC (Lindane)	ND U	1.3	0.39	10	07/08/18 21:58	5/31/18	
gamma-Chlordane	ND U	2.5	0.81	10	07/08/18 21:58	5/31/18	
Heptachlor	ND U	1.3	0.49	10	07/08/18 21:58	5/31/18	
trans-Nonachlor	ND U	2.5	0.73	10	07/08/18 21:58	5/31/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	75	5 - 120	07/08/18 21:58	
S_4,4'-DDT-d4	67	13 - 200	07/08/18 21:58	
S_Aldrin-13C12	74	10 - 143	07/08/18 21:58	
S_Endrin-13C12	74	20 - 157	07/08/18 21:58	
S_GBHC6	59	5 - 124	07/08/18 21:58	
S_Heptachlor-13C10	74	10 - 177	07/08/18 21:58	
S_Heptachlrepox13C10	53	8 - 146	07/08/18 21:58	
S_Oxychlordane-13C10	74	5 - 144	07/08/18 21:58	

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Analytical Report

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

Service Request: K1804876
Date Collected: 05/22/18 12:30
Date Received: 05/23/18 13:30

Sample Name: PDI-SG-B234-BL1-D
Lab Code: K1804876-006

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	1.3	0.82	10	07/08/18 22:26	5/31/18	
2,4'-DDE	ND U	1.3	1.1	10	07/08/18 22:26	5/31/18	
2,4'-DDT	ND U	1.3	1.3	10	07/08/18 22:26	5/31/18	
4,4'-DDD	0.84 J	1.3	0.46	10	07/08/18 22:26	5/31/18	
4,4'-DDE	2.2	1.3	0.91	10	07/08/18 22:26	5/31/18	
4,4'-DDT	ND U	1.3	0.61	10	07/08/18 22:26	5/31/18	
Aldrin	ND U	1.3	1.1	10	07/08/18 22:26	5/31/18	
alpha-Chlordane	ND U	2.6	0.80	10	07/08/18 22:26	5/31/18	
cis-Nonachlor	ND U	1.3	1.3	10	07/08/18 22:26	5/31/18	*
Dieldrin	ND U	2.6	1.0	10	07/08/18 22:26	5/31/18	
gamma-BHC (Lindane)	ND U	1.3	0.40	10	07/08/18 22:26	5/31/18	
gamma-Chlordane	ND U	2.6	0.83	10	07/08/18 22:26	5/31/18	
Heptachlor	ND U	1.3	0.51	10	07/08/18 22:26	5/31/18	
trans-Nonachlor	ND U	2.6	0.75	10	07/08/18 22:26	5/31/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	61	5 - 120	07/08/18 22:26	
S_4,4'-DDT-d4	50	13 - 200	07/08/18 22:26	
S_Aldrin-13C12	52	10 - 143	07/08/18 22:26	
S_Endrin-13C12	46	20 - 157	07/08/18 22:26	
S_GBHC6	42	5 - 124	07/08/18 22:26	
S_Heptachlor-13C10	47	10 - 177	07/08/18 22:26	
S_Heptachlrepox13C10	31	8 - 146	07/08/18 22:26	
S_Oxychlordane-13C10	45	5 - 144	07/08/18 22:26	

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Analytical Report

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

Sample Name: PDI-SG-B246-BL1
Lab Code: K1804876-007

Service Request: K1804876
Date Collected: 05/22/18 15:10
Date Received: 05/23/18 13:30

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.92	0.63	10	07/08/18 22:53	5/31/18	
2,4'-DDE	ND U	0.92	0.79	10	07/08/18 22:53	5/31/18	
2,4'-DDT	ND U	0.94	0.94	10	07/08/18 22:53	5/31/18	
4,4'-DDD	0.91 J	0.92	0.35	10	07/08/18 22:53	5/31/18	
4,4'-DDE	1.3	0.92	0.70	10	07/08/18 22:53	5/31/18	
4,4'-DDT	0.62 J	0.92	0.47	10	07/08/18 22:53	5/31/18	
Aldrin	ND U	0.92	0.79	10	07/08/18 22:53	5/31/18	
alpha-Chlordane	ND U	1.8	0.62	10	07/08/18 22:53	5/31/18	
cis-Nonachlor	ND U	0.97	0.97	10	07/08/18 22:53	5/31/18	*
Dieldrin	ND U	2.0	0.77	10	07/08/18 22:53	5/31/18	
gamma-BHC (Lindane)	ND U	0.92	0.31	10	07/08/18 22:53	5/31/18	
gamma-Chlordane	ND U	1.8	0.64	10	07/08/18 22:53	5/31/18	
Heptachlor	ND U	0.92	0.39	10	07/08/18 22:53	5/31/18	
trans-Nonachlor	ND U	1.8	0.58	10	07/08/18 22:53	5/31/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	70	5 - 120	07/08/18 22:53	
S_4,4'-DDT-d4	67	13 - 200	07/08/18 22:53	
S_Aldrin-13C12	70	10 - 143	07/08/18 22:53	
S_Endrin-13C12	59	20 - 157	07/08/18 22:53	
S_GBHC6	48	5 - 124	07/08/18 22:53	
S_Heptachlor-13C10	62	10 - 177	07/08/18 22:53	
S_Heptachlrepx13C10	51	8 - 146	07/08/18 22:53	
S_Oxychlordane-13C10	46	5 - 144	07/08/18 22:53	

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Analytical Report

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

Sample Name: PDI-SG-B251-BL1
Lab Code: K1804876-008

Service Request: K1804876
Date Collected: 05/22/18 16:10
Date Received: 05/23/18 13:30

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	1.2	0.78	10	07/08/18 23:20	5/31/18	
2,4'-DDE	ND U	1.2	0.98	10	07/08/18 23:20	5/31/18	
2,4'-DDT	ND U	1.2	1.2	10	07/08/18 23:20	5/31/18	
4,4'-DDD	1.5	1.2	0.44	10	07/08/18 23:20	5/31/18	
4,4'-DDE	2.5	1.2	0.87	10	07/08/18 23:20	5/31/18	
4,4'-DDT	0.83 J	1.2	0.58	10	07/08/18 23:20	5/31/18	
Aldrin	ND U	1.2	0.98	10	07/08/18 23:20	5/31/18	
alpha-Chlordane	ND U	2.5	0.77	10	07/08/18 23:20	5/31/18	
cis-Nonachlor	ND U	1.2	1.2	10	07/08/18 23:20	5/31/18	*
Dieldrin	ND U	2.5	0.95	10	07/08/18 23:20	5/31/18	
gamma-BHC (Lindane)	ND U	1.2	0.39	10	07/08/18 23:20	5/31/18	
gamma-Chlordane	ND U	2.5	0.79	10	07/08/18 23:20	5/31/18	
Heptachlor	ND U	1.2	0.49	10	07/08/18 23:20	5/31/18	
trans-Nonachlor	ND U	2.5	0.72	10	07/08/18 23:20	5/31/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	64	5 - 120	07/08/18 23:20	
S_4,4'-DDT-d4	68	13 - 200	07/08/18 23:20	
S_Aldrin-13C12	58	10 - 143	07/08/18 23:20	
S_Endrin-13C12	57	20 - 157	07/08/18 23:20	
S_GBHC6	43	5 - 124	07/08/18 23:20	
S_Heptachlor-13C10	60	10 - 177	07/08/18 23:20	
S_Heptachlrepox13C10	42	8 - 146	07/08/18 23:20	
S_Oxychlordane-13C10	70	5 - 144	07/08/18 23:20	

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Analytical Report

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

Service Request: K1804876
Date Collected: 05/22/18 16:45
Date Received: 05/23/18 13:30

Sample Name: PDI-SG-B257-BL1
Lab Code: K1804876-009

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.63	0.63	10	07/08/18 23:49	5/31/18	
2,4'-DDE	ND U	0.79	0.79	10	07/08/18 23:49	5/31/18	
2,4'-DDT	ND U	0.94	0.94	10	07/08/18 23:49	5/31/18	
4,4'-DDD	ND U	0.58	0.35	10	07/08/18 23:49	5/31/18	
4,4'-DDE	ND U	0.70	0.70	10	07/08/18 23:49	5/31/18	
4,4'-DDT	ND U	0.58	0.47	10	07/08/18 23:49	5/31/18	
Aldrin	ND U	0.79	0.79	10	07/08/18 23:49	5/31/18	
alpha-Chlordane	ND U	1.2	0.62	10	07/08/18 23:49	5/31/18	
cis-Nonachlor	ND U	0.97	0.97	10	07/08/18 23:49	5/31/18	*
Dieldrin	ND U	2.0	0.77	10	07/08/18 23:49	5/31/18	
gamma-BHC (Lindane)	ND U	0.58	0.31	10	07/08/18 23:49	5/31/18	
gamma-Chlordane	ND U	1.2	0.64	10	07/08/18 23:49	5/31/18	
Heptachlor	ND U	0.58	0.39	10	07/08/18 23:49	5/31/18	
trans-Nonachlor	ND U	1.2	0.58	10	07/08/18 23:49	5/31/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	83	5 - 120	07/08/18 23:49	
S_4,4'-DDT-d4	66	13 - 200	07/08/18 23:49	
S_Aldrin-13C12	57	10 - 143	07/08/18 23:49	
S_Endrin-13C12	62	20 - 157	07/08/18 23:49	
S_GBHC6	57	5 - 124	07/08/18 23:49	
S_Heptachlor-13C10	63	10 - 177	07/08/18 23:49	
S_Heptachlrepox13C10	50	8 - 146	07/08/18 23:49	
S_Oxychlordane-13C10	61	5 - 144	07/08/18 23:49	

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Analytical Report

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

Sample Name: PDI-SG-B315-BL1
Lab Code: K1804876-010

Service Request: K1804876
Date Collected: 05/22/18 10:37
Date Received: 05/23/18 13:30

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.70	0.63	10	07/09/18 00:16	5/31/18	
2,4'-DDE	ND U	0.79	0.79	10	07/09/18 00:16	5/31/18	
2,4'-DDT	ND U	0.94	0.94	10	07/09/18 00:16	5/31/18	
4,4'-DDD	0.52 J	0.70	0.35	10	07/09/18 00:16	5/31/18	
4,4'-DDE	0.81	0.70	0.70	10	07/09/18 00:16	5/31/18	
4,4'-DDT	ND U	0.70	0.47	10	07/09/18 00:16	5/31/18	
Aldrin	ND U	0.79	0.79	10	07/09/18 00:16	5/31/18	
alpha-Chlordane	ND U	1.4	0.62	10	07/09/18 00:16	5/31/18	
cis-Nonachlor	ND U	0.97	0.97	10	07/09/18 00:16	5/31/18	*
Dieldrin	ND U	2.0	0.77	10	07/09/18 00:16	5/31/18	
gamma-BHC (Lindane)	ND U	0.70	0.31	10	07/09/18 00:16	5/31/18	
gamma-Chlordane	ND U	1.4	0.64	10	07/09/18 00:16	5/31/18	
Heptachlor	ND U	0.70	0.39	10	07/09/18 00:16	5/31/18	
trans-Nonachlor	ND U	1.4	0.58	10	07/09/18 00:16	5/31/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	69	5 - 120	07/09/18 00:16	
S_4,4'-DDT-d4	64	13 - 200	07/09/18 00:16	
S_Aldrin-13C12	64	10 - 143	07/09/18 00:16	
S_Endrin-13C12	55	20 - 157	07/09/18 00:16	
S_GBHC6	47	5 - 124	07/09/18 00:16	
S_Heptachlor-13C10	60	10 - 177	07/09/18 00:16	
S_Heptachlrepox13C10	32	8 - 146	07/09/18 00:16	
S_Oxychlordane-13C10	51	5 - 144	07/09/18 00:16	

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Analytical Report

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

Sample Name: PDI-SG-B315-BL1-D
Lab Code: K1804876-011

Service Request: K1804876
Date Collected: 05/22/18 10:38
Date Received: 05/23/18 13:30

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.70	0.63	10	07/09/18 00:43	5/31/18	
2,4'-DDE	ND U	0.79	0.79	10	07/09/18 00:43	5/31/18	
2,4'-DDT	ND U	0.94	0.94	10	07/09/18 00:43	5/31/18	
4,4'-DDD	0.49 J	0.70	0.35	10	07/09/18 00:43	5/31/18	
4,4'-DDE	0.72	0.70	0.70	10	07/09/18 00:43	5/31/18	
4,4'-DDT	ND U	0.70	0.47	10	07/09/18 00:43	5/31/18	
Aldrin	ND U	0.79	0.79	10	07/09/18 00:43	5/31/18	
alpha-Chlordane	ND U	1.4	0.62	10	07/09/18 00:43	5/31/18	
cis-Nonachlor	ND U	0.97	0.97	10	07/09/18 00:43	5/31/18	*
Dieldrin	ND U	2.0	0.77	10	07/09/18 00:43	5/31/18	
gamma-BHC (Lindane)	ND U	0.70	0.31	10	07/09/18 00:43	5/31/18	
gamma-Chlordane	ND U	1.4	0.64	10	07/09/18 00:43	5/31/18	
Heptachlor	ND U	0.70	0.39	10	07/09/18 00:43	5/31/18	
trans-Nonachlor	ND U	1.4	0.58	10	07/09/18 00:43	5/31/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	57	5 - 120	07/09/18 00:43	
S_4,4'-DDT-d4	44	13 - 200	07/09/18 00:43	
S_Aldrin-13C12	43	10 - 143	07/09/18 00:43	
S_Endrin-13C12	59	20 - 157	07/09/18 00:43	
S_GBHCD6	45	5 - 124	07/09/18 00:43	
S_Heptachlor-13C10	56	10 - 177	07/09/18 00:43	
S_Heptachlrepox13C10	44	8 - 146	07/09/18 00:43	
S_Oxychlordane-13C10	58	5 - 144	07/09/18 00:43	

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dba ALS Environmental

Analytical Report

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

Sample Name: PDI-SG-B398-BL1
Lab Code: K1804876-012

Service Request: K1804876
Date Collected: 05/22/18 13:09
Date Received: 05/23/18 13:30

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	1.3	0.81	10	07/09/18 01:11	5/31/18	
2,4'-DDE	ND U	1.3	1.1	10	07/09/18 01:11	5/31/18	
2,4'-DDT	ND U	1.3	1.2	10	07/09/18 01:11	5/31/18	
4,4'-DDD	0.67 J	1.3	0.45	10	07/09/18 01:11	5/31/18	
4,4'-DDE	1.6	1.3	0.90	10	07/09/18 01:11	5/31/18	
4,4'-DDT	0.99 J	1.3	0.60	10	07/09/18 01:11	5/31/18	
Aldrin	ND U	1.3	1.1	10	07/09/18 01:11	5/31/18	
alpha-Chlordane	ND U	2.5	0.79	10	07/09/18 01:11	5/31/18	
cis-Nonachlor	ND U	1.3	1.3	10	07/09/18 01:11	5/31/18	*
Dieldrin	ND U	2.5	0.98	10	07/09/18 01:11	5/31/18	
gamma-BHC (Lindane)	ND U	1.3	0.40	10	07/09/18 01:11	5/31/18	
gamma-Chlordane	ND U	2.5	0.82	10	07/09/18 01:11	5/31/18	
Heptachlor	ND U	1.3	0.50	10	07/09/18 01:11	5/31/18	
trans-Nonachlor	ND U	2.5	0.74	10	07/09/18 01:11	5/31/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	63	5 - 120	07/09/18 01:11	
S_4,4'-DDT-d4	50	13 - 200	07/09/18 01:11	
S_Aldrin-13C12	85	10 - 143	07/09/18 01:11	
S_Endrin-13C12	57	20 - 157	07/09/18 01:11	
S_GBHC6	58	5 - 124	07/09/18 01:11	
S_Heptachlor-13C10	77	10 - 177	07/09/18 01:11	
S_Heptachlrepox13C10	40	8 - 146	07/09/18 01:11	
S_Oxychlordane-13C10	51	5 - 144	07/09/18 01:11	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Sample Name: PDI-SG-B417-BL1
Lab Code: K1804876-013

Service Request: K1804876
Date Collected: 05/22/18 14:58
Date Received: 05/23/18 13:30

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.66	0.63	10	07/09/18 01:38	5/31/18	
2,4'-DDE	ND U	0.79	0.79	10	07/09/18 01:38	5/31/18	
2,4'-DDT	ND U	0.94	0.94	10	07/09/18 01:38	5/31/18	
4,4'-DDD	ND U	0.66	0.35	10	07/09/18 01:38	5/31/18	
4,4'-DDE	ND U	0.70	0.70	10	07/09/18 01:38	5/31/18	
4,4'-DDT	ND U	0.66	0.47	10	07/09/18 01:38	5/31/18	
Aldrin	ND U	0.79	0.79	10	07/09/18 01:38	5/31/18	
alpha-Chlordane	ND U	1.3	0.62	10	07/09/18 01:38	5/31/18	
cis-Nonachlor	ND U	0.97	0.97	10	07/09/18 01:38	5/31/18	*
Dieldrin	ND U	2.0	0.77	10	07/09/18 01:38	5/31/18	
gamma-BHC (Lindane)	ND U	0.66	0.31	10	07/09/18 01:38	5/31/18	
gamma-Chlordane	ND U	1.3	0.64	10	07/09/18 01:38	5/31/18	
Heptachlor	ND U	0.66	0.39	10	07/09/18 01:38	5/31/18	
trans-Nonachlor	ND U	1.3	0.58	10	07/09/18 01:38	5/31/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	52	5 - 120	07/09/18 01:38	
S_4,4'-DDT-d4	46	13 - 200	07/09/18 01:38	
S_Aldrin-13C12	51	10 - 143	07/09/18 01:38	
S_Endrin-13C12	41	20 - 157	07/09/18 01:38	
S_GBHCD6	52	5 - 124	07/09/18 01:38	
S_Heptachlor-13C10	50	10 - 177	07/09/18 01:38	
S_Heptachlrepox13C10	53	8 - 146	07/09/18 01:38	
S_Oxychlordane-13C10	47	5 - 144	07/09/18 01:38	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: K1804876
Date Collected: 05/22/18 17:05
Date Received: 05/23/18 13:30

Sample Name: PDI-RB-VV-182105
Lab Code: K1804876-014

Units: ng/L
Basis: NA

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3535A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.52	0.12	1	07/03/18 02:35	5/29/18	
2,4'-DDE	ND U	0.52	0.12	1	07/03/18 02:35	5/29/18	*
2,4'-DDT	ND U	0.52	0.091	1	07/03/18 02:35	5/29/18	
4,4'-DDD	ND U	0.52	0.11	1	07/03/18 02:35	5/29/18	
4,4'-DDE	ND U	0.52	0.079	1	07/03/18 02:35	5/29/18	*
4,4'-DDT	0.44 J	0.52	0.092	1	07/03/18 02:35	5/29/18	
Aldrin	ND U	1.0	0.48	1	07/03/18 02:35	5/29/18	
alpha-Chlordane	ND U	0.52	0.14	1	07/03/18 02:35	5/29/18	*
cis-Nonachlor	ND U	0.52	0.18	1	07/03/18 02:35	5/29/18	*
Dieldrin	ND U	5.2	0.78	1	07/03/18 02:35	5/29/18	
gamma-BHC (Lindane)	ND U	0.52	0.32	1	07/03/18 02:35	5/29/18	
gamma-Chlordane	ND U	0.52	0.18	1	07/03/18 02:35	5/29/18	*
Heptachlor	ND U	1.0	0.13	1	07/03/18 02:35	5/29/18	
trans-Nonachlor	ND U	0.52	0.13	1	07/03/18 02:35	5/29/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	124	5 - 120	07/03/18 02:35	*
S_4,4'-DDT-d4	139	13 - 200	07/03/18 02:35	
S_Aldrin-13C12	40	5 - 126	07/03/18 02:35	
S_Endrin-13C12	108	20 - 157	07/03/18 02:35	
S_GBHC6	35	5 - 124	07/03/18 02:35	
S_Heptachlor-13C10	39	5 - 128	07/03/18 02:35	
S_Heptachlrepox13C10	54	8 - 146	07/03/18 02:35	
S_Oxychlordane-13C10	46	5 - 144	07/03/18 02:35	

ALS Group USA, Corp.
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Analytical Report

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

Sample Name: Method Blank
Lab Code: KQ1807024-04

Service Request: K1804876
Date Collected: NA
Date Received: NA

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.063	0.063	1	07/08/18 18:19	5/31/18	
2,4'-DDE	ND U	0.079	0.079	1	07/08/18 18:19	5/31/18	
2,4'-DDT	ND U	0.094	0.094	1	07/08/18 18:19	5/31/18	
4,4'-DDD	ND U	0.049	0.035	1	07/08/18 18:19	5/31/18	
4,4'-DDE	ND U	0.070	0.070	1	07/08/18 18:19	5/31/18	
4,4'-DDT	ND U	0.049	0.047	1	07/08/18 18:19	5/31/18	
Aldrin	ND U	0.079	0.079	1	07/08/18 18:19	5/31/18	
alpha-Chlordane	ND U	0.098	0.062	1	07/08/18 18:19	5/31/18	
cis-Nonachlor	ND U	0.097	0.097	1	07/08/18 18:19	5/31/18	
Dieldrin	ND U	0.20	0.077	1	07/08/18 18:19	5/31/18	
gamma-BHC (Lindane)	ND U	0.049	0.031	1	07/08/18 18:19	5/31/18	
gamma-Chlordane	ND U	0.098	0.064	1	07/08/18 18:19	5/31/18	
Heptachlor	ND U	0.049	0.039	1	07/08/18 18:19	5/31/18	
trans-Nonachlor	ND U	0.098	0.058	1	07/08/18 18:19	5/31/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	88	5 - 120	07/08/18 18:19	
S_4,4'-DDT-d4	79	13 - 200	07/08/18 18:19	
S_Aldrin-13C12	91	10 - 143	07/08/18 18:19	
S_Endrin-13C12	73	20 - 157	07/08/18 18:19	
S_GBHCD6	61	5 - 124	07/08/18 18:19	
S_Heptachlor-13C10	96	10 - 177	07/08/18 18:19	
S_Heptachlrepx13C10	101	8 - 146	07/08/18 18:19	
S_Oxychlordane-13C10	90	5 - 144	07/08/18 18:19	

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Analytical Report

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

Sample Name: Method Blank
Lab Code: KQ1807075-03

Service Request: K1804876
Date Collected: NA
Date Received: NA

Units: ng/L
Basis: NA

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3535A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.50	0.11	1	07/03/18 01:13	5/29/18	
2,4'-DDE	ND U	0.50	0.11	1	07/03/18 01:13	5/29/18	
2,4'-DDT	ND U	0.50	0.087	1	07/03/18 01:13	5/29/18	
4,4'-DDD	ND U	0.50	0.10	1	07/03/18 01:13	5/29/18	
4,4'-DDE	ND U	0.50	0.075	1	07/03/18 01:13	5/29/18	
4,4'-DDT	ND U	0.50	0.088	1	07/03/18 01:13	5/29/18	
Aldrin	ND U	1.0	0.46	1	07/03/18 01:13	5/29/18	
alpha-Chlordane	ND U	0.50	0.13	1	07/03/18 01:13	5/29/18	
cis-Nonachlor	ND U	0.50	0.17	1	07/03/18 01:13	5/29/18	
Dieldrin	ND U	5.0	0.74	1	07/03/18 01:13	5/29/18	
gamma-BHC (Lindane)	ND U	0.50	0.30	1	07/03/18 01:13	5/29/18	
gamma-Chlordane	ND U	0.50	0.17	1	07/03/18 01:13	5/29/18	
Heptachlor	ND U	1.0	0.12	1	07/03/18 01:13	5/29/18	
trans-Nonachlor	ND U	0.50	0.12	1	07/03/18 01:13	5/29/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	121	5 - 120	07/03/18 01:13	*
S_4,4'-DDT-d4	132	13 - 200	07/03/18 01:13	
S_Aldrin-13C12	43	5 - 126	07/03/18 01:13	
S_Endrin-13C12	86	20 - 157	07/03/18 01:13	
S_GBHC6	45	5 - 124	07/03/18 01:13	
S_Heptachlor-13C10	44	5 - 128	07/03/18 01:13	
S_Heptachlrepox13C10	58	8 - 146	07/03/18 01:13	
S_Oxychlordane-13C10	61	5 - 144	07/03/18 01:13	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Service Request: K1804876

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Extraction Method: EPA 3541

Sample Name	Lab Code	S_4,4'-DDD-d4	S_4,4'-DDT-d4	S_Aldrin-13C12
		5-120	13-200	10-143
PDI-SG-B299-BL1	K1804876-001	59	52	65
PDI-SG-B298-BL1	K1804876-002	63	57	61
PDI-SG-B305-BL1	K1804876-003	71	69	47
PDI-SG-B214-BL1	K1804876-004	54	43	50
PDI-SG-B234-BL1	K1804876-005	75	67	74
PDI-SG-B234-BL1-D	K1804876-006	61	50	52
PDI-SG-B246-BL1	K1804876-007	70	67	70
PDI-SG-B251-BL1	K1804876-008	64	68	58
PDI-SG-B257-BL1	K1804876-009	83	66	57
PDI-SG-B315-BL1	K1804876-010	69	64	64
PDI-SG-B315-BL1-D	K1804876-011	57	44	43
PDI-SG-B398-BL1	K1804876-012	63	50	85
PDI-SG-B417-BL1	K1804876-013	52	46	51
Batch QC	K1804878-001	70	76	76
Method Blank	KQ1807024-04	88	79	91
Lab Control Sample	KQ1807024-03	76	70	74
Batch QC	KQ1807024-01	71	61	69
Batch QC	KQ1807024-02	67	68	74

ALS Group USA, Corp.
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QA/QC Report

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

Service Request: K1804876

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Extraction Method: EPA 3541

Sample Name	Lab Code	S_Endrin-13C12	S_GBHCD6	S_Heptachlor-13C10
		20-157	5-124	10-177
PDI-SG-B299-BL1	K1804876-001	47	35	53
PDI-SG-B298-BL1	K1804876-002	63	59	69
PDI-SG-B305-BL1	K1804876-003	72	40	60
PDI-SG-B214-BL1	K1804876-004	51	41	41
PDI-SG-B234-BL1	K1804876-005	74	59	74
PDI-SG-B234-BL1-D	K1804876-006	46	42	47
PDI-SG-B246-BL1	K1804876-007	59	48	62
PDI-SG-B251-BL1	K1804876-008	57	43	60
PDI-SG-B257-BL1	K1804876-009	62	57	63
PDI-SG-B315-BL1	K1804876-010	55	47	60
PDI-SG-B315-BL1-D	K1804876-011	59	45	56
PDI-SG-B398-BL1	K1804876-012	57	58	77
PDI-SG-B417-BL1	K1804876-013	41	52	50
Batch QC	K1804878-001	53	59	85
Method Blank	KQ1807024-04	73	61	96
Lab Control Sample	KQ1807024-03	60	50	78
Batch QC	KQ1807024-01	60	52	63
Batch QC	KQ1807024-02	57	49	71

ALS Group USA, Corp.
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QA/QC Report

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

Service Request: K1804876

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Extraction Method: EPA 3541

Sample Name	Lab Code	S_Heptachlrepox13C10	S_Oxychlordan-13C10
		8-146	5-144
PDI-SG-B299-BL1	K1804876-001	42	51
PDI-SG-B298-BL1	K1804876-002	50	49
PDI-SG-B305-BL1	K1804876-003	51	47
PDI-SG-B214-BL1	K1804876-004	32	35
PDI-SG-B234-BL1	K1804876-005	53	74
PDI-SG-B234-BL1-D	K1804876-006	31	45
PDI-SG-B246-BL1	K1804876-007	51	46
PDI-SG-B251-BL1	K1804876-008	42	70
PDI-SG-B257-BL1	K1804876-009	50	61
PDI-SG-B315-BL1	K1804876-010	32	51
PDI-SG-B315-BL1-D	K1804876-011	44	58
PDI-SG-B398-BL1	K1804876-012	40	51
PDI-SG-B417-BL1	K1804876-013	53	47
Batch QC	K1804878-001	0*	0* 
Method Blank	KQ1807024-04	101	90
Lab Control Sample	KQ1807024-03	70	64
Batch QC	KQ1807024-01	46	75
Batch QC	KQ1807024-02	75	88

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Service Request: K1804876

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Extraction Method: EPA 3541

Sample Name	Lab Code	S_4,4'DDD-d4	S_4,4'-DDT-d4	S_Aldrin-13C12
		5-120	13-200	10-143
PDI-RB-VV-182105	K1804876-014	124*	139	40
Method Blank	KQ1807075-03	121*	132	43
Lab Control Sample	KQ1807075-01	116	134	39
Duplicate Lab Control Sample	KQ1807075-02	112	130	39

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Service Request: K1804876

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Extraction Method: EPA 3541

Sample Name	Lab Code	S_Endrin-13C12	S_GBHCD6	S_Heptachlor-13C10
		20-157	5-124	10-177
PDI-RB-VV-182105	K1804876-014	108	35	39
Method Blank	KQ1807075-03	86	45	44
Lab Control Sample	KQ1807075-01	86	44	37
Duplicate Lab Control Sample	KQ1807075-02	98	47	40

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Service Request: K1804876

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Extraction Method: EPA 3541

Sample Name	Lab Code	S_Heptachlrepox13C10	S_Oxychlordane-13C10
		8-146	5-144
PDI-RB-VV-182105	K1804876-014	54	46
Method Blank	KQ1807075-03	58	61
Lab Control Sample	KQ1807075-01	54	51
Duplicate Lab Control Sample	KQ1807075-02	60	55

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Service Request: K1804876
Date Analyzed: 07/08/18 17:52

Internal Standard Area and RT SUMMARY
Organochlorine Pesticides by GC/MS/MS

File ID: J:\MS21\Data\070818\070818F014.D\
Instrument ID: K-MSMS-01
Analysis Method: ALS SOP

Lab Code: KQ1809156-01
Analysis Lot: 597755
Signal ID: 1

	Pyrene-d10	
	Area	RT
ICAL Result ==>	20,641	14.0862
Upper Limit ==>	41,282	14.59
Lower Limit ==>	10,320	13.59

Associated Analyses

Continuing Calibration Verification	KQ1809156-01	40232.4	14.0863
Method Blank	KQ1807024-04	33492.1	14.0862
Lab Control Sample	KQ1807024-03	40504.1	14.0862
Batch QCMS	KQ1807024-01	49158.8	14.0862
Batch QCDMS	KQ1807024-02	51669.4	14.0862
PDI-SG-B299-BL1	K1804876-001	49572.2	14.0862
PDI-SG-B298-BL1	K1804876-002	53519	14.0862
PDI-SG-B305-BL1	K1804876-003	55624.4	14.0862
PDI-SG-B214-BL1	K1804876-004	45309.9	14.0862
PDI-SG-B234-BL1	K1804876-005	51749.8	14.0864
PDI-SG-B234-BL1-D	K1804876-006	49458	14.0862
PDI-SG-B246-BL1	K1804876-007	51438.2	14.0862
PDI-SG-B251-BL1	K1804876-008	47287.8	14.0862
PDI-SG-B257-BL1	K1804876-009	40349.6	14.0862
PDI-SG-B315-BL1	K1804876-010	49267.2	14.0862
PDI-SG-B315-BL1-D	K1804876-011	46437.6	14.0862
PDI-SG-B398-BL1	K1804876-012	42548.8	14.0862
PDI-SG-B417-BL1	K1804876-013	39643.7	14.0862
Batch QC	K1804878-001	49885.9	14.0862

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Service Request: K1804876
Date Collected: N/A
Date Received: N/A
Date Analyzed: 07/8/18
Date Extracted: 05/31/18

Duplicate Matrix Spike Summary
Organochlorine Pesticides by GC/MS/MS

Sample Name: Batch QC
Lab Code: K1804878-001
Analysis Method: ALS SOP
Prep Method: EPA 3541

Units: ug/Kg
Basis: Dry

Analyte Name	Sample Result	Matrix Spike KQ1807024-01			Duplicate Matrix Spike KQ1807024-02			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
2,4'-DDD	ND U	2.30	2.39	96	2.56	2.40	107	32-169	11	40
2,4'-DDE	ND U	2.12	2.39	89	2.05	2.40	85	43-155	3	40
2,4'-DDT	ND U	2.39	2.39	100	2.19	2.40	91	55-161	9	40
4,4'-DDD	1.6	3.87	2.39	93	4.03	2.40	99	10-190	4	40
4,4'-DDE	4.1	6.13	2.39	86	6.65	2.40	107	35-162	8	40
4,4'-DDT	ND U	5.71	2.39	239 *	2.66	2.40	111	24-183	73*	40
Aldrin	ND U	3.03	2.39	127	2.85	2.40	119	52-151	6	40
alpha-Chlordane	ND U	1.71 J	2.39	72	1.54 J	2.40	64	31-156	10	40
cis-Nonachlor	ND U	1.32	2.39	55	1.23	2.40	51	27-144	7	40
Dieldrin	ND U	2.10 J	2.39	88	2.67	2.40	111	28-150	24	40
gamma-BHC (Lindane)	ND U	2.13	2.39	89	1.97	2.40	82	64-135	8	40
gamma-Chlordane	ND U	2.06 J	2.39	86	1.77 J	2.40	74	31-158	15	40
Heptachlor	ND U	2.29	2.39	96	2.15	2.40	90	76-117	6	40
trans-Nonachlor	ND U	1.83 J	2.39	77	1.45 J	2.40	61	35-153	23	40

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

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

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

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Service Request: K1804876
Date Analyzed: 07/08/18
Date Extracted: 05/31/18

Lab Control Sample Summary
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Units: ug/Kg
Basis: Dry
Analysis Lot: 597755

Lab Control Sample
KQ1807024-03

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
2,4'-DDD	1.60	2.00	80	73-122
2,4'-DDE	1.69	2.00	84	54-145
2,4'-DDT	1.86	2.00	93	77-118
4,4'-DDD	1.90	2.00	95	74-117
4,4'-DDE	1.91	2.00	96	66-132
4,4'-DDT	1.97	2.00	98	78-116
Aldrin	2.14	2.00	107	74-122
alpha-Chlordane	1.59	2.00	79	74-130
cis-Nonachlor	1.33	2.00	66 *	69-134
Dieldrin	1.97	2.00	99	62-131
gamma-BHC (Lindane)	1.85	2.00	92	79-116
gamma-Chlordane	1.76	2.00	88	76-128
Heptachlor	1.81	2.00	91	81-114
trans-Nonachlor	1.59	2.00	79	76-124

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Service Request: K1804876
Date Analyzed: 07/03/18
Date Extracted: 05/29/18

Duplicate Lab Control Sample Summary
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3535A

Units: ng/L
Basis: NA
Analysis Lot: 597310

Lab Control Sample
KQ1807075-01

Duplicate Lab Control Sample
KQ1807075-02

Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
2,4'-DDD	17.9	20.0	90	18.4	20.0	92	79-113	3	30
2,4'-DDE	12.4	20.0	62 *	13.4	20.0	67 *	75-117	8	30
2,4'-DDT	19.6	20.0	98	19.0	20.0	95	77-114	3	30
4,4'-DDD	19.3	20.0	96	21.1	20.0	106	78-114	9	30
4,4'-DDE	14.8	20.0	74 *	15.1	20.0	76	76-115	2	30
4,4'-DDT	19.8	20.0	99	21.1	20.0	105	85-113	6	30
Aldrin	16.9	20.0	84	17.6	20.0	88	81-113	4	30
alpha-Chlordane	26.9	20.0	134 *	25.4	20.0	127	69-130	6	30
cis-Nonachlor	47.5	20.0	238 *	44.8	20.0	224 *	59-138	6	30
Dieldrin	16.7	20.0	83	13.2	20.0	66	62-111	24	30
gamma-BHC (Lindane)	20.1	20.0	101	19.7	20.0	99	66-130	2	30
gamma-Chlordane	28.1	20.0	140 *	26.3	20.0	131 *	72-127	7	30
Heptachlor	19.2	20.0	96	19.5	20.0	97	81-115	1	30
trans-Nonachlor	29.4	20.0	147 *	25.9	20.0	129 *	72-127	13	30

ALS Group USA, Corp.

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QA/QC Report

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

Service Request: K1804876
Date Analyzed: 07/08/18 18:19
Date Extracted: 05/31/18

Method Blank Summary
Organochlorine Pesticides by GC/MS/MS

Sample Name: Method Blank **Instrument ID:** K-MSMS-01
Lab Code: KQ1807024-04 **File ID:** J:\MS21\Data\070818\070818F015.D\
Analysis Method: ALS SOP **Analysis Lot:** 597755
Prep Method: EPA 3541 **Extraction Lot:** 314712

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ1807024-03	J:\MS21\Data\070818\070818F016.D\	07/08/18 18:46
Batch QCMS	KQ1807024-01	J:\MS21\Data\070818\070818F017.D\	07/08/18 19:14
Batch QCDMS	KQ1807024-02	J:\MS21\Data\070818\070818F018.D\	07/08/18 19:41
PDI-SG-B299-BL1	K1804876-001	J:\MS21\Data\070818\070818F019.D\	07/08/18 20:09
PDI-SG-B298-BL1	K1804876-002	J:\MS21\Data\070818\070818F020.D\	07/08/18 20:36
PDI-SG-B305-BL1	K1804876-003	J:\MS21\Data\070818\070818F021.D\	07/08/18 21:03
PDI-SG-B214-BL1	K1804876-004	J:\MS21\Data\070818\070818F022.D\	07/08/18 21:31
PDI-SG-B234-BL1	K1804876-005	J:\MS21\Data\070818\070818F023.D\	07/08/18 21:58
PDI-SG-B234-BL1-D	K1804876-006	J:\MS21\Data\070818\070818F024.D\	07/08/18 22:26
PDI-SG-B246-BL1	K1804876-007	J:\MS21\Data\070818\070818F025.D\	07/08/18 22:53
PDI-SG-B251-BL1	K1804876-008	J:\MS21\Data\070818\070818F026.D\	07/08/18 23:20
PDI-SG-B257-BL1	K1804876-009	J:\MS21\Data\070818\070818F027.D\	07/08/18 23:49
PDI-SG-B315-BL1	K1804876-010	J:\MS21\Data\070818\070818F028.D\	07/09/18 00:16
PDI-SG-B315-BL1-D	K1804876-011	J:\MS21\Data\070818\070818F029.D\	07/09/18 00:43
PDI-SG-B398-BL1	K1804876-012	J:\MS21\Data\070818\070818F030.D\	07/09/18 01:11
PDI-SG-B417-BL1	K1804876-013	J:\MS21\Data\070818\070818F031.D\	07/09/18 01:38
Batch QC	K1804878-001	J:\MS21\Data\070818\070818F032.D\	07/09/18 02:05

ALS Group USA, Corp.

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QA/QC Report

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

Service Request: K1804876
Date Analyzed: 07/03/18 01:13
Date Extracted: 05/29/18

Method Blank Summary
Organochlorine Pesticides by GC/MS/MS

Sample Name:	Method Blank	Instrument ID:	K-MSMS-01
Lab Code:	KQ1807075-03	File ID:	J:\MS21\Data\070218\070218F023.D\
Analysis Method:	ALS SOP	Analysis Lot:	597310
Prep Method:	EPA 3535A	Extraction Lot:	314778

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ1807075-01	J:\MS21\Data\070218\070218F024.D\	07/03/18 01:40
Duplicate Lab Control Sample	KQ1807075-02	J:\MS21\Data\070218\070218F025.D\	07/03/18 02:08
PDI-RB-VV-182105	K1804876-014	J:\MS21\Data\070218\070218F026.D\	07/03/18 02:35

ALS Group USA, Corp.

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QA/QC Report

Client: AECOM**Project:** Portland Harbor Pre-Remedial Design Investigation/60566335**Sample Matrix:** Sediment**Service Request:** K1804876**Date Analyzed:** 07/08/18 18:46**Date Extracted:** 05/31/18**Lab Control Sample Summary**
Organochlorine Pesticides by GC/MS/MS**Sample Name:** Lab Control Sample**Instrument ID:** K-MSMS-01**Lab Code:** KQ1807024-03**File ID:** J:\MS21\Data\070818\070818F016.D**Analysis Method:** ALS SOP**Analysis Lot:** 597755**Prep Method:** EPA 3541**Extraction Lot:** 314712

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1807024-04	J:\MS21\Data\070818\070818F015.D\	07/08/18 18:19
Batch QCMS	KQ1807024-01	J:\MS21\Data\070818\070818F017.D\	07/08/18 19:14
Batch QCDMS	KQ1807024-02	J:\MS21\Data\070818\070818F018.D\	07/08/18 19:41
PDI-SG-B299-BL1	K1804876-001	J:\MS21\Data\070818\070818F019.D\	07/08/18 20:09
PDI-SG-B298-BL1	K1804876-002	J:\MS21\Data\070818\070818F020.D\	07/08/18 20:36
PDI-SG-B305-BL1	K1804876-003	J:\MS21\Data\070818\070818F021.D\	07/08/18 21:03
PDI-SG-B214-BL1	K1804876-004	J:\MS21\Data\070818\070818F022.D\	07/08/18 21:31
PDI-SG-B234-BL1	K1804876-005	J:\MS21\Data\070818\070818F023.D\	07/08/18 21:58
PDI-SG-B234-BL1-D	K1804876-006	J:\MS21\Data\070818\070818F024.D\	07/08/18 22:26
PDI-SG-B246-BL1	K1804876-007	J:\MS21\Data\070818\070818F025.D\	07/08/18 22:53
PDI-SG-B251-BL1	K1804876-008	J:\MS21\Data\070818\070818F026.D\	07/08/18 23:20
PDI-SG-B257-BL1	K1804876-009	J:\MS21\Data\070818\070818F027.D\	07/08/18 23:49
PDI-SG-B315-BL1	K1804876-010	J:\MS21\Data\070818\070818F028.D\	07/09/18 00:16
PDI-SG-B315-BL1-D	K1804876-011	J:\MS21\Data\070818\070818F029.D\	07/09/18 00:43
PDI-SG-B398-BL1	K1804876-012	J:\MS21\Data\070818\070818F030.D\	07/09/18 01:11
PDI-SG-B417-BL1	K1804876-013	J:\MS21\Data\070818\070818F031.D\	07/09/18 01:38
Batch QC	K1804878-001	J:\MS21\Data\070818\070818F032.D\	07/09/18 02:05

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QA/QC Report

Client: AECOM**Project:** Portland Harbor Pre-Remedial Design Investigation/60566335**Sample Matrix:** Water**Service Request:** K1804876**Date Analyzed:** 07/03/18 01:40**Date Extracted:** 05/29/18**Lab Control Sample Summary
Organochlorine Pesticides by GC/MS/MS****Sample Name:** Lab Control Sample**Instrument ID:**K-MSMS-01**Lab Code:** KQ1807075-01**File ID:**J:\MS21\Data\070218\070218F024.D**Analysis Method:** ALS SOP**Analysis Lot:**597310**Prep Method:** EPA 3535A**Extraction Lot:**314778

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1807075-03	J:\MS21\Data\070218\070218F023.D\	07/03/18 01:13
Duplicate Lab Control Sample	KQ1807075-02	J:\MS21\Data\070218\070218F025.D\	07/03/18 02:08
PDI-RB-VV-182105	K1804876-014	J:\MS21\Data\070218\070218F026.D\	07/03/18 02:35

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QC/QC Report

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

Service Request: K1804876
Date Analyzed: 07/03/18 01:13

Tune Summary
Organochlorine Pesticides by GC/MS/MS

File ID: J:\MS21\Data\070218\070218F023.D\
Instrument ID: K-MSMS-01

Analytical Method: ALS SOP
Analysis Lot: 597310

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Method Blank	KQ1807075-03	J:\MS21\Data\070218\070218F023.D\	07/03/18 01:13	
Lab Control Sample	KQ1807075-01	J:\MS21\Data\070218\070218F024.D\	07/03/18 01:40	
Duplicate Lab Control Sample	KQ1807075-02	J:\MS21\Data\070218\070218F025.D\	07/03/18 02:08	
PDI-RB-VV-182105	K1804876-014	J:\MS21\Data\070218\070218F026.D\	07/03/18 02:35	

ALS Group USA, Corp.
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QC/QC Report

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

Service Request: K1804876
Date Analyzed: 07/08/18 17:52

Tune Summary
Organochlorine Pesticides by GC/MS/MS

File ID: J:\MS21\Data\070818\070818F014.D\
Instrument ID: K-MSMS-01

Analytical Method: ALS SOP
Analysis Lot: 597755

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1809156-01	J:\MS21\Data\070818\070818F014.D\	07/08/18 17:52	
Method Blank	KQ1807024-04	J:\MS21\Data\070818\070818F015.D\	07/08/18 18:19	
Lab Control Sample	KQ1807024-03	J:\MS21\Data\070818\070818F016.D\	07/08/18 18:46	
Batch QC	KQ1807024-01	J:\MS21\Data\070818\070818F017.D\	07/08/18 19:14	
Batch QC	KQ1807024-02	J:\MS21\Data\070818\070818F018.D\	07/08/18 19:41	
PDI-SG-B299-BL1	K1804876-001	J:\MS21\Data\070818\070818F019.D\	07/08/18 20:09	
PDI-SG-B298-BL1	K1804876-002	J:\MS21\Data\070818\070818F020.D\	07/08/18 20:36	
PDI-SG-B305-BL1	K1804876-003	J:\MS21\Data\070818\070818F021.D\	07/08/18 21:03	
PDI-SG-B214-BL1	K1804876-004	J:\MS21\Data\070818\070818F022.D\	07/08/18 21:31	
PDI-SG-B234-BL1	K1804876-005	J:\MS21\Data\070818\070818F023.D\	07/08/18 21:58	
PDI-SG-B234-BL1-D	K1804876-006	J:\MS21\Data\070818\070818F024.D\	07/08/18 22:26	
PDI-SG-B246-BL1	K1804876-007	J:\MS21\Data\070818\070818F025.D\	07/08/18 22:53	
PDI-SG-B251-BL1	K1804876-008	J:\MS21\Data\070818\070818F026.D\	07/08/18 23:20	
PDI-SG-B257-BL1	K1804876-009	J:\MS21\Data\070818\070818F027.D\	07/08/18 23:49	
PDI-SG-B315-BL1	K1804876-010	J:\MS21\Data\070818\070818F028.D\	07/09/18 00:16	
PDI-SG-B315-BL1-D	K1804876-011	J:\MS21\Data\070818\070818F029.D\	07/09/18 00:43	
PDI-SG-B398-BL1	K1804876-012	J:\MS21\Data\070818\070818F030.D\	07/09/18 01:11	
PDI-SG-B417-BL1	K1804876-013	J:\MS21\Data\070818\070818F031.D\	07/09/18 01:38	
Batch QC	K1804878-001	J:\MS21\Data\070818\070818F032.D\	07/09/18 02:05	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Service Request: K1804876
Calibration Date: 7/6/2018

Initial Calibration Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1800333
Instrument ID: K-MSMS-01

Signal ID: 1

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1800333-01		J:\MS21\Data\070618\070618F015.D	07/06/2018 14:05
02	KC1800333-02		J:\MS21\Data\070618\070618F016.D	07/06/2018 14:32
03	KC1800333-03		J:\MS21\Data\070618\070618F017.D	07/06/2018 14:59
04	KC1800333-04		J:\MS21\Data\070618\070618F018.D	07/06/2018 15:26
05	KC1800333-05		J:\MS21\Data\070618\070618F019.D	07/06/2018 15:54
06	KC1800333-06		J:\MS21\Data\070618\070618F020.D	07/06/2018 16:21
07	KC1800333-07		J:\MS21\Data\070618\070618F021.D	07/06/2018 16:48
08	KC1800333-08		J:\MS21\Data\070618\070618F022.D	07/06/2018 17:16
09	KC1800333-09		J:\MS21\Data\070618\070618F023.D	07/06/2018 17:43

Analyte

2,4'-DDD

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.7967	02	1.0	0.6984	03	2.0	0.7144	04	5.0	0.6857
05	10	0.6844	06	20	0.6629	07	40	0.6422	08	60	0.6535
09	80	0.6363									

2,4'-DDE

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.4749	02	1.0	0.5193	03	2.0	0.4574	04	5.0	0.473
05	10	0.4654	06	20	0.4594	07	40	0.4391	08	60	0.4652
09	80	0.4425									

2,4'-DDT

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.8919	02	1.0	0.8214	03	2.0	0.821	04	5.0	0.7055
05	10	0.726	06	20	0.756	07	40	0.7159	08	60	0.6633
09	80	0.7054									

4,4'-DDD

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.7558	02	1.0	0.6863	03	2.0	0.6942	04	5.0	0.654
05	10	0.6733	06	20	0.6517	07	40	0.6502	08	60	0.6795
09	80	0.657									

4,4'-DDE

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.5393	02	1.0	0.4805	03	2.0	0.4621	04	5.0	0.4606
05	10	0.4924	06	20	0.4582	07	40	0.4594	08	60	0.4511
09	80	0.4453									

4,4'-DDT

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.8218	02	1.0	0.6889	03	2.0	0.6574	04	5.0	0.5953
05	10	0.6533	06	20	0.6514	07	40	0.643	08	60	0.6562
09	80	0.6721									

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Service Request: K1804876
Calibration Date: 7/6/2018

Initial Calibration Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1800333
Instrument ID: K-MSMS-01

Signal ID: 1

Analyte

Aldrin

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	1.003	02	1.0	0.8297	03	2.0	1.11	04	5.0	0.8863
05	10	0.8942	06	20	0.7651	07	40	0.7389	08	60	0.7889
09	80	0.8144									

Dieldrin

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	1.439	02	1.0	1.37	03	2.0	1.36	04	5.0	1.291
05	10	1.352	06	20	1.109	07	40	1.108	08	60	1.161
09	80	1.223									

Heptachlor

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	1.327	02	1.0	1.254	03	2.0	1.103	04	5.0	0.9748
05	10	0.9709	06	20	0.9394	07	40	0.9129	08	60	0.8961
09	80	0.903									

S_4,4'-DDT-d4

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	5	3.488	02	5	3.463	03	5	3.576	04	5	3.902
05	5	3.711	06	5	3.648	07	5	3.816	08	5	4.115
09	5	4.082									

S_4,4'DDD-d4

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	5	5.771	02	5	5.99	03	5	6.102	04	5	5.983
05	5	5.999	06	5	6.153	07	5	6.182	08	5	6.163
09	5	6.489									

S_Aldrin-13C12

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.4051	02	20	0.3901	03	20	0.3681	04	20	0.3712
05	20	0.3831	06	20	0.4255	07	20	0.4026	08	20	0.3886
09	20	0.3895									

S_Endrin-13C12

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.1726	02	20	0.1635	03	20	0.1709	04	20	0.1826
05	20	0.1682	06	20	0.1877	07	20	0.192	08	20	0.1806
09	20	0.1794									

S_GBHCD6

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.9306	02	20	0.8719	03	20	0.8676	04	20	0.9098
05	20	0.9093	06	20	0.8786	07	20	0.8662	08	20	0.8141
09	20	0.8456									

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Service Request: K1804876
Calibration Date: 7/6/2018

Initial Calibration Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1800333
Instrument ID: K-MSMS-01

Signal ID: 1

Analyte

S_Heptachlor-13C10

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.6063	02	20	0.606	03	20	0.6149	04	20	0.6238
05	20	0.6273	06	20	0.6342	07	20	0.6635	08	20	0.6743
09	20	0.6875									

S_Heptachlorepo13C10

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.3176	02	20	0.2842	03	20	0.308	04	20	0.3294
05	20	0.3266	06	20	0.2891	07	20	0.3157	08	20	0.3141
09	20	0.2993									

S_Oxychlordane-13C10

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.2191	02	20	0.2178	03	20	0.2162	04	20	0.2169
05	20	0.2332	06	20	0.2043	07	20	0.21	08	20	0.2068
09	20	0.205									

alpha-Chlordane

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	4.382	02	1.0	3.009	03	2.0	3.114	04	5.0	3.417
05	10	2.85	06	20	3.343	07	40	3.406	08	60	3.298
09	80	3.449									

cis-Nonachlor

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	3.451	02	1.0	3.363	03	2.0	2.761	04	5.0	2.914
05	10	2.457	06	20	2.816	07	40	2.729	08	60	2.813
09	80	2.935									

gamma-BHC (Lindane)

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.578	02	1.0	0.7009	03	2.0	0.5742	04	5.0	0.5433
05	10	0.5773	06	20	0.5573	07	40	0.5702	08	60	0.5901
09	80	0.5689									

gamma-Chlordane

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	3.399	02	1.0	4.62	03	2.0	3.278	04	5.0	3.149
05	10	3.089	06	20	3.193	07	40	3.191	08	60	3.147
09	80	3.469									

trans-Nonachlor

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	2.549	02	1.0	2.715	03	2.0	2.816	04	5.0	2.227
05	10	2.277	06	20	2.492	07	40	2.46	08	60	2.395
09	80	2.62									

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

Service Request: K1804876
Calibration Date: 7/6/2018

Initial Calibration Summary Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1800333
Instrument ID: K-MSMS-01

Signal ID: 1

Analyte Name	Compound Type	Calibration Evaluation				Calibration Evaluation	
		Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
2,4'-DDD	TRG	Average RF	% RSD	7.1	≤20	0.686	0.01
2,4'-DDE	TRG	Average RF	% RSD	5.0	≤20	0.4662	0.01
2,4'-DDT	TRG	Average RF	% RSD	9.7	≤20	0.7563	0.01
4,4'-DDD	TRG	Average RF	% RSD	4.9	≤20	0.678	0.01
4,4'-DDE	TRG	Average RF	% RSD	6.1	≤20	0.4721	0.01
4,4'-DDT	TRG	Average RF	% RSD	9.2	≤20	0.671	0.01
Aldrin	TRG	Average RF	% RSD	13.8	≤20	0.8701	0.01
Dieldrin	TRG	Average RF	% RSD	9.7	≤20	1.268	0.01
Heptachlor	TRG	Average RF	% RSD	15.6	≤20	1.031	0.01
S_4,4'-DDT-d4	SURR	Average RF	% RSD	6.4	≤	3.756	0.01
S_4,4'DDD-d4	SURR	Average RF	% RSD	3.2	≤	6.093	0.01
S_Aldrin-13C12	SURR	Average RF	% RSD	4.5	≤	0.3915	0.01
S_Endrin-13C12	SURR	Average RF	% RSD	5.3	≤	0.1775	0.01
S_GBHCD6	SURR	Average RF	% RSD	4.1	≤	0.8771	0.01
S_Heptachlor-13C10	SURR	Average RF	% RSD	4.7	≤	0.6375	0.01
S_Heptachlrepox13C10	SURR	Average RF	% RSD	5.1	≤	0.3094	0.01
S_Oxychlordane-13C10	SURR	Average RF	% RSD	4.3	≤	0.2144	0.01
alpha-Chlordane	TRG	Average RF	% RSD	12.9	≤20	3.363	0.01
cis-Nonachlor	TRG	Average RF	% RSD	10.7	≤20	2.915	0.01
gamma-BHC (Lindane)	TRG	Average RF	% RSD	7.8	≤20	0.5845	0.01
gamma-Chlordane	TRG	Quadratic	COD	0.9983	≥	3.393	0.01
trans-Nonachlor	TRG	Average RF	% RSD	7.7	≤20	2.506	0.01

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QA/QC Report

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

Service Request: K1804876
Calibration Date: 7/2/2018

Initial Calibration Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1800348
Instrument ID: K-MSMS-01

Signal ID: 1

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1800348-01		J:\MS21\Data\070218\070218F009.D	07/02/2018 19:01
02	KC1800348-02		J:\MS21\Data\070218\070218F010.D	07/02/2018 19:28
03	KC1800348-03		J:\MS21\Data\070218\070218F011.D	07/02/2018 19:55
04	KC1800348-04		J:\MS21\Data\070218\070218F012.D	07/02/2018 20:23
05	KC1800348-05		J:\MS21\Data\070218\070218F013.D	07/02/2018 20:50
06	KC1800348-06		J:\MS21\Data\070218\070218F014.D	07/02/2018 21:18
07	KC1800348-07		J:\MS21\Data\070218\070218F015.D	07/02/2018 21:45
08	KC1800348-08		J:\MS21\Data\070218\070218F016.D	07/02/2018 22:12
09	KC1800348-09		J:\MS21\Data\070218\070218F017.D	07/02/2018 22:39
10	KC1800348-10		J:\MS21\Data\070218\070218F018.D	07/02/2018 23:07

Analyte

2,4'-DDD

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.5263	02	1.0	0.4543	03	2.0	0.4645	04	5.0	0.4494
05	10	0.4243	06	20	0.4173	07	40	0.4182	08	60	0.4416
09	80	0.4487	10	100	0.4425						

2,4'-DDE

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.3365	02	1.0	0.3387	03	2.0	0.2784	04	5.0	0.2837
05	10	0.2794	06	20	0.2766	07	40	0.2842	08	60	0.3024
09	80	0.3085	10	100	0.3023						

2,4'-DDT

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.5696	02	1.0	0.4775	03	2.0	0.4814	04	5.0	0.4224
05	10	0.4363	06	20	0.4918	07	40	0.4932	08	60	0.4998
09	80	0.4931	10	100	0.467						

4,4'-DDD

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.7613	02	1.0	0.6322	03	2.0	0.6356	04	5.0	0.6255
05	10	0.6137	06	20	0.6126	07	40	0.5971	08	60	0.6181
09	80	0.6247	10	100	0.6311						

4,4'-DDE

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.3384	02	1.0	0.3074	03	2.0	0.279	04	5.0	0.2952
05	10	0.2781	06	20	0.2767	07	40	0.2666	08	60	0.279
09	80	0.2802	10	100	0.2779						

4,4'-DDT

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.7678	02	1.0	0.7722	03	2.0	0.6932	04	5.0	0.6885
05	10	0.6695	06	20	0.7322	07	40	0.7205	08	60	0.7055

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QA/QC Report

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

Service Request: K1804876
Calibration Date: 7/2/2018

Initial Calibration Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1800348
Instrument ID: K-MSMS-01

Signal ID: 1

Analyte

4,4'-DDT

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
09	80	0.7128	10	100	0.7002						

Aldrin

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	1.78	02	1.0	1.08	03	2.0	1.501	04	5.0	1.537
05	10	1.191	06	20	1.149	07	40	1.197	08	60	1.341
09	80	1.256	10	100	1.307						

Dieldrin

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
02	1.0	0.8094	03	2.0	1.267	04	5.0	1.174	05	10	1.219
06	20	1.174	07	40	1.213	08	60	1.059	09	80	1.131
10	100	1.089									

Heptachlor

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	1.124	02	1.0	1.109	03	2.0	1.198	04	5.0	1.013
05	10	1.044	06	20	1.003	07	40	0.956	08	60	0.9248
09	80	0.9598	10	100	0.9725						

alpha-Chlordane

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	1.524	02	1.0	2.036	03	2.0	2.107	04	5.0	1.596
05	10	1.624	06	20	1.781	07	40	1.87	08	60	1.784
09	80	1.741	10	100	1.932						

cis-Nonachlor

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	1.785	02	1.0	1.94	03	2.0	1.572	04	5.0	1.33
05	10	1.32	06	20	1.554	07	40	1.437	08	60	1.426
09	80	1.414	10	100	1.594						

gamma-BHC (Lindane)

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.5031	02	1.0	0.5701	03	2.0	0.6336	04	5.0	0.6102
05	10	0.5506	06	20	0.5536	07	40	0.5547	08	60	0.55
09	80	0.5613	10	100	0.5565						

gamma-Chlordane

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	3.837	02	1.0	2.525	03	2.0	2.082	04	5.0	1.788
05	10	2.072	06	20	2.232	07	40	2.257	08	60	2.15
09	80	2.13	10	100	2.41						

trans-Nonachlor

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	1.229	02	1.0	1.691	03	2.0	1.474	04	5.0	1.036

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

Service Request: K1804876
Calibration Date: 7/2/2018

Initial Calibration Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1800348
Instrument ID: K-MSMS-01

Signal ID: 1

Analyte

trans-Nonachlor

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
05	10	1.331	06	20	1.227	07	40	1.359	08	60	1.257
09	80	1.195	10	100	1.415						

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

Service Request: K1804876
Calibration Date: 7/2/2018

Initial Calibration Summary Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1800348
Instrument ID: K-MSMS-01

Signal ID: 1

Analyte Name	Compound Type	Calibration Evaluation				Calibration Evaluation	
		Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
2,4'-DDD	TRG	Average RF	% RSD	7.0	≤20	0.4487	0.01
2,4'-DDE	TRG	Average RF	% RSD	7.8	≤20	0.2991	0.01
2,4'-DDT	TRG	Average RF	% RSD	8.2	≤20	0.4832	0.01
4,4'-DDD	TRG	Average RF	% RSD	7.2	≤20	0.6352	0.01
4,4'-DDE	TRG	Average RF	% RSD	7.3	≤20	0.2879	0.01
4,4'-DDT	TRG	Average RF	% RSD	4.6	≤20	0.7162	0.01
Aldrin	TRG	Average RF	% RSD	16.0	≤20	1.334	0.01
Dieldrin	TRG	Average RF	% RSD	12.0	≤20	1.126	0.01
Heptachlor	TRG	Average RF	% RSD	8.5	≤20	1.03	0.01
alpha-Chlordane	TRG	Average RF	% RSD	10.6	≤20	1.799	0.01
cis-Nonachlor	TRG	Average RF	% RSD	12.9	≤20	1.537	0.01
gamma-BHC (Lindane)	TRG	Average RF	% RSD	6.3	≤20	0.5644	0.01
gamma-Chlordane	TRG	Quadratic	COD	0.9961	≥	2.348	0.01
trans-Nonachlor	TRG	Average RF	% RSD	13.6	≤20	1.322	0.01

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QA/QC Report

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

Service Request: K1804876
Calibration Date: 7/6/2018

Initial Calibration Verification Summary Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1800333
Instrument ID: K-MSMS-01

Signal ID: 1

#	Lab Code	Sample Name	File Location	Acquisition Date
10	KC1800333-10		J:\MS21\Data\070618\070618F024.D	07/06/2018 18:10

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
2,4'-DDD	20.0	17.9	6.86E-1	6.127E-1	-10.695	±25	Average RF
2,4'-DDE	20.0	19.6	4.662E-1	4.577E-1	-1.832	±25	Average RF
2,4'-DDT	20.0	16.8	7.563E-1	6.34E-1	-16.161	±25	Average RF
4,4'-DDD	20.0	19.4	6.78E-1	6.567E-1	-3.144	±25	Average RF
4,4'-DDE	20.0	18.9	4.721E-1	4.468E-1	-5.367	±25	Average RF
4,4'-DDT	20.0	18.1	6.71E-1	6.057E-1	-9.735	±25	Average RF
Aldrin	20.0	18.8	8.701E-1	8.194E-1	-5.827	±25	Average RF
alpha-Chlordane	20.0	21.0	3.363E0	3.534E0	5.09	±25	Average RF
cis-Nonachlor	20.0	19.0	2.915E0	2.767E0	-5.097	±25	Average RF
Dieldrin	20.0	18.2	1.268E0	1.156E0	-8.844	±25	Average RF
gamma-BHC (Lindane)	20.0	19.0	5.845E-1	5.56E-1	-4.865	±25	Average RF
gamma-Chlordane	20.0	21.7	3.393E0	3.368E0	8.56	±25	Quadratic
Heptachlor	20.0	18.7	1.031E0	9.619E-1	-6.722	±25	Average RF
trans-Nonachlor	20.0	20.6	2.506E0	2.577E0	2.83	±25	Average RF

Analyte Name	Expected	Result	Average RF	SSV RF	Rec.	Criteria	Curve Fit
S_4,4'DDD-d4	5.00	5.03	6.093E0	6.126E0	101	50-200	Average RF
S_4,4'-DDT-d4	5.00	5.16	3.756E0	3.874E0	103	50-200	Average RF
S_Aldrin-13C12	20.0	20.7	3.915E-1	4.054E-1	104	50-200	Average RF
S_Endrin-13C12	20.0	21.3	1.775E-1	1.887E-1	107	50-200	Average RF
S_GBHCD6	20.0	20.0	8.771E-1	8.772E-1	100	50-200	Average RF
S_Heptachlor-13C10	20.0	22.1	6.375E-1	7.058E-1	111	50-200	Average RF
S_Heptachlrepox13C10	20.0	21.8	3.094E-1	3.366E-1	109	50-200	Average RF
S_Oxychlordane-13C10	20.0	19.1	2.144E-1	2.045E-1	95.5	50-200	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Service Request: K1804876
Calibration Date: 7/2/2018

Initial Calibration Verification Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1800348
Instrument ID: K-MSMS-01

Signal ID: 1

#	Lab Code	Sample Name	File Location	Acquisition Date
11	KC1800348-11		J:\MS21\Data\070218\070218F019.D	07/02/2018 23:34

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
2,4'-DDD	20.0	18.8	4.487E-1	4.228E-1	-5.773	±25	Average RF
2,4'-DDE	20.0	19.0	2.991E-1	2.844E-1	-4.897	±25	Average RF
2,4'-DDT	20.0	17.3	4.832E-1	4.184E-1	-13.404	±25	Average RF
4,4'-DDD	20.0	19.8	6.352E-1	6.301E-1	-0.797	±25	Average RF
4,4'-DDE	20.0	19.6	2.879E-1	2.827E-1	-1.774	±25	Average RF
4,4'-DDT	20.0	18.9	7.162E-1	6.774E-1	-5.424	±25	Average RF
Aldrin	20.0	18.3	1.334E0	1.223E0	-8.311	±25	Average RF
alpha-Chlordane	20.0	24.7	1.799E0	2.227E0	23.74	±25	Average RF
cis-Nonachlor	20.0	19.4	1.537E0	1.488E0	-3.233	±25	Average RF
Dieldrin	20.0	21.9	1.126E0	1.234E0	9.62	±25	Average RF
gamma-BHC (Lindane)	20.0	18.5	5.644E-1	5.209E-1	-7.707	±25	Average RF
gamma-Chlordane	20.0	24.8	2.348E0	2.596E0	24.05	±25	Quadratic
Heptachlor	20.0	19.6	1.03E0	1.009E0	-2.065	±25	Average RF
trans-Nonachlor	20.0	22.3	1.322E0	1.471E0	11.28	±25	Average RF

ALS Group USA, Corp.
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QA/QC Report

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

Service Request: K1804876
Date Analyzed: 07/08/18 17:52

Continuing Calibration Verification (CCV) Summary
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
File ID: J:\MS21\Data\070818\070818F014.D\
Signal ID: 1

Calibration Date: 7/6/2018
Calibration ID: KC1800333
Analysis Lot: 597755
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
2,4'-DDD	20.0	15.4	0.686	0.5274	-23.1	NA	±25	Average RF
2,4'-DDE	20.0	18.5	0.4662	0.4316	-7.4	NA	±25	Average RF
2,4'-DDT	20.0	16.0	0.7563	0.6066	-19.8	NA	±25	Average RF
4,4'-DDD	20.0	18.7	0.678	0.6356	-6.3	NA	±25	Average RF
4,4'-DDE	20.0	19.2	0.4721	0.4527	-4.1	NA	±25	Average RF
4,4'-DDT	20.0	17.6	0.671	0.5917	-11.8	NA	±25	Average RF
Aldrin	20.0	20.7	0.8701	0.9017	3.6	NA	±25	Average RF
alpha-Chlordane	20.0	19.9	3.3631	3.3488	-0.4	NA	±25	Average RF
cis-Nonachlor	20.0	15.4	2.9153	2.2402	-23.2	NA	±25	Average RF
Dieldrin	20.0	19.9	1.2683	1.2608	-0.6	NA	±25	Average RF
gamma-BHC (Lindane)	20.0	17.7	0.5845	0.5158	-11.7	NA	±25	Average RF
gamma-Chlordane	20.0	20.5	3.3928	3.1748	NA	2.5	±25	Quadratic
Heptachlor	20.0	18.7	1.0312	0.9656	-6.4	NA	±25	Average RF
trans-Nonachlor	20.0	17.9	2.5059	2.2376	-10.7	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	Rec.	% Drift	Criteria	Curve Fit
S_4,4'DDD-d4	5.00	5.07	6.0926	6.1771	101	NA	50-200	Average RF
S_4,4'-DDT-d4	5.00	4.68	3.7557	3.5139	93.6	NA	50-200	Average RF
S_Aldrin-13C12	20.0	18.8	0.3915	0.3687	94.2	NA	50-200	Average RF
S_Endrin-13C12	20.0	17.0	0.1775	0.1509	85.0	NA	50-200	Average RF
S_GBHCd6	20.0	16.8	0.8771	0.7356	83.9	NA	50-200	Average RF
S_Heptachlor-13C10	20.0	17.5	0.6375	0.559	87.7	NA	50-200	Average RF
S_Heptachlrepox13C10	20.0	21.7	0.3094	0.3353	108	NA	50-200	Average RF
S_Oxychlordane-13C10	20.0	16.1	0.2144	0.172	80.3	NA	50-200	Average RF

ALS Group USA, Corp.

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QA/QC Report

Client: AECOM

Service Request:K1804876

Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Analysis Run Log
Organochlorine Pesticides by GC/MS/MS

Analysis Method:

Analysis Lot:597310

Instrument ID:K-MSMS-01

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS21\Data\070218\070218F022.D\	ZZZZZZZZ	ZZZZZZZZ	7/3/2018	00:46:08	
J:\MS21\Data\070218\070218F023.D\	Method Blank	KQ1807075-03	7/3/2018	01:13:26	
J:\MS21\Data\070218\070218F024.D\	Lab Control Sample	KQ1807075-01	7/3/2018	01:40:48	
J:\MS21\Data\070218\070218F025.D\	Duplicate Lab Control Sample	KQ1807075-02	7/3/2018	02:08:15	
J:\MS21\Data\070218\070218F026.D\	PDI-RB-VV-182105	K1804876-014	7/3/2018	02:35:38	
J:\MS21\Data\070218\070218F027.D\	ZZZZZZZZ	ZZZZZZZZ	7/3/2018	03:02:49	
J:\MS21\Data\070218\070218F028.D\	ZZZZZZZZ	ZZZZZZZZ	7/3/2018	03:30:11	
J:\MS21\Data\070218\070218F029.D\	ZZZZZZZZ	ZZZZZZZZ	7/3/2018	03:57:28	
J:\MS21\Data\070218\070218F030.D\	ZZZZZZZZ	ZZZZZZZZ	7/3/2018	04:24:59	
J:\MS21\Data\070218\070218F031.D\	ZZZZZZZZ	ZZZZZZZZ	7/3/2018	04:52:15	
J:\MS21\Data\070218\070218F032.D\	ZZZZZZZZ	ZZZZZZZZ	7/3/2018	05:19:37	
J:\MS21\Data\070218\070218F033.D\	ZZZZZZZZ	ZZZZZZZZ	7/3/2018	05:46:53	
J:\MS21\Data\070218\070218F034.D\	ZZZZZZZZ	ZZZZZZZZ	7/3/2018	06:14:08	
J:\MS21\Data\070218\070218F035.D\	ZZZZZZZZ	ZZZZZZZZ	7/3/2018	06:41:25	
J:\MS21\Data\070218\070218F036.D\	ZZZZZZZZ	ZZZZZZZZ	7/3/2018	07:08:40	
J:\MS21\Data\070218\070218F037.D\	ZZZZZZZZ	ZZZZZZZZ	7/3/2018	07:35:57	
J:\MS21\Data\070218\070218F038.D\	ZZZZZZZZ	ZZZZZZZZ	7/3/2018	08:03:18	
J:\MS21\Data\070218\070218F039.D\	ZZZZZZZZ	ZZZZZZZZ	7/3/2018	08:30:35	
J:\MS21\Data\070218\070218F040.D\	ZZZZZZZZ	ZZZZZZZZ	7/3/2018	08:57:57	
J:\MS21\Data\070218\070218F041.D\	ZZZZZZZZ	ZZZZZZZZ	7/3/2018	09:25:37	
J:\MS21\Data\070218\070218F042.D\	ZZZZZZZZ	ZZZZZZZZ	7/3/2018	09:53:24	
J:\MS21\Data\070218\070218F044.D\	ZZZZZZZZ	ZZZZZZZZ	7/3/2018	10:48:52	

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QA/QC Report

Client: AECOM

Service Request:K1804876

Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Analysis Run Log
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP

Analysis Lot:597755

Instrument ID:K-MSMS-01

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS21\Data\070818\070818F014.D\	Continuing Calibration Verification	KQ1809156-01	7/8/2018	17:52:27	
J:\MS21\Data\070818\070818F015.D\	Method Blank	KQ1807024-04	7/8/2018	18:19:45	
J:\MS21\Data\070818\070818F016.D\	Lab Control Sample	KQ1807024-03	7/8/2018	18:46:56	
J:\MS21\Data\070818\070818F017.D\	Batch QC MS	KQ1807024-01	7/8/2018	19:14:14	
J:\MS21\Data\070818\070818F018.D\	Batch QC DMS	KQ1807024-02	7/8/2018	19:41:36	
J:\MS21\Data\070818\070818F019.D\	PDI-SG-B299-BL1	K1804876-001	7/8/2018	20:09:09	
J:\MS21\Data\070818\070818F020.D\	PDI-SG-B298-BL1	K1804876-002	7/8/2018	20:36:29	
J:\MS21\Data\070818\070818F021.D\	PDI-SG-B305-BL1	K1804876-003	7/8/2018	21:03:52	
J:\MS21\Data\070818\070818F022.D\	PDI-SG-B214-BL1	K1804876-004	7/8/2018	21:31:08	
J:\MS21\Data\070818\070818F023.D\	PDI-SG-B234-BL1	K1804876-005	7/8/2018	21:58:30	
J:\MS21\Data\070818\070818F024.D\	PDI-SG-B234-BL1-D	K1804876-006	7/8/2018	22:26:08	
J:\MS21\Data\070818\070818F025.D\	PDI-SG-B246-BL1	K1804876-007	7/8/2018	22:53:29	
J:\MS21\Data\070818\070818F026.D\	PDI-SG-B251-BL1	K1804876-008	7/8/2018	23:20:50	
J:\MS21\Data\070818\070818F027.D\	PDI-SG-B257-BL1	K1804876-009	7/8/2018	23:49:08	
J:\MS21\Data\070818\070818F028.D\	PDI-SG-B315-BL1	K1804876-010	7/9/2018	00:16:30	
J:\MS21\Data\070818\070818F029.D\	PDI-SG-B315-BL1-D	K1804876-011	7/9/2018	00:43:47	
J:\MS21\Data\070818\070818F030.D\	PDI-SG-B398-BL1	K1804876-012	7/9/2018	01:11:13	
J:\MS21\Data\070818\070818F031.D\	PDI-SG-B417-BL1	K1804876-013	7/9/2018	01:38:33	
J:\MS21\Data\070818\070818F032.D\	Batch QC	K1804878-001	7/9/2018	02:05:55	
J:\MS21\Data\070818\070818F033.D\	ZZZZZZZZ	ZZZZZZZZ	7/9/2018	02:33:12	
J:\MS21\Data\070818\070818F034.D\	ZZZZZZZZ	ZZZZZZZZ	7/9/2018	03:00:40	
J:\MS21\Data\070818\070818F035.D\	ZZZZZZZZ	ZZZZZZZZ	7/9/2018	03:28:02	
J:\MS21\Data\070818\070818F036.D\	ZZZZZZZZ	ZZZZZZZZ	7/9/2018	03:55:23	
J:\MS21\Data\070818\070818F037.D\	ZZZZZZZZ	ZZZZZZZZ	7/9/2018	04:22:44	

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Prep Summary Report

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

Service Request: K1804876

Organochlorine Pesticides by GC/MS/MS

Prep Method: EPA 3541
Analytical Method: ALS SOP

Extraction Lot: 314712
Extraction Date: 05/31/18 09:24

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
PDI-SG-B299-BL1	K1804876-001	5/21/18	5/23/18	20.035 g	1 mL	40.8
PDI-SG-B298-BL1	K1804876-002	5/21/18	5/23/18	20.326 g	1 mL	73.1
PDI-SG-B305-BL1	K1804876-003	5/21/18	5/23/18	20.109 g	1 mL	56.6
PDI-SG-B214-BL1	K1804876-004	5/21/18	5/23/18	20.458 g	1 mL	73.8
PDI-SG-B234-BL1	K1804876-005	5/22/18	5/23/18	20.198 g	1 mL	39.5
PDI-SG-B234-BL1-D	K1804876-006	5/22/18	5/23/18	20.023 g	1 mL	38.8
PDI-SG-B246-BL1	K1804876-007	5/22/18	5/23/18	20.278 g	1 mL	53.5
PDI-SG-B251-BL1	K1804876-008	5/22/18	5/23/18	20.173 g	1 mL	40.2
PDI-SG-B257-BL1	K1804876-009	5/22/18	5/23/18	20.287 g	1 mL	84.3
PDI-SG-B315-BL1	K1804876-010	5/22/18	5/23/18	20.345 g	1 mL	70.7
PDI-SG-B315-BL1-D	K1804876-011	5/22/18	5/23/18	20.019 g	1 mL	71.0
PDI-SG-B398-BL1	K1804876-012	5/22/18	5/23/18	20.165 g	1 mL	39.0
PDI-SG-B417-BL1	K1804876-013	5/22/18	5/23/18	20.476 g	1 mL	73.8
Batch QC	K1804878-001	NA	NA	20.481 g	1 mL	41.0
Matrix Spike	KQ1807024-01MS	NA	NA	20.412 g	1 mL	41.0
Duplicate Matrix Spike	KQ1807024-02DMS	NA	NA	20.320 g	1 mL	41.0
Lab Control Sample	KQ1807024-03LCS	NA	NA	10 g	1 mL	
Method Blank	KQ1807024-04MB	NA	NA	20.4810 g	1 mL	

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Prep Summary Report

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

Service Request:K1804876

Organochlorine Pesticides by GC/MS/MS

Prep Method: EPA 3535A
Analytical Method: ALS SOP

Extraction Lot: 314778
Extraction Date: 05/29/18 09:12

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
PDI-RB-VV-182105	K1804876-014	5/22/18	5/23/18	960.0000 mL	1 mL	
Lab Control Sample	KQ1807075-01LCS	NA	NA	1000 mL	1 mL	
Duplicate Lab Control Sample	KQ1807075-02DLCS	NA	NA	1000 mL	1 mL	
Method Blank	KQ1807075-03MB	NA	NA	1000 mL	1 mL	