



ALS Environmental
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February 26, 2019

Analytical Report for Service Request No: K1806864
Revised Service Request No: K1806864.OXY

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

RE: Portland Harbor Pre-Remedial Design Investigation / 60566335

Dear Amy,

Enclosed is the revised report for the sample(s) submitted to our laboratory July 23, 2018
For your reference, these analyses have been assigned our service request number **K1806864**.

This report contains Oxychlordane data.

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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Phone (360)577-7222 Fax (360)636-1068
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Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation
Sample Matrix: Sediment

Service Request: K1806864
Date Received: 07/23/2018

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:

Three sediment samples were received for analysis at ALS Environmental on 07/23/2018. 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:

Oxychlorane:

No significant anomalies were noted with this analysis.

Approved by



Date

02/25/2019



Chain of Custody

ALS Environmental—Kelso Laboratory
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PC H2

Cooler Receipt and Preservation Form

Client AECOM Service Request K18 06864
 Received: 7/23/18 Opened: 7/23/18 By: [Signature] Unloaded: 7/23/18 By: [Signature]

1. Samples were received via? USPS Fed Ex UPS DHL PDX Courier Hand Delivered
2. Samples were received in: (circle) Cooler Box Envelope Other NA
3. Were custody seals on coolers? NA Y N If yes, how many and where? one, 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
3.4	3.3	4.6	4.5	-0.1	308	NA		NA

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: _____



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-B172-BL1
Lab Code: K1806864-001

Service Request: K1806864
Date Collected: 07/20/18 11:45
Date Received: 07/23/18 14:05

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
Oxychlorane	ND U	0.98	0.64	1	08/09/18 19:22	7/25/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_Oxychlorane-13C10	51	5 - 144	08/09/18 19:22	

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Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment
Sample Name: PDI-SG-B174-BL1
Lab Code: K1806864-002

Service Request: K1806864
Date Collected: 07/20/18 13:15
Date Received: 07/23/18 14:05

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
Oxychlorane	ND U	1.0	0.65	1	08/09/18 19:49	7/25/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_Oxychlorane-13C10	46	5 - 144	08/09/18 19:49	

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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-B266-BL1
Lab Code: K1806864-003

Service Request: K1806864
Date Collected: 07/20/18 15:15
Date Received: 07/23/18 14:05

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
Oxychlorane	ND U	0.63	0.41	1	08/09/18 20:16	7/25/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_Oxychlorane-13C10	52	5 - 144	08/09/18 20:16	

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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: KQ1809987-04

Service Request: K1806864
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
Oxychlorane	ND U	0.20	0.13	1	08/09/18 09:52	7/25/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_Oxychlorane-13C10	36	5 - 144	08/09/18 09:52	

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

Service Request: K1806864

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Extraction Method: EPA 3541

Sample Name	Lab Code	S_Oxychlorane-13C10
		5-144
Batch QC	K1804798-010	37
PDI-SG-B172-BL1	K1806864-001	51
PDI-SG-B174-BL1	K1806864-002	46
PDI-SG-B266-BL1	K1806864-003	52
Method Blank	KQ1809987-04	36
Lab Control Sample	KQ1809987-03	36
Batch QC	KQ1809987-01	35
Batch QC	KQ1809987-02	33

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QA/QC Report

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

Service Request: K1806864
Date Analyzed: 08/09/18 09:16

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

File ID: J:\MS21\Data\080918a\080918aF003.D\
Instrument ID: K-MSMS-01
Analysis Method: ALS SOP

Lab Code: KQ1810804-01
Analysis Lot: 601816
Signal ID: 1

	Pyrene-d10	
	Area	RT
Result ==>	67,641	14.366
Upper Limit ==>	135,282	14.87
Lower Limit ==>	33,820	13.87

Associated Analyses

		Area	RT
Method Blank	KQ1809987-04	54456.7	14.366
Lab Control Sample	KQ1809987-03	48744	14.366
Batch QCMS	KQ1809987-01	55801	14.3661
Batch QCDMS	KQ1809987-02	52391.8	14.366
Batch QC	K1804798-010	57106.2	14.366
PDI-SG-B172-BL1	K1806864-001	68644.4	14.3917
PDI-SG-B174-BL1	K1806864-002	64161.2	14.3917
PDI-SG-B266-BL1	K1806864-003	67779.9	14.3917

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QA/QC Report

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

Service Request: K1806864
Date Collected: N/A
Date Received: N/A
Date Analyzed: 08/9/18
Date Extracted: 07/25/18

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

Sample Name: Batch QC
Lab Code: K1804798-010
Analysis Method: ALS SOP
Prep Method: EPA 3541

Units: ug/Kg
Basis: Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1809987-01		Duplicate Matrix Spike KQ1809987-02		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
Oxychlorane	ND U	35.2	36.5	97	41.2	37.9	109	53-144	16	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.

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QA/QC Report

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

Service Request: K1806864
Date Analyzed: 08/09/18
Date Extracted: 07/25/18

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: 601816

Lab Control Sample
KQ1809987-03

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Oxychlordane	1.82	2.00	91	59-141

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QA/QC Report

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

Service Request: K1806864
Date Analyzed: 08/09/18 10:16
Date Extracted: 07/25/18

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

Sample Name: Lab Control Sample **Instrument ID:** K-MSMS-01
Lab Code: KQ1809987-03 **File ID:** J:\MS21\Data\080918a\080918aF005.D\
Analysis Method: ALS SOP **Analysis Lot:** 601816
Prep Method: EPA 3541 **Extraction Lot:** 318364

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1809987-04	J:\MS21\Data\080918a\080918aF004.D\	08/09/18 09:52
Batch QCMS	KQ1809987-01	J:\MS21\Data\080918a\080918aF006.D\	08/09/18 10:43
Batch QCDMS	KQ1809987-02	J:\MS21\Data\080918a\080918aF007.D\	08/09/18 11:10
Batch QC	K1804798-010	J:\MS21\Data\080918a\080918aF019.D\	08/09/18 16:38
PDI-SG-B172-BL1	K1806864-001	J:\MS21\Data\080918a\080918aF025.D\	08/09/18 19:22
PDI-SG-B174-BL1	K1806864-002	J:\MS21\Data\080918a\080918aF026.D\	08/09/18 19:49
PDI-SG-B266-BL1	K1806864-003	J:\MS21\Data\080918a\080918aF027.D\	08/09/18 20:16

ALS Group USA, Corp.
dba ALS Environmental

QC/QC Report

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

Service Request: K1806864
Date Analyzed: 08/09/18 09:16

Tune Summary
Organochlorine Pesticides by GC/MS/MS

File ID: J:\MS21\Data\080918a\080918aF003.D\
Instrument ID: K-MSMS-01

Analytical Method: ALS SOP
Analysis Lot: 601816

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1810804-01	J:\MS21\Data\080918a\080918aF003.D\	08/09/18 09:16	
Method Blank	KQ1809987-04	J:\MS21\Data\080918a\080918aF004.D\	08/09/18 09:52	
Lab Control Sample	KQ1809987-03	J:\MS21\Data\080918a\080918aF005.D\	08/09/18 10:16	
Batch QC	KQ1809987-01	J:\MS21\Data\080918a\080918aF006.D\	08/09/18 10:43	
Batch QC	KQ1809987-02	J:\MS21\Data\080918a\080918aF007.D\	08/09/18 11:10	
Batch QC	K1804798-010	J:\MS21\Data\080918a\080918aF019.D\	08/09/18 16:38	
PDI-SG-B172-BL1	K1806864-001	J:\MS21\Data\080918a\080918aF025.D\	08/09/18 19:22	
PDI-SG-B174-BL1	K1806864-002	J:\MS21\Data\080918a\080918aF026.D\	08/09/18 19:49	
PDI-SG-B266-BL1	K1806864-003	J:\MS21\Data\080918a\080918aF027.D\	08/09/18 20:16	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Service Request: K1806864
Calibration Date: 8/8/2018

Initial Calibration Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1800383
Instrument ID: K-MSMS-01

Signal ID: 1

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1800383-01		J:\MS21\Data\080818\080818F007.D	08/08/2018 09:40
02	KC1800383-02		J:\MS21\Data\080818\080818F008.D	08/08/2018 10:07
03	KC1800383-03		J:\MS21\Data\080818\080818F009.D	08/08/2018 10:34
04	KC1800383-04		J:\MS21\Data\080818\080818F010.D	08/08/2018 11:01
05	KC1800383-05		J:\MS21\Data\080818\080818F011.D	08/08/2018 11:29
06	KC1800383-06		J:\MS21\Data\080818\080818F012.D	08/08/2018 11:56
07	KC1800383-07		J:\MS21\Data\080818\080818F013.D	08/08/2018 12:24
08	KC1800383-08		J:\MS21\Data\080818\080818F014.D	08/08/2018 12:51
09	KC1800383-09		J:\MS21\Data\080818\080818F015.D	08/08/2018 13:18
10	KC1800383-10		J:\MS21\Data\080818\080818F017.D	08/08/2018 13:55

Analyte

Oxychlorane

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	1.431	02	1.0	1.162	03	2.0	1.033	04	5.0	1.006
05	10	1.061	06	20	1.018	07	40	0.8964	08	60	0.9452
09	80	0.9705	10	100	0.8801						

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

Service Request: K1806864
Calibration Date: 8/8/2018

Initial Calibration Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1800383
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
Oxychlorane	TRG	Average RF	% RSD	15.4	20	1.04	0.01

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

Service Request: K1806864
Calibration Date: 8/8/2018

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

Calibration ID: KC1800383
Instrument ID: K-MSMS-01

Signal ID: 1

#	Lab Code	Sample Name	File Location	Acquisition Date
11	KC1800383-11		J:\MS21\Data\080818\080818F018.D	08/08/2018 14:19

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
Oxychlorane	20.0	23.5	1.04E0	1.22E0	17.32	±25	Average RF

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

Service Request: K1806864
Date Analyzed: 08/09/18 09:16

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

Analysis Method: ALS SOP
File ID: J:\MS21\Data\080918a\080918aF003.D\
Signal ID: 1

Calibration Date: 8/8/2018
Calibration ID: KC1800383
Analysis Lot: 601816
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Oxychlordane	20.0	22.2	1.0403	1.1525	10.8	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	Rec.	% Drift	Criteria	Curve Fit
S_Oxychlordane-13C10	20.0	17.5	NA	NA	87.5	NA	50-200	

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QA/QC Report

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

Service Request:K1806864

Analysis Run Log
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP

Analysis Lot:601816
Instrument ID:K-MSMS-01

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS21\Data\080918a\080918aF003.D\	Continuing Calibration Verification	KQ1810804-01	8/9/2018	09:16:43	
J:\MS21\Data\080918a\080918aF004.D\	Method Blank	KQ1809987-04	8/9/2018	09:52:53	
J:\MS21\Data\080918a\080918aF005.D\	Lab Control Sample	KQ1809987-03	8/9/2018	10:16:25	
J:\MS21\Data\080918a\080918aF006.D\	Batch QC MS	KQ1809987-01	8/9/2018	10:43:42	
J:\MS21\Data\080918a\080918aF007.D\	Batch QC DMS	KQ1809987-02	8/9/2018	11:10:53	
J:\MS21\Data\080918a\080918aF008.D\	ZZZZZZ	ZZZZZZ	8/9/2018	11:38:15	
J:\MS21\Data\080918a\080918aF009.D\	ZZZZZZ	ZZZZZZ	8/9/2018	12:05:31	
J:\MS21\Data\080918a\080918aF010.D\	ZZZZZZ	ZZZZZZ	8/9/2018	12:32:46	
J:\MS21\Data\080918a\080918aF011.D\	ZZZZZZ	ZZZZZZ	8/9/2018	12:59:58	
J:\MS21\Data\080918a\080918aF012.D\	ZZZZZZ	ZZZZZZ	8/9/2018	13:27:20	
J:\MS21\Data\080918a\080918aF013.D\	ZZZZZZ	ZZZZZZ	8/9/2018	13:54:51	
J:\MS21\Data\080918a\080918aF014.D\	ZZZZZZ	ZZZZZZ	8/9/2018	14:22:04	
J:\MS21\Data\080918a\080918aF015.D\	ZZZZZZ	ZZZZZZ	8/9/2018	14:49:26	
J:\MS21\Data\080918a\080918aF016.D\	ZZZZZZ	ZZZZZZ	8/9/2018	15:16:37	
J:\MS21\Data\080918a\080918aF017.D\	ZZZZZZ	ZZZZZZ	8/9/2018	15:43:54	
J:\MS21\Data\080918a\080918aF018.D\	ZZZZZZ	ZZZZZZ	8/9/2018	16:11:16	
J:\MS21\Data\080918a\080918aF019.D\	Batch QC	K1804798-010	8/9/2018	16:38:31	
J:\MS21\Data\080918a\080918aF020.D\	ZZZZZZ	ZZZZZZ	8/9/2018	17:05:45	
J:\MS21\Data\080918a\080918aF021.D\	ZZZZZZ	ZZZZZZ	8/9/2018	17:33:03	
J:\MS21\Data\080918a\080918aF022.D\	ZZZZZZ	ZZZZZZ	8/9/2018	18:00:25	
J:\MS21\Data\080918a\080918aF023.D\	ZZZZZZ	ZZZZZZ	8/9/2018	18:27:42	
J:\MS21\Data\080918a\080918aF024.D\	ZZZZZZ	ZZZZZZ	8/9/2018	18:54:57	
J:\MS21\Data\080918a\080918aF025.D\	PDI-SG-B172-BL1	K1806864-001	8/9/2018	19:22:11	
J:\MS21\Data\080918a\080918aF026.D\	PDI-SG-B174-BL1	K1806864-002	8/9/2018	19:49:29	
J:\MS21\Data\080918a\080918aF027.D\	PDI-SG-B266-BL1	K1806864-003	8/9/2018	20:16:46	

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Prep Summary Report

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

Service Request: K1806864

Organochlorine Pesticides by GC/MS/MS

Prep Method: EPA 3541
Analytical Method: ALS SOP

Extraction Lot: 318364
Extraction Date: 07/25/18 13:11

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
Batch QC	K1804798-010	NA	NA	1.397 g	1 mL	47.9
PDI-SG-B172-BL1	K1806864-001	7/20/18	7/23/18	5.402 g	1 mL	37.9
PDI-SG-B174-BL1	K1806864-002	7/20/18	7/23/18	5.284 g	1 mL	38.0
PDI-SG-B266-BL1	K1806864-003	7/20/18	7/23/18	5.478 g	1 mL	58.3
Matrix Spike	KQ1809987-01MS	NA	NA	1.145 g	1 mL	47.9
Duplicate Matrix Spike	KQ1809987-02DMS	NA	NA	1.102 g	1 mL	47.9
Lab Control Sample	KQ1809987-03LCS	NA	NA	10 g	1 mL	
Method Blank	KQ1809987-04MB	NA	NA	10 g	1 mL	