

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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TestAmerica Job ID: 580-79203-1

Client Project/Site: Portland Harbor Pre-Remedial Design
Revision: 1

For:

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Attn: Amy Dahl

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Authorized for release by:
10/16/2018 2:55:15 PM

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79203-1

Job ID: 580-79203-1

Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE

Client: AECOM

Project: Portland Harbor Pre-Remedial Design

Report Number: 580-79203-1

REVISION 1: OCTOBER 15, 2018

This revision was required to revise PCB data that was mistakenly identified as the wrong Aroclors for samples PDI-SC-S163-0to2 (580-79203-1) and PDI-SC-S251-2to2.5 (580-79203-8).

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) resulting from a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are an unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes within the calibration range of the instrument or that reduces the interferences thereby enabling the quantification of target analytes.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

Eight samples were received on 7/30/2018 1:40 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.7° C.

A sample container was provided to be archived frozen at the TestAmerica Sacramento laboratory pending potential additional analyses.

This report contains results of all analyses performed by TestAmerica Seattle.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

SEMIVOLATILE ORGANIC COMPOUNDS - SELECTED ION MODE (SIM)

Samples PDI-SC-S163-0to2 (580-79203-1), PDI-SC-S163-2to4 (580-79203-2), PDI-SC-S163-4to6 (580-79203-3), PDI-SC-S163-6to8 (580-79203-4), PDI-SC-S163-8to10 (580-79203-5), PDI-SC-S163-10to12.7 (580-79203-6), PDI-SC-S163-12.7to13 (580-79203-7) and PDI-SC-S251-2to2.5 (580-79203-8) were analyzed for semivolatile organic compounds - Selected Ion Mode (SIM) in accordance with SW846 8270D_SIM. The samples were prepared on 08/02/2018 and analyzed on 08/04/2018.

Benzo[a]anthracene, Naphthalene and Phenanthrene were detected in method blank MB 580-280682/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Because the result concentrations were greater than 10x the concentration in the method blank, no corrective action was required.

Several analytes failed the recovery criteria low for the MS of sample PDI-SC-S163-4to6MS (580-79203-3) in batch 580-280846. Fluoranthene and Phenanthrene failed the recovery criteria low for the MSD of sample PDI-SC-S163-4to6MSD (580-79203-3) in batch 580-280846. Acenaphthylene and Dibenz(a,h)anthracene exceeded the RPD limit. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Case Narrative

Client: AECOM
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Laboratory: TestAmerica Seattle (Continued)

Samples PDI-SC-S163-0to2 (580-79203-1)[10X], PDI-SC-S163-2to4 (580-79203-2)[10X], PDI-SC-S163-4to6 (580-79203-3)[10X], PDI-SC-S163-6to8 (580-79203-4)[10X], PDI-SC-S163-8to10 (580-79203-5)[10X], PDI-SC-S163-10to12.7 (580-79203-6)[10X], PDI-SC-S163-12.7to13 (580-79203-7)[5X] and PDI-SC-S251-2to2.5 (580-79203-8)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

POLYCHLORINATED BIPHENYLS (PCBS)

Samples PDI-SC-S163-0to2 (580-79203-1), PDI-SC-S163-2to4 (580-79203-2), PDI-SC-S163-4to6 (580-79203-3), PDI-SC-S163-6to8 (580-79203-4), PDI-SC-S163-8to10 (580-79203-5), PDI-SC-S163-10to12.7 (580-79203-6), PDI-SC-S163-12.7to13 (580-79203-7) and PDI-SC-S251-2to2.5 (580-79203-8) were analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA sw-846 method 8082A. The samples were prepared on 08/01/2018 and analyzed on 08/19/2018 and 08/23/2018.

PCB-1016 and PCB-1260 failed the recovery criteria high for the MS of sample PDI-SC-S163-4to6MS (580-79203-3) in batch 580-282231. PCB-1016 and PCB-1260 failed the recovery criteria high for the MSD of sample PDI-SC-S163-4to6MSD (580-79203-3) in batch 580-282231. PCB-1260 exceeded the RPD limit. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Samples PDI-SC-S163-2to4 (580-79203-2)[10X], PDI-SC-S163-6to8 (580-79203-4)[10X], PDI-SC-S163-8to10 (580-79203-5)[10X] and PDI-SC-S163-10to12.7 (580-79203-6)[10X] required dilution prior to analysis to bring the concentration of target analytes within the calibration range. The reporting limits have been adjusted accordingly.

The following samples appears to contain polychlorinated biphenyls (PCBs); however, due to weathering or other environmental processes, the PCBs in the sample do not closely match any of the laboratory's Aroclor standards used for instrument calibration: PDI-SC-S163-0to2 (580-79203-1), PDI-SC-S163-2to4 (580-79203-2), PDI-SC-S163-4to6 (580-79203-3), PDI-SC-S163-4to6 (580-79203-3[MS]), PDI-SC-S163-4to6 (580-79203-3[MSD]) and PDI-SC-S163-10to12.7 (580-79203-6). The sample(s) has been quantified and reported as PCB-1232 and PCB-1254. Due to the poor match with the Aroclor standard(s), there is increased qualitative and quantitative uncertainty associated with this result.

The %RPD between the primary and confirmation column exceeded 40% for PCB-1232 for the following sample: PDI-SC-S163-10to12.7 (580-79203-6). The lower value(s) has been reported and qualified in accordance with the laboratory's SOP.

The %RPD between the primary and confirmation column exceeded 40% for PCB-1254 for the following sample: PDI-SC-S251-2to2.5 (580-79203-8). The lower has been reported and qualified in accordance with the laboratory's SOP.

PCB-1016 and PCB-1260 failed the recovery criteria high for the MS of sample PDI-SC-S163-4to6MS (580-79203-3) in batch 580-282231. PCB-1016 and PCB-1260 failed the recovery criteria high for the MSD of sample PDI-SC-S163-4to6MSD (580-79203-3) in batch 580-282231. PCB-1260 exceeded the RPD limit. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

The continuing calibration verification (CCV) associated with 580-281924 recovered high and outside the control limits for PCB-1232, PCB-1248, PCB-1242, PCB-1221, PCB-1016 and PCB-1254 on one column. Results are confirmed on both columns and reported from the passing column. The following samples are impacted: PDI-SC-S163-6to8 (580-79203-4), PDI-SC-S163-8to10 (580-79203-5), PDI-SC-S163-12.7to13 (580-79203-7), PDI-SC-S251-2to2.5 (580-79203-8), (CCV 580-281924/2), (CCV 580-281924/4), (CCV 580-281924/5) and (CCVIS 580-281924/6).

The continuing calibration verification (CCV) associated with 580-281924 recovered high and outside the control limits for PCB-1248 and PCB-1254 on the primary column. Results are confirmed on both columns and reported from this batch only for results that were non-detect. The following samples are impacted: PDI-SC-S163-6to8 (580-79203-4), PDI-SC-S163-8to10 (580-79203-5), PDI-SC-S163-12.7to13 (580-79203-7), PDI-SC-S251-2to2.5 (580-79203-8), (CCV 580-281924/2), (CCV 580-281924/4), (CCV 580-281924/5) and (CCVIS 580-281924/6).

The continuing calibration verification (CCV) associated with 580-282231 recovered high and outside the control limits for PCB-1232, PCB-1016, PCB-1260 and PCB-1242 on one column. Results are confirmed on both columns and reported from the passing column. The following samples are impacted: Samples PDI-SC-S163-0to2 (580-79203-1), PDI-SC-S163-2to4 (580-79203-2), PDI-SC-S163-4to6

Case Narrative

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

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Laboratory: TestAmerica Seattle (Continued)

(580-79203-3), (CCV 580-282231/6), (CCV 580-282231/8) and (CCV 580-282231/10).

The continuing calibration verification (CCV) associated with batch 580-282231 recovered above the upper control limit for PCB-1016. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following sample is impacted: Samples PDI-SC-S163-0to2 (580-79203-1), PDI-SC-S163-2to4 (580-79203-2), PDI-SC-S163-4to6 (580-79203-3) and (CCV 580-282231/10).

The surrogate recovery for the continuous calibration blank associated with analytical batch 580-282231 was outside the upper control limits.

The continuing calibration verification (CCV) associated with batch 580-282233 recovered above the upper control limit for PCB-1242, PCB-1016 and PCB-1260. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: PDI-SC-S163-6to8 (580-79203-4), PDI-SC-S163-8to10 (580-79203-5), PDI-SC-S163-10to12.7 (580-79203-6), PDI-SC-S251-2to2.5 (580-79203-8) and (CCV 580-282233/35).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL ORGANIC CARBON

Samples PDI-SC-S163-0to2 (580-79203-1), PDI-SC-S163-2to4 (580-79203-2), PDI-SC-S163-4to6 (580-79203-3), PDI-SC-S163-6to8 (580-79203-4), PDI-SC-S163-8to10 (580-79203-5), PDI-SC-S163-10to12.7 (580-79203-6), PDI-SC-S163-12.7to13 (580-79203-7) and PDI-SC-S251-2to2.5 (580-79203-8) were analyzed for total organic carbon in accordance with EPA SW-846 Method 9060. The samples were analyzed on 08/02/2018.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GRAIN SIZE

Samples PDI-SC-S163-0to2 (580-79203-1), PDI-SC-S163-2to4 (580-79203-2), PDI-SC-S163-4to6 (580-79203-3), PDI-SC-S163-6to8 (580-79203-4), PDI-SC-S163-8to10 (580-79203-5), PDI-SC-S163-10to12.7 (580-79203-6), PDI-SC-S163-12.7to13 (580-79203-7) and PDI-SC-S251-2to2.5 (580-79203-8) were analyzed for grain size in accordance with ASTM D7928/D6913. The samples were analyzed on 08/01/2018.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS

Samples PDI-SC-S163-0to2 (580-79203-1), PDI-SC-S163-2to4 (580-79203-2), PDI-SC-S163-4to6 (580-79203-3), PDI-SC-S163-6to8 (580-79203-4), PDI-SC-S163-8to10 (580-79203-5), PDI-SC-S163-10to12.7 (580-79203-6), PDI-SC-S163-12.7to13 (580-79203-7) and PDI-SC-S251-2to2.5 (580-79203-8) were analyzed for percent solids in accordance with ASTM D2216. The samples were analyzed on 08/01/2018.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL SOLIDS @ 70C

Samples PDI-SC-S163-0to2 (580-79203-1), PDI-SC-S163-2to4 (580-79203-2), PDI-SC-S163-4to6 (580-79203-3), PDI-SC-S163-6to8 (580-79203-4), PDI-SC-S163-8to10 (580-79203-5), PDI-SC-S163-10to12.7 (580-79203-6), PDI-SC-S163-12.7to13 (580-79203-7) and PDI-SC-S251-2to2.5 (580-79203-8) were analyzed for Total Solids @ 70C. The samples were analyzed on 08/02/2018.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79203-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F2	MS/MSD RPD exceeds control limits
F1	MS and/or MSD Recovery is outside acceptance limits.

GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79203-1

Client Sample ID: PDI-SC-S163-0to2

Lab Sample ID: 580-79203-1

Date Collected: 07/27/18 12:50

Matrix: Solid

Date Received: 07/30/18 13:40

Percent Solids: 52.2

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	70		19	1.7	ug/Kg	☼	08/02/18 12:14	08/04/18 17:27	10
Acenaphthene	74		19	2.3	ug/Kg	☼	08/02/18 12:14	08/04/18 17:27	10
Acenaphthylene	61		19	1.9	ug/Kg	☼	08/02/18 12:14	08/04/18 17:27	10
Anthracene	93		19	2.3	ug/Kg	☼	08/02/18 12:14	08/04/18 17:27	10
Benzo[a]anthracene	100	B	19	2.9	ug/Kg	☼	08/02/18 12:14	08/04/18 17:27	10
Benzo[a]pyrene	110		19	1.5	ug/Kg	☼	08/02/18 12:14	08/04/18 17:27	10
Benzo[b]fluoranthene	200		19	2.2	ug/Kg	☼	08/02/18 12:14	08/04/18 17:27	10
Benzo[g,h,i]perylene	93		19	1.9	ug/Kg	☼	08/02/18 12:14	08/04/18 17:27	10
Benzo[k]fluoranthene	ND		19	2.3	ug/Kg	☼	08/02/18 12:14	08/04/18 17:27	10
Chrysene	190		19	5.7	ug/Kg	☼	08/02/18 12:14	08/04/18 17:27	10
Dibenz(a,h)anthracene	ND		19	2.7	ug/Kg	☼	08/02/18 12:14	08/04/18 17:27	10
Fluoranthene	560		19	5.3	ug/Kg	☼	08/02/18 12:14	08/04/18 17:27	10
Fluorene	82		19	1.9	ug/Kg	☼	08/02/18 12:14	08/04/18 17:27	10
Indeno[1,2,3-cd]pyrene	86		19	2.3	ug/Kg	☼	08/02/18 12:14	08/04/18 17:27	10
Naphthalene	170	B	19	3.0	ug/Kg	☼	08/02/18 12:14	08/04/18 17:27	10
Phenanthrene	540	B	19	2.6	ug/Kg	☼	08/02/18 12:14	08/04/18 17:27	10
Pyrene	550		19	3.7	ug/Kg	☼	08/02/18 12:14	08/04/18 17:27	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	77		57 - 120	08/02/18 12:14	08/04/18 17:27	10

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.8	0.64	ug/Kg	☼	08/01/18 09:51	08/23/18 00:08	1
PCB-1221	ND		3.8	1.8	ug/Kg	☼	08/01/18 09:51	08/23/18 00:08	1
PCB-1232	8.9		3.8	0.89	ug/Kg	☼	08/01/18 09:51	08/23/18 00:08	1
PCB-1242	ND		3.8	0.92	ug/Kg	☼	08/01/18 09:51	08/23/18 00:08	1
PCB-1248	ND		3.8	0.30	ug/Kg	☼	08/01/18 09:51	08/23/18 00:08	1
PCB-1254	8.6		3.8	1.5	ug/Kg	☼	08/01/18 09:51	08/23/18 00:08	1
PCB-1260	ND		3.8	0.64	ug/Kg	☼	08/01/18 09:51	08/23/18 00:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	62		54 - 142	08/01/18 09:51	08/23/18 00:08	1
Tetrachloro-m-xylene	65		58 - 122	08/01/18 09:51	08/23/18 00:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	25000		2000	44	mg/Kg			08/02/18 15:56	1
Total Solids	52.2		0.1	0.1	%			08/01/18 09:09	1
Total Solids @ 70°C	53		0.10	0.10	%			08/02/18 13:52	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/01/18 08:58	1
Coarse Sand	0.1				%			08/01/18 08:58	1
Medium Sand	0.5				%			08/01/18 08:58	1
Fine Sand	17.5				%			08/01/18 08:58	1
Silt	69.8				%			08/01/18 08:58	1
Clay	12.2				%			08/01/18 08:58	1

TestAmerica Seattle

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79203-1

Client Sample ID: PDI-SC-S163-2to4

Lab Sample ID: 580-79203-2

Date Collected: 07/27/18 12:55

Matrix: Solid

Date Received: 07/30/18 13:40

Percent Solids: 52.4

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	140		19	1.7	ug/Kg	☼	08/02/18 12:14	08/04/18 17:49	10
Acenaphthene	110		19	2.2	ug/Kg	☼	08/02/18 12:14	08/04/18 17:49	10
Acenaphthylene	100		19	1.9	ug/Kg	☼	08/02/18 12:14	08/04/18 17:49	10
Anthracene	140		19	2.2	ug/Kg	☼	08/02/18 12:14	08/04/18 17:49	10
Benzo[a]anthracene	110	B	19	2.8	ug/Kg	☼	08/02/18 12:14	08/04/18 17:49	10
Benzo[a]pyrene	110		19	1.5	ug/Kg	☼	08/02/18 12:14	08/04/18 17:49	10
Benzo[b]fluoranthene	160		19	2.2	ug/Kg	☼	08/02/18 12:14	08/04/18 17:49	10
Benzo[g,h,i]perylene	100		19	1.9	ug/Kg	☼	08/02/18 12:14	08/04/18 17:49	10
Benzo[k]fluoranthene	35		19	2.2	ug/Kg	☼	08/02/18 12:14	08/04/18 17:49	10
Chrysene	190		19	5.6	ug/Kg	☼	08/02/18 12:14	08/04/18 17:49	10
Dibenz(a,h)anthracene	13	J	19	2.7	ug/Kg	☼	08/02/18 12:14	08/04/18 17:49	10
Fluoranthene	490		19	5.2	ug/Kg	☼	08/02/18 12:14	08/04/18 17:49	10
Fluorene	140		19	1.9	ug/Kg	☼	08/02/18 12:14	08/04/18 17:49	10
Indeno[1,2,3-cd]pyrene	95		19	2.2	ug/Kg	☼	08/02/18 12:14	08/04/18 17:49	10
Naphthalene	370	B	19	3.0	ug/Kg	☼	08/02/18 12:14	08/04/18 17:49	10
Phenanthrene	540	B	19	2.6	ug/Kg	☼	08/02/18 12:14	08/04/18 17:49	10
Pyrene	530		19	3.6	ug/Kg	☼	08/02/18 12:14	08/04/18 17:49	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	66		57 - 120	08/02/18 12:14	08/04/18 17:49	10

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		35	6.0	ug/Kg	☼	08/01/18 09:51	08/23/18 00:26	10
PCB-1221	ND		35	17	ug/Kg	☼	08/01/18 09:51	08/23/18 00:26	10
PCB-1232	35		35	8.3	ug/Kg	☼	08/01/18 09:51	08/23/18 00:26	10
PCB-1242	ND		35	8.6	ug/Kg	☼	08/01/18 09:51	08/23/18 00:26	10
PCB-1248	ND		35	2.8	ug/Kg	☼	08/01/18 09:51	08/23/18 00:26	10
PCB-1254	54		35	14	ug/Kg	☼	08/01/18 09:51	08/23/18 00:26	10
PCB-1260	ND		35	6.0	ug/Kg	☼	08/01/18 09:51	08/23/18 00:26	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	81		54 - 142	08/01/18 09:51	08/23/18 00:26	10
Tetrachloro-m-xylene	75		58 - 122	08/01/18 09:51	08/23/18 00:26	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	34000		2000	44	mg/Kg			08/02/18 16:01	1
Total Solids	52.4		0.1	0.1	%			08/01/18 09:09	1
Total Solids @ 70°C	55		0.10	0.10	%			08/02/18 13:52	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.1				%			08/01/18 08:58	1
Coarse Sand	0.0				%			08/01/18 08:58	1
Medium Sand	0.2				%			08/01/18 08:58	1
Fine Sand	13.3				%			08/01/18 08:58	1
Silt	72.2				%			08/01/18 08:58	1
Clay	14.3				%			08/01/18 08:58	1

TestAmerica Seattle

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79203-1

Client Sample ID: PDI-SC-S163-4to6

Lab Sample ID: 580-79203-3

Date Collected: 07/27/18 13:00

Matrix: Solid

Date Received: 07/30/18 13:40

Percent Solids: 55.7

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	130		16	1.5	ug/Kg	☼	08/02/18 12:14	08/04/18 18:11	10
Acenaphthene	140		16	2.0	ug/Kg	☼	08/02/18 12:14	08/04/18 18:11	10
Acenaphthylene	110	F2	16	1.6	ug/Kg	☼	08/02/18 12:14	08/04/18 18:11	10
Anthracene	160		16	2.0	ug/Kg	☼	08/02/18 12:14	08/04/18 18:11	10
Benzo[a]anthracene	160	B	16	2.5	ug/Kg	☼	08/02/18 12:14	08/04/18 18:11	10
Benzo[a]pyrene	130	F1	16	1.3	ug/Kg	☼	08/02/18 12:14	08/04/18 18:11	10
Benzo[b]fluoranthene	180	F1	16	1.9	ug/Kg	☼	08/02/18 12:14	08/04/18 18:11	10
Benzo[g,h,i]perylene	120	F1	16	1.6	ug/Kg	☼	08/02/18 12:14	08/04/18 18:11	10
Benzo[k]fluoranthene	46		16	2.0	ug/Kg	☼	08/02/18 12:14	08/04/18 18:11	10
Chrysene	210		16	4.9	ug/Kg	☼	08/02/18 12:14	08/04/18 18:11	10
Dibenz(a,h)anthracene	16	F2 F1	16	2.4	ug/Kg	☼	08/02/18 12:14	08/04/18 18:11	10
Fluoranthene	570	F1	16	4.6	ug/Kg	☼	08/02/18 12:14	08/04/18 18:11	10
Fluorene	140		16	1.6	ug/Kg	☼	08/02/18 12:14	08/04/18 18:11	10
Indeno[1,2,3-cd]pyrene	110		16	2.0	ug/Kg	☼	08/02/18 12:14	08/04/18 18:11	10
Naphthalene	380	B	16	2.6	ug/Kg	☼	08/02/18 12:14	08/04/18 18:11	10
Phenanthrene	610	F1 B	16	2.3	ug/Kg	☼	08/02/18 12:14	08/04/18 18:11	10
Pyrene	630		16	3.2	ug/Kg	☼	08/02/18 12:14	08/04/18 18:11	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	76		57 - 120	08/02/18 12:14	08/04/18 18:11	10

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND	F1	3.5	0.60	ug/Kg	☼	08/01/18 09:51	08/23/18 00:43	1
PCB-1221	ND		3.5	1.7	ug/Kg	☼	08/01/18 09:51	08/23/18 00:43	1
PCB-1232	15		3.5	0.83	ug/Kg	☼	08/01/18 09:51	08/23/18 00:43	1
PCB-1242	ND		3.5	0.87	ug/Kg	☼	08/01/18 09:51	08/23/18 00:43	1
PCB-1248	ND		3.5	0.28	ug/Kg	☼	08/01/18 09:51	08/23/18 00:43	1
PCB-1254	36		3.5	1.4	ug/Kg	☼	08/01/18 09:51	08/23/18 00:43	1
PCB-1260	ND	F1 F2	3.5	0.60	ug/Kg	☼	08/01/18 09:51	08/23/18 00:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	71		54 - 142	08/01/18 09:51	08/23/18 00:43	1
Tetrachloro-m-xylene	58		58 - 122	08/01/18 09:51	08/23/18 00:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	30000		2000	44	mg/Kg			08/02/18 15:26	1
Total Solids	55.7		0.1	0.1	%			08/01/18 20:04	1
Total Solids @ 70°C	58		0.10	0.10	%			08/02/18 13:52	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.1				%			08/01/18 08:58	1
Coarse Sand	0.0				%			08/01/18 08:58	1
Medium Sand	0.2				%			08/01/18 08:58	1
Fine Sand	16.7				%			08/01/18 08:58	1
Silt	69.3				%			08/01/18 08:58	1
Clay	13.7				%			08/01/18 08:58	1

TestAmerica Seattle

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79203-1

Client Sample ID: PDI-SC-S163-6to8

Lab Sample ID: 580-79203-4

Date Collected: 07/27/18 13:05

Matrix: Solid

Date Received: 07/30/18 13:40

Percent Solids: 56.0

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	150		18	1.6	ug/Kg	☼	08/02/18 12:14	08/04/18 19:18	10
Acenaphthene	110		18	2.1	ug/Kg	☼	08/02/18 12:14	08/04/18 19:18	10
Acenaphthylene	76		18	1.8	ug/Kg	☼	08/02/18 12:14	08/04/18 19:18	10
Anthracene	210		18	2.1	ug/Kg	☼	08/02/18 12:14	08/04/18 19:18	10
Benzo[a]anthracene	180	B	18	2.7	ug/Kg	☼	08/02/18 12:14	08/04/18 19:18	10
Benzo[a]pyrene	170		18	1.4	ug/Kg	☼	08/02/18 12:14	08/04/18 19:18	10
Benzo[b]fluoranthene	170		18	2.1	ug/Kg	☼	08/02/18 12:14	08/04/18 19:18	10
Benzo[g,h,i]perylene	150		18	1.8	ug/Kg	☼	08/02/18 12:14	08/04/18 19:18	10
Benzo[k]fluoranthene	47		18	2.1	ug/Kg	☼	08/02/18 12:14	08/04/18 19:18	10
Chrysene	250		18	5.3	ug/Kg	☼	08/02/18 12:14	08/04/18 19:18	10
Dibenz(a,h)anthracene	13	J	18	2.5	ug/Kg	☼	08/02/18 12:14	08/04/18 19:18	10
Fluoranthene	560		18	4.9	ug/Kg	☼	08/02/18 12:14	08/04/18 19:18	10
Fluorene	130		18	1.8	ug/Kg	☼	08/02/18 12:14	08/04/18 19:18	10
Indeno[1,2,3-cd]pyrene	160		18	2.1	ug/Kg	☼	08/02/18 12:14	08/04/18 19:18	10
Naphthalene	360	B	18	2.8	ug/Kg	☼	08/02/18 12:14	08/04/18 19:18	10
Phenanthrene	650	B	18	2.4	ug/Kg	☼	08/02/18 12:14	08/04/18 19:18	10
Pyrene	580		18	3.4	ug/Kg	☼	08/02/18 12:14	08/04/18 19:18	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	75		57 - 120	08/02/18 12:14	08/04/18 19:18	10

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.4	0.58	ug/Kg	☼	08/01/18 09:51	08/19/18 04:12	1
PCB-1221	ND		3.4	1.6	ug/Kg	☼	08/01/18 09:51	08/19/18 04:12	1
PCB-1232	ND		3.4	0.80	ug/Kg	☼	08/01/18 09:51	08/19/18 04:12	1
PCB-1242	ND		3.4	0.84	ug/Kg	☼	08/01/18 09:51	08/19/18 04:12	1
PCB-1254	ND		3.4	1.3	ug/Kg	☼	08/01/18 09:51	08/19/18 04:12	1
PCB-1260	ND		3.4	0.58	ug/Kg	☼	08/01/18 09:51	08/19/18 04:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	73		54 - 142	08/01/18 09:51	08/19/18 04:12	1
Tetrachloro-m-xylene	71		58 - 122	08/01/18 09:51	08/19/18 04:12	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1248	78		34	2.7	ug/Kg	☼	08/01/18 09:51	08/23/18 04:15	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	34000		2000	44	mg/Kg			08/02/18 16:07	1
Total Solids	56.0		0.1	0.1	%			08/01/18 09:09	1
Total Solids @ 70°C	57		0.10	0.10	%			08/02/18 13:52	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/01/18 08:58	1
Coarse Sand	0.0				%			08/01/18 08:58	1
Medium Sand	0.1				%			08/01/18 08:58	1
Fine Sand	9.9				%			08/01/18 08:58	1
Silt	71.8				%			08/01/18 08:58	1

TestAmerica Seattle

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79203-1

Client Sample ID: PDI-SC-S163-6to8

Lab Sample ID: 580-79203-4

Date Collected: 07/27/18 13:05

Matrix: Solid

Date Received: 07/30/18 13:40

Percent Solids: 56.0

Method: D7928/D6913 - ASTM D7928/D6913 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	18.2				%			08/01/18 08:58	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79203-1

Client Sample ID: PDI-SC-S163-8to10

Lab Sample ID: 580-79203-5

Date Collected: 07/27/18 13:10

Matrix: Solid

Date Received: 07/30/18 13:40

Percent Solids: 55.3

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	180		18	1.6	ug/Kg	☼	08/02/18 12:14	08/04/18 19:40	10
Acenaphthene	150		18	2.1	ug/Kg	☼	08/02/18 12:14	08/04/18 19:40	10
Acenaphthylene	190		18	1.8	ug/Kg	☼	08/02/18 12:14	08/04/18 19:40	10
Anthracene	300		18	2.1	ug/Kg	☼	08/02/18 12:14	08/04/18 19:40	10
Benzo[a]anthracene	250	B	18	2.7	ug/Kg	☼	08/02/18 12:14	08/04/18 19:40	10
Benzo[a]pyrene	250		18	1.4	ug/Kg	☼	08/02/18 12:14	08/04/18 19:40	10
Benzo[b]fluoranthene	290		18	2.1	ug/Kg	☼	08/02/18 12:14	08/04/18 19:40	10
Benzo[g,h,i]perylene	230		18	1.8	ug/Kg	☼	08/02/18 12:14	08/04/18 19:40	10
Benzo[k]fluoranthene	120		18	2.1	ug/Kg	☼	08/02/18 12:14	08/04/18 19:40	10
Chrysene	340		18	5.3	ug/Kg	☼	08/02/18 12:14	08/04/18 19:40	10
Dibenz(a,h)anthracene	21		18	2.5	ug/Kg	☼	08/02/18 12:14	08/04/18 19:40	10
Fluoranthene	820		18	5.0	ug/Kg	☼	08/02/18 12:14	08/04/18 19:40	10
Fluorene	270		18	1.8	ug/Kg	☼	08/02/18 12:14	08/04/18 19:40	10
Indeno[1,2,3-cd]pyrene	210		18	2.1	ug/Kg	☼	08/02/18 12:14	08/04/18 19:40	10
Naphthalene	460	B	18	2.8	ug/Kg	☼	08/02/18 12:14	08/04/18 19:40	10
Phenanthrene	980	B	18	2.4	ug/Kg	☼	08/02/18 12:14	08/04/18 19:40	10
Pyrene	920		18	3.4	ug/Kg	☼	08/02/18 12:14	08/04/18 19:40	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	79		57 - 120	08/02/18 12:14	08/04/18 19:40	10

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.6	0.61	ug/Kg	☼	08/01/18 09:51	08/19/18 04:29	1
PCB-1221	ND		3.6	1.7	ug/Kg	☼	08/01/18 09:51	08/19/18 04:29	1
PCB-1232	ND		3.6	0.85	ug/Kg	☼	08/01/18 09:51	08/19/18 04:29	1
PCB-1242	ND		3.6	0.88	ug/Kg	☼	08/01/18 09:51	08/19/18 04:29	1
PCB-1254	ND		3.6	1.4	ug/Kg	☼	08/01/18 09:51	08/19/18 04:29	1
PCB-1260	ND		3.6	0.61	ug/Kg	☼	08/01/18 09:51	08/19/18 04:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	75		54 - 142	08/01/18 09:51	08/19/18 04:29	1
Tetrachloro-m-xylene	74		58 - 122	08/01/18 09:51	08/19/18 04:29	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1248	40		36	2.9	ug/Kg	☼	08/01/18 09:51	08/23/18 04:33	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	38000		2000	44	mg/Kg			08/02/18 16:12	1
Total Solids	55.3		0.1	0.1	%			08/01/18 09:09	1
Total Solids @ 70°C	57		0.10	0.10	%			08/02/18 13:52	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.5				%			08/01/18 08:58	1
Coarse Sand	0.4				%			08/01/18 08:58	1
Medium Sand	0.2				%			08/01/18 08:58	1
Fine Sand	6.6				%			08/01/18 08:58	1
Silt	78.9				%			08/01/18 08:58	1

TestAmerica Seattle

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79203-1

Client Sample ID: PDI-SC-S163-8to10

Lab Sample ID: 580-79203-5

Date Collected: 07/27/18 13:10

Matrix: Solid

Date Received: 07/30/18 13:40

Percent Solids: 55.3

Method: D7928/D6913 - ASTM D7928/D6913 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	13.4				%			08/01/18 08:58	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79203-1

Client Sample ID: PDI-SC-S163-10to12.7

Lab Sample ID: 580-79203-6

Date Collected: 07/27/18 13:15

Matrix: Solid

Date Received: 07/30/18 13:40

Percent Solids: 58.1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	250		17	1.5	ug/Kg	☼	08/02/18 12:14	08/04/18 20:03	10
Acenaphthene	2300		17	2.1	ug/Kg	☼	08/02/18 12:14	08/04/18 20:03	10
Acenaphthylene	190		17	1.7	ug/Kg	☼	08/02/18 12:14	08/04/18 20:03	10
Anthracene	650		17	2.1	ug/Kg	☼	08/02/18 12:14	08/04/18 20:03	10
Benzo[a]anthracene	500	B	17	2.6	ug/Kg	☼	08/02/18 12:14	08/04/18 20:03	10
Benzo[a]pyrene	420		17	1.4	ug/Kg	☼	08/02/18 12:14	08/04/18 20:03	10
Benzo[b]fluoranthene	520		17	2.0	ug/Kg	☼	08/02/18 12:14	08/04/18 20:03	10
Benzo[g,h,i]perylene	300		17	1.7	ug/Kg	☼	08/02/18 12:14	08/04/18 20:03	10
Benzo[k]fluoranthene	81		17	2.1	ug/Kg	☼	08/02/18 12:14	08/04/18 20:03	10
Chrysene	660		17	5.1	ug/Kg	☼	08/02/18 12:14	08/04/18 20:03	10
Dibenz(a,h)anthracene	33		17	2.5	ug/Kg	☼	08/02/18 12:14	08/04/18 20:03	10
Fluoranthene	1700		17	4.8	ug/Kg	☼	08/02/18 12:14	08/04/18 20:03	10
Fluorene	1500		17	1.7	ug/Kg	☼	08/02/18 12:14	08/04/18 20:03	10
Indeno[1,2,3-cd]pyrene	330		17	2.1	ug/Kg	☼	08/02/18 12:14	08/04/18 20:03	10
Naphthalene	330	B	17	2.7	ug/Kg	☼	08/02/18 12:14	08/04/18 20:03	10
Phenanthrene	2800	B	17	2.4	ug/Kg	☼	08/02/18 12:14	08/04/18 20:03	10
Pyrene	1700		17	3.3	ug/Kg	☼	08/02/18 12:14	08/04/18 20:03	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	61		57 - 120				08/02/18 12:14	08/04/18 20:03	10

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	103		54 - 142	08/01/18 09:51	08/19/18 04:47	1
Tetrachloro-m-xylene	92		58 - 122	08/01/18 09:51	08/19/18 04:47	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		34	5.7	ug/Kg	☼	08/01/18 09:51	08/23/18 04:51	10
PCB-1221	ND		34	16	ug/Kg	☼	08/01/18 09:51	08/23/18 04:51	10
PCB-1232	40		34	7.9	ug/Kg	☼	08/01/18 09:51	08/23/18 04:51	10
PCB-1242	ND		34	8.2	ug/Kg	☼	08/01/18 09:51	08/23/18 04:51	10
PCB-1248	ND		34	2.7	ug/Kg	☼	08/01/18 09:51	08/23/18 04:51	10
PCB-1254	160		34	13	ug/Kg	☼	08/01/18 09:51	08/23/18 04:51	10
PCB-1260	ND		34	5.7	ug/Kg	☼	08/01/18 09:51	08/23/18 04:51	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	32000		2000	44	mg/Kg			08/02/18 16:18	1
Total Solids	58.1		0.1	0.1	%			08/01/18 09:09	1
Total Solids @ 70°C	60		0.10	0.10	%			08/02/18 13:52	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.5				%			08/01/18 08:58	1
Coarse Sand	0.9				%			08/01/18 08:58	1
Medium Sand	0.2				%			08/01/18 08:58	1
Fine Sand	6.7				%			08/01/18 08:58	1
Silt	70.8				%			08/01/18 08:58	1
Clay	20.8				%			08/01/18 08:58	1

TestAmerica Seattle

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79203-1

Client Sample ID: PDI-SC-S163-12.7to13

Lab Sample ID: 580-79203-7

Date Collected: 07/27/18 13:20

Matrix: Solid

Date Received: 07/30/18 13:40

Percent Solids: 71.8

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	47		6.9	0.63	ug/Kg	☼	08/02/18 12:14	08/04/18 20:25	5
Acenaphthene	60		6.9	0.83	ug/Kg	☼	08/02/18 12:14	08/04/18 20:25	5
Acenaphthylene	58		6.9	0.69	ug/Kg	☼	08/02/18 12:14	08/04/18 20:25	5
Anthracene	110		6.9	0.83	ug/Kg	☼	08/02/18 12:14	08/04/18 20:25	5
Benzo[a]anthracene	140	B	6.9	1.1	ug/Kg	☼	08/02/18 12:14	08/04/18 20:25	5
Benzo[a]pyrene	190		6.9	0.56	ug/Kg	☼	08/02/18 12:14	08/04/18 20:25	5
Benzo[b]fluoranthene	220		6.9	0.82	ug/Kg	☼	08/02/18 12:14	08/04/18 20:25	5
Benzo[g,h,i]perylene	150		6.9	0.69	ug/Kg	☼	08/02/18 12:14	08/04/18 20:25	5
Benzo[k]fluoranthene	27		6.9	0.83	ug/Kg	☼	08/02/18 12:14	08/04/18 20:25	5
Chrysene	170		6.9	2.1	ug/Kg	☼	08/02/18 12:14	08/04/18 20:25	5
Dibenz(a,h)anthracene	22		6.9	1.0	ug/Kg	☼	08/02/18 12:14	08/04/18 20:25	5
Fluoranthene	370		6.9	1.9	ug/Kg	☼	08/02/18 12:14	08/04/18 20:25	5
Fluorene	46		6.9	0.69	ug/Kg	☼	08/02/18 12:14	08/04/18 20:25	5
Indeno[1,2,3-cd]pyrene	160		6.9	0.83	ug/Kg	☼	08/02/18 12:14	08/04/18 20:25	5
Naphthalene	92	B	6.9	1.1	ug/Kg	☼	08/02/18 12:14	08/04/18 20:25	5
Phenanthrene	340	B	6.9	0.96	ug/Kg	☼	08/02/18 12:14	08/04/18 20:25	5
Pyrene	520		6.9	1.3	ug/Kg	☼	08/02/18 12:14	08/04/18 20:25	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	68		57 - 120				08/02/18 12:14	08/04/18 20:25	5

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.7	0.46	ug/Kg	☼	08/01/18 09:51	08/19/18 05:04	1
PCB-1221	ND		2.7	1.3	ug/Kg	☼	08/01/18 09:51	08/19/18 05:04	1
PCB-1232	ND		2.7	0.63	ug/Kg	☼	08/01/18 09:51	08/19/18 05:04	1
PCB-1242	ND		2.7	0.66	ug/Kg	☼	08/01/18 09:51	08/19/18 05:04	1
PCB-1248	ND		2.7	0.21	ug/Kg	☼	08/01/18 09:51	08/19/18 05:04	1
PCB-1254	ND		2.7	1.1	ug/Kg	☼	08/01/18 09:51	08/19/18 05:04	1
PCB-1260	ND		2.7	0.46	ug/Kg	☼	08/01/18 09:51	08/19/18 05:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	64		54 - 142				08/01/18 09:51	08/19/18 05:04	1
Tetrachloro-m-xylene	74		58 - 122				08/01/18 09:51	08/19/18 05:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	8500		2000	44	mg/Kg			08/02/18 16:24	1
Total Solids	71.8		0.1	0.1	%			08/01/18 09:09	1
Total Solids @ 70°C	75		0.10	0.10	%			08/02/18 13:52	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/01/18 08:58	1
Coarse Sand	0.1				%			08/01/18 08:58	1
Medium Sand	0.1				%			08/01/18 08:58	1
Fine Sand	17.9				%			08/01/18 08:58	1
Silt	74.3				%			08/01/18 08:58	1
Clay	7.7				%			08/01/18 08:58	1

TestAmerica Seattle

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79203-1

Client Sample ID: PDI-SC-S251-2to2.5

Lab Sample ID: 580-79203-8

Date Collected: 07/27/18 17:40

Matrix: Solid

Date Received: 07/30/18 13:40

Percent Solids: 72.9

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	16		6.8	0.61	ug/Kg	☼	08/02/18 12:14	08/04/18 20:47	5
Acenaphthene	640		6.8	0.82	ug/Kg	☼	08/02/18 12:14	08/04/18 20:47	5
Acenaphthylene	8.6		6.8	0.68	ug/Kg	☼	08/02/18 12:14	08/04/18 20:47	5
Anthracene	20		6.8	0.82	ug/Kg	☼	08/02/18 12:14	08/04/18 20:47	5
Benzo[a]anthracene	19	B	6.8	1.0	ug/Kg	☼	08/02/18 12:14	08/04/18 20:47	5
Benzo[a]pyrene	19		6.8	0.55	ug/Kg	☼	08/02/18 12:14	08/04/18 20:47	5
Benzo[b]fluoranthene	29		6.8	0.81	ug/Kg	☼	08/02/18 12:14	08/04/18 20:47	5
Benzo[g,h,i]perylene	15		6.8	0.68	ug/Kg	☼	08/02/18 12:14	08/04/18 20:47	5
Benzo[k]fluoranthene	7.7		6.8	0.82	ug/Kg	☼	08/02/18 12:14	08/04/18 20:47	5
Chrysene	30		6.8	2.0	ug/Kg	☼	08/02/18 12:14	08/04/18 20:47	5
Dibenz(a,h)anthracene	3.5	J	6.8	0.98	ug/Kg	☼	08/02/18 12:14	08/04/18 20:47	5
Fluoranthene	110		6.8	1.9	ug/Kg	☼	08/02/18 12:14	08/04/18 20:47	5
Fluorene	38		6.8	0.68	ug/Kg	☼	08/02/18 12:14	08/04/18 20:47	5
Indeno[1,2,3-cd]pyrene	17		6.8	0.82	ug/Kg	☼	08/02/18 12:14	08/04/18 20:47	5
Naphthalene	160	B	6.8	1.1	ug/Kg	☼	08/02/18 12:14	08/04/18 20:47	5
Phenanthrene	460	B	6.8	0.94	ug/Kg	☼	08/02/18 12:14	08/04/18 20:47	5
Pyrene	130		6.8	1.3	ug/Kg	☼	08/02/18 12:14	08/04/18 20:47	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	92		57 - 120	08/02/18 12:14	08/04/18 20:47	5

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.7	0.45	ug/Kg	☼	08/01/18 09:51	08/19/18 05:22	1
PCB-1221	ND		2.7	1.3	ug/Kg	☼	08/01/18 09:51	08/19/18 05:22	1
PCB-1232	ND		2.7	0.63	ug/Kg	☼	08/01/18 09:51	08/19/18 05:22	1
PCB-1242	ND		2.7	0.66	ug/Kg	☼	08/01/18 09:51	08/19/18 05:22	1
PCB-1248	ND		2.7	0.21	ug/Kg	☼	08/01/18 09:51	08/19/18 05:22	1
PCB-1260	ND		2.7	0.45	ug/Kg	☼	08/01/18 09:51	08/19/18 05:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	66		54 - 142	08/01/18 09:51	08/19/18 05:22	1
Tetrachloro-m-xylene	79		58 - 122	08/01/18 09:51	08/19/18 05:22	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1254	5.0		2.7	1.1	ug/Kg	☼	08/01/18 09:51	08/23/18 05:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	3900		2000	44	mg/Kg			08/02/18 16:28	1
Total Solids	72.9		0.1	0.1	%			08/01/18 09:09	1
Total Solids @ 70°C	84		0.10	0.10	%			08/02/18 13:52	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	1.0				%			08/01/18 08:58	1
Coarse Sand	1.3				%			08/01/18 08:58	1
Medium Sand	30.2				%			08/01/18 08:58	1
Fine Sand	52.7				%			08/01/18 08:58	1
Silt	11.8				%			08/01/18 08:58	1

TestAmerica Seattle

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79203-1

Client Sample ID: PDI-SC-S251-2to2.5

Lab Sample ID: 580-79203-8

Date Collected: 07/27/18 17:40

Matrix: Solid

Date Received: 07/30/18 13:40

Percent Solids: 72.9

Method: D7928/D6913 - ASTM D7928/D6913 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	3.1				%			08/01/18 08:58	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

QC Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79203-1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 580-280682/1-A

Matrix: Solid

Analysis Batch: 280846

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 280682

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		1.0	0.090	ug/Kg		08/02/18 12:14	08/04/18 16:21	1
Acenaphthene	ND		1.0	0.12	ug/Kg		08/02/18 12:14	08/04/18 16:21	1
Acenaphthylene	ND		1.0	0.10	ug/Kg		08/02/18 12:14	08/04/18 16:21	1
Anthracene	ND		1.0	0.12	ug/Kg		08/02/18 12:14	08/04/18 16:21	1
Benzo[a]anthracene	0.168	J	1.0	0.15	ug/Kg		08/02/18 12:14	08/04/18 16:21	1
Benzo[a]pyrene	ND		1.0	0.080	ug/Kg		08/02/18 12:14	08/04/18 16:21	1
Benzo[b]fluoranthene	ND		1.0	0.12	ug/Kg		08/02/18 12:14	08/04/18 16:21	1
Benzo[g,h,i]perylene	ND		1.0	0.10	ug/Kg		08/02/18 12:14	08/04/18 16:21	1
Benzo[k]fluoranthene	ND		1.0	0.12	ug/Kg		08/02/18 12:14	08/04/18 16:21	1
Chrysene	ND		1.0	0.30	ug/Kg		08/02/18 12:14	08/04/18 16:21	1
Dibenz(a,h)anthracene	ND		1.0	0.14	ug/Kg		08/02/18 12:14	08/04/18 16:21	1
Fluoranthene	ND		1.0	0.28	ug/Kg		08/02/18 12:14	08/04/18 16:21	1
Fluorene	ND		1.0	0.10	ug/Kg		08/02/18 12:14	08/04/18 16:21	1
Indeno[1,2,3-cd]pyrene	ND		1.0	0.12	ug/Kg		08/02/18 12:14	08/04/18 16:21	1
Naphthalene	0.200	J	1.0	0.16	ug/Kg		08/02/18 12:14	08/04/18 16:21	1
Phenanthrene	0.161	J	1.0	0.14	ug/Kg		08/02/18 12:14	08/04/18 16:21	1
Pyrene	ND		1.0	0.19	ug/Kg		08/02/18 12:14	08/04/18 16:21	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	80		57 - 120	08/02/18 12:14	08/04/18 16:21	1

Lab Sample ID: LCS 580-280682/2-A

Matrix: Solid

Analysis Batch: 280846

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 280682

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
2-Methylnaphthalene	200	146		ug/Kg		73	68 - 120
Acenaphthene	200	151		ug/Kg		75	68 - 120
Acenaphthylene	200	147		ug/Kg		73	68 - 120
Anthracene	200	149		ug/Kg		75	73 - 125
Benzo[a]anthracene	200	156		ug/Kg		78	66 - 120
Benzo[a]pyrene	200	195		ug/Kg		98	72 - 124
Benzo[b]fluoranthene	200	187		ug/Kg		94	63 - 121
Benzo[g,h,i]perylene	200	185		ug/Kg		92	63 - 120
Benzo[k]fluoranthene	200	210		ug/Kg		105	63 - 123
Chrysene	200	200		ug/Kg		100	69 - 120
Dibenz(a,h)anthracene	200	214		ug/Kg		107	70 - 125
Fluoranthene	200	157		ug/Kg		78	74 - 125
Fluorene	200	152		ug/Kg		76	73 - 120
Indeno[1,2,3-cd]pyrene	200	208		ug/Kg		104	65 - 121
Naphthalene	200	140		ug/Kg		70	70 - 120
Phenanthrene	200	145		ug/Kg		73	73 - 120
Pyrene	200	152		ug/Kg		76	70 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	76		57 - 120

TestAmerica Seattle

QC Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79203-1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: 580-79203-3 MS

Matrix: Solid
Analysis Batch: 280846

Client Sample ID: PDI-SC-S163-4to6

Prep Type: Total/NA
Prep Batch: 280682

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier				
2-Methylnaphthalene	130		334	388		ug/Kg	☼	76	68 - 120
Acenaphthene	140		334	384		ug/Kg	☼	72	68 - 120
Acenaphthylene	110	F2	334	366		ug/Kg	☼	76	68 - 120
Anthracene	160		334	415		ug/Kg	☼	76	73 - 125
Benzo[a]anthracene	160	B	334	400		ug/Kg	☼	73	66 - 120
Benzo[a]pyrene	130	F1	334	367	F1	ug/Kg	☼	70	72 - 124
Benzo[b]fluoranthene	180	F1	334	384	F1	ug/Kg	☼	62	63 - 121
Benzo[g,h,i]perylene	120	F1	334	325	F1	ug/Kg	☼	62	63 - 120
Benzo[k]fluoranthene	46		334	313		ug/Kg	☼	80	63 - 123
Chrysene	210		334	493		ug/Kg	☼	83	69 - 120
Dibenz(a,h)anthracene	16	F2 F1	334	247	F1	ug/Kg	☼	69	70 - 125
Fluoranthene	570	F1	334	827		ug/Kg	☼	76	74 - 125
Fluorene	140		334	404		ug/Kg	☼	80	73 - 120
Indeno[1,2,3-cd]pyrene	110		334	439		ug/Kg	☼	100	65 - 121
Naphthalene	380	B	334	639		ug/Kg	☼	76	70 - 120
Phenanthrene	610	F1 B	334	850	F1	ug/Kg	☼	72	73 - 120
Pyrene	630		334	868		ug/Kg	☼	72	70 - 120

Surrogate	MS %Recovery	MS Qualifier	Limits
Terphenyl-d14	83		57 - 120

Lab Sample ID: 580-79203-3 MSD

Matrix: Solid
Analysis Batch: 280846

Client Sample ID: PDI-SC-S163-4to6

Prep Type: Total/NA
Prep Batch: 280682

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier						
2-Methylnaphthalene	130		348	437		ug/Kg	☼	87	68 - 120	12	12
Acenaphthene	140		348	432		ug/Kg	☼	84	68 - 120	12	12
Acenaphthylene	110	F2	348	423	F2	ug/Kg	☼	90	68 - 120	14	12
Anthracene	160		348	433		ug/Kg	☼	78	73 - 125	4	12
Benzo[a]anthracene	160	B	348	461		ug/Kg	☼	87	66 - 120	14	14
Benzo[a]pyrene	130	F1	348	406		ug/Kg	☼	79	72 - 124	10	12
Benzo[b]fluoranthene	180	F1	348	420		ug/Kg	☼	70	63 - 121	9	10
Benzo[g,h,i]perylene	120	F1	348	367		ug/Kg	☼	72	63 - 120	12	14
Benzo[k]fluoranthene	46		348	332		ug/Kg	☼	82	63 - 123	6	15
Chrysene	210		348	536		ug/Kg	☼	92	69 - 120	8	10
Dibenz(a,h)anthracene	16	F2 F1	348	292	F2	ug/Kg	☼	79	70 - 125	17	13
Fluoranthene	570	F1	348	807	F1	ug/Kg	☼	67	74 - 125	2	13
Fluorene	140		348	441		ug/Kg	☼	87	73 - 120	9	13
Indeno[1,2,3-cd]pyrene	110		348	511		ug/Kg	☼	117	65 - 121	15	15
Naphthalene	380	B	348	660		ug/Kg	☼	79	70 - 120	3	12
Phenanthrene	610	F1 B	348	842	F1	ug/Kg	☼	67	73 - 120	1	11
Pyrene	630		348	872		ug/Kg	☼	70	70 - 120	0	12

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Terphenyl-d14	74		57 - 120

TestAmerica Seattle

QC Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79203-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 580-280561/1-A
Matrix: Solid
Analysis Batch: 281924

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 280561

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.0	0.34	ug/Kg		08/01/18 09:51	08/19/18 01:32	1
PCB-1221	ND		2.0	0.95	ug/Kg		08/01/18 09:51	08/19/18 01:32	1
PCB-1232	ND		2.0	0.47	ug/Kg		08/01/18 09:51	08/19/18 01:32	1
PCB-1242	ND		2.0	0.49	ug/Kg		08/01/18 09:51	08/19/18 01:32	1
PCB-1248	ND		2.0	0.16	ug/Kg		08/01/18 09:51	08/19/18 01:32	1
PCB-1254	ND		2.0	0.79	ug/Kg		08/01/18 09:51	08/19/18 01:32	1
PCB-1260	ND		2.0	0.34	ug/Kg		08/01/18 09:51	08/19/18 01:32	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	96		54 - 142	08/01/18 09:51	08/19/18 01:32	1
Tetrachloro-m-xylene	73		58 - 122	08/01/18 09:51	08/19/18 01:32	1

Lab Sample ID: MB 580-280561/1-A
Matrix: Solid
Analysis Batch: 282231

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 280561

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.0	0.34	ug/Kg		08/01/18 09:51	08/22/18 23:32	1
PCB-1221	ND		2.0	0.95	ug/Kg		08/01/18 09:51	08/22/18 23:32	1
PCB-1232	ND		2.0	0.47	ug/Kg		08/01/18 09:51	08/22/18 23:32	1
PCB-1242	ND		2.0	0.49	ug/Kg		08/01/18 09:51	08/22/18 23:32	1
PCB-1248	ND		2.0	0.16	ug/Kg		08/01/18 09:51	08/22/18 23:32	1
PCB-1254	ND		2.0	0.79	ug/Kg		08/01/18 09:51	08/22/18 23:32	1
PCB-1260	ND		2.0	0.34	ug/Kg		08/01/18 09:51	08/22/18 23:32	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	83		54 - 142	08/01/18 09:51	08/22/18 23:32	1
Tetrachloro-m-xylene	61		58 - 122	08/01/18 09:51	08/22/18 23:32	1

Lab Sample ID: LCS 580-280561/2-A
Matrix: Solid
Analysis Batch: 281924

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 280561

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
PCB-1016	10.0	9.70		ug/Kg		97	64 - 120
PCB-1260	10.0	9.68		ug/Kg		97	63 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	100		54 - 142
Tetrachloro-m-xylene	90		58 - 122

Lab Sample ID: LCS 580-280561/2-A
Matrix: Solid
Analysis Batch: 282231

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 280561

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
PCB-1016	10.0	8.70		ug/Kg		87	64 - 120

TestAmerica Seattle

QC Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79203-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: LCS 580-280561/2-A
Matrix: Solid
Analysis Batch: 282231

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 280561
%Rec. Limits

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
PCB-1260	10.0	9.18		ug/Kg		92	63 - 130
		LCS %Recovery	LCS Qualifier	Limits			
<i>DCB Decachlorobiphenyl</i>		90		54 - 142			
<i>Tetrachloro-m-xylene</i>		76		58 - 122			

Lab Sample ID: 580-79203-3 MS
Matrix: Solid
Analysis Batch: 282231

Client Sample ID: PDI-SC-S163-4to6
Prep Type: Total/NA
Prep Batch: 280561
%Rec. Limits

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
PCB-1016	ND	F1	17.8	25.7	F1	ug/Kg	☼	144	64 - 120
PCB-1260	ND	F1 F2	17.8	34.4	F1	ug/Kg	☼	193	63 - 130
		MS %Recovery	MS Qualifier	Limits					
<i>DCB Decachlorobiphenyl</i>		65		54 - 142					
<i>Tetrachloro-m-xylene</i>		59		58 - 122					

Lab Sample ID: 580-79203-3 MSD
Matrix: Solid
Analysis Batch: 282231

Client Sample ID: PDI-SC-S163-4to6
Prep Type: Total/NA
Prep Batch: 280561
%Rec. RPD Limit

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
PCB-1016	ND	F1	17.5	22.0	F1	ug/Kg	☼	126	64 - 120	16	21
PCB-1260	ND	F1 F2	17.5	26.4	F1 F2	ug/Kg	☼	151	63 - 130	26	25
		MSD %Recovery	MSD Qualifier	Limits							
<i>DCB Decachlorobiphenyl</i>		64		54 - 142							
<i>Tetrachloro-m-xylene</i>		63		58 - 122							

Method: 9060_PSEP - TOC (Puget Sound)

Lab Sample ID: MB 580-280722/3
Matrix: Solid
Analysis Batch: 280722

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	ND		2000	44	mg/Kg			08/02/18 15:19	1

Lab Sample ID: LCS 580-280722/4
Matrix: Solid
Analysis Batch: 280722

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
%Rec. Limits

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Total Organic Carbon - Duplicates	4270	4240		mg/Kg		99	68 - 149

TestAmerica Seattle

QC Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79203-1

Method: 9060_PSEP - TOC (Puget Sound) (Continued)

Lab Sample ID: LCSD 580-280722/5

Matrix: Solid
Analysis Batch: 280722

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	4270	4040		mg/Kg		95	68 - 149	5	32

Lab Sample ID: 580-79203-3 MS

Matrix: Solid
Analysis Batch: 280722

Client Sample ID: PDI-SC-S163-4to6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	30000		120000	140000		mg/Kg		92	68 - 149		

Lab Sample ID: 580-79203-3 MSD

Matrix: Solid
Analysis Batch: 280722

Client Sample ID: PDI-SC-S163-4to6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	30000		120000	139000		mg/Kg		91	68 - 149	1	32

Lab Sample ID: 580-79203-3 DU

Matrix: Solid
Analysis Batch: 280722

Client Sample ID: PDI-SC-S163-4to6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon - Duplicates	30000		29900		mg/Kg		0.2	50

Lab Sample ID: 580-79203-3 TRL

Matrix: Solid
Analysis Batch: 280722

Client Sample ID: PDI-SC-S163-4to6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	TRL Result	TRL Qualifier	Unit	D	RSD	RSD Limit
Total Organic Carbon - Duplicates	30000		29500		mg/Kg		0.8	20

Method: Moisture 70C - Percent Moisture, 70 C

Lab Sample ID: 580-79203-1 DU

Matrix: Solid
Analysis Batch: 281038

Client Sample ID: PDI-SC-S163-0to2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Solids @ 70°C	53		53		%		0.3	20

TestAmerica Seattle

QC Sample Results

Client: AECOM
 Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79203-1

Method: D7928/D6913 - ASTM D7928/D6913

Lab Sample ID: 580-79203-1 DU

Matrix: Solid

Analysis Batch: 280552

Client Sample ID: PDI-SC-S163-0to2

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Gravel	0.0		0.0		%		NC	20
Coarse Sand	0.1		0.1		%		0	20
Medium Sand	0.5		0.5		%		0	20
Fine Sand	17.5		16.5		%		6	20
Silt	69.8		70.8		%		1	20
Clay	12.2		12.1		%		0.8	20



Lab Chronicle

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79203-1

Client Sample ID: PDI-SC-S163-0to2

Date Collected: 07/27/18 12:50

Date Received: 07/30/18 13:40

Lab Sample ID: 580-79203-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	280722	08/02/18 15:56	Z1T	TAL SEA
Total/NA	Analysis	D 2216		1	280554	08/01/18 09:09	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	281038	08/02/18 13:52	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	280552	08/01/18 08:58	JKM	TAL SEA

Client Sample ID: PDI-SC-S163-0to2

Date Collected: 07/27/18 12:50

Date Received: 07/30/18 13:40

Lab Sample ID: 580-79203-1

Matrix: Solid

Percent Solids: 52.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			280682	08/02/18 12:14	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		10	280846	08/04/18 17:27	W1T	TAL SEA
Total/NA	Prep	3550B			280561	08/01/18 09:51	BAH	TAL SEA
Total/NA	Analysis	8082A		1	282231	08/23/18 00:08	APR	TAL SEA

Client Sample ID: PDI-SC-S163-2to4

Date Collected: 07/27/18 12:55

Date Received: 07/30/18 13:40

Lab Sample ID: 580-79203-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	280722	08/02/18 16:01	Z1T	TAL SEA
Total/NA	Analysis	D 2216		1	280554	08/01/18 09:09	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	281038	08/02/18 13:52	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	280552	08/01/18 08:58	JKM	TAL SEA

Client Sample ID: PDI-SC-S163-2to4

Date Collected: 07/27/18 12:55

Date Received: 07/30/18 13:40

Lab Sample ID: 580-79203-2

Matrix: Solid

Percent Solids: 52.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			280682	08/02/18 12:14	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		10	280846	08/04/18 17:49	W1T	TAL SEA
Total/NA	Prep	3550B			280561	08/01/18 09:51	BAH	TAL SEA
Total/NA	Analysis	8082A		10	282231	08/23/18 00:26	APR	TAL SEA

Client Sample ID: PDI-SC-S163-4to6

Date Collected: 07/27/18 13:00

Date Received: 07/30/18 13:40

Lab Sample ID: 580-79203-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	280722	08/02/18 15:26	Z1T	TAL SEA
Total/NA	Analysis	D 2216		1	280640	08/01/18 20:04	BAH	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: AECOM

TestAmerica Job ID: 580-79203-1

Project/Site: Portland Harbor Pre-Remedial Design

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture 70C		1	281038	08/02/18 13:52	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	280552	08/01/18 08:58	JKM	TAL SEA

Client Sample ID: PDI-SC-S163-4to6

Lab Sample ID: 580-79203-3

Date Collected: 07/27/18 13:00

Matrix: Solid

Date Received: 07/30/18 13:40

Percent Solids: 55.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			280682	08/02/18 12:14	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		10	280846	08/04/18 18:11	W1T	TAL SEA
Total/NA	Prep	3550B			280561	08/01/18 09:51	BAH	TAL SEA
Total/NA	Analysis	8082A		1	282231	08/23/18 00:43	APR	TAL SEA

Client Sample ID: PDI-SC-S163-6to8

Lab Sample ID: 580-79203-4

Date Collected: 07/27/18 13:05

Matrix: Solid

Date Received: 07/30/18 13:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	280722	08/02/18 16:07	Z1T	TAL SEA
Total/NA	Analysis	D 2216		1	280554	08/01/18 09:09	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	281038	08/02/18 13:52	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	280552	08/01/18 08:58	JKM	TAL SEA

Client Sample ID: PDI-SC-S163-6to8

Lab Sample ID: 580-79203-4

Date Collected: 07/27/18 13:05

Matrix: Solid

Date Received: 07/30/18 13:40

Percent Solids: 56.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			280682	08/02/18 12:14	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		10	280846	08/04/18 19:18	W1T	TAL SEA
Total/NA	Prep	3550B			280561	08/01/18 09:51	BAH	TAL SEA
Total/NA	Analysis	8082A		1	281924	08/19/18 04:12	APR	TAL SEA
Total/NA	Prep	3550B	RA		280561	08/01/18 09:51	BAH	TAL SEA
Total/NA	Analysis	8082A	RA	10	282233	08/23/18 04:15	APR	TAL SEA

Client Sample ID: PDI-SC-S163-8to10

Lab Sample ID: 580-79203-5

Date Collected: 07/27/18 13:10

Matrix: Solid

Date Received: 07/30/18 13:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	280722	08/02/18 16:12	Z1T	TAL SEA
Total/NA	Analysis	D 2216		1	280554	08/01/18 09:09	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	281038	08/02/18 13:52	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	280552	08/01/18 08:58	JKM	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79203-1

Client Sample ID: PDI-SC-S163-8to10

Date Collected: 07/27/18 13:10
Date Received: 07/30/18 13:40

Lab Sample ID: 580-79203-5

Matrix: Solid
Percent Solids: 55.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			280682	08/02/18 12:14	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		10	280846	08/04/18 19:40	W1T	TAL SEA
Total/NA	Prep	3550B			280561	08/01/18 09:51	BAH	TAL SEA
Total/NA	Analysis	8082A		1	281924	08/19/18 04:29	APR	TAL SEA
Total/NA	Prep	3550B	RA		280561	08/01/18 09:51	BAH	TAL SEA
Total/NA	Analysis	8082A	RA	10	282233	08/23/18 04:33	APR	TAL SEA

Client Sample ID: PDI-SC-S163-10to12.7

Date Collected: 07/27/18 13:15
Date Received: 07/30/18 13:40

Lab Sample ID: 580-79203-6

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	280722	08/02/18 16:18	Z1T	TAL SEA
Total/NA	Analysis	D 2216		1	280554	08/01/18 09:09	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	281038	08/02/18 13:52	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	280552	08/01/18 08:58	JKM	TAL SEA

Client Sample ID: PDI-SC-S163-10to12.7

Date Collected: 07/27/18 13:15
Date Received: 07/30/18 13:40

Lab Sample ID: 580-79203-6

Matrix: Solid
Percent Solids: 58.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			280682	08/02/18 12:14	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		10	280846	08/04/18 20:03	W1T	TAL SEA
Total/NA	Prep	3550B			280561	08/01/18 09:51	BAH	TAL SEA
Total/NA	Analysis	8082A		1	281924	08/19/18 04:47	APR	TAL SEA
Total/NA	Prep	3550B	RA		280561	08/01/18 09:51	BAH	TAL SEA
Total/NA	Analysis	8082A	RA	10	282233	08/23/18 04:51	APR	TAL SEA

Client Sample ID: PDI-SC-S163-12.7to13

Date Collected: 07/27/18 13:20
Date Received: 07/30/18 13:40

Lab Sample ID: 580-79203-7

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	280722	08/02/18 16:24	Z1T	TAL SEA
Total/NA	Analysis	D 2216		1	280554	08/01/18 09:09	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	281038	08/02/18 13:52	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	280552	08/01/18 08:58	JKM	TAL SEA

Lab Chronicle

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79203-1

Client Sample ID: PDI-SC-S163-12.7to13

Lab Sample ID: 580-79203-7

Date Collected: 07/27/18 13:20

Matrix: Solid

Date Received: 07/30/18 13:40

Percent Solids: 71.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			280682	08/02/18 12:14	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		5	280846	08/04/18 20:25	W1T	TAL SEA
Total/NA	Prep	3550B			280561	08/01/18 09:51	BAH	TAL SEA
Total/NA	Analysis	8082A		1	281924	08/19/18 05:04	APR	TAL SEA

Client Sample ID: PDI-SC-S251-2to2.5

Lab Sample ID: 580-79203-8

Date Collected: 07/27/18 17:40

Matrix: Solid

Date Received: 07/30/18 13:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	280722	08/02/18 16:28	Z1T	TAL SEA
Total/NA	Analysis	D 2216		1	280554	08/01/18 09:09	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	281038	08/02/18 13:52	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	280552	08/01/18 08:58	JKM	TAL SEA

Client Sample ID: PDI-SC-S251-2to2.5

Lab Sample ID: 580-79203-8

Date Collected: 07/27/18 17:40

Matrix: Solid

Date Received: 07/30/18 13:40

Percent Solids: 72.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			280682	08/02/18 12:14	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		5	280846	08/04/18 20:47	W1T	TAL SEA
Total/NA	Prep	3550B			280561	08/01/18 09:51	BAH	TAL SEA
Total/NA	Analysis	8082A		1	281924	08/19/18 05:22	APR	TAL SEA
Total/NA	Prep	3550B	RA		280561	08/01/18 09:51	BAH	TAL SEA
Total/NA	Analysis	8082A	RA	1	282233	08/23/18 05:26	APR	TAL SEA

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: AECOM

TestAmerica Job ID: 580-79203-1

Project/Site: Portland Harbor Pre-Remedial Design

Laboratory: TestAmerica Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	17-024	01-19-19
ANAB	DoD ELAP		L2236	01-19-19
ANAB	ISO/IEC 17025		L2236	01-19-19
California	State Program	9	2901	11-05-18
Montana (UST)	State Program	8	N/A	04-30-20
Nevada	State Program	9	WA000502019-1	07-31-19
Oregon	NELAP	10	WA100007	11-05-18
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-19

Sample Summary

Client: AECOM

TestAmerica Job ID: 580-79203-1

Project/Site: Portland Harbor Pre-Remedial Design

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-79203-1	PDI-SC-S163-0to2	Solid	07/27/18 12:50	07/30/18 13:40
580-79203-2	PDI-SC-S163-2to4	Solid	07/27/18 12:55	07/30/18 13:40
580-79203-3	PDI-SC-S163-4to6	Solid	07/27/18 13:00	07/30/18 13:40
580-79203-4	PDI-SC-S163-6to8	Solid	07/27/18 13:05	07/30/18 13:40
580-79203-5	PDI-SC-S163-8to10	Solid	07/27/18 13:10	07/30/18 13:40
580-79203-6	PDI-SC-S163-10to12.7	Solid	07/27/18 13:15	07/30/18 13:40
580-79203-7	PDI-SC-S163-12.7to13	Solid	07/27/18 13:20	07/30/18 13:40
580-79203-8	PDI-SC-S251-2to2.5	Solid	07/27/18 17:40	07/30/18 13:40



SUBSURFACE SEDIMENT

CHAIN OF CUSTODY

TestAmerica-Seattle
5755-8th-Street-East
Tacoma, WA 98424-1317
Ph: 253-922-2310 Fax: 253-922-5047

Client Contact
AECOM
1111 3rd Ave Suite 1600
Seattle, WA 98101
Phone: (206) 438-2700 Fax: 1-(866) 495-5288
Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling

Portland, OR
Project #: 60566335 Study: Subsurface Sediment
Sample Type:

Project Contact: Amy Dahl / Chelsey Cook
Tel: (206) 438-2261 / (206) 438-2010
Analysis Turnaround Time
Calendar (C) or Work Days (W) W
21 days
 Other

Site Contact: Jennifer Ray / Michaela McCoog
Laboratory Contact: Elaine Walker
Date: 7/30/18
Carrier: Courier
COC No: 1 of 1 pages



Atterberg Limits ASTM D4318
Total Solids 8082A, 8270D-SIM, 9060, 1603
PCB Aroclors, PAHs Total Organic Carbon
Grain size ASTM D7928/D6913
Archive
PCDD's 1613B
Fraction

Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	Archive	Grain size ASTM D7928/D6913	PCB Aroclors, PAHs Total Organic Carbon	Total Solids 8082A, 8270D-SIM, 9060, 1603	Atterberg Limits ASTM D4318	Sample Specific Notes:
PDI-SC-S163 - 0 to 2	7/27/2018	12:50	SC			4		X	X	X	X		
PDI-SC-S163 - 2 to 4	7/27/2018	12:55	SC			4		X	X	X	X		
PDI-SC-S163 - 4 to 6	7/27/2018	13:00	SC	MS/MSD		6		X	X	X	X		
PDI-SC-S163 - 6 to 8	7/27/2018	13:05	SC			4		X	X	X	X		
PDI-SC-S163 - 8 to 10	7/27/2018	13:10	SC			4		X	X	X	X		
PDI-SC-S163 - 10 to 12.7	7/27/2018	13:15	SC			4		X	X	X	X		
PDI-SC-S163 - 12.7 to 13	7/27/2018	13:20	SC			4		X	X	X	X		
PDI-SC-S251 - 2 to 2.5	7/27/2018	17:40	SC			4		X	X	X	X		

Container Type: WMG=Wide Mouth Glass Jar, P=HDPE, PP=Polypropylene, AG=amber glass, G=glass, RC=Resin Col
Preservative: HCl = Hydrochloric Acid, H3PO4 = Phosphoric Acid, HNO3 = Nitric Acid
Fractions: D = Dissolved, PRT = Particulate, T = Total (unfiltered)

Special Instructions/QC Requirements & Comments: **Separate reports for each lab**
 Return To Client Disposal By Lab Archive For 12 Months

Relinquished by: <i>[Signature]</i>	Company: <i>AECOM</i>	Date/Time: <i>7/30/18 / 1305</i>	Received by: <i>[Signature]</i>	Company: <i>ME</i>	Date/Time: <i>7-30-18 / 1305</i>
Relinquished by: <i>[Signature]</i>	Company: <i>ME</i>	Date/Time: <i>7-30-18 / 1340</i>	Received by: <i>[Signature]</i>	Company: <i>TAOR</i>	Date/Time: <i>7/30/18 1340</i>
Relinquished by: <i>[Signature]</i>	Company: <i>[Signature]</i>	Date/Time: <i>[Signature]</i>	Received by: <i>[Signature]</i>	Company: <i>[Signature]</i>	Date/Time: <i>[Signature]</i>

2.7



Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-79203-1

Login Number: 79203

List Number: 1

Creator: O'Connell, Jason I

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	