TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Seattle
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Tel: (253)922-2310

TestAmerica Job ID: 580-77301-1
Client Project/Site: Portland Harbor Pre-Remedial Design
Revision: 1

For:
AECOM
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Seattle, Washington 98101

Attn: Karen Mixon

M. Elaine Walker

Authorized for release by:
8/1/2018 5:21:08 PM

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Job ID: 580-77301-1

Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE
Client: AECOM
Project: Portland Harbor Pre-Remedial Design
Report Number: 580-77301-1

REVISION 1: August 1, 2018
This revision was required to remove an unnecessary statement in the NWTPH-Dx section of the narrative. Only the reports required revision; not the EDD.

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
Eleven samples were received on 5/15/2018 1:15 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 1.3º C, 2.1º C and 2.7º 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.

DIESEL AND MOTOR OIL RANGE ORGANICS - Rinse Blank
Sample PDI-RB-VV-180514 (580-77301-11) was analyzed for diesel and motor oil range organics in accordance with Method NWTPH-Dx. The sample was prepared on 05/17/2018 and analyzed on 05/22/2018.

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

METALS (ICPMS) - Rinse Blank
Sample PDI-RB-VV-180514 (580-77301-11) was analyzed for Metals (ICPMS) in accordance with 6020A_LL. The sample was prepared on 06/01/2018 and analyzed on 06/04/2018.

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

TOTAL MERCURY - Rinse Blank
Sample PDI-RB-VV-180514 (580-77301-11) was analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The sample was prepared and analyzed on 05/31/2018.

Job ID: 580-77301-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

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

TOTAL ORGANIC CARBON

Samples PDI-SG-S158 (580-77301-1), PDI-SG-S161 (580-77301-2), PDI-SG-S250 (580-77301-3), PDI-SG-S249 (580-77301-4), PDI-SG-S248 (580-77301-5), PDI-SG-S247 (580-77301-6), PDI-SG-S246 (580-77301-7), PDI-SG-S252 (580-77301-8), PDI-SG-S244 (580-77301-9) and PDI-SG-S227 (580-77301-10) were analyzed for total organic carbon in accordance with EPA SW-846 Method 9060. The samples were analyzed on 05/24/2018.

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

TOTAL ORGANIC CARBON - Rinse Blank

Sample PDI-RB-VV-180514 (580-77301-11) was analyzed for total organic carbon in accordance with SM 5310B. The sample was analyzed on 05/18/2018.

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

GRAIN SIZE

Samples PDI-SG-S158 (580-77301-1), PDI-SG-S161 (580-77301-2), PDI-SG-S250 (580-77301-3), PDI-SG-S249 (580-77301-4), PDI-SG-S248 (580-77301-5), PDI-SG-S247 (580-77301-6), PDI-SG-S246 (580-77301-7), PDI-SG-S252 (580-77301-8), PDI-SG-S244 (580-77301-9) and PDI-SG-S227 (580-77301-10) were analyzed for grain size in accordance with ASTM D7928/D6913. The samples were analyzed on 06/12/2018.

Medium Sand exceeded the RPD limit for the duplicate of sample PDI-SG-S244DU (580-77301-9).

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

PERCENT SOLIDS

Samples PDI-SG-S158 (580-77301-1), PDI-SG-S161 (580-77301-2), PDI-SG-S250 (580-77301-3), PDI-SG-S249 (580-77301-4), PDI-SG-S248 (580-77301-5), PDI-SG-S247 (580-77301-6), PDI-SG-S246 (580-77301-7), PDI-SG-S252 (580-77301-8), PDI-SG-S244 (580-77301-9) and PDI-SG-S227 (580-77301-10) were analyzed for percent solids in accordance with ASTM D2216. The samples were analyzed on 05/17/2018.

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

TOTAL SOLIDS @ 70C

Samples PDI-SG-S158 (580-77301-1), PDI-SG-S161 (580-77301-2), PDI-SG-S250 (580-77301-3), PDI-SG-S249 (580-77301-4), PDI-SG-S248 (580-77301-5), PDI-SG-S247 (580-77301-6), PDI-SG-S246 (580-77301-7), PDI-SG-S252 (580-77301-8), PDI-SG-S244 (580-77301-9) and PDI-SG-S227 (580-77301-10) were analyzed for Total Solids @ 70C. The samples were analyzed on 06/18/2018 and 06/19/2018.

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

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

TestAmerica Job ID: 580-77301-1

Qualifiers

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Geotechnical

Qualifier	Qualifier Description
F3	Duplicate RPD exceeds the control limit

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-77301-1

Client Sample ID: PDI-SG-S158
Date Collected: 05/14/18 13:15
Date Received: 05/15/18 13:15

Lab Sample ID: 580-77301-1
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	16000		2000	44	mg/Kg			05/24/18 12:09	1
Total Solids	57.3		0.1	0.1	%			05/17/18 09:51	1
Total Solids @ 70°C	56		0.10	0.10	%			06/18/18 16:42	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	11.6				%			06/12/18 08:40	1
Coarse Sand	0.1				%			06/12/18 08:40	1
Fine Sand	36.6				%			06/12/18 08:40	1
Gravel	0.0				%			06/12/18 08:40	1
Medium Sand	1.4				%			06/12/18 08:40	1
Silt	50.5				%			06/12/18 08:40	1

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

TestAmerica Job ID: 580-77301-1

Client Sample ID: PDI-SG-S161
Date Collected: 05/14/18 16:30
Date Received: 05/15/18 13:15

Lab Sample ID: 580-77301-2
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	28000		2000	44	mg/Kg			05/24/18 12:15	1
Total Solids	41.4		0.1	0.1	%			05/17/18 09:51	1
Total Solids @ 70°C	40		0.10	0.10	%			06/18/18 16:42	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	16.2				%			06/12/18 08:40	1
Coarse Sand	0.0				%			06/12/18 08:40	1
Fine Sand	9.3				%			06/12/18 08:40	1
Gravel	0.0				%			06/12/18 08:40	1
Medium Sand	0.2				%			06/12/18 08:40	1
Silt	74.4				%			06/12/18 08:40	1

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

TestAmerica Job ID: 580-77301-1

Client Sample ID: PDI-SG-S250
Date Collected: 05/14/18 10:40
Date Received: 05/15/18 13:15

Lab Sample ID: 580-77301-3
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	32000		2000	44	mg/Kg			05/24/18 12:20	1
Total Solids	38.5		0.1	0.1	%			05/17/18 09:51	1
Total Solids @ 70°C	35		0.10	0.10	%			06/18/18 16:42	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	14.3				%			06/12/18 08:40	1
Coarse Sand	0.0				%			06/12/18 08:40	1
Fine Sand	11.8				%			06/12/18 08:40	1
Gravel	0.0				%			06/12/18 08:40	1
Medium Sand	0.4				%			06/12/18 08:40	1
Silt	73.5				%			06/12/18 08:40	1

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

TestAmerica Job ID: 580-77301-1

Client Sample ID: PDI-SG-S249
Date Collected: 05/14/18 12:00
Date Received: 05/15/18 13:15

Lab Sample ID: 580-77301-4
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	13000		2000	44	mg/Kg			05/24/18 12:26	1
Total Solids	60.1		0.1	0.1	%			05/17/18 09:51	1
Total Solids @ 70°C	57		0.10	0.10	%			06/18/18 16:42	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	7.8				%			06/12/18 08:40	1
Coarse Sand	0.3				%			06/12/18 08:40	1
Fine Sand	42.7				%			06/12/18 08:40	1
Gravel	0.1				%			06/12/18 08:40	1
Medium Sand	20.9				%			06/12/18 08:40	1
Silt	28.3				%			06/12/18 08:40	1

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

TestAmerica Job ID: 580-77301-1

Client Sample ID: PDI-SG-S248
Date Collected: 05/14/18 12:50
Date Received: 05/15/18 13:15

Lab Sample ID: 580-77301-5
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	29000		2000	44	mg/Kg			05/24/18 12:32	1
Total Solids	40.9		0.1	0.1	%			05/17/18 09:51	1
Total Solids @ 70°C	37		0.10	0.10	%			06/18/18 16:42	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	13.4				%			06/12/18 08:40	1
Coarse Sand	0.0				%			06/12/18 08:40	1
Fine Sand	12.9				%			06/12/18 08:40	1
Gravel	0.0				%			06/12/18 08:40	1
Medium Sand	0.4				%			06/12/18 08:40	1
Silt	73.3				%			06/12/18 08:40	1

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

TestAmerica Job ID: 580-77301-1

Client Sample ID: PDI-SG-S247
Date Collected: 05/14/18 14:10
Date Received: 05/15/18 13:15

Lab Sample ID: 580-77301-6
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	25000		2000	44	mg/Kg			05/24/18 12:38	1
Total Solids	42.9		0.1	0.1	%			05/17/18 09:51	1
Total Solids @ 70°C	41		0.10	0.10	%			06/18/18 16:42	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	13.6				%			06/12/18 08:40	1
Coarse Sand	0.1				%			06/12/18 08:40	1
Fine Sand	20.4				%			06/12/18 08:40	1
Gravel	0.0				%			06/12/18 08:40	1
Medium Sand	1.5				%			06/12/18 08:40	1
Silt	64.4				%			06/12/18 08:40	1

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

TestAmerica Job ID: 580-77301-1

Client Sample ID: PDI-SG-S246
Date Collected: 05/14/18 15:15
Date Received: 05/15/18 13:15

Lab Sample ID: 580-77301-7
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	31000		2000	44	mg/Kg			05/24/18 12:43	1
Total Solids	37.3		0.1	0.1	%			05/17/18 09:51	1
Total Solids @ 70°C	37		0.10	0.10	%			06/18/18 16:42	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	13.7				%			06/12/18 08:40	1
Coarse Sand	0.0				%			06/12/18 08:40	1
Fine Sand	12.2				%			06/12/18 08:40	1
Gravel	0.0				%			06/12/18 08:40	1
Medium Sand	0.2				%			06/12/18 08:40	1
Silt	73.8				%			06/12/18 08:40	1

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

TestAmerica Job ID: 580-77301-1

Client Sample ID: PDI-SG-S252
Date Collected: 05/14/18 09:45
Date Received: 05/15/18 13:15

Lab Sample ID: 580-77301-8
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	9300		2000	44	mg/Kg			05/24/18 12:49	1
Total Solids	61.3		0.1	0.1	%			05/17/18 09:51	1
Total Solids @ 70°C	59		0.10	0.10	%			06/18/18 16:42	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	8.2				%			06/12/18 08:40	1
Coarse Sand	0.2				%			06/12/18 08:40	1
Fine Sand	52.2				%			06/12/18 08:40	1
Gravel	0.0				%			06/12/18 08:40	1
Medium Sand	11.1				%			06/12/18 08:40	1
Silt	28.5				%			06/12/18 08:40	1

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

TestAmerica Job ID: 580-77301-1

Client Sample ID: PDI-SG-S244
Date Collected: 05/14/18 15:50
Date Received: 05/15/18 13:15

Lab Sample ID: 580-77301-9
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	29000		2000	44	mg/Kg			05/24/18 12:55	1
Total Solids	39.5		0.1	0.1	%			05/17/18 09:51	1
Total Solids @ 70°C	38		0.10	0.10	%			06/19/18 06:55	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	14.1				%			06/12/18 14:11	1
Coarse Sand	0.0				%			06/12/18 14:11	1
Fine Sand	12.3				%			06/12/18 14:11	1
Gravel	0.0				%			06/12/18 14:11	1
Medium Sand	0.1				%			06/12/18 14:11	1
Silt	73.5				%			06/12/18 14:11	1

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

TestAmerica Job ID: 580-77301-1

Client Sample ID: PDI-SG-S227
Date Collected: 05/14/18 16:50
Date Received: 05/15/18 13:15

Lab Sample ID: 580-77301-10
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	28000		2000	44	mg/Kg			05/24/18 13:37	1
Total Solids	40.4		0.1	0.1	%			05/17/18 09:51	1
Total Solids @ 70°C	38		0.10	0.10	%			06/19/18 06:55	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	12.5				%			06/12/18 14:11	1
Coarse Sand	0.1				%			06/12/18 14:11	1
Fine Sand	11.1				%			06/12/18 14:11	1
Gravel	0.0				%			06/12/18 14:11	1
Medium Sand	0.3				%			06/12/18 14:11	1
Silt	76.0				%			06/12/18 14:11	1

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

TestAmerica Job ID: 580-77301-1

Client Sample ID: PDI-RB-VV-180514
Date Collected: 05/14/18 17:30
Date Received: 05/15/18 13:15

Lab Sample ID: 580-77301-11
Matrix: Water

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.12	0.072	mg/L		05/17/18 09:11	05/22/18 20:14	1
Motor Oil (>C24-C36)	ND		0.39	0.11	mg/L		05/17/18 09:11	05/22/18 20:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*77*		*50 - 150*	*05/17/18 09:11*	*05/22/18 20:14*	*1*

Method: 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010	0.00020	mg/L		06/01/18 11:39	06/04/18 11:01	1
Cadmium	ND		0.00040	0.00010	mg/L		06/01/18 11:39	06/04/18 11:01	1
Copper	ND		0.0020	0.00060	mg/L		06/01/18 11:39	06/04/18 11:01	1
Lead	ND		0.00080	0.00020	mg/L		06/01/18 11:39	06/04/18 11:01	1
Zinc	ND		0.0070	0.0019	mg/L		06/01/18 11:39	06/04/18 11:01	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00030	0.00015	mg/L		05/31/18 09:08	05/31/18 13:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**0.31**	**J**	1.0	0.19	mg/L			05/18/18 16:36	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-274059/1-A
Matrix: Water
Analysis Batch: 274347

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 274059

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.11	0.065	mg/L		05/17/18 09:11	05/22/18 12:51	1
Motor Oil (>C24-C36)	ND		0.35	0.096	mg/L		05/17/18 09:11	05/22/18 12:51	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*75*		*50 - 150*	*05/17/18 09:11*	*05/22/18 12:51*	*1*

Lab Sample ID: LCS 580-274059/2-A
Matrix: Water
Analysis Batch: 274347

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 274059

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
#2 Diesel (C10-C24)	2.00	1.49		mg/L		75	59 - 112
Motor Oil (>C24-C36)	2.00	1.80		mg/L		90	64 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*94*		*50 - 150*

Lab Sample ID: LCSD 580-274059/3-A
Matrix: Water
Analysis Batch: 274347

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 274059

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	2.00	1.53		mg/L		76	59 - 112	2	16
Motor Oil (>C24-C36)	2.00	1.95		mg/L		97	64 - 120	8	17

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*88*		*50 - 150*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 580-275188/22-A
Matrix: Water
Analysis Batch: 275333

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 275188

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010	0.00020	mg/L		06/01/18 11:39	06/04/18 10:49	1
Cadmium	ND		0.00040	0.00010	mg/L		06/01/18 11:39	06/04/18 10:49	1
Copper	ND		0.0020	0.00060	mg/L		06/01/18 11:39	06/04/18 10:49	1
Lead	ND		0.00080	0.00020	mg/L		06/01/18 11:39	06/04/18 10:49	1
Zinc	ND		0.0070	0.0019	mg/L		06/01/18 11:39	06/04/18 10:49	1

Lab Sample ID: LCS 580-275188/23-A
Matrix: Water
Analysis Batch: 275333

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 275188

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	4.00	3.98		mg/L		99	80 - 120

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 580-275188/23-A
Matrix: Water
Analysis Batch: 275333

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 275188

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	0.100	0.0885		mg/L		89	80 - 120
Copper	0.500	0.484		mg/L		97	80 - 120
Lead	1.00	0.973		mg/L		97	80 - 120
Zinc	4.00	3.76		mg/L		94	80 - 120

Lab Sample ID: LCSD 580-275188/24-A
Matrix: Water
Analysis Batch: 275333

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 275188

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	4.00	3.93		mg/L		98	80 - 120	1	20
Cadmium	0.100	0.0887		mg/L		89	80 - 120	0	20
Copper	0.500	0.487		mg/L		97	80 - 120	1	20
Lead	1.00	0.966		mg/L		97	80 - 120	1	20
Zinc	4.00	3.82		mg/L		95	80 - 120	1	20

Lab Sample ID: 580-77301-11 MS
Matrix: Water
Analysis Batch: 275333

Client Sample ID: PDI-RB-VV-180514
Prep Type: Total Recoverable
Prep Batch: 275188

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	ND		4.00	4.15		mg/L		104	80 - 120
Cadmium	ND		0.100	0.0876		mg/L		88	80 - 120
Copper	ND		0.500	0.511		mg/L		102	80 - 120
Lead	ND		1.00	1.01		mg/L		101	80 - 120
Zinc	ND		4.00	3.95		mg/L		99	80 - 120

Lab Sample ID: 580-77301-11 MSD
Matrix: Water
Analysis Batch: 275333

Client Sample ID: PDI-RB-VV-180514
Prep Type: Total Recoverable
Prep Batch: 275188

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND		4.00	4.35		mg/L		109	80 - 120	5	20
Cadmium	ND		0.100	0.0933		mg/L		93	80 - 120	6	20
Copper	ND		0.500	0.538		mg/L		108	80 - 120	5	20
Lead	ND		1.00	1.08		mg/L		108	80 - 120	6	20
Zinc	ND		4.00	4.14		mg/L		104	80 - 120	5	20

Lab Sample ID: 580-77301-11 DU
Matrix: Water
Analysis Batch: 275333

Client Sample ID: PDI-RB-VV-180514
Prep Type: Total Recoverable
Prep Batch: 275188

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	ND		ND		mg/L		NC	20
Cadmium	ND		ND		mg/L		NC	20
Copper	ND		ND		mg/L		NC	20
Lead	ND		ND		mg/L		NC	20
Zinc	ND		ND		mg/L		NC	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 580-275060/21-A
Matrix: Water
Analysis Batch: 275113

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 275060

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00030	0.00015	mg/L		05/31/18 09:08	05/31/18 12:36	1

Lab Sample ID: LCS 580-275060/22-A
Matrix: Water
Analysis Batch: 275113

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 275060

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00200	0.00186		mg/L		93	80 - 120

Lab Sample ID: LCSD 580-275060/23-A
Matrix: Water
Analysis Batch: 275113

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 275060

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.00200	0.00178		mg/L		89	80 - 120	4	20

Method: 9060_PSEP - TOC (Puget Sound)

Lab Sample ID: MB 580-274638/3
Matrix: Solid
Analysis Batch: 274638

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			05/24/18 09:55	1

Lab Sample ID: LCS 580-274638/4
Matrix: Solid
Analysis Batch: 274638

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	4620	5120		mg/Kg		111	68 - 149

Lab Sample ID: LCSD 580-274638/5
Matrix: Solid
Analysis Batch: 274638

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	4620	4520		mg/Kg		98	68 - 149	13	32

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-77301-10 DU
Matrix: Solid
Analysis Batch: 274065

Client Sample ID: PDI-SG-S227
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Solids	40.4		40.6		%		0.5	20

Method: Moisture 70C - Percent Moisture, 70 C

Lab Sample ID: 580-77301-9 DU
Matrix: Solid
Analysis Batch: 276629

Client Sample ID: PDI-SG-S244
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Solids @ 70°C	38			38		%				0.4	20

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 580-274398/3
Matrix: Water
Analysis Batch: 274398

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	ND		1.0	0.19	mg/L			05/18/18 16:36	1

Lab Sample ID: LCS 580-274398/4
Matrix: Water
Analysis Batch: 274398

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			10.0	8.90		mg/L		89	85 - 115		

Method: D7928/D6913 - ASTM D7928/D6913

Lab Sample ID: 580-77301-9 DU
Matrix: Solid
Analysis Batch: 276050

Client Sample ID: PDI-SG-S244
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Clay	14.1			12.9		%				9	20
Coarse Sand	0.0			0.0		%				NC	20
Fine Sand	12.3			12.4		%				0.8	20
Gravel	0.0			0.0		%				NC	20
Medium Sand	0.1			0.2	F3	%				67	20
Silt	73.5			74.4		%				1	20

Lab Chronicle

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

TestAmerica Job ID: 580-77301-1

Client Sample ID: PDI-SG-S158
Date Collected: 05/14/18 13:15
Date Received: 05/15/18 13:15

Lab Sample ID: 580-77301-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	274638	05/24/18 12:09	MP	TAL SEA
Total/NA	Analysis	D 2216		1	274065	05/17/18 09:51	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	276606	06/18/18 16:42	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	275989	06/12/18 08:40	DB	TAL SEA

Client Sample ID: PDI-SG-S161
Date Collected: 05/14/18 16:30
Date Received: 05/15/18 13:15

Lab Sample ID: 580-77301-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	274638	05/24/18 12:15	MP	TAL SEA
Total/NA	Analysis	D 2216		1	274065	05/17/18 09:51	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	276606	06/18/18 16:42	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	275989	06/12/18 08:40	DB	TAL SEA

Client Sample ID: PDI-SG-S250
Date Collected: 05/14/18 10:40
Date Received: 05/15/18 13:15

Lab Sample ID: 580-77301-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	274638	05/24/18 12:20	MP	TAL SEA
Total/NA	Analysis	D 2216		1	274065	05/17/18 09:51	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	276606	06/18/18 16:42	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	275989	06/12/18 08:40	DB	TAL SEA

Client Sample ID: PDI-SG-S249
Date Collected: 05/14/18 12:00
Date Received: 05/15/18 13:15

Lab Sample ID: 580-77301-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	274638	05/24/18 12:26	MP	TAL SEA
Total/NA	Analysis	D 2216		1	274065	05/17/18 09:51	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	276606	06/18/18 16:42	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	275989	06/12/18 08:40	DB	TAL SEA

Client Sample ID: PDI-SG-S248
Date Collected: 05/14/18 12:50
Date Received: 05/15/18 13:15

Lab Sample ID: 580-77301-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	274638	05/24/18 12:32	MP	TAL SEA

Lab Chronicle

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

TestAmerica Job ID: 580-77301-1

Client Sample ID: PDI-SG-S248
Date Collected: 05/14/18 12:50
Date Received: 05/15/18 13:15

Lab Sample ID: 580-77301-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	274065	05/17/18 09:51	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	276606	06/18/18 16:42	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	275989	06/12/18 08:40	DB	TAL SEA

Client Sample ID: PDI-SG-S247
Date Collected: 05/14/18 14:10
Date Received: 05/15/18 13:15

Lab Sample ID: 580-77301-6
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	274638	05/24/18 12:38	MP	TAL SEA
Total/NA	Analysis	D 2216		1	274065	05/17/18 09:51	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	276606	06/18/18 16:42	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	275989	06/12/18 08:40	DB	TAL SEA

Client Sample ID: PDI-SG-S246
Date Collected: 05/14/18 15:15
Date Received: 05/15/18 13:15

Lab Sample ID: 580-77301-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	274638	05/24/18 12:43	MP	TAL SEA
Total/NA	Analysis	D 2216		1	274065	05/17/18 09:51	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	276606	06/18/18 16:42	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	275989	06/12/18 08:40	DB	TAL SEA

Client Sample ID: PDI-SG-S252
Date Collected: 05/14/18 09:45
Date Received: 05/15/18 13:15

Lab Sample ID: 580-77301-8
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	274638	05/24/18 12:49	MP	TAL SEA
Total/NA	Analysis	D 2216		1	274065	05/17/18 09:51	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	276606	06/18/18 16:42	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	275989	06/12/18 08:40	DB	TAL SEA

Client Sample ID: PDI-SG-S244
Date Collected: 05/14/18 15:50
Date Received: 05/15/18 13:15

Lab Sample ID: 580-77301-9
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	274638	05/24/18 12:55	MP	TAL SEA
Total/NA	Analysis	D 2216		1	274065	05/17/18 09:51	TTN	TAL SEA

Lab Chronicle

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

TestAmerica Job ID: 580-77301-1

Client Sample ID: PDI-SG-S244

Lab Sample ID: 580-77301-9

Date Collected: 05/14/18 15:50
Matrix: Solid
Date Received: 05/15/18 13:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture 70C		1	276629	06/19/18 06:55	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	276050	06/12/18 14:11	DB	TAL SEA

Client Sample ID: PDI-SG-S227

Lab Sample ID: 580-77301-10

Date Collected: 05/14/18 16:50
Matrix: Solid
Date Received: 05/15/18 13:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	274638	05/24/18 13:37	MP	TAL SEA
Total/NA	Analysis	D 2216		1	274065	05/17/18 09:51	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	276629	06/19/18 06:55	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	276050	06/12/18 14:11	DB	TAL SEA

Client Sample ID: PDI-RB-VV-180514

Lab Sample ID: 580-77301-11

Date Collected: 05/14/18 17:30
Matrix: Water
Date Received: 05/15/18 13:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			274059	05/17/18 09:11	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	274347	05/22/18 20:14	NMI	TAL SEA
Total Recoverable	Prep	3005A			275188	06/01/18 11:39	CJB	TAL SEA
Total Recoverable	Analysis	6020B		1	275333	06/04/18 11:01	FCW	TAL SEA
Total/NA	Prep	7470A			275060	05/31/18 09:08	CJB	TAL SEA
Total/NA	Analysis	7470A		1	275113	05/31/18 13:53	PAB	TAL SEA
Total/NA	Analysis	SM 5310B		1	274398	05/18/18 16:36	MP	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: 580-77301-1
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
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
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-77301-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-77301-1	PDI-SG-S158	Solid	05/14/18 13:15	05/15/18 13:15
580-77301-2	PDI-SG-S161	Solid	05/14/18 16:30	05/15/18 13:15
580-77301-3	PDI-SG-S250	Solid	05/14/18 10:40	05/15/18 13:15
580-77301-4	PDI-SG-S249	Solid	05/14/18 12:00	05/15/18 13:15
580-77301-5	PDI-SG-S248	Solid	05/14/18 12:50	05/15/18 13:15
580-77301-6	PDI-SG-S247	Solid	05/14/18 14:10	05/15/18 13:15
580-77301-7	PDI-SG-S246	Solid	05/14/18 15:15	05/15/18 13:15
580-77301-8	PDI-SG-S252	Solid	05/14/18 09:45	05/15/18 13:15
580-77301-9	PDI-SG-S244	Solid	05/14/18 15:50	05/15/18 13:15
580-77301-10	PDI-SG-S227	Solid	05/14/18 16:50	05/15/18 13:15
580-77301-11	PDI-RB-VV-180514	Water	05/14/18 17:30	05/15/18 13:15

SURFACE SEDIMENT CHAIN OF CUSTODY

TestAmerica-Seattle 5755-8th-Street-East Tacoma, WA 98424-1317 **Ph: 253-922-2310 Fax: 253-922-5047**	**Project Contact: Amy Dahl / Chelsey Cook** **Tel: (206) 438-2261 / (206) 438-2010**	**Site Contact: Jennifer Ray** **Laboratory Contact: Elaine-Walker**	**5/15/2018** COC No: 1 **Carrier: Courier** ___1___ of ___1___ pages
Client Contact AECOM 1111 3rd Ave Suite 1600 Seattle, WA 98101 Phone: (206) 438-2700 Fax: 1+(866) 495-5288 Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling Portland, OR Project #: 60566335 Study: Surface Sediment-SMA	**Analysis Turnaround Time** Calendar (C) or Work Days (W) _____ [x] 21 days [ ] Other _____		

Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	PCB Congeners 1668A	PCDD/Fs 1613B	Grain size ASTM D7928/D6913	Total organic carbon, Total solids 9060	Archive Archive -20 C	WQ - PCB Congeners 1668A	WQ - PCDD/Fs 1613B	WQ - TPH Diesel NWTPH-Dx	WQ - Metals, Mercury 6020B, 7470	WQ - Total Organic Carbon SM5310B	Sample Specific Notes:
PDI-SG-S158	5/14/2018	13:15	SS		LS	5		X	X	X	X	X						
PDI-SG-S161	5/14/2018	16:30	SS		LS	5		X	X	X	X	X						
PDI-SG-S250	5/14/2018	10:40	SS		AM	5		X	X	X	X	X						
PDI-SG-S249	5/14/2018	12:00	SS		AM	5		X	X	X	X	X						
PDI-SG-S248	5/14/2018	12:50	SS		AM	5		X	X	X	X	X						
PDI-SG-S247	5/14/2018	14:10	SS		AM	5		X	X	X	X	X						
PDI-SG-S246	5/14/2018	15:15	SS		AM	5		X	X	X	X	X						
PDI-SG-S252	5/14/2018	9:45	SS		AM	5		X	X	X	X	X						
PDI-SG-S244	5/14/2018	15:50	SS		AM	5		X	X	X	X	X						
PDI-SG-S227	5/14/2018	16:50	SS		AM	5		X	X	X	X	X						
PDI-RB-VV-180514	5/14/2018	17:30	W		MT	8							X	X	X	X	X	

580-77301 Chain of Custody

Container Type: WMG=Wide Mouth Glass Jar, P=HDPE, PP=Polypropylene, AG=amber glass, G=glass, RC=Resin Column

Preservative: HCl = Hydrochloric Acid, H3PO4 = Phosphoric Acid, HNO3 = Nitric Acid

Fraction: D = Dissolved, PRT = Particulate, T = Total (unfiltered)

Sample Disposal

[ ] *Return To Client* [X] *Disposal By Lab* [X] *Archive For 12 Months*

Special Instructions/QC Requirements & Comments:

Separate reports for each lab

SMA Study samples - Log in seperately from SS Study samples

1.3, 2.7, 2.1

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	AECOM	5/15/18 1240		M.E.	5/15/18 1240
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	M.E.	5/15/18 1315		TAROR	5/15/18 1315
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

SURFACE SEDIMENT
CHAIN OF CUSTODY

TestAmerica-Seattle 5755-8th-Street-East Tacoma, WA 98424-1317 **Ph: 253-922-2310 Fax: 253-922-5047**	**Project Contact: Amy Dahl / Chelsey Cook** **Tel: (206) 438-2261 / (206) 438-2010** **Analysis Turnaround Time** Calendar (C) or Work Days (W)	**Site Contact: Jennifer Ray** **Laboratory Contact: Elaine-Walker**	**5/15/2018** COC No: 1 **Carrier: Courier** 1 of 1 pages
Client Contact AECOM 1111 3rd Ave Suite 1600 Seattle, WA 98101 Phone: (206) 438-2700 Fax: 1+(866) 495-5288 Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling Portland, OR Project #: 60566335 Study: Surface Sediment-SMA	[x] 21 days [ ] Other _____		580-77301 Chain of Custody

Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Filtration Fraction	PCB Congeners 1668A	PCDD/Fs 1613B	Grain size ASTM D7928/D6913	Total organic carbon, Total solids 9060	Archive Archive -20 C	WQ - PCB Congeners 1668A	WQ - PCDD/Fs 1613B	WQ - TPH Diesel NWTPH-Dx	WQ - Metals, Mercury 6020B, 7470	WQ - Total Organic Carbon SM5310B	Sample Specific Notes:
PDI-SG-S158	5/14/2018	13:15	SS		LS	5		X	X	X	X	X						
PDI-SG-S161	5/14/2018	16:30	SS		LS	5		X	X	X	X	X						
PDI-SG-S250	5/14/2018	10:40	SS		AM	5		X	X	X	X	X						
PDI-SG-S249	5/14/2018	12:00	SS		AM	5		X	X	X	X	X						
PDI-SG-S248	5/14/2018	12:50	SS		AM	5		X	X	X	X	X						
PDI-SG-S247	5/14/2018	14:10	SS		AM	5		X	X	X	X	X						
PDI-SG-S246	5/14/2018	15:15	SS		AM	5		X	X	X	X	X						
PDI-SG-S252	5/14/2018	9:45	SS		AM	5		X	X	X	X	X						
PDI-SG-S244	5/14/2018	15:50	SS		AM	5		X	X	X	X	X						
PDI-SG-S227	5/14/2018	16:50	SS		AM	5		X	X	X	X	X						
PDI-RB-VV-180514	5/14/2018	17:30	W		MT	8							X	X	X	X	X	

Container Type: WMG=Wide Mouth Glass Jar, P=HDPE, PP=Polypropylene, AG=amber glass, G=glass, RC=Resin Column

Preservative: HCl = Hydrochloric Acid, H3PO4 = Phosphoric Acid, HNO3 = Nitric Acid

Fraction: D = Dissolved, PRT = Particulate, T = Total (unfiltered)

Sample Disposal

[ ] Return To Client [X] Disposal By Lab [X] Archive For 12 Months

Special Instructions/QC Requirements & Comments:

Separate reports for each lab

SMA Study samples - Log in seperately from SS Study samples

1.3, 2.7, 2.1

IR4 -3.2/-3.4

Relinquished by:	Company: AECOM	Date/Time: 5/15/18 1240	Received by:	Company: M.E.	Date/Time: 5/15/18 1240
Relinquished by:	Company: M.E.	Date/Time: 5/15/18 1315	Received by:	Company: TAPOR	Date/Time: 5/15/18 1315
Relinquished by:	Company: TAPOR	Date/Time: 5/16/18 1700	Received by:	Company: TA-Sea	Date/Time: 5/16/18 0915

Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-77301-1

Login Number: 77301
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	