TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

TestAmerica Job ID: 580-77233-1
Client Project/Site: Portland Harbor Pre-Remedial Design

For:
AECOM
1111 Third Ave
Suite 1600
Seattle, Washington 98101

Attn: Karen Mixon

M. Elaine Walker

Authorized for release by:
6/19/2018 4:44:58 PM

Elaine Walker, Project Manager II
(253)248-4972
elaine.walker@testamericainc.com

Table of Contents

Job ID: 580-77233-1

Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE
Client: AECOM
Project: Portland Harbor Pre-Remedial Design
Report Number: 580-77233-1

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

Sixteen samples were received on 5/11/2018 12:45 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.9º C, 1.8º C and 4.1º 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.

TOTAL ORGANIC CARBON

Samples PDI-SG-S004 (580-77233-1), PDI-SG-S003 (580-77233-2), PDI-SG-S028 (580-77233-3), PDI-SG-S087 (580-77233-4), PDI-SG-S088 (580-77233-5), PDI-SG-S091 (580-77233-6), PDI-SG-S021 (580-77233-7), PDI-SG-S094 (580-77233-8), PDI-SG-S101 (580-77233-9), PDI-SG-S024 (580-77233-10), PDI-SG-S025 (580-77233-11), PDI-SG-S027 (580-77233-12), PDI-SG-S026 (580-77233-13), PDI-SG-S007 (580-77233-14), PDI-SG-S012 (580-77233-15) and PDI-SG-S086 (580-77233-16) were analyzed for total organic carbon in accordance with EPA SW-846 Method 9060. The samples were analyzed on 05/17/2018 and 05/21/2018.

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

GRAIN SIZE

Samples PDI-SG-S004 (580-77233-1), PDI-SG-S003 (580-77233-2), PDI-SG-S028 (580-77233-3), PDI-SG-S087 (580-77233-4), PDI-SG-S088 (580-77233-5), PDI-SG-S091 (580-77233-6), PDI-SG-S021 (580-77233-7), PDI-SG-S094 (580-77233-8), PDI-SG-S101 (580-77233-9), PDI-SG-S024 (580-77233-10), PDI-SG-S025 (580-77233-11), PDI-SG-S027 (580-77233-12), PDI-SG-S026 (580-77233-13), PDI-SG-S007 (580-77233-14), PDI-SG-S012 (580-77233-15) and PDI-SG-S086 (580-77233-16) were analyzed for grain size in accordance with D422. The samples were analyzed on 05/30/2018 and 06/07/2018.

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

PERCENT SOLIDS

Samples PDI-SG-S004 (580-77233-1), PDI-SG-S003 (580-77233-2), PDI-SG-S028 (580-77233-3), PDI-SG-S087 (580-77233-4), PDI-SG-S088 (580-77233-5), PDI-SG-S091 (580-77233-6), PDI-SG-S021 (580-77233-7), PDI-SG-S094 (580-77233-8), PDI-SG-S101

Job ID: 580-77233-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

(580-77233-9), PDI-SG-S024 (580-77233-10), PDI-SG-S025 (580-77233-11), PDI-SG-S027 (580-77233-12), PDI-SG-S026 (580-77233-13), PDI-SG-S007 (580-77233-14), PDI-SG-S012 (580-77233-15) and PDI-SG-S086 (580-77233-16) were analyzed for percent solids in accordance with ASTM D2216. The samples were analyzed on 05/14/2018.

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

TOTAL SOLIDS @ 70C

Samples PDI-SG-S004 (580-77233-1), PDI-SG-S003 (580-77233-2), PDI-SG-S028 (580-77233-3), PDI-SG-S087 (580-77233-4), PDI-SG-S088 (580-77233-5), PDI-SG-S091 (580-77233-6), PDI-SG-S021 (580-77233-7), PDI-SG-S094 (580-77233-8), PDI-SG-S101 (580-77233-9), PDI-SG-S024 (580-77233-10), PDI-SG-S025 (580-77233-11), PDI-SG-S027 (580-77233-12), PDI-SG-S026 (580-77233-13), PDI-SG-S007 (580-77233-14), PDI-SG-S012 (580-77233-15) and PDI-SG-S086 (580-77233-16) were analyzed for Total Solids @ 70C. The samples were analyzed on 06/14/2018.

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: 580-77233-1

Qualifiers

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: 580-77233-1

Client Sample ID: PDI-SG-S004
Date Collected: 05/09/18 16:10
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-1
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	12000		2000	44	mg/Kg			05/17/18 17:16	1
Total Solids	62.0		0.1	0.1	%			05/14/18 09:27	1
Total Solids @ 70°C	62		0.10	0.10	%			06/14/18 16:50	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	4.7				%			05/30/18 06:21	1
Coarse Sand	0.2				%			05/30/18 06:21	1
Fine Sand	77.0				%			05/30/18 06:21	1
Gravel	0.3				%			05/30/18 06:21	1
Medium Sand	5.0				%			05/30/18 06:21	1
Silt	12.9				%			05/30/18 06:21	1

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

TestAmerica Job ID: 580-77233-1

Client Sample ID: PDI-SG-S003
Date Collected: 05/09/18 14:50
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-2
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	9900		2000	44	mg/Kg			05/17/18 17:27	1
Total Solids	59.0		0.1	0.1	%			05/14/18 09:27	1
Total Solids @ 70°C	58		0.10	0.10	%			06/14/18 16:50	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	6.3				%			05/30/18 06:21	1
Coarse Sand	0.1				%			05/30/18 06:21	1
Fine Sand	71.9				%			05/30/18 06:21	1
Gravel	0.1				%			05/30/18 06:21	1
Medium Sand	0.2				%			05/30/18 06:21	1
Silt	21.5				%			05/30/18 06:21	1

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

TestAmerica Job ID: 580-77233-1

Client Sample ID: PDI-SG-S028
Date Collected: 05/09/18 11:45
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-3
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	6800		2000	44	mg/Kg			05/17/18 17:32	1
Total Solids	66.9		0.1	0.1	%			05/14/18 09:27	1
Total Solids @ 70°C	66		0.10	0.10	%			06/14/18 16:50	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	4.4				%			05/30/18 06:21	1
Coarse Sand	0.1				%			05/30/18 06:21	1
Fine Sand	75.1				%			05/30/18 06:21	1
Gravel	0.0				%			05/30/18 06:21	1
Medium Sand	6.5				%			05/30/18 06:21	1
Silt	14.0				%			05/30/18 06:21	1

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

TestAmerica Job ID: 580-77233-1

Client Sample ID: PDI-SG-S087
Date Collected: 05/09/18 11:50
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-4
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	2100		2000	44	mg/Kg			05/17/18 17:37	1
Total Solids	73.4		0.1	0.1	%			05/14/18 09:27	1
Total Solids @ 70°C	77		0.10	0.10	%			06/14/18 17:09	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	3.2				%			06/07/18 09:21	1
Coarse Sand	5.9				%			06/07/18 09:21	1
Fine Sand	34.2				%			06/07/18 09:21	1
Gravel	6.4				%			06/07/18 09:21	1
Medium Sand	47.5				%			06/07/18 09:21	1
Silt	2.7				%			06/07/18 09:21	1

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

TestAmerica Job ID: 580-77233-1

Client Sample ID: PDI-SG-S088
Date Collected: 05/09/18 17:11
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-5
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	23000		2000	44	mg/Kg			05/17/18 17:42	1
Total Solids	50.9		0.1	0.1	%			05/14/18 09:27	1
Total Solids @ 70°C	51		0.10	0.10	%			06/14/18 17:09	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	8.7				%			06/07/18 09:21	1
Coarse Sand	0.1				%			06/07/18 09:21	1
Fine Sand	58.9				%			06/07/18 09:21	1
Gravel	0.0				%			06/07/18 09:21	1
Medium Sand	2.4				%			06/07/18 09:21	1
Silt	29.9				%			06/07/18 09:21	1

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

TestAmerica Job ID: 580-77233-1

Client Sample ID: PDI-SG-S091
Date Collected: 05/09/18 15:40
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-6
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	6000		2000	44	mg/Kg			05/17/18 17:47	1
Total Solids	71.0		0.1	0.1	%			05/14/18 09:27	1
Total Solids @ 70°C	71		0.10	0.10	%			06/14/18 17:09	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	3.6				%			06/07/18 09:21	1
Coarse Sand	0.2				%			06/07/18 09:21	1
Fine Sand	53.1				%			06/07/18 09:21	1
Gravel	0.0				%			06/07/18 09:21	1
Medium Sand	35.2				%			06/07/18 09:21	1
Silt	7.9				%			06/07/18 09:21	1

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

TestAmerica Job ID: 580-77233-1

Client Sample ID: PDI-SG-S021
Date Collected: 05/10/18 15:55
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-7
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	14000		2000	44	mg/Kg			05/17/18 17:52	1
Total Solids	56.8		0.1	0.1	%			05/14/18 09:27	1
Total Solids @ 70°C	56		0.10	0.10	%			06/14/18 17:09	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	6.6				%			06/07/18 09:21	1
Coarse Sand	5.2				%			06/07/18 09:21	1
Fine Sand	39.6				%			06/07/18 09:21	1
Gravel	6.4				%			06/07/18 09:21	1
Medium Sand	13.3				%			06/07/18 09:21	1
Silt	28.8				%			06/07/18 09:21	1

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

TestAmerica Job ID: 580-77233-1

Client Sample ID: PDI-SG-S094
Date Collected: 05/10/18 12:20
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-8
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	23000		2000	44	mg/Kg			05/17/18 17:57	1
Total Solids	42.1		0.1	0.1	%			05/14/18 09:27	1
Total Solids @ 70°C	42		0.10	0.10	%			06/14/18 17:09	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	13.2				%			06/07/18 09:21	1
Coarse Sand	0.0				%			06/07/18 09:21	1
Fine Sand	21.5				%			06/07/18 09:21	1
Gravel	0.0				%			06/07/18 09:21	1
Medium Sand	1.4				%			06/07/18 09:21	1
Silt	63.8				%			06/07/18 09:21	1

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

TestAmerica Job ID: 580-77233-1

Client Sample ID: PDI-SG-S101
Date Collected: 05/10/18 10:55
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-9
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	29000		2000	44	mg/Kg			05/21/18 12:57	1
Total Solids	38.5		0.1	0.1	%			05/14/18 09:27	1
Total Solids @ 70°C	39		0.10	0.10	%			06/14/18 17:09	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	16.3				%			06/07/18 09:21	1
Coarse Sand	0.1				%			06/07/18 09:21	1
Fine Sand	16.8				%			06/07/18 09:21	1
Gravel	0.0				%			06/07/18 09:21	1
Medium Sand	0.4				%			06/07/18 09:21	1
Silt	66.5				%			06/07/18 09:21	1

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

TestAmerica Job ID: 580-77233-1

Client Sample ID: PDI-SG-S024
Date Collected: 05/10/18 09:40
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-10
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	19000		2000	44	mg/Kg			05/21/18 16:28	1
Total Solids	43.2		0.1	0.1	%			05/14/18 09:27	1
Total Solids @ 70°C	45		0.10	0.10	%			06/14/18 17:09	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	20.0				%			06/07/18 09:21	1
Coarse Sand	0.2				%			06/07/18 09:21	1
Fine Sand	25.2				%			06/07/18 09:21	1
Gravel	0.0				%			06/07/18 09:21	1
Medium Sand	4.1				%			06/07/18 09:21	1
Silt	50.5				%			06/07/18 09:21	1

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

TestAmerica Job ID: 580-77233-1

Client Sample ID: PDI-SG-S025
Date Collected: 05/10/18 10:45
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-11
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	17000		2000	44	mg/Kg			05/21/18 13:02	1
Total Solids	43.5		0.1	0.1	%			05/14/18 09:27	1
Total Solids @ 70°C	44		0.10	0.10	%			06/14/18 17:09	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	14.2				%			06/07/18 09:21	1
Coarse Sand	0.0				%			06/07/18 09:21	1
Fine Sand	29.2				%			06/07/18 09:21	1
Gravel	0.0				%			06/07/18 09:21	1
Medium Sand	5.3				%			06/07/18 09:21	1
Silt	51.3				%			06/07/18 09:21	1

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

TestAmerica Job ID: 580-77233-1

Client Sample ID: PDI-SG-S027
Date Collected: 05/10/18 11:33
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-12
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	16000		2000	44	mg/Kg			05/21/18 14:11	1
Total Solids	43.0		0.1	0.1	%			05/14/18 09:27	1
Total Solids @ 70°C	45		0.10	0.10	%			06/14/18 17:09	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	18.7				%			06/07/18 09:21	1
Coarse Sand	0.0				%			06/07/18 09:21	1
Fine Sand	33.0				%			06/07/18 09:21	1
Gravel	0.0				%			06/07/18 09:21	1
Medium Sand	5.7				%			06/07/18 09:21	1
Silt	42.6				%			06/07/18 09:21	1

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

TestAmerica Job ID: 580-77233-1

Client Sample ID: PDI-SG-S026
Date Collected: 05/10/18 12:24
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-13
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	20000		2000	44	mg/Kg			05/21/18 14:16	1
Total Solids	41.9		0.1	0.1	%			05/14/18 09:27	1
Total Solids @ 70°C	43		0.10	0.10	%			06/14/18 17:09	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	20.5				%			06/07/18 09:21	1
Coarse Sand	0.0				%			06/07/18 09:21	1
Fine Sand	26.1				%			06/07/18 09:21	1
Gravel	0.0				%			06/07/18 09:21	1
Medium Sand	3.4				%			06/07/18 09:21	1
Silt	50.0				%			06/07/18 09:21	1

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

TestAmerica Job ID: 580-77233-1

Client Sample ID: PDI-SG-S007
Date Collected: 05/10/18 14:48
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-14
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	9300		2000	44	mg/Kg			05/21/18 14:22	1
Total Solids	60.4		0.1	0.1	%			05/14/18 09:27	1
Total Solids @ 70°C	61		0.10	0.10	%			06/14/18 17:09	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	7.9				%			06/07/18 09:21	1
Coarse Sand	0.3				%			06/07/18 09:21	1
Fine Sand	51.5				%			06/07/18 09:21	1
Gravel	0.0				%			06/07/18 09:21	1
Medium Sand	11.8				%			06/07/18 09:21	1
Silt	28.5				%			06/07/18 09:21	1

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

TestAmerica Job ID: 580-77233-1

Client Sample ID: PDI-SG-S012
Date Collected: 05/10/18 15:41
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-15
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	30000		2000	44	mg/Kg			05/21/18 14:26	1
Total Solids	40.2		0.1	0.1	%			05/14/18 09:27	1
Total Solids @ 70°C	40		0.10	0.10	%			06/14/18 17:09	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	22.2				%			06/07/18 09:21	1
Coarse Sand	0.1				%			06/07/18 09:21	1
Fine Sand	14.3				%			06/07/18 09:21	1
Gravel	0.0				%			06/07/18 09:21	1
Medium Sand	0.3				%			06/07/18 09:21	1
Silt	63.2				%			06/07/18 09:21	1

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

TestAmerica Job ID: 580-77233-1

Client Sample ID: PDI-SG-S086
Date Collected: 05/09/18 10:30
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-16
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	9400		2000	44	mg/Kg			05/21/18 14:32	1
Total Solids	65.8		0.1	0.1	%			05/14/18 09:27	1
Total Solids @ 70°C	67		0.10	0.10	%			06/14/18 17:09	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	5.3				%			06/07/18 09:21	1
Coarse Sand	0.6				%			06/07/18 09:21	1
Fine Sand	67.4				%			06/07/18 09:21	1
Gravel	0.0				%			06/07/18 09:21	1
Medium Sand	15.4				%			06/07/18 09:21	1
Silt	11.4				%			06/07/18 09:21	1

Method: 9060_PSEP - TOC (Puget Sound)

Lab Sample ID: MB 580-274172/3
Matrix: Solid
Analysis Batch: 274172

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			05/17/18 15:25	1

Lab Sample ID: LCS 580-274172/4
Matrix: Solid
Analysis Batch: 274172

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	5540		mg/Kg		120	68 - 149

Lab Sample ID: LCSD 580-274172/5
Matrix: Solid
Analysis Batch: 274172

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	5360		mg/Kg		116	68 - 149	3	32

Lab Sample ID: MB 580-274333/3
Matrix: Solid
Analysis Batch: 274333

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			05/21/18 12:08	1

Lab Sample ID: LCS 580-274333/4
Matrix: Solid
Analysis Batch: 274333

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	5590		mg/Kg		121	68 - 149

Lab Sample ID: LCSD 580-274333/5
Matrix: Solid
Analysis Batch: 274333

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	5530		mg/Kg		120	68 - 149	1	32

Lab Sample ID: MB 580-274350/3
Matrix: Solid
Analysis Batch: 274350

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			05/21/18 16:09	1

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

Lab Sample ID: LCS 580-274350/4
Matrix: Solid
Analysis Batch: 274350

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	5020		mg/Kg		109	68 - 149		

Lab Sample ID: LCSD 580-274350/5
Matrix: Solid
Analysis Batch: 274350

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	5270		mg/Kg		114	68 - 149	5	32

Lab Sample ID: 580-77233-10 MS
Matrix: Solid
Analysis Batch: 274350

Client Sample ID: PDI-SG-S024
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon - Duplicates	19000		120000	129000		mg/Kg		92	68 - 149		

Lab Sample ID: 580-77233-10 MSD
Matrix: Solid
Analysis Batch: 274350

Client Sample ID: PDI-SG-S024
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	19000		120000	136000		mg/Kg		98	68 - 149	5	32

Lab Sample ID: 580-77233-10 DU
Matrix: Solid
Analysis Batch: 274350

Client Sample ID: PDI-SG-S024
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Organic Carbon - Duplicates	19000			18400		mg/Kg				1	50

Lab Sample ID: 580-77233-10 TRL
Matrix: Solid
Analysis Batch: 274350

Client Sample ID: PDI-SG-S024
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		TRL Result	TRL Qualifier	Unit	D			RSD	RSD Limit
Total Organic Carbon - Duplicates	19000			18300		mg/Kg				0.9	20

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-77233-9 DU
Matrix: Solid
Analysis Batch: 273722

Client Sample ID: PDI-SG-S101
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Solids	38.5			38.7		%				0.5	20

Method: Moisture 70C - Percent Moisture, 70 C

Lab Sample ID: 580-77233-4 DU
Matrix: Solid
Analysis Batch: 276325

Client Sample ID: PDI-SG-S087
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Solids @ 70°C	77			76		%				1	20

Method: D7928/D6913 - ASTM D7928/D6913

Lab Sample ID: 580-77233-4 DU
Matrix: Solid
Analysis Batch: 275623

Client Sample ID: PDI-SG-S087
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Clay	3.2			3.4		%				6	20
Coarse Sand	5.9			5.9		%				0	20
Fine Sand	34.2			33.9		%				0.9	20
Gravel	6.4			8.8	F3	%				32	20
Medium Sand	47.5			46.9		%				1	20
Silt	2.7			1.1	F3	%				84	20

Lab Chronicle

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

TestAmerica Job ID: 580-77233-1

Client Sample ID: PDI-SG-S004
Date Collected: 05/09/18 16:10
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	274172	05/17/18 17:16	MP	TAL SEA
Total/NA	Analysis	D 2216		1	273722	05/14/18 09:27	JSM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	276316	06/14/18 16:50	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	274935	05/30/18 06:21	HJM	TAL SEA

Client Sample ID: PDI-SG-S003
Date Collected: 05/09/18 14:50
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	274172	05/17/18 17:27	MP	TAL SEA
Total/NA	Analysis	D 2216		1	273722	05/14/18 09:27	JSM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	276316	06/14/18 16:50	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	274935	05/30/18 06:21	HJM	TAL SEA

Client Sample ID: PDI-SG-S028
Date Collected: 05/09/18 11:45
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	274172	05/17/18 17:32	MP	TAL SEA
Total/NA	Analysis	D 2216		1	273722	05/14/18 09:27	JSM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	276316	06/14/18 16:50	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	274935	05/30/18 06:21	HJM	TAL SEA

Client Sample ID: PDI-SG-S087
Date Collected: 05/09/18 11:50
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	274172	05/17/18 17:37	MP	TAL SEA
Total/NA	Analysis	D 2216		1	273722	05/14/18 09:27	JSM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	276325	06/14/18 17:09	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	275623	06/07/18 09:21	HJM	TAL SEA

Client Sample ID: PDI-SG-S088
Date Collected: 05/09/18 17:11
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	274172	05/17/18 17:42	MP	TAL SEA

Lab Chronicle

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

TestAmerica Job ID: 580-77233-1

Client Sample ID: PDI-SG-S088
Date Collected: 05/09/18 17:11
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	273722	05/14/18 09:27	JSM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	276325	06/14/18 17:09	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	275623	06/07/18 09:21	HJM	TAL SEA

Client Sample ID: PDI-SG-S091
Date Collected: 05/09/18 15:40
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-6
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	274172	05/17/18 17:47	MP	TAL SEA
Total/NA	Analysis	D 2216		1	273722	05/14/18 09:27	JSM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	276325	06/14/18 17:09	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	275623	06/07/18 09:21	HJM	TAL SEA

Client Sample ID: PDI-SG-S021
Date Collected: 05/10/18 15:55
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	274172	05/17/18 17:52	MP	TAL SEA
Total/NA	Analysis	D 2216		1	273722	05/14/18 09:27	JSM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	276325	06/14/18 17:09	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	275623	06/07/18 09:21	HJM	TAL SEA

Client Sample ID: PDI-SG-S094
Date Collected: 05/10/18 12:20
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-8
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	274172	05/17/18 17:57	MP	TAL SEA
Total/NA	Analysis	D 2216		1	273722	05/14/18 09:27	JSM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	276325	06/14/18 17:09	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	275623	06/07/18 09:21	HJM	TAL SEA

Client Sample ID: PDI-SG-S101
Date Collected: 05/10/18 10:55
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-9
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	274333	05/21/18 12:57	MP	TAL SEA
Total/NA	Analysis	D 2216		1	273722	05/14/18 09:27	JSM	TAL SEA

Client Sample ID: PDI-SG-S101
Date Collected: 05/10/18 10:55
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-9
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture 70C		1	276325	06/14/18 17:09	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	275623	06/07/18 09:21	HJM	TAL SEA

Client Sample ID: PDI-SG-S024
Date Collected: 05/10/18 09:40
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-10
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	274350	05/21/18 16:28	MP	TAL SEA
Total/NA	Analysis	D 2216		1	273722	05/14/18 09:27	JSM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	276325	06/14/18 17:09	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	275623	06/07/18 09:21	HJM	TAL SEA

Client Sample ID: PDI-SG-S025
Date Collected: 05/10/18 10:45
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-11
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	274333	05/21/18 13:02	MP	TAL SEA
Total/NA	Analysis	D 2216		1	273722	05/14/18 09:27	JSM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	276325	06/14/18 17:09	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	275623	06/07/18 09:21	HJM	TAL SEA

Client Sample ID: PDI-SG-S027
Date Collected: 05/10/18 11:33
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-12
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	274333	05/21/18 14:11	MP	TAL SEA
Total/NA	Analysis	D 2216		1	273722	05/14/18 09:27	JSM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	276325	06/14/18 17:09	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	275623	06/07/18 09:21	HJM	TAL SEA

Client Sample ID: PDI-SG-S026
Date Collected: 05/10/18 12:24
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-13
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	274333	05/21/18 14:16	MP	TAL SEA
Total/NA	Analysis	D 2216		1	273722	05/14/18 09:27	JSM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	276325	06/14/18 17:09	HJM	TAL SEA

Lab Chronicle

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

TestAmerica Job ID: 580-77233-1

Client Sample ID: PDI-SG-S026
Date Collected: 05/10/18 12:24
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-13
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D7928/D6913		1	275623	06/07/18 09:21	HJM	TAL SEA

Client Sample ID: PDI-SG-S007
Date Collected: 05/10/18 14:48
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-14
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	274333	05/21/18 14:22	MP	TAL SEA
Total/NA	Analysis	D 2216		1	273722	05/14/18 09:27	JSM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	276325	06/14/18 17:09	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	275623	06/07/18 09:21	HJM	TAL SEA

Client Sample ID: PDI-SG-S012
Date Collected: 05/10/18 15:41
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-15
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	274333	05/21/18 14:26	MP	TAL SEA
Total/NA	Analysis	D 2216		1	273722	05/14/18 09:27	JSM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	276325	06/14/18 17:09	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	275623	06/07/18 09:21	HJM	TAL SEA

Client Sample ID: PDI-SG-S086
Date Collected: 05/09/18 10:30
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77233-16
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	274333	05/21/18 14:32	MP	TAL SEA
Total/NA	Analysis	D 2216		1	273722	05/14/18 09:27	JSM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	276325	06/14/18 17:09	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	275623	06/07/18 09:21	HJM	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: 580-77233-1
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	10-31-18
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: 580-77233-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-77233-1	PDI-SG-S004	Solid	05/09/18 16:10	05/11/18 12:45
580-77233-2	PDI-SG-S003	Solid	05/09/18 14:50	05/11/18 12:45
580-77233-3	PDI-SG-S028	Solid	05/09/18 11:45	05/11/18 12:45
580-77233-4	PDI-SG-S087	Solid	05/09/18 11:50	05/11/18 12:45
580-77233-5	PDI-SG-S088	Solid	05/09/18 17:11	05/11/18 12:45
580-77233-6	PDI-SG-S091	Solid	05/09/18 15:40	05/11/18 12:45
580-77233-7	PDI-SG-S021	Solid	05/10/18 15:55	05/11/18 12:45
580-77233-8	PDI-SG-S094	Solid	05/10/18 12:20	05/11/18 12:45
580-77233-9	PDI-SG-S101	Solid	05/10/18 10:55	05/11/18 12:45
580-77233-10	PDI-SG-S024	Solid	05/10/18 09:40	05/11/18 12:45
580-77233-11	PDI-SG-S025	Solid	05/10/18 10:45	05/11/18 12:45
580-77233-12	PDI-SG-S027	Solid	05/10/18 11:33	05/11/18 12:45
580-77233-13	PDI-SG-S026	Solid	05/10/18 12:24	05/11/18 12:45
580-77233-14	PDI-SG-S007	Solid	05/10/18 14:48	05/11/18 12:45
580-77233-15	PDI-SG-S012	Solid	05/10/18 15:41	05/11/18 12:45
580-77233-16	PDI-SG-S086	Solid	05/09/18 10:30	05/11/18 12:45

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) _____ [x] 21 days [ ] Other _____	**Site Contact: Jennifer Ray** **Laboratory Contact: Elaine-Walker**	5/11/2018 **Carrier: Courier**	COC No: 1 1 of 2 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

580-77233 Chain of Custody

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	Sample Specific Notes:
PDI-SG-S004	5/9/2018	16:10	SS		AC	5		X	X	X	X	X	
PDI-SG-S003	5/9/2018	14:50	SS		AC	5		X	X	X	X	X	
PDI-SG-S028	5/9/2018	11:45	SS		AC	5		X	X	X	X	X	
PDI-SG-S087	5/9/2018	11;50	SS		KK	5		X	X	X	X	X	
PDI-SG-S088	5/9/2018	17:11	SS		MT	5		X	X	X	X	X	
PDI-SG-S091	5/9/2018	15:40	SS		MT	5		X	X	X	X	X	
PDI-SG-S021	5/10/2018	15:55	SS		MT	5		X	X	X	X	X	
PDI-SG-S094	5/10/2018	12:20	SS		MT	5		X	X	X	X	X	
PDI-SG-S101	5/10/2018	10:55	SS		MT	5		X	X	X	X	X	
PDI-SG-S024	5/10/2018	9:40	SS	MS/MSD	MM	9		X	X	X	X	X	
PDI-SG-S025	5/10/2018	10:45	SS		MM	5		X	X	X	X	X	
PDI-SG-S027	5/10/2018	11:33	SS		MM	5		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

0.9, 4.1, 1.8

Relinquished by: [signature] 09	Company: AECOM	Date/Time: 5-11-18 1205	Received by: [signature]	Company: M.E.	Date/Time: 5-11-18 1205
Relinquished by: [signature]	Company: M.E.	Date/Time: 5/11/18 1245	Received by: [signature]	Company: TAPOR	Date/Time: 5/11/18 1246
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**	**Site Contact: Jennifer Ray** **Laboratory Contact: Elaine-Walker**	**5/11/2018** **Carrier: Courier**	COC No: 1 2 of 2 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	Sample Specific Notes:
PDI-SG-S026	5/10/2018	12:24	SS		MM	5		X	X	X	X	X	
PDI-SG-S007	5/10/2018	14:48	SS		MM	5		X	X	X	X	X	
PDI-SG-S012	5/10/2018	15:41	SS		MM	5		X	X	X	X	X	
PDI-SG-S080	5/9/18	10:30	SS		MT	5		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] *isposal 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

	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by: Michael McCoy	AECOM	5-11-18 1205	Jennifer Nyr	M.E.	5/11/18 1205
Relinquished by: Jennifer Nyr	M.E.	5/11/18 1245	[signature]	TAOR	5/11/18 1245
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

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

SURFACE SEDIMENT
CHAIN OF CUSTODY

Client Contact	Project Contact: Amy Dahl / Chelsey Cook	Site Contact: Jennifer Ray	5/11/2018	COC No. 1
AECOM	Tel: (206) 438-2261 / (206) 438-2010	Laboratory Contact: Elaine-Walker	Carrier: Courier	1 of 2 pages
1111 3rd Ave Suite 1600	Analysis Turnaround Time			
Seattle, WA 98101	Calendar (C) or Work Days (W)			
Phone: (206) 438-2700 Fax: 1+(866) 495-5288				
Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling	[x] 21 days			
Portland, OR	[ ] Other			
Project # 60566335 Study: Surface Sediment-SMA				

580-77233 Chain of Custody

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	Sample Specific Notes:
PDI-SG-S004	5/9/2018	16:10	SS		AC	5		X	X	X	X	X	
PDI-SG-S003	5/9/2018	14:50	SS		AC	5		X	X	X	X	X	
PDI-SG-S028	5/9/2018	11:45	SS		AC	5		X	X	X	X	X	
PDI-SG-S087	5/9/2018	11:50	SS		KK	5		X	X	X	X	X	
PDI-SG-S088	5/9/2018	17:11	SS		MT	5		X	X	X	X	X	
PDI-SG-S~~088~~ 091	5/9/2018	15:40	SS		MT	5		X	X	X	X	X	
PDI-SG-S021	5/10/2018	15:55	SS		MT	5		X	X	X	X	X	
PDI-SG-S094	5/10/2018	12:20	SS		MT	5		X	X	X	X	X	
PDI-SG-S101	5/10/2018	10:55	SS		MT	5		X	X	X	X	X	
PDI-SG-S024	5/10/2018	9:40	SS	MS/MSD	MM	9		X	X	X	X	X	
PDI-SG-S025	5/10/2018	10:45	SS		MM	5		X	X	X	X	X	
PDI-SG-S027	5/10/2018	11:33	SS		MM	5		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

0.9, 4.1, 1.8

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	AECOM	5-11-18 1205	[signature]	M.E.	5-11-18 1205
[signature]	M.E.	5/11/18 1245	[signature]	TAPOR	5/11/18 1246
[signature]	TAPOR	5/11/18 1700	B. [signature]	SEA TA	5.12.18 0945

IRY= 0.6/0.4 W/C.S.

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) _____ [x] 21 days [ ] Other _____	**Site Contact: Jennifer Ray** **Laboratory Contact: Elaine-Walker**	**5/11/2018** **Carrier: Courier**	COC No: 1 2 of 2 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				

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	Sample Specific Notes:
PDI-SG-S026	5/10/2018	12:24	SS		MM	5		X	X	X	X	X	
PDI-SG-S007	5/10/2018	14:48	SS		MM	5		X	X	X	X	X	
PDI-SG-S012	5/10/2018	15:41	SS		MM	5		X	X	X	X	X	
PDI-SG-S080	5/9/18	10 30	SS		MT	5		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

	Company	Date/Time		Company	Date/Time
Relinquished by: Michael McCoy	AECOM	5-11-18 1205	Received by: Jessica Nye	M.E.	5/11/18 1205
Relinquished by: Jessica Nye	M.E.	5/11/18 1245	Received by: [illegible]	TAOR	5/11/18 1245
Relinquished by: [illegible]	TAOR	5/11/18 1700	Received by: P. Lee	SEATAC	5.12.18 0945

Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-77233-1

Login Number: 77233
List Number: 1
Creator: Gonzales, Steve

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.	N/A	
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	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

580-77233 Field Sheet

Job:_____

Tracking # 442307592899 SO / PO / FO

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations.
File in the job folder with the COC.

Notes: Placed in freezer on 5/12/18 @ 17:20

Therm. ID: (AK-2) / AK-3 / AK-4 / AK-5 / HACCP / Other____

Ice ✓ Wet ✓ Gel ____ Other ____

Cooler Custody Seal: Seal

Sample Custody Seal: —

Cooler ID: —

Temp: Observed 2.1

From: Temp Blank ☑ Sample ☐

NCM Filed: Yes ☐ No ☐

	Yes	No	NA
Perchlorate has headspace?	☐	☐	☐
CoC is complete w/o discrepancies?	☐	☐	☐
Samples received within holding time?	☐	☐	☐
Sample preservatives verified?	☐	☐	☐
Cooler compromised/tampered with?	☐	☐	☐
Samples compromised/tampered with?	☐	☐	☐
Samples w/o discrepancies?	☐	☐	☐
Sample containers have legible labels?	☐	☐	☐
Containers are not broken or leaking?	☐	☐	☐
Sample date/times are provided.	☐	☐	☐
Appropriate containers are used?	☐	☐	☐
Sample bottles are completely filled?	☐	☐	☐
Zero headspace?*	☐	☐	☐
Multiphasic samples are not present?	☐	☐	☐
Sample temp OK?	☐	☐	☐
Sample out of temp?	☐	☐	☐

Initials: AZ Date: 5/12/18 Time 19:25

*Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")

W20 D boxed