

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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Tel: (253)922-2310

TestAmerica Job ID: 580-78604-6

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

For:

AECOM  
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Attn: Amy Dahl

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Authorized for release by:  
8/1/2018 12:49:52 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.*

1

2

3

4

5

6

7

8

9

10

11

12



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	5
Client Sample Results . . . . .	6
QC Sample Results . . . . .	18
Chronicle . . . . .	22
Certification Summary . . . . .	25
Sample Summary . . . . .	26
Chain of Custody . . . . .	27
Receipt Checklists . . . . .	29
Correspondence . . . . .	30

# Case Narrative

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

TestAmerica Job ID: 580-78604-6

**Job ID: 580-78604-6**

**Laboratory: TestAmerica Seattle**

**Narrative**

## CASE NARRATIVE Client: AECOM Project: Portland Harbor Pre-Remedial Design Report Number: 580-78604-6

### **REVISION 1: August 1, 2018**

This revision was required to remove the LCSSRM data from the 6020B metals QC section of the reports and 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**

The ten samples were received on 7/5/2018 3:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.3° C, 0.7° C and 2.2° 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.

### **RECEIPT EXCEPTIONS**

The following sample was activated for Manganese by 6020BLL analysis by the client on 7/10/2018: PDI-SG-B466 (580-78604-8) This analysis was not originally requested on the chain-of-custody (COC).

The following sample was activated by the client for TOC, Metals+Mn and Solids on 7/19/2018: PDI-SG-B468 (580-78604-9). These analysis were previously on hold.

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.

### **METALS (ICPMS)**

**Samples PDI-SG-B466 (580-78604-8) and PDI-SG-B468 (580-78604-9) were analyzed for Metals (ICPMS) in accordance with 6020A\_LL.** The samples were prepared on 07/09/2018 and 07/23/2018 and analyzed on 07/10/2018 and 07/23/2018.

Cadmium and Lead exceeded the RPD limit for the duplicate of sample PDI-SG-B468DU (580-78604-9).

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

### **TOTAL ORGANIC CARBON**

# Case Narrative

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

TestAmerica Job ID: 580-78604-6

## Job ID: 580-78604-6 (Continued)

### Laboratory: TestAmerica Seattle (Continued)

**Samples PDI-SG-B466 (580-78604-8) and PDI-SG-B468 (580-78604-9) were analyzed for total organic carbon in accordance with EPA SW-846 Method 9060.** The samples were analyzed on 07/12/2018 and 07/24/2018.

Total Organic Carbon - Duplicates was detected in method blank MB 580-278904/3 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

The test for the following sample was activated and added in the backlog after the holding time expired: PDI-SG-B468 (580-78604-9).

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

### GRAIN SIZE

**Samples PDI-SG-B458 (580-78604-1), PDI-SG-B470 (580-78604-2), PDI-SG-B469 (580-78604-3), PDI-SG-B456 (580-78604-4), PDI-SG-B462 (580-78604-5), PDI-SG-B463 (580-78604-6), PDI-SG-B464 (580-78604-7), PDI-SG-B466 (580-78604-8), PDI-SG-B468 (580-78604-9) and PDI-SG-B429 (580-78604-10) were analyzed for grain size in accordance with ASTM D7928/D6913.** The samples were analyzed on 07/16/2018.

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

### PERCENT SOLIDS

**Samples PDI-SG-B466 (580-78604-8) and PDI-SG-B468 (580-78604-9) were analyzed for percent solids in accordance with ASTM D2216.** The samples were analyzed on 07/09/2018 and 07/25/2018.

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

### TOTAL SOLIDS @ 70C

**Samples PDI-SG-B466 (580-78604-8) and PDI-SG-B468 (580-78604-9) were analyzed for Total Solids @ 70C.** The samples were analyzed on 07/16/2018.

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: 580-78604-6

## Qualifiers

### Metals

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.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.
F3	Duplicate RPD exceeds the control limit
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

### General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## 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: 580-78604-6

**Client Sample ID: PDI-SG-B458**

**Lab Sample ID: 580-78604-1**

**Date Collected: 07/02/18 11:00**

**Matrix: Solid**

**Date Received: 07/05/18 14:59**

**Method: D7928/D6913 - ASTM D7928/D6913**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	7.1				%			07/16/18 10:05	1
Coarse Sand	0.7				%			07/16/18 10:05	1
Fine Sand	47.4				%			07/16/18 10:05	1
Gravel	0.0				%			07/16/18 10:05	1
Medium Sand	1.3				%			07/16/18 10:05	1
Silt	43.5				%			07/16/18 10:05	1

# Client Sample Results

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

TestAmerica Job ID: 580-78604-6

**Client Sample ID: PDI-SG-B470**

**Lab Sample ID: 580-78604-2**

**Date Collected: 07/02/18 15:20**

**Matrix: Solid**

**Date Received: 07/05/18 14:59**

**Method: D7928/D6913 - ASTM D7928/D6913**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	2.6				%			07/16/18 10:05	1
Coarse Sand	0.1				%			07/16/18 10:05	1
Fine Sand	59.8				%			07/16/18 10:05	1
Gravel	0.0				%			07/16/18 10:05	1
Medium Sand	0.8				%			07/16/18 10:05	1
Silt	36.8				%			07/16/18 10:05	1

# Client Sample Results

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

TestAmerica Job ID: 580-78604-6

**Client Sample ID: PDI-SG-B469**

**Lab Sample ID: 580-78604-3**

**Date Collected: 07/02/18 16:30**

**Matrix: Solid**

**Date Received: 07/05/18 14:59**

**Method: D7928/D6913 - ASTM D7928/D6913**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	5.2				%			07/16/18 10:05	1
Coarse Sand	0.2				%			07/16/18 10:05	1
Fine Sand	47.4				%			07/16/18 10:05	1
Gravel	0.0				%			07/16/18 10:05	1
Medium Sand	0.2				%			07/16/18 10:05	1
Silt	47.0				%			07/16/18 10:05	1



# Client Sample Results

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

TestAmerica Job ID: 580-78604-6

**Client Sample ID: PDI-SG-B456**

**Lab Sample ID: 580-78604-4**

**Date Collected: 07/02/18 10:19**

**Matrix: Solid**

**Date Received: 07/05/18 14:59**

**Method: D7928/D6913 - ASTM D7928/D6913**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	3.2				%			07/16/18 10:05	1
Coarse Sand	0.0				%			07/16/18 10:05	1
Fine Sand	71.2				%			07/16/18 10:05	1
Gravel	0.0				%			07/16/18 10:05	1
Medium Sand	0.1				%			07/16/18 10:05	1
Silt	25.5				%			07/16/18 10:05	1

# Client Sample Results

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

TestAmerica Job ID: 580-78604-6

**Client Sample ID: PDI-SG-B462**

**Lab Sample ID: 580-78604-5**

**Date Collected: 07/02/18 11:56**

**Matrix: Solid**

**Date Received: 07/05/18 14:59**

**Method: D7928/D6913 - ASTM D7928/D6913**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	4.8				%			07/16/18 10:05	1
Coarse Sand	0.5				%			07/16/18 10:05	1
Fine Sand	55.8				%			07/16/18 10:05	1
Gravel	0.1				%			07/16/18 10:05	1
Medium Sand	1.0				%			07/16/18 10:05	1
Silt	37.8				%			07/16/18 10:05	1

# Client Sample Results

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

TestAmerica Job ID: 580-78604-6

**Client Sample ID: PDI-SG-B463**

**Lab Sample ID: 580-78604-6**

**Date Collected: 07/02/18 12:58**

**Matrix: Solid**

**Date Received: 07/05/18 14:59**

**Method: D7928/D6913 - ASTM D7928/D6913**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	2.1				%			07/16/18 10:05	1
Coarse Sand	0.0				%			07/16/18 10:05	1
Fine Sand	68.5				%			07/16/18 10:05	1
Gravel	0.0				%			07/16/18 10:05	1
Medium Sand	0.4				%			07/16/18 10:05	1
Silt	29.0				%			07/16/18 10:05	1

- 1
- 2
- 3
- 4
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- 6
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- 11
- 12

# Client Sample Results

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

TestAmerica Job ID: 580-78604-6

**Client Sample ID: PDI-SG-B464**

**Lab Sample ID: 580-78604-7**

**Date Collected: 07/02/18 14:39**

**Matrix: Solid**

**Date Received: 07/05/18 14:59**

**Method: D7928/D6913 - ASTM D7928/D6913**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	5.0				%			07/16/18 10:05	1
Coarse Sand	0.0				%			07/16/18 10:05	1
Fine Sand	48.8				%			07/16/18 10:05	1
Gravel	0.0				%			07/16/18 10:05	1
Medium Sand	0.1				%			07/16/18 10:05	1
Silt	46.0				%			07/16/18 10:05	1

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- 3
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- 9
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- 11
- 12

# Client Sample Results

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

TestAmerica Job ID: 580-78604-6

**Client Sample ID: PDI-SG-B466**

**Lab Sample ID: 580-78604-8**

**Date Collected: 07/02/18 15:34**

**Matrix: Solid**

**Date Received: 07/05/18 14:59**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	20000	B	2000	44	mg/Kg			07/12/18 14:52	1
Total Solids	55.4		0.1	0.1	%			07/09/18 10:42	1
Total Solids @ 70°C	55	H	0.10	0.10	%			07/16/18 08:09	1

## Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	4.0				%			07/16/18 10:05	1
Coarse Sand	0.0				%			07/16/18 10:05	1
Fine Sand	66.5				%			07/16/18 10:05	1
Gravel	0.0				%			07/16/18 10:05	1
Medium Sand	1.5				%			07/16/18 10:05	1
Silt	28.0				%			07/16/18 10:05	1

# Client Sample Results

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

TestAmerica Job ID: 580-78604-6

**Client Sample ID: PDI-SG-B466**

**Lab Sample ID: 580-78604-8**

**Date Collected: 07/02/18 15:34**

**Matrix: Solid**

**Date Received: 07/05/18 14:59**

**Percent Solids: 55.4**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	3.9		0.30	0.060	mg/Kg	☼	07/09/18 13:34	07/10/18 13:20	5
Cadmium	0.12	J	0.24	0.046	mg/Kg	☼	07/09/18 13:34	07/10/18 13:20	5
Copper	29		0.60	0.13	mg/Kg	☼	07/09/18 13:34	07/10/18 13:20	5
Lead	7.3		0.30	0.029	mg/Kg	☼	07/09/18 13:34	07/10/18 13:20	5
Zinc	79		3.0	0.96	mg/Kg	☼	07/09/18 13:34	07/10/18 13:20	5
Manganese	650		0.60	0.27	mg/Kg	☼	07/09/18 13:34	07/10/18 13:20	5

# Client Sample Results

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

TestAmerica Job ID: 580-78604-6

**Client Sample ID: PDI-SG-B468**

**Lab Sample ID: 580-78604-9**

**Date Collected: 07/02/18 16:33**

**Matrix: Solid**

**Date Received: 07/05/18 14:59**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	5900	H	2000	44	mg/Kg			07/24/18 14:51	1
Total Solids	61.9		0.1	0.1	%			07/25/18 12:01	1
Total Solids @ 70°C	64	H	0.10	0.10	%			07/16/18 08:10	1

## Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	2.2				%			07/16/18 10:05	1
Coarse Sand	0.0				%			07/16/18 10:05	1
Fine Sand	77.9				%			07/16/18 10:05	1
Gravel	0.0				%			07/16/18 10:05	1
Medium Sand	0.1				%			07/16/18 10:05	1
Silt	19.8				%			07/16/18 10:05	1

# Client Sample Results

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

TestAmerica Job ID: 580-78604-6

**Client Sample ID: PDI-SG-B468**

**Lab Sample ID: 580-78604-9**

**Date Collected: 07/02/18 16:33**

**Matrix: Solid**

**Date Received: 07/05/18 14:59**

**Percent Solids: 61.9**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	3.5		0.32	0.065	mg/Kg	☼	07/23/18 09:56	07/23/18 16:50	5
Cadmium	0.16	J	0.26	0.050	mg/Kg	☼	07/23/18 09:56	07/23/18 16:50	5
Copper	23		0.65	0.14	mg/Kg	☼	07/23/18 09:56	07/23/18 16:50	5
Lead	6.9		0.32	0.031	mg/Kg	☼	07/23/18 09:56	07/23/18 16:50	5
Zinc	70		3.2	1.0	mg/Kg	☼	07/23/18 09:56	07/23/18 16:50	5
Manganese	470		0.65	0.29	mg/Kg	☼	07/23/18 09:56	07/23/18 16:50	5



# Client Sample Results

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

TestAmerica Job ID: 580-78604-6

**Client Sample ID: PDI-SG-B429**

**Lab Sample ID: 580-78604-10**

**Date Collected: 07/03/18 10:15**

**Matrix: Solid**

**Date Received: 07/05/18 14:59**

**Method: D7928/D6913 - ASTM D7928/D6913**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	4.4				%			07/16/18 10:05	1
Coarse Sand	0.0				%			07/16/18 10:05	1
Fine Sand	57.7				%			07/16/18 10:05	1
Gravel	0.0				%			07/16/18 10:05	1
Medium Sand	0.2				%			07/16/18 10:05	1
Silt	37.7				%			07/16/18 10:05	1

# QC Sample Results

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

TestAmerica Job ID: 580-78604-6

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

**Lab Sample ID: MB 580-278436/21-A**  
**Matrix: Solid**  
**Analysis Batch: 278564**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 278436**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.25	0.050	mg/Kg		07/09/18 13:34	07/10/18 11:09	5
Cadmium	ND		0.20	0.039	mg/Kg		07/09/18 13:34	07/10/18 11:09	5
Copper	ND		0.50	0.11	mg/Kg		07/09/18 13:34	07/10/18 11:09	5
Lead	ND		0.25	0.024	mg/Kg		07/09/18 13:34	07/10/18 11:09	5
Zinc	ND		2.5	0.81	mg/Kg		07/09/18 13:34	07/10/18 11:09	5
Manganese	ND		0.50	0.23	mg/Kg		07/09/18 13:34	07/10/18 11:09	5

**Lab Sample ID: LCS 580-278436/22-A**  
**Matrix: Solid**  
**Analysis Batch: 278564**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 278436**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	200	201		mg/Kg		101	80 - 120
Cadmium	5.00	5.27		mg/Kg		105	80 - 120
Copper	25.0	25.7		mg/Kg		103	80 - 120
Lead	50.0	49.7		mg/Kg		99	80 - 120
Zinc	200	199		mg/Kg		100	80 - 120
Manganese	50.0	49.9		mg/Kg		100	80 - 120

**Lab Sample ID: LCSD 580-278436/23-A**  
**Matrix: Solid**  
**Analysis Batch: 278564**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 278436**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Arsenic	200	203		mg/Kg		102	80 - 120	1	20
Cadmium	5.00	5.28		mg/Kg		106	80 - 120	0	20
Copper	25.0	25.9		mg/Kg		103	80 - 120	1	20
Lead	50.0	50.1		mg/Kg		100	80 - 120	1	20
Zinc	200	197		mg/Kg		98	80 - 120	1	20
Manganese	50.0	49.4		mg/Kg		99	80 - 120	1	20

**Lab Sample ID: MB 580-279768/22-A**  
**Matrix: Solid**  
**Analysis Batch: 279898**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 279768**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.25	0.050	mg/Kg		07/23/18 09:56	07/23/18 16:33	5
Cadmium	ND		0.20	0.039	mg/Kg		07/23/18 09:56	07/23/18 16:33	5
Copper	ND		0.50	0.11	mg/Kg		07/23/18 09:56	07/23/18 16:33	5
Lead	ND		0.25	0.024	mg/Kg		07/23/18 09:56	07/23/18 16:33	5
Zinc	ND		2.5	0.81	mg/Kg		07/23/18 09:56	07/23/18 16:33	5
Manganese	ND		0.50	0.23	mg/Kg		07/23/18 09:56	07/23/18 16:33	5

**Lab Sample ID: LCS 580-279768/23-A**  
**Matrix: Solid**  
**Analysis Batch: 279898**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 279768**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	200	189		mg/Kg		95	80 - 120

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-78604-6

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

**Lab Sample ID: LCS 580-279768/23-A**  
**Matrix: Solid**  
**Analysis Batch: 279898**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 279768**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	5.00	4.71		mg/Kg		94	80 - 120
Copper	25.0	23.2		mg/Kg		93	80 - 120
Lead	50.0	46.6		mg/Kg		93	80 - 120
Zinc	200	186		mg/Kg		93	80 - 120
Manganese	50.0	46.1		mg/Kg		92	80 - 120

**Lab Sample ID: LCSD 580-279768/24-A**  
**Matrix: Solid**  
**Analysis Batch: 279898**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 279768**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Arsenic	200	186		mg/Kg		93	80 - 120	2	20
Cadmium	5.00	4.66		mg/Kg		93	80 - 120	1	20
Copper	25.0	23.5		mg/Kg		94	80 - 120	1	20
Lead	50.0	47.1		mg/Kg		94	80 - 120	1	20
Zinc	200	181		mg/Kg		90	80 - 120	3	20
Manganese	50.0	45.9		mg/Kg		92	80 - 120	0	20

**Lab Sample ID: 580-78604-9 MS**  
**Matrix: Solid**  
**Analysis Batch: 279898**

**Client Sample ID: PDI-SG-B468**  
**Prep Type: Total/NA**  
**Prep Batch: 279768**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	3.5		252	264		mg/Kg	☼	104	80 - 120
Cadmium	0.16	J	6.30	6.56		mg/Kg	☼	102	80 - 120
Copper	23		31.5	56.6		mg/Kg	☼	107	80 - 120
Lead	6.9		63.0	71.2		mg/Kg	☼	102	80 - 120
Zinc	70		252	326		mg/Kg	☼	102	80 - 120
Manganese	470		63.0	547	4	mg/Kg	☼	117	80 - 120

**Lab Sample ID: 580-78604-9 MSD**  
**Matrix: Solid**  
**Analysis Batch: 279898**

**Client Sample ID: PDI-SG-B468**  
**Prep Type: Total/NA**  
**Prep Batch: 279768**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Arsenic	3.5		258	272		mg/Kg	☼	104	80 - 120	3	20
Cadmium	0.16	J	6.44	6.44		mg/Kg	☼	97	80 - 120	2	20
Copper	23		32.2	56.4		mg/Kg	☼	104	80 - 120	0	20
Lead	6.9		64.4	72.4		mg/Kg	☼	102	80 - 120	2	20
Zinc	70		258	330		mg/Kg	☼	101	80 - 120	1	20
Manganese	470		64.4	532	4	mg/Kg	☼	91	80 - 120	3	20

**Lab Sample ID: 580-78604-9 DU**  
**Matrix: Solid**  
**Analysis Batch: 279898**

**Client Sample ID: PDI-SG-B468**  
**Prep Type: Total/NA**  
**Prep Batch: 279768**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Arsenic	3.5		3.34		mg/Kg	☼	4	20
Cadmium	0.16	J	0.210	J F5	mg/Kg	☼	28	20

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-78604-6

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

**Lab Sample ID: 580-78604-9 DU**  
**Matrix: Solid**  
**Analysis Batch: 279898**

**Client Sample ID: PDI-SG-B468**  
**Prep Type: Total/NA**  
**Prep Batch: 279768**

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Copper	23		24.4		mg/Kg	✱	7	20
Lead	6.9		9.40	F3	mg/Kg	✱	30	20
Zinc	70		70.7		mg/Kg	✱	0.9	20
Manganese	470		443		mg/Kg	✱	7	20

## Method: 9060\_PSEP - TOC (Puget Sound)

**Lab Sample ID: MB 580-278904/3**  
**Matrix: Solid**  
**Analysis Batch: 278904**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Total Organic Carbon - Duplicates	63.1	J	2000	44	mg/Kg			07/12/18 14:45	1

**Lab Sample ID: LCS 580-278904/4**  
**Matrix: Solid**  
**Analysis Batch: 278904**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

**Lab Sample ID: LCSD 580-278904/5**  
**Matrix: Solid**  
**Analysis Batch: 278904**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit

**Lab Sample ID: 580-78604-8 MS**  
**Matrix: Solid**  
**Analysis Batch: 278904**

**Client Sample ID: PDI-SG-B466**  
**Prep Type: Total/NA**

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier		Result	Qualifier				
Total Organic Carbon - Duplicates	20000	B	120000	137000		mg/Kg		97	68 - 149

**Lab Sample ID: 580-78604-8 MSD**  
**Matrix: Solid**  
**Analysis Batch: 278904**

**Client Sample ID: PDI-SG-B466**  
**Prep Type: Total/NA**

Analyte	Sample	Sample	Spike Added	MSD	MSD	Unit	D	%Rec	%Rec. Limits	RPD	Limit
	Result	Qualifier		Result	Qualifier						
Total Organic Carbon - Duplicates	20000	B	120000	131000		mg/Kg		92	68 - 149	4	32

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-78604-6

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

**Lab Sample ID: 580-78604-8 DU**  
**Matrix: Solid**  
**Analysis Batch: 278904**

**Client Sample ID: PDI-SG-B466**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon - Duplicates	20000	B	17700		mg/Kg		11	50

**Lab Sample ID: 580-78604-8 TRL**  
**Matrix: Solid**  
**Analysis Batch: 278904**

**Client Sample ID: PDI-SG-B466**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	TRL Result	TRL Qualifier	Unit	D	RSD	RSD Limit
Total Organic Carbon - Duplicates	20000	B	17700		mg/Kg		6	20

**Lab Sample ID: MB 580-279996/3**  
**Matrix: Solid**  
**Analysis Batch: 279996**

**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			07/24/18 14:17	1

**Lab Sample ID: LCS 580-279996/4**  
**Matrix: Solid**  
**Analysis Batch: 279996**

**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	4270	3990		mg/Kg		93	68 - 149

**Lab Sample ID: LCSD 580-279996/5**  
**Matrix: Solid**  
**Analysis Batch: 279996**

**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	4120		mg/Kg		96	68 - 149	3	32

# Lab Chronicle

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

TestAmerica Job ID: 580-78604-6

**Client Sample ID: PDI-SG-B458**

**Date Collected: 07/02/18 11:00**

**Date Received: 07/05/18 14:59**

**Lab Sample ID: 580-78604-1**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D7928/D6913		1	279096	07/16/18 10:05	HJM	TAL SEA

**Client Sample ID: PDI-SG-B470**

**Date Collected: 07/02/18 15:20**

**Date Received: 07/05/18 14:59**

**Lab Sample ID: 580-78604-2**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D7928/D6913		1	279096	07/16/18 10:05	HJM	TAL SEA

**Client Sample ID: PDI-SG-B469**

**Date Collected: 07/02/18 16:30**

**Date Received: 07/05/18 14:59**

**Lab Sample ID: 580-78604-3**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D7928/D6913		1	279096	07/16/18 10:05	HJM	TAL SEA

**Client Sample ID: PDI-SG-B456**

**Date Collected: 07/02/18 10:19**

**Date Received: 07/05/18 14:59**

**Lab Sample ID: 580-78604-4**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D7928/D6913		1	279096	07/16/18 10:05	HJM	TAL SEA

**Client Sample ID: PDI-SG-B462**

**Date Collected: 07/02/18 11:56**

**Date Received: 07/05/18 14:59**

**Lab Sample ID: 580-78604-5**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D7928/D6913		1	279096	07/16/18 10:05	HJM	TAL SEA

**Client Sample ID: PDI-SG-B463**

**Date Collected: 07/02/18 12:58**

**Date Received: 07/05/18 14:59**

**Lab Sample ID: 580-78604-6**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D7928/D6913		1	279096	07/16/18 10:05	HJM	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-78604-6

**Client Sample ID: PDI-SG-B464**

**Lab Sample ID: 580-78604-7**

**Date Collected: 07/02/18 14:39**

**Matrix: Solid**

**Date Received: 07/05/18 14:59**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D7928/D6913		1	279096	07/16/18 10:05	HJM	TAL SEA

**Client Sample ID: PDI-SG-B466**

**Lab Sample ID: 580-78604-8**

**Date Collected: 07/02/18 15:34**

**Matrix: Solid**

**Date Received: 07/05/18 14:59**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	278904	07/12/18 14:52	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	278413	07/09/18 10:42	SPS	TAL SEA
Total/NA	Analysis	Moisture 70C		1	279638	07/16/18 08:09	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	279096	07/16/18 10:05	HJM	TAL SEA

**Client Sample ID: PDI-SG-B466**

**Lab Sample ID: 580-78604-8**

**Date Collected: 07/02/18 15:34**

**Matrix: Solid**

**Date Received: 07/05/18 14:59**

**Percent Solids: 55.4**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			278436	07/09/18 13:34	T1H	TAL SEA
Total/NA	Analysis	6020B		5	278564	07/10/18 13:20	FCW	TAL SEA

**Client Sample ID: PDI-SG-B468**

**Lab Sample ID: 580-78604-9**

**Date Collected: 07/02/18 16:33**

**Matrix: Solid**

**Date Received: 07/05/18 14:59**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	279996	07/24/18 14:51	Z1T	TAL SEA
Total/NA	Analysis	D 2216		1	280006	07/25/18 12:01	JCM	TAL SEA
Total/NA	Analysis	Moisture 70C		1	279638	07/16/18 08:10	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	279096	07/16/18 10:05	HJM	TAL SEA

**Client Sample ID: PDI-SG-B468**

**Lab Sample ID: 580-78604-9**

**Date Collected: 07/02/18 16:33**

**Matrix: Solid**

**Date Received: 07/05/18 14:59**

**Percent Solids: 61.9**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			279768	07/23/18 09:56	T1H	TAL SEA
Total/NA	Analysis	6020B		5	279898	07/23/18 16:50	FCW	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-78604-6

**Client Sample ID: PDI-SG-B429**

**Lab Sample ID: 580-78604-10**

**Date Collected: 07/03/18 10:15**

**Matrix: Solid**

**Date Received: 07/05/18 14:59**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D7928/D6913		1	279096	07/16/18 10:05	HJM	TAL SEA

**Laboratory References:**

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

- 1
- 2
- 3
- 4
- 5
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- 7
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- 10
- 11
- 12



# Accreditation/Certification Summary

Client: AECOM

TestAmerica Job ID: 580-78604-6

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

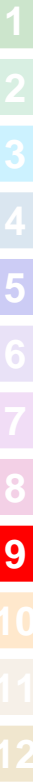
# Sample Summary

Client: AECOM

Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-78604-6

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-78604-1	PDI-SG-B458	Solid	07/02/18 11:00	07/05/18 14:59
580-78604-2	PDI-SG-B470	Solid	07/02/18 15:20	07/05/18 14:59
580-78604-3	PDI-SG-B469	Solid	07/02/18 16:30	07/05/18 14:59
580-78604-4	PDI-SG-B456	Solid	07/02/18 10:19	07/05/18 14:59
580-78604-5	PDI-SG-B462	Solid	07/02/18 11:56	07/05/18 14:59
580-78604-6	PDI-SG-B463	Solid	07/02/18 12:58	07/05/18 14:59
580-78604-7	PDI-SG-B464	Solid	07/02/18 14:39	07/05/18 14:59
580-78604-8	PDI-SG-B466	Solid	07/02/18 15:34	07/05/18 14:59
580-78604-9	PDI-SG-B468	Solid	07/02/18 16:33	07/05/18 14:59
580-78604-10	PDI-SG-B429	Solid	07/03/18 10:15	07/05/18 14:59



580-78604



580-78604 Chain of Custody

TestAmerica-Seattle							SURFACE SEDIMENT CHAIN OF CUSTODY																				
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							7/5/2018 COC No: 1						
Client Contact							Analysis Turnaround Time							Carrier: Courier							1 of 1 pages						
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 Sample Type: D/U							Calendar (C) or Work Days (W) <input type="checkbox"/> 21 days <input checked="" type="checkbox"/> Other _ASAP_ (sediments only)							PCB Congeners 1668A PCDD/Fs 1613B TPH Diesel, Metals, Mercury NWTPH-Dx, 6020B, 7471A Grain size ASTM D7928/D6913 Total organic carbon, Total solids 9060 (104C & 70C) Archive Archive -20 C PAHs, BEHP, Tributyltin, 8270-SIM, 8270-LL, Kron/Unger Atterberg Limits ASTM D4318 WQ - PCB Congeners 1668A WQ - PCDD/Fs 1613B TPH Diesel, Metals, Mercury NWTPH-Dx, 6020B, 7471A WQ - Total Organic Carbon SM5310B WQ - PAHs 8270-SIM WQ - BEHP EPA 8270D-LL WQ - Tributyltin Kron/Unger							Sample Specific Notes:						
Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	PCB Congeners 1668A	PCDD/Fs 1613B	TPH Diesel, Metals, Mercury NWTPH-Dx, 6020B, 7471A	Grain size ASTM D7928/D6913	Total organic carbon, Total solids 9060 (104C & 70C)	Archive Archive -20 C	PAHs, BEHP, Tributyltin, 8270-SIM, 8270-LL, Kron/Unger	Atterberg Limits ASTM D4318	WQ - PCB Congeners 1668A	WQ - PCDD/Fs 1613B	TPH Diesel, Metals, Mercury NWTPH-Dx, 6020B, 7471A	WQ - Total Organic Carbon SM5310B	WQ - PAHs 8270-SIM	WQ - BEHP EPA 8270D-LL	WQ - Tributyltin Kron/Unger					
PDI-SG-B458	7/2/2018	11:00	SS		AC	7		H	H	H	x	H	H	H													
PDI-SG-B470	7/2/2018	15:20	SS		AC	8		H	H	H	x	H	H	H	H												
PDI-SG-B469	7/2/2018	16:30	SS		AC	8		H	H	H	x	H	H	H	H												
PDI-SG-B456	7/2/2018	10:19	SS		SH	7		H	H	H	x	H	H	H													
PDI-SG-B462	7/2/2018	11:56	SS		SH	8		H	H	H	x	H	H	H	H												
PDI-SG-B463	7/2/2018	12:58	SS	MS/MSD	SH	14		H	H	H	x	H	H	H	H												
PDI-SG-B464	7/2/2018	14:39	SS		SH	8		H	H	H	x	H	H	H	H												
PDI-SG-B466	7/2/2018	15:34	SS		SH	8		H	H	x*	x*	x*	H	H	H												
PDI-SG-B468	7/2/2018	14:02 14:33	SS		SH	8		H	H	H	x	H	H	H	H												
PDI-SG-B429	7/3/2018	10:15	SS		SH	7		H	H	H	x	H	H	H													
RB-VV-180703-1720	7/3/2018	17:20	W		SH	14										x	x	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  Disposal By Lab  Archive For 12 Months

Special Instructions/QC Requirements & Comments:

Separate reports for each lab.  
x\* - Analyze for grain size, metals (6020B analytes only), and TOC (9060 @ 104C & 70C) ASAP. Rush TAT for these take precedent over remaining rush grain size analyses requested ASAP.  
H - Hold analyses pending further instruction.

0.7, 1.02, 0.3

Relinquished by: <i>[Signature]</i>	Company: <i>M.E.</i>	Date/Time: 7/5/18 1234	Received by: <i>[Signature]</i>	Company: <i>M.E.</i>	Date/Time: 7/5/18 1235
Relinquished by: <i>[Signature]</i>	Company: <i>M.E.</i>	Date/Time: 7/5/18 1500	Received by: <i>[Signature]</i>	Company: <i>TAPOR</i>	Date/Time: 7/5/18 1500
Relinquished by: <i>[Signature]</i>	Company: <i>TAPOR</i>	Date/Time: 7/5/18 1700	Received by: <i>[Signature]</i>	Company: <i>SFA TO</i>	Date/Time: 7/6/18 0930

= 0.8 / 0.8 w/cs

IR5 = 0.7 / 0.7 w/cs

= -1.9 / -1.9 w/cs

Revised CSL

580-78604



580-78604 Chain of Custody

### SURFACE SEDIMENT CHAIN OF CUSTODY

Site Contact: Jennifer Roy  
Laboratory Contact: Elaine Walker

Project Contact: Amy Dahl / Chesley Cook  
Tel: (206) 438-2551 / (206) 438-2010

Client Contact  
1111 3rd Ave Suite 1600  
Seattle, WA 98101

Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling  
Portland, OR

Project #: 60566335 Study: Surface Sediment  
Sample Type: D/U

Calendar (C) or Work Days (W)  
21 days  
 21 days  
 Other \_ASAP\_ (sediments only)

Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.
7/2/2018	11:00	SS	SS	AC	7
7/2/2018	15:20	SS	SS	AC	8
7/2/2018	16:30	SS	SS	AC	8
7/2/2018	10:19	SS	SS	SH	7
7/2/2018	11:36	SS	SS	SH	8
7/2/2018	12:58	SS	MS/MSD	SH	14
7/2/2018	14:39	SS	SS	SH	8
7/2/2018	15:34	SS	SS	SH	8
7/2/2018	14:02/14:38	SS	SS	SH	8
7/2/2018	10:15	SS	SS	SH	7
7/2/2018	17:20	W	W	SH	14

Container Type: MRG=High Mouth Glass Jar, P=HDPE, PF=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)

Special Instructions/QC Requirements & Comments:  
Separate reports for each lab.  
X\* - Analyze for grain size, metals (6020B analytes only), and TOC (9060 @ 104C & 70C) ASAP. Rush TAT for these take precedent over remaining rush grain size analyses requested ASAP.  
H - Hold analyses pending further instruction.

Relinquished by	Relinquished Company	Date/Time	Received by	Received Company	Date/Time
<i>[Signature]</i>	M.E.	7/5/18 12:34	<i>[Signature]</i>	M.E.	7/5/18 12:35
<i>[Signature]</i>	M.E.	7/5/18 15:00	<i>[Signature]</i>	JAPOR	7/5/18 15:00
<i>[Signature]</i>	JAPOR	7/5/18 17:00	<i>[Signature]</i>	SFP TO	7/6/18 09:30

\*\*\* \* Metals PCB, Solids activated  
 \* \* \* \* \* Mon hold samples Per Secor  
 7/19/18 (FD)  
 \* \* \* \* \* Revised corrected  
 changed sample Ed +1720  
 Add PDS -  
 +170 remove (K) Per Nelson  
 7/22/18

IR5 = 0.7 / 10.7 w/c.s.  
 = -1.9 / -1.9 w/c.s.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12

# Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-78604-6

**Login Number: 78604**

**List Source: TestAmerica Seattle**

**List Number: 1**

**Creator: O'Connell, Jason I**

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	

## Presley, Kim

---

**From:** Dahl, Amy <amy.dahl@aecom.com>  
**Sent:** Thursday, July 19, 2018 6:02 PM  
**To:** Presley, Kim  
**Cc:** Walker, M Elaine; Ray, Jennifer; Cook, Chelsey  
**Subject:** FW: TestAmerica Seattle sample confirmation files from 580-78604-6 Portland Harbor Pre-Remedial Design  
**Attachments:** SampleLoginAck\_580-78604-6 [Std\_Tal\_Login\_Ack].pdf; COC 580-78604 (201807061632).pdf  
**Categories:** Red category

### -External Email-

---

On the attached SDG, we need to add Mn and rush the metals, TOC, and total solids to PDI-SG-B468 (580-78604-9).

How are the rush metals coming along and will you be able to report Mn from the original runs? Here is a list of SDGs that have the rush analysis:

580-78527-6  
580-78604-6  
580-78750-6  
SDG picked up 7/16, no confirmation received yet

**Amy Dahl, PhD**  
Chemist, Environment, Pacific Northwest  
D +1-206-438-2261  
[amy.dahl@aecom.com](mailto:amy.dahl@aecom.com)

**AECOM**  
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Seattle, WA 98101, United States  
T +1-206-438-2700  
[aecom.com](http://aecom.com)

---

**From:** Presley, Kim [<mailto:Kim.Presley@testamericainc.com>]  
**Sent:** Friday, July 06, 2018 5:28 PM  
**To:** Presley, Kim; Dahl, Amy; Cook, Chelsey  
**Subject:** RE: TestAmerica Seattle sample confirmation files from 580-78604-6 Portland Harbor Pre-Remedial Design

Sorry this is the Rush work. Not the RB and Hold for Seattle

Hello,

Attached please find the Seattle sample confirmation files for job 580-78604-6; Portland Harbor Pre-Remedial Design

Please feel free to contact me or your PM Elaine Walker if you have any questions.

Thank you.

Please let us know if we met your expectations by rating the service you received from TestAmerica on this project by visiting our website at: [Project Feedback](#)

**KIM A PRESLEY**  
Project Manager Assistant

**TestAmerica Seattle**  
THE LEADER IN ENVIRONMENTAL TESTING

Tel: 253.922.2310  
[www.testamericainc.com](http://www.testamericainc.com)

Reference: [249727]  
Attachments: 2



**Presley, Kim**

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**From:** Dahl, Amy <amy.dahl@aecom.com>  
**Sent:** Tuesday, July 10, 2018 5:20 PM  
**To:** Ray, Jennifer; Presley, Kim; Walker, M Elaine  
**Cc:** Cook, Chelsey; Mixon, Karen  
**Subject:** need to add Mn to rush metals samples

**Importance:** High

**-External Email-**

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Karen pointed out that we need to add manganese on those rush samples for metals and TOC.

Can you please add manganese to the following samples in house and to future samples submitted for rush metals/TOC:

580-78527-3 PDI-SG-B441  
580-78527-15 PDI-SG-B455  
580-78527-17 PDI-SG-B454  
580-78527-18 PDI-SG-B453  
580-78527-19 PDI-SG-B453-D  
580-78527-23 PDI-SG-B460  
580-78604-8 PDI-SG-B466

Elaine and Jennifer, please confirm receipt of this message.

Thank you,

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**Amy Dahl, PhD**  
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**AECOM**  
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Seattle, WA 98101, United States  
T +1-206-438-2700  
[aecom.com](http://aecom.com)

---

**From:** Ray, Jennifer  
**Sent:** Tuesday, July 03, 2018 12:12 PM  
**To:** Presley, Kim; Walker, M Elaine; Dahl, Amy; Cook, Chelsey  
**Subject:** RE: another rush request

Kim-

You are correct there is no rush Dx. Please note that it is only Metals (6020B) included in the rush revision as well, mercury should not be included. Yes we still need the other grain size analyses performed, however, these 5 requested on the revised COC take precedence (see Amy's email at the start of the chain below). Let me know if you have other questions.



Thanks,

**Jennifer Ray, EIT**  
Environmental Engineering, Environment, Portland  
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M +1-971-373-1622  
[jennifer.ray@aecom.com](mailto:jennifer.ray@aecom.com)

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COMMUNICATION/ATTORNEY WORK PRODUCT*

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**From:** Presley, Kim [mailto:Kim.Presley@testamericainc.com]  
**Sent:** Tuesday, July 03, 2018 12:04 PM  
**To:** Walker, M Elaine; Dahl, Amy; Ray, Jennifer; Cook, Chelsey  
**Subject:** RE: another rush request

Jennifer,

Please confirm

No Dx are needed on the rush samples. Just Metals, Grainsize and TOC. (no GS for B453-D).

Also- the COC indicates all Grain Size on all samples to be rushed. Do we need to run any other grain size than the 5 you have circled on the revised COC?

**KIM A PRESLEY**  
Project Management Assistant

**TestAmerica**  
THE LEADER IN ENVIRONMENTAL TESTING

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**SHIPPING ALERT: Independence Day, Wednesday July 4<sup>th</sup> 2018**

For the upcoming Independence Day holiday (observed Wednesday, July 4<sup>th</sup>) FedEx and UPS will not have scheduled service on Wednesday July 4<sup>th</sup>.

If you have BOD samples or any short hold samples arriving over the weekend or being delivered Monday July 2<sup>rd</sup> or Tuesday July 3<sup>rd</sup> we ask that you contact your Project Manager in advance to ensure your samples meet all holding time criteria.

We are thankful for your business and hope that you have a wonderful and safe holiday!

---

**From:** Walker, M Elaine  
**Sent:** Tuesday, July 03, 2018 12:00 PM  
**To:** Presley, Kim  
**Subject:** FW: another rush request

**SHIPPING ALERT: Independence Day, Wednesday July 4<sup>th</sup> 2018**

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We are thankful for your business and hope that you have a wonderful and safe holiday!

**M. ELAINE WALKER**  
Project Manager

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**From:** Ray, Jennifer [<mailto:jennifer.ray@aecom.com>]  
**Sent:** Monday, July 02, 2018 2:14 PM  
**To:** Walker, M Elaine  
**Cc:** Dahl, Amy; Cook, Chelsey; Mixon, Karen  
**Subject:** RE: another rush request

**-External Email-**

---

Elaine-  
Attached is the revised COC for the rush requests on samples submitted today. Please let me know if you have questions.  
Thanks,

**Jennifer Ray, EIT**  
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[jennifer.ray@aecom.com](mailto:jennifer.ray@aecom.com)

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---

**From:** Dahl, Amy  
**Sent:** Monday, July 02, 2018 1:26 PM  
**To:** Walker, M Elaine <[Elaine.Walker@testamericainc.com](mailto:Elaine.Walker@testamericainc.com)> (<[Elaine.Walker@testamericainc.com](mailto:Elaine.Walker@testamericainc.com)>)  
**Cc:** Cook, Chelsey; Ray, Jennifer; Mixon, Karen  
**Subject:** another rush request  
**Importance:** High

Hi Elaine, we have about 15 sediment samples that require rush analysis for metals, TOC, and grain size (standard TAT for PCB congeners, dioxin/furans, TPH, and mercury).

6 of them were picked up today and Jennifer will be submitting revised COCs shortly to add the rush analytes and samples. The other 9 samples will be arriving over the next few weeks. We will clearly mark the samples and analytes requiring rush TAT on the COCs.

What turn around can you commit to for the rush analytes? How will you report them if they are mixed with other samples on hold?

These rush analyses take precedence over the other grain size rush we are submitting right now.

Thank you,

**Amy Dahl**, PhD  
Chemist, Environment, Pacific Northwest  
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[amy.dahl@aecom.com](mailto:amy.dahl@aecom.com)

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