

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: 580-79722-3

Client Project/Site: Portland Harbor Pre-Remedial Design

For:

AECOM
1111 Third Ave
Suite 1600
Seattle, Washington 98101

Attn: Amy Dahl

M. Elaine Walker

Authorized for release by:
9/25/2018 10:30:35 AM

Elaine Walker, Project Manager II
(253)248-4972

elaine.walker@testamericainc.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

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	7
QC Sample Results	22
Chronicle	30
Certification Summary	31
Sample Summary	32
Chain of Custody	33
Receipt Checklists	37
Isotope Dilution Summary	38

Case Narrative

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

TestAmerica Job ID: 580-79722-3

Job ID: 580-79722-3

Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE

Client: AECOM

Project: Portland Harbor Pre-Remedial Design

Report Number: 580-79722-3

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

Four samples were received on 8/20/2018 3:10 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.8° C.

The following samples were activated for all on hold analyses by the client on 9/11/2018: PDI-SG-B473 (580-79722-1), PDI-SG-B467 (580-79722-2), and PDI-SG-B465 (580-79722-3).

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

This report contains results for PCB Congeners by Method 1668A, performed at TestAmerica Knoxville.

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.

POLYCHLORINATED BIPHENYLS CONGENERS (PCBS)

Samples PDI-SG-B473 (580-79722-1), PDI-SG-B467 (580-79722-2) and PDI-SG-B465 (580-79722-3) were analyzed for polychlorinated biphenyls congeners (PCBs) in accordance with EPA Method 1668A. The samples were prepared on 09/13/2018 and analyzed on 09/24/2018.

Several analytes were detected in method blank MB 140-23571/10-B at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

PCB-178L failed the surrogate recovery criteria high for PDI-SG-B465 (580-79722-3). Refer to the QC report for details.

One ore more Isotope Dilution Analyte (IDA) recoveries are above the method recommended limit for the following sample: PDI-SG-B465 (580-79722-3). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Cleanup standard, PCB 178L, recovery is above the method recommended limit for the following sample: PDI-SG-B465 (580-79722-3).

One ore more ion abundance ratios are outside criteria for the Isotope Dilution Analytes (IDA) associated with the following sample: PDI-SG-B465 (580-79722-3).

Case Narrative

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

TestAmerica Job ID: 580-79722-3

Job ID: 580-79722-3 (Continued)

Laboratory: TestAmerica Seattle (Continued)

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

1

2

3

4

5

6

7

8

9

10

11

12

Definitions/Glossary

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

TestAmerica Job ID: 580-79722-3

Qualifiers

Dioxin

Qualifier	Qualifier Description
C93	The compound co-eluted with PCB-93
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.
C90	The compound co-eluted with PCB-90
C98	The compound co-eluted with PCB-98
C	The compound co-eluted with other compounds
C86	The compound co-eluted with PCB-86
B	Compound was found in the blank and sample.
C110	The compound co-eluted with PCB-110
C85	The compound co-eluted with PCB-85
C108	The compound co-eluted with PCB-108
C12	The compound co-eluted with PCB-12
C129	The compound co-eluted with PCB-129
C139	The compound co-eluted with PCB-139
C134	The compound co-eluted with PCB-134
C147	The compound co-eluted with PCB-147
C135	The compound co-eluted with PCB-135
C156	The compound co-eluted with PCB-156
C128	The compound co-eluted with PCB-128
C153	The compound co-eluted with PCB-153
C171	The compound co-eluted with PCB-171
C183	The compound co-eluted with PCB-183
C180	The compound co-eluted with PCB-180
C198	The compound co-eluted with PCB-198
C20	The compound co-eluted with PCB-20
C26	The compound co-eluted with PCB-26
C18	The compound co-eluted with PCB-18
C21	The compound co-eluted with PCB-21
C40	The compound co-eluted with PCB-40
C44	The compound co-eluted with PCB-44
C45	The compound co-eluted with PCB-45
C50	The compound co-eluted with PCB-50
C59	The compound co-eluted with PCB-59
C49	The compound co-eluted with PCB-49
C61	The compound co-eluted with PCB-61
C43	The compound co-eluted with PCB-43
C88	The compound co-eluted with PCB-88
C83	The compound co-eluted with PCB-83
X	Surrogate is outside control limits
*	Isotope Dilution analyte is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor

TestAmerica Seattle

Definitions/Glossary

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

TestAmerica Job ID: 580-79722-3

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
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: 580-79722-3

Client Sample ID: PDI-SG-B473

Lab Sample ID: 580-79722-1

Date Collected: 08/18/18 10:18

Matrix: Solid

Date Received: 08/20/18 15:10

Percent Solids: 63.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	ND		0.0076	0.00018	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-2	0.0025	J B q	0.0076	0.00020	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-3	ND		0.0076	0.00022	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-4	ND		0.015	0.0024	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-5	ND		0.0076	0.0019	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-6	ND		0.0076	0.0017	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-7	ND		0.0076	0.0018	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-8	0.0047	J q	0.015	0.0016	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-9	ND		0.0076	0.0018	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-10	ND		0.0076	0.0019	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-11	0.015	B q	0.015	0.0017	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-12	ND	C	0.015	0.0017	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-13	ND	C12	0.015	0.0017	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-14	ND		0.0076	0.0015	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-15	0.0048	J q	0.0076	0.0018	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-16	0.0041	J q	0.0076	0.00011	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-17	0.0076		0.0076	0.00010	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-18	0.011	J C q	0.015	0.000089	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-19	0.00099	J q	0.0076	0.00012	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-20	0.026	C	0.015	0.00045	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-21	0.012	J C	0.015	0.00044	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-22	0.0068	J	0.0076	0.00046	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-23	ND		0.0076	0.00046	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-24	ND		0.0076	0.000085	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-25	0.0022	J	0.0076	0.00042	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-26	0.0032	J C q	0.015	0.00044	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-27	ND		0.0076	0.000074	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-28	0.026	C20	0.015	0.00045	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-29	0.0032	J C26 q	0.015	0.00044	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-30	0.011	J C18 q	0.015	0.000089	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-31	0.021		0.015	0.00044	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-32	0.0036	J	0.0076	0.000071	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-33	0.012	J C21	0.015	0.00044	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-34	ND		0.0076	0.00048	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-35	0.0012	J	0.0076	0.00046	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-36	ND		0.0076	0.00045	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-37	0.0056	J q	0.0076	0.00046	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-38	ND		0.0076	0.00048	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-39	ND		0.0076	0.00043	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-40	0.015	J C	0.023	0.00025	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-41	0.015	J C40	0.023	0.00025	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-42	0.0083		0.0076	0.00025	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-43	0.0010	J C q	0.015	0.00024	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-44	0.041	C B	0.023	0.00022	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-45	0.0046	J C q	0.015	0.00027	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-46	0.0012	J	0.0076	0.00032	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-47	0.041	B C44	0.023	0.00022	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-48	0.0065	J	0.0076	0.00025	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-49	0.031	C	0.015	0.00021	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-79722-3

Client Sample ID: PDI-SG-B473

Lab Sample ID: 580-79722-1

Date Collected: 08/18/18 10:18

Matrix: Solid

Date Received: 08/20/18 15:10

Percent Solids: 63.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	0.0033	J C q	0.015	0.00025	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-51	0.0046	J C45 q	0.015	0.00027	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-52	0.050		0.0076	0.00025	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-53	0.0033	J C50 q	0.015	0.00025	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-54	ND		0.0076	0.000010	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-55	0.00086	J q	0.0076	0.00018	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-56	0.015		0.0076	0.00018	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-57	ND		0.0076	0.00019	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-58	0.00042	J q	0.0076	0.00019	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-59	0.0024	J C q	0.023	0.00018	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-60	0.0059	J	0.0076	0.00019	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-61	0.068	C B	0.030	0.00018	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-62	0.0024	J C59 q	0.023	0.00018	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-63	0.0022	J	0.0076	0.00017	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-64	0.014		0.0076	0.00017	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-65	0.041	B C44	0.023	0.00022	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-66	0.044		0.0076	0.00018	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-67	0.00096	J q	0.0076	0.00016	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-68	0.0014	J	0.0076	0.00017	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-69	0.031	C49	0.015	0.00021	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-70	0.068	C61 B	0.030	0.00018	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-71	0.015	J C40	0.023	0.00025	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-72	0.0024	J	0.0076	0.00018	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-73	0.0010	J C43 q	0.015	0.00024	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-74	0.068	C61 B	0.030	0.00018	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-75	0.0024	J C59 q	0.023	0.00018	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-76	0.068	C61 B	0.030	0.00018	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-77	0.0038	J	0.0076	0.00018	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-78	ND		0.0076	0.00019	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-79	0.00079	J q	0.0076	0.00016	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-80	ND		0.0076	0.00016	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-81	ND		0.0076	0.00017	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-82	0.0078		0.0076	0.00026	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-83	0.067	C	0.015	0.00024	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-84	0.018		0.0076	0.00026	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-85	0.015	J C	0.023	0.00019	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-86	0.055	C	0.046	0.00019	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-87	0.055	C86	0.046	0.00019	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-88	0.013	J C	0.015	0.00023	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-89	ND		0.0076	0.00025	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-90	0.086	C	0.023	0.00020	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-91	0.013	J C88	0.015	0.00023	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-92	0.018		0.0076	0.00022	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-93	0.0013	J C q	0.015	0.00023	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-94	ND		0.0076	0.00025	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-95	0.063		0.0076	0.00025	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-96	ND		0.0076	0.00019	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-97	0.055	C86	0.046	0.00019	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-98	0.0026	J C q	0.015	0.00022	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-79722-3

Client Sample ID: PDI-SG-B473

Lab Sample ID: 580-79722-1

Date Collected: 08/18/18 10:18

Matrix: Solid

Date Received: 08/20/18 15:10

Percent Solids: 63.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	0.067	C83	0.015	0.00024	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-100	0.0013	J C93 q	0.015	0.00023	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-101	0.086	C90	0.023	0.00020	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-102	0.0026	J C98 q	0.015	0.00022	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-103	0.0023	J	0.0076	0.00022	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-104	ND		0.0076	0.00017	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-105	0.026		0.0076	0.00076	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-106	ND		0.0076	0.00078	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-107	0.0099		0.0076	0.00084	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-108	0.0023	J C q	0.015	0.00080	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-109	0.055	C86	0.046	0.00019	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-110	0.10	C	0.015	0.00016	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-111	ND		0.0076	0.00016	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-112	ND		0.0076	0.00017	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-113	0.086	C90	0.023	0.00020	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-114	ND		0.0076	0.00075	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-115	0.10	C110	0.015	0.00016	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-116	0.015	J C85	0.023	0.00019	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-117	0.015	J C85	0.023	0.00019	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-118	0.079		0.0076	0.00074	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-119	0.055	C86	0.046	0.00019	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-120	ND		0.0076	0.00016	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-121	ND		0.0076	0.00017	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-122	ND		0.0076	0.00090	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-123	ND		0.0076	0.00078	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-124	0.0023	J q C108	0.015	0.00080	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-125	0.055	C86	0.046	0.00019	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-126	ND		0.0076	0.00079	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-127	ND		0.0076	0.00078	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-128	0.021	C	0.015	0.0011	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-129	0.12	C	0.030	0.0011	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-130	0.0098		0.0076	0.0014	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-131	ND		0.0076	0.0015	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-132	0.036		0.0076	0.0014	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-133	0.0029	J q	0.0076	0.0014	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-134	0.0082	J C	0.015	0.0014	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-135	0.030	C q	0.015	0.00012	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-136	0.011		0.0076	0.000087	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-137	0.0046	J	0.0076	0.0012	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-138	0.12	C129	0.030	0.0011	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-139	0.0020	J C q	0.015	0.0012	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-140	0.0020	J C139 q	0.015	0.0012	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-141	0.018		0.0076	0.0013	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-142	ND		0.0076	0.0014	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-143	0.0082	J C134	0.015	0.0014	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-144	0.0032	J	0.0076	0.00011	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-145	ND		0.0076	0.000082	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-146	0.023		0.0076	0.0012	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-147	0.10	C	0.015	0.0014	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-79722-3

Client Sample ID: PDI-SG-B473

Lab Sample ID: 580-79722-1

Date Collected: 08/18/18 10:18

Matrix: Solid

Date Received: 08/20/18 15:10

Percent Solids: 63.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	ND		0.0076	0.00012	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-149	0.10	C147	0.015	0.0014	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-150	0.00052	J q	0.0076	0.000079	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-151	0.030	C135 q	0.015	0.00012	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-152	ND		0.0076	0.000085	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-153	0.10	C	0.015	0.00096	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-154	0.0027	J q	0.0076	0.000094	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-155	ND		0.0076	0.000079	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-156	0.012	J C	0.015	0.0012	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-157	0.012	J C156	0.015	0.0012	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-158	0.011		0.0076	0.00086	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-159	ND		0.0076	0.00091	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-160	0.12	C129	0.030	0.0011	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-161	ND		0.0076	0.00091	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-162	ND		0.0076	0.00090	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-163	0.12	C129	0.030	0.0011	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-164	0.0088		0.0076	0.00096	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-165	ND		0.0076	0.0010	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-166	0.021	C128	0.015	0.0011	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-167	0.0048	J	0.0076	0.00068	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-168	0.10	C153	0.015	0.00096	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-169	ND		0.0076	0.00066	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-170	0.026		0.0076	0.00049	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-171	0.0081	J C	0.015	0.00047	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-172	0.0040	J q	0.0076	0.00047	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-173	0.0081	J C171	0.015	0.00047	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-174	0.022	q	0.0076	0.00044	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-175	ND		0.0076	0.00042	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-176	0.0018	J q	0.0076	0.00032	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-177	0.017		0.0076	0.00045	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-178	0.0072	J	0.0076	0.00046	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-179	0.013		0.0076	0.00034	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-180	0.054	C	0.015	0.00035	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-181	ND		0.0076	0.00042	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-182	ND		0.0076	0.00041	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-183	0.017	C	0.015	0.00041	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-184	ND		0.0076	0.00035	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-185	0.017	C183	0.015	0.00041	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-186	ND		0.0076	0.00034	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-187	0.039		0.0076	0.00039	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-188	ND		0.0076	0.00030	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-189	ND		0.0076	0.00088	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-190	0.0054	J	0.0076	0.00031	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-191	0.0015	J	0.0076	0.00032	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-192	ND		0.0076	0.00036	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-193	0.054	C180	0.015	0.00035	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-194	0.014		0.0076	0.0013	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-195	0.0069	J	0.0076	0.0014	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-196	0.0075	J	0.0076	0.00039	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-79722-3

Client Sample ID: PDI-SG-B473

Lab Sample ID: 580-79722-1

Date Collected: 08/18/18 10:18

Matrix: Solid

Date Received: 08/20/18 15:10

Percent Solids: 63.3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	0.00061	J q	0.0076	0.00029	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-198	0.014	J C q	0.015	0.00039	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-199	0.014	J C198 q	0.015	0.00039	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-200	0.0019	J q	0.0076	0.00026	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-201	0.0016	J q	0.0076	0.00027	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-202	0.0035	J	0.0076	0.00030	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-203	0.0076	q	0.0076	0.00035	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-204	ND		0.0076	0.00029	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-205	ND		0.0076	0.0011	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-206	0.0085		0.0076	0.0014	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-207	ND		0.0076	0.00092	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-208	ND		0.0076	0.00089	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
PCB-209	0.013	q	0.0076	0.000043	ng/g	☼	09/13/18 11:15	09/24/18 06:21	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
PCB-1L	63		30 - 140				09/13/18 11:15	09/24/18 06:21	1
PCB-3L	63		30 - 140				09/13/18 11:15	09/24/18 06:21	1
PCB-4L	80		30 - 140				09/13/18 11:15	09/24/18 06:21	1
PCB-15L	81		30 - 140				09/13/18 11:15	09/24/18 06:21	1
PCB-19L	90		30 - 140				09/13/18 11:15	09/24/18 06:21	1
PCB-37L	89		30 - 140				09/13/18 11:15	09/24/18 06:21	1
PCB-54L	103		30 - 140				09/13/18 11:15	09/24/18 06:21	1
PCB-77L	91		30 - 140				09/13/18 11:15	09/24/18 06:21	1
PCB-81L	89		30 - 140				09/13/18 11:15	09/24/18 06:21	1
PCB-104L	82		30 - 140				09/13/18 11:15	09/24/18 06:21	1
PCB-105L	93		30 - 140				09/13/18 11:15	09/24/18 06:21	1
PCB-114L	92		30 - 140				09/13/18 11:15	09/24/18 06:21	1
PCB-118L	92		30 - 140				09/13/18 11:15	09/24/18 06:21	1
PCB-123L	90		30 - 140				09/13/18 11:15	09/24/18 06:21	1
PCB-126L	88		30 - 140				09/13/18 11:15	09/24/18 06:21	1
PCB-155L	98		30 - 140				09/13/18 11:15	09/24/18 06:21	1
PCB-156L	86	C	30 - 140				09/13/18 11:15	09/24/18 06:21	1
PCB-157L	86	C156	30 - 140				09/13/18 11:15	09/24/18 06:21	1
PCB-167L	87		30 - 140				09/13/18 11:15	09/24/18 06:21	1
PCB-169L	91		30 - 140				09/13/18 11:15	09/24/18 06:21	1
PCB-170L	85		30 - 140				09/13/18 11:15	09/24/18 06:21	1
PCB-188L	92		30 - 140				09/13/18 11:15	09/24/18 06:21	1
PCB-189L	85		30 - 140				09/13/18 11:15	09/24/18 06:21	1
PCB-202L	108		30 - 140				09/13/18 11:15	09/24/18 06:21	1
PCB-205L	75		30 - 140				09/13/18 11:15	09/24/18 06:21	1
PCB-206L	83		30 - 140				09/13/18 11:15	09/24/18 06:21	1
PCB-208L	96		30 - 140				09/13/18 11:15	09/24/18 06:21	1
PCB-209L	80		30 - 140				09/13/18 11:15	09/24/18 06:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
PCB-28L	97		40 - 125				09/13/18 11:15	09/24/18 06:21	1
PCB-111L	96		40 - 125				09/13/18 11:15	09/24/18 06:21	1
PCB-178L	103		40 - 125				09/13/18 11:15	09/24/18 06:21	1

Client Sample Results

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

TestAmerica Job ID: 580-79722-3

Client Sample ID: PDI-SG-B467

Lab Sample ID: 580-79722-2

Date Collected: 08/18/18 12:29

Matrix: Solid

Date Received: 08/20/18 15:10

Percent Solids: 51.7

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	ND		0.0095	0.00012	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-2	0.0051	J B	0.0095	0.00014	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-3	0.0015	J	0.0095	0.00015	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-4	ND		0.019	0.0069	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-5	ND		0.0095	0.0059	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-6	ND		0.0095	0.0052	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-7	ND		0.0095	0.0053	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-8	ND		0.019	0.0048	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-9	ND		0.0095	0.0054	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-10	ND		0.0095	0.0058	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-11	0.040	B	0.019	0.0051	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-12	ND	C	0.019	0.0053	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-13	ND	C12	0.019	0.0053	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-14	ND		0.0095	0.0045	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-15	0.0094	J	0.0095	0.0058	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-16	ND		0.0095	0.000066	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-17	0.0054	J q	0.0095	0.000059	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-18	ND	C	0.019	0.000052	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-19	ND		0.0095	0.000072	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-20	0.025	C	0.019	0.00057	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-21	0.0069	J C	0.019	0.00056	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-22	ND		0.0095	0.00058	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-23	ND		0.0095	0.00058	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-24	ND		0.0095	0.000050	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-25	0.0016	J q	0.0095	0.00053	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-26	0.0040	J C	0.019	0.00056	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-27	ND		0.0095	0.000043	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-28	0.025	C20	0.019	0.00057	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-29	0.0040	J C26	0.019	0.00056	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-30	ND	C18	0.019	0.000052	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-31	0.017	J q	0.019	0.00056	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-32	0.0017	J q	0.0095	0.000041	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-33	0.0069	J C21	0.019	0.00056	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-34	ND		0.0095	0.00060	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-35	ND		0.0095	0.00058	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-36	ND		0.0095	0.00056	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-37	0.0082	J q	0.0095	0.00058	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-38	ND		0.0095	0.00060	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-39	ND		0.0095	0.00054	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-40	0.010	J q C	0.028	0.000028	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-41	0.010	J q C40	0.028	0.000028	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-42	0.0068	J q	0.0095	0.000028	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-43	ND	C	0.019	0.000026	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-44	0.043	C B	0.028	0.000025	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-45	0.0041	J q C	0.019	0.000029	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-46	ND		0.0095	0.000036	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-47	0.043	C44 B	0.028	0.000025	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-48	0.0037	J q	0.0095	0.000028	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-49	0.031	C	0.019	0.000023	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-79722-3

Client Sample ID: PDI-SG-B467

Lab Sample ID: 580-79722-2

Date Collected: 08/18/18 12:29

Matrix: Solid

Date Received: 08/20/18 15:10

Percent Solids: 51.7

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	ND	C	0.019	0.000027	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-51	0.0041	J q C45	0.019	0.000029	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-52	0.069		0.0095	0.000028	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-53	ND	C50	0.019	0.000027	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-54	ND		0.0095	0.00019	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-55	0.00098	J q	0.0095	0.000020	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-56	0.018		0.0095	0.000020	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-57	ND		0.0095	0.000021	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-58	ND		0.0095	0.000021	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-59	ND	C	0.028	0.000020	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-60	0.0092	J	0.0095	0.000021	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-61	0.074	C B	0.038	0.000019	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-62	ND	C59	0.028	0.000020	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-63	0.0011	J q	0.0095	0.000019	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-64	0.017		0.0095	0.000019	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-65	0.043	C44 B	0.028	0.000025	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-66	0.043	q	0.0095	0.000019	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-67	ND		0.0095	0.000018	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-68	ND		0.0095	0.000018	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-69	0.031	C49	0.019	0.000023	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-70	0.074	C61 B	0.038	0.000019	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-71	0.010	J q C40	0.028	0.000028	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-72	ND		0.0095	0.000020	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-73	ND	C43	0.019	0.000026	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-74	0.074	C61 B	0.038	0.000019	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-75	ND	C59	0.028	0.000020	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-76	0.074	C61 B	0.038	0.000019	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-77	0.0046	J	0.0095	0.000020	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-78	ND		0.0095	0.000021	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-79	ND		0.0095	0.000018	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-80	ND		0.0095	0.000018	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-81	ND		0.0095	0.000019	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-82	0.0094	J q	0.0095	0.000032	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-83	0.088	C	0.019	0.000029	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-84	0.015	q	0.0095	0.000032	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-85	0.026	J C	0.028	0.000023	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-86	0.079	C	0.057	0.000024	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-87	0.079	C86	0.057	0.000024	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-88	0.0081	J q C	0.019	0.000029	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-89	ND		0.0095	0.000031	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-90	0.10	q C	0.028	0.000024	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-91	0.0081	J q C88	0.019	0.000029	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-92	0.017	q	0.0095	0.000027	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-93	ND	C	0.019	0.000027	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-94	ND		0.0095	0.000031	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-95	0.087		0.0095	0.000030	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-96	ND		0.0095	0.000023	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-97	0.079	C86	0.057	0.000024	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-98	ND	C	0.019	0.000027	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-79722-3

Client Sample ID: PDI-SG-B467

Lab Sample ID: 580-79722-2

Date Collected: 08/18/18 12:29

Matrix: Solid

Date Received: 08/20/18 15:10

Percent Solids: 51.7

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	0.088	C83	0.019	0.00029	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-100	ND	C93	0.019	0.00027	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-101	0.10	q C90	0.028	0.00024	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-102	ND	C98	0.019	0.00027	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-103	ND		0.0095	0.00027	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-104	ND		0.0095	0.00021	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-105	0.049		0.0095	0.0015	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-106	ND		0.0095	0.0017	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-107	0.011	q	0.0095	0.0018	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-108	0.0036	J q C	0.019	0.0017	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-109	0.079	C86	0.057	0.00024	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-110	0.13	q C	0.019	0.00020	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-111	ND		0.0095	0.00019	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-112	ND		0.0095	0.00020	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-113	0.10	q C90	0.028	0.00024	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-114	ND		0.0095	0.0015	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-115	0.13	q C110	0.019	0.00020	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-116	0.026	J C85	0.028	0.00023	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-117	0.026	J C85	0.028	0.00023	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-118	0.12		0.0095	0.0016	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-119	0.079	C86	0.057	0.00024	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-120	ND		0.0095	0.00020	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-121	ND		0.0095	0.00020	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-122	ND		0.0095	0.0019	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-123	0.0041	J	0.0095	0.0016	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-124	0.0036	J q C108	0.019	0.0017	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-125	0.079	C86	0.057	0.00024	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-126	ND		0.0095	0.0018	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-127	ND		0.0095	0.0016	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-128	0.025	C	0.019	0.0016	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-129	0.16	C	0.038	0.0017	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-130	0.0087	J q	0.0095	0.0022	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-131	ND		0.0095	0.0023	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-132	0.030	q	0.0095	0.0022	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-133	ND		0.0095	0.0021	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-134	0.0057	J q C	0.019	0.0022	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-135	0.044	q C	0.019	0.000079	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-136	0.016		0.0095	0.000057	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-137	0.0064	J q	0.0095	0.0019	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-138	0.16	C129	0.038	0.0017	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-139	ND	C	0.019	0.0019	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-140	ND	C139	0.019	0.0019	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-141	0.019		0.0095	0.0020	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-142	ND		0.0095	0.0021	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-143	0.0057	J q C134	0.019	0.0022	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-144	0.0071	J q	0.0095	0.000071	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-145	ND		0.0095	0.000054	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-146	0.016	q	0.0095	0.0019	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-147	0.091	q C	0.019	0.0021	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-79722-3

Client Sample ID: PDI-SG-B467

Lab Sample ID: 580-79722-2

Date Collected: 08/18/18 12:29

Matrix: Solid

Date Received: 08/20/18 15:10

Percent Solids: 51.7

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	ND		0.0095	0.000076	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-149	0.091	q C147	0.019	0.0021	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-150	ND		0.0095	0.000052	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-151	0.044	q C135	0.019	0.000079	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-152	ND		0.0095	0.000056	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-153	0.13	C	0.019	0.0015	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-154	0.0013	J q	0.0095	0.000061	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-155	ND		0.0095	0.000052	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-156	0.021	C	0.019	0.0017	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-157	0.021	C156	0.019	0.0017	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-158	0.016		0.0095	0.0013	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-159	ND		0.0095	0.0014	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-160	0.16	C129	0.038	0.0017	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-161	ND		0.0095	0.0014	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-162	ND		0.0095	0.0014	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-163	0.16	C129	0.038	0.0017	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-164	0.011		0.0095	0.0015	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-165	ND		0.0095	0.0016	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-166	0.025	C128	0.019	0.0016	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-167	0.0045	J q	0.0095	0.0011	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-168	0.13	C153	0.019	0.0015	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-169	ND		0.0095	0.0012	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-170	0.032		0.0095	0.00024	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-171	0.0087	J q C	0.019	0.00025	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-172	0.0046	J q	0.0095	0.00024	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-173	0.0087	J q C171	0.019	0.00025	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-174	0.031	q	0.0095	0.00023	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-175	ND		0.0095	0.00022	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-176	0.0035	J q	0.0095	0.00017	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-177	0.014	q	0.0095	0.00024	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-178	0.0065	J q	0.0095	0.00024	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-179	0.012		0.0095	0.00018	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-180	0.079	C	0.019	0.00019	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-181	ND		0.0095	0.00022	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-182	ND		0.0095	0.00021	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-183	0.016	J C	0.019	0.00022	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-184	ND		0.0095	0.00018	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-185	0.016	J C183	0.019	0.00022	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-186	ND		0.0095	0.00018	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-187	0.037		0.0095	0.00021	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-188	ND		0.0095	0.00016	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-189	0.0030	J	0.0095	0.00095	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-190	0.0021	J q	0.0095	0.00016	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-191	ND		0.0095	0.00017	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-192	ND		0.0095	0.00019	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-193	0.079	C180	0.019	0.00019	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-194	0.014	q	0.0095	0.0010	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-195	0.0057	J	0.0095	0.0011	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-196	ND		0.0095	0.00010	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-79722-3

Client Sample ID: PDI-SG-B467

Lab Sample ID: 580-79722-2

Date Collected: 08/18/18 12:29

Matrix: Solid

Date Received: 08/20/18 15:10

Percent Solids: 51.7

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	ND		0.0095	0.000079	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-198	0.018	J q C	0.019	0.00011	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-199	0.018	J q C198	0.019	0.00011	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-200	ND		0.0095	0.000070	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-201	0.0017	J q	0.0095	0.000072	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-202	0.0050	J	0.0095	0.000081	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-203	ND		0.0095	0.000094	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-204	ND		0.0095	0.000079	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-205	ND		0.0095	0.000085	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-206	0.0076	J q	0.0095	0.00026	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-207	ND		0.0095	0.00011	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-208	0.0045	J	0.0095	0.000087	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
PCB-209	0.029	q	0.0095	0.000091	ng/g	☼	09/13/18 11:15	09/24/18 07:22	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
PCB-1L	111		30 - 140				09/13/18 11:15	09/24/18 07:22	1
PCB-3L	120		30 - 140				09/13/18 11:15	09/24/18 07:22	1
PCB-4L	82		30 - 140				09/13/18 11:15	09/24/18 07:22	1
PCB-15L	77		30 - 140				09/13/18 11:15	09/24/18 07:22	1
PCB-19L	108		30 - 140				09/13/18 11:15	09/24/18 07:22	1
PCB-37L	102		30 - 140				09/13/18 11:15	09/24/18 07:22	1
PCB-54L	82		30 - 140				09/13/18 11:15	09/24/18 07:22	1
PCB-77L	86		30 - 140				09/13/18 11:15	09/24/18 07:22	1
PCB-81L	89		30 - 140				09/13/18 11:15	09/24/18 07:22	1
PCB-104L	87		30 - 140				09/13/18 11:15	09/24/18 07:22	1
PCB-105L	95		30 - 140				09/13/18 11:15	09/24/18 07:22	1
PCB-114L	95		30 - 140				09/13/18 11:15	09/24/18 07:22	1
PCB-118L	85		30 - 140				09/13/18 11:15	09/24/18 07:22	1
PCB-123L	91		30 - 140				09/13/18 11:15	09/24/18 07:22	1
PCB-126L	88		30 - 140				09/13/18 11:15	09/24/18 07:22	1
PCB-155L	79		30 - 140				09/13/18 11:15	09/24/18 07:22	1
PCB-156L	112	C	30 - 140				09/13/18 11:15	09/24/18 07:22	1
PCB-157L	112	C156	30 - 140				09/13/18 11:15	09/24/18 07:22	1
PCB-167L	92		30 - 140				09/13/18 11:15	09/24/18 07:22	1
PCB-169L	101		30 - 140				09/13/18 11:15	09/24/18 07:22	1
PCB-170L	92		30 - 140				09/13/18 11:15	09/24/18 07:22	1
PCB-188L	86		30 - 140				09/13/18 11:15	09/24/18 07:22	1
PCB-189L	136		30 - 140				09/13/18 11:15	09/24/18 07:22	1
PCB-202L	69		30 - 140				09/13/18 11:15	09/24/18 07:22	1
PCB-205L	73		30 - 140				09/13/18 11:15	09/24/18 07:22	1
PCB-206L	51		30 - 140				09/13/18 11:15	09/24/18 07:22	1
PCB-208L	64		30 - 140				09/13/18 11:15	09/24/18 07:22	1
PCB-209L	35		30 - 140				09/13/18 11:15	09/24/18 07:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
PCB-28L	105		40 - 125				09/13/18 11:15	09/24/18 07:22	1
PCB-111L	102		40 - 125				09/13/18 11:15	09/24/18 07:22	1
PCB-178L	99		40 - 125				09/13/18 11:15	09/24/18 07:22	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-79722-3

Client Sample ID: PDI-SG-B465

Lab Sample ID: 580-79722-3

Date Collected: 08/18/18 13:40

Matrix: Solid

Date Received: 08/20/18 15:10

Percent Solids: 66.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	ND		0.0074	0.00012	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-2	0.0020	J q B	0.0074	0.00014	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-3	ND		0.0074	0.00015	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-4	ND		0.015	0.0080	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-5	ND		0.0074	0.0066	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-6	ND		0.0074	0.0058	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-7	ND		0.0074	0.0060	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-8	ND		0.015	0.0054	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-9	ND		0.0074	0.0061	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-10	ND		0.0074	0.0065	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-11	0.025	q B	0.015	0.0057	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-12	ND	C	0.015	0.0059	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-13	ND	C12	0.015	0.0059	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-14	ND		0.0074	0.0050	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-15	ND		0.0074	0.0063	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-16	ND		0.0074	0.000075	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-17	ND		0.0074	0.000068	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-18	0.0057	J q C	0.015	0.000060	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-19	ND		0.0074	0.000083	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-20	0.015	C	0.015	0.00039	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-21	0.0046	J q C	0.015	0.00038	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-22	0.0035	J q	0.0074	0.00040	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-23	ND		0.0074	0.00040	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-24	ND		0.0074	0.000057	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-25	0.0010	J q	0.0074	0.00036	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-26	0.0027	J C	0.015	0.00039	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-27	ND		0.0074	0.000049	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-28	0.015	C20	0.015	0.00039	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-29	0.0027	J C26	0.015	0.00039	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-30	0.0057	J q C18	0.015	0.000060	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-31	0.011	J	0.015	0.00038	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-32	ND		0.0074	0.000047	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-33	0.0046	J q C21	0.015	0.00038	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-34	ND		0.0074	0.00041	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-35	ND		0.0074	0.00040	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-36	ND		0.0074	0.00039	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-37	0.0031	J q	0.0074	0.00040	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-38	ND		0.0074	0.00042	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-39	ND		0.0074	0.00037	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-40	0.0052	J q C	0.022	0.00056	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-41	0.0052	J q C40	0.022	0.00056	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-42	ND		0.0074	0.00056	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-43	ND	C	0.015	0.00053	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-44	0.014	J C B	0.022	0.00050	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-45	0.0015	J q C	0.015	0.00059	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-46	ND		0.0074	0.00071	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-47	0.014	J C44 B	0.022	0.00050	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-48	0.0017	J q	0.0074	0.00056	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-49	0.0094	J C	0.015	0.00046	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-79722-3

Client Sample ID: PDI-SG-B465

Lab Sample ID: 580-79722-3

Date Collected: 08/18/18 13:40

Matrix: Solid

Date Received: 08/20/18 15:10

Percent Solids: 66.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	ND	C	0.015	0.00054	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-51	0.0015	J q C45	0.015	0.00059	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-52	0.023		0.0074	0.00056	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-53	ND	C50	0.015	0.00054	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-54	ND		0.0074	0.000079	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-55	ND		0.0074	0.00041	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-56	0.0042	J q	0.0074	0.00041	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-57	ND		0.0074	0.00041	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-58	ND		0.0074	0.00042	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-59	0.0013	J C	0.022	0.00040	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-60	0.0023	J	0.0074	0.00042	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-61	0.037	C B	0.029	0.00039	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-62	0.0013	J C59	0.022	0.00040	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-63	ND		0.0074	0.00038	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-64	0.0042	J q	0.0074	0.00037	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-65	0.014	J C44 B	0.022	0.00050	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-66	0.018		0.0074	0.00039	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-67	ND		0.0074	0.00036	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-68	ND		0.0074	0.00037	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-69	0.0094	J C49	0.015	0.00046	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-70	0.037	C61 B	0.029	0.00039	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-71	0.0052	J q C40	0.022	0.00056	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-72	ND		0.0074	0.00041	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-73	ND	C43	0.015	0.00053	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-74	0.037	C61 B	0.029	0.00039	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-75	0.0013	J C59	0.022	0.00040	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-76	0.037	C61 B	0.029	0.00039	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-77	0.0013	J q	0.0074	0.00046	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-78	ND		0.0074	0.00042	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-79	ND		0.0074	0.00036	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-80	ND		0.0074	0.00036	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-81	ND		0.0074	0.00034	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-82	ND		0.0074	0.00026	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-83	0.043	C	0.015	0.00024	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-84	0.013		0.0074	0.00027	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-85	0.013	J C	0.022	0.00019	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-86	0.029	J C	0.044	0.00020	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-87	0.029	J C86	0.044	0.00020	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-88	0.0092	J C	0.015	0.00024	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-89	ND		0.0074	0.00026	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-90	0.045	C	0.022	0.00020	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-91	0.0092	J C88	0.015	0.00024	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-92	ND		0.0074	0.00023	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-93	ND	C	0.015	0.00023	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-94	ND		0.0074	0.00026	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-95	0.034	q	0.0074	0.00025	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-96	ND		0.0074	0.00019	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-97	0.029	J C86	0.044	0.00020	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-98	ND	C	0.015	0.00022	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-79722-3

Client Sample ID: PDI-SG-B465

Lab Sample ID: 580-79722-3

Date Collected: 08/18/18 13:40

Matrix: Solid

Date Received: 08/20/18 15:10

Percent Solids: 66.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	0.043	C83	0.015	0.00024	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-100	ND	C93	0.015	0.00023	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-101	0.045	C90	0.022	0.00020	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-102	ND	C98	0.015	0.00022	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-103	ND		0.0074	0.00023	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-104	ND		0.0074	0.00017	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-105	0.015	q	0.0074	0.00050	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-106	ND		0.0074	0.00048	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-107	0.0048	J	0.0074	0.00051	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-108	ND	C	0.015	0.00049	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-109	0.029	J C86	0.044	0.00020	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-110	0.072	C	0.015	0.00017	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-111	ND		0.0074	0.00016	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-112	ND		0.0074	0.00017	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-113	0.045	C90	0.022	0.00020	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-114	ND		0.0074	0.00044	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-115	0.072	C110	0.015	0.00017	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-116	0.013	J C85	0.022	0.00019	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-117	0.013	J C85	0.022	0.00019	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-118	0.039		0.0074	0.00042	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-119	0.029	J C86	0.044	0.00020	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-120	ND		0.0074	0.00016	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-121	ND		0.0074	0.00017	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-122	ND		0.0074	0.00056	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-123	ND		0.0074	0.00045	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-124	ND	C108	0.015	0.00049	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-125	0.029	J C86	0.044	0.00020	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-126	ND		0.0074	0.00056	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-127	ND		0.0074	0.00048	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-128	0.012	J q C	0.015	0.0010	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-129	0.14	C	0.029	0.0010	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-130	0.0069	J	0.0074	0.0014	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-131	ND		0.0074	0.0014	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-132	0.026		0.0074	0.0013	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-133	ND		0.0074	0.0013	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-134	0.0033	J q C	0.015	0.0014	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-135	0.0015	J q C	0.015	0.000065	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-136	0.0035	J q	0.0074	0.000047	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-137	0.0044	J q	0.0074	0.0012	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-138	0.14	C129	0.029	0.0010	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-139	ND	C	0.015	0.0012	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-140	ND	C139	0.015	0.0012	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-141	0.014		0.0074	0.0012	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-142	ND		0.0074	0.0013	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-143	0.0033	J q C134	0.015	0.0014	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-144	ND		0.0074	0.000059	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-145	ND		0.0074	0.000045	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-146	0.012	q	0.0074	0.0011	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-147	0.052	q C	0.015	0.0013	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-79722-3

Client Sample ID: PDI-SG-B465

Lab Sample ID: 580-79722-3

Date Collected: 08/18/18 13:40

Matrix: Solid

Date Received: 08/20/18 15:10

Percent Solids: 66.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	ND		0.0074	0.000063	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-149	0.052	q C147	0.015	0.0013	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-150	ND		0.0074	0.000043	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-151	0.0015	J q C135	0.015	0.000065	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-152	ND		0.0074	0.000046	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-153	0.088	C	0.015	0.00090	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-154	0.0038	J	0.0074	0.000051	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-155	ND		0.0074	0.000043	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-156	0.0044	J q C	0.015	0.0011	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-157	0.0044	J q C156	0.015	0.0011	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-158	0.012		0.0074	0.00082	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-159	ND		0.0074	0.00086	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-160	0.14	C129	0.029	0.0010	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-161	ND		0.0074	0.00086	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-162	ND		0.0074	0.00085	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-163	0.14	C129	0.029	0.0010	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-164	0.0070	J q	0.0074	0.00091	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-165	ND		0.0074	0.00097	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-166	0.012	J q C128	0.015	0.0010	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-167	0.0030	J q	0.0074	0.00063	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-168	0.088	C153	0.015	0.00090	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-169	ND		0.0074	0.00069	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-170	0.016		0.0074	0.00047	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-171	ND	C	0.015	0.00036	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-172	ND		0.0074	0.00036	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-173	ND	C171	0.015	0.00036	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-174	0.019		0.0074	0.00033	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-175	ND		0.0074	0.00032	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-176	0.0014	J q	0.0074	0.00024	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-177	0.0039	J q	0.0074	0.00034	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-178	0.0043	J q	0.0074	0.00035	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-179	0.0096	q	0.0074	0.00026	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-180	0.030	C	0.015	0.00027	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-181	ND		0.0074	0.00032	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-182	ND		0.0074	0.00031	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-183	0.0034	J q C	0.015	0.00032	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-184	ND		0.0074	0.00026	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-185	0.0034	J q C183	0.015	0.00032	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-186	ND		0.0074	0.00026	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-187	0.018	q	0.0074	0.00030	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-188	ND		0.0074	0.00020	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-189	ND		0.0074	0.00036	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-190	0.0030	J q	0.0074	0.00023	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-191	ND		0.0074	0.00024	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-192	ND		0.0074	0.00027	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-193	0.030	C180	0.015	0.00027	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-194	0.011	q	0.0074	0.00030	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-195	0.0049	J	0.0074	0.00033	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-196	ND		0.0074	0.000060	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-79722-3

Client Sample ID: PDI-SG-B465

Lab Sample ID: 580-79722-3

Date Collected: 08/18/18 13:40

Matrix: Solid

Date Received: 08/20/18 15:10

Percent Solids: 66.1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	ND		0.0074	0.000046	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-198	0.0087	J q C	0.015	0.000061	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-199	0.0087	J q C198	0.015	0.000061	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-200	ND		0.0074	0.000041	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-201	ND		0.0074	0.000042	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-202	ND		0.0074	0.000047	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-203	0.010	q	0.0074	0.000054	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-204	ND		0.0074	0.000046	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-205	ND		0.0074	0.000026	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-206	0.0051	J q	0.0074	0.000018	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-207	ND		0.0074	0.000071	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-208	0.0039	J q	0.0074	0.000056	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
PCB-209	0.017		0.0074	0.000054	ng/g	☼	09/13/18 11:15	09/24/18 08:24	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
PCB-1L	143	*	30 - 140				09/13/18 11:15	09/24/18 08:24	1
PCB-3L	152	*	30 - 140				09/13/18 11:15	09/24/18 08:24	1
PCB-4L	87		30 - 140				09/13/18 11:15	09/24/18 08:24	1
PCB-15L	72	q	30 - 140				09/13/18 11:15	09/24/18 08:24	1
PCB-19L	102		30 - 140				09/13/18 11:15	09/24/18 08:24	1
PCB-37L	84		30 - 140				09/13/18 11:15	09/24/18 08:24	1
PCB-54L	76	q	30 - 140				09/13/18 11:15	09/24/18 08:24	1
PCB-77L	105		30 - 140				09/13/18 11:15	09/24/18 08:24	1
PCB-81L	103		30 - 140				09/13/18 11:15	09/24/18 08:24	1
PCB-104L	73		30 - 140				09/13/18 11:15	09/24/18 08:24	1
PCB-105L	80		30 - 140				09/13/18 11:15	09/24/18 08:24	1
PCB-114L	89		30 - 140				09/13/18 11:15	09/24/18 08:24	1
PCB-118L	87		30 - 140				09/13/18 11:15	09/24/18 08:24	1
PCB-123L	85		30 - 140				09/13/18 11:15	09/24/18 08:24	1
PCB-126L	69		30 - 140				09/13/18 11:15	09/24/18 08:24	1
PCB-155L	66		30 - 140				09/13/18 11:15	09/24/18 08:24	1
PCB-156L	54	C	30 - 140				09/13/18 11:15	09/24/18 08:24	1
PCB-157L	54	C156	30 - 140				09/13/18 11:15	09/24/18 08:24	1
PCB-167L	49		30 - 140				09/13/18 11:15	09/24/18 08:24	1
PCB-169L	56		30 - 140				09/13/18 11:15	09/24/18 08:24	1
PCB-170L	102		30 - 140				09/13/18 11:15	09/24/18 08:24	1
PCB-188L	166	*	30 - 140				09/13/18 11:15	09/24/18 08:24	1
PCB-189L	135		30 - 140				09/13/18 11:15	09/24/18 08:24	1
PCB-202L	103		30 - 140				09/13/18 11:15	09/24/18 08:24	1
PCB-205L	68		30 - 140				09/13/18 11:15	09/24/18 08:24	1
PCB-206L	58		30 - 140				09/13/18 11:15	09/24/18 08:24	1
PCB-208L	69		30 - 140				09/13/18 11:15	09/24/18 08:24	1
PCB-209L	48		30 - 140				09/13/18 11:15	09/24/18 08:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
PCB-28L	95		40 - 125				09/13/18 11:15	09/24/18 08:24	1
PCB-111L	96		40 - 125				09/13/18 11:15	09/24/18 08:24	1
PCB-178L	212	X	40 - 125				09/13/18 11:15	09/24/18 08:24	1

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-79722-3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Lab Sample ID: MB 140-23571/10-B
Matrix: Solid
Analysis Batch: 23839

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 23571

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	ND		0.010	0.00013	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-2	0.000912	J q	0.010	0.00016	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-3	ND		0.010	0.00018	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-4	ND		0.020	0.0067	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-5	ND		0.010	0.0055	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-6	ND		0.010	0.0049	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-7	ND		0.010	0.0050	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-8	ND		0.020	0.0045	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-9	ND		0.010	0.0051	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-10	ND		0.010	0.0054	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-11	0.00478	J q	0.020	0.0047	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-12	ND	C	0.020	0.0049	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-13	ND	C12	0.020	0.0049	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-14	ND		0.010	0.0042	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-15	ND		0.010	0.0053	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-16	ND		0.010	0.00018	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-17	ND		0.010	0.00016	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-18	ND	C	0.020	0.00014	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-19	ND		0.010	0.00020	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-20	ND	C	0.020	0.00039	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-21	ND	C	0.020	0.00039	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-22	ND		0.010	0.00040	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-23	ND		0.010	0.00040	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-24	ND		0.010	0.00014	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-25	ND		0.010	0.00036	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-26	ND	C	0.020	0.00039	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-27	ND		0.010	0.00012	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-28	ND	C20	0.020	0.00039	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-29	ND	C26	0.020	0.00039	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-30	ND	C18	0.020	0.00014	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-31	ND		0.020	0.00038	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-32	ND		0.010	0.00011	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-33	ND	C21	0.020	0.00039	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-34	ND		0.010	0.00042	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-35	ND		0.010	0.00040	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-36	ND		0.010	0.00039	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-37	ND		0.010	0.00040	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-38	ND		0.010	0.00042	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-39	ND		0.010	0.00038	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-40	ND	C	0.030	0.000094	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-41	ND	C40	0.030	0.000094	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-42	ND		0.010	0.000094	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-43	ND	C	0.020	0.000088	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-44	0.00215	J q C	0.030	0.000083	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-45	ND	C	0.020	0.000099	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-46	ND		0.010	0.00012	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-47	0.00215	J q C44	0.030	0.000083	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-48	ND		0.010	0.000094	ng/g		09/13/18 11:15	09/22/18 16:33	1

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-79722-3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 140-23571/10-B
Matrix: Solid
Analysis Batch: 23839

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 23571

Analyte	MB	MB	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
PCB-49	ND	C	0.020	0.000077	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-50	ND	C	0.020	0.000091	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-51	ND	C45	0.020	0.000099	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-52	ND		0.010	0.000093	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-53	ND	C50	0.020	0.000091	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-54	ND		0.010	0.000020	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-55	ND		0.010	0.000068	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-56	ND		0.010	0.000068	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-57	ND		0.010	0.000069	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-58	ND		0.010	0.000070	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-59	ND	C	0.030	0.000066	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-60	ND		0.010	0.000070	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-61	0.000934	J q C	0.040	0.000065	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-62	ND	C59	0.030	0.000066	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-63	ND		0.010	0.000064	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-64	ND		0.010	0.000063	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-65	0.00215	J q C44	0.030	0.000083	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-66	ND		0.010	0.000065	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-67	ND		0.010	0.000060	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-68	ND		0.010	0.000061	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-69	ND	C49	0.020	0.000077	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-70	0.000934	J q C61	0.040	0.000065	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-71	ND	C40	0.030	0.000094	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-72	ND		0.010	0.000068	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-73	ND	C43	0.020	0.000088	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-74	0.000934	J q C61	0.040	0.000065	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-75	ND	C59	0.030	0.000066	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-76	0.000934	J q C61	0.040	0.000065	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-77	ND		0.010	0.000067	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-78	ND		0.010	0.000070	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-79	ND		0.010	0.000061	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-80	ND		0.010	0.000060	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-81	ND		0.010	0.000063	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-82	ND		0.010	0.000060	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-83	ND	C	0.020	0.000055	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-84	ND		0.010	0.000060	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-85	ND	C	0.030	0.000044	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-86	ND	C	0.060	0.000045	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-87	ND	C86	0.060	0.000045	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-88	ND	C	0.020	0.000054	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-89	ND		0.010	0.000059	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-90	ND	C	0.030	0.000045	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-91	ND	C88	0.020	0.000054	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-92	ND		0.010	0.000051	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-93	ND	C	0.020	0.000052	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-94	ND		0.010	0.000059	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-95	ND		0.010	0.000057	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-96	ND		0.010	0.000044	ng/g		09/13/18 11:15	09/22/18 16:33	1

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-79722-3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 140-23571/10-B
Matrix: Solid
Analysis Batch: 23839

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 23571

Analyte	MB	MB	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
PCB-97	ND	C86	0.060	0.000045	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-98	ND	C	0.020	0.000050	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-99	ND	C83	0.020	0.000055	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-100	ND	C93	0.020	0.000052	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-101	ND	C90	0.030	0.000045	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-102	ND	C98	0.020	0.000050	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-103	ND		0.010	0.000052	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-104	ND		0.010	0.000039	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-105	ND		0.010	0.000016	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-106	ND		0.010	0.000017	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-107	ND		0.010	0.000018	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-108	ND	C	0.020	0.000018	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-109	ND	C86	0.060	0.000045	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-110	ND	C	0.020	0.000038	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-111	ND		0.010	0.000036	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-112	ND		0.010	0.000038	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-113	ND	C90	0.030	0.000045	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-114	ND		0.010	0.000016	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-115	ND	C110	0.020	0.000038	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-116	ND	C85	0.030	0.000044	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-117	ND	C85	0.030	0.000044	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-118	ND		0.010	0.000016	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-119	ND	C86	0.060	0.000045	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-120	ND		0.010	0.000037	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-121	ND		0.010	0.000038	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-122	ND		0.010	0.000020	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-123	ND		0.010	0.000017	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-124	ND	C108	0.020	0.000018	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-125	ND	C86	0.060	0.000045	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-126	ND		0.010	0.000020	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-127	ND		0.010	0.000017	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-128	ND	C	0.020	0.000071	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-129	ND	C	0.040	0.000074	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-130	ND		0.010	0.000097	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-131	ND		0.010	0.000010	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-132	ND		0.010	0.000095	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-133	ND		0.010	0.000092	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-134	ND	C	0.020	0.000096	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-135	ND	C	0.020	0.000030	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-136	ND		0.010	0.000022	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-137	ND		0.010	0.000083	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-138	ND	C129	0.040	0.000074	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-139	ND	C	0.020	0.000082	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-140	ND	C139	0.020	0.000082	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-141	ND		0.010	0.000086	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-142	ND		0.010	0.000091	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-143	ND	C134	0.020	0.000096	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-144	ND		0.010	0.000027	ng/g		09/13/18 11:15	09/22/18 16:33	1

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-79722-3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 140-23571/10-B
Matrix: Solid
Analysis Batch: 23839

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 23571

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-145	ND		0.010	0.000021	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-146	ND		0.010	0.000081	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-147	ND	C	0.020	0.000093	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-148	ND		0.010	0.000029	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-149	ND	C147	0.020	0.000093	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-150	ND		0.010	0.000020	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-151	ND	C135	0.020	0.000030	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-152	ND		0.010	0.000021	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-153	ND	C	0.020	0.000064	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-154	ND		0.010	0.000024	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-155	ND		0.010	0.000020	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-156	ND	C	0.020	0.000080	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-157	ND	C156	0.020	0.000080	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-158	ND		0.010	0.000058	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-159	ND		0.010	0.000061	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-160	ND	C129	0.040	0.000074	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-161	ND		0.010	0.000061	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-162	ND		0.010	0.000060	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-163	ND	C129	0.040	0.000074	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-164	ND		0.010	0.000064	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-165	ND		0.010	0.000069	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-166	ND	C128	0.020	0.000071	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-167	ND		0.010	0.000044	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-168	ND	C153	0.020	0.000064	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-169	ND		0.010	0.000048	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-170	ND		0.010	0.000032	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-171	ND	C	0.020	0.000029	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-172	ND		0.010	0.000029	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-173	ND	C171	0.020	0.000029	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-174	ND		0.010	0.000027	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-175	ND		0.010	0.000027	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-176	ND		0.010	0.000020	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-177	ND		0.010	0.000028	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-178	ND		0.010	0.000029	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-179	ND		0.010	0.000021	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-180	ND	C	0.020	0.000022	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-181	ND		0.010	0.000026	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-182	ND		0.010	0.000026	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-183	ND	C	0.020	0.000026	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-184	ND		0.010	0.000022	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-185	ND	C183	0.020	0.000026	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-186	ND		0.010	0.000021	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-187	ND		0.010	0.000025	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-188	ND		0.010	0.000018	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-189	ND		0.010	0.000040	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-190	ND		0.010	0.000019	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-191	ND		0.010	0.000020	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-192	ND		0.010	0.000022	ng/g		09/13/18 11:15	09/22/18 16:33	1

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-79722-3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 140-23571/10-B
Matrix: Solid
Analysis Batch: 23839

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 23571

Analyte	MB	MB	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
PCB-193	ND	C180	0.020	0.000022	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-194	ND		0.010	0.000048	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-195	ND		0.010	0.000052	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-196	ND		0.010	0.000041	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-197	ND		0.010	0.000031	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-198	ND	C	0.020	0.000042	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-199	ND	C198	0.020	0.000042	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-200	ND		0.010	0.000028	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-201	ND		0.010	0.000029	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-202	ND		0.010	0.000032	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-203	ND		0.010	0.000037	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-204	ND		0.010	0.000031	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-205	ND		0.010	0.000040	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-206	ND		0.010	0.000055	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-207	ND		0.010	0.000040	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-208	ND		0.010	0.000041	ng/g		09/13/18 11:15	09/22/18 16:33	1
PCB-209	ND		0.010	0.000029	ng/g		09/13/18 11:15	09/22/18 16:33	1

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
PCB-1L	57		30 - 140	09/13/18 11:15	09/22/18 16:33	1
PCB-3L	53		30 - 140	09/13/18 11:15	09/22/18 16:33	1
PCB-4L	81		30 - 140	09/13/18 11:15	09/22/18 16:33	1
PCB-15L	80		30 - 140	09/13/18 11:15	09/22/18 16:33	1
PCB-19L	88		30 - 140	09/13/18 11:15	09/22/18 16:33	1
PCB-37L	84		30 - 140	09/13/18 11:15	09/22/18 16:33	1
PCB-54L	106		30 - 140	09/13/18 11:15	09/22/18 16:33	1
PCB-77L	78		30 - 140	09/13/18 11:15	09/22/18 16:33	1
PCB-81L	76		30 - 140	09/13/18 11:15	09/22/18 16:33	1
PCB-104L	89		30 - 140	09/13/18 11:15	09/22/18 16:33	1
PCB-105L	89		30 - 140	09/13/18 11:15	09/22/18 16:33	1
PCB-114L	85		30 - 140	09/13/18 11:15	09/22/18 16:33	1
PCB-118L	85		30 - 140	09/13/18 11:15	09/22/18 16:33	1
PCB-123L	80		30 - 140	09/13/18 11:15	09/22/18 16:33	1
PCB-126L	79		30 - 140	09/13/18 11:15	09/22/18 16:33	1
PCB-155L	113		30 - 140	09/13/18 11:15	09/22/18 16:33	1
PCB-156L	95	C	30 - 140	09/13/18 11:15	09/22/18 16:33	1
PCB-157L	95	C156	30 - 140	09/13/18 11:15	09/22/18 16:33	1
PCB-167L	89		30 - 140	09/13/18 11:15	09/22/18 16:33	1
PCB-169L	93		30 - 140	09/13/18 11:15	09/22/18 16:33	1
PCB-170L	80		30 - 140	09/13/18 11:15	09/22/18 16:33	1
PCB-188L	89		30 - 140	09/13/18 11:15	09/22/18 16:33	1
PCB-189L	76		30 - 140	09/13/18 11:15	09/22/18 16:33	1
PCB-202L	115		30 - 140	09/13/18 11:15	09/22/18 16:33	1
PCB-205L	75		30 - 140	09/13/18 11:15	09/22/18 16:33	1
PCB-206L	98		30 - 140	09/13/18 11:15	09/22/18 16:33	1
PCB-208L	102		30 - 140	09/13/18 11:15	09/22/18 16:33	1
PCB-209L	113		30 - 140	09/13/18 11:15	09/22/18 16:33	1

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-79722-3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 140-23571/10-B
Matrix: Solid
Analysis Batch: 23839

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 23571

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
PCB-28L	89		40 - 125	09/13/18 11:15	09/22/18 16:33	1
PCB-111L	98		40 - 125	09/13/18 11:15	09/22/18 16:33	1
PCB-178L	93		40 - 125	09/13/18 11:15	09/22/18 16:33	1

Lab Sample ID: LCS 140-23571/11-B
Matrix: Solid
Analysis Batch: 23846

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 23571

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.
							Limits
PCB-1	0.500	0.438		ng/g		88	50 - 150
PCB-3	0.500	0.453		ng/g		91	50 - 150
PCB-4	0.500	0.483		ng/g		97	50 - 150
PCB-15	0.500	0.528		ng/g		106	50 - 150
PCB-19	0.500	0.548		ng/g		110	50 - 150
PCB-37	0.500	0.525		ng/g		105	50 - 150
PCB-54	0.500	0.480		ng/g		96	50 - 150
PCB-77	0.500	0.538		ng/g		108	50 - 150
PCB-81	0.500	0.512		ng/g		102	50 - 150
PCB-104	0.500	0.534		ng/g		107	50 - 150
PCB-105	0.500	0.546		ng/g		109	50 - 150
PCB-114	0.500	0.596		ng/g		119	50 - 150
PCB-118	0.500	0.541		ng/g		108	50 - 150
PCB-123	0.500	0.593		ng/g		119	50 - 150
PCB-126	0.500	0.578		ng/g		116	50 - 150
PCB-155	0.500	0.515		ng/g		103	50 - 150
PCB-156	1.00	1.09	C	ng/g		109	50 - 150
PCB-157	1.00	1.09	C156	ng/g		109	50 - 150
PCB-167	0.500	0.564		ng/g		113	50 - 150
PCB-169	0.500	0.507		ng/g		101	50 - 150
PCB-188	0.500	0.552		ng/g		110	50 - 150
PCB-189	0.500	0.540		ng/g		108	50 - 150
PCB-202	0.500	0.494		ng/g		99	50 - 150
PCB-205	0.500	0.605		ng/g		121	50 - 150
PCB-206	0.500	0.531		ng/g		106	50 - 150
PCB-208	0.500	0.571		ng/g		114	50 - 150
PCB-209	0.500	0.577		ng/g		115	50 - 150

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
PCB-1L	73		30 - 140
PCB-3L	68		30 - 140
PCB-4L	85		30 - 140
PCB-15L	80		30 - 140
PCB-19L	96		30 - 140
PCB-37L	89		30 - 140
PCB-54L	111		30 - 140
PCB-77L	85		30 - 140
PCB-81L	86		30 - 140
PCB-104L	87		30 - 140

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-79722-3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 140-23571/11-B
Matrix: Solid
Analysis Batch: 23846

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 23571

<i>Isotope Dilution</i>	LCS LCS		Limits
	%Recovery	Qualifier	
PCB-105L	94		30 - 140
PCB-114L	93		30 - 140
PCB-118L	91		30 - 140
PCB-123L	90		30 - 140
PCB-126L	88		30 - 140
PCB-155L	103		30 - 140
PCB-156L	93	C	30 - 140
PCB-157L	93	C156	30 - 140
PCB-167L	91		30 - 140
PCB-169L	96		30 - 140
PCB-170L	87		30 - 140
PCB-188L	92		30 - 140
PCB-189L	84		30 - 140
PCB-202L	108		30 - 140
PCB-205L	79		30 - 140
PCB-206L	91		30 - 140
PCB-208L	88		30 - 140
PCB-209L	93		30 - 140

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
PCB-28L	97		40 - 125
PCB-111L	94		40 - 125
PCB-178L	98		40 - 125

Lab Sample ID: LCSD 140-23571/12-B
Matrix: Solid
Analysis Batch: 23846

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 23571

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.		RPD	Limit
							Limits	RPD		
PCB-1	0.500	0.436		ng/g		87	50 - 150	0	50	
PCB-3	0.500	0.466		ng/g		93	50 - 150	3	50	
PCB-4	0.500	0.500		ng/g		100	50 - 150	3	50	
PCB-15	0.500	0.550		ng/g		110	50 - 150	4	50	
PCB-19	0.500	0.533		ng/g		107	50 - 150	3	50	
PCB-37	0.500	0.532		ng/g		106	50 - 150	1	50	
PCB-54	0.500	0.494		ng/g		99	50 - 150	3	50	
PCB-77	0.500	0.568		ng/g		114	50 - 150	6	50	
PCB-81	0.500	0.506		ng/g		101	50 - 150	1	50	
PCB-104	0.500	0.557		ng/g		111	50 - 150	4	50	
PCB-105	0.500	0.536		ng/g		107	50 - 150	2	50	
PCB-114	0.500	0.586		ng/g		117	50 - 150	2	50	
PCB-118	0.500	0.560		ng/g		112	50 - 150	4	50	
PCB-123	0.500	0.605		ng/g		121	50 - 150	2	50	
PCB-126	0.500	0.577		ng/g		115	50 - 150	0	50	
PCB-155	0.500	0.529		ng/g		106	50 - 150	3	50	
PCB-156	1.00	1.10	C	ng/g		110	50 - 150	1	50	
PCB-157	1.00	1.10	C156	ng/g		110	50 - 150	1	50	
PCB-167	0.500	0.564		ng/g		113	50 - 150	0	50	

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-79722-3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 140-23571/12-B
Matrix: Solid
Analysis Batch: 23846

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 23571

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-169	0.500	0.522		ng/g		104	50 - 150	3	50
PCB-188	0.500	0.538		ng/g		108	50 - 150	3	50
PCB-189	0.500	0.567		ng/g		113	50 - 150	5	50
PCB-202	0.500	0.511		ng/g		102	50 - 150	3	50
PCB-205	0.500	0.601		ng/g		120	50 - 150	1	50
PCB-206	0.500	0.528		ng/g		106	50 - 150	0	50
PCB-208	0.500	0.541		ng/g		108	50 - 150	5	50
PCB-209	0.500	0.578		ng/g		116	50 - 150	0	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	LCSD Limits
PCB-1L	68		30 - 140
PCB-3L	67		30 - 140
PCB-4L	83		30 - 140
PCB-15L	82		30 - 140
PCB-19L	95		30 - 140
PCB-37L	90		30 - 140
PCB-54L	104		30 - 140
PCB-77L	81		30 - 140
PCB-81L	83		30 - 140
PCB-104L	81		30 - 140
PCB-105L	93		30 - 140
PCB-114L	94		30 - 140
PCB-118L	90		30 - 140
PCB-123L	88		30 - 140
PCB-126L	87		30 - 140
PCB-155L	98		30 - 140
PCB-156L	90	C	30 - 140
PCB-157L	90	C156	30 - 140
PCB-167L	89		30 - 140
PCB-169L	90		30 - 140
PCB-170L	85		30 - 140
PCB-188L	92		30 - 140
PCB-189L	80		30 - 140
PCB-202L	106		30 - 140
PCB-205L	76		30 - 140
PCB-206L	90		30 - 140
PCB-208L	85		30 - 140
PCB-209L	87		30 - 140

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
PCB-28L	97		40 - 125
PCB-111L	93		40 - 125
PCB-178L	101		40 - 125

Lab Chronicle

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

TestAmerica Job ID: 580-79722-3

Client Sample ID: PDI-SG-B473

Lab Sample ID: 580-79722-1

Date Collected: 08/18/18 10:18

Matrix: Solid

Date Received: 08/20/18 15:10

Percent Solids: 63.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			23571	09/13/18 11:15	CLI	TAL KNX
Total/NA	Cleanup	Split			23654	09/17/18 06:42	EBS	TAL KNX
Total/NA	Analysis	1668A		1	23846	09/24/18 06:21	LKM	TAL KNX

Client Sample ID: PDI-SG-B467

Lab Sample ID: 580-79722-2

Date Collected: 08/18/18 12:29

Matrix: Solid

Date Received: 08/20/18 15:10

Percent Solids: 51.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			23571	09/13/18 11:15	CLI	TAL KNX
Total/NA	Cleanup	Split			23654	09/17/18 06:42	EBS	TAL KNX
Total/NA	Analysis	1668A		1	23846	09/24/18 07:22	LKM	TAL KNX

Client Sample ID: PDI-SG-B465

Lab Sample ID: 580-79722-3

Date Collected: 08/18/18 13:40

Matrix: Solid

Date Received: 08/20/18 15:10

Percent Solids: 66.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			23571	09/13/18 11:15	CLI	TAL KNX
Total/NA	Cleanup	Split			23654	09/17/18 06:42	EBS	TAL KNX
Total/NA	Analysis	1668A		1	23846	09/24/18 08:24	LKM	TAL KNX

Laboratory References:

TAL KNX = TestAmerica Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-79722-3

Laboratory: TestAmerica Seattle

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

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

Laboratory: TestAmerica Knoxville

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
	AFCEE		N/A	
ANAB	DoD ELAP		L2311	02-13-19
Arkansas DEQ	State Program	6	88-0688	06-16-19
California	State Program	9	2423	06-30-19
Colorado	State Program	8	TN00009	02-28-19
Connecticut	State Program	1	PH-0223	09-30-19
Florida	NELAP	4	E87177	06-30-19
Georgia	State Program	4	906	04-13-20
Hawaii	State Program	9	N/A	04-13-19
Kansas	NELAP	7	E-10349	10-31-18
Kentucky (DW)	State Program	4	90101	12-31-18
Louisiana	NELAP	6	83979	06-30-19
Louisiana (DW)	NELAP	6	LA160005	12-31-18
Maryland	State Program	3	277	03-31-19
Michigan	State Program	5	9933	04-13-20
Nevada	State Program	9	TN00009	07-31-19
New Jersey	NELAP	2	TN001	06-30-19
New York	NELAP	2	10781	03-31-19
North Carolina (DW)	State Program	4	21705	07-31-19
North Carolina (WW/SW)	State Program	4	64	12-31-18
Ohio VAP	State Program	5	CL0059	08-28-20
Oklahoma	State Program	6	9415	08-31-19
Oregon	NELAP	10	TNI0189	01-01-19
Pennsylvania	NELAP	3	68-00576	12-31-18
Tennessee	State Program	4	2014	04-13-20
Texas	NELAP	6	T104704380-16-9	08-31-19
US Fish & Wildlife	Federal		LE-058448-0	07-31-19
USDA	Federal		P330-16-00262	08-20-19
Utah	NELAP	8	TN00009	07-31-18 *
Virginia	NELAP	3	460176	09-14-19
Washington	State Program	10	C593	01-19-19
West Virginia (DW)	State Program	3	9955C	12-31-18
West Virginia DEP	State Program	3	345	04-30-19
Wisconsin	State Program	5	998044300	08-31-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Seattle

Sample Summary

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

TestAmerica Job ID: 580-79722-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-79722-1	PDI-SG-B473	Solid	08/18/18 10:18	08/20/18 15:10
580-79722-2	PDI-SG-B467	Solid	08/18/18 12:29	08/20/18 15:10
580-79722-3	PDI-SG-B465	Solid	08/18/18 13:40	08/20/18 15:10

1

2

3

4

5

6

7

8

9

10

11

12

SURFACE SEDIMENT CHAIN OF CUSTODY

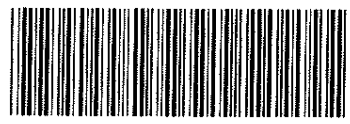
TestAmerica-Seattle 5755-8th-Street-East Tacoma, WA 98424-1317 Ph: 253-922-2310 Fax: 253-922-5047	Client Contact AECOM 1111 3rd Ave Suite 1600 Seattle, WA 98101 Phone (206) 438-2700 Fax: 1-(866) 495-5288 Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling Portland, OR Project #: 6056335 Study: Surface Sediment Sample Type: D/U	Project Contact: Amy Dahl / Chelsea Cook Tel: (206) 438-2261 / (206) 438-2010 Analysis Turnaround Time Calendar (C) or Work Days (W) 21 days <input type="checkbox"/> 21 days <input checked="" type="checkbox"/> Other ASAP	Site Contact: Jennifer Ray Laboratory Contact: Elaine Walker Carrier: Courier COC No. 1 _____ of _____ pages	Date/Time: 8/20/2018 Date/Time: 8/20/18 Date/Time: 8/20/18 Date/Time: 8/20/18
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)				
Special Instructions/QC Requirements & Comments: Analyze samples for grain size ASAP. Hold (H) remaining analyses pending further instruction. Separate reports for each lab.				
Relinquished by: <i>[Signature]</i> Company: M.E. Date/Time: 8/20/18 1430 Relinquished by: <i>[Signature]</i> Company: M.E. Date/Time: 8/20/18 1510 Relinquished by: <i>[Signature]</i> Company: M.E. Date/Time: 8/20/18 1510				



508

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

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				8/20/2018		COC No: 1					
Client Contact		Analysis Turnaround Time				Laboratory Contact: Elaine-Walker				Carrier: Courier		1 of 1 pages					
AECOM 1111 3rd Ave Suite 1600 Seattle, WA 98101 Phone: (206) 438-2700 Fax: 1-(866) 495-5288		Calendar (C) or Work Days (W)															
Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling		<input type="checkbox"/> 21 days															
Portland, OR		<input checked="" type="checkbox"/> Other _ASAP_															
Project #: 60566335 Study: Surface Sediment																	
Sample Type: D/U																	
Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	PCB Congeners 168A	PCDD/Fs 1613B	PPH Dissol. Metals, Mercury NWTPH-DA, 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	Sample Specific Notes:	
PDI-SG-B473	8/18/2018	10:18	SS		MT	8		H	H	H	x	H	H	H	H		
PDI-SG-B467	8/18/2018	12:29	SS		MT	8		H	H	H	x	H	H	H	H		
PDI-SG-B465	8/18/2018	13:40	SS		MT	8		H	H	H	x	H	H	H	H		
PDI-SG-B431	8/18/2018	15:48	SS		MT	8		H	H	H	x	H	H	H	H		



580-79722 Chain of Custody

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

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

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

Sample Disposal

Return To Client Disposal By Lab Archive For 12 Months

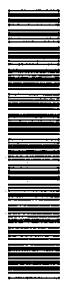
Special Instructions/QC Requirements & Comments:

Analyze samples for grain size ASAP, Hold (H) remaining analyses pending further instruction.
Separate reports for each lab.

508

Relinquished by: <i>[Signature]</i>	Company: AECOM	Date/Time: 8/20/18 1430	Received by: <i>[Signature]</i>	Company: M.E.	Date/Time: 8/20/18 1430
Relinquished by: <i>[Signature]</i>	Company: M.E.	Date/Time: 8/20/18 1510	Received by: <i>[Signature]</i>	Company: TAPOR	Date/Time: 8/20/18 1510
Relinquished by: <i>[Signature]</i>	Company: TAPOR	Date/Time: 8/20/18 1700	Received by: <i>[Signature]</i>	Company: SEA TA	Date/Time: 8.21.18 1400

I125 = 2.5/2.5 w/c.s.



Chain of Custody Record

Client Information (Sub Contract Lab)		Sampler:	Lab PIV:	Walker, Elaine M	Carrier Tracking No(s):	COC No:	580-58323-1			
Client Contact:		Phone:	E-Mail:	elaine.walker@testamerica.com	State of Origin:	Page:	Page 1 of 1			
Shipping/Receiving		Accreditations Required (See note):								
Company:		TestAmerica Laboratories, Inc.								
Address:		5815 Middlebrook Pike,								
City:		Knoxville								
State, Zip:		TN, 37921								
Phone:		865-291-3000(Tel) 865-584-4315(Fax)								
Email:										
Project #:		58012120								
Site:		Portland Harbor Pre-Remedial Design								
Due Date Requested:		9/7/2018								
TAT Requested (days):										
PO #:										
W/O #:										
Sample Date		Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Solid, Overstool, Other)	Field Filtered Sample (Yes or No)	Performs MSD (Yes or No)	1688A/1668_P_Sox (MDP) 209 PCBs plus Totals	Screen 1688/Screen_PCB_P's (Hold)	Total Number of Containers	Special Instructions/Note:
PDI-SG-B473 (580-79722-1)	8/18/18	10:18 Pacific	Solid	Solid	X	X	X	X	1	
PDI-SG-B467 (580-79722-2)	8/18/18	12:29 Pacific	Solid	Solid	X	X	X	X	1	
PDI-SG-B465 (580-79722-3)	8/18/18	13:40 Pacific	Solid	Solid	X	X	X	X	1	
PDI-SG-B431 (580-79722-4)	8/18/18	15:48 Pacific	Solid	Solid	X	X	X	X	1	
580-79722 Chain of Custody										
<p>Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.</p>										
Possible Hazard Identification										
<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/QC Requirements:										
Deliverable Requested: I, II, III, IV, Other (specify) _____ Primary Deliverable Rank: 2										
Empty Kit Relinquished by: _____ Date: _____ Relinquished by: _____ Date/Time: 8/21/18 9:10 Relinquished by: _____ Date/Time: _____ Relinquished by: _____ Date/Time: _____										
Company: _____ Company: _____ Company: _____ Company: TA WAX Company: _____ Company: _____										
Custody Seals Intact: _____ Custody Seal No.: _____ Cooler Temperature(s) °C and Other Remarks: _____										

TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

Review Items	Yes	No	NA	If No, what was the problem?	Comments/Actions Taken
1. Are the shipping containers intact?	/			<input type="checkbox"/> Containers, Broken	<p>CUSTODY SEALS INTACT RECEIVED AT 11:03/010410 BY 8-22-18 CODYA FES X# 4423 0250 9755 P0</p> <p>Labeling Verified by: _____ Date: _____</p> <p>pH test strip lot number: _____</p> <p>Box 16A: pH Preservation Box 18A: Residual Chlorine</p> <p>Preservative: _____</p> <p>Lot Number: _____</p> <p>Exp Date: _____</p> <p>Analyst: _____</p> <p>Date: _____</p> <p>Time: _____</p>
2. Were ambient air containers received intact?			/	<input type="checkbox"/> Checked in lab	
3. The coolers/containers custody seal if present, is it intact?	/			<input type="checkbox"/> Yes <input type="checkbox"/> NA	
4. Is the cooler temperature within limits? (> freezing temp. of water to 6 °C, VOST: 10°C) Thermometer ID : <u>5668</u> Correction factor: <u>-0.1°C</u>	/			<input type="checkbox"/> Cooler Out of Temp, Client Contacted, Proceed/Cancel <input type="checkbox"/> Cooler Out of Temp, Same Day Receipt	
5. Were all of the sample containers received intact?	/			<input type="checkbox"/> Containers, Broken	
6. Were samples received in appropriate containers?	/			<input type="checkbox"/> Containers, Improper; Client Contacted; Proceed/Cancel	
7. Do sample container labels match COC? (IDs, Dates, Times)	/			<input type="checkbox"/> COC & Samples Do Not Match <input type="checkbox"/> COC Incorrect/Incomplete <input type="checkbox"/> COC Not Received	
8. Were all of the samples listed on the COC received?	/			<input type="checkbox"/> Sample Received, Not on COC <input type="checkbox"/> Sample on COC, Not Received	
9. Is the date/time of sample collection noted?	/			<input type="checkbox"/> COC; No Date/Time; Client Contacted	
10. Was the sampler identified on the COC?	/		/	<input type="checkbox"/> Sampler Not Listed on COC	
11. Is the client and project name/# identified?	/			<input type="checkbox"/> COC Incorrect/Incomplete	
12. Are tests/parameters listed for each sample?	/			<input type="checkbox"/> COC No tests on COC	
13. Is the matrix of the samples noted?	/			<input type="checkbox"/> COC Incorrect/Incomplete	
14. Was COC relinquished? (Signed/Dated/Timed)	/			<input type="checkbox"/> COC Incorrect/Incomplete	
15. Were samples received within holding time?	/			<input type="checkbox"/> Holding Time - Receipt	
16. Were samples received with correct chemical preservative (excluding Encore)?	/		/	<input type="checkbox"/> pH Adjusted, pH Included (See box 16A) <input type="checkbox"/> Incorrect Preservative	
17. Were VOA samples received without headspace?	/		/	<input type="checkbox"/> Headspace (VOA only) <input type="checkbox"/> Residual Chlorine	
18. Did you check for residual chlorine, if necessary? (e.g. 1613B, 1668) Chlorine test strip lot number: _____	/		/		
19. For 1613B water samples is pH<9?	/		/	<input type="checkbox"/> If no, lab will adjust	
20. For rad samples was sample activity info. Provided?	/		/	<input type="checkbox"/> Project missing info	

Project #: _____ PM Instructions: _____

Sample Receiving Associate: [Signature] Date: 8-22-18

QA026R30.doc, 080916



Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-79722-3

Login Number: 79722

List Source: TestAmerica Seattle

List Number: 1

Creator: Antonson, Angeline D

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	

Isotope Dilution Summary

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

TestAmerica Job ID: 580-79722-3

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Matrix: Solid

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PCB1L (30-140)	PCB3L (30-140)	PCB4L (30-140)	PCB15L (30-140)	PCB19L (30-140)	PCB37L (30-140)	PCB54L (30-140)	PCB77L (30-140)
580-79722-1	PDI-SG-B473	63	63	80	81	90	89	103	91
580-79722-2	PDI-SG-B467	111	120	82	77	108	102	82	86
580-79722-3	PDI-SG-B465	143 *	152 *	87	72 q	102	84	76 q	105
LCS 140-23571/11-B	Lab Control Sample	73	68	85	80	96	89	111	85
LCSD 140-23571/12-B	Lab Control Sample Dup	68	67	83	82	95	90	104	81
MB 140-23571/10-B	Method Blank	57	53	81	80	88	84	106	78

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PCB81L (30-140)	PCB104L (30-140)	PCB105L (30-140)	P114L (30-140)	PCB118L (30-140)	PCB123L (30-140)	PCB126L (30-140)	PCB155L (30-140)
580-79722-1	PDI-SG-B473	89	82	93	92	92	90	88	98
580-79722-2	PDI-SG-B467	89	87	95	95	85	91	88	79
580-79722-3	PDI-SG-B465	103	73	80	89	87	85	69	66
LCS 140-23571/11-B	Lab Control Sample	86	87	94	93	91	90	88	103
LCSD 140-23571/12-B	Lab Control Sample Dup	83	81	93	94	90	88	87	98
MB 140-23571/10-B	Method Blank	76	89	89	85	85	80	79	113

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PCB156L (30-140)	PCB157L (30-140)	PCB167L (30-140)	PCB169L (30-140)	PCB170L (30-140)	PCB188L (30-140)	PCB189L (30-140)	PCB202L (30-140)
580-79722-1	PDI-SG-B473	86 C	86 C156	87	91	85	92	85	108
580-79722-2	PDI-SG-B467	112 C	112 C156	92	101	92	86	136	69
580-79722-3	PDI-SG-B465	54 C	54 C156	49	56	102	166 *	135	103
LCS 140-23571/11-B	Lab Control Sample	93 C	93 C156	91	96	87	92	84	108
LCSD 140-23571/12-B	Lab Control Sample Dup	90 C	90 C156	89	90	85	92	80	106
MB 140-23571/10-B	Method Blank	95 C	95 C156	89	93	80	89	76	115

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PCB205L (30-140)	PCB206L (30-140)	PCB208L (30-140)	PCB209L (30-140)
580-79722-1	PDI-SG-B473	75	83	96	80
580-79722-2	PDI-SG-B467	73	51	64	35
580-79722-3	PDI-SG-B465	68	58	69	48
LCS 140-23571/11-B	Lab Control Sample	79	91	88	93
LCSD 140-23571/12-B	Lab Control Sample Dup	76	90	85	87
MB 140-23571/10-B	Method Blank	75	98	102	113

Surrogate Legend

- PCB1L = PCB-1L
- PCB3L = PCB-3L
- PCB4L = PCB-4L
- PCB15L = PCB-15L
- PCB19L = PCB-19L
- PCB37L = PCB-37L
- PCB54L = PCB-54L
- PCB77L = PCB-77L
- PCB81L = PCB-81L
- PCB104L = PCB-104L
- PCB105L = PCB-105L
- P114L = PCB-114L
- PCB118L = PCB-118L
- PCB123L = PCB-123L

TestAmerica Seattle

Isotope Dilution Summary

Client: AECOM

Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-79722-3

PCB126L = PCB-126L
PCB155L = PCB-155L
PCB156L = PCB-156L
PCB157L = PCB-157L
PCB167L = PCB-167L
PCB169L = PCB-169L
PCB170L = PCB-170L
PCB188L = PCB-188L
PCB189L = PCB-189L
PCB202L = PCB-202L
PCB205L = PCB-205L
PCB206L = PCB-206L
PCB208L = PCB-208L
PCB209L = PCB-209L

1

2

3

4

5

6

7

8

9

10

11

12