TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

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TestAmerica Job ID: 580-77234-3
Client Project/Site: Portland Harbor Pre-Remedial Design

For:
AECOM
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Attn: Karen Mixon

M. Elaine Walker

Authorized for release by:
6/8/2018 5:18:39 PM

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Job ID: 580-77234-3

Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE
Client: AECOM
Project: Portland Harbor Pre-Remedial Design
Report Number: 580-77234-3

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

One sample was received on 5/11/2018 12:45 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the cooler at receipt time was 0.9º C.

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

This report contains results of PCB Congeners by Method 1668A, performed by 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)

Sample PDI-SG-B078-BL1 (580-77234-1) was analyzed for polychlorinated biphenyls congeners (PCBs) in accordance with EPA Method 1668A. The sample was prepared on 05/22/2018 and analyzed on 06/07/2018.

Several analytes were detected in method blank MB 140-20544/16-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-105 and PCB-118 failed the recovery criteria low for the MS of sample PDI-SG-B078-BL1MS (580-77234-1) in batch 140-21006. PCB-105, PCB-118, PCB-156 and PCB-157 failed the recovery criteria low for the MSD of sample PDI-SG-B078-BL1MSD (580-77234-1) in batch 140-21006.

The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Ion abundance ratios are outside criteria for the Isotope Dilution Analyte (IDA) associated with the following sample: PDI-SG-B078-BL1 (580-77234-1[MS]).

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

Qualifiers

Dioxin

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
C93	The compound co-eluted with PCB-93
C90	The compound co-eluted with PCB-90
C98	The compound co-eluted with PCB-98
F1	MS and/or MSD Recovery is outside acceptance limits.
C	The compound co-eluted with other compounds
C86	The compound co-eluted with PCB-86
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
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.
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
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
G	The reported quantitation limit has been raised due to an exhibited elevated noise or matrix interference

Glossary

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

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample ID: PDI-SG-B078-BL1
Date Collected: 05/09/18 10:15
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77234-1
Matrix: Solid
Percent Solids: 71.3

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

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.021	B	0.0098	0.00026	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-2	0.0056	J q B	0.0098	0.00029	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-3	0.011	B	0.0098	0.00033	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-4	0.066		0.020	0.00073	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-5	0.0027	J q	0.0098	0.00052	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-6	0.027		0.0098	0.00051	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-7	0.0056	J	0.0098	0.00049	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-8	0.12	B	0.020	0.00050	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-9	0.0089	J B	0.0098	0.00057	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-10	0.0052	J	0.0098	0.00055	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-11	0.054	B	0.020	0.00047	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-12	0.013	J C	0.020	0.00047	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-13	0.013	J C12	0.020	0.00047	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-14	ND		0.0098	0.00043	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-15	0.10		0.0098	0.00052	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-16	0.087		0.0098	0.00075	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-17	0.089		0.0098	0.00057	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-18	0.18	C	0.020	0.00050	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-19	0.033		0.0098	0.00071	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-20	0.47	C B	0.020	0.0020	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-21	0.21	C B	0.020	0.0019	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-22	0.15		0.0098	0.0020	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-23	ND		0.0098	0.0020	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-24	0.0037	J q B	0.0098	0.00043	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-25	0.043		0.0098	0.0019	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-26	0.077	C	0.020	0.0020	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-27	0.023		0.0098	0.00043	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-28	0.47	C20 B	0.020	0.0020	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-29	0.077	C26	0.020	0.0020	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-30	0.18	C18	0.020	0.00050	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-31	0.33	B	0.020	0.0019	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-32	0.087	B	0.0098	0.00039	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-33	0.21	C21 B	0.020	0.0019	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-34	ND		0.0098	0.0021	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-35	ND		0.0098	0.0020	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-36	ND		0.0098	0.0018	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-37	0.16	B	0.0098	0.0019	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-38	ND		0.0098	0.0020	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-39	ND		0.0098	0.0018	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-40	0.39	C	0.029	0.0027	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-41	0.39	C40	0.029	0.0027	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-42	0.18		0.0098	0.0027	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-43	0.039	C	0.020	0.0024	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-44	0.97	C B	0.029	0.0024	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-45	0.14	C	0.020	0.0028	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-46	0.051		0.0098	0.0033	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-47	0.97	C44 B	0.029	0.0024	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-48	0.11		0.0098	0.0026	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-49	0.56	C	0.020	0.0021	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1

Client Sample ID: PDI-SG-B078-BL1
Date Collected: 05/09/18 10:15
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77234-1
Matrix: Solid
Percent Solids: 71.3

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

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	0.13	C	0.020	0.0027	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-51	0.14	C45	0.020	0.0028	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-52	2.3	B	0.0098	0.0028	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-53	0.13	C50	0.020	0.0027	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-54	0.0038	J q	0.0098	0.000035	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-55	0.017		0.0098	0.0018	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-56	0.25		0.0098	0.0019	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-57	ND		0.0098	0.0019	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-58	0.0077	J	0.0098	0.0018	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-59	0.067	C	0.029	0.0018	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-60	0.11		0.0098	0.0018	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-61	1.6	C B	0.039	0.0018	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-62	0.067	C59	0.029	0.0018	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-63	0.019		0.0098	0.0016	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-64	0.34		0.0098	0.0017	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-65	0.97	C44 B	0.029	0.0024	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-66	0.64	B	0.0098	0.0018	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-67	0.015		0.0098	0.0017	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-68	ND		0.0098	0.0016	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-69	0.56	C49	0.020	0.0021	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-70	1.6	C61 B	0.039	0.0018	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-71	0.39	C40	0.029	0.0027	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-72	0.0089	J	0.0098	0.0018	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-73	0.039	C43	0.020	0.0024	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-74	1.6	C61 B	0.039	0.0018	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-75	0.067	C59	0.029	0.0018	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-76	1.6	C61 B	0.039	0.0018	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-77	0.056		0.0098	0.0017	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-78	ND		0.0098	0.0018	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-79	0.033		0.0098	0.0015	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-80	ND		0.0098	0.0016	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-81	ND		0.0098	0.0017	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-82	0.54		0.0098	0.00047	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-83	2.3	C	0.020	0.00045	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-84	1.3		0.0098	0.00049	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-85	0.68	C	0.029	0.00034	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-86	2.8	C	0.059	0.00036	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-87	2.8	C86	0.059	0.00036	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-88	0.60	C	0.020	0.00043	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-89	0.042		0.0098	0.00046	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-90	4.2	C B	0.029	0.00036	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-91	0.60	C88	0.020	0.00043	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-92	0.84		0.0098	0.00044	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-93	0.11	C	0.020	0.00043	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-94	ND		0.0098	0.00046	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-95	4.0		0.0098	0.00045	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-96	ND		0.0098	0.00035	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-97	2.8	C86	0.059	0.00036	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-98	0.13	C	0.020	0.00043	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1

Client Sample ID: PDI-SG-B078-BL1
Date Collected: 05/09/18 10:15
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77234-1
Matrix: Solid
Percent Solids: 71.3

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

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	2.3	C83	0.020	0.00045	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-100	0.11	C93	0.020	0.00043	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-101	4.2	C90 B	0.029	0.00036	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-102	0.13	C98	0.020	0.00043	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-103	ND		0.0098	0.00040	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-104	ND		0.0098	0.00031	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-105	1.3	F1	0.0098	0.0055	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-106	ND		0.0098	0.0059	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-107	0.23		0.0098	0.0057	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-108	0.16	C	0.020	0.0059	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-109	2.8	C86	0.059	0.00036	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-110	5.3	C B	0.020	0.00030	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-111	ND		0.0098	0.00028	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-112	ND		0.0098	0.00030	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-113	4.2	C90 B	0.029	0.00036	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-114	0.081		0.0098	0.0055	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-115	5.3	C110 B	0.020	0.00030	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-116	0.68	C85	0.029	0.00034	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-117	0.68	C85	0.029	0.00034	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-118	3.2	B	0.0098	0.0054	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-119	2.8	C86	0.059	0.00036	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-120	ND		0.0098	0.00027	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-121	ND		0.0098	0.00030	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-122	0.064		0.0098	0.0065	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-123	0.064		0.0098	0.0054	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-124	0.16	C108	0.020	0.0059	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-125	2.8	C86	0.059	0.00036	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-126	0.0068	J	0.0098	0.0056	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-127	0.015		0.0098	0.0056	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-128	0.98	C	0.020	0.0033	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-129	5.4	C B	0.039	0.0033	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-130	0.40		0.0098	0.0045	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-131	0.096		0.0098	0.0045	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-132	1.9		0.0098	0.0043	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-133	0.073		0.0098	0.0042	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-134	0.35	C	0.020	0.0044	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-135	1.6	C B	0.020	0.000091	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-136	0.66		0.0098	0.000066	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-137	0.31		0.0098	0.0036	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-138	5.4	C129 B	0.039	0.0033	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-139	0.11	C	0.020	0.0037	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-140	0.11	C139	0.020	0.0037	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-141	1.0		0.0098	0.0039	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-142	ND		0.0098	0.0042	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-143	0.35	C134	0.020	0.0044	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-144	0.25		0.0098	0.000085	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-145	0.0035	J q	0.0098	0.000066	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-146	0.66		0.0098	0.0035	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-147	3.8	C B	0.020	0.0038	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1

Client Sample ID: PDI-SG-B078-BL1
Date Collected: 05/09/18 10:15
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77234-1
Matrix: Solid
Percent Solids: 71.3

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

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	0.0028	J q	0.0098	0.000088	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-149	3.8	C147 B	0.020	0.0038	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-150	0.0044	J q	0.0098	0.000059	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-151	1.6	C135 B	0.020	0.000091	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-152	0.0048	J q	0.0098	0.000064	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-153	3.6	C B	0.020	0.0029	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-154	0.055		0.0098	0.000076	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-155	ND		0.0098	0.000060	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-156	0.69	C B F1	0.020	0.0035	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-157	0.69	C156 B F1	0.020	0.0035	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-158	0.63		0.0098	0.0026	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-159	0.041		0.0098	0.0027	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-160	5.4	C129 B	0.039	0.0033	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-161	ND		0.0098	0.0028	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-162	ND		0.0098	0.0026	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-163	5.4	C129 B	0.039	0.0033	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-164	0.39		0.0098	0.0028	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-165	ND		0.0098	0.0032	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-166	0.98	C128	0.020	0.0033	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-167	0.23		0.0098	0.0020	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-168	3.6	C153 B	0.020	0.0029	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-169	ND		0.0098	0.0020	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-170	1.0		0.0098	0.000048	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-171	0.33	C	0.020	0.000050	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-172	0.18		0.0098	0.000049	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-173	0.33	C171	0.020	0.000050	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-174	1.1	B	0.0098	0.000051	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-175	0.043		0.0098	0.000046	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-176	0.11		0.0098	0.000032	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-177	0.60		0.0098	0.000051	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-178	0.18		0.0098	0.000047	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-179	0.38		0.0098	0.000035	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-180	2.1	C B	0.020	0.000038	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-181	0.015		0.0098	0.000044	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-182	ND		0.0098	0.000041	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-183	0.64	C B	0.020	0.000042	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-184	ND		0.0098	0.000036	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-185	0.64	C183 B	0.020	0.000042	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-186	ND		0.0098	0.000034	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-187	1.1		0.0098	0.000043	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-188	ND		0.0098	0.000032	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-189	0.041		0.0098	0.00079	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-190	0.20		0.0098	0.000032	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-191	0.047		0.0098	0.000033	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-192	ND		0.0098	0.000035	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-193	2.1	C180 B	0.020	0.000038	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-194	0.45		0.0098	0.0019	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-195	0.19		0.0098	0.0021	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-196	0.22		0.0098	0.00024	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1

Client Sample ID: PDI-SG-B078-BL1
Date Collected: 05/09/18 10:15
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77234-1
Matrix: Solid
Percent Solids: 71.3

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

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	0.015		0.0098	0.00017	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-198	0.52	C	0.020	0.00026	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-199	0.52	C198	0.020	0.00026	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-200	0.057		0.0098	0.00018	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-201	0.058		0.0098	0.00018	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-202	0.097		0.0098	0.00020	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-203	0.32		0.0098	0.00023	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-204	ND		0.0098	0.00018	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-205	0.022		0.0098	0.0014	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-206	0.30		0.0098	0.0011	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-207	0.028		0.0098	0.00069	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-208	0.082		0.0098	0.00074	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1
PCB-209	0.18		0.0098	0.00034	ng/g	☼	05/22/18 08:05	06/07/18 17:32	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*60*		*30 - 140*	*05/22/18 08:05*	*06/07/18 17:32*	*1*
PCB-3L	*57*		*30 - 140*	*05/22/18 08:05*	*06/07/18 17:32*	*1*
PCB-4L	*87*		*30 - 140*	*05/22/18 08:05*	*06/07/18 17:32*	*1*
PCB-15L	*87*		*30 - 140*	*05/22/18 08:05*	*06/07/18 17:32*	*1*
PCB-19L	*87*		*30 - 140*	*05/22/18 08:05*	*06/07/18 17:32*	*1*
PCB-37L	*80*		*30 - 140*	*05/22/18 08:05*	*06/07/18 17:32*	*1*
PCB-54L	*100*		*30 - 140*	*05/22/18 08:05*	*06/07/18 17:32*	*1*
PCB-77L	*98*		*30 - 140*	*05/22/18 08:05*	*06/07/18 17:32*	*1*
PCB-81L	*96*		*30 - 140*	*05/22/18 08:05*	*06/07/18 17:32*	*1*
PCB-104L	*91*		*30 - 140*	*05/22/18 08:05*	*06/07/18 17:32*	*1*
PCB-105L	*89*		*30 - 140*	*05/22/18 08:05*	*06/07/18 17:32*	*1*
PCB-114L	*85*		*30 - 140*	*05/22/18 08:05*	*06/07/18 17:32*	*1*
PCB-118L	*89*		*30 - 140*	*05/22/18 08:05*	*06/07/18 17:32*	*1*
PCB-123L	*89*		*30 - 140*	*05/22/18 08:05*	*06/07/18 17:32*	*1*
PCB-126L	*91*		*30 - 140*	*05/22/18 08:05*	*06/07/18 17:32*	*1*
PCB-155L	*112*		*30 - 140*	*05/22/18 08:05*	*06/07/18 17:32*	*1*
PCB-156L	*91*	*C*	*30 - 140*	*05/22/18 08:05*	*06/07/18 17:32*	*1*
PCB-157L	*91*	*C156*	*30 - 140*	*05/22/18 08:05*	*06/07/18 17:32*	*1*
PCB-167L	*88*		*30 - 140*	*05/22/18 08:05*	*06/07/18 17:32*	*1*
PCB-169L	*90*		*30 - 140*	*05/22/18 08:05*	*06/07/18 17:32*	*1*
PCB-170L	*87*		*30 - 140*	*05/22/18 08:05*	*06/07/18 17:32*	*1*
PCB-188L	*85*		*30 - 140*	*05/22/18 08:05*	*06/07/18 17:32*	*1*
PCB-189L	*76*		*30 - 140*	*05/22/18 08:05*	*06/07/18 17:32*	*1*
PCB-202L	*111*		*30 - 140*	*05/22/18 08:05*	*06/07/18 17:32*	*1*
PCB-205L	*82*		*30 - 140*	*05/22/18 08:05*	*06/07/18 17:32*	*1*
PCB-206L	*81*		*30 - 140*	*05/22/18 08:05*	*06/07/18 17:32*	*1*
PCB-208L	*83*		*30 - 140*	*05/22/18 08:05*	*06/07/18 17:32*	*1*
PCB-209L	*84*		*30 - 140*	*05/22/18 08:05*	*06/07/18 17:32*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-28L	*80*		*40 - 125*	*05/22/18 08:05*	*06/07/18 17:32*	*1*
PCB-111L	*90*		*40 - 125*	*05/22/18 08:05*	*06/07/18 17:32*	*1*
PCB-178L	*84*		*40 - 125*	*05/22/18 08:05*	*06/07/18 17:32*	*1*

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

Lab Sample ID: MB 140-20544/16-B
Matrix: Solid
Analysis Batch: 20989

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 20544

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.00317	J q	0.010	0.000093	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-2	0.00474	J q	0.010	0.00010	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-3	0.00334	J	0.010	0.00012	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-4	ND		0.020	0.00018	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-5	ND		0.010	0.00014	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-6	ND		0.010	0.00014	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-7	ND		0.010	0.00013	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-8	0.000445	J q	0.020	0.00013	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-9	0.000460	J q	0.010	0.00015	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-10	ND		0.010	0.00015	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-11	0.00249	J	0.020	0.00013	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-12	ND	C	0.020	0.00013	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-13	ND	C12	0.020	0.00013	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-14	ND		0.010	0.00012	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-15	ND		0.010	0.00015	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-16	ND		0.010	0.000031	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-17	ND		0.010	0.000023	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-18	ND	C	0.020	0.000020	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-19	ND		0.010	0.000029	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-20	0.000332	J q C	0.020	0.00011	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-21	0.000210	J q C	0.020	0.00011	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-22	ND		0.010	0.00012	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-23	ND		0.010	0.00011	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-24	0.0000453	J	0.010	0.000018	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-25	ND		0.010	0.00011	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-26	ND	C	0.020	0.00011	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-27	ND		0.010	0.000017	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-28	0.000332	J q C20	0.020	0.00011	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-29	ND	C26	0.020	0.00011	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-30	ND	C18	0.020	0.000020	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-31	0.000362	J q	0.020	0.00011	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-32	0.000281	J	0.010	0.000016	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-33	0.000210	J q C21	0.020	0.00011	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-34	ND		0.010	0.00012	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-35	ND		0.010	0.00011	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-36	ND		0.010	0.00010	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-37	0.000140	J q	0.010	0.00011	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-38	ND		0.010	0.00011	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-39	ND		0.010	0.00010	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-40	ND	C	0.030	0.000045	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-41	ND	C40	0.030	0.000045	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-42	ND		0.010	0.000046	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-43	ND	C	0.020	0.000041	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-44	0.00106	J q C	0.030	0.000041	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-45	ND	C	0.020	0.000048	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-46	ND		0.010	0.000056	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-47	0.00106	J q C44	0.030	0.000041	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-48	ND		0.010	0.000043	ng/g		05/22/18 08:05	06/07/18 04:13	1

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

Lab Sample ID: MB 140-20544/16-B
Matrix: Solid
Analysis Batch: 20989

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 20544

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-49	ND	C	0.020	0.000036	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-50	ND	C	0.020	0.000045	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-51	ND	C45	0.020	0.000048	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-52	0.000644	J	0.010	0.000048	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-53	ND	C50	0.020	0.000045	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-54	ND		0.010	0.000030	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-55	ND		0.010	0.000031	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-56	ND		0.010	0.000032	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-57	ND		0.010	0.000032	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-58	ND		0.010	0.000030	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-59	ND	C	0.030	0.000031	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-60	ND		0.010	0.000031	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-61	0.000504	J C	0.040	0.000030	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-62	ND	C59	0.030	0.000031	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-63	ND		0.010	0.000027	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-64	ND		0.010	0.000029	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-65	0.00106	J q C44	0.030	0.000041	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-66	0.000225	J	0.010	0.000030	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-67	ND		0.010	0.000029	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-68	ND		0.010	0.000027	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-69	ND	C49	0.020	0.000036	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-70	0.000504	J C61	0.040	0.000030	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-71	ND	C40	0.030	0.000045	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-72	ND		0.010	0.000031	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-73	ND	C43	0.020	0.000041	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-74	0.000504	J C61	0.040	0.000030	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-75	ND	C59	0.030	0.000031	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-76	0.000504	J C61	0.040	0.000030	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-77	ND		0.010	0.000029	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-78	ND		0.010	0.000030	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-79	ND		0.010	0.000026	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-80	ND		0.010	0.000027	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-81	ND		0.010	0.000029	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-82	ND		0.010	0.000054	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-83	ND	C	0.020	0.000052	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-84	ND		0.010	0.000057	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-85	ND	C	0.030	0.000039	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-86	ND	C	0.060	0.000041	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-87	ND	C86	0.060	0.000041	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-88	ND	C	0.020	0.000049	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-89	ND		0.010	0.000053	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-90	0.000198	J q C	0.030	0.000042	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-91	ND	C88	0.020	0.000049	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-92	ND		0.010	0.000051	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-93	ND	C	0.020	0.000050	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-94	ND		0.010	0.000053	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-95	ND		0.010	0.000052	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-96	ND		0.010	0.000040	ng/g		05/22/18 08:05	06/07/18 04:13	1

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

Lab Sample ID: MB 140-20544/16-B
Matrix: Solid
Analysis Batch: 20989

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 20544

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-97	ND	C86	0.060	0.000041	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-98	ND	C	0.020	0.000050	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-99	ND	C83	0.020	0.000052	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-100	ND	C93	0.020	0.000050	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-101	0.000198	J q C90	0.030	0.000042	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-102	ND	C98	0.020	0.000050	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-103	ND		0.010	0.000046	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-104	ND		0.010	0.000036	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-105	ND		0.010	0.00014	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-106	ND		0.010	0.00015	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-107	ND		0.010	0.00014	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-108	ND	C	0.020	0.00015	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-109	ND	C86	0.060	0.000041	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-110	0.000382	J q C	0.020	0.000034	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-111	ND		0.010	0.000032	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-112	ND		0.010	0.000035	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-113	0.000198	J q C90	0.030	0.000042	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-114	ND		0.010	0.00013	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-115	0.000382	J q C110	0.020	0.000034	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-116	ND	C85	0.030	0.000039	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-117	ND	C85	0.030	0.000039	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-118	0.000357	J	0.010	0.00013	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-119	ND	C86	0.060	0.000041	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-120	ND		0.010	0.000032	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-121	ND		0.010	0.000034	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-122	ND		0.010	0.00016	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-123	ND		0.010	0.00013	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-124	ND	C108	0.020	0.00015	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-125	ND	C86	0.060	0.000041	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-126	ND		0.010	0.00015	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-127	ND		0.010	0.00014	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-128	ND	C	0.020	0.000052	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-129	0.000660	J q C	0.040	0.000053	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-130	ND		0.010	0.000071	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-131	ND		0.010	0.000072	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-132	ND		0.010	0.000069	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-133	ND		0.010	0.000067	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-134	ND	C	0.020	0.000070	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-135	0.000193	J q C	0.020	0.000035	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-136	ND		0.010	0.000025	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-137	ND		0.010	0.000058	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-138	0.000660	J q C129	0.040	0.000053	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-139	ND	C	0.020	0.000059	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-140	ND	C139	0.020	0.000059	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-141	ND		0.010	0.000062	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-142	ND		0.010	0.000067	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-143	ND	C134	0.020	0.000070	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-144	ND		0.010	0.000033	ng/g		05/22/18 08:05	06/07/18 04:13	1

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

Lab Sample ID: MB 140-20544/16-B
Matrix: Solid
Analysis Batch: 20989

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 20544

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-145	ND		0.010	0.000025	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-146	ND		0.010	0.000056	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-147	0.000173	J q C	0.020	0.000060	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-148	ND		0.010	0.000034	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-149	0.000173	J q C147	0.020	0.000060	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-150	ND		0.010	0.000023	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-151	0.000193	J q C135	0.020	0.000035	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-152	ND		0.010	0.000024	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-153	0.000857	J C	0.020	0.000046	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-154	ND		0.010	0.000029	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-155	ND		0.010	0.000023	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-156	0.0000895	J q C	0.020	0.000057	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-157	0.0000895	J q C156	0.020	0.000057	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-158	ND		0.010	0.000041	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-159	ND		0.010	0.000043	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-160	0.000660	J q C129	0.040	0.000053	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-161	ND		0.010	0.000044	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-162	ND		0.010	0.000042	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-163	0.000660	J q C129	0.040	0.000053	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-164	ND		0.010	0.000045	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-165	ND		0.010	0.000050	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-166	ND	C128	0.020	0.000052	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-167	ND		0.010	0.000030	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-168	0.000857	J C153	0.020	0.000046	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-169	ND		0.010	0.000033	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-170	ND		0.010	0.000012	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-171	ND	C	0.020	0.000012	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-172	ND		0.010	0.000011	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-173	ND	C171	0.020	0.000012	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-174	0.000255	J q	0.010	0.000012	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-175	ND		0.010	0.000011	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-176	ND		0.010	0.0000075	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-177	ND		0.010	0.000012	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-178	ND		0.010	0.000011	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-179	ND		0.010	0.0000082	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-180	0.000617	J q C	0.020	0.0000088	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-181	ND		0.010	0.000010	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-182	ND		0.010	0.0000097	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-183	0.000178	J q C	0.020	0.0000099	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-184	ND		0.010	0.0000083	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-185	0.000178	J q C183	0.020	0.0000099	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-186	ND		0.010	0.0000080	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-187	ND		0.010	0.000010	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-188	ND		0.010	0.0000073	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-189	ND		0.010	0.000032	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-190	ND		0.010	0.0000076	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-191	ND		0.010	0.0000077	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-192	ND		0.010	0.0000081	ng/g		05/22/18 08:05	06/07/18 04:13	1

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

Lab Sample ID: MB 140-20544/16-B
Matrix: Solid
Analysis Batch: 20989

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 20544

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-193	0.000617	J q C180	0.020	0.0000088	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-194	ND		0.010	0.000030	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-195	ND		0.010	0.000034	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-196	ND		0.010	0.000031	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-197	ND		0.010	0.000021	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-198	ND	C	0.020	0.000032	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-199	ND	C198	0.020	0.000032	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-200	ND		0.010	0.000023	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-201	ND		0.010	0.000022	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-202	ND		0.010	0.000025	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-203	ND		0.010	0.000029	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-204	ND		0.010	0.000023	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-205	ND		0.010	0.000023	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-206	ND		0.010	0.00015	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-207	ND		0.010	0.00010	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-208	ND		0.010	0.00011	ng/g		05/22/18 08:05	06/07/18 04:13	1
PCB-209	ND		0.010	0.000020	ng/g		05/22/18 08:05	06/07/18 04:13	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*63*		*30 - 140*	*05/22/18 08:05*	*06/07/18 04:13*	*1*
PCB-3L	*59*		*30 - 140*	*05/22/18 08:05*	*06/07/18 04:13*	*1*
PCB-4L	*90*		*30 - 140*	*05/22/18 08:05*	*06/07/18 04:13*	*1*
PCB-15L	*84*		*30 - 140*	*05/22/18 08:05*	*06/07/18 04:13*	*1*
PCB-19L	*85*		*30 - 140*	*05/22/18 08:05*	*06/07/18 04:13*	*1*
PCB-37L	*83*		*30 - 140*	*05/22/18 08:05*	*06/07/18 04:13*	*1*
PCB-54L	*83*		*30 - 140*	*05/22/18 08:05*	*06/07/18 04:13*	*1*
PCB-77L	*85*		*30 - 140*	*05/22/18 08:05*	*06/07/18 04:13*	*1*
PCB-81L	*84*		*30 - 140*	*05/22/18 08:05*	*06/07/18 04:13*	*1*
PCB-104L	*95*		*30 - 140*	*05/22/18 08:05*	*06/07/18 04:13*	*1*
PCB-105L	*88*		*30 - 140*	*05/22/18 08:05*	*06/07/18 04:13*	*1*
PCB-114L	*87*		*30 - 140*	*05/22/18 08:05*	*06/07/18 04:13*	*1*
PCB-118L	*92*		*30 - 140*	*05/22/18 08:05*	*06/07/18 04:13*	*1*
PCB-123L	*88*		*30 - 140*	*05/22/18 08:05*	*06/07/18 04:13*	*1*
PCB-126L	*88*		*30 - 140*	*05/22/18 08:05*	*06/07/18 04:13*	*1*
PCB-155L	*107*		*30 - 140*	*05/22/18 08:05*	*06/07/18 04:13*	*1*
PCB-156L	*87*	*C*	*30 - 140*	*05/22/18 08:05*	*06/07/18 04:13*	*1*
PCB-157L	*87*	*C156*	*30 - 140*	*05/22/18 08:05*	*06/07/18 04:13*	*1*
PCB-167L	*87*		*30 - 140*	*05/22/18 08:05*	*06/07/18 04:13*	*1*
PCB-169L	*88*		*30 - 140*	*05/22/18 08:05*	*06/07/18 04:13*	*1*
PCB-170L	*86*		*30 - 140*	*05/22/18 08:05*	*06/07/18 04:13*	*1*
PCB-188L	*91*		*30 - 140*	*05/22/18 08:05*	*06/07/18 04:13*	*1*
PCB-189L	*79*		*30 - 140*	*05/22/18 08:05*	*06/07/18 04:13*	*1*
PCB-202L	*113*		*30 - 140*	*05/22/18 08:05*	*06/07/18 04:13*	*1*
PCB-205L	*84*		*30 - 140*	*05/22/18 08:05*	*06/07/18 04:13*	*1*
PCB-206L	*80*		*30 - 140*	*05/22/18 08:05*	*06/07/18 04:13*	*1*
PCB-208L	*82*		*30 - 140*	*05/22/18 08:05*	*06/07/18 04:13*	*1*
PCB-209L	*87*		*30 - 140*	*05/22/18 08:05*	*06/07/18 04:13*	*1*

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

Lab Sample ID: MB 140-20544/16-B
Matrix: Solid
Analysis Batch: 20989

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 20544

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	79		40 - 125	05/22/18 08:05	06/07/18 04:13	1
PCB-111L	89		40 - 125	05/22/18 08:05	06/07/18 04:13	1
PCB-178L	88		40 - 125	05/22/18 08:05	06/07/18 04:13	1

Lab Sample ID: LCS 140-20544/17-B
Matrix: Solid
Analysis Batch: 20887

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 20544

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1	0.500	0.465		ng/g		93	50 - 150
PCB-3	0.500	0.470		ng/g		94	50 - 150
PCB-4	0.500	0.405		ng/g		81	50 - 150
PCB-15	0.500	0.443		ng/g		89	50 - 150
PCB-19	0.500	0.407		ng/g		81	50 - 150
PCB-37	0.500	0.436	G	ng/g		87	50 - 150
PCB-54	0.500	0.447		ng/g		89	50 - 150
PCB-77	0.500	0.421		ng/g		84	50 - 150
PCB-81	0.500	0.433		ng/g		87	50 - 150
PCB-104	0.500	0.418		ng/g		84	50 - 150
PCB-105	0.500	0.430		ng/g		86	50 - 150
PCB-114	0.500	0.467		ng/g		93	50 - 150
PCB-118	0.500	0.444		ng/g		89	50 - 150
PCB-123	0.500	0.425		ng/g		85	50 - 150
PCB-126	0.500	0.442		ng/g		88	50 - 150
PCB-155	0.500	0.475		ng/g		95	50 - 150
PCB-156	1.00	0.897	C	ng/g		90	50 - 150
PCB-157	1.00	0.897	C156	ng/g		90	50 - 150
PCB-167	0.500	0.459		ng/g		92	50 - 150
PCB-169	0.500	0.439		ng/g		88	50 - 150
PCB-188	0.500	0.413		ng/g		83	50 - 150
PCB-189	0.500	0.450		ng/g		90	50 - 150
PCB-202	0.500	0.426		ng/g		85	50 - 150
PCB-205	0.500	0.425		ng/g		85	50 - 150
PCB-206	0.500	0.458		ng/g		92	50 - 150
PCB-208	0.500	0.447		ng/g		89	50 - 150
PCB-209	0.500	0.425		ng/g		85	50 - 150

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
PCB-1L	59		30 - 140
PCB-3L	57		30 - 140
PCB-4L	84		30 - 140
PCB-15L	82		30 - 140
PCB-19L	81		30 - 140
PCB-37L	83		30 - 140
PCB-54L	103		30 - 140
PCB-77L	89		30 - 140
PCB-81L	86		30 - 140
PCB-104L	92		30 - 140

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

Lab Sample ID: LCS 140-20544/17-B
Matrix: Solid
Analysis Batch: 20887

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 20544

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
PCB-105L	87		30 - 140
PCB-114L	84		30 - 140
PCB-118L	89		30 - 140
PCB-123L	88		30 - 140
PCB-126L	88		30 - 140
PCB-155L	105		30 - 140
PCB-156L	87	C	30 - 140
PCB-157L	87	C156	30 - 140
PCB-167L	85		30 - 140
PCB-169L	87		30 - 140
PCB-170L	83		30 - 140
PCB-188L	85		30 - 140
PCB-189L	77		30 - 140
PCB-202L	109		30 - 140
PCB-205L	82		30 - 140
PCB-206L	80		30 - 140
PCB-208L	81		30 - 140
PCB-209L	87		30 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
PCB-28L	82		40 - 125
PCB-111L	90		40 - 125
PCB-178L	86		40 - 125

Lab Sample ID: LCSD 140-20544/18-B
Matrix: Solid
Analysis Batch: 20887

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 20544

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1			0.500	0.464		ng/g		93	50 - 150	0	50
PCB-3			0.500	0.487		ng/g		97	50 - 150	4	50
PCB-4			0.500	0.420		ng/g		84	50 - 150	4	50
PCB-15			0.500	0.437		ng/g		87	50 - 150	1	50
PCB-19			0.500	0.415		ng/g		83	50 - 150	2	50
PCB-37			0.500	0.438		ng/g		88	50 - 150	0	50
PCB-54			0.500	0.438		ng/g		88	50 - 150	2	50
PCB-77			0.500	0.424		ng/g		85	50 - 150	1	50
PCB-81			0.500	0.419		ng/g		84	50 - 150	3	50
PCB-104			0.500	0.407		ng/g		81	50 - 150	3	50
PCB-105			0.500	0.428		ng/g		86	50 - 150	0	50
PCB-114			0.500	0.446		ng/g		89	50 - 150	5	50
PCB-118			0.500	0.437		ng/g		87	50 - 150	1	50
PCB-123			0.500	0.419		ng/g		84	50 - 150	1	50
PCB-126			0.500	0.440		ng/g		88	50 - 150	0	50
PCB-155			0.500	0.458		ng/g		92	50 - 150	3	50
PCB-156			1.00	0.885	C	ng/g		89	50 - 150	1	50
PCB-157			1.00	0.885	C156	ng/g		89	50 - 150	1	50
PCB-167			0.500	0.459		ng/g		92	50 - 150	0	50

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

Lab Sample ID: LCSD 140-20544/18-B
Matrix: Solid
Analysis Batch: 20887

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 20544

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-169			0.500	0.437		ng/g		87	50 - 150	1	50
PCB-188			0.500	0.414		ng/g		83	50 - 150	0	50
PCB-189			0.500	0.447		ng/g		89	50 - 150	1	50
PCB-202			0.500	0.425		ng/g		85	50 - 150	0	50
PCB-205			0.500	0.432		ng/g		86	50 - 150	1	50
PCB-206			0.500	0.475		ng/g		95	50 - 150	3	50
PCB-208			0.500	0.446		ng/g		89	50 - 150	0	50
PCB-209			0.500	0.408		ng/g		82	50 - 150	4	50

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
PCB-1L	*60*		*30 - 140*
PCB-3L	*57*		*30 - 140*
PCB-4L	*86*		*30 - 140*
PCB-15L	*86*		*30 - 140*
PCB-19L	*80*		*30 - 140*
PCB-37L	*85*		*30 - 140*
PCB-54L	*102*		*30 - 140*
PCB-77L	*85*		*30 - 140*
PCB-81L	*83*		*30 - 140*
PCB-104L	*93*		*30 - 140*
PCB-105L	*87*		*30 - 140*
PCB-114L	*85*		*30 - 140*
PCB-118L	*89*		*30 - 140*
PCB-123L	*88*		*30 - 140*
PCB-126L	*87*		*30 - 140*
PCB-155L	*106*		*30 - 140*
PCB-156L	*85*	*C*	*30 - 140*
PCB-157L	*85*	*C156*	*30 - 140*
PCB-167L	*83*		*30 - 140*
PCB-169L	*85*		*30 - 140*
PCB-170L	*85*		*30 - 140*
PCB-188L	*88*		*30 - 140*
PCB-189L	*75*		*30 - 140*
PCB-202L	*110*		*30 - 140*
PCB-205L	*80*		*30 - 140*
PCB-206L	*76*		*30 - 140*
PCB-208L	*80*		*30 - 140*
PCB-209L	*87*		*30 - 140*

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
PCB-28L	*82*		*40 - 125*
PCB-111L	*91*		*40 - 125*
PCB-178L	*90*		*40 - 125*

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

Lab Sample ID: 580-77234-1 MS
Matrix: Solid
Analysis Batch: 21006

Client Sample ID: PDI-SG-B078-BL1
Prep Type: Total/NA
Prep Batch: 20544

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1	0.021	B	0.494	0.479		ng/g	☼	93	50 - 150
PCB-3	0.011	B	0.494	0.516		ng/g	☼	102	50 - 150
PCB-4	0.066		0.494	0.438		ng/g	☼	75	50 - 150
PCB-15	0.10		0.494	0.522		ng/g	☼	85	50 - 150
PCB-19	0.033		0.494	0.420		ng/g	☼	78	50 - 150
PCB-37	0.16	B	0.494	0.560		ng/g	☼	80	50 - 150
PCB-54	0.0038	J q	0.494	0.485		ng/g	☼	97	50 - 150
PCB-77	0.056		0.494	0.465		ng/g	☼	83	50 - 150
PCB-81	ND		0.494	0.432		ng/g	☼	88	50 - 150
PCB-104	ND		0.494	0.409		ng/g	☼	83	50 - 150
PCB-105	1.3	F1	0.494	1.09	F1	ng/g	☼	-38	50 - 150
PCB-114	0.081		0.494	0.488		ng/g	☼	83	50 - 150
PCB-118	3.2	B	0.494	2.02	4	ng/g	☼	-241	50 - 150
PCB-123	0.064		0.494	0.464		ng/g	☼	81	50 - 150
PCB-126	0.0068	J	0.494	0.478		ng/g	☼	95	50 - 150
PCB-155	ND		0.494	0.453		ng/g	☼	92	50 - 150
PCB-156	0.69	C B F1	0.988	1.25	C	ng/g	☼	56	50 - 150
PCB-157	0.69	C156 B F1	0.988	1.25	C156	ng/g	☼	56	50 - 150
PCB-167	0.23		0.494	0.595		ng/g	☼	74	50 - 150
PCB-169	ND		0.494	0.436		ng/g	☼	88	50 - 150
PCB-188	ND		0.494	0.413		ng/g	☼	84	50 - 150
PCB-189	0.041		0.494	0.467		ng/g	☼	86	50 - 150
PCB-202	0.097		0.494	0.469		ng/g	☼	75	50 - 150
PCB-205	0.022		0.494	0.439		ng/g	☼	84	50 - 150
PCB-206	0.30		0.494	0.653		ng/g	☼	71	50 - 150
PCB-208	0.082		0.494	0.499		ng/g	☼	84	50 - 150
PCB-209	0.18		0.494	0.464		ng/g	☼	56	50 - 150

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
PCB-1L	*59*		*30 - 140*
PCB-3L	*45*	*q*	*30 - 140*
PCB-4L	*85*		*30 - 140*
PCB-15L	*85*		*30 - 140*
PCB-19L	*86*		*30 - 140*
PCB-37L	*89*		*30 - 140*
PCB-54L	*97*		*30 - 140*
PCB-77L	*92*		*30 - 140*
PCB-81L	*91*		*30 - 140*
PCB-104L	*89*		*30 - 140*
PCB-105L	*89*		*30 - 140*
PCB-114L	*89*		*30 - 140*
PCB-118L	*90*		*30 - 140*
PCB-123L	*90*		*30 - 140*
PCB-126L	*87*		*30 - 140*
PCB-155L	*110*		*30 - 140*
PCB-156L	*79*	*C*	*30 - 140*
PCB-157L	*79*	*C156*	*30 - 140*

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

Lab Sample ID: 580-77234-1 MS
Matrix: Solid
Analysis Batch: 21006

Client Sample ID: PDI-SG-B078-BL1
Prep Type: Total/NA
Prep Batch: 20544

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
PCB-167L	84		30 - 140
PCB-169L	76		30 - 140
PCB-170L	84		30 - 140
PCB-188L	92		30 - 140
PCB-189L	74		30 - 140
PCB-202L	112		30 - 140
PCB-205L	77		30 - 140
PCB-206L	81		30 - 140
PCB-208L	84		30 - 140
PCB-209L	79		30 - 140

Surrogate	MS %Recovery	MS Qualifier	Limits
PCB-28L	81		40 - 125
PCB-111L	91		40 - 125
PCB-178L	91		40 - 125

Lab Sample ID: 580-77234-1 MSD
Matrix: Solid
Analysis Batch: 21006

Client Sample ID: PDI-SG-B078-BL1
Prep Type: Total/NA
Prep Batch: 20544

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1	0.021	B	0.482	0.473		ng/g	☼	94	50 - 150	1	50
PCB-3	0.011	B	0.482	0.470		ng/g	☼	95	50 - 150	9	50
PCB-4	0.066		0.482	0.436		ng/g	☼	77	50 - 150	0	50
PCB-15	0.10		0.482	0.489		ng/g	☼	80	50 - 150	6	50
PCB-19	0.033		0.482	0.418		ng/g	☼	80	50 - 150	1	50
PCB-37	0.16	B	0.482	0.525		ng/g	☼	75	50 - 150	6	50
PCB-54	0.0038	J q	0.482	0.474		ng/g	☼	97	50 - 150	2	50
PCB-77	0.056		0.482	0.466		ng/g	☼	85	50 - 150	0	50
PCB-81	ND		0.482	0.421		ng/g	☼	87	50 - 150	3	50
PCB-104	ND		0.482	0.399		ng/g	☼	83	50 - 150	3	50
PCB-105	1.3	F1	0.482	0.973	F1	ng/g	☼	-63	50 - 150	11	50
PCB-114	0.081		0.482	0.464		ng/g	☼	79	50 - 150	5	50
PCB-118	3.2	B	0.482	1.74	4	ng/g	☼	-305	50 - 150	15	50
PCB-123	0.064		0.482	0.442		ng/g	☼	78	50 - 150	5	50
PCB-126	0.0068	J	0.482	0.467		ng/g	☼	95	50 - 150	3	50
PCB-155	ND		0.482	0.449		ng/g	☼	93	50 - 150	1	50
PCB-156	0.69	C B F1	0.965	1.15	C F1	ng/g	☼	47	50 - 150	8	50
PCB-157	0.69	C156 B F1	0.965	1.15	C156 F1	ng/g	☼	47	50 - 150	8	50
PCB-167	0.23		0.482	0.544		ng/g	☼	65	50 - 150	9	50
PCB-169	ND		0.482	0.435		ng/g	☼	90	50 - 150	0	50
PCB-188	ND		0.482	0.413		ng/g	☼	86	50 - 150	0	50
PCB-189	0.041		0.482	0.462		ng/g	☼	87	50 - 150	1	50
PCB-202	0.097		0.482	0.518		ng/g	☼	87	50 - 150	10	50
PCB-205	0.022		0.482	0.449		ng/g	☼	89	50 - 150	2	50
PCB-206	0.30		0.482	0.972	q	ng/g	☼	139	50 - 150	39	50
PCB-208	0.082		0.482	0.534		ng/g	☼	94	50 - 150	7	50

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

Lab Sample ID: 580-77234-1 MSD
Matrix: Solid
Analysis Batch: 21006

Client Sample ID: PDI-SG-B078-BL1
Prep Type: Total/NA
Prep Batch: 20544

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-209	0.18		0.482	0.477		ng/g	☼	61	50 - 150	3	50

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
PCB-1L	*62*		*30 - 140*
PCB-3L	*57*		*30 - 140*
PCB-4L	*88*		*30 - 140*
PCB-15L	*87*		*30 - 140*
PCB-19L	*87*		*30 - 140*
PCB-37L	*91*		*30 - 140*
PCB-54L	*100*		*30 - 140*
PCB-77L	*95*		*30 - 140*
PCB-81L	*94*		*30 - 140*
PCB-104L	*92*		*30 - 140*
PCB-105L	*91*		*30 - 140*
PCB-114L	*92*		*30 - 140*
PCB-118L	*93*		*30 - 140*
PCB-123L	*93*		*30 - 140*
PCB-126L	*93*		*30 - 140*
PCB-155L	*112*		*30 - 140*
PCB-156L	*88*	*C*	*30 - 140*
PCB-157L	*88*	*C156*	*30 - 140*
PCB-167L	*88*		*30 - 140*
PCB-169L	*86*		*30 - 140*
PCB-170L	*85*		*30 - 140*
PCB-188L	*92*		*30 - 140*
PCB-189L	*79*		*30 - 140*
PCB-202L	*114*		*30 - 140*
PCB-205L	*79*		*30 - 140*
PCB-206L	*81*		*30 - 140*
PCB-208L	*86*		*30 - 140*
PCB-209L	*82*		*30 - 140*

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
PCB-28L	*82*		*40 - 125*
PCB-111L	*94*		*40 - 125*
PCB-178L	*90*		*40 - 125*

Lab Chronicle

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

TestAmerica Job ID: 580-77234-3

Client Sample ID: PDI-SG-B078-BL1
Date Collected: 05/09/18 10:15
Date Received: 05/11/18 12:45

Lab Sample ID: 580-77234-1
Matrix: Solid
Percent Solids: 71.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			20544	05/22/18 08:05	SSS	TAL KNX
Total/NA	Cleanup	Split			20627	05/24/18 12:47	EBS	TAL KNX
Total/NA	Analysis	1668A		1	21006	06/07/18 17:32	MSD	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: 580-77234-3

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
Oregon	NELAP	10	WA100007	11-05-18
US Fish & Wildlife	Federal		LE058448-0	10-31-18
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-19

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	06-30-18
Colorado	State Program	8	TN00009	02-28-19
Connecticut	State Program	1	PH-0223	09-30-19
Florida	NELAP	4	E87177	06-30-18
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	07-31-18
New Jersey	NELAP	2	TN001	06-30-18
New York	NELAP	2	10781	03-31-19
North Carolina (DW)	State Program	4	21705	07-31-18
North Carolina (WW/SW)	State Program	4	64	12-31-18
Ohio VAP	State Program	5	CL0059	11-22-18
Oklahoma	State Program	6	9415	08-31-18
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	08-31-18
US Fish & Wildlife	Federal		LE-058448-0	07-31-18
USDA	Federal		P330-16-00262	08-20-19
Utah	NELAP	8	TN00009	07-31-18
Virginia	NELAP	3	460176	09-14-18
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	08-31-18

Sample Summary

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

TestAmerica Job ID: 580-77234-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-77234-1	PDI-SG-B078-BL1	Solid	05/09/18 10:15	05/11/18 12:45

580-77234 Chain of Custody

SURFACE SEDIMENT
CHAIN OF CUSTODY

TestAmerica-Seattle 5755-8th-Street-East Tacoma, WA 98424-1317 **Ph: 253-922-2310 Fax: 253-922-5047**	**Project Contact: Amy Dahl / Chelsey Cook** **Tel: (206) 438-2261 / (206) 438-2010**	**Site Contact: Jennifer Ray** **Laboratory Contact: Elaine-Walker**	**4/25/2018** **Carrier: Courier**	COC No: 1 of 3 COCs

Client Contact
AECOM
1111 3rd Ave Suite 1600
Seattle, WA 98101
Phone: (206) 438-2700 Fax: 1+(866) 495-5288
Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling
Portland, OR
Project #: 60566335 Study: Surface Sediment

Analysis Turnaround Time
Calendar (C) or Work Days (W) _____
[x] 21 days
[ ] Other _____

Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	PCB Congeners 1668A	PCDD/Fs 1613B	TPH Diesel, Metals, Mercury NWTPH-Dx, 6020B, 7471A	Grain size ASTM D7928/D6913	Total organic carbon, Total solids 9060	Archive Archive -20 C	Sample Specific Notes:
PDI-SG-B078-BL1	5/9/2018	10:15	SE	MS/MSD	AC	3 12		X	X	X	X	X	X	

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

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

Special Instructions/QC Requirements & Comments:
Separate reports for each lab

Relinquished by: Michael McCoy	Company: AECOM	Date/Time: 5-11-18 1205	Received by: Jessica Nye	Company: M-E.	Date/Time: 5/11/18 1205
Relinquished by: Jessica Nye	Company: M.E.	Date/Time: 5/11/18 1245	Received by: Michael McCoy	Company: TAECR	Date/Time: 5/11/18 1245
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

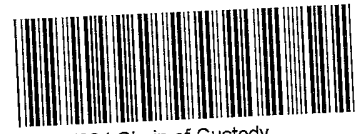
TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST **Log In Number:**

Review Items	Yes	No	NA	If No, what was the problem?
1. Are the shipping containers intact?	✓		✓	☐ **Containers, Broken**
2. Were ambient air containers received intact?			✓	☐ Checked in lab
3. The coolers/containers custody seal if present, is it intact?	✓			☐ Yes ☐ NA
4. Is the cooler temperature within limits? (> freezing temp. of water to 6 °C, VOST: 10°C) Thermometer ID : SC68 Correction factor: 0.0°C	✓			☐ **Cooler Out of Temp, Client Contacted, Proceed/Cancel** ☐ **Cooler Out of Temp, Same Day Receipt**
5. Were all of the sample containers received intact?	✓			☐ **Containers, Broken**
6. Were samples received in appropriate containers?	✓			☐ **Containers, Improper; Client Contacted; Proceed/Cancel**
7. Do sample container labels match COC? (IDs, Dates, Times)		✓		☐ **COC & Samples Do Not Match** ☐ **COC Incorrect/Incomplete** ☑ **COC Not Received**
8. Were all of the samples listed on the COC received?			✓	☐ **Sample Received, Not on COC** ☐ **Sample on COC, Not Received**
9. Is the date/time of sample collection noted?			✓	☐ **COC; No Date/Time; Client Contacted**
10. Was the sampler identified on the COC?			✓	☐ **Sampler Not Listed on COC**
11. Is the client and project name/# identified?			✓	☐ **COC Incorrect/Incomplete**
12. Are tests/parameters listed for each sample?			✓	☐ **COC No tests on COC**
13. Is the matrix of the samples noted?			✓	☐ **COC Incorrect/Incomplete**
14. Was COC relinquished? (Signed/Dated/Timed)			✓	☐ **COC Incorrect/Incomplete**
15. Were samples received within holding time?			✓	☐ **Holding Time - Receipt**
16. Were samples received with correct chemical preservative (excluding Encore)?			✓	☐ **pH Adjusted, pH Included (See box 16A)** ☐ **Incorrect Preservative**
17. Were VOA samples received without headspace?			✓	☐ **Headspace (VOA only)**
18. Did you check for residual chlorine, if necessary? (e.g. 1613B, 1668) Chlorine test strip lot number:_____			✓	☐ **Residual Chlorine**
19. For 1613B water samples is pH<9?			✓	☐ If no, lab will adjust
20. For rad samples was sample activity info. Provided?			✓	☐ Project missing info

Comments/Actions Taken

CUSTODY SEALS INTACT
RECEIVED AT RT 0.6 / CT 0.6°C
DKD 5-15-18
1 COOLER FEDX# 442307502897 PO
RECEIVED BY [signature] 5-15-18 09:30 TA KNX

1, 580-77234 # 1



Labeling Verified by: **Date:**

pH test strip lot number:

	Box 16A: pH Preservation	Box 18A: Residual Chlorine
Preservative:		
Lot Number:		
Exp Date:		
Analyst:		
Date:		
Time:		

Project #: _____ PM Instructions: _____

Sample Receiving Associate: [signature] Date: 5-15-18

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Walker, Elaine M	Carrier Tracking No(s):	COC No: 580-55372.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: elaine.walker@testamericainc.com	State of Origin: Oregon	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 580-77234-3
Address: 5815 Middlebrook Pike,	Due Date Requested: 5/31/2018			
City: Knoxville	TAT Requested (days):			
State, Zip: TN, 37921				
Phone: 865-291-3000(Tel) 865-584-4315(Fax)	PO #:			
Email:	WO #:			
Project Name: Portland Harbor Pre-Remedial Design	Project #: 58012120			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1668A/1668_P_Sox (MOD) 209 PCBs plus Totals	Screen_1668/Screen_PCB_P_S	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
PDI-SG-B078-BL1 (580-77234-1)	5/9/18	10:15 Pacific		Solid			X	X	1	
PDI-SG-B078-BL1 (580-77234-1MS)	5/9/18	10:15 Pacific	MS	Solid			X		1	
PDI-SG-B078-BL1 (580-77234-1MSD)	5/9/18	10:15 Pacific	MSD	Solid			X		1	

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/tests/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.

Possible Hazard Identification Unconfirmed	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)* ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:			
Relinquished by:	Date/Time: 5/14/18 1400	Company TAL SOL	Received by:	Date/Time: 5-15-18 0930	Company TAL KX	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:
	Cooler Temperature(s) °C and Other Remarks:

Ver: 09/20/2016

Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-77234-3

Login Number: 77234
List Number: 1
Creator: Gonzales, Steve

List Source: TestAmerica Seattle

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

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

580-77234 Field Sheet

Job:_____

Tracking # 4423 9759 2899 SO / PO / FO

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

Notes:
Placed in Freezer on 5/12/18 @ 1720

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

Ice ✓ Wet ✓ Gel ____ Other ____

Cooler Custody Seal: Seal

Sample Custody Seal: —

Cooler ID: —

Temp: Observed 2.1

From: Temp Blank ☑ Sample ☐

NCM Filed: Yes ☐ No ☐

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

Initials: AZ Date: 5/12/18 Time 09:25

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

W20D

Isotope Dilution Summary

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

TestAmerica Job ID: 580-77234-3

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

Matrix: Solid **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PCB1L	PCB3L	PCB4L	PCB15L	PCB19L	PCB37L	PCB54L	PCB77L
Lab Sample ID	Client Sample ID	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)
580-77234-1	PDI-SG-B078-BL1	60	57	87	87	87	80	100	98
580-77234-1 MS	PDI-SG-B078-BL1	59	45 q	85	85	86	89	97	92
580-77234-1 MSD	PDI-SG-B078-BL1	62	57	88	87	87	91	100	95
LCS 140-20544/17-B	Lab Control Sample	59	57	84	82	81	83	103	89
LCSD 140-20544/18-B	Lab Control Sample Dup	60	57	86	86	80	85	102	85
MB 140-20544/16-B	Method Blank	63	59	90	84	85	83	83	85

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PCB81L	PCB104L	PCB105L	P114L	PCB118L	PCB123L	PCB126L	PCB155L
Lab Sample ID	Client Sample ID	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)
580-77234-1	PDI-SG-B078-BL1	96	91	89	85	89	89	91	112
580-77234-1 MS	PDI-SG-B078-BL1	91	89	89	89	90	90	87	110
580-77234-1 MSD	PDI-SG-B078-BL1	94	92	91	92	93	93	93	112
LCS 140-20544/17-B	Lab Control Sample	86	92	87	84	89	88	88	105
LCSD 140-20544/18-B	Lab Control Sample Dup	83	93	87	85	89	88	87	106
MB 140-20544/16-B	Method Blank	84	95	88	87	92	88	88	107

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PCB156L	PCB157L	PCB167L	PCB169L	PCB170L	PCB188L	PCB189L	PCB202L
Lab Sample ID	Client Sample ID	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)
580-77234-1	PDI-SG-B078-BL1	91 C	91 C156	88	90	87	85	76	111
580-77234-1 MS	PDI-SG-B078-BL1	79 C	79 C156	84	76	84	92	74	112
580-77234-1 MSD	PDI-SG-B078-BL1	88 C	88 C156	88	86	85	92	79	114
LCS 140-20544/17-B	Lab Control Sample	87 C	87 C156	85	87	83	85	77	109
LCSD 140-20544/18-B	Lab Control Sample Dup	85 C	85 C156	83	85	85	88	75	110
MB 140-20544/16-B	Method Blank	87 C	87 C156	87	88	86	91	79	113

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PCB205L	PCB206L	PCB208L	PCB209L				
Lab Sample ID	Client Sample ID	(30-140)	(30-140)	(30-140)	(30-140)				
580-77234-1	PDI-SG-B078-BL1	82	81	83	84				
580-77234-1 MS	PDI-SG-B078-BL1	77	81	84	79				
580-77234-1 MSD	PDI-SG-B078-BL1	79	81	86	82				
LCS 140-20544/17-B	Lab Control Sample	82	80	81	87				
LCSD 140-20544/18-B	Lab Control Sample Dup	80	76	80	87				
MB 140-20544/16-B	Method Blank	84	80	82	87				

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

Isotope Dilution Summary

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

TestAmerica Job ID: 580-77234-3

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