TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

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TestAmerica Job ID: 580-80213-11
Client Project/Site: Portland Harbor Pre-Remedial Design

For:
AECOM
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Seattle, Washington 98101

Attn: Amy Dahl

M. Elaine Walker

Authorized for release by:
10/18/2018 5:45:39 PM

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Job ID: 580-80213-11

Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE
Client: AECOM
Project: Portland Harbor Pre-Remedial Design
Report Number: 580-80213-11

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

Three samples were received on 9/10/2018 12:40 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.3º C.

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.

The following samples were activated for all on hold analysis by the client on 9/26/18: PDI-SG-B431 (580-80213-1) and PDI-SG-B479 (580-80213-2).

The Rinse Blank sample has been reported under separate cover.

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-B431 (580-80213-1) and PDI-SG-B479 (580-80213-2) were analyzed for polychlorinated biphenyls congeners (PCBs) in accordance with EPA Method 1668A. The samples were prepared on 10/03/2018 and 10/10/2018 and analyzed on 10/11/2018 and 10/18/2018.

Several analytes were detected in method blank MB 140-24151/6-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.

Several analytes were detected in method blank MB 140-24331/9-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.

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

Qualifiers

Dioxin

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
C93	The compound co-eluted with PCB-93
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
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.
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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
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-B431
Date Collected: 09/07/18 12:08
Date Received: 09/10/18 12:40

Lab Sample ID: 580-80213-1
Matrix: Solid
Percent Solids: 65.0

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

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	**0.0022**	**J**	0.0075	0.00024	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-2	**0.0016**	**J q**	0.0075	0.00026	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-3	ND		0.0075	0.00027	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-4	**0.0065**	**J q**	0.015	0.0038	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-5	ND		0.0075	0.0029	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-6	ND		0.0075	0.0026	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-7	ND		0.0075	0.0026	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-8	**0.012**	**J q**	0.015	0.0024	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-9	ND		0.0075	0.0027	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-10	ND		0.0075	0.0029	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-11	**0.017**	**B q**	0.015	0.0025	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-12	ND	C	0.015	0.0026	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-13	ND	C12	0.015	0.0026	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-14	ND		0.0075	0.0022	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-15	**0.0096**		0.0075	0.0027	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-16	**0.0060**	**J q**	0.0075	0.00042	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-17	**0.011**		0.0075	0.00037	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-18	**0.015**	**C**	0.015	0.00033	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-19	**0.0033**	**J q**	0.0075	0.00046	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-20	**0.034**	**C B**	0.015	0.00074	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-21	**0.015**	**C B**	0.015	0.00072	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-22	**0.0075**		0.0075	0.00075	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-23	ND		0.0075	0.00075	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-24	ND		0.0075	0.00031	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-25	**0.0038**	**J**	0.0075	0.00068	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-26	**0.0064**	**J C**	0.015	0.00072	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-27	**0.0016**	**J q**	0.0075	0.00027	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-28	**0.034**	**B C20**	0.015	0.00074	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-29	**0.0064**	**J C26**	0.015	0.00072	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-30	**0.015**	**C18**	0.015	0.00033	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-31	**0.024**	**B**	0.015	0.00072	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-32	**0.016**	**B**	0.0075	0.00026	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-33	**0.015**	**B C21**	0.015	0.00072	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-34	ND		0.0075	0.00078	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-35	ND		0.0075	0.00076	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-36	ND		0.0075	0.00073	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-37	**0.0096**	**B**	0.0075	0.00075	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-38	ND		0.0075	0.00078	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-39	ND		0.0075	0.00070	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-40	**0.040**	**C B**	0.022	0.0017	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-41	**0.040**	**B C40**	0.022	0.0017	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-42	**0.013**		0.0075	0.0017	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-43	**0.0067**	**J C q**	0.015	0.0016	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-44	**0.31**	**C B**	0.022	0.0015	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-45	**0.11**	**C**	0.015	0.0018	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-46	**0.0078**		0.0075	0.0021	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-47	**0.31**	**B C44**	0.022	0.0015	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-48	**0.0077**		0.0075	0.0017	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-49	**0.12**	**C**	0.015	0.0014	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1

Client Sample ID: PDI-SG-B431
Date Collected: 09/07/18 12:08
Date Received: 09/10/18 12:40

Lab Sample ID: 580-80213-1
Matrix: Solid
Percent Solids: 65.0

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

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	0.052	C	0.015	0.0016	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-51	0.11	C45	0.015	0.0018	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-52	0.12		0.0075	0.0017	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-53	0.052	C50	0.015	0.0016	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-54	0.0073	J q	0.0075	0.000036	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-55	0.0016	J B	0.0075	0.0012	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-56	0.016	B q	0.0075	0.0012	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-57	ND		0.0075	0.0012	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-58	ND		0.0075	0.0013	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-59	0.0077	J C	0.022	0.0012	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-60	0.0088	B	0.0075	0.0012	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-61	0.12	C B	0.030	0.0012	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-62	0.0077	J C59	0.022	0.0012	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-63	0.0041	J	0.0075	0.0011	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-64	0.021	B	0.0075	0.0011	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-65	0.31	B C44	0.022	0.0015	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-66	0.055	B	0.0075	0.0012	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-67	ND		0.0075	0.0011	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-68	0.0033	J	0.0075	0.0011	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-69	0.12	C49	0.015	0.0014	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-70	0.12	C61 B	0.030	0.0012	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-71	0.040	B C40	0.022	0.0017	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-72	0.0016	J q	0.0075	0.0012	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-73	0.0067	J C43 q	0.015	0.0016	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-74	0.12	C61 B	0.030	0.0012	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-75	0.0077	J C59	0.022	0.0012	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-76	0.12	C61 B	0.030	0.0012	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-77	0.0072	J B	0.0075	0.0012	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-78	ND		0.0075	0.0013	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-79	0.0019	J q	0.0075	0.0011	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-80	ND		0.0075	0.0011	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-81	ND		0.0075	0.0011	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-82	0.037		0.0075	0.00015	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-83	0.23	C B	0.015	0.00014	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-84	0.072		0.0075	0.00015	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-85	0.051	C q	0.022	0.00011	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-86	0.23	C B	0.045	0.00011	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-87	0.23	B C86	0.045	0.00011	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-88	0.15	C	0.015	0.00014	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-89	ND		0.0075	0.00015	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-90	0.46	C B	0.022	0.00011	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-91	0.15	C88	0.015	0.00014	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-92	0.087		0.0075	0.00013	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-93	0.045	C B	0.015	0.00013	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-94	0.019	q	0.0075	0.00015	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-95	0.30		0.0075	0.00014	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-96	0.014	q	0.0075	0.00011	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-97	0.23	B C86	0.045	0.00011	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-98	0.022	C B	0.015	0.00013	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1

Client Sample ID: PDI-SG-B431
Date Collected: 09/07/18 12:08
Date Received: 09/10/18 12:40

Lab Sample ID: 580-80213-1
Matrix: Solid
Percent Solids: 65.0

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

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	0.23	C83 B	0.015	0.00014	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-100	0.045	C93 B	0.015	0.00013	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-101	0.46	B C90	0.022	0.00011	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-102	0.022	C98 B	0.015	0.00013	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-103	0.024		0.0075	0.00013	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-104	ND		0.0075	0.00010	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-105	0.10	B	0.0075	0.0013	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-106	ND		0.0075	0.0013	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-107	0.025		0.0075	0.0014	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-108	0.012	J C B	0.015	0.0014	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-109	0.23	B C86	0.045	0.00011	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-110	0.40	C B	0.015	0.000096	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-111	ND		0.0075	0.000092	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-112	0.0021	J q	0.0075	0.000097	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-113	0.46	B C90	0.022	0.00011	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-114	0.0064	J q	0.0075	0.0013	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-115	0.40	B C110	0.015	0.000096	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-116	0.051	C85 q	0.022	0.00011	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-117	0.051	C85 q	0.022	0.00011	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-118	0.27	B	0.0075	0.0012	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-119	0.23	B C86	0.045	0.00011	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-120	ND		0.0075	0.000094	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-121	ND		0.0075	0.000096	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-122	0.0044	J	0.0075	0.0016	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-123	0.0050	J	0.0075	0.0013	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-124	0.012	J B C108	0.015	0.0014	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-125	0.23	B C86	0.045	0.00011	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-126	0.0024	J	0.0075	0.0014	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-127	ND		0.0075	0.0013	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-128	0.078	C B	0.015	0.0019	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-129	0.80	C	0.030	0.0020	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-130	0.044		0.0075	0.0026	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-131	0.010		0.0075	0.0027	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-132	0.23		0.0075	0.0026	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-133	0.014	q	0.0075	0.0025	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-134	0.048	C	0.015	0.0026	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-135	0.32	C	0.015	0.00025	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-136	0.11		0.0075	0.00018	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-137	0.023	B	0.0075	0.0022	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-138	0.80	C129	0.030	0.0020	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-139	0.0072	J C	0.015	0.0022	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-140	0.0072	J C139	0.015	0.0022	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-141	0.17		0.0075	0.0023	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-142	ND		0.0075	0.0025	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-143	0.048	C134	0.015	0.0026	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-144	0.034		0.0075	0.00023	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-145	ND		0.0075	0.00017	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-146	0.12		0.0075	0.0022	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-147	0.77	C	0.015	0.0025	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1

Client Sample ID: PDI-SG-B431
Date Collected: 09/07/18 12:08
Date Received: 09/10/18 12:40

Lab Sample ID: 580-80213-1
Matrix: Solid
Percent Solids: 65.0

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

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	0.0024	J	0.0075	0.00024	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-149	0.77	C147	0.015	0.0025	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-150	0.0074	J	0.0075	0.00017	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-151	0.32	C135	0.015	0.00025	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-152	0.0045	J q	0.0075	0.00018	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-153	0.66	C B	0.015	0.0017	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-154	0.016		0.0075	0.00020	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-155	0.00061	J	0.0075	0.00017	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-156	0.069	C B	0.015	0.0020	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-157	0.069	C156 B	0.015	0.0020	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-158	0.074	B	0.0075	0.0016	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-159	0.0057	J B	0.0075	0.0017	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-160	0.80	C129	0.030	0.0020	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-161	ND		0.0075	0.0016	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-162	0.0031	J B q	0.0075	0.0016	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-163	0.80	C129	0.030	0.0020	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-164	0.059		0.0075	0.0017	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-165	ND		0.0075	0.0019	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-166	0.078	C128 B	0.015	0.0019	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-167	0.026	B	0.0075	0.0013	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-168	0.66	B C153	0.015	0.0017	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-169	ND		0.0075	0.0013	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-170	0.26		0.0075	0.00074	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-171	0.081	C B	0.015	0.00071	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-172	0.040	B	0.0075	0.00071	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-173	0.081	C171 B	0.015	0.00071	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-174	0.24		0.0075	0.00066	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-175	0.010		0.0075	0.00064	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-176	0.029	B	0.0075	0.00049	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-177	0.14		0.0075	0.00068	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-178	0.049		0.0075	0.00070	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-179	0.11		0.0075	0.00051	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-180	0.51	C B	0.015	0.00054	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-181	ND		0.0075	0.00064	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-182	0.0033	J	0.0075	0.00062	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-183	0.17	C B	0.015	0.00063	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-184	ND		0.0075	0.00053	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-185	0.17	B C183	0.015	0.00063	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-186	ND		0.0075	0.00051	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-187	0.27		0.0075	0.00060	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-188	ND		0.0075	0.00045	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-189	0.0087	B q	0.0075	0.0015	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-190	0.046	B	0.0075	0.00046	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-191	0.0099	B	0.0075	0.00048	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-192	ND		0.0075	0.00054	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-193	0.51	C180 B	0.015	0.00054	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-194	0.10	B	0.0075	0.0023	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-195	0.050		0.0075	0.0026	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-196	0.042	B	0.0075	0.00065	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1

Client Sample ID: PDI-SG-B431
Date Collected: 09/07/18 12:08
Date Received: 09/10/18 12:40

Lab Sample ID: 580-80213-1
Matrix: Solid
Percent Solids: 65.0

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

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	0.0028	J B q	0.0075	0.00050	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-198	0.083	C B	0.015	0.00066	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-199	0.083	C198 B	0.015	0.00066	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-200	0.010	B	0.0075	0.00044	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-201	0.0078	q	0.0075	0.00046	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-202	0.015		0.0075	0.00051	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-203	0.049	B	0.0075	0.00059	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-204	ND		0.0075	0.00050	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-205	0.0061	J B	0.0075	0.0020	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-206	0.023	q	0.0075	0.0019	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-207	0.0043	J	0.0075	0.0012	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-208	0.0072	J	0.0075	0.0012	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1
PCB-209	0.016		0.0075	0.00028	ng/g	☼	10/10/18 11:55	10/18/18 05:28	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*57*		*30 - 140*	*10/10/18 11:55*	*10/18/18 05:28*	*1*
PCB-3L	*60*		*30 - 140*	*10/10/18 11:55*	*10/18/18 05:28*	*1*
PCB-4L	*70*		*30 - 140*	*10/10/18 11:55*	*10/18/18 05:28*	*1*
PCB-15L	*75*		*30 - 140*	*10/10/18 11:55*	*10/18/18 05:28*	*1*
PCB-19L	*78*		*30 - 140*	*10/10/18 11:55*	*10/18/18 05:28*	*1*
PCB-37L	*83*		*30 - 140*	*10/10/18 11:55*	*10/18/18 05:28*	*1*
PCB-54L	*53*		*30 - 140*	*10/10/18 11:55*	*10/18/18 05:28*	*1*
PCB-77L	*84*		*30 - 140*	*10/10/18 11:55*	*10/18/18 05:28*	*1*
PCB-81L	*85*		*30 - 140*	*10/10/18 11:55*	*10/18/18 05:28*	*1*
PCB-104L	*74*		*30 - 140*	*10/10/18 11:55*	*10/18/18 05:28*	*1*
PCB-105L	*87*		*30 - 140*	*10/10/18 11:55*	*10/18/18 05:28*	*1*
PCB-114L	*88*		*30 - 140*	*10/10/18 11:55*	*10/18/18 05:28*	*1*
PCB-118L	*86*		*30 - 140*	*10/10/18 11:55*	*10/18/18 05:28*	*1*
PCB-123L	*85*		*30 - 140*	*10/10/18 11:55*	*10/18/18 05:28*	*1*
PCB-126L	*82*		*30 - 140*	*10/10/18 11:55*	*10/18/18 05:28*	*1*
PCB-155L	*83*		*30 - 140*	*10/10/18 11:55*	*10/18/18 05:28*	*1*
PCB-156L	*84*	*C*	*30 - 140*	*10/10/18 11:55*	*10/18/18 05:28*	*1*
PCB-157L	*84*	*C156*	*30 - 140*	*10/10/18 11:55*	*10/18/18 05:28*	*1*
PCB-167L	*84*		*30 - 140*	*10/10/18 11:55*	*10/18/18 05:28*	*1*
PCB-169L	*82*		*30 - 140*	*10/10/18 11:55*	*10/18/18 05:28*	*1*
PCB-170L	*81*		*30 - 140*	*10/10/18 11:55*	*10/18/18 05:28*	*1*
PCB-188L	*92*		*30 - 140*	*10/10/18 11:55*	*10/18/18 05:28*	*1*
PCB-189L	*87*		*30 - 140*	*10/10/18 11:55*	*10/18/18 05:28*	*1*
PCB-202L	*108*		*30 - 140*	*10/10/18 11:55*	*10/18/18 05:28*	*1*
PCB-205L	*71*		*30 - 140*	*10/10/18 11:55*	*10/18/18 05:28*	*1*
PCB-206L	*81*		*30 - 140*	*10/10/18 11:55*	*10/18/18 05:28*	*1*
PCB-208L	*98*		*30 - 140*	*10/10/18 11:55*	*10/18/18 05:28*	*1*
PCB-209L	*75*		*30 - 140*	*10/10/18 11:55*	*10/18/18 05:28*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-28L	*88*		*40 - 125*	*10/10/18 11:55*	*10/18/18 05:28*	*1*
PCB-111L	*89*		*40 - 125*	*10/10/18 11:55*	*10/18/18 05:28*	*1*
PCB-178L	*101*		*40 - 125*	*10/10/18 11:55*	*10/18/18 05:28*	*1*

Client Sample ID: PDI-SG-B479
Date Collected: 09/07/18 09:58
Date Received: 09/10/18 12:40

Lab Sample ID: 580-80213-2
Matrix: Solid
Percent Solids: 65.2

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

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	ND		0.0075	0.00011	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-2	**0.0017**	**J q**	0.0075	0.00012	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-3	**0.00066**	**J**	0.0075	0.00012	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-4	ND		0.015	0.0043	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-5	ND		0.0075	0.0035	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-6	ND		0.0075	0.0030	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-7	ND		0.0075	0.0031	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-8	**0.0035**	**J q**	0.015	0.0028	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-9	ND		0.0075	0.0032	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-10	ND		0.0075	0.0034	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-11	**0.020**	**q**	0.015	0.0030	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-12	ND	C	0.015	0.0031	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-13	ND	C12	0.015	0.0031	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-14	ND		0.0075	0.0026	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-15	**0.0036**	**J q**	0.0075	0.0032	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-16	**0.0017**	**J q**	0.0075	0.00024	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-17	ND		0.0075	0.00021	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-18	**0.0062**	**J q C B**	0.015	0.00019	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-19	**0.0017**	**J q**	0.0075	0.00026	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-20	**0.012**	**J C B**	0.015	0.00047	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-21	**0.0034**	**J q C**	0.015	0.00046	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-22	**0.0039**	**J**	0.0075	0.00048	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-23	ND		0.0075	0.00048	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-24	ND		0.0075	0.00018	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-25	**0.0012**	**J**	0.0075	0.00043	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-26	**0.0026**	**J C**	0.015	0.00046	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-27	ND		0.0075	0.00016	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-28	**0.012**	**J C20 B**	0.015	0.00047	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-29	**0.0026**	**J C26**	0.015	0.00046	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-30	**0.0062**	**J q C18 B**	0.015	0.00019	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-31	**0.010**	**J**	0.015	0.00046	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-32	**0.0019**	**J**	0.0075	0.00015	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-33	**0.0034**	**J q C21**	0.015	0.00046	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-34	ND		0.0075	0.00049	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-35	ND		0.0075	0.00048	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-36	ND		0.0075	0.00046	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-37	**0.0034**	**J q**	0.0075	0.00048	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-38	ND		0.0075	0.00050	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-39	ND		0.0075	0.00045	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-40	**0.0073**	**J q C**	0.023	0.00093	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-41	**0.0073**	**J q C40**	0.023	0.00093	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-42	**0.0044**	**J q**	0.0075	0.00093	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-43	ND	C	0.015	0.00087	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-44	**0.014**	**J q C B**	0.023	0.00082	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-45	**0.0019**	**J q C**	0.015	0.00097	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-46	ND		0.0075	0.0012	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-47	**0.014**	**J q C44 B**	0.023	0.00082	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-48	**0.0017**	**J q**	0.0075	0.00093	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-49	**0.013**	**J C**	0.015	0.00076	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1

Client Sample ID: PDI-SG-B479
Date Collected: 09/07/18 09:58
Date Received: 09/10/18 12:40

Lab Sample ID: 580-80213-2
Matrix: Solid
Percent Solids: 65.2

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

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	**0.0017**	**J q C**	0.015	0.00090	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-51	**0.0019**	**J q C45**	0.015	0.00097	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-52	**0.028**		0.0075	0.00092	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-53	**0.0017**	**J q C50**	0.015	0.00090	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-54	ND		0.0075	0.000035	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-55	ND		0.0075	0.00068	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-56	**0.0070**	**J**	0.0075	0.00068	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-57	ND		0.0075	0.00069	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-58	ND		0.0075	0.00070	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-59	ND	C	0.023	0.00066	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-60	**0.0037**	**J B**	0.0075	0.00069	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-61	**0.033**	**C**	0.030	0.00065	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-62	ND	C59	0.023	0.00066	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-63	ND		0.0075	0.00063	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-64	**0.0067**	**J q**	0.0075	0.00062	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-65	**0.014**	**J q C44 B**	0.023	0.00082	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-66	**0.019**	**B**	0.0075	0.00064	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-67	ND		0.0075	0.00059	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-68	ND		0.0075	0.00061	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-69	**0.013**	**J C49**	0.015	0.00076	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-70	**0.033**	**C61**	0.030	0.00065	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-71	**0.0073**	**J q C40**	0.023	0.00093	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-72	ND		0.0075	0.00067	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-73	ND	C43	0.015	0.00087	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-74	**0.033**	**C61**	0.030	0.00065	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-75	ND	C59	0.023	0.00066	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-76	**0.033**	**C61**	0.030	0.00065	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-77	**0.0029**	**J q B**	0.0075	0.00066	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-78	ND		0.0075	0.00069	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-79	ND		0.0075	0.00060	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-80	ND		0.0075	0.00059	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-81	ND		0.0075	0.00062	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-82	**0.0040**	**J q**	0.0075	0.00034	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-83	**0.034**	**C**	0.015	0.00031	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-84	**0.010**	**q**	0.0075	0.00034	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-85	**0.0095**	**J q C**	0.023	0.00025	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-86	**0.034**	**J C B**	0.045	0.00025	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-87	**0.034**	**J C86 B**	0.045	0.00025	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-88	**0.0075**	**J C**	0.015	0.00030	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-89	ND		0.0075	0.00033	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-90	**0.047**	**C**	0.023	0.00025	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-91	**0.0075**	**J C88**	0.015	0.00030	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-92	**0.010**		0.0075	0.00029	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-93	ND	C	0.015	0.00029	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-94	ND		0.0075	0.00033	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-95	**0.029**	**q**	0.0075	0.00032	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-96	ND		0.0075	0.00025	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-97	**0.034**	**J C86 B**	0.045	0.00025	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-98	ND	C	0.015	0.00028	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1

Client Sample ID: PDI-SG-B479
Date Collected: 09/07/18 09:58
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Lab Sample ID: 580-80213-2
Matrix: Solid
Percent Solids: 65.2

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

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	**0.034**	**C83**	0.015	0.00031	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-100	ND	C93	0.015	0.00029	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-101	**0.047**	**C90**	0.023	0.00025	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-102	ND	C98	0.015	0.00028	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-103	ND		0.0075	0.00029	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-104	ND		0.0075	0.00022	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-105	**0.020**		0.0075	0.00075	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-106	ND		0.0075	0.00075	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-107	**0.0045**	**J q**	0.0075	0.00081	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-108	ND	C	0.015	0.00077	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-109	**0.034**	**J C86 B**	0.045	0.00025	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-110	**0.060**	**C**	0.015	0.00021	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-111	ND		0.0075	0.00020	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-112	ND		0.0075	0.00022	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-113	**0.047**	**C90**	0.023	0.00025	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-114	ND		0.0075	0.00071	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-115	**0.060**	**C110**	0.015	0.00021	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-116	**0.0095**	**J q C85**	0.023	0.00025	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-117	**0.0095**	**J q C85**	0.023	0.00025	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-118	**0.049**	**B**	0.0075	0.00070	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-119	**0.034**	**J C86 B**	0.045	0.00025	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-120	ND		0.0075	0.00021	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-121	ND		0.0075	0.00021	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-122	ND		0.0075	0.00087	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-123	ND		0.0075	0.00077	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-124	ND	C108	0.015	0.00077	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-125	**0.034**	**J C86 B**	0.045	0.00025	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-126	ND		0.0075	0.00075	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-127	ND		0.0075	0.00075	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-128	**0.014**	**J C B**	0.015	0.0010	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-129	**0.082**	**C B**	0.030	0.0010	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-130	**0.0049**	**J q**	0.0075	0.0014	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-131	ND		0.0075	0.0014	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-132	**0.017**	**q**	0.0075	0.0014	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-133	ND		0.0075	0.0013	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-134	**0.0024**	**J q C**	0.015	0.0014	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-135	**0.025**	**C**	0.015	0.000024	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-136	**0.0034**	**J q**	0.0075	0.000017	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-137	**0.0041**	**J**	0.0075	0.0012	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-138	**0.082**	**C129 B**	0.030	0.0010	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-139	ND	C	0.015	0.0012	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-140	ND	C139	0.015	0.0012	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-141	**0.011**	**q**	0.0075	0.0012	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-142	ND		0.0075	0.0013	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-143	**0.0024**	**J q C134**	0.015	0.0014	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-144	**0.0023**	**J**	0.0075	0.000021	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-145	ND		0.0075	0.000016	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-146	**0.0098**	**q**	0.0075	0.0012	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-147	**0.046**	**q C**	0.015	0.0013	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1

Client Sample ID: PDI-SG-B479
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Lab Sample ID: 580-80213-2
Matrix: Solid
Percent Solids: 65.2

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

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	ND		0.0075	0.000023	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-149	**0.046**	**q C147**	0.015	0.0013	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-150	ND		0.0075	0.000015	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-151	**0.025**	**C135**	0.015	0.000024	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-152	ND		0.0075	0.000017	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-153	**0.066**	**C B**	0.015	0.00091	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-154	**0.0013**	**J q**	0.0075	0.000018	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-155	ND		0.0075	0.000016	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-156	**0.0092**	**J C B**	0.015	0.0010	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-157	**0.0092**	**J C156 B**	0.015	0.0010	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-158	**0.0066**	**J q**	0.0075	0.00082	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-159	ND		0.0075	0.00087	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-160	**0.082**	**C129 B**	0.030	0.0010	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-161	ND		0.0075	0.00087	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-162	ND		0.0075	0.00086	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-163	**0.082**	**C129 B**	0.030	0.0010	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-164	**0.0046**	**J q B**	0.0075	0.00092	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-165	ND		0.0075	0.00098	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-166	**0.014**	**J C128 B**	0.015	0.0010	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-167	**0.0031**	**J q B**	0.0075	0.00067	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-168	**0.066**	**C153 B**	0.015	0.00091	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-169	ND		0.0075	0.00072	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-170	**0.020**		0.0075	0.00031	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-171	**0.0058**	**J q C**	0.015	0.00029	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-172	**0.0047**	**J**	0.0075	0.00029	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-173	**0.0058**	**J q C171**	0.015	0.00029	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-174	**0.019**		0.0075	0.00027	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-175	ND		0.0075	0.00026	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-176	**0.0016**	**J q**	0.0075	0.00020	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-177	**0.0087**	**q**	0.0075	0.00028	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-178	**0.0036**	**J q**	0.0075	0.00028	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-179	**0.0060**	**J q**	0.0075	0.00021	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-180	**0.043**	**C B**	0.015	0.00022	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-181	ND		0.0075	0.00026	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-182	ND		0.0075	0.00025	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-183	**0.0098**	**J q C**	0.015	0.00025	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-184	ND		0.0075	0.00021	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-185	**0.0098**	**J q C183**	0.015	0.00025	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-186	ND		0.0075	0.00021	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-187	**0.030**		0.0075	0.00024	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-188	ND		0.0075	0.00018	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-189	ND		0.0075	0.0011	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-190	**0.0043**	**J B**	0.0075	0.00019	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-191	ND		0.0075	0.00019	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-192	ND		0.0075	0.00022	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-193	**0.043**	**C180 B**	0.015	0.00022	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-194	**0.011**	**B**	0.0075	0.00028	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-195	**0.0057**	**J B**	0.0075	0.00030	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-196	**0.0023**	**J**	0.0075	0.000049	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1

Client Sample ID: PDI-SG-B479
Date Collected: 09/07/18 09:58
Date Received: 09/10/18 12:40

Lab Sample ID: 580-80213-2
Matrix: Solid
Percent Solids: 65.2

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

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	ND		0.0075	0.000037	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-198	**0.014**	**J q C**	0.015	0.000050	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-199	**0.014**	**J q C198**	0.015	0.000050	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-200	**0.0015**	**J**	0.0075	0.000033	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-201	**0.0019**	**J q**	0.0075	0.000034	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-202	**0.0031**	**J**	0.0075	0.000038	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-203	**0.010**		0.0075	0.000044	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-204	ND		0.0075	0.000037	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-205	ND		0.0075	0.00023	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-206	**0.0076**	**B**	0.0075	0.0013	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-207	ND		0.0075	0.00089	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-208	**0.0037**	**J q**	0.0075	0.00089	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1
PCB-209	**0.014**	**q B**	0.0075	0.000014	ng/g	☼	10/03/18 10:12	10/11/18 19:31	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*61*		*30 - 140*	*10/03/18 10:12*	*10/11/18 19:31*	*1*
PCB-3L	*63*		*30 - 140*	*10/03/18 10:12*	*10/11/18 19:31*	*1*
PCB-4L	*80*		*30 - 140*	*10/03/18 10:12*	*10/11/18 19:31*	*1*
PCB-15L	*82*		*30 - 140*	*10/03/18 10:12*	*10/11/18 19:31*	*1*
PCB-19L	*90*		*30 - 140*	*10/03/18 10:12*	*10/11/18 19:31*	*1*
PCB-37L	*91*		*30 - 140*	*10/03/18 10:12*	*10/11/18 19:31*	*1*
PCB-54L	*62*		*30 - 140*	*10/03/18 10:12*	*10/11/18 19:31*	*1*
PCB-77L	*92*		*30 - 140*	*10/03/18 10:12*	*10/11/18 19:31*	*1*
PCB-81L	*90*		*30 - 140*	*10/03/18 10:12*	*10/11/18 19:31*	*1*
PCB-104L	*81*		*30 - 140*	*10/03/18 10:12*	*10/11/18 19:31*	*1*
PCB-105L	*92*		*30 - 140*	*10/03/18 10:12*	*10/11/18 19:31*	*1*
PCB-114L	*92*		*30 - 140*	*10/03/18 10:12*	*10/11/18 19:31*	*1*
PCB-118L	*91*		*30 - 140*	*10/03/18 10:12*	*10/11/18 19:31*	*1*
PCB-123L	*89*		*30 - 140*	*10/03/18 10:12*	*10/11/18 19:31*	*1*
PCB-126L	*90*		*30 - 140*	*10/03/18 10:12*	*10/11/18 19:31*	*1*
PCB-155L	*79*		*30 - 140*	*10/03/18 10:12*	*10/11/18 19:31*	*1*
PCB-156L	*91*	*C*	*30 - 140*	*10/03/18 10:12*	*10/11/18 19:31*	*1*
PCB-157L	*91*	*C156*	*30 - 140*	*10/03/18 10:12*	*10/11/18 19:31*	*1*
PCB-167L	*92*		*30 - 140*	*10/03/18 10:12*	*10/11/18 19:31*	*1*
PCB-169L	*97*		*30 - 140*	*10/03/18 10:12*	*10/11/18 19:31*	*1*
PCB-170L	*88*		*30 - 140*	*10/03/18 10:12*	*10/11/18 19:31*	*1*
PCB-188L	*95*		*30 - 140*	*10/03/18 10:12*	*10/11/18 19:31*	*1*
PCB-189L	*84*		*30 - 140*	*10/03/18 10:12*	*10/11/18 19:31*	*1*
PCB-202L	*100*		*30 - 140*	*10/03/18 10:12*	*10/11/18 19:31*	*1*
PCB-205L	*75*		*30 - 140*	*10/03/18 10:12*	*10/11/18 19:31*	*1*
PCB-206L	*89*		*30 - 140*	*10/03/18 10:12*	*10/11/18 19:31*	*1*
PCB-208L	*91*		*30 - 140*	*10/03/18 10:12*	*10/11/18 19:31*	*1*
PCB-209L	*87*		*30 - 140*	*10/03/18 10:12*	*10/11/18 19:31*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-28L	*97*		*40 - 125*	*10/03/18 10:12*	*10/11/18 19:31*	*1*
PCB-111L	*94*		*40 - 125*	*10/03/18 10:12*	*10/11/18 19:31*	*1*
PCB-178L	*96*		*40 - 125*	*10/03/18 10:12*	*10/11/18 19:31*	*1*

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

Lab Sample ID: MB 140-24151/6-B
Matrix: Solid
Analysis Batch: 24368

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 24151

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	ND		0.010	0.000044	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-2	ND		0.010	0.000048	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-3	ND		0.010	0.000050	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-4	ND		0.020	0.0073	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-5	ND		0.010	0.0058	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-6	ND		0.010	0.0051	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-7	ND		0.010	0.0052	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-8	ND		0.020	0.0047	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-9	ND		0.010	0.0053	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-10	ND		0.010	0.0057	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-11	ND		0.020	0.0050	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-12	ND	C	0.020	0.0052	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-13	ND	C12	0.020	0.0052	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-14	ND		0.010	0.0044	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-15	ND		0.010	0.0054	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-16	ND		0.010	0.00036	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-17	ND		0.010	0.00032	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-18	0.00270	J q C	0.020	0.00028	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-19	ND		0.010	0.00039	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-20	0.00151	J q C	0.020	0.00035	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-21	ND	C	0.020	0.00034	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-22	ND		0.010	0.00035	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-23	ND		0.010	0.00035	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-24	ND		0.010	0.00027	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-25	ND		0.010	0.00032	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-26	ND	C	0.020	0.00034	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-27	ND		0.010	0.00023	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-28	0.00151	J q C20	0.020	0.00035	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-29	ND	C26	0.020	0.00034	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-30	0.00270	J q C18	0.020	0.00028	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-31	ND		0.020	0.00034	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-32	ND		0.010	0.00022	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-33	ND	C21	0.020	0.00034	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-34	ND		0.010	0.00037	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-35	ND		0.010	0.00036	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-36	ND		0.010	0.00034	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-37	ND		0.010	0.00035	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-38	ND		0.010	0.00037	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-39	ND		0.010	0.00033	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-40	ND	C	0.030	0.00059	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-41	ND	C40	0.030	0.00059	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-42	ND		0.010	0.00059	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-43	ND	C	0.020	0.00055	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-44	0.00239	J q C	0.030	0.00052	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-45	ND	C	0.020	0.00061	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-46	ND		0.010	0.00074	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-47	0.00239	J q C44	0.030	0.00052	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-48	ND		0.010	0.00058	ng/g		10/03/18 10:12	10/11/18 17:28	1

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

Lab Sample ID: MB 140-24151/6-B
Matrix: Solid
Analysis Batch: 24368

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 24151

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-49	ND	C	0.020	0.00048	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-50	ND	C	0.020	0.00057	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-51	ND	C45	0.020	0.00061	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-52	ND		0.010	0.00058	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-53	ND	C50	0.020	0.00057	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-54	ND		0.010	0.000030	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-55	ND		0.010	0.00043	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-56	ND		0.010	0.00043	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-57	ND		0.010	0.00043	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-58	ND		0.010	0.00044	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-59	ND	C	0.030	0.00041	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-60	0.000945	J q	0.010	0.00043	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-61	ND	C	0.040	0.00041	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-62	ND	C59	0.030	0.00041	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-63	ND		0.010	0.00040	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-64	ND		0.010	0.00039	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-65	0.00239	J q C44	0.030	0.00052	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-66	0.00208	J q	0.010	0.00041	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-67	ND		0.010	0.00037	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-68	ND		0.010	0.00038	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-69	ND	C49	0.020	0.00048	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-70	ND	C61	0.040	0.00041	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-71	ND	C40	0.030	0.00059	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-72	ND		0.010	0.00042	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-73	ND	C43	0.020	0.00055	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-74	ND	C61	0.040	0.00041	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-75	ND	C59	0.030	0.00041	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-76	ND	C61	0.040	0.00041	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-77	0.00179	J	0.010	0.00042	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-78	0.00128	J q	0.010	0.00044	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-79	ND		0.010	0.00038	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-80	ND		0.010	0.00037	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-81	ND		0.010	0.00039	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-82	ND		0.010	0.00017	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-83	ND	C	0.020	0.00016	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-84	ND		0.010	0.00017	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-85	ND	C	0.030	0.00013	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-86	0.00222	J q C	0.060	0.00013	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-87	0.00222	J q C86	0.060	0.00013	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-88	ND	C	0.020	0.00016	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-89	ND		0.010	0.00017	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-90	ND	C	0.030	0.00013	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-91	ND	C88	0.020	0.00016	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-92	ND		0.010	0.00015	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-93	ND	C	0.020	0.00015	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-94	ND		0.010	0.00017	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-95	ND		0.010	0.00016	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-96	ND		0.010	0.00013	ng/g		10/03/18 10:12	10/11/18 17:28	1

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

Lab Sample ID: MB 140-24151/6-B
Matrix: Solid
Analysis Batch: 24368

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 24151

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-97	0.00222	J q C86	0.060	0.00013	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-98	ND	C	0.020	0.00015	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-99	ND	C83	0.020	0.00016	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-100	ND	C93	0.020	0.00015	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-101	ND	C90	0.030	0.00013	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-102	ND	C98	0.020	0.00015	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-103	ND		0.010	0.00015	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-104	ND		0.010	0.00011	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-105	ND		0.010	0.00011	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-106	ND		0.010	0.00012	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-107	ND		0.010	0.00012	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-108	ND	C	0.020	0.00012	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-109	0.00222	J q C86	0.060	0.00013	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-110	ND	C	0.020	0.00011	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-111	ND		0.010	0.00011	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-112	ND		0.010	0.00011	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-113	ND	C90	0.030	0.00013	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-114	0.00137	J q	0.010	0.00011	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-115	ND	C110	0.020	0.00011	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-116	ND	C85	0.030	0.00013	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-117	ND	C85	0.030	0.00013	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-118	0.00102	J q	0.010	0.00011	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-119	0.00222	J q C86	0.060	0.00013	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-120	ND		0.010	0.00011	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-121	ND		0.010	0.00011	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-122	ND		0.010	0.00013	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-123	ND		0.010	0.00011	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-124	ND	C108	0.020	0.00012	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-125	0.00222	J q C86	0.060	0.00013	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-126	0.00267	J q	0.010	0.00012	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-127	0.00107	J	0.010	0.00012	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-128	0.00193	J q C	0.020	0.00025	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-129	0.00373	J q C	0.040	0.00026	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-130	ND		0.010	0.00034	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-131	ND		0.010	0.00035	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-132	ND		0.010	0.00033	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-133	ND		0.010	0.00032	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-134	ND	C	0.020	0.00033	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-135	ND	C	0.020	0.000064	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-136	ND		0.010	0.000046	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-137	ND		0.010	0.00029	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-138	0.00373	J q C129	0.040	0.00026	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-139	ND	C	0.020	0.00028	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-140	ND	C139	0.020	0.00028	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-141	ND		0.010	0.00030	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-142	ND		0.010	0.00032	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-143	ND	C134	0.020	0.00033	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-144	ND		0.010	0.000058	ng/g		10/03/18 10:12	10/11/18 17:28	1

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

Lab Sample ID: MB 140-24151/6-B
Matrix: Solid
Analysis Batch: 24368

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 24151

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-145	ND		0.010	0.000044	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-146	ND		0.010	0.00028	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-147	ND	C	0.020	0.00032	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-148	ND		0.010	0.000061	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-149	ND	C147	0.020	0.00032	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-150	ND		0.010	0.000042	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-151	ND	C135	0.020	0.000064	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-152	ND		0.010	0.000045	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-153	0.00167	J q C	0.020	0.00022	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-154	ND		0.010	0.000050	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-155	ND		0.010	0.000042	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-156	0.00194	J q C	0.020	0.00026	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-157	0.00194	J q C156	0.020	0.00026	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-158	ND		0.010	0.00020	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-159	ND		0.010	0.00021	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-160	0.00373	J q C129	0.040	0.00026	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-161	ND		0.010	0.00021	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-162	0.000664	J q	0.010	0.00021	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-163	0.00373	J q C129	0.040	0.00026	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-164	0.00112	J	0.010	0.00022	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-165	ND		0.010	0.00024	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-166	0.00193	J q C128	0.020	0.00025	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-167	0.00127	J q	0.010	0.00017	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-168	0.00167	J q C153	0.020	0.00022	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-169	0.00420	J q	0.010	0.00016	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-170	ND		0.010	0.00031	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-171	ND	C	0.020	0.00030	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-172	ND		0.010	0.00029	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-173	ND	C171	0.020	0.00030	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-174	ND		0.010	0.00027	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-175	ND		0.010	0.00027	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-176	ND		0.010	0.00020	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-177	ND		0.010	0.00028	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-178	ND		0.010	0.00029	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-179	ND		0.010	0.00021	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-180	0.00294	J q C	0.020	0.00022	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-181	ND		0.010	0.00027	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-182	ND		0.010	0.00026	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-183	ND	C	0.020	0.00026	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-184	ND		0.010	0.00022	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-185	ND	C183	0.020	0.00026	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-186	ND		0.010	0.00021	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-187	ND		0.010	0.00025	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-188	ND		0.010	0.00019	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-189	0.00551	J	0.010	0.00016	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-190	0.00299	J	0.010	0.00019	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-191	ND		0.010	0.00020	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-192	ND		0.010	0.00022	ng/g		10/03/18 10:12	10/11/18 17:28	1

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

Lab Sample ID: MB 140-24151/6-B
Matrix: Solid
Analysis Batch: 24368

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 24151

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-193	0.00294	J q C180	0.020	0.00022	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-194	0.00563	J q	0.010	0.00042	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-195	0.00215	J q	0.010	0.00046	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-196	ND		0.010	0.000021	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-197	ND		0.010	0.000016	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-198	ND	C	0.020	0.000021	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-199	ND	C198	0.020	0.000021	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-200	ND		0.010	0.000014	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-201	ND		0.010	0.000015	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-202	ND		0.010	0.000016	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-203	ND		0.010	0.000019	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-204	ND		0.010	0.000016	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-205	0.00584	J q	0.010	0.00035	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-206	0.00792	J	0.010	0.0020	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-207	ND		0.010	0.0015	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-208	ND		0.010	0.0016	ng/g		10/03/18 10:12	10/11/18 17:28	1
PCB-209	0.00697	J q	0.010	0.000027	ng/g		10/03/18 10:12	10/11/18 17:28	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*68*		*30 - 140*	*10/03/18 10:12*	*10/11/18 17:28*	*1*
PCB-3L	*67*		*30 - 140*	*10/03/18 10:12*	*10/11/18 17:28*	*1*
PCB-4L	*75*		*30 - 140*	*10/03/18 10:12*	*10/11/18 17:28*	*1*
PCB-15L	*75*		*30 - 140*	*10/03/18 10:12*	*10/11/18 17:28*	*1*
PCB-19L	*90*		*30 - 140*	*10/03/18 10:12*	*10/11/18 17:28*	*1*
PCB-37L	*84*		*30 - 140*	*10/03/18 10:12*	*10/11/18 17:28*	*1*
PCB-54L	*59*		*30 - 140*	*10/03/18 10:12*	*10/11/18 17:28*	*1*
PCB-77L	*83*		*30 - 140*	*10/03/18 10:12*	*10/11/18 17:28*	*1*
PCB-81L	*84*		*30 - 140*	*10/03/18 10:12*	*10/11/18 17:28*	*1*
PCB-104L	*76*		*30 - 140*	*10/03/18 10:12*	*10/11/18 17:28*	*1*
PCB-105L	*91*		*30 - 140*	*10/03/18 10:12*	*10/11/18 17:28*	*1*
PCB-114L	*87*		*30 - 140*	*10/03/18 10:12*	*10/11/18 17:28*	*1*
PCB-118L	*86*		*30 - 140*	*10/03/18 10:12*	*10/11/18 17:28*	*1*
PCB-123L	*87*		*30 - 140*	*10/03/18 10:12*	*10/11/18 17:28*	*1*
PCB-126L	*86*		*30 - 140*	*10/03/18 10:12*	*10/11/18 17:28*	*1*
PCB-155L	*76*		*30 - 140*	*10/03/18 10:12*	*10/11/18 17:28*	*1*
PCB-156L	*92*	*C*	*30 - 140*	*10/03/18 10:12*	*10/11/18 17:28*	*1*
PCB-157L	*92*	*C156*	*30 - 140*	*10/03/18 10:12*	*10/11/18 17:28*	*1*
PCB-167L	*92*		*30 - 140*	*10/03/18 10:12*	*10/11/18 17:28*	*1*
PCB-169L	*97*		*30 - 140*	*10/03/18 10:12*	*10/11/18 17:28*	*1*
PCB-170L	*86*		*30 - 140*	*10/03/18 10:12*	*10/11/18 17:28*	*1*
PCB-188L	*88*		*30 - 140*	*10/03/18 10:12*	*10/11/18 17:28*	*1*
PCB-189L	*79*		*30 - 140*	*10/03/18 10:12*	*10/11/18 17:28*	*1*
PCB-202L	*101*		*30 - 140*	*10/03/18 10:12*	*10/11/18 17:28*	*1*
PCB-205L	*76*		*30 - 140*	*10/03/18 10:12*	*10/11/18 17:28*	*1*
PCB-206L	*90*		*30 - 140*	*10/03/18 10:12*	*10/11/18 17:28*	*1*
PCB-208L	*92*		*30 - 140*	*10/03/18 10:12*	*10/11/18 17:28*	*1*
PCB-209L	*94*		*30 - 140*	*10/03/18 10:12*	*10/11/18 17:28*	*1*

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

Lab Sample ID: MB 140-24151/6-B
Matrix: Solid
Analysis Batch: 24368

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 24151

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	96		40 - 125	10/03/18 10:12	10/11/18 17:28	1
PCB-111L	97		40 - 125	10/03/18 10:12	10/11/18 17:28	1
PCB-178L	97		40 - 125	10/03/18 10:12	10/11/18 17:28	1

Lab Sample ID: LCS 140-24151/7-B
Matrix: Solid
Analysis Batch: 24368

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 24151

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1	0.500	0.388		ng/g		78	50 - 150
PCB-3	0.500	0.390		ng/g		78	50 - 150
PCB-4	0.500	0.425		ng/g		85	50 - 150
PCB-15	0.500	0.482		ng/g		96	50 - 150
PCB-19	0.500	0.544		ng/g		109	50 - 150
PCB-37	0.500	0.475		ng/g		95	50 - 150
PCB-54	0.500	0.496		ng/g		99	50 - 150
PCB-77	0.500	0.462		ng/g		92	50 - 150
PCB-81	0.500	0.458		ng/g		92	50 - 150
PCB-104	0.500	0.504		ng/g		101	50 - 150
PCB-105	0.500	0.485		ng/g		97	50 - 150
PCB-114	0.500	0.512		ng/g		102	50 - 150
PCB-118	0.500	0.477		ng/g		95	50 - 150
PCB-123	0.500	0.555		ng/g		111	50 - 150
PCB-126	0.500	0.524		ng/g		105	50 - 150
PCB-155	0.500	0.523		ng/g		105	50 - 150
PCB-156	1.00	0.995	C	ng/g		99	50 - 150
PCB-157	1.00	0.995	C156	ng/g		99	50 - 150
PCB-167	0.500	0.517		ng/g		103	50 - 150
PCB-169	0.500	0.446		ng/g		89	50 - 150
PCB-188	0.500	0.495		ng/g		99	50 - 150
PCB-189	0.500	0.491		ng/g		98	50 - 150
PCB-202	0.500	0.428		ng/g		86	50 - 150
PCB-205	0.500	0.543		ng/g		109	50 - 150
PCB-206	0.500	0.473		ng/g		95	50 - 150
PCB-208	0.500	0.498		ng/g		100	50 - 150
PCB-209	0.500	0.487		ng/g		97	50 - 150

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
PCB-1L	63		30 - 140
PCB-3L	63		30 - 140
PCB-4L	80		30 - 140
PCB-15L	78		30 - 140
PCB-19L	88		30 - 140
PCB-37L	85		30 - 140
PCB-54L	71		30 - 140
PCB-77L	88		30 - 140
PCB-81L	86		30 - 140
PCB-104L	78		30 - 140

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

Lab Sample ID: LCS 140-24151/7-B
Matrix: Solid
Analysis Batch: 24368

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 24151

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
PCB-105L	90		30 - 140
PCB-114L	88		30 - 140
PCB-118L	91		30 - 140
PCB-123L	87		30 - 140
PCB-126L	87		30 - 140
PCB-155L	81		30 - 140
PCB-156L	89	C	30 - 140
PCB-157L	89	C156	30 - 140
PCB-167L	90		30 - 140
PCB-169L	97		30 - 140
PCB-170L	84		30 - 140
PCB-188L	89		30 - 140
PCB-189L	77		30 - 140
PCB-202L	105		30 - 140
PCB-205L	75		30 - 140
PCB-206L	89		30 - 140
PCB-208L	91		30 - 140
PCB-209L	96		30 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
PCB-28L	91		40 - 125
PCB-111L	94		40 - 125
PCB-178L	95		40 - 125

Lab Sample ID: MB 140-24331/9-B
Matrix: Solid
Analysis Batch: 24548

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 24331

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	ND		0.010	0.00021	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-2	ND		0.010	0.00025	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-3	ND		0.010	0.00029	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-4	ND		0.020	0.0036	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-5	ND		0.010	0.0031	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-6	ND		0.010	0.0027	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-7	ND		0.010	0.0028	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-8	ND		0.020	0.0025	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-9	ND		0.010	0.0029	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-10	ND		0.010	0.0031	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-11	0.00469	J q	0.020	0.0027	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-12	ND	C	0.020	0.0028	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-13	ND	C12	0.020	0.0028	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-14	ND		0.010	0.0023	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-15	ND		0.010	0.0030	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-16	ND		0.010	0.00032	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-17	ND		0.010	0.00029	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-18	ND	C	0.020	0.00025	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-19	ND		0.010	0.00035	ng/g		10/10/18 11:55	10/17/18 21:10	1

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

Lab Sample ID: MB 140-24331/9-B
Matrix: Solid
Analysis Batch: 24548

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 24331

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-20	0.00144	J C	0.020	0.00026	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-21	0.000923	J C	0.020	0.00026	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-22	ND		0.010	0.00027	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-23	ND		0.010	0.00027	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-24	ND		0.010	0.00024	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-25	ND		0.010	0.00024	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-26	ND	C	0.020	0.00026	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-27	ND		0.010	0.00021	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-28	0.00144	J C20	0.020	0.00026	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-29	ND	C26	0.020	0.00026	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-30	ND	C18	0.020	0.00025	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-31	0.000748	J q	0.020	0.00026	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-32	0.000271	J q	0.010	0.00020	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-33	0.000923	J C21	0.020	0.00026	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-34	ND		0.010	0.00028	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-35	0.000895	J q	0.010	0.00027	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-36	ND		0.010	0.00026	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-37	0.000698	J q	0.010	0.00027	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-38	ND		0.010	0.00028	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-39	ND		0.010	0.00025	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-40	0.00171	J C	0.030	0.00058	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-41	0.00171	J C40	0.030	0.00058	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-42	ND		0.010	0.00058	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-43	ND	C	0.020	0.00055	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-44	0.00416	J q C	0.030	0.00052	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-45	ND	C	0.020	0.00061	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-46	ND		0.010	0.00074	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-47	0.00416	J q C44	0.030	0.00052	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-48	ND		0.010	0.00058	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-49	ND	C	0.020	0.00048	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-50	ND	C	0.020	0.00057	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-51	ND	C45	0.020	0.00061	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-52	ND		0.010	0.00058	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-53	ND	C50	0.020	0.00057	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-54	ND		0.010	0.000046	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-55	0.000641	J q	0.010	0.00042	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-56	0.00197	J	0.010	0.00043	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-57	ND		0.010	0.00043	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-58	ND		0.010	0.00044	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-59	ND	C	0.030	0.00041	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-60	0.00105	J q	0.010	0.00043	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-61	0.00297	J q C	0.040	0.00041	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-62	ND	C59	0.030	0.00041	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-63	ND		0.010	0.00040	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-64	0.000856	J q	0.010	0.00039	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-65	0.00416	J q C44	0.030	0.00052	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-66	0.00153	J q	0.010	0.00040	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-67	ND		0.010	0.00037	ng/g		10/10/18 11:55	10/17/18 21:10	1

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

Lab Sample ID: MB 140-24331/9-B
Matrix: Solid
Analysis Batch: 24548

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 24331

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-68	ND		0.010	0.00038	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-69	ND	C49	0.020	0.00048	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-70	0.00297	J q C61	0.040	0.00041	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-71	0.00171	J C40	0.030	0.00058	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-72	ND		0.010	0.00042	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-73	ND	C43	0.020	0.00055	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-74	0.00297	J q C61	0.040	0.00041	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-75	ND	C59	0.030	0.00041	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-76	0.00297	J q C61	0.040	0.00041	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-77	0.00154	J q	0.010	0.00041	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-78	0.00127	J q	0.010	0.00044	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-79	ND		0.010	0.00038	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-80	ND		0.010	0.00037	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-81	ND		0.010	0.00041	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-82	ND		0.010	0.00033	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-83	0.00256	J q C	0.020	0.00031	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-84	ND		0.010	0.00034	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-85	ND	C	0.030	0.00025	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-86	0.00584	J C	0.060	0.00025	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-87	0.00584	J C86	0.060	0.00025	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-88	ND	C	0.020	0.00030	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-89	ND		0.010	0.00033	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-90	0.00202	J q C	0.030	0.00025	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-91	ND	C88	0.020	0.00030	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-92	ND		0.010	0.00029	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-93	0.000533	J q C	0.020	0.00029	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-94	ND		0.010	0.00033	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-95	ND		0.010	0.00032	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-96	ND		0.010	0.00025	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-97	0.00584	J C86	0.060	0.00025	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-98	0.000818	J C	0.020	0.00028	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-99	0.00256	J q C83	0.020	0.00031	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-100	0.000533	J q C93	0.020	0.00029	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-101	0.00202	J q C90	0.030	0.00025	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-102	0.000818	J C98	0.020	0.00028	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-103	ND		0.010	0.00029	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-104	ND		0.010	0.00022	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-105	0.00138	J q	0.010	0.00066	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-106	ND		0.010	0.00069	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-107	ND		0.010	0.00074	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-108	0.00192	J q C	0.020	0.00071	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-109	0.00584	J C86	0.060	0.00025	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-110	0.00240	J q C	0.020	0.00021	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-111	ND		0.010	0.00020	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-112	ND		0.010	0.00021	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-113	0.00202	J q C90	0.030	0.00025	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-114	ND		0.010	0.00065	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-115	0.00240	J q C110	0.020	0.00021	ng/g		10/10/18 11:55	10/17/18 21:10	1

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

Lab Sample ID: MB 140-24331/9-B
Matrix: Solid
Analysis Batch: 24548

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 24331

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-116	ND	C85	0.030	0.00025	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-117	ND	C85	0.030	0.00025	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-118	0.00224	J	0.010	0.00065	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-119	0.00584	J C86	0.060	0.00025	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-120	ND		0.010	0.00021	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-121	ND		0.010	0.00021	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-122	ND		0.010	0.00080	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-123	ND		0.010	0.00069	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-124	0.00192	J q C108	0.020	0.00071	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-125	0.00584	J C86	0.060	0.00025	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-126	ND		0.010	0.00074	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-127	ND		0.010	0.00069	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-128	0.00144	J q C	0.020	0.00074	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-129	ND	C	0.040	0.00077	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-130	ND		0.010	0.0010	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-131	ND		0.010	0.0011	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-132	ND		0.010	0.00099	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-133	ND		0.010	0.00096	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-134	ND	C	0.020	0.0010	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-135	ND	C	0.020	0.00018	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-136	ND		0.010	0.00013	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-137	0.00117	J q	0.010	0.00087	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-138	ND	C129	0.040	0.00077	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-139	ND	C	0.020	0.00085	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-140	ND	C139	0.020	0.00085	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-141	ND		0.010	0.00090	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-142	ND		0.010	0.00096	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-143	ND	C134	0.020	0.0010	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-144	ND		0.010	0.00016	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-145	ND		0.010	0.00012	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-146	ND		0.010	0.00085	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-147	ND	C	0.020	0.00097	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-148	ND		0.010	0.00017	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-149	ND	C147	0.020	0.00097	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-150	ND		0.010	0.00012	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-151	ND	C135	0.020	0.00018	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-152	ND		0.010	0.00013	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-153	0.00199	J q C	0.020	0.00067	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-154	ND		0.010	0.00014	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-155	ND		0.010	0.00012	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-156	0.00323	J q C	0.020	0.00080	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-157	0.00323	J q C156	0.020	0.00080	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-158	0.00160	J	0.010	0.00060	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-159	0.00132	J q	0.010	0.00064	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-160	ND	C129	0.040	0.00077	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-161	0.000853	J q	0.010	0.00064	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-162	0.00101	J	0.010	0.00063	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-163	ND	C129	0.040	0.00077	ng/g		10/10/18 11:55	10/17/18 21:10	1

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

Lab Sample ID: MB 140-24331/9-B
Matrix: Solid
Analysis Batch: 24548

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 24331

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-164	ND		0.010	0.00067	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-165	ND		0.010	0.00072	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-166	0.00144	J q C128	0.020	0.00074	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-167	0.00133	J q	0.010	0.00051	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-168	0.00199	J q C153	0.020	0.00067	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-169	0.00248	J	0.010	0.00049	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-170	ND		0.010	0.00047	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-171	0.00244	J q C	0.020	0.00046	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-172	0.00209	J q	0.010	0.00046	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-173	0.00244	J q C171	0.020	0.00046	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-174	ND		0.010	0.00043	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-175	ND		0.010	0.00042	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-176	0.000722	J q	0.010	0.00031	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-177	ND		0.010	0.00044	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-178	ND		0.010	0.00045	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-179	ND		0.010	0.00033	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-180	0.00296	J q C	0.020	0.00035	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-181	ND		0.010	0.00041	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-182	ND		0.010	0.00040	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-183	0.00319	J C	0.020	0.00041	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-184	ND		0.010	0.00034	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-185	0.00319	J C183	0.020	0.00041	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-186	ND		0.010	0.00033	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-187	ND		0.010	0.00039	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-188	ND		0.010	0.00030	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-189	0.00308	J	0.010	0.0011	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-190	0.000700	J q	0.010	0.00030	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-191	0.00205	J q	0.010	0.00031	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-192	0.00181	J	0.010	0.00035	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-193	0.00296	J q C180	0.020	0.00035	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-194	0.00214	J q	0.010	0.00083	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-195	ND		0.010	0.00090	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-196	0.00146	J q	0.010	0.00020	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-197	0.000935	J q	0.010	0.00015	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-198	0.00198	J q C	0.020	0.00020	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-199	0.00198	J q C198	0.020	0.00020	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-200	0.000429	J q	0.010	0.00014	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-201	ND		0.010	0.00014	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-202	ND		0.010	0.00016	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-203	0.00171	J q	0.010	0.00018	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-204	ND		0.010	0.00015	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-205	0.00243	J q	0.010	0.00070	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-206	ND		0.010	0.0014	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-207	ND		0.010	0.00099	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-208	ND		0.010	0.0010	ng/g		10/10/18 11:55	10/17/18 21:10	1
PCB-209	ND		0.010	0.00036	ng/g		10/10/18 11:55	10/17/18 21:10	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-1L	64		30 - 140	10/10/18 11:55	10/17/18 21:10	1
PCB-3L	64		30 - 140	10/10/18 11:55	10/17/18 21:10	1
PCB-4L	69		30 - 140	10/10/18 11:55	10/17/18 21:10	1
PCB-15L	71		30 - 140	10/10/18 11:55	10/17/18 21:10	1
PCB-19L	76		30 - 140	10/10/18 11:55	10/17/18 21:10	1
PCB-37L	78		30 - 140	10/10/18 11:55	10/17/18 21:10	1
PCB-54L	48		30 - 140	10/10/18 11:55	10/17/18 21:10	1
PCB-77L	80		30 - 140	10/10/18 11:55	10/17/18 21:10	1
PCB-81L	79		30 - 140	10/10/18 11:55	10/17/18 21:10	1
PCB-104L	69		30 - 140	10/10/18 11:55	10/17/18 21:10	1
PCB-105L	84		30 - 140	10/10/18 11:55	10/17/18 21:10	1
PCB-114L	82		30 - 140	10/10/18 11:55	10/17/18 21:10	1
PCB-118L	81		30 - 140	10/10/18 11:55	10/17/18 21:10	1
PCB-123L	79		30 - 140	10/10/18 11:55	10/17/18 21:10	1
PCB-126L	81		30 - 140	10/10/18 11:55	10/17/18 21:10	1
PCB-155L	71		30 - 140	10/10/18 11:55	10/17/18 21:10	1
PCB-156L	85	C	30 - 140	10/10/18 11:55	10/17/18 21:10	1
PCB-157L	85	C156	30 - 140	10/10/18 11:55	10/17/18 21:10	1
PCB-167L	86		30 - 140	10/10/18 11:55	10/17/18 21:10	1
PCB-169L	91		30 - 140	10/10/18 11:55	10/17/18 21:10	1
PCB-170L	80		30 - 140	10/10/18 11:55	10/17/18 21:10	1
PCB-188L	78		30 - 140	10/10/18 11:55	10/17/18 21:10	1
PCB-189L	81		30 - 140	10/10/18 11:55	10/17/18 21:10	1
PCB-202L	96		30 - 140	10/10/18 11:55	10/17/18 21:10	1
PCB-205L	71		30 - 140	10/10/18 11:55	10/17/18 21:10	1
PCB-206L	82		30 - 140	10/10/18 11:55	10/17/18 21:10	1
PCB-208L	82		30 - 140	10/10/18 11:55	10/17/18 21:10	1
PCB-209L	82		30 - 140	10/10/18 11:55	10/17/18 21:10	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	87		40 - 125	10/10/18 11:55	10/17/18 21:10	1
PCB-111L	87		40 - 125	10/10/18 11:55	10/17/18 21:10	1
PCB-178L	90		40 - 125	10/10/18 11:55	10/17/18 21:10	1

Lab Sample ID: LCS 140-24331/10-B
Matrix: Solid
Analysis Batch: 24548

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 24331

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1	0.500	0.484		ng/g		97	50 - 150
PCB-3	0.500	0.476		ng/g		95	50 - 150
PCB-4	0.500	0.529		ng/g		106	50 - 150
PCB-15	0.500	0.555		ng/g		111	50 - 150
PCB-19	0.500	0.637		ng/g		127	50 - 150
PCB-37	0.500	0.552		ng/g		110	50 - 150
PCB-54	0.500	0.593		ng/g		119	50 - 150
PCB-77	0.500	0.512		ng/g		102	50 - 150
PCB-81	0.500	0.482		ng/g		96	50 - 150
PCB-104	0.500	0.558		ng/g		112	50 - 150
PCB-105	0.500	0.557		ng/g		111	50 - 150
PCB-114	0.500	0.601		ng/g		120	50 - 150
PCB-118	0.500	0.590		ng/g		118	50 - 150
PCB-123	0.500	0.631		ng/g		126	50 - 150
PCB-126	0.500	0.591		ng/g		118	50 - 150

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

Lab Sample ID: LCS 140-24331/10-B
Matrix: Solid
Analysis Batch: 24548

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 24331

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
PCB-155			0.500	0.564		ng/g		113	50 - 150		
PCB-156			1.00	1.12	C	ng/g		112	50 - 150		
PCB-157			1.00	1.12	C156	ng/g		112	50 - 150		
PCB-167			0.500	0.579		ng/g		116	50 - 150		
PCB-169			0.500	0.514		ng/g		103	50 - 150		
PCB-188			0.500	0.563		ng/g		113	50 - 150		
PCB-189			0.500	0.575		ng/g		115	50 - 150		
PCB-202			0.500	0.483		ng/g		97	50 - 150		
PCB-205			0.500	0.641		ng/g		128	50 - 150		
PCB-206			0.500	0.516		ng/g		103	50 - 150		
PCB-208			0.500	0.549		ng/g		110	50 - 150		
PCB-209			0.500	0.559		ng/g		112	50 - 150		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
PCB-1L	*57*		*30 - 140*
PCB-3L	*58*		*30 - 140*
PCB-4L	*64*		*30 - 140*
PCB-15L	*65*		*30 - 140*
PCB-19L	*68*		*30 - 140*
PCB-37L	*74*		*30 - 140*
PCB-54L	*44*		*30 - 140*
PCB-77L	*77*		*30 - 140*
PCB-81L	*77*		*30 - 140*
PCB-104L	*63*		*30 - 140*
PCB-105L	*79*		*30 - 140*
PCB-114L	*76*		*30 - 140*
PCB-118L	*75*		*30 - 140*
PCB-123L	*74*		*30 - 140*
PCB-126L	*79*		*30 - 140*
PCB-155L	*70*		*30 - 140*
PCB-156L	*83*	*C*	*30 - 140*
PCB-157L	*83*	*C156*	*30 - 140*
PCB-167L	*82*		*30 - 140*
PCB-169L	*90*		*30 - 140*
PCB-170L	*76*		*30 - 140*
PCB-188L	*72*		*30 - 140*
PCB-189L	*79*		*30 - 140*
PCB-202L	*92*		*30 - 140*
PCB-205L	*70*		*30 - 140*
PCB-206L	*83*		*30 - 140*
PCB-208L	*82*		*30 - 140*
PCB-209L	*85*		*30 - 140*

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
PCB-28L	*80*		*40 - 125*
PCB-111L	*86*		*40 - 125*
PCB-178L	*88*		*40 - 125*

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

Lab Sample ID: LCSD 140-24331/11-B
Matrix: Solid
Analysis Batch: 24548

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 24331

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1			0.500	0.472		ng/g		94	50 - 150	3	50
PCB-3			0.500	0.477		ng/g		95	50 - 150	0	50
PCB-4			0.500	0.510		ng/g		102	50 - 150	4	50
PCB-15			0.500	0.547		ng/g		109	50 - 150	1	50
PCB-19			0.500	0.630		ng/g		126	50 - 150	1	50
PCB-37			0.500	0.534		ng/g		107	50 - 150	3	50
PCB-54			0.500	0.641		ng/g		128	50 - 150	8	50
PCB-77			0.500	0.513		ng/g		103	50 - 150	0	50
PCB-81			0.500	0.480		ng/g		96	50 - 150	0	50
PCB-104			0.500	0.557		ng/g		111	50 - 150	0	50
PCB-105			0.500	0.529		ng/g		106	50 - 150	5	50
PCB-114			0.500	0.592		ng/g		118	50 - 150	2	50
PCB-118			0.500	0.561		ng/g		112	50 - 150	5	50
PCB-123			0.500	0.573		ng/g		115	50 - 150	10	50
PCB-126			0.500	0.589		ng/g		118	50 - 150	0	50
PCB-155			0.500	0.562		ng/g		112	50 - 150	0	50
PCB-156			1.00	1.15	C	ng/g		115	50 - 150	2	50
PCB-157			1.00	1.15	C156	ng/g		115	50 - 150	2	50
PCB-167			0.500	0.557		ng/g		111	50 - 150	4	50
PCB-169			0.500	0.520		ng/g		104	50 - 150	1	50
PCB-188			0.500	0.545		ng/g		109	50 - 150	3	50
PCB-189			0.500	0.565		ng/g		113	50 - 150	2	50
PCB-202			0.500	0.483		ng/g		97	50 - 150	0	50
PCB-205			0.500	0.639		ng/g		128	50 - 150	0	50
PCB-206			0.500	0.522		ng/g		104	50 - 150	1	50
PCB-208			0.500	0.554		ng/g		111	50 - 150	1	50
PCB-209			0.500	0.563		ng/g		113	50 - 150	1	50

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
PCB-1L	*61*		*30 - 140*
PCB-3L	*61*		*30 - 140*
PCB-4L	*67*		*30 - 140*
PCB-15L	*68*		*30 - 140*
PCB-19L	*73*		*30 - 140*
PCB-37L	*76*		*30 - 140*
PCB-54L	*45*		*30 - 140*
PCB-77L	*80*		*30 - 140*
PCB-81L	*78*		*30 - 140*
PCB-104L	*67*		*30 - 140*
PCB-105L	*83*		*30 - 140*
PCB-114L	*79*		*30 - 140*
PCB-118L	*79*		*30 - 140*
PCB-123L	*77*		*30 - 140*
PCB-126L	*80*		*30 - 140*
PCB-155L	*72*		*30 - 140*
PCB-156L	*84*	*C*	*30 - 140*
PCB-157L	*84*	*C156*	*30 - 140*
PCB-167L	*85*		*30 - 140*

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

Lab Sample ID: LCSD 140-24331/11-B
Matrix: Solid
Analysis Batch: 24548

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 24331

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
PCB-169L	91		30 - 140
PCB-170L	81		30 - 140
PCB-188L	78		30 - 140
PCB-189L	80		30 - 140
PCB-202L	96		30 - 140
PCB-205L	71		30 - 140
PCB-206L	82		30 - 140
PCB-208L	81		30 - 140
PCB-209L	85		30 - 140

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
PCB-28L	81		40 - 125
PCB-111L	83		40 - 125
PCB-178L	90		40 - 125

Lab Chronicle

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

TestAmerica Job ID: 580-80213-11

Client Sample ID: PDI-SG-B431

Lab Sample ID: 580-80213-1

Date Collected: 09/07/18 12:08
Matrix: Solid
Date Received: 09/10/18 12:40
Percent Solids: 65.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			24331	10/10/18 11:55	CLI	TAL KNX
Total/NA	Cleanup	Split			24475	10/15/18 14:54	SMM	TAL KNX
Total/NA	Analysis	1668A		1	24572	10/18/18 05:28	LKM	TAL KNX

Client Sample ID: PDI-SG-B479

Lab Sample ID: 580-80213-2

Date Collected: 09/07/18 09:58
Matrix: Solid
Date Received: 09/10/18 12:40
Percent Solids: 65.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			24151	10/03/18 10:12	BRS	TAL KNX
Total/NA	Cleanup	Split			24200	10/04/18 20:32	SMM	TAL KNX
Total/NA	Analysis	1668A		1	24368	10/11/18 19:31	JMN	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: 580-80213-11

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	07-31-19
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

Sample Summary

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

TestAmerica Job ID: 580-80213-11

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-80213-1	PDI-SG-B431	Solid	09/07/18 12:08	09/10/18 12:40
580-80213-2	PDI-SG-B479	Solid	09/07/18 09:58	09/10/18 12:40

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	Project Contact: Amy Dahl / Chelsey Cook
AECOM	Tel: (206) 438-2261 / (206) 438-2010
1111 3rd Ave Suite 1600	Analysis Turnaround Time
Seattle, WA 98101	Calendar (C) or Work Days (W) _____
Phone: (206) 438-2700 Fax: 1+(866) 495-5288	[X] 21 days (water)
Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling	[X] Other _ASAP_(GS only)
Portland, OR	
Project #: 60566335 Study: Surface ~~Water~~ Sediment	
Sample Type: D/U	

Site Contact: Jennifer Ray
Laboratory Contact: Elaine-Walker
Carrier: Courier
9/10/2018
COC No: 1
1 of 1 pages

Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	PCB Congeners 1668A	PCDD/Fs 1613B	TPH Diesel, Metals, Mercury NWTPH-Dx, 6020B, 7471A	Grain size ASTM D7928/D6913	Total organic carbon, Total solids 9060 (104C & 70C)	Archive Archive -20 C	PAHs, BEHP, Tributyltin, 8270-SIM, 8270-LL; Krone/Unger	WQ - PCB Congeners 1668A	WQ - PCDD/Fs 1613B	WQ - TPH Diesel NWTPH-Dx	WQ - Metals, Mercury 6020B, 7470	WQ - Total Organic Carbon SM5310B	WQ - PAHs 8270-SIM	WQ - Pesticides 1669M	WQ - BEHP EPA 8270D-LL	WQ - Tributyltin Krone/Unger	Sample Specific Notes:
PDI-SG-B431	9/7/2018	12:08	SS		~~MT~~ JH	7		H	H	H	x	H	H	H										
PDI-SG-B479	9/7/2018	9:58	SS		~~MT~~ JH	7		H	H	H	x	H	H	H										
PDI-RB-VV-090718	9/7/2018	14:50	W		JH	14									x	x	x	x	x	x		x	x	

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

Sample Disposal
[ ] Return To Client [X] Disposal By Lab [X] 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.

1.3

Relinquished by:	Company: AECOM	Date/Time: 9/10/18 1204	Received by:	Company: M.E.	Date/Time: 9/10/18 1204
Relinquished by:	Company: M.E.	Date/Time: 9/10/18 1240	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

580-80213 Chain of Custody

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

SURFACE SEDIMENT CHAIN OF CUSTODY

Client Contact	**Project Contact: Amy Dahl / Chelsey Cook**
AECOM	**Tel: (206) 438-2261 / (206) 438-2010**
1111 3rd Ave Suite 1600	**Analysis Turnaround Time**
Seattle, WA 98101	Calendar (C) or Work Days (W)
Phone (206) 438-2700 Fax: 1+(866) 495-5288	[X] 21 days (water)
Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling	X [X] Other _ASAP_ (GS only)
Portland, OR	
Project #: 60566335 Study: Surface ~~Water~~ Sediment	
Sample Type: D/U	

Site Contact: Jennifer Ray — 9/10/2018 — COC No: 1
Laboratory Contact: Elaine-Walker — **Carrier: Courier** — 1 of 1 pages

Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	PCB Congeners 1668A	PCDD/Fs 1613B	TPH Diesel, Metals, Mercury NWTPH-Dx, 6020B, 7471A	Grain size ASTM D7928/D6913	Total organic carbon, Total solids 9060 (104C & 70C)	Archive Archive -20 C	PAHs, BEHP, Tributyltin, 8270-SIM, 8270-LL, Kron/Unger	WQ - PCB Congeners 1668A	WQ - PCDD/Fs 1613B	WQ - TPH Diesel NWTPH-Dx	WQ - Metals, Mercury 6020B, 7470	WQ - Total Organic Carbon SM5310B	WQ - PAHs 8270-SIM	WQ - Pesticides 1669M	WQ - BEHP EPA 8270D-LL	WQ - Tributyltin Krone/Unger	Sample Specific Notes:
PDI-SG-B431	9/7/2018	12:08	SS		~~MT~~ JH	7		H	H	H	x	H	H	H										
PDI-SG-B479	9/7/2018	9:58	SS		~~MT~~ JH	7		H	H	H	x	H	H	H										
PDI-RB-VV-090718	9/7/2018	14:50	W		JH	14									x	x	x	x	x	x		x	x	

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

Sample Disposal
[ ] Return To Client [X] Disposal By Lab [X] 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.

1.3

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	AECOM	9/10/18 1204	[signature]	M.E.	9/10/18 1204
[signature]	M.E.	9/10/18 1240	Tom B[signature]	TA Sea	9/11/18 0950
[signature]	TAPOR	9/10/18 1700			

IR5 1.6/1.6

Chain of Custody Record

580-80213 Chain of Custody

TestAmerica
LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Walker, Elaine M	253.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: elaine.walker@testamericainc.com	State of Origin: Oregon
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):	Page: Page 1 of 1
Address: 5815 Middlebrook Pike, ,	Due Date Requested: 9/27/2018		Job #: 580-80213-3
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 (Hold)	Screen_1668/Screen_PCB_P_S (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
PDI-SG-B431 (580-80213-1)	9/7/18	12:08 Pacific		Solid			X	X	1	
PDI-SG-B479 (580-80213-2)	9/7/18	09:58 Pacific		Solid			X	X	1	

RT: 1.5°C CT: 1.6°C, 1 cooler
FedEx PO,+K#9611 5676 1168
Custody seal intact, KL 9/15/18

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 complicance 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: 9/14/18 1400	Company TAPOS	Received by:	Date/Time: 9/15/18 1000	Company TA-Knox
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Ver: 09/20/2016

Loc: 580
80213

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 : SC 68 Correction factor: +0.1	/			☐ **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

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: Ke Sx Date: 9/15/18

QA026R30.doc, 080916

Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-80213-11

Login Number: 80213
List Number: 1
Creator: Antonson, Angeline D

List Source: TestAmerica Seattle

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

Isotope Dilution Summary

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

TestAmerica Job ID: 580-80213-11

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)
580-80213-1	PDI-SG-B431	57	60	70	75	78	83	53	84
580-80213-2	PDI-SG-B479	61	63	80	82	90	91	62	92
LCS 140-24151/7-B	Lab Control Sample	63	63	80	78	88	85	71	88
LCS 140-24331/10-B	Lab Control Sample	57	58	64	65	68	74	44	77
LCSD 140-24331/11-B	Lab Control Sample Dup	61	61	67	68	73	76	45	80
MB 140-24151/6-B	Method Blank	68	67	75	75	90	84	59	83
MB 140-24331/9-B	Method Blank	64	64	69	71	76	78	48	80

		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)
580-80213-1	PDI-SG-B431	85	74	87	88	86	85	82	83
580-80213-2	PDI-SG-B479	90	81	92	92	91	89	90	79
LCS 140-24151/7-B	Lab Control Sample	86	78	90	88	91	87	87	81
LCS 140-24331/10-B	Lab Control Sample	77	63	79	76	75	74	79	70
LCSD 140-24331/11-B	Lab Control Sample Dup	78	67	83	79	79	77	80	72
MB 140-24151/6-B	Method Blank	84	76	91	87	86	87	86	76
MB 140-24331/9-B	Method Blank	79	69	84	82	81	79	81	71

		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)
580-80213-1	PDI-SG-B431	84 C	84 C156	84	82	81	92	87	108
580-80213-2	PDI-SG-B479	91 C	91 C156	92	97	88	95	84	100
LCS 140-24151/7-B	Lab Control Sample	89 C	89 C156	90	97	84	89	77	105
LCS 140-24331/10-B	Lab Control Sample	83 C	83 C156	82	90	76	72	79	92
LCSD 140-24331/11-B	Lab Control Sample Dup	84 C	84 C156	85	91	81	78	80	96
MB 140-24151/6-B	Method Blank	92 C	92 C156	92	97	86	88	79	101
MB 140-24331/9-B	Method Blank	85 C	85 C156	86	91	80	78	81	96

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PCB205L (30-140)	PCB206L (30-140)	PCB208L (30-140)	PCB209L (30-140)				
580-80213-1	PDI-SG-B431	71	81	98	75				
580-80213-2	PDI-SG-B479	75	89	91	87				
LCS 140-24151/7-B	Lab Control Sample	75	89	91	96				
LCS 140-24331/10-B	Lab Control Sample	70	83	82	85				
LCSD 140-24331/11-B	Lab Control Sample Dup	71	82	81	85				
MB 140-24151/6-B	Method Blank	76	90	92	94				
MB 140-24331/9-B	Method Blank	71	82	82	82				

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

Isotope Dilution Summary

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

TestAmerica Job ID: 580-80213-11

PCB105L = PCB-105L
P114L = PCB-114L
PCB118L = PCB-118L
PCB123L = PCB-123L
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

Presley, Kim

From: Walker, M Elaine
Sent: Wednesday, September 26, 2018 1:36 PM
To: 'Dahl, Amy'
Cc: Cook, Chelsey; Presley, Kim
Subject: RE: authorization of D/U sample

Got it Amy, thanks.

M. ELAINE WALKER
Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

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Tacoma, WA 98424
Tel 253.248.4972 | Fax 253.922.5047
www.testamericainc.com

From: Dahl, Amy [mailto:amy.dahl@aecom.com]
Sent: Wednesday, September 26, 2018 12:57 PM
To: Walker, M Elaine
Cc: Cook, Chelsey
Subject: PH: authorization of D/U sample

-External Email-

Hi Elaine, all analysis has been authorized for the following sample currently logged in under sample group 580-80213-1:

580-80213-2 PDI-SG-B479

Keep the other sample on hold for now:

580-80213-1 PDI-SG-B431

Thank you,

PRIVILEGED AND CONFIDENTIAL / JOINT DEFENSE COMMUNICATION / ATTORNEY CLIENT WORK PRODUCT

Amy Dahl, PhD
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AECOM
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