TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

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TestAmerica Job ID: 580-78459-3
Client Project/Site: Portland Harbor Pre-Remedial Design

For:
AECOM
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Attn: Amy Dahl

M. Elaine Walker

Authorized for release by:
9/11/2018 4:19:06 PM

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Job ID: 580-78459-3

Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE
Client: AECOM
Project: Portland Harbor Pre-Remedial Design
Report Number: 580-78459-3

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) resulting from a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are an unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes within the calibration range of the instrument or that reduces the interferences thereby enabling the quantification of target analytes.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

Three samples were received on 6/29/2018 1:05 PM; the samples arrived in good condition, properly preserved and, where required, on ice.

The following samples were activated for Grain Size by the client on 8/16/18: PDI-SG-B430 (580-78459-1) and PDI-SG-B432 (580-78459-3). All other analyses are on hold.

The following samples were taken off hold for all remaining analyses and started on 09/11/2018: PDI-SG-B430 (580-78459-1) and PDI-SG-B432 (580-78459-3).

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

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

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

POLYCHLORINATED BIPHENYLS CONGENERS (PCBS)

Samples PDI-SG-B430 (580-78459-1) and PDI-SG-B432 (580-78459-3) were analyzed for polychlorinated biphenyls congeners (PCBs) in accordance with EPA Method 1668A. The samples were prepared on 08/24/2018 and analyzed on 09/05/2018 and 09/06/2018.

Several analytes were detected in method blank MB 140-23078/16-B at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Several Isotope Dilution Analyte (IDA) recoveries associated with the following samples are below the method recommended limit: (LCSD 140-23078/18-B) and (MB 140-23078/16-B). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the samples.

An ion abundance ratio is outside criteria for an Isotope Dilution Analyte (IDA) associated with the following samples: (LCSD 140-23078/18-B) and (MB 140-23078/16-B).

Job ID: 580-78459-3 (Continued)

Laboratory: TestAmerica Seattle (Continued)

The following sample exhibited elevated noise or matrix interferences for one or more analytes causing elevation of the detection limit (EDL): PDI-SG-B432 (580-78459-3). The reporting limit (RL) for the affected analytes has been raised to be equal to the EDL, and a "G" qualifier applied.

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.
C93	The compound co-eluted with PCB-93
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.
B	Compound was found in the blank and sample.
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
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
G	The reported quantitation limit has been raised due to an exhibited elevated noise or matrix interference
*	Isotope Dilution analyte is outside acceptance limits.

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

Glossary (Continued)

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

Client Sample ID: PDI-SG-B430
Date Collected: 06/28/18 14:18
Date Received: 06/29/18 13:05

Lab Sample ID: 580-78459-1
Matrix: Solid
Percent Solids: 47.5

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

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.0032	J	0.010	0.00019	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-2	0.0029	J q	0.010	0.00022	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-3	ND		0.010	0.00023	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-4	0.010	J	0.021	0.0044	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-5	ND		0.010	0.0035	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-6	0.0077	J q	0.010	0.0031	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-7	0.0036	J q	0.010	0.0032	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-8	0.0089	J q	0.021	0.0029	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-9	0.0046	J q	0.010	0.0033	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-10	ND		0.010	0.0035	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-11	0.044	B	0.021	0.0030	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-12	0.0038	J q C	0.021	0.0032	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-13	0.0038	J q C12	0.021	0.0032	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-14	ND		0.010	0.0027	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-15	0.012	q	0.010	0.0033	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-16	0.0051	J q	0.010	0.00041	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-17	0.016		0.010	0.00037	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-18	0.016	J C	0.021	0.00033	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-19	0.0035	J q	0.010	0.00045	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-20	0.043	C B	0.021	0.00068	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-21	0.0098	J q C	0.021	0.00067	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-22	0.0079	J q	0.010	0.00070	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-23	ND		0.010	0.00069	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-24	ND		0.010	0.00031	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-25	0.0047	J q	0.010	0.00063	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-26	0.0076	J q C	0.021	0.00067	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-27	0.0047	J q	0.010	0.00027	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-28	0.043	C20 B	0.021	0.00068	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-29	0.0076	J q C26	0.021	0.00067	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-30	0.016	J C18	0.021	0.00033	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-31	0.031		0.021	0.00067	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-32	0.010		0.010	0.00026	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-33	0.0098	J q C21	0.021	0.00067	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-34	ND		0.010	0.00072	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-35	0.0013	J q	0.010	0.00070	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-36	ND		0.010	0.00067	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-37	0.010		0.010	0.00070	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-38	ND		0.010	0.00072	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-39	ND		0.010	0.00065	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-40	0.021	J C	0.031	0.00039	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-41	0.021	J C40	0.031	0.00039	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-42	0.0090	J q	0.010	0.00039	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-43	0.0023	J C	0.021	0.00037	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-44	0.055	C B	0.031	0.00034	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-45	0.0074	J C	0.021	0.00041	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-46	ND		0.010	0.00050	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-47	0.055	C44 B	0.031	0.00034	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-48	0.0075	J	0.010	0.00039	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-49	0.036	C	0.021	0.00032	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1

Client Sample ID: PDI-SG-B430
Date Collected: 06/28/18 14:18
Date Received: 06/29/18 13:05

Lab Sample ID: 580-78459-1
Matrix: Solid
Percent Solids: 47.5

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

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	0.0048	J q C	0.021	0.00038	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-51	0.0074	J C45	0.021	0.00041	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-52	0.078	B	0.010	0.00039	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-53	0.0048	J q C50	0.021	0.00038	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-54	0.00025	J q	0.010	0.000029	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-55	ND		0.010	0.00028	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-56	0.015	q	0.010	0.00028	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-57	ND		0.010	0.00029	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-58	ND		0.010	0.00029	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-59	0.0026	J q C	0.031	0.00028	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-60	0.0059	J q	0.010	0.00029	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-61	0.093	C B	0.042	0.00027	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-62	0.0026	J q C59	0.031	0.00028	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-63	0.0024	J	0.010	0.00026	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-64	0.019		0.010	0.00026	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-65	0.055	C44 B	0.031	0.00034	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-66	0.048	B	0.010	0.00027	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-67	ND		0.010	0.00025	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-68	0.0016	J q	0.010	0.00025	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-69	0.036	C49	0.021	0.00032	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-70	0.093	C61 B	0.042	0.00027	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-71	0.021	J C40	0.031	0.00039	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-72	0.0012	J q	0.010	0.00028	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-73	0.0023	J C43	0.021	0.00037	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-74	0.093	C61 B	0.042	0.00027	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-75	0.0026	J q C59	0.031	0.00028	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-76	0.093	C61 B	0.042	0.00027	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-77	0.010	q	0.010	0.00028	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-78	ND		0.010	0.00029	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-79	0.0015	J q	0.010	0.00025	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-80	ND		0.010	0.00025	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-81	ND		0.010	0.00026	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-82	0.020		0.010	0.00027	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-83	0.095	C	0.021	0.00024	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-84	0.033		0.010	0.00027	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-85	0.028	J C	0.031	0.00020	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-86	0.10	C	0.063	0.00020	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-87	0.10	C86	0.063	0.00020	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-88	0.020	J C	0.021	0.00024	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-89	ND		0.010	0.00026	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-90	0.15	C B	0.031	0.00020	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-91	0.020	J C88	0.021	0.00024	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-92	0.026	q	0.010	0.00023	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-93	0.0043	J q C	0.021	0.00023	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-94	ND		0.010	0.00026	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-95	0.11	B	0.010	0.00025	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-96	ND		0.010	0.00020	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-97	0.10	C86	0.063	0.00020	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-98	0.0021	J q C	0.021	0.00022	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1

Client Sample ID: PDI-SG-B430
Date Collected: 06/28/18 14:18
Date Received: 06/29/18 13:05

Lab Sample ID: 580-78459-1
Matrix: Solid
Percent Solids: 47.5

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

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	0.095	C83	0.021	0.00024	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-100	0.0043	J q C93	0.021	0.00023	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-101	0.15	C90 B	0.031	0.00020	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-102	0.0021	J q C98	0.021	0.00022	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-103	ND		0.010	0.00023	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-104	ND		0.010	0.00018	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-105	0.061	B	0.010	0.0012	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-106	ND		0.010	0.0013	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-107	0.012	q	0.010	0.0014	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-108	0.0063	J q C	0.021	0.0013	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-109	0.10	C86	0.063	0.00020	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-110	0.18	C B	0.021	0.00017	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-111	ND		0.010	0.00016	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-112	ND		0.010	0.00017	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-113	0.15	C90 B	0.031	0.00020	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-114	0.0029	J	0.010	0.0012	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-115	0.18	C110 B	0.021	0.00017	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-116	0.028	J C85	0.031	0.00020	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-117	0.028	J C85	0.031	0.00020	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-118	0.14	B	0.010	0.0012	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-119	0.10	C86	0.063	0.00020	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-120	ND		0.010	0.00017	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-121	ND		0.010	0.00017	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-122	0.0021	J q	0.010	0.0015	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-123	0.0029	J q	0.010	0.0013	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-124	0.0063	J q C108	0.021	0.0013	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-125	0.10	C86	0.063	0.00020	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-126	ND		0.010	0.0014	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-127	ND		0.010	0.0013	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-128	0.040	C	0.021	0.0014	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-129	0.29	C B	0.042	0.0015	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-130	0.014	q	0.010	0.0020	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-131	ND		0.010	0.0020	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-132	0.090		0.010	0.0019	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-133	ND		0.010	0.0018	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-134	0.012	J C	0.021	0.0019	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-135	0.071	C	0.021	0.000064	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-136	0.023		0.010	0.000046	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-137	0.011	q	0.010	0.0017	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-138	0.29	C129 B	0.042	0.0015	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-139	ND	C	0.021	0.0016	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-140	ND	C139	0.021	0.0016	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-141	0.049		0.010	0.0017	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-142	ND		0.010	0.0018	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-143	0.012	J C134	0.021	0.0019	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-144	0.0078	J q	0.010	0.000058	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-145	ND		0.010	0.000044	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-146	0.042		0.010	0.0016	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-147	0.23	C B	0.021	0.0019	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1

Client Sample ID: PDI-SG-B430
Date Collected: 06/28/18 14:18
Date Received: 06/29/18 13:05

Lab Sample ID: 580-78459-1
Matrix: Solid
Percent Solids: 47.5

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

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	ND		0.010	0.000062	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-149	**0.23**	**C147 B**	0.021	0.0019	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-150	ND		0.010	0.000042	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-151	**0.071**	**C135**	0.021	0.000064	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-152	ND		0.010	0.000045	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-153	**0.22**	**C B**	0.021	0.0013	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-154	**0.0021**	**J q**	0.010	0.000050	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-155	ND		0.010	0.000042	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-156	**0.029**	**C**	0.021	0.0017	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-157	**0.029**	**C156**	0.021	0.0017	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-158	**0.026**		0.010	0.0012	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-159	ND		0.010	0.0012	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-160	**0.29**	**C129 B**	0.042	0.0015	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-161	ND		0.010	0.0012	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-162	ND		0.010	0.0012	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-163	**0.29**	**C129 B**	0.042	0.0015	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-164	**0.022**		0.010	0.0013	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-165	ND		0.010	0.0014	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-166	**0.040**	**C128**	0.021	0.0014	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-167	**0.0092**	**J**	0.010	0.00084	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-168	**0.22**	**C153 B**	0.021	0.0013	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-169	ND		0.010	0.00095	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-170	**0.070**		0.010	0.00024	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-171	**0.020**	**J q C**	0.021	0.00020	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-172	**0.013**		0.010	0.00019	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-173	**0.020**	**J q C171**	0.021	0.00020	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-174	**0.066**		0.010	0.00018	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-175	ND		0.010	0.00018	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-176	**0.0089**	**J**	0.010	0.00013	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-177	**0.042**		0.010	0.00019	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-178	**0.016**		0.010	0.00019	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-179	**0.032**	**B**	0.010	0.00014	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-180	**0.16**	**C**	0.021	0.00015	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-181	ND		0.010	0.00018	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-182	ND		0.010	0.00017	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-183	**0.043**	**C**	0.021	0.00017	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-184	ND		0.010	0.00014	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-185	**0.043**	**C183**	0.021	0.00017	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-186	ND		0.010	0.00014	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-187	**0.093**		0.010	0.00016	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-188	ND		0.010	0.00011	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-189	ND		0.010	0.0015	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-190	**0.011**		0.010	0.00013	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-191	**0.0031**	**J q**	0.010	0.00013	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-192	ND		0.010	0.00015	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-193	**0.16**	**C180**	0.021	0.00015	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-194	**0.038**	**q**	0.010	0.00026	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-195	**0.017**	**q**	0.010	0.00028	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-196	**0.016**		0.010	0.000059	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1

Client Sample ID: PDI-SG-B430
Date Collected: 06/28/18 14:18
Date Received: 06/29/18 13:05

Lab Sample ID: 580-78459-1
Matrix: Solid
Percent Solids: 47.5

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

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	0.0010	J q	0.010	0.000045	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-198	0.038	q C	0.021	0.000060	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-199	0.038	q C198	0.021	0.000060	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-200	0.0036	J q	0.010	0.000040	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-201	0.0035	J q	0.010	0.000041	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-202	0.0071	J q	0.010	0.000046	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-203	0.025		0.010	0.000054	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-204	ND		0.010	0.000046	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-205	0.0029	J	0.010	0.00022	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-206	0.040		0.010	0.00017	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-207	0.0018	J q	0.010	0.00011	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-208	0.015		0.010	0.00010	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1
PCB-209	0.035	q	0.010	0.000039	ng/g	☼	08/24/18 11:00	09/05/18 15:55	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*71*		*30 - 140*	*08/24/18 11:00*	*09/05/18 15:55*	*1*
PCB-3L	*71*		*30 - 140*	*08/24/18 11:00*	*09/05/18 15:55*	*1*
PCB-4L	*78*		*30 - 140*	*08/24/18 11:00*	*09/05/18 15:55*	*1*
PCB-15L	*79*		*30 - 140*	*08/24/18 11:00*	*09/05/18 15:55*	*1*
PCB-19L	*93*		*30 - 140*	*08/24/18 11:00*	*09/05/18 15:55*	*1*
PCB-37L	*85*		*30 - 140*	*08/24/18 11:00*	*09/05/18 15:55*	*1*
PCB-54L	*85*		*30 - 140*	*08/24/18 11:00*	*09/05/18 15:55*	*1*
PCB-77L	*84*		*30 - 140*	*08/24/18 11:00*	*09/05/18 15:55*	*1*
PCB-81L	*86*		*30 - 140*	*08/24/18 11:00*	*09/05/18 15:55*	*1*
PCB-104L	*85*		*30 - 140*	*08/24/18 11:00*	*09/05/18 15:55*	*1*
PCB-105L	*92*		*30 - 140*	*08/24/18 11:00*	*09/05/18 15:55*	*1*
PCB-114L	*92*		*30 - 140*	*08/24/18 11:00*	*09/05/18 15:55*	*1*
PCB-118L	*92*		*30 - 140*	*08/24/18 11:00*	*09/05/18 15:55*	*1*
PCB-123L	*91*		*30 - 140*	*08/24/18 11:00*	*09/05/18 15:55*	*1*
PCB-126L	*86*		*30 - 140*	*08/24/18 11:00*	*09/05/18 15:55*	*1*
PCB-155L	*90*		*30 - 140*	*08/24/18 11:00*	*09/05/18 15:55*	*1*
PCB-156L	*80*	*C*	*30 - 140*	*08/24/18 11:00*	*09/05/18 15:55*	*1*
PCB-157L	*80*	*C156*	*30 - 140*	*08/24/18 11:00*	*09/05/18 15:55*	*1*
PCB-167L	*87*		*30 - 140*	*08/24/18 11:00*	*09/05/18 15:55*	*1*
PCB-169L	*81*		*30 - 140*	*08/24/18 11:00*	*09/05/18 15:55*	*1*
PCB-170L	*81*		*30 - 140*	*08/24/18 11:00*	*09/05/18 15:55*	*1*
PCB-188L	*101*		*30 - 140*	*08/24/18 11:00*	*09/05/18 15:55*	*1*
PCB-189L	*88*		*30 - 140*	*08/24/18 11:00*	*09/05/18 15:55*	*1*
PCB-202L	*113*		*30 - 140*	*08/24/18 11:00*	*09/05/18 15:55*	*1*
PCB-205L	*73*		*30 - 140*	*08/24/18 11:00*	*09/05/18 15:55*	*1*
PCB-206L	*81*		*30 - 140*	*08/24/18 11:00*	*09/05/18 15:55*	*1*
PCB-208L	*88*		*30 - 140*	*08/24/18 11:00*	*09/05/18 15:55*	*1*
PCB-209L	*78*		*30 - 140*	*08/24/18 11:00*	*09/05/18 15:55*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-28L	*91*		*40 - 125*	*08/24/18 11:00*	*09/05/18 15:55*	*1*
PCB-111L	*95*		*40 - 125*	*08/24/18 11:00*	*09/05/18 15:55*	*1*
PCB-178L	*108*		*40 - 125*	*08/24/18 11:00*	*09/05/18 15:55*	*1*

Client Sample ID: PDI-SG-B432
Date Collected: 06/28/18 17:40
Date Received: 06/29/18 13:05

Lab Sample ID: 580-78459-3
Matrix: Solid
Percent Solids: 61.4

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

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	ND		0.0081	0.00041	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-2	**0.010**	**q**	0.0081	0.00048	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-3	ND		0.0081	0.00052	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-4	**0.013**	**J**	0.016	0.0042	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-5	ND		0.0081	0.0035	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-6	**0.0066**	**J q**	0.0081	0.0031	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-7	ND		0.0081	0.0032	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-8	**0.029**		0.016	0.0028	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-9	ND		0.0081	0.0032	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-10	ND		0.0081	0.0034	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-11	**0.12**	**B**	0.016	0.0030	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-12	ND	C	0.016	0.0031	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-13	ND	C12	0.016	0.0031	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-14	ND		0.0081	0.0027	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-15	**0.026**	**q**	0.0081	0.0033	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-16	**0.034**		0.0081	0.00043	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-17	**0.036**		0.0081	0.00038	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-18	**0.076**	**C**	0.016	0.00034	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-19	**0.015**		0.0081	0.00047	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-20	**0.16**	**C B**	0.016	0.0012	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-21	**0.068**	**C**	0.016	0.0012	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-22	**0.053**		0.0081	0.0013	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-23	ND		0.0081	0.0013	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-24	**0.0018**	**J q**	0.0081	0.00032	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-25	**0.011**	**q**	0.0081	0.0011	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-26	**0.027**	**C**	0.016	0.0012	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-27	**0.0078**	**J**	0.0081	0.00028	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-28	**0.16**	**C20 B**	0.016	0.0012	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-29	**0.027**	**C26**	0.016	0.0012	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-30	**0.076**	**C18**	0.016	0.00034	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-31	**0.13**		0.016	0.0012	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-32	**0.028**		0.0081	0.00027	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-33	**0.068**	**C21**	0.016	0.0012	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-34	ND		0.0081	0.0013	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-35	**0.0035**	**J q**	0.0081	0.0013	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-36	**0.0040**	**J**	0.0081	0.0012	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-37	**0.046**		0.0081	0.0013	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-38	ND		0.0081	0.0013	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-39	**0.010**		0.0081	0.0012	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-40	**0.11**	**C**	0.024	0.00040	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-41	**0.11**	**C40**	0.024	0.00040	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-42	**0.048**		0.0081	0.00040	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-43	**0.012**	**J q C**	0.016	0.00038	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-44	**0.21**	**C B**	0.024	0.00035	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-45	**0.043**	**C**	0.016	0.00042	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-46	**0.012**		0.0081	0.00051	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-47	**0.21**	**C44 B**	0.024	0.00035	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-48	**0.037**		0.0081	0.00040	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-49	**0.13**	**C**	0.016	0.00033	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1

Client Sample ID: PDI-SG-B432
Date Collected: 06/28/18 17:40
Date Received: 06/29/18 13:05

Lab Sample ID: 580-78459-3
Matrix: Solid
Percent Solids: 61.4

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

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	0.031	C	0.016	0.00039	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-51	0.043	C45	0.016	0.00042	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-52	0.28	B	0.0081	0.00040	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-53	0.031	C50	0.016	0.00039	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-54	ND		0.0081	0.000018	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-55	0.0021	J q	0.0081	0.00029	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-56	0.054	q	0.0081	0.00029	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-57	ND		0.0081	0.00030	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-58	0.0022	J q	0.0081	0.00030	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-59	0.020	J C	0.024	0.00028	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-60	0.012		0.0081	0.00030	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-61	0.29	C B	0.033	0.00028	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-62	0.020	J C59	0.024	0.00028	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-63	0.0062	J q	0.0081	0.00027	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-64	0.081		0.0081	0.00027	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-65	0.21	C44 B	0.024	0.00035	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-66	0.15	B	0.0081	0.00028	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-67	0.0052	J	0.0081	0.00026	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-68	0.0091	q	0.0081	0.00026	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-69	0.13	C49	0.016	0.00033	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-70	0.29	C61 B	0.033	0.00028	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-71	0.11	C40	0.024	0.00040	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-72	0.0030	J q	0.0081	0.00029	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-73	0.012	J q C43	0.016	0.00038	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-74	0.29	C61 B	0.033	0.00028	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-75	0.020	J C59	0.024	0.00028	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-76	0.29	C61 B	0.033	0.00028	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-77	0.019		0.0081	0.00032	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-78	ND		0.0081	0.00030	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-79	0.0035	J q	0.0081	0.00026	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-80	ND		0.0081	0.00025	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-81	ND		0.0081	0.00024	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-82	0.030	q	0.0081	0.00044	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-83	0.21	C	0.016	0.00040	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-84	0.085		0.0081	0.00045	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-85	0.060	C	0.024	0.00033	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-86	0.24	C	0.049	0.00033	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-87	0.24	C86	0.049	0.00033	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-88	0.048	C	0.016	0.00040	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-89	0.0027	J q	0.0081	0.00043	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-90	0.36	C B	0.024	0.00034	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-91	0.048	C88	0.016	0.00040	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-92	0.055		0.0081	0.00038	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-93	0.021	C	0.016	0.00038	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-94	ND		0.0081	0.00043	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-95	0.33	B	0.0081	0.00042	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-96	0.0042	J	0.0081	0.00033	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-97	0.24	C86	0.049	0.00033	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-98	0.014	J C	0.016	0.00037	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1

Client Sample ID: PDI-SG-B432
Date Collected: 06/28/18 17:40
Date Received: 06/29/18 13:05

Lab Sample ID: 580-78459-3
Matrix: Solid
Percent Solids: 61.4

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

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	0.21	C83	0.016	0.00040	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-100	0.021	C93	0.016	0.00038	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-101	0.36	C90 B	0.024	0.00034	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-102	0.014	J C98	0.016	0.00037	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-103	0.0028	J q	0.0081	0.00038	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-104	ND		0.0081	0.00029	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-105	0.13	B	0.0081	0.0028	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-106	ND		0.0081	0.0028	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-107	0.025		0.0081	0.0030	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-108	0.012	J q C	0.016	0.0029	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-109	0.24	C86	0.049	0.00033	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-110	0.41	C B	0.016	0.00028	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-111	ND		0.0081	0.00027	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-112	ND		0.0081	0.00028	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-113	0.36	C90 B	0.024	0.00034	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-114	0.0043	J q	0.0081	0.0027	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-115	0.41	C110 B	0.016	0.00028	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-116	0.060	C85	0.024	0.00033	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-117	0.060	C85	0.024	0.00033	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-118	0.31	B	0.0081	0.0026	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-119	0.24	C86	0.049	0.00033	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-120	ND		0.0081	0.00027	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-121	ND		0.0081	0.00028	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-122	ND		0.0081	0.0033	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-123	0.0043	J	0.0081	0.0027	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-124	0.012	J q C108	0.016	0.0029	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-125	0.24	C86	0.049	0.00033	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-126	ND		0.0081	0.0032	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-127	ND		0.0081	0.0028	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-128	0.071	C	0.016	0.0061	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-129	0.61	C B	0.033	0.0063	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-130	0.027	G q	0.0083	0.0083	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-131	ND	G	0.0087	0.0087	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-132	0.18		0.0081	0.0081	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-133	ND		0.0081	0.0078	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-134	0.019	q C	0.016	0.0082	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-135	0.18	C	0.016	0.00030	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-136	0.066		0.0081	0.00022	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-137	0.021		0.0081	0.0071	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-138	0.61	C129 B	0.033	0.0063	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-139	ND	C	0.016	0.0070	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-140	ND	C139	0.016	0.0070	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-141	0.12		0.0081	0.0073	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-142	ND		0.0081	0.0078	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-143	0.019	q C134	0.016	0.0082	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-144	0.012	q	0.0081	0.00027	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-145	ND		0.0081	0.00020	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-146	0.094		0.0081	0.0069	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-147	0.52	C B	0.016	0.0079	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1

Client Sample ID: PDI-SG-B432
Date Collected: 06/28/18 17:40
Date Received: 06/29/18 13:05

Lab Sample ID: 580-78459-3
Matrix: Solid
Percent Solids: 61.4

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

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	ND		0.0081	0.00029	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-149	**0.52**	**C147 B**	0.016	0.0079	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-150	ND		0.0081	0.00020	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-151	**0.18**	**C135**	0.016	0.00030	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-152	ND		0.0081	0.00021	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-153	**0.50**	**C B**	0.016	0.0055	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-154	**0.0054**	**J**	0.0081	0.00023	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-155	ND		0.0081	0.00020	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-156	**0.051**	**C**	0.016	0.0064	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-157	**0.051**	**C156**	0.016	0.0064	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-158	**0.056**		0.0081	0.0049	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-159	ND		0.0081	0.0052	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-160	**0.61**	**C129 B**	0.033	0.0063	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-161	ND		0.0081	0.0052	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-162	ND		0.0081	0.0051	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-163	**0.61**	**C129 B**	0.033	0.0063	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-164	**0.038**		0.0081	0.0055	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-165	ND		0.0081	0.0059	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-166	**0.071**	**C128**	0.016	0.0061	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-167	**0.015**		0.0081	0.0033	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-168	**0.50**	**C153 B**	0.016	0.0055	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-169	ND		0.0081	0.0057	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-170	**0.15**		0.0081	0.0012	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-171	**0.044**	**C**	0.016	0.0010	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-172	**0.025**		0.0081	0.0010	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-173	**0.044**	**C171**	0.016	0.0010	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-174	**0.17**		0.0081	0.00095	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-175	**0.0095**	**q**	0.0081	0.00092	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-176	**0.021**		0.0081	0.00069	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-177	**0.087**		0.0081	0.00098	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-178	**0.036**		0.0081	0.00099	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-179	**0.068**	**B**	0.0081	0.00073	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-180	**0.33**	**C**	0.016	0.00077	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-181	ND		0.0081	0.00092	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-182	ND		0.0081	0.00088	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-183	**0.11**	**C**	0.016	0.00090	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-184	ND		0.0081	0.00075	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-185	**0.11**	**C183**	0.016	0.00090	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-186	ND		0.0081	0.00073	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-187	**0.23**		0.0081	0.00085	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-188	ND		0.0081	0.00060	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-189	ND		0.0081	0.0034	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-190	**0.028**		0.0081	0.00066	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-191	**0.0047**	**J q**	0.0081	0.00069	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-192	ND		0.0081	0.00077	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-193	**0.33**	**C180**	0.016	0.00077	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-194	**0.074**		0.0081	0.0034	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-195	**0.033**		0.0081	0.0037	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-196	**0.033**		0.0081	0.0010	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1

Client Sample ID: PDI-SG-B432
Date Collected: 06/28/18 17:40
Date Received: 06/29/18 13:05

Lab Sample ID: 580-78459-3
Matrix: Solid
Percent Solids: 61.4

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

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	ND		0.0081	0.00078	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-198	**0.096**	**C**	0.016	0.0010	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-199	**0.096**	**C198**	0.016	0.0010	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-200	**0.0082**		0.0081	0.00069	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-201	**0.0075**	**J q**	0.0081	0.00071	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-202	**0.021**	**q**	0.0081	0.00079	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-203	**0.040**		0.0081	0.00092	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-204	ND		0.0081	0.00078	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-205	ND		0.0081	0.0029	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-206	**0.066**		0.0081	0.0014	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-207	ND		0.0081	0.0015	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-208	**0.012**	**q**	0.0081	0.0024	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1
PCB-209	**0.064**	**q**	0.0081	0.00028	ng/g	☼	08/24/18 11:00	09/06/18 16:33	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*79*		*30 - 140*	*08/24/18 11:00*	*09/06/18 16:33*	*1*
PCB-3L	*78*		*30 - 140*	*08/24/18 11:00*	*09/06/18 16:33*	*1*
PCB-4L	*79*		*30 - 140*	*08/24/18 11:00*	*09/06/18 16:33*	*1*
PCB-15L	*81*		*30 - 140*	*08/24/18 11:00*	*09/06/18 16:33*	*1*
PCB-19L	*102*		*30 - 140*	*08/24/18 11:00*	*09/06/18 16:33*	*1*
PCB-37L	*86*		*30 - 140*	*08/24/18 11:00*	*09/06/18 16:33*	*1*
PCB-54L	*77*		*30 - 140*	*08/24/18 11:00*	*09/06/18 16:33*	*1*
PCB-77L	*76*		*30 - 140*	*08/24/18 11:00*	*09/06/18 16:33*	*1*
PCB-81L	*77*		*30 - 140*	*08/24/18 11:00*	*09/06/18 16:33*	*1*
PCB-104L	*85*		*30 - 140*	*08/24/18 11:00*	*09/06/18 16:33*	*1*
PCB-105L	*97*		*30 - 140*	*08/24/18 11:00*	*09/06/18 16:33*	*1*
PCB-114L	*95*		*30 - 140*	*08/24/18 11:00*	*09/06/18 16:33*	*1*
PCB-118L	*94*		*30 - 140*	*08/24/18 11:00*	*09/06/18 16:33*	*1*
PCB-123L	*96*		*30 - 140*	*08/24/18 11:00*	*09/06/18 16:33*	*1*
PCB-126L	*86*		*30 - 140*	*08/24/18 11:00*	*09/06/18 16:33*	*1*
PCB-155L	*85*		*30 - 140*	*08/24/18 11:00*	*09/06/18 16:33*	*1*
PCB-156L	*81*	*C*	*30 - 140*	*08/24/18 11:00*	*09/06/18 16:33*	*1*
PCB-157L	*81*	*C156*	*30 - 140*	*08/24/18 11:00*	*09/06/18 16:33*	*1*
PCB-167L	*90*		*30 - 140*	*08/24/18 11:00*	*09/06/18 16:33*	*1*
PCB-169L	*85*		*30 - 140*	*08/24/18 11:00*	*09/06/18 16:33*	*1*
PCB-170L	*86*		*30 - 140*	*08/24/18 11:00*	*09/06/18 16:33*	*1*
PCB-188L	*100*		*30 - 140*	*08/24/18 11:00*	*09/06/18 16:33*	*1*
PCB-189L	*87*		*30 - 140*	*08/24/18 11:00*	*09/06/18 16:33*	*1*
PCB-202L	*107*		*30 - 140*	*08/24/18 11:00*	*09/06/18 16:33*	*1*
PCB-205L	*74*		*30 - 140*	*08/24/18 11:00*	*09/06/18 16:33*	*1*
PCB-206L	*83*		*30 - 140*	*08/24/18 11:00*	*09/06/18 16:33*	*1*
PCB-208L	*71*		*30 - 140*	*08/24/18 11:00*	*09/06/18 16:33*	*1*
PCB-209L	*82*		*30 - 140*	*08/24/18 11:00*	*09/06/18 16:33*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-28L	*100*		*40 - 125*	*08/24/18 11:00*	*09/06/18 16:33*	*1*
PCB-111L	*85*		*40 - 125*	*08/24/18 11:00*	*09/06/18 16:33*	*1*
PCB-178L	*108*		*40 - 125*	*08/24/18 11:00*	*09/06/18 16:33*	*1*

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

Lab Sample ID: MB 140-23078/16-B
Matrix: Solid
Analysis Batch: 23336

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 23078

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	ND		0.010	0.00028	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-2	ND		0.010	0.00033	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-3	0.00108	J	0.010	0.00036	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-4	ND		0.020	0.011	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-5	ND		0.010	0.0098	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-6	ND		0.010	0.0086	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-7	ND		0.010	0.0088	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-8	ND		0.020	0.0080	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-9	ND		0.010	0.0090	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-10	ND		0.010	0.0096	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-11	0.0188	J q	0.020	0.0084	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-12	ND	C	0.020	0.0087	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-13	ND	C12	0.020	0.0087	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-14	ND		0.010	0.0074	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-15	ND		0.010	0.0098	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-16	ND		0.010	0.00058	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-17	ND		0.010	0.00052	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-18	ND	C	0.020	0.00045	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-19	ND		0.010	0.00063	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-20	0.00328	J C q	0.020	0.00076	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-21	ND	C	0.020	0.00074	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-22	ND		0.010	0.00077	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-23	ND		0.010	0.00077	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-24	ND		0.010	0.00043	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-25	ND		0.010	0.00070	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-26	ND	C	0.020	0.00074	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-27	ND		0.010	0.00038	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-28	0.00328	J C20 q	0.020	0.00076	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-29	ND	C26	0.020	0.00074	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-30	ND	C18	0.020	0.00045	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-31	ND		0.020	0.00074	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-32	ND		0.010	0.00036	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-33	ND	C21	0.020	0.00074	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-34	ND		0.010	0.00080	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-35	ND		0.010	0.00078	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-36	ND		0.010	0.00075	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-37	ND		0.010	0.00077	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-38	ND		0.010	0.00080	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-39	ND		0.010	0.00072	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-40	ND	C	0.030	0.00056	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-41	ND	C40	0.030	0.00056	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-42	ND		0.010	0.00056	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-43	ND	C	0.020	0.00052	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-44	0.00545	J C q	0.030	0.00049	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-45	ND	C	0.020	0.00058	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-46	ND		0.010	0.00071	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-47	0.00545	J C44 q	0.030	0.00049	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-48	ND		0.010	0.00056	ng/g		08/24/18 11:00	09/05/18 14:53	1

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

Lab Sample ID: MB 140-23078/16-B
Matrix: Solid
Analysis Batch: 23336

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 23078

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-49	ND	C	0.020	0.00045	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-50	ND	C	0.020	0.00054	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-51	ND	C45	0.020	0.00058	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-52	0.00328	J q	0.010	0.00055	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-53	ND	C50	0.020	0.00054	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-54	ND		0.010	0.000069	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-55	ND		0.010	0.00040	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-56	ND		0.010	0.00041	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-57	ND		0.010	0.00041	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-58	ND		0.010	0.00042	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-59	ND	C	0.030	0.00039	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-60	ND		0.010	0.00041	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-61	0.00576	J C q	0.040	0.00039	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-62	ND	C59	0.030	0.00039	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-63	ND		0.010	0.00038	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-64	ND		0.010	0.00037	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-65	0.00545	J C44 q	0.030	0.00049	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-66	0.00216	J q	0.010	0.00039	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-67	ND		0.010	0.00036	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-68	ND		0.010	0.00036	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-69	ND	C49	0.020	0.00045	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-70	0.00576	J C61 q	0.040	0.00039	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-71	ND	C40	0.030	0.00056	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-72	ND		0.010	0.00040	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-73	ND	C43	0.020	0.00052	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-74	0.00576	J C61 q	0.040	0.00039	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-75	ND	C59	0.030	0.00039	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-76	0.00576	J C61 q	0.040	0.00039	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-77	ND		0.010	0.00038	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-78	ND		0.010	0.00042	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-79	ND		0.010	0.00036	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-80	ND		0.010	0.00035	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-81	ND		0.010	0.00039	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-82	ND		0.010	0.00013	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-83	ND	C	0.020	0.00012	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-84	ND		0.010	0.00014	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-85	ND	C	0.030	0.00010	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-86	ND	C	0.060	0.00010	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-87	ND	C86	0.060	0.00010	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-88	ND	C	0.020	0.00012	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-89	ND		0.010	0.00013	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-90	0.00281	J C q	0.030	0.00010	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-91	ND	C88	0.020	0.00012	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-92	ND		0.010	0.00012	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-93	ND	C	0.020	0.00012	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-94	ND		0.010	0.00013	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-95	0.00398	J	0.010	0.00013	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-96	ND		0.010	0.00010	ng/g		08/24/18 11:00	09/05/18 14:53	1

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

Lab Sample ID: MB 140-23078/16-B
Matrix: Solid
Analysis Batch: 23336

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 23078

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-97	ND	C86	0.060	0.00010	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-98	ND	C	0.020	0.00011	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-99	ND	C83	0.020	0.00012	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-100	ND	C93	0.020	0.00012	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-101	0.00281	J C90 q	0.030	0.00010	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-102	ND	C98	0.020	0.00011	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-103	ND		0.010	0.00012	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-104	ND		0.010	0.000089	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-105	0.00229	J q	0.010	0.00016	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-106	ND		0.010	0.00016	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-107	ND		0.010	0.00017	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-108	ND	C	0.020	0.00017	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-109	ND	C86	0.060	0.00010	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-110	0.00302	J C q	0.020	0.000085	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-111	ND		0.010	0.000082	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-112	ND		0.010	0.000086	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-113	0.00281	J C90 q	0.030	0.00010	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-114	ND		0.010	0.00015	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-115	0.00302	J C110 q	0.020	0.000085	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-116	ND	C85	0.030	0.00010	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-117	ND	C85	0.030	0.00010	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-118	0.00432	J	0.010	0.00015	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-119	ND	C86	0.060	0.00010	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-120	ND		0.010	0.000083	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-121	ND		0.010	0.000086	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-122	ND		0.010	0.00019	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-123	ND		0.010	0.00016	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-124	ND	C108	0.020	0.00017	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-125	ND	C86	0.060	0.00010	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-126	ND		0.010	0.00019	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-127	ND		0.010	0.00016	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-128	ND	C	0.020	0.00081	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-129	0.00835	J C q	0.040	0.00084	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-130	ND		0.010	0.0011	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-131	ND		0.010	0.0012	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-132	ND		0.010	0.0011	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-133	ND		0.010	0.0010	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-134	ND	C	0.020	0.0011	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-135	ND	C	0.020	0.000064	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-136	ND		0.010	0.000046	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-137	ND		0.010	0.00095	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-138	0.00835	J C129 q	0.040	0.00084	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-139	ND	C	0.020	0.00093	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-140	ND	C139	0.020	0.00093	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-141	ND		0.010	0.00098	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-142	ND		0.010	0.0010	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-143	ND	C134	0.020	0.0011	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-144	ND		0.010	0.000058	ng/g		08/24/18 11:00	09/05/18 14:53	1

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

Lab Sample ID: MB 140-23078/16-B
Matrix: Solid
Analysis Batch: 23336

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 23078

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-145	ND		0.010	0.000044	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-146	ND		0.010	0.00092	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-147	0.00389	J C q	0.020	0.0011	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-148	ND		0.010	0.000062	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-149	0.00389	J C147 q	0.020	0.0011	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-150	ND		0.010	0.000042	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-151	ND	C135	0.020	0.000064	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-152	ND		0.010	0.000045	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-153	0.00321	J C q	0.020	0.00073	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-154	ND		0.010	0.000050	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-155	ND		0.010	0.000042	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-156	ND	C	0.020	0.00088	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-157	ND	C156	0.020	0.00088	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-158	ND		0.010	0.00066	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-159	ND		0.010	0.00070	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-160	0.00835	J C129 q	0.040	0.00084	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-161	ND		0.010	0.00069	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-162	ND		0.010	0.00069	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-163	0.00835	J C129 q	0.040	0.00084	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-164	ND		0.010	0.00074	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-165	ND		0.010	0.00079	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-166	ND	C128	0.020	0.00081	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-167	ND		0.010	0.00054	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-168	0.00321	J C153 q	0.020	0.00073	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-169	ND		0.010	0.00054	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-170	ND		0.010	0.00021	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-171	ND	C	0.020	0.00019	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-172	ND		0.010	0.00019	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-173	ND	C171	0.020	0.00019	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-174	ND		0.010	0.00018	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-175	ND		0.010	0.00017	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-176	ND		0.010	0.00013	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-177	ND		0.010	0.00018	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-178	ND		0.010	0.00018	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-179	0.00134	J q	0.010	0.00014	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-180	ND	C	0.020	0.00014	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-181	ND		0.010	0.00017	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-182	ND		0.010	0.00016	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-183	ND	C	0.020	0.00017	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-184	ND		0.010	0.00014	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-185	ND	C183	0.020	0.00017	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-186	ND		0.010	0.00014	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-187	ND		0.010	0.00016	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-188	ND		0.010	0.00012	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-189	ND		0.010	0.00017	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-190	ND		0.010	0.00012	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-191	ND		0.010	0.00013	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-192	ND		0.010	0.00014	ng/g		08/24/18 11:00	09/05/18 14:53	1

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

Lab Sample ID: MB 140-23078/16-B
Matrix: Solid
Analysis Batch: 23336

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 23078

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-193	ND	C180	0.020	0.00014	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-194	ND		0.010	0.000074	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-195	ND		0.010	0.000081	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-196	ND		0.010	0.00011	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-197	ND		0.010	0.000085	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-198	ND	C	0.020	0.00011	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-199	ND	C198	0.020	0.00011	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-200	ND		0.010	0.000075	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-201	ND		0.010	0.000077	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-202	ND		0.010	0.000086	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-203	ND		0.010	0.00010	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-204	ND		0.010	0.000085	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-205	ND		0.010	0.000063	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-206	ND		0.010	0.00015	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-207	ND		0.010	0.00011	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-208	ND		0.010	0.00011	ng/g		08/24/18 11:00	09/05/18 14:53	1
PCB-209	ND		0.010	0.000067	ng/g		08/24/18 11:00	09/05/18 14:53	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*29*	*	*30 - 140*	*08/24/18 11:00*	*09/05/18 14:53*	*1*
PCB-3L	*24*	* q	*30 - 140*	*08/24/18 11:00*	*09/05/18 14:53*	*1*
PCB-4L	*31*		*30 - 140*	*08/24/18 11:00*	*09/05/18 14:53*	*1*
PCB-15L	*27*	*	*30 - 140*	*08/24/18 11:00*	*09/05/18 14:53*	*1*
PCB-19L	*35*		*30 - 140*	*08/24/18 11:00*	*09/05/18 14:53*	*1*
PCB-37L	*30*		*30 - 140*	*08/24/18 11:00*	*09/05/18 14:53*	*1*
PCB-54L	*32*		*30 - 140*	*08/24/18 11:00*	*09/05/18 14:53*	*1*
PCB-77L	*30*		*30 - 140*	*08/24/18 11:00*	*09/05/18 14:53*	*1*
PCB-81L	*28*	*	*30 - 140*	*08/24/18 11:00*	*09/05/18 14:53*	*1*
PCB-104L	*30*		*30 - 140*	*08/24/18 11:00*	*09/05/18 14:53*	*1*
PCB-105L	*34*		*30 - 140*	*08/24/18 11:00*	*09/05/18 14:53*	*1*
PCB-114L	*33*		*30 - 140*	*08/24/18 11:00*	*09/05/18 14:53*	*1*
PCB-118L	*34*		*30 - 140*	*08/24/18 11:00*	*09/05/18 14:53*	*1*
PCB-123L	*33*		*30 - 140*	*08/24/18 11:00*	*09/05/18 14:53*	*1*
PCB-126L	*30*		*30 - 140*	*08/24/18 11:00*	*09/05/18 14:53*	*1*
PCB-155L	*34*		*30 - 140*	*08/24/18 11:00*	*09/05/18 14:53*	*1*
PCB-156L	*33*	*C*	*30 - 140*	*08/24/18 11:00*	*09/05/18 14:53*	*1*
PCB-157L	*33*	*C156*	*30 - 140*	*08/24/18 11:00*	*09/05/18 14:53*	*1*
PCB-167L	*30*		*30 - 140*	*08/24/18 11:00*	*09/05/18 14:53*	*1*
PCB-169L	*31*		*30 - 140*	*08/24/18 11:00*	*09/05/18 14:53*	*1*
PCB-170L	*30*		*30 - 140*	*08/24/18 11:00*	*09/05/18 14:53*	*1*
PCB-188L	*34*		*30 - 140*	*08/24/18 11:00*	*09/05/18 14:53*	*1*
PCB-189L	*28*	*	*30 - 140*	*08/24/18 11:00*	*09/05/18 14:53*	*1*
PCB-202L	*30*		*30 - 140*	*08/24/18 11:00*	*09/05/18 14:53*	*1*
PCB-205L	*27*	*	*30 - 140*	*08/24/18 11:00*	*09/05/18 14:53*	*1*
PCB-206L	*31*		*30 - 140*	*08/24/18 11:00*	*09/05/18 14:53*	*1*
PCB-208L	*31*		*30 - 140*	*08/24/18 11:00*	*09/05/18 14:53*	*1*
PCB-209L	*30*		*30 - 140*	*08/24/18 11:00*	*09/05/18 14:53*	*1*

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

Lab Sample ID: MB 140-23078/16-B
Matrix: Solid
Analysis Batch: 23336

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 23078

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	96		40 - 125	08/24/18 11:00	09/05/18 14:53	1
PCB-111L	90		40 - 125	08/24/18 11:00	09/05/18 14:53	1
PCB-178L	99		40 - 125	08/24/18 11:00	09/05/18 14:53	1

Lab Sample ID: LCS 140-23078/17-B
Matrix: Solid
Analysis Batch: 23336

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 23078

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1	0.500	0.414		ng/g		83	50 - 150
PCB-3	0.500	0.441		ng/g		88	50 - 150
PCB-4	0.500	0.478		ng/g		96	50 - 150
PCB-15	0.500	0.524		ng/g		105	50 - 150
PCB-19	0.500	0.533		ng/g		107	50 - 150
PCB-37	0.500	0.493		ng/g		99	50 - 150
PCB-54	0.500	0.506		ng/g		101	50 - 150
PCB-77	0.500	0.529		ng/g		106	50 - 150
PCB-81	0.500	0.504		ng/g		101	50 - 150
PCB-104	0.500	0.514		ng/g		103	50 - 150
PCB-105	0.500	0.528		ng/g		106	50 - 150
PCB-114	0.500	0.571		ng/g		114	50 - 150
PCB-118	0.500	0.558		ng/g		112	50 - 150
PCB-123	0.500	0.595		ng/g		119	50 - 150
PCB-126	0.500	0.567		ng/g		113	50 - 150
PCB-155	0.500	0.511		ng/g		102	50 - 150
PCB-156	1.00	1.10	C	ng/g		110	50 - 150
PCB-157	1.00	1.10	C156	ng/g		110	50 - 150
PCB-167	0.500	0.560		ng/g		112	50 - 150
PCB-169	0.500	0.485		ng/g		97	50 - 150
PCB-188	0.500	0.548		ng/g		110	50 - 150
PCB-189	0.500	0.545		ng/g		109	50 - 150
PCB-202	0.500	0.482		ng/g		96	50 - 150
PCB-205	0.500	0.580		ng/g		116	50 - 150
PCB-206	0.500	0.537		ng/g		107	50 - 150
PCB-208	0.500	0.548		ng/g		110	50 - 150
PCB-209	0.500	0.556		ng/g		111	50 - 150

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
PCB-1L	38		30 - 140
PCB-3L	34		30 - 140
PCB-4L	39		30 - 140
PCB-15L	37		30 - 140
PCB-19L	51		30 - 140
PCB-37L	42		30 - 140
PCB-54L	42		30 - 140
PCB-77L	37		30 - 140
PCB-81L	38		30 - 140
PCB-104L	41		30 - 140

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

Lab Sample ID: LCS 140-23078/17-B
Matrix: Solid
Analysis Batch: 23336

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 23078

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
PCB-105L	45		30 - 140
PCB-114L	45		30 - 140
PCB-118L	46		30 - 140
PCB-123L	45		30 - 140
PCB-126L	42		30 - 140
PCB-155L	44		30 - 140
PCB-156L	44	C	30 - 140
PCB-157L	44	C156	30 - 140
PCB-167L	43		30 - 140
PCB-169L	43		30 - 140
PCB-170L	42		30 - 140
PCB-188L	47		30 - 140
PCB-189L	39		30 - 140
PCB-202L	55		30 - 140
PCB-205L	37		30 - 140
PCB-206L	41		30 - 140
PCB-208L	43		30 - 140
PCB-209L	40		30 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
PCB-28L	96		40 - 125
PCB-111L	90		40 - 125
PCB-178L	102		40 - 125

Lab Sample ID: LCSD 140-23078/18-B
Matrix: Solid
Analysis Batch: 23336

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 23078

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1			0.500	0.432		ng/g		86	50 - 150	4	50
PCB-3			0.500	0.441		ng/g		88	50 - 150	0	50
PCB-4			0.500	0.536	G	ng/g		107	50 - 150	11	50
PCB-15			0.500	0.596	G	ng/g		119	50 - 150	13	50
PCB-19			0.500	0.588		ng/g		118	50 - 150	10	50
PCB-37			0.500	0.532		ng/g		106	50 - 150	8	50
PCB-54			0.500	0.498		ng/g		100	50 - 150	2	50
PCB-77			0.500	0.506		ng/g		101	50 - 150	4	50
PCB-81			0.500	0.501		ng/g		100	50 - 150	1	50
PCB-104			0.500	0.528		ng/g		106	50 - 150	3	50
PCB-105			0.500	0.514		ng/g		103	50 - 150	3	50
PCB-114			0.500	0.539		ng/g		108	50 - 150	6	50
PCB-118			0.500	0.547		ng/g		109	50 - 150	2	50
PCB-123			0.500	0.626		ng/g		125	50 - 150	5	50
PCB-126			0.500	0.568		ng/g		114	50 - 150	0	50
PCB-155			0.500	0.512		ng/g		102	50 - 150	0	50
PCB-156			1.00	1.09	C	ng/g		109	50 - 150	1	50
PCB-157			1.00	1.09	C156	ng/g		109	50 - 150	1	50
PCB-167			0.500	0.544		ng/g		109	50 - 150	3	50

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

Lab Sample ID: LCSD 140-23078/18-B
Matrix: Solid
Analysis Batch: 23336

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 23078

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-169			0.500	0.469		ng/g		94	50 - 150	3	50
PCB-188			0.500	0.521		ng/g		104	50 - 150	5	50
PCB-189			0.500	0.546		ng/g		109	50 - 150	0	50
PCB-202			0.500	0.504		ng/g		101	50 - 150	4	50
PCB-205			0.500	0.580		ng/g		116	50 - 150	0	50
PCB-206			0.500	0.535		ng/g		107	50 - 150	0	50
PCB-208			0.500	0.559		ng/g		112	50 - 150	2	50
PCB-209			0.500	0.574		ng/g		115	50 - 150	3	50

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
PCB-1L	*21*	*	*30 - 140*
PCB-3L	*20*	*	*30 - 140*
PCB-4L	*19*	*	*30 - 140*
PCB-15L	*18*	*	*30 - 140*
PCB-19L	*20*	* q	*30 - 140*
PCB-37L	*20*	*	*30 - 140*
PCB-54L	*20*	*	*30 - 140*
PCB-77L	*21*	*	*30 - 140*
PCB-81L	*20*	*	*30 - 140*
PCB-104L	*18*	*	*30 - 140*
PCB-105L	*22*	*	*30 - 140*
PCB-114L	*23*	*	*30 - 140*
PCB-118L	*22*	*	*30 - 140*
PCB-123L	*21*	*	*30 - 140*
PCB-126L	*21*	*	*30 - 140*
PCB-155L	*24*	*	*30 - 140*
PCB-156L	*22*	C *	*30 - 140*
PCB-157L	*22*	* C156	*30 - 140*
PCB-167L	*22*	*	*30 - 140*
PCB-169L	*21*	*	*30 - 140*
PCB-170L	*21*	*	*30 - 140*
PCB-188L	*23*	*	*30 - 140*
PCB-189L	*21*	*	*30 - 140*
PCB-202L	*25*	*	*30 - 140*
PCB-205L	*19*	*	*30 - 140*
PCB-206L	*22*	*	*30 - 140*
PCB-208L	*21*	*	*30 - 140*
PCB-209L	*22*	*	*30 - 140*

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
PCB-28L	*95*		*40 - 125*
PCB-111L	*91*		*40 - 125*
PCB-178L	*104*		*40 - 125*

Lab Chronicle

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

TestAmerica Job ID: 580-78459-3

Client Sample ID: PDI-SG-B430

Lab Sample ID: 580-78459-1
Date Collected: 06/28/18 14:18
Matrix: Solid
Date Received: 06/29/18 13:05
Percent Solids: 47.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			23078	08/24/18 11:00	CLI	TAL KNX
Total/NA	Cleanup	Split			23142	08/27/18 20:14	SMM	TAL KNX
Total/NA	Analysis	1668A		1	23336	09/05/18 15:55	JMN	TAL KNX

Client Sample ID: PDI-SG-B432

Lab Sample ID: 580-78459-3
Date Collected: 06/28/18 17:40
Matrix: Solid
Date Received: 06/29/18 13:05
Percent Solids: 61.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			23078	08/24/18 11:00	CLI	TAL KNX
Total/NA	Cleanup	Split			23142	08/27/18 20:14	SMM	TAL KNX
Total/NA	Analysis	1668A		1	23367	09/06/18 16:33	MSD	TAL KNX

Laboratory References:

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

Accreditation/Certification Summary

Client: AECOM
TestAmerica Job ID: 580-78459-3
Project/Site: Portland Harbor Pre-Remedial Design

Laboratory: TestAmerica Seattle

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

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

Laboratory: TestAmerica Knoxville

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

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

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

Sample Summary

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

TestAmerica Job ID: 580-78459-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-78459-1	PDI-SG-B430	Solid	06/28/18 14:18	06/29/18 13:05
580-78459-3	PDI-SG-B432	Solid	06/28/18 17:40	06/29/18 13:05

SURFACE SEDIMENT CHAIN OF CUSTODY

TestAmerica-Seattle 5755-8th-Street-East Tacoma, WA 98424-1317 **Ph: 253-922-2310 Fax: 253-922-5047**	**Project Contact: Amy Dahl / Chelsey Cook** **Tel: (206) 438-2261 / (206) 438-2010** **Analysis Turnaround Time** Calendar (C) or Work Days (W) _____ ☐ 21 days ☒ Other _ASAP_____	**Site Contact: Jennifer Ray** **Laboratory Contact: Elaine-Walker**	**6/29/2018** **Carrier: Courier**	COC No: 1 __1__ of __1__ COCs

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

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, Krom/Unger	Sample Specific Notes:
PDI-SG-B430	6/28/2018	14:18	SS		MT	7		H	H	H	x	H	H	H	
PDI-SG-B431	6/28/2018	16:16	SS		MT	7		H	H	H	x	H	H	H	
PDI-SG-B432	6/28/2018	17:40	SS		MT	7		H	H	H	x	H	H	H	

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

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☒ Archive For **12** Months

Special Instructions/QC Requirements & Comments:
Analyze samples for grain size ASAP, Hold (H) remaining analyses pending further instruction.
Separate reports for each lab.

5.2

Relinquished by:	Company: AECOM	Date/Time: 6/29/18 1250	Received by:	Company: M. E.	Date/Time: 6/29/18 1250
Relinquished by:	Company: M. E.	Date/Time: 6/29/18 1320	Received by:	Company: TARDA	Date/Time: 6/29/18 1320
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

580-78459 Chain of Custody

SURFACE SEDIMENT CHAIN OF CUSTODY

TestAmerica-Seattle 5755-8th-Street-East Tacoma, WA 98424-1317 **Ph: 253-922-2310 Fax: 253-922-5047**	**Project Contact: Amy Dahl / Chelsey Cook** **Tel: (206) 438-2261 / (206) 438-2010** **Analysis Turnaround Time** Calendar (C) or Work Days (W)	**Site Contact: Jennifer Ray** **Laboratory Contact: Elaine-Walker**	**6/29/2018** **Carrier: Courier**	COC No: 1 1 of 1 COCs
Client Contact AECOM 1111 3rd Ave Suite 1600 Seattle, WA 98101 Phone: (206) 438-2700 Fax: 1+(866) 495-5288 Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling Portland, OR Project #: 60566335 Study: Surface Water Sample Type: D/U	☐ 21 days ☒ Other ASAP			

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	Sample Specific Notes:
PDI-SG-B430	6/28/2018	14:18	SS		MT	7		H	H	H	x	H	H	H	
PDI-SG-B431	6/28/2018	16:16	SS		MT	7		H	H	H	x	H	H	H	
PDI-SG-B432	6/28/2018	17:40	SS		MT	7		H	H	H	x	H	H	H	

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

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

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

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☒ Archive For 12 Months

Special Instructions/QC Requirements & Comments:
Analyze samples for grain size ASAP, Hold (H) remaining analyses pending further instruction.
Separate reports for each lab.

5.2

Relinquished by:	Company: AECOM	Date/Time: 6/29/18 1250	Received by:	Company: M.E.	Date/Time: 6/29/18 1250
Relinquished by:	Company: M.E.	Date/Time: 6/29/18 1320	Received by:	Company: TARGET	Date/Time: 6/29/18 1320
Relinquished by:	Company: TARGET	Date/Time: 6/29/18 1700	Received by:	Company: TASEC	Date/Time: 6-30-18 1000

TestAmerica Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
Phone (865) 291-3000 Fax (865) 584-4315

Chain of Custody Record

580-78459 Chain of Custody

stAmerica
ADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Walker, Elaine M		Job: 140-3788.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: elaine.walker@testamericainc.com	State of Origin: Oregon	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 580-78459-3
Address: 5815 Middlebrook Pike, ,	Due Date Requested: 7/19/2018			
City: Knoxville	TAT Requested (days):			
State, Zip: TN, 37921				
Phone: 865-291-3000(Tel) 865-584-4315(Fax)	PO #:			
Email:	WO #:			
Project Name: Portland Harbor Pre-Remedial Design	Project #: 58012120			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1668A/1668_P_Sox (MOD) 209 PCBs plus Totals (Hold)	Screen_1668/Screen_PCB_P_S (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
PDI-SG-B430 (580-78459-1)	6/28/18	14:18 Pacific		Solid			X	X	1	
PDI-SG-B431 (580-78459-2)	6/28/18	16:16 Pacific		Solid			X	X	1	
PDI-SG-B432 (580-78459-3)	6/28/18	17:40 Pacific		Solid			X	X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said 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:	Company	Received by:	Date/Time: 6/29/18 0930	Company TA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Ver: 09/20/2016

9/11/2018

Loc: 580
78459

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 : JC68 Correction factor: 0.0	/			☐ **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?	/			☐ **Sample 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

RT: 0.2°C CT: 0.2°C
Custody seal intact
Fedex Exp#4423 0750 5988
1 Cooler; KW 6/30/18

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: KW Date: 6/30/18

QA026R30.doc, 080916

Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-78459-3

Login Number: 78459
List Number: 1
Creator: O'Connell, Jason I

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: 580-78459-3

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

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

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PCB1L (30-140)	PCB3L (30-140)	PCB4L (30-140)	PCB15L (30-140)	PCB19L (30-140)	PCB37L (30-140)	PCB54L (30-140)	PCB77L (30-140)
580-78459-1	PDI-SG-B430	71	71	78	79	93	85	85	84
580-78459-3	PDI-SG-B432	79	78	79	81	102	86	77	76
LCS 140-23078/17-B	Lab Control Sample	38	34	39	37	51	42	42	37
LCSD 140-23078/18-B	Lab Control Sample Dup	21 *	20 *	19 *	18 *	20 * q	20 *	20 *	21 *
MB 140-23078/16-B	Method Blank	29 *	24 * q	31	27 *	35	30	32	30

		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)
580-78459-1	PDI-SG-B430	86	85	92	92	92	91	86	90
580-78459-3	PDI-SG-B432	77	85	97	95	94	96	86	85
LCS 140-23078/17-B	Lab Control Sample	38	41	45	45	46	45	42	44
LCSD 140-23078/18-B	Lab Control Sample Dup	20 *	18 *	22 *	23 *	22 *	21 *	21 *	24 *
MB 140-23078/16-B	Method Blank	28 *	30	34	33	34	33	30	34

		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)
580-78459-1	PDI-SG-B430	80 C	80 C156	87	81	81	101	88	113
580-78459-3	PDI-SG-B432	81 C	81 C156	90	85	86	100	87	107
LCS 140-23078/17-B	Lab Control Sample	44 C	44 C156	43	43	42	47	39	55
LCSD 140-23078/18-B	Lab Control Sample Dup	22 C *	22 * C156	22 *	21 *	21 *	23 *	21 *	25 *
MB 140-23078/16-B	Method Blank	33 C	33 C156	30	31	30	34	28 *	30

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PCB205L (30-140)	PCB206L (30-140)	PCB208L (30-140)	PCB209L (30-140)				
580-78459-1	PDI-SG-B430	73	81	88	78				
580-78459-3	PDI-SG-B432	74	83	71	82				
LCS 140-23078/17-B	Lab Control Sample	37	41	43	40				
LCSD 140-23078/18-B	Lab Control Sample Dup	19 *	22 *	21 *	22 *				
MB 140-23078/16-B	Method Blank	27 *	31	31	30				

Surrogate Legend

PCB1L = PCB-1L
PCB3L = PCB-3L
PCB4L = PCB-4L
PCB15L = PCB-15L
PCB19L = PCB-19L
PCB37L = PCB-37L
PCB54L = PCB-54L
PCB77L = PCB-77L
PCB81L = PCB-81L
PCB104L = PCB-104L
PCB105L = PCB-105L
P114L = PCB-114L
PCB118L = PCB-118L
PCB123L = PCB-123L
PCB126L = PCB-126L
PCB155L = PCB-155L
PCB156L = PCB-156L
PCB157L = PCB-157L

Isotope Dilution Summary

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

TestAmerica Job ID: 580-78459-3

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