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## Data Validation Report

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

Laboratory: Test America, Knoxville, Tennessee

Service Request: 580-77396-3

Analyses/Method: Chlorinated Biphenyls by HRGC/HRMS / E1668A

Validation Level: Stage 2A

AECOM Project Number: 60566335.2.12

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### SUMMARY

The samples listed below were collected by AECOM in Portland Harbor in Portland, OR on May 16 and 17, 2018.

Sample ID	Matrix/Sample Type
PDI-RB-VV-180517	Equipment Blank
PDI-SG-B028-BL1	Sediment
PDI-SG-B137-BL1	Sediment
PDI-SG-B209-BL1	Sediment
PDI-SG-B225-BL1	Sediment
PDI-SG-B225-BL1-D	Field Duplicate of PDI-SG-B225-BL1

Data validation activities were conducted with reference to:

- *EPA Method 1668A: Chlorinated Biphenyl Congeners in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS* (USEPA, August 2003),
- *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April 2016),
- *Quality Assurance Project Plan, Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling, Portland Harbor Superfund Site (March 2018)*, and the
- laboratory quality control (QC) limits.

The National Functional Guidelines were modified to accommodate the non-CLP methodologies. In the absence of method-specific information, laboratory QC limits, project-specific requirements and/or AECOM professional judgment were used as appropriate.

### REVIEW ELEMENTS

The data were evaluated based on the following parameters (where applicable to the method):

✓	Data completeness [chain-of-custody (COC)/sample integrity]
✓	Holding times and sample preservation
X	Laboratory blanks/equipment blanks
NA	Matrix spike (MS) and/or matrix spike duplicate (MSD) results
✓	Ongoing precision and recovery results
X	Field duplicate results
✓	Labeled compounds and labeled clean-up standard recoveries
X	Sample results/reporting issues

The symbol (✓) indicates that no validation qualifiers were applied based on this parameter. An NA indicates that the parameter was not included as part of this data set or was not applicable to this validation and therefore not reviewed. The symbol (X) indicates that a QC nonconformance resulted in the qualification of data. Any QC nonconformance that resulted in the qualification of data is discussed below. In addition, nonconformances or other issues that were noted during validation, but did not result in qualification of data, may be discussed for informational purposes only.

The data appear valid as qualified and may be used for decision making purposes. Select data points were qualified as estimated or negated due to nonconformances of certain QC criteria (see discussion below). Qualified sample results are presented in Table 1.

## RESULTS

### Data Completeness (COC)/Sample Integrity

The data package was reviewed and found to meet acceptance criteria for completeness:

- The COCs were reviewed for completeness of information relevant to the samples and requested analyses, and for signatures indicating transfer of sample custody.
- The laboratory sample login sheet(s) were reviewed for issues potentially affecting sample integrity, including the condition of sample containers upon receipt at the laboratory.
- Completeness of analyses was verified by comparing the reported results to the COC requests.

### Holding Times and Sample Preservation

Sample preservation and preparation/analysis holding times were reviewed for conformance with method criteria. All method QC acceptance criteria were met.

### Laboratory Blanks/Equipment Blanks

Method and equipment rinse blank results are evaluated as to whether there are contaminants detected above the estimated detection limit (EDL).

Target compounds were detected in the laboratory method blanks and the equipment blank associated with the samples in this data set. The equipment blank contamination, after laboratory method blank actions were applied, is summarized below for informational purposes only. Equipment blank contamination was not used to qualify field samples.

Blank ID	Compound	Result	EDL	Units
PDI-RB-VV-180517	PCB-1	0.0024	0.00027	ng/L
	PCB-101	0.0030	0.000088	ng/L
	PCB-11	0.030	0.0071	ng/L
	PCB-110	0.0036	0.000074	ng/L
	PCB-113	0.0030	0.000088	ng/L
	PCB-115	0.0036	0.000074	ng/L
	PCB-118	0.0014	0.00037	ng/L
	PCB-129	0.0037	0.00071	ng/L
	PCB-138	0.0037	0.00071	ng/L
	PCB-15	0.015	0.0078	ng/L
	PCB-153	0.0036	0.00062	ng/L
	PCB-16	0.0085	0.0012	ng/L
	PCB-160	0.0037	0.00071	ng/L
	PCB-163	0.0037	0.00071	ng/L
	PCB-168	0.0036	0.00062	ng/L
	PCB-17	0.0049	0.0011	ng/L
	PCB-18	0.023	0.00096	ng/L
	PCB-180	0.0027	0.00023	ng/L
	PCB-187	0.0022	0.00026	ng/L
	PCB-193	0.0027	0.00023	ng/L
	PCB-20	0.019	0.00088	ng/L
	PCB-21	0.010	0.00086	ng/L
	PCB-22	0.0098	0.00090	ng/L
	PCB-26	0.0035	0.00086	ng/L
	PCB-27	0.0035	0.00079	ng/L
	PCB-28	0.019	0.00088	ng/L
	PCB-29	0.0035	0.00086	ng/L
	PCB-3	0.0029	0.00037	ng/L
	PCB-30	0.023	0.00096	ng/L
	PCB-31	0.0054	0.00086	ng/L
	PCB-32	0.0069	0.00076	ng/L
	PCB-33	0.010	0.00086	ng/L
	PCB-37	0.0053	0.00089	ng/L
	PCB-4	0.021	0.0099	ng/L
	PCB-40	0.0039	0.00055	ng/L
	PCB-41	0.0039	0.00055	ng/L
	PCB-42	0.0014	0.00055	ng/L
	PCB-44	0.015	0.00048	ng/L
	PCB-45	0.0026	0.00057	ng/L
	PCB-47	0.015	0.00048	ng/L
	PCB-49	0.0020	0.00045	ng/L

	PCB-50	0.0016	0.00053	ng/L
	PCB-51	0.0026	0.00057	ng/L
	PCB-52	0.0097	0.00054	ng/L
	PCB-53	0.0016	0.00053	ng/L
	PCB-56	0.0021	0.00040	ng/L
	PCB-61	0.0067	0.00038	ng/L
	PCB-64	0.0028	0.00037	ng/L
	PCB-65	0.015	0.00048	ng/L
	PCB-66	0.0035	0.00038	ng/L
	PCB-68	0.0019	0.00036	ng/L
	PCB-69	0.0020	0.00045	ng/L
	PCB-70	0.0067	0.00038	ng/L
	PCB-71	0.0039	0.00055	ng/L
	PCB-74	0.0067	0.00038	ng/L
	PCB-76	0.0067	0.00038	ng/L
	PCB-8	0.018	0.0067	ng/L
	PCB-90	0.0030	0.000088	ng/L

The NFG guidance stipulates that a conservative approach should be taken with regards to qualification of PCB congeners due to the toxicity of these compounds and the reporting of false negative results should be avoided. Therefore, in order to avoid the reporting of false negative results professional judgment was used to qualify the data in the following manner. As allowed in the NFG, a blank action limit (BAL) was determined as 5 times the method blank result:

- When the sample results were < the method blank result, the sample result was qualified as nondetect (U) at the sample result.
- When the sample result was  $\geq$  the method blank result and  $\leq$  the BAL, the sample result was qualified as estimated and potentially biased high (J+).
- When the sample result was > the BAL, sample result was not qualified.

Qualified sample results are summarized in Table 1.

### **MS/MSD Results**

MS/MSD analyses were not performed on a sample in this data set. No data validation actions were taken on this basis.

### **Ongoing Precision and Recovery**

The OPR %Rs and/or RPDs were reviewed for conformance with the method QC acceptance criteria. All method QC acceptance criteria were met.

### **Field Duplicate Results**

Field duplicate RPDs were reviewed for conformance with the AECOM QC acceptance criteria of  $\leq 50\%$  [if one or both results were greater than five times the practical quantitation limit (PQL)] for solid matrices and  $\leq 30\%$  [if one or both results were greater than five times the PQL] for aqueous matrices.

Nonconformances are summarized in Attachment A in Table A-1. Samples were qualified as follows:

**Actions:** (Based on AECOM professional judgment)

Criteria	RPD	Action	
		Detect	Nondetect
Sample and duplicate are nondetect results (<EDL)	Not calculable (NC)	No qualification	No qualification
Sample and duplicate results <PQL	Not applicable	No qualification	No qualification
Sample and duplicate results $\geq 5 \times \text{PQL}$	>30% Aqueous >50% All other sample types	J	Not Applicable
Sample and duplicate results are >PQL and <5xPQL	>60% Aqueous >100% All other sample types	J	Not Applicable
Sample and/or duplicate results are >PQL and/or >5xPQL	>30% Aqueous >50% All other sample types	J	Not Applicable
If sample or duplicate result is >5xPQL and the other is not detected	NC	J	UJ
If sample or duplicate result is <PQL and the other is not detected	NC	No qualification	No qualification

Qualified sample results are summarized in Table 1.

### **Labeled Compounds and Labeled Clean-up Standard Recoveries**

The labeled compounds and labeled clean-up standard %Rs were reviewed for conformance with the QC acceptance criteria. All method QC acceptance criteria were met.

### **Sample Results/Reporting Issues**

All sample results detected at concentrations less than the lowest calibration standard (or PQL) but greater than the EDL are qualified by the laboratory as estimated (J). This "J" qualifier is retained during data validation.

The laboratory qualified the sample results with a "q" to indicate that the ion abundance ratio was outside of the QC acceptance limits; the result should be considered as an Estimated Maximum Possible Concentration (EMPC). These results were qualified as estimated and tentatively identified (JN). Qualified sample results are summarized in Table 1.

It should be noted that the "JN" qualifier was retained rather than replacement with the conventional overall "J", "J+", and "J-" qualifiers in instances where sample results were qualified for multiple quality control nonconformances.

### Percent Solids Content

The percent solids data were reviewed since the amount of moisture in a solid sample may have an impact on data representativeness. Due to the extremely low solubility of PCB congeners in water, these analytes should be contained in the solid phase. Consequently, the NFG guidance does not stipulate a percent solids criterion. If applicable, EPA Regional guidance is used when assessing percent solids content. In the absence of EPA Regional guidance, AECOM uses 30% solids (from the NFG semivolatile guidance) as a benchmark to evaluate the percent solids content and professional judgment is used to determine the necessity to qualify data. Data were not qualified on the basis of percent solids content.

### **QUALIFICATION ACTIONS**

Sample results qualified as a result of validation actions are summarized in Table 1. All actions are described above.

### **ATTACHMENTS**

Attachment A: Nonconformance Summary Tables

Attachment B: Qualifier Codes and Explanations

Attachment C: Reason Codes and Explanations

**Table 1 - Data Validation Summary of Qualified Data**

Sample ID	Matrix	Compound	Result	EDL	Units	Validation Qualifiers	Validation Reason
PDI-RB-VV-180517	WQ	PCB-11	0.032	0.0080	ng/L	J+	bl
PDI-RB-VV-180517	WQ	PCB-118	0.0021	0.00074	ng/L	JN	k
PDI-RB-VV-180517	WQ	PCB-16	0.011	0.0012	ng/L	JN	k
PDI-RB-VV-180517	WQ	PCB-17	0.0070	0.0011	ng/L	JN	k
PDI-RB-VV-180517	WQ	PCB-18	0.022	0.00094	ng/L	JN	k
PDI-RB-VV-180517	WQ	PCB-2	0.0019	0.00041	ng/L	JN	k
PDI-RB-VV-180517	WQ	PCB-21	0.0094	0.0012	ng/L	JN	k
PDI-RB-VV-180517	WQ	PCB-30	0.022	0.00094	ng/L	JN	k
PDI-RB-VV-180517	WQ	PCB-31	0.0052	0.0012	ng/L	JN	k
PDI-RB-VV-180517	WQ	PCB-33	0.0094	0.0012	ng/L	JN	k
PDI-RB-VV-180517	WQ	PCB-40	0.0046	0.00080	ng/L	JN	k
PDI-RB-VV-180517	WQ	PCB-41	0.0046	0.00080	ng/L	JN	k
PDI-RB-VV-180517	WQ	PCB-42	0.0031	0.00081	ng/L	JN	k
PDI-RB-VV-180517	WQ	PCB-44	0.013	0.00071	ng/L	JN	bl,k
PDI-RB-VV-180517	WQ	PCB-45	0.0020	0.00084	ng/L	JN	k
PDI-RB-VV-180517	WQ	PCB-47	0.013	0.00071	ng/L	JN	bl,k
PDI-RB-VV-180517	WQ	PCB-48	0.0019	0.00080	ng/L	JN	k
PDI-RB-VV-180517	WQ	PCB-51	0.0020	0.00084	ng/L	JN	k
PDI-RB-VV-180517	WQ	PCB-61	0.0055	0.00056	ng/L	JN	k
PDI-RB-VV-180517	WQ	PCB-65	0.013	0.00071	ng/L	JN	bl,k
PDI-RB-VV-180517	WQ	PCB-66	0.0022	0.00056	ng/L	JN	k
PDI-RB-VV-180517	WQ	PCB-70	0.0055	0.00056	ng/L	JN	k
PDI-RB-VV-180517	WQ	PCB-71	0.0046	0.00080	ng/L	JN	k
PDI-RB-VV-180517	WQ	PCB-74	0.0055	0.00056	ng/L	JN	k
PDI-RB-VV-180517	WQ	PCB-76	0.0055	0.00056	ng/L	JN	k
PDI-SG-B028-BL1	SE	PCB-10	0.0021	0.00060	ng/g	JN	k
PDI-SG-B028-BL1	SE	PCB-100	0.024	0.00022	ng/g	JN	k
PDI-SG-B028-BL1	SE	PCB-112	0.0062	0.00015	ng/g	JN	k
PDI-SG-B028-BL1	SE	PCB-133	0.014	0.0012	ng/g	JN	k
PDI-SG-B028-BL1	SE	PCB-148	0.00090	0.000063	ng/g	JN	k
PDI-SG-B028-BL1	SE	PCB-150	0.0011	0.000042	ng/g	JN	k
PDI-SG-B028-BL1	SE	PCB-152	0.00089	0.000045	ng/g	JN	k
PDI-SG-B028-BL1	SE	PCB-175	0.0072	0.00012	ng/g	JN	k
PDI-SG-B028-BL1	SE	PCB-191	0.0095	0.000084	ng/g	JN	k
PDI-SG-B028-BL1	SE	PCB-2	0.014	0.00043	ng/g	JN	k
PDI-SG-B028-BL1	SE	PCB-39	0.0028	0.0016	ng/g	JN	k
PDI-SG-B028-BL1	SE	PCB-55	0.023	0.0013	ng/g	JN	k
PDI-SG-B028-BL1	SE	PCB-63	0.029	0.0011	ng/g	JN	k

Sample ID	Matrix	Compound	Result	EDL	Units	Validation Qualifiers	Validation Reason
PDI-SG-B028-BL1	SE	PCB-67	0.016	0.0012	ng/g	JN	k
PDI-SG-B028-BL1	SE	PCB-93	0.024	0.00022	ng/g	JN	k
PDI-SG-B028-BL1	SE	PCB-94	0.0085	0.00023	ng/g	JN	k
PDI-SG-B028-BL1	SE	PCB-96	0.012	0.00017	ng/g	JN	k
PDI-SG-B137-BL1	SE	PCB-107	0.0074	0.00094	ng/g	JN	k
PDI-SG-B137-BL1	SE	PCB-122	0.0014	0.0011	ng/g	JN	k
PDI-SG-B137-BL1	SE	PCB-130	0.010	0.0016	ng/g	JN	k
PDI-SG-B137-BL1	SE	PCB-134	0.0078	0.0016	ng/g	JN	k
PDI-SG-B137-BL1	SE	PCB-137	0.0056	0.0013	ng/g	JN	k
PDI-SG-B137-BL1	SE	PCB-143	0.0078	0.0016	ng/g	JN	k
PDI-SG-B137-BL1	SE	PCB-144	0.011	0.00024	ng/g	JN	k
PDI-SG-B137-BL1	SE	PCB-15	0.0051	0.00061	ng/g	JN	k
PDI-SG-B137-BL1	SE	PCB-150	0.00041	0.00017	ng/g	JN	k
PDI-SG-B137-BL1	SE	PCB-17	0.0069	0.00019	ng/g	JN	k
PDI-SG-B137-BL1	SE	PCB-175	0.0012	0.00071	ng/g	JN	k
PDI-SG-B137-BL1	SE	PCB-19	0.0050	0.00023	ng/g	JN	k
PDI-SG-B137-BL1	SE	PCB-190	0.014	0.00051	ng/g	JN	k
PDI-SG-B137-BL1	SE	PCB-191	0.0027	0.00051	ng/g	JN	k
PDI-SG-B137-BL1	SE	PCB-197	0.0023	0.00041	ng/g	JN	k
PDI-SG-B137-BL1	SE	PCB-2	0.0025	0.00076	ng/g	JN	k
PDI-SG-B137-BL1	SE	PCB-200	0.0065	0.00045	ng/g	JN	k
PDI-SG-B137-BL1	SE	PCB-207	0.0095	0.00095	ng/g	JN	k
PDI-SG-B137-BL1	SE	PCB-25	0.0028	0.00094	ng/g	JN	k
PDI-SG-B137-BL1	SE	PCB-27	0.0013	0.00014	ng/g	JN	k
PDI-SG-B137-BL1	SE	PCB-4	0.0035	0.00094	ng/g	JN	k
PDI-SG-B137-BL1	SE	PCB-6	0.0024	0.00063	ng/g	J+	bl
PDI-SG-B137-BL1	SE	PCB-67	0.0012	0.00050	ng/g	JN	k
PDI-SG-B137-BL1	SE	PCB-77	0.0048	0.00049	ng/g	JN	k
PDI-SG-B137-BL1	SE	PCB-8	0.0059	0.00061	ng/g	JN	k
PDI-SG-B137-BL1	SE	PCB-95	0.089	0.00086	ng/g	JN	k
PDI-SG-B209-BL1	SE	PCB-1	0.0047	0.00020	ng/g	JN	k
PDI-SG-B209-BL1	SE	PCB-102	0.017	0.00061	ng/g	JN	k
PDI-SG-B209-BL1	SE	PCB-131	0.0098	0.0023	ng/g	JN	k
PDI-SG-B209-BL1	SE	PCB-137	0.026	0.0018	ng/g	JN	k
PDI-SG-B209-BL1	SE	PCB-139	0.011	0.0019	ng/g	JN	k
PDI-SG-B209-BL1	SE	PCB-140	0.011	0.0019	ng/g	JN	k
PDI-SG-B209-BL1	SE	PCB-148	0.0015	0.00023	ng/g	JN	k
PDI-SG-B209-BL1	SE	PCB-155	0.00063	0.00016	ng/g	JN	k
PDI-SG-B209-BL1	SE	PCB-16	0.027	0.00053	ng/g	JN	k
PDI-SG-B209-BL1	SE	PCB-182	0.0051	0.00024	ng/g	JN	k



Sample ID	Matrix	Compound	Result	EDL	Units	Validation Qualifiers	Validation Reason
PDI-SG-B209-BL1	SE	PCB-184	0.010	0.00021	ng/g	JN	k
PDI-SG-B209-BL1	SE	PCB-19	0.011	0.00050	ng/g	JN	k
PDI-SG-B209-BL1	SE	PCB-2	0.0039	0.00022	ng/g	JN	k
PDI-SG-B209-BL1	SE	PCB-204	0.0026	0.00042	ng/g	JN	k
PDI-SG-B209-BL1	SE	PCB-206	0.26	0.0018	ng/g	JN	k
PDI-SG-B209-BL1	SE	PCB-24	0.00076	0.00031	ng/g	JN	k
PDI-SG-B209-BL1	SE	PCB-4	0.014	0.00098	ng/g	JN	k
PDI-SG-B209-BL1	SE	PCB-46	0.015	0.0017	ng/g	JN	k
PDI-SG-B209-BL1	SE	PCB-54	0.00089	0.000053	ng/g	JN	k
PDI-SG-B209-BL1	SE	PCB-55	0.0047	0.00094	ng/g	JN	k
PDI-SG-B209-BL1	SE	PCB-63	0.0072	0.00084	ng/g	JN	k
PDI-SG-B209-BL1	SE	PCB-67	0.0050	0.00089	ng/g	JN	k
PDI-SG-B209-BL1	SE	PCB-7	0.00093	0.00060	ng/g	JN	k
PDI-SG-B209-BL1	SE	PCB-79	0.0031	0.00080	ng/g	JN	k
PDI-SG-B209-BL1	SE	PCB-89	0.0075	0.00065	ng/g	JN	k
PDI-SG-B209-BL1	SE	PCB-98	0.017	0.00061	ng/g	JN	k
PDI-SG-B225-BL1	SE	PCB-100	0.014	0.00027	ng/g	JN	k
PDI-SG-B225-BL1	SE	PCB-103	0.0074	0.00025	ng/g	JN	k
PDI-SG-B225-BL1	SE	PCB-130	0.042	0.0027	ng/g	JN	k
PDI-SG-B225-BL1	SE	PCB-131	0.0056	0.0028	ng/g	JN	k
PDI-SG-B225-BL1	SE	PCB-137	0.028	0.0022	ng/g	JN	k
PDI-SG-B225-BL1	SE	PCB-139	0.0092	0.0023	ng/g	JN	k
PDI-SG-B225-BL1	SE	PCB-140	0.0092	0.0023	ng/g	JN	k
PDI-SG-B225-BL1	SE	PCB-142	0.0027	0.0026	ng/g	JN	k
PDI-SG-B225-BL1	SE	PCB-159	0.0080	0.0016	ng/g	JN	k
PDI-SG-B225-BL1	SE	PCB-16	0.067	0.0011	ng/g	J	fd
PDI-SG-B225-BL1	SE	PCB-17	0.067	0.00084	ng/g	JN	k
PDI-SG-B225-BL1	SE	PCB-175	0.0099	0.00049	ng/g	JN	k
PDI-SG-B225-BL1	SE	PCB-18	0.16	0.00074	ng/g	J	fd
PDI-SG-B225-BL1	SE	PCB-189	0.0079	0.00064	ng/g	JN	k
PDI-SG-B225-BL1	SE	PCB-2	0.0078	0.00030	ng/g	JN	k
PDI-SG-B225-BL1	SE	PCB-201	0.018	0.00074	ng/g	JN	k
PDI-SG-B225-BL1	SE	PCB-204	0.0020	0.00076	ng/g	JN	k
PDI-SG-B225-BL1	SE	PCB-205	0.010	0.0021	ng/g	JN	k
PDI-SG-B225-BL1	SE	PCB-208	0.043	0.0018	ng/g	JN	k
PDI-SG-B225-BL1	SE	PCB-21	0.12	0.0021	ng/g	J	fd
PDI-SG-B225-BL1	SE	PCB-24	0.0018	0.00064	ng/g	JN	k
PDI-SG-B225-BL1	SE	PCB-30	0.16	0.00074	ng/g	J	fd
PDI-SG-B225-BL1	SE	PCB-33	0.12	0.0021	ng/g	J	fd
PDI-SG-B225-BL1	SE	PCB-54	0.0037	0.000067	ng/g	JN	k

Sample ID	Matrix	Compound	Result	EDL	Units	Validation Qualifiers	Validation Reason
PDI-SG-B225-BL1	SE	PCB-55	0.013	0.0013	ng/g	JN	k
PDI-SG-B225-BL1	SE	PCB-67	0.012	0.0012	ng/g	JN	k
PDI-SG-B225-BL1	SE	PCB-7	0.0024	0.00073	ng/g	JN	k
PDI-SG-B225-BL1	SE	PCB-79	0.0034	0.0011	ng/g	JN	k
PDI-SG-B225-BL1	SE	PCB-9	0.0037	0.00085	ng/g	JN	k
PDI-SG-B225-BL1	SE	PCB-93	0.014	0.00027	ng/g	JN	k
PDI-SG-B225-BL1	SE	PCB-94	0.0047	0.00029	ng/g	JN	k
PDI-SG-B225-BL1	SE	PCB-96	0.0071	0.00021	ng/g	JN	k
PDI-SG-B225-BL1-D	SE	PCB-12	0.010	0.00064	ng/g	JN	k
PDI-SG-B225-BL1-D	SE	PCB-120	0.0019	0.00033	ng/g	JN	k
PDI-SG-B225-BL1-D	SE	PCB-123	0.0098	0.0022	ng/g	JN	k
PDI-SG-B225-BL1-D	SE	PCB-13	0.010	0.00064	ng/g	JN	k
PDI-SG-B225-BL1-D	SE	PCB-131	0.0064	0.0031	ng/g	JN	k
PDI-SG-B225-BL1-D	SE	PCB-134	0.026	0.0030	ng/g	JN	k
PDI-SG-B225-BL1-D	SE	PCB-137	0.025	0.0025	ng/g	JN	k
PDI-SG-B225-BL1-D	SE	PCB-143	0.026	0.0030	ng/g	JN	k
PDI-SG-B225-BL1-D	SE	PCB-145	0.0011	0.00035	ng/g	JN	k
PDI-SG-B225-BL1-D	SE	PCB-15	0.031	0.00069	ng/g	JN	k
PDI-SG-B225-BL1-D	SE	PCB-16	0.037	0.00076	ng/g	J	fd
PDI-SG-B225-BL1-D	SE	PCB-18	0.085	0.00051	ng/g	J	fd
PDI-SG-B225-BL1-D	SE	PCB-191	0.0092	0.00076	ng/g	JN	k
PDI-SG-B225-BL1-D	SE	PCB-197	0.0051	0.00083	ng/g	JN	k
PDI-SG-B225-BL1-D	SE	PCB-205	0.0094	0.0016	ng/g	JN	k
PDI-SG-B225-BL1-D	SE	PCB-206	0.18	0.0031	ng/g	JN	k
PDI-SG-B225-BL1-D	SE	PCB-21	0.067	0.0013	ng/g	J	fd
PDI-SG-B225-BL1-D	SE	PCB-30	0.085	0.00051	ng/g	J	fd
PDI-SG-B225-BL1-D	SE	PCB-33	0.067	0.0013	ng/g	J	fd
PDI-SG-B225-BL1-D	SE	PCB-46	0.019	0.0026	ng/g	JN	k
PDI-SG-B225-BL1-D	SE	PCB-54	0.0022	0.000056	ng/g	JN	k
PDI-SG-B225-BL1-D	SE	PCB-55	0.0080	0.0014	ng/g	JN	k
PDI-SG-B225-BL1-D	SE	PCB-59	0.029	0.0014	ng/g	JN	k
PDI-SG-B225-BL1-D	SE	PCB-62	0.029	0.0014	ng/g	JN	k
PDI-SG-B225-BL1-D	SE	PCB-63	0.014	0.0013	ng/g	JN	k
PDI-SG-B225-BL1-D	SE	PCB-67	0.0074	0.0014	ng/g	JN	k
PDI-SG-B225-BL1-D	SE	PCB-72	0.0040	0.0014	ng/g	JN	k
PDI-SG-B225-BL1-D	SE	PCB-75	0.029	0.0014	ng/g	JN	k
PDI-SG-B225-BL1-D	SE	PCB-79	0.0040	0.0012	ng/g	JN	k
PDI-SG-B225-BL1-D	SE	PCB-8	0.034	0.00068	ng/g	JN	k
PDI-SG-B225-BL1-D	SE	PCB-94	0.0035	0.00056	ng/g	JN	k

**Attachment A****Nonconformance Summary Tables****Table A-1 - Field Duplicates**

Sample ID	Duplicate ID	Compound	Sample Result	Qual	Duplicate Result	Qual	QL	Units	RPD
PDI-SG-S225-BL1	PDI-SG-S225-BL1-D	PCB-16	0.067	J	0.037	J	0.012	ng/g	57.7
		PCB-18	0.16	J	0.085	J	0.025	ng/g	61.2
		PCB-21	0.12	J	0.067	J	0.025	ng/g	56.7
		PCB-30	0.16	J	0.085	J	0.025	ng/g	61.2
		PCB-33	0.12	J	0.067	J	0.025	ng/g	56.7

**Attachment B****Qualifier Codes and Explanations**

<b>Qualifier</b>	<b>Explanation</b>
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J-	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a potential low bias.
J+	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a potential high bias.
JN	The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

## Attachment C

### Reason Codes and Explanations

Reason Code	Explanation
be	Equipment blank contamination
bf	Field blank contamination
bl	Laboratory blank contamination
c	Calibration issue
cl	Clean-up standard recovery
d	Reporting limit raised due to chromatographic interference
fd	Field duplicate RPDs
h	Holding times
i	Internal standard areas
k	Estimated Maximum Possible Concentration (EMPC)
l	LCS or OPR recoveries
lc	Labeled compound recovery
ld	Laboratory duplicate RPDs
lp	Laboratory control sample/laboratory control sample duplicate RPDs
m	Matrix spike recovery
md	Matrix spike/matrix spike duplicate RPDs
nb	Negative laboratory blank contamination
p	Chemical preservation issue
r	Dual column RPD
q	Quantitation issue
s	Surrogate recovery
su	Ion suppression
t	Temperature preservation issue
x	Percent solids
y	Serial dilution results
z	ICS results