

Data Validation Report

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

Laboratory: Test America, West Sacramento, California

Laboratory Group: 580-76932-2

Analyses/Method: Clean Water Act - Dioxins and Furans / CWA1613B

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 April 27, 28 and 29, 2018.

Sample ID	Matrix/Sample Type
PDI-RB-VV-180429-1730	Equipment Blank
PDI-RB-VV-180429-1800	Equipment Blank
PDI-SG-B347-BL1-D	Field Duplicate of PDI-SG-B347-BL1
PDI-SG-B381-BL1-D	Field Duplicate of PDI-SG-B381-BL1
PDI-SG-B388-BL1-D	Field Duplicate of PDI-SG-B388-BL1
PDI-SG-B312-BL1	Sediment
PDI-SG-B328-BL1	Sediment
PDI-SG-B331-BL1	Sediment
PDI-SG-B336-BL1	Sediment
PDI-SG-B339-BL1	Sediment
PDI-SG-B340-BL1	Sediment
PDI-SG-B341-BL1	Sediment
PDI-SG-B343-BL1	Sediment
PDI-SG-B345-BL1	Sediment
PDI-SG-B347-BL1	Sediment
PDI-SG-B350-BL1	Sediment
PDI-SG-B351-BL1	Sediment
PDI-SG-B353-BL1	Sediment
PDI-SG-B359-BL1	Sediment
PDI-SG-B360-BL1	Sediment

Sample ID	Matrix/Sample Type
PDI-SG-B361-BL1	Sediment
PDI-SG-B364-BL1	Sediment
PDI-SG-B365-BL1	Sediment
PDI-SG-B369-BL1	Sediment
PDI-SG-B370-BL1	Sediment
PDI-SG-B371-BL1	Sediment
PDI-SG-B375-BL1	Sediment
PDI-SG-B376-BL1	Sediment
PDI-SG-B379-BL1	Sediment
PDI-SG-B381-BL1	Sediment
PDI-SG-B385-BL1	Sediment
PDI-SG-B386-BL1	Sediment
PDI-SG-B388-BL1	Sediment
PDI-SG-B400-BL1	Sediment
PDI-SG-B408-BL1	Sediment

Data validation activities were conducted with reference to:

- EPA Method 1613B: *Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS (October 1994)*,
- *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
- ✗ Laboratory blanks/equipment blanks
- NA Matrix spike (MS) and/or matrix spike duplicate (MSD) results
- ✓ Ongoing precision and recovery (OPR) results
- ✗ Field duplicate results
- ✓ Labeled compound and clean-up standard recoveries
- ✗ 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 and/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

Laboratory method blanks and equipment 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 blanks 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.

Blank ID	Compound	Result	QL	Units
PDI-RB-VV-180429-1730	1,2,3,4,6,7,8-HpCDD	57	57	pg/L
	1,2,3,4,6,7,8-HpCDF	2.3	57	pg/L
	1,2,3,4,7,8,9-HpCDF	2.8	57	pg/L
	1,2,3,4,7,8-HxCDD	1.8	57	pg/L
	1,2,3,6,7,8-HxCDD	4.0	57	pg/L
	1,2,3,7,8,9-HxCDD	1.5	57	pg/L
	1,2,3,7,8,9-HxCDF	2.2	57	pg/L
	OCDD	52	110	pg/L
	OCDF	7.3	110	pg/L
PDI-RB-VV-180429-1800	1,2,3,4,6,7,8-HpCDF	0.82	53	pg/L

Blank ID	Compound	Result	QL	Units
	1,2,3,7,8,9-HxCDF	2.2	53	pg/L

Detected compounds are summarized in Attachment A in Table A-1.

The NFG guidance stipulates that a conservative approach should be taken with regards to qualification of PCDD/PCDFs 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 blank result:

When the sample results were $<$ the blank result, the sample result was qualified as nondetect (U) at the sample result.

When the sample result was \geq the blank result and \leq the BAL, and, 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.

OPR Results

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 both results were greater than five times the quantitation limit (QL)] for solid matrices and \leq 30% [if one or both results were greater than five times the QL] for aqueous matrices.

Nonconformances are summarized in Attachment A in Table A-2. Samples were qualified as follows:

Actions: (Based on AECOM professional judgment)

Criteria	RPD	Action	
		Detected	Nondetected
Sample and duplicate are nondetect results	Not calculable (NC)	No qualification	No qualification
Sample and duplicate results $<$ QL	Not applicable	No qualification	No qualification
Sample and duplicate results \geq 5xQL	$>$ 30% Aqueous	J	Not Applicable

Criteria	RPD	Action	
		Detected	Nondetected
	>50% All other sample types		
Sample and duplicate results are >QL and <5xRL	>60% Aqueous >100% All other sample types	J	Not Applicable
If sample or duplicate result is >5xQL and the other is not detected	NC	J	UJ
If sample or duplicate result is <RL and the other is not detected	NC	No qualification	No qualification

Qualified sample results are summarized in Table 1.

Labeled Compound and 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 but greater than the EDL are qualified by the laboratory as estimated (J). This "J" qualifier is retained during data validation.

Due to the matrix, the initial volumes used for the sediment samples deviated from the standard procedure. The reporting limits (RLs) have been adjusted proportionately.

Second Column Confirmation (2,3,7,8-TCDF)

The sample data was reviewed to ensure that results for 2,3,7,8-TCDF when analyzed on a DB-5 (or equivalent) column were confirmed on a second column (i.e., DB-225 or equivalent) when isomer specificity is not achieved. All sample results requiring confirmation were confirmed and results were reported from the confirmation column.

Estimated Maximum Possible Concentrations (EMPCs)

The data were reviewed to identify sample results that were indicated by the laboratory to be estimated maximum possible concentrations (EMPCs) because of identification criteria not being met.

The laboratory qualified all affected sample results with a "q" laboratory qualifier in cases where the ion ratio criterion was not met. Results qualified with the "q" laboratory qualifier were qualified as estimated and tentatively identified (JN). Qualified sample results are shown in Table 1.

It should be noted that the "JN" qualifier was retained rather than replacement with the conventional overall "J" qualifier 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 dioxins and furans 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. Qualification on this basis was not required.

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-180429-1730	WQ	1,2,3,4,6,7,8-HpCDF	2.3	0.73	pg/L	JN	bl,k
PDI-RB-VV-180429-1730	WQ	1,2,3,4,7,8,9-HpCDF	2.8	0.99	pg/L	JN	bl,k
PDI-RB-VV-180429-1730	WQ	1,2,3,4,7,8-HxCDD	1.8	1.2	pg/L	JN	bl,k
PDI-RB-VV-180429-1730	WQ	1,2,3,7,8,9-HxCDD	1.5	1.0	pg/L	JN	k
PDI-RB-VV-180429-1730	WQ	1,2,3,7,8,9-HxCDF	2.2	1.1	pg/L	JN	bl,k
PDI-RB-VV-180429-1800	WQ	1,2,3,4,6,7,8-HpCDF	0.82	0.40	pg/L	JN	bl,k
PDI-RB-VV-180429-1800	WQ	1,2,3,7,8,9-HxCDF	2.2	0.61	pg/L	J+	bl
PDI-RB-VV-180429-1800	WQ	OCDD		4.2	pg/L	U	bl
PDI-SG-B312-BL1	SE	1,2,3,4,6,7,8-HpCDF	0.0030	0.00018	ug/kg	JN	k
PDI-SG-B312-BL1	SE	1,2,3,4,7,8-HxCDD		0.00027	ug/kg	U	bl
PDI-SG-B312-BL1	SE	1,2,3,6,7,8-HxCDD	0.00092	0.000053	ug/kg	J+	bl
PDI-SG-B312-BL1	SE	1,2,3,7,8,9-HxCDD	0.00065	0.000049	ug/kg	J+	bl
PDI-SG-B312-BL1	SE	2,3,4,6,7,8-HxCDF		0.00016	ug/kg	U	bl
PDI-SG-B312-BL1	SE	2,3,4,7,8-PeCDF		0.000093	ug/kg	U	bl
PDI-SG-B312-BL1	SE	2,3,7,8-TCDF	0.00043	0.000059	ug/kg	J+	bl
PDI-SG-B328-BL1	SE	1,2,3,4,7,8,9-HpCDF	0.0016	0.0011	ug/kg	J+	bl
PDI-SG-B328-BL1	SE	1,2,3,4,7,8-HxCDD	0.00073	0.00010	ug/kg	J+	bl
PDI-SG-B328-BL1	SE	1,2,3,4,7,8-HxCDF	0.0011	0.00024	ug/kg	J+	bl
PDI-SG-B328-BL1	SE	1,2,3,6,7,8-HxCDF	0.00053	0.00021	ug/kg	J+	bl
PDI-SG-B328-BL1	SE	1,2,3,7,8-PeCDF		0.00017	ug/kg	U	bl
PDI-SG-B328-BL1	SE	2,3,4,6,7,8-HxCDF		0.00028	ug/kg	U	bl
PDI-SG-B328-BL1	SE	2,3,7,8-TCDD	0.00019	0.000081	ug/kg	JN	k
PDI-SG-B331-BL1	SE	1,2,3,4,6,7,8-HpCDF	0.0065	0.00034	ug/kg	JN	k
PDI-SG-B331-BL1	SE	1,2,3,4,7,8-HxCDD	0.00079	0.00016	ug/kg	J+	bl
PDI-SG-B331-BL1	SE	1,2,3,4,7,8-HxCDF	0.00055	0.00020	ug/kg	JN	bl,k
PDI-SG-B331-BL1	SE	1,2,3,7,8-PeCDD	0.00040	0.00016	ug/kg	JN	k
PDI-SG-B331-BL1	SE	2,3,4,6,7,8-HxCDF	0.00033	0.00014	ug/kg	J+	bl
PDI-SG-B331-BL1	SE	2,3,4,7,8-PeCDF	0.00031	0.000087	ug/kg	J+	bl
PDI-SG-B336-BL1	SE	1,2,3,4,7,8,9-HpCDF	0.00077	0.00034	ug/kg	J+	bl
PDI-SG-B336-BL1	SE	1,2,3,4,7,8-HxCDD	0.00069	0.000085	ug/kg	J+	bl
PDI-SG-B336-BL1	SE	1,2,3,4,7,8-HxCDF	0.00060	0.00030	ug/kg	JN	bl,k
PDI-SG-B336-BL1	SE	1,2,3,7,8,9-HxCDD	0.0011	0.000076	ug/kg	J+	bl
PDI-SG-B336-BL1	SE	2,3,4,6,7,8-HxCDF	0.00042	0.00022	ug/kg	J+	bl
PDI-SG-B336-BL1	SE	2,3,7,8-TCDF	0.00052	0.00011	ug/kg	J+	bl
PDI-SG-B339-BL1	SE	1,2,3,4,6,7,8-HpCDF	0.0047	0.00022	ug/kg	JN	k
PDI-SG-B339-BL1	SE	1,2,3,4,7,8,9-HpCDF	0.00038	0.00024	ug/kg	J+	bl
PDI-SG-B339-BL1	SE	1,2,3,4,7,8-HxCDD	0.00039	0.000079	ug/kg	J+	bl
PDI-SG-B339-BL1	SE	1,2,3,6,7,8-HxCDD	0.00087	0.000075	ug/kg	JN	k
PDI-SG-B339-BL1	SE	1,2,3,6,7,8-HxCDF	0.00040	0.00012	ug/kg	JN	k

Sample ID	Matrix	Compound	Result	EDL	Units	Validation Qualifiers	Validation Reason
PDI-SG-B339-BL1	SE	1,2,3,7,8-PeCDD	0.00016	0.000069	ug/kg	J+	bl
PDI-SG-B339-BL1	SE	1,2,3,7,8-PeCDF	0.00023	0.000055	ug/kg	J+	bl
PDI-SG-B339-BL1	SE	2,3,4,6,7,8-HxCDF	0.00070	0.000083	ug/kg	J+	bl
PDI-SG-B339-BL1	SE	2,3,4,7,8-PeCDF	0.00041	0.000062	ug/kg	J+	bl
PDI-SG-B339-BL1	SE	2,3,7,8-TCDF		0.00034	ug/kg	U	bl
PDI-SG-B340-BL1	SE	1,2,3,4,7,8,9-HpCDF	0.00062	0.00019	ug/kg	J+	bl
PDI-SG-B340-BL1	SE	1,2,3,4,7,8-HxCDD	0.00093	0.00011	ug/kg	J+	bl
PDI-SG-B340-BL1	SE	1,2,3,7,8,9-HxCDF		0.00012	ug/kg	U	bl
PDI-SG-B340-BL1	SE	1,2,3,7,8-PeCDD	0.00068	0.000061	ug/kg	JN	bl,k
PDI-SG-B340-BL1	SE	1,2,3,7,8-PeCDF	0.00039	0.000063	ug/kg	J+	bl
PDI-SG-B340-BL1	SE	2,3,4,6,7,8-HxCDF	0.00048	0.000070	ug/kg	J+	bl
PDI-SG-B340-BL1	SE	2,3,4,7,8-PeCDF	0.00047	0.000075	ug/kg	J+	bl
PDI-SG-B340-BL1	SE	2,3,7,8-TCDD	0.00041	0.000041	ug/kg	JN	k
PDI-SG-B341-BL1	SE	1,2,3,4,7,8,9-HpCDF	0.00026	0.00017	ug/kg	J+	bl
PDI-SG-B341-BL1	SE	1,2,3,4,7,8-HxCDD	0.00036	0.000048	ug/kg	J+	bl
PDI-SG-B341-BL1	SE	1,2,3,4,7,8-HxCDF	0.00032	0.000071	ug/kg	JN	bl,k
PDI-SG-B341-BL1	SE	1,2,3,7,8,9-HxCDD	0.00079	0.000042	ug/kg	J+	bl
PDI-SG-B341-BL1	SE	1,2,3,7,8,9-HxCDF		0.000057	ug/kg	U	bl
PDI-SG-B341-BL1	SE	1,2,3,7,8-PeCDD	0.00023	0.000059	ug/kg	J+	bl
PDI-SG-B341-BL1	SE	1,2,3,7,8-PeCDF		0.000091	ug/kg	U	bl
PDI-SG-B341-BL1	SE	2,3,4,6,7,8-HxCDF		0.00012	ug/kg	U	bl
PDI-SG-B341-BL1	SE	2,3,4,7,8-PeCDF		0.00012	ug/kg	U	bl
PDI-SG-B341-BL1	SE	2,3,7,8-TCDF	0.00050	0.000044	ug/kg	J+	bl
PDI-SG-B343-BL1	SE	1,2,3,4,6,7,8-HpCDF	0.0063	0.00018	ug/kg	JN	k
PDI-SG-B343-BL1	SE	1,2,3,4,7,8,9-HpCDF	0.00040	0.00014	ug/kg	JN	bl,k
PDI-SG-B343-BL1	SE	1,2,3,4,7,8-HxCDD	0.00050	0.000073	ug/kg	J+	bl
PDI-SG-B343-BL1	SE	1,2,3,7,8,9-HxCDF		0.00013	ug/kg	U	bl
PDI-SG-B343-BL1	SE	1,2,3,7,8-PeCDD	0.00030	0.000051	ug/kg	J+	bl
PDI-SG-B343-BL1	SE	1,2,3,7,8-PeCDF	0.00020	0.000040	ug/kg	J+	bl
PDI-SG-B343-BL1	SE	2,3,4,7,8-PeCDF	0.00026	0.000049	ug/kg	J+	bl
PDI-SG-B343-BL1	SE	2,3,7,8-TCDD	0.00029	0.000044	ug/kg	JN	k
PDI-SG-B343-BL1	SE	2,3,7,8-TCDF	0.00058	0.000048	ug/kg	J+	bl
PDI-SG-B345-BL1	SE	1,2,3,4,6,7,8-HpCDF	0.0072	0.00039	ug/kg	JN	k
PDI-SG-B345-BL1	SE	1,2,3,4,7,8-HxCDD	0.00052	0.000098	ug/kg	JN	bl,k
PDI-SG-B345-BL1	SE	1,2,3,6,7,8-HxCDF	0.00030	0.00012	ug/kg	JN	k
PDI-SG-B345-BL1	SE	1,2,3,7,8-PeCDD	0.00015	0.00011	ug/kg	JN	bl,k
PDI-SG-B345-BL1	SE	1,2,3,7,8-PeCDF	0.00016	0.000079	ug/kg	J+	bl
PDI-SG-B345-BL1	SE	2,3,4,6,7,8-HxCDF	0.00019	0.000091	ug/kg	JN	bl,k
PDI-SG-B345-BL1	SE	2,3,4,7,8-PeCDF	0.00023	0.000089	ug/kg	J+	bl
PDI-SG-B345-BL1	SE	2,3,7,8-TCDF	0.00075	0.000075	ug/kg	J+	bl

Sample ID	Matrix	Compound	Result	EDL	Units	Validation Qualifiers	Validation Reason
PDI-SG-B347-BL1	SE	1,2,3,4,7,8,9-HpCDF	0.00039	0.00016	ug/kg	J+	bl
PDI-SG-B347-BL1	SE	1,2,3,4,7,8-HxCDD	0.00045	0.00012	ug/kg	J+	bl
PDI-SG-B347-BL1	SE	1,2,3,7,8-PeCDD	0.00030	0.000086	ug/kg	J+	bl
PDI-SG-B347-BL1	SE	1,2,3,7,8-PeCDF		0.00013	ug/kg	U	bl
PDI-SG-B347-BL1	SE	2,3,4,7,8-PeCDF	0.00019	0.000072	ug/kg	J+	bl
PDI-SG-B347-BL1	SE	2,3,7,8-TCDD	0.00014	0.000069	ug/kg	JN	k
PDI-SG-B347-BL1	SE	2,3,7,8-TCDF	0.00061	0.000055	ug/kg	JN	bl,k
PDI-SG-B347-BL1-D	SE	1,2,3,4,6,7,8-HpCDF	0.0057	0.00014	ug/kg	JN	k
PDI-SG-B347-BL1-D	SE	1,2,3,4,7,8,9-HpCDF	0.00037	0.00013	ug/kg	J+	bl
PDI-SG-B347-BL1-D	SE	1,2,3,4,7,8-HxCDF	0.00048	0.00014	ug/kg	J+	bl
PDI-SG-B347-BL1-D	SE	1,2,3,7,8,9-HxCDF		0.00011	ug/kg	U	bl
PDI-SG-B347-BL1-D	SE	1,2,3,7,8-PeCDD	0.00026	0.000077	ug/kg	JN	bl,k
PDI-SG-B347-BL1-D	SE	1,2,3,7,8-PeCDF		0.00013	ug/kg	U	bl
PDI-SG-B347-BL1-D	SE	2,3,4,6,7,8-HxCDF	0.00020	0.00011	ug/kg	J+	bl
PDI-SG-B347-BL1-D	SE	2,3,4,7,8-PeCDF		0.00013	ug/kg	U	bl
PDI-SG-B347-BL1-D	SE	2,3,7,8-TCDD	0.00015	0.000052	ug/kg	JN	k
PDI-SG-B347-BL1-D	SE	2,3,7,8-TCDF	0.00044	0.000054	ug/kg	JN	bl,k
PDI-SG-B350-BL1	SE	1,2,3,4,6,7,8-HpCDF	0.0083	0.00017	ug/kg	JN	k
PDI-SG-B350-BL1	SE	1,2,3,4,7,8,9-HpCDF	0.00052	0.00016	ug/kg	J+	bl
PDI-SG-B350-BL1	SE	1,2,3,7,8,9-HxCDF	0.00030	0.000061	ug/kg	J+	bl
PDI-SG-B350-BL1	SE	1,2,3,7,8-PeCDD	0.00036	0.000071	ug/kg	J+	bl
PDI-SG-B350-BL1	SE	1,2,3,7,8-PeCDF	0.00029	0.000039	ug/kg	J+	bl
PDI-SG-B350-BL1	SE	2,3,4,6,7,8-HxCDF	0.00027	0.000088	ug/kg	J+	bl
PDI-SG-B350-BL1	SE	2,3,4,7,8-PeCDF	0.00027	0.000044	ug/kg	J+	bl
PDI-SG-B350-BL1	SE	2,3,7,8-TCDD	0.00028	0.000052	ug/kg	JN	k
PDI-SG-B350-BL1	SE	2,3,7,8-TCDF	0.00064	0.000043	ug/kg	J+	bl
PDI-SG-B351-BL1	SE	1,2,3,4,7,8-HxCDD	0.0016	0.00030	ug/kg	JN	k
PDI-SG-B351-BL1	SE	1,2,3,7,8,9-HxCDF		0.00023	ug/kg	U	bl
PDI-SG-B351-BL1	SE	1,2,3,7,8-PeCDD	0.00085	0.000097	ug/kg	JN	k
PDI-SG-B351-BL1	SE	2,3,7,8-TCDD	0.00049	0.000058	ug/kg	JN	k
PDI-SG-B351-BL1	SE	2,3,7,8-TCDF	0.00086	0.000046	ug/kg	J+	bl
PDI-SG-B353-BL1	SE	1,2,3,4,6,7,8-HpCDF	0.0074	0.00015	ug/kg	JN	k
PDI-SG-B353-BL1	SE	1,2,3,4,7,8,9-HpCDF	0.00041	0.00015	ug/kg	JN	bl,k
PDI-SG-B353-BL1	SE	1,2,3,4,7,8-HxCDD	0.00063	0.000087	ug/kg	J+	bl
PDI-SG-B353-BL1	SE	1,2,3,4,7,8-HxCDF	0.00065	0.00012	ug/kg	J+	bl
PDI-SG-B353-BL1	SE	1,2,3,7,8,9-HxCDF		0.00016	ug/kg	U	bl
PDI-SG-B353-BL1	SE	1,2,3,7,8-PeCDD	0.00026	0.000065	ug/kg	JN	bl,k
PDI-SG-B353-BL1	SE	1,2,3,7,8-PeCDF	0.00022	0.000038	ug/kg	J+	bl
PDI-SG-B353-BL1	SE	2,3,4,6,7,8-HxCDF	0.00023	0.000092	ug/kg	JN	bl,k
PDI-SG-B353-BL1	SE	2,3,4,7,8-PeCDF	0.00024	0.000043	ug/kg	J+	bl

Sample ID	Matrix	Compound	Result	EDL	Units	Validation Qualifiers	Validation Reason
PDI-SG-B353-BL1	SE	2,3,7,8-TCDD	0.00022	0.000050	ug/kg	JN	k
PDI-SG-B353-BL1	SE	2,3,7,8-TCDF	0.00063	0.000048	ug/kg	J+	bl
PDI-SG-B359-BL1	SE	1,2,3,4,6,7,8-HpCDF	0.0075	0.00018	ug/kg	JN	k
PDI-SG-B359-BL1	SE	1,2,3,4,7,8,9-HpCDF	0.00045	0.00018	ug/kg	J+	bl
PDI-SG-B359-BL1	SE	1,2,3,4,7,8-HxCDD	0.00061	0.000080	ug/kg	J+	bl
PDI-SG-B359-BL1	SE	1,2,3,4,7,8-HxCDF	0.00060	0.00015	ug/kg	J+	bl
PDI-SG-B359-BL1	SE	1,2,3,7,8,9-HxCDF		0.00015	ug/kg	U	bl
PDI-SG-B359-BL1	SE	1,2,3,7,8-PeCDD	0.00035	0.000081	ug/kg	JN	bl,k
PDI-SG-B359-BL1	SE	1,2,3,7,8-PeCDF	0.00022	0.000048	ug/kg	J+	bl
PDI-SG-B359-BL1	SE	2,3,4,6,7,8-HxCDF	0.00022	0.00011	ug/kg	JN	bl,k
PDI-SG-B359-BL1	SE	2,3,4,7,8-PeCDF	0.00020	0.000052	ug/kg	JN	bl,k
PDI-SG-B359-BL1	SE	2,3,7,8-TCDD	0.00030	0.000062	ug/kg	JN	k
PDI-SG-B359-BL1	SE	2,3,7,8-TCDF	0.00074	0.000056	ug/kg	J+	bl
PDI-SG-B360-BL1	SE	1,2,3,4,6,7,8-HpCDF	0.0077	0.00016	ug/kg	JN	k
PDI-SG-B360-BL1	SE	1,2,3,4,7,8,9-HpCDF	0.00048	0.00015	ug/kg	J+	bl
PDI-SG-B360-BL1	SE	1,2,3,4,7,8-HxCDD	0.00061	0.000081	ug/kg	J+	bl
PDI-SG-B360-BL1	SE	1,2,3,4,7,8-HxCDF	0.00061	0.00014	ug/kg	J+	bl
PDI-SG-B360-BL1	SE	1,2,3,7,8,9-HxCDF		0.00015	ug/kg	U	bl
PDI-SG-B360-BL1	SE	1,2,3,7,8-PeCDD	0.00035	0.000074	ug/kg	JN	bl,k
PDI-SG-B360-BL1	SE	2,3,4,7,8-PeCDF	0.00021	0.000040	ug/kg	J+	bl
PDI-SG-B360-BL1	SE	2,3,7,8-TCDD	0.00015	0.000043	ug/kg	JN	k
PDI-SG-B360-BL1	SE	2,3,7,8-TCDF	0.00058	0.000042	ug/kg	J+	bl
PDI-SG-B361-BL1	SE	1,2,3,4,6,7,8-HpCDF	0.0083	0.00023	ug/kg	JN	k
PDI-SG-B361-BL1	SE	1,2,3,4,7,8,9-HpCDF	0.00048	0.00023	ug/kg	J+	bl
PDI-SG-B361-BL1	SE	1,2,3,4,7,8-HxCDD	0.00082	0.000099	ug/kg	J+	bl
PDI-SG-B361-BL1	SE	1,2,3,4,7,8-HxCDF	0.00067	0.00015	ug/kg	J+	bl
PDI-SG-B361-BL1	SE	1,2,3,7,8,9-HxCDF		0.00013	ug/kg	U	bl
PDI-SG-B361-BL1	SE	1,2,3,7,8-PeCDD	0.00068	0.000070	ug/kg	J+	bl
PDI-SG-B361-BL1	SE	1,2,3,7,8-PeCDF	0.00023	0.000045	ug/kg	J+	bl
PDI-SG-B361-BL1	SE	2,3,4,6,7,8-HxCDF	0.00030	0.00011	ug/kg	J+	bl
PDI-SG-B361-BL1	SE	2,3,4,7,8-PeCDF	0.00022	0.000053	ug/kg	J+	bl
PDI-SG-B361-BL1	SE	2,3,7,8-TCDD	0.00032	0.000052	ug/kg	JN	k
PDI-SG-B361-BL1	SE	2,3,7,8-TCDF	0.00059	0.000047	ug/kg	J+	bl
PDI-SG-B364-BL1	SE	1,2,3,4,6,7,8-HpCDF	0.016	0.00024	ug/kg	JN	k
PDI-SG-B364-BL1	SE	1,2,3,4,7,8,9-HpCDF	0.00096	0.00021	ug/kg	J+	bl
PDI-SG-B364-BL1	SE	1,2,3,4,7,8-HxCDD	0.0010	0.000088	ug/kg	J+	bl
PDI-SG-B364-BL1	SE	1,2,3,7,8,9-HxCDF	0.00039	0.000067	ug/kg	J+	bl
PDI-SG-B364-BL1	SE	1,2,3,7,8-PeCDD	0.00065	0.000058	ug/kg	J+	bl
PDI-SG-B364-BL1	SE	1,2,3,7,8-PeCDF	0.00040	0.000042	ug/kg	J+	bl
PDI-SG-B364-BL1	SE	2,3,4,6,7,8-HxCDF	0.00051	0.000096	ug/kg	J+	bl

Sample ID	Matrix	Compound	Result	EDL	Units	Validation Qualifiers	Validation Reason
PDI-SG-B364-BL1	SE	2,3,4,7,8-PeCDF	0.00035	0.000047	ug/kg	J+	bl
PDI-SG-B364-BL1	SE	2,3,7,8-TCDD	0.00028	0.000041	ug/kg	JN	k
PDI-SG-B364-BL1	SE	2,3,7,8-TCDF	0.00075	0.000054	ug/kg	J+	bl
PDI-SG-B365-BL1	SE	1,2,3,4,6,7,8-HpCDF	0.0073	0.00031	ug/kg	JN	k
PDI-SG-B365-BL1	SE	1,2,3,4,7,8-HxCDD	0.00076	0.000093	ug/kg	J+	bl
PDI-SG-B365-BL1	SE	1,2,3,4,7,8-HxCDF	0.00081	0.00011	ug/kg	J+	bl
PDI-SG-B365-BL1	SE	1,2,3,6,7,8-HxCDD	0.0019	0.000087	ug/kg	JN	k
PDI-SG-B365-BL1	SE	1,2,3,6,7,8-HxCDF	0.00044	0.000094	ug/kg	J+	bl
PDI-SG-B365-BL1	SE	1,2,3,7,8,9-HxCDF		0.00029	ug/kg	U	bl
PDI-SG-B365-BL1	SE	1,2,3,7,8-PeCDF	0.00040	0.000091	ug/kg	J+	bl
PDI-SG-B365-BL1	SE	2,3,4,6,7,8-HxCDF	0.00037	0.000071	ug/kg	J+	bl
PDI-SG-B365-BL1	SE	2,3,4,7,8-PeCDF	0.00034	0.000097	ug/kg	J+	bl
PDI-SG-B365-BL1	SE	2,3,7,8-TCDF	0.00048	0.000071	ug/kg	J+	bl
PDI-SG-B369-BL1	SE	1,2,3,4,6,7,8-HpCDF	0.0066	0.00034	ug/kg	JN	k
PDI-SG-B369-BL1	SE	1,2,3,4,7,8,9-HpCDF	0.00045	0.00032	ug/kg	J+	bl
PDI-SG-B369-BL1	SE	1,2,3,4,7,8-HxCDD	0.00062	0.00010	ug/kg	JN	bl,k
PDI-SG-B369-BL1	SE	1,2,3,4,7,8-HxCDF	0.00031	0.00015	ug/kg	J+	bl
PDI-SG-B369-BL1	SE	1,2,3,6,7,8-HxCDD	0.0016	0.000093	ug/kg	J+	bl
PDI-SG-B369-BL1	SE	1,2,3,6,7,8-HxCDF	0.00043	0.00014	ug/kg	JN	bl,k
PDI-SG-B369-BL1	SE	2,3,4,6,7,8-HxCDF	0.00031	0.00010	ug/kg	J+	bl
PDI-SG-B369-BL1	SE	2,3,4,7,8-PeCDF		0.00022	ug/kg	U	bl
PDI-SG-B369-BL1	SE	2,3,7,8-TCDF	0.00037	0.000074	ug/kg	JN	bl,k
PDI-SG-B370-BL1	SE	1,2,3,4,6,7,8-HpCDF	0.0054	0.00012	ug/kg	JN	k
PDI-SG-B370-BL1	SE	1,2,3,4,7,8,9-HpCDF	0.00043	0.00011	ug/kg	J+	bl
PDI-SG-B370-BL1	SE	1,2,3,4,7,8-HxCDD	0.00044	0.000090	ug/kg	J+	bl
PDI-SG-B370-BL1	SE	1,2,3,4,7,8-HxCDF	0.00053	0.000074	ug/kg	J+	bl
PDI-SG-B370-BL1	SE	1,2,3,6,7,8-HxCDD	0.0010	0.000081	ug/kg	JN	k
PDI-SG-B370-BL1	SE	1,2,3,7,8,9-HxCDF		0.00020	ug/kg	U	bl
PDI-SG-B370-BL1	SE	1,2,3,7,8-PeCDD	0.00026	0.000036	ug/kg	J+	bl
PDI-SG-B370-BL1	SE	1,2,3,7,8-PeCDF	0.00023	0.000032	ug/kg	J+	bl
PDI-SG-B370-BL1	SE	2,3,4,6,7,8-HxCDF	0.00021	0.000052	ug/kg	J+	bl
PDI-SG-B370-BL1	SE	2,3,4,7,8-PeCDF	0.00022	0.000037	ug/kg	J+	bl
PDI-SG-B370-BL1	SE	2,3,7,8-TCDD	0.00019	0.000036	ug/kg	JN	k
PDI-SG-B370-BL1	SE	2,3,7,8-TCDF	0.00058	0.000028	ug/kg	J+	bl
PDI-SG-B371-BL1	SE	1,2,3,4,7,8-HxCDD	0.00080	0.00016	ug/kg	J+	bl
PDI-SG-B371-BL1	SE	1,2,3,7,8,9-HxCDF		0.00018	ug/kg	U	bl
PDI-SG-B371-BL1	SE	1,2,3,7,8-PeCDD	0.00043	0.000055	ug/kg	JN	bl,k
PDI-SG-B371-BL1	SE	1,2,3,7,8-PeCDF	0.00034	0.000077	ug/kg	J+	bl
PDI-SG-B371-BL1	SE	2,3,4,6,7,8-HxCDF	0.00040	0.00019	ug/kg	J+	bl
PDI-SG-B371-BL1	SE	2,3,4,7,8-PeCDF	0.00042	0.000085	ug/kg	J+	bl

Sample ID	Matrix	Compound	Result	EDL	Units	Validation Qualifiers	Validation Reason
PDI-SG-B371-BL1	SE	2,3,7,8-TCDD	0.00026	0.000047	ug/kg	JN	k
PDI-SG-B371-BL1	SE	2,3,7,8-TCDF	0.00061	0.000058	ug/kg	J+	bl
PDI-SG-B375-BL1	SE	1,2,3,4,6,7,8-HpCDF	0.010	0.00039	ug/kg	JN	k
PDI-SG-B375-BL1	SE	1,2,3,4,7,8,9-HpCDF	0.00060	0.00040	ug/kg	JN	bl,k
PDI-SG-B375-BL1	SE	1,2,3,4,7,8-HxCDD	0.00071	0.000096	ug/kg	J+	bl
PDI-SG-B375-BL1	SE	1,2,3,4,7,8-HxCDF	0.00068	0.00011	ug/kg	JN	bl,k
PDI-SG-B375-BL1	SE	1,2,3,6,7,8-HxCDD	0.0022	0.000096	ug/kg	JN	k
PDI-SG-B375-BL1	SE	1,2,3,6,7,8-HxCDF	0.00045	0.000091	ug/kg	JN	bl,k
PDI-SG-B375-BL1	SE	1,2,3,7,8,9-HxCDF		0.00029	ug/kg	U	bl
PDI-SG-B375-BL1	SE	1,2,3,7,8-PeCDD	0.00042	0.00010	ug/kg	JN	k
PDI-SG-B375-BL1	SE	1,2,3,7,8-PeCDF		0.00020	ug/kg	U	bl
PDI-SG-B375-BL1	SE	2,3,4,6,7,8-HxCDF	0.00036	0.000072	ug/kg	J+	bl
PDI-SG-B375-BL1	SE	2,3,4,7,8-PeCDF		0.00026	ug/kg	U	bl
PDI-SG-B375-BL1	SE	2,3,7,8-TCDD	0.00039	0.000086	ug/kg	JN	k
PDI-SG-B375-BL1	SE	2,3,7,8-TCDF	0.00039	0.000076	ug/kg	J+	bl
PDI-SG-B376-BL1	SE	1,2,3,4,6,7,8-HpCDF	0.0072	0.00041	ug/kg	JN	k
PDI-SG-B376-BL1	SE	1,2,3,4,7,8,9-HpCDF	0.00071	0.00040	ug/kg	J+	bl
PDI-SG-B376-BL1	SE	1,2,3,4,7,8-HxCDD	0.0010	0.00011	ug/kg	J+	bl
PDI-SG-B376-BL1	SE	1,2,3,4,7,8-HxCDF	0.00083	0.00012	ug/kg	J+	bl
PDI-SG-B376-BL1	SE	1,2,3,6,7,8-HxCDD	0.0024	0.00010	ug/kg	JN	k
PDI-SG-B376-BL1	SE	1,2,3,6,7,8-HxCDF	0.00067	0.00011	ug/kg	J+	bl
PDI-SG-B376-BL1	SE	1,2,3,7,8,9-HxCDF	0.00040	0.000080	ug/kg	JN	bl,k
PDI-SG-B376-BL1	SE	1,2,3,7,8-PeCDF	0.00051	0.000081	ug/kg	J+	bl
PDI-SG-B376-BL1	SE	2,3,4,6,7,8-HxCDF	0.00051	0.000083	ug/kg	JN	bl,k
PDI-SG-B376-BL1	SE	2,3,4,7,8-PeCDF	0.00044	0.000086	ug/kg	J+	bl
PDI-SG-B376-BL1	SE	2,3,7,8-TCDD	0.00049	0.000093	ug/kg	JN	k
PDI-SG-B376-BL1	SE	2,3,7,8-TCDF	0.00054	0.000087	ug/kg	J+	bl
PDI-SG-B379-BL1	SE	1,2,3,4,6,7,8-HpCDF	0.0093	0.00062	ug/kg	JN	k
PDI-SG-B379-BL1	SE	1,2,3,4,7,8-HxCDD	0.00075	0.00017	ug/kg	JN	bl,k
PDI-SG-B379-BL1	SE	1,2,3,4,7,8-HxCDF	0.0015	0.00032	ug/kg	J+	bl
PDI-SG-B379-BL1	SE	1,2,3,6,7,8-HxCDD	0.0025	0.00015	ug/kg	JN	k
PDI-SG-B379-BL1	SE	1,2,3,6,7,8-HxCDF	0.00074	0.00029	ug/kg	J+	bl
PDI-SG-B379-BL1	SE	2,3,4,7,8-PeCDF	0.00041	0.00016	ug/kg	J+	bl
PDI-SG-B379-BL1	SE	2,3,7,8-TCDF	0.00038	0.00018	ug/kg	JN	bl,k
PDI-SG-B381-BL1	SE	1,2,3,4,7,8-HxCDD	0.00069	0.00013	ug/kg	J+	bl
PDI-SG-B381-BL1	SE	1,2,3,4,7,8-HxCDF	0.00074	0.00013	ug/kg	J+	bl
PDI-SG-B381-BL1	SE	1,2,3,6,7,8-HxCDF	0.00046	0.00012	ug/kg	J+	bl
PDI-SG-B381-BL1	SE	1,2,3,7,8-PeCDF		0.00018	ug/kg	U	bl
PDI-SG-B381-BL1	SE	2,3,4,6,7,8-HxCDF		0.00029	ug/kg	U	bl
PDI-SG-B381-BL1	SE	2,3,4,7,8-PeCDF		0.00028	ug/kg	U	bl

Sample ID	Matrix	Compound	Result	EDL	Units	Validation Qualifiers	Validation Reason
PDI-SG-B381-BL1	SE	2,3,7,8-TCDD	0.00023	0.000072	ug/kg	JN	k
PDI-SG-B381-BL1	SE	2,3,7,8-TCDF	0.00047	0.000070	ug/kg	J+	bl
PDI-SG-B381-BL1-D	SE	1,2,3,4,7,8,9-HpCDF	0.00059	0.00043	ug/kg	J+	bl
PDI-SG-B381-BL1-D	SE	1,2,3,4,7,8-HxCDD	0.00074	0.000097	ug/kg	J+	bl
PDI-SG-B381-BL1-D	SE	1,2,3,4,7,8-HxCDF	0.0011	0.00018	ug/kg	J+	bl
PDI-SG-B381-BL1-D	SE	1,2,3,6,7,8-HxCDF	0.00049	0.00015	ug/kg	J+	bl
PDI-SG-B381-BL1-D	SE	1,2,3,7,8-PeCDF		0.00020	ug/kg	U	bl
PDI-SG-B381-BL1-D	SE	2,3,4,6,7,8-HxCDF	0.00039	0.00012	ug/kg	J+	bl
PDI-SG-B381-BL1-D	SE	2,3,4,7,8-PeCDF		0.00027	ug/kg	U	bl
PDI-SG-B381-BL1-D	SE	2,3,7,8-TCDF	0.00048	0.000068	ug/kg	J+	bl
PDI-SG-B385-BL1	SE	1,2,3,4,6,7,8-HpCDF	0.012	0.00022	ug/kg	JN	k
PDI-SG-B385-BL1	SE	1,2,3,4,7,8-HxCDD	0.00090	0.00010	ug/kg	J+	bl
PDI-SG-B385-BL1	SE	2,3,7,8-TCDD	0.00031	0.000058	ug/kg	JN	k
PDI-SG-B385-BL1	SE	2,3,7,8-TCDF	0.00089	0.00014	ug/kg	J+	bl
PDI-SG-B386-BL1	SE	1,2,3,4,6,7,8-HpCDF	0.0098	0.00019	ug/kg	JN	k
PDI-SG-B386-BL1	SE	1,2,3,4,7,8,9-HpCDF	0.00065	0.00018	ug/kg	J+	bl
PDI-SG-B386-BL1	SE	1,2,3,4,7,8-HxCDD	0.00064	0.000084	ug/kg	J+	bl
PDI-SG-B386-BL1	SE	1,2,3,6,7,8-HxCDF	0.00033	0.00014	ug/kg	JN	k
PDI-SG-B386-BL1	SE	1,2,3,7,8,9-HxCDF		0.00021	ug/kg	U	bl
PDI-SG-B386-BL1	SE	1,2,3,7,8-PeCDD	0.00035	0.000068	ug/kg	J+	bl
PDI-SG-B386-BL1	SE	1,2,3,7,8-PeCDF	0.00024	0.000041	ug/kg	J+	bl
PDI-SG-B386-BL1	SE	2,3,4,6,7,8-HxCDF	0.00029	0.00011	ug/kg	J+	bl
PDI-SG-B386-BL1	SE	2,3,4,7,8-PeCDF	0.00024	0.000047	ug/kg	J+	bl
PDI-SG-B386-BL1	SE	2,3,7,8-TCDD	0.00024	0.000051	ug/kg	JN	k
PDI-SG-B386-BL1	SE	2,3,7,8-TCDF	0.00068	0.000050	ug/kg	J+	bl
PDI-SG-B388-BL1	SE	1,2,3,4,6,7,8-HpCDF	0.0064	0.00046	ug/kg	J	fd
PDI-SG-B388-BL1	SE	1,2,3,4,7,8-HxCDD	0.00060	0.00015	ug/kg	JN	bl,k
PDI-SG-B388-BL1	SE	1,2,3,4,7,8-HxCDF	0.00070	0.00021	ug/kg	J+	bl
PDI-SG-B388-BL1	SE	1,2,3,6,7,8-HxCDF	0.00039	0.00019	ug/kg	J+	bl
PDI-SG-B388-BL1	SE	2,3,4,6,7,8-HxCDF		0.00021	ug/kg	U	bl
PDI-SG-B388-BL1	SE	2,3,4,7,8-PeCDF		0.00028	ug/kg	U	bl
PDI-SG-B388-BL1	SE	2,3,7,8-TCDF	0.00049	0.000067	ug/kg	J+	bl
PDI-SG-B388-BL1	SE	OCDF	0.023	0.00018	ug/kg	J	fd
PDI-SG-B388-BL1-D	SE	1,2,3,4,6,7,8-HpCDF	0.025	0.0010	ug/kg	J	fd
PDI-SG-B388-BL1-D	SE	1,2,3,4,7,8,9-HpCDF	0.0014	0.00095	ug/kg	J+	bl
PDI-SG-B388-BL1-D	SE	1,2,3,4,7,8-HxCDD	0.0013	0.000092	ug/kg	J+	bl
PDI-SG-B388-BL1-D	SE	1,2,3,4,7,8-HxCDF	0.0012	0.00017	ug/kg	J+	bl
PDI-SG-B388-BL1-D	SE	1,2,3,6,7,8-HxCDF	0.00089	0.00016	ug/kg	J+	bl
PDI-SG-B388-BL1-D	SE	2,3,4,6,7,8-HxCDF	0.00058	0.00012	ug/kg	J+	bl
PDI-SG-B388-BL1-D	SE	2,3,4,7,8-PeCDF		0.00023	ug/kg	U	bl

Sample ID	Matrix	Compound	Result	EDL	Units	Validation Qualifiers	Validation Reason
PDI-SG-B388-BL1-D	SE	2,3,7,8-TCDD	0.00014	0.000076	ug/kg	JN	k
PDI-SG-B388-BL1-D	SE	2,3,7,8-TCDF	0.00051	0.000077	ug/kg	J+	bl
PDI-SG-B388-BL1-D	SE	OCDF	0.080	0.00024	ug/kg	J	fd
PDI-SG-B400-BL1	SE	1,2,3,4,6,7,8-HpCDF	0.0090	0.00015	ug/kg	JN	k
PDI-SG-B400-BL1	SE	1,2,3,4,7,8,9-HpCDF	0.00053	0.00015	ug/kg	J+	bl
PDI-SG-B400-BL1	SE	1,2,3,4,7,8-HxCDD	0.00071	0.000079	ug/kg	J+	bl
PDI-SG-B400-BL1	SE	1,2,3,7,8,9-HxCDF		0.00015	ug/kg	U	bl
PDI-SG-B400-BL1	SE	1,2,3,7,8-PeCDD	0.00043	0.000080	ug/kg	J+	bl
PDI-SG-B400-BL1	SE	1,2,3,7,8-PeCDF	0.00032	0.000063	ug/kg	J+	bl
PDI-SG-B400-BL1	SE	2,3,4,6,7,8-HxCDF	0.00040	0.000087	ug/kg	J+	bl
PDI-SG-B400-BL1	SE	2,3,4,7,8-PeCDF	0.00035	0.000069	ug/kg	J+	bl
PDI-SG-B400-BL1	SE	2,3,7,8-TCDD	0.00023	0.000045	ug/kg	JN	k
PDI-SG-B400-BL1	SE	2,3,7,8-TCDF	0.0011	0.000061	ug/kg	J+	bl
PDI-SG-B408-BL1	SE	1,2,3,4,6,7,8-HpCDF	0.0019	0.000050	ug/kg	JN	k
PDI-SG-B408-BL1	SE	1,2,3,4,7,8,9-HpCDF		0.00016	ug/kg	U	bl
PDI-SG-B408-BL1	SE	1,2,3,4,7,8-HxCDD		0.00022	ug/kg	U	bl
PDI-SG-B408-BL1	SE	1,2,3,4,7,8-HxCDF	0.00021	0.000079	ug/kg	J+	bl
PDI-SG-B408-BL1	SE	1,2,3,6,7,8-HxCDD	0.00050	0.000043	ug/kg	J+	bl
PDI-SG-B408-BL1	SE	1,2,3,7,8,9-HxCDD	0.00043	0.000042	ug/kg	J+	bl
PDI-SG-B408-BL1	SE	1,2,3,7,8,9-HxCDF		0.00014	ug/kg	U	bl
PDI-SG-B408-BL1	SE	1,2,3,7,8-PeCDD		0.0001	ug/kg	U	bl
PDI-SG-B408-BL1	SE	1,2,3,7,8-PeCDF		0.00010	ug/kg	U	bl
PDI-SG-B408-BL1	SE	2,3,4,7,8-PeCDF		0.00010	ug/kg	U	bl
PDI-SG-B408-BL1	SE	2,3,7,8-TCDD	0.00011	0.000035	ug/kg	JN	k
PDI-SG-B408-BL1	SE	2,3,7,8-TCDF		0.00039	ug/kg	U	bl

Attachment A

Nonconformance Summary Tables

Table A-1 - Lab Blanks

Blank ID	Compound	Result	QL	BAL	Units	Associated Samples
MB 320-222518/1-A	1,2,3,4,6,7,8-HpCDD	0.000539	0.0050	0.002695	ug/kg	PDI-SG-B312-BL1 PDI-SG-B328-BL1 PDI-SG-B331-BL1 PDI-SG-B336-BL1 PDI-SG-B365-BL1 PDI-SG-B369-BL1 PDI-SG-B375-BL1 PDI-SG-B376-BL1 PDI-SG-B379-BL1 PDI-SG-B381-BL1 PDI-SG-B381-BL1-D PDI-SG-B388-BL1 PDI-SG-B388-BL1-D
	1,2,3,4,6,7,8-HpCDF	0.000375	0.0050	0.001875	ug/kg	
	1,2,3,4,7,8,9-HpCDF	0.000341	0.0050	0.001705	ug/kg	
	1,2,3,4,7,8-HxCDD	0.000446	0.0050	0.00223	ug/kg	
	1,2,3,4,7,8-HxCDF	0.000309	0.0050	0.001545	ug/kg	
	1,2,3,6,7,8-HxCDD	0.000321	0.0050	0.001605	ug/kg	
	1,2,3,6,7,8-HxCDF	0.000269	0.0050	0.001345	ug/kg	
	1,2,3,7,8,9-HxCDD	0.000255	0.0050	0.001275	ug/kg	
	1,2,3,7,8,9-HxCDF	0.000352	0.0050	0.00176	ug/kg	
	1,2,3,7,8-PeCDF	0.000228	0.0050	0.00114	ug/kg	
	2,3,4,6,7,8-HxCDF	0.000307	0.0050	0.001535	ug/kg	
	2,3,4,7,8-PeCDF	0.000296	0.0050	0.00148	ug/kg	
	2,3,7,8-TCDF	0.000180	0.0010	0.0009	ug/kg	
	OCDD	0.00230	0.010	0.0115	ug/kg	
	OCDF	0.000759	0.010	0.003795	ug/kg	
MB 320-223214/1-A	1,2,3,4,6,7,8-HpCDD	1.52	50	7.6	pg/L	PDI-RB-VV-180429-1730 PDI-RB-VV-180429-1800
	1,2,3,4,6,7,8-HpCDF	0.744	50	3.72	pg/L	
	1,2,3,4,7,8,9-HpCDF	0.825	50	4.125	pg/L	
	1,2,3,4,7,8-HxCDD	1.22	50	6.1	pg/L	
	1,2,3,7,8,9-HxCDF	0.971	50	4.855	pg/L	
	2,3,7,8-TCDF	0.506	10	2.53	pg/L	
	OCDD	6.54	100	32.7	pg/L	
MB 320-223997/1-A	1,2,3,4,6,7,8-HpCDD	0.000323	0.0050	0.001615	ug/kg	PDI-SG-B339-BL1 PDI-SG-B340-BL1 PDI-SG-B341-BL1 PDI-SG-B343-BL1 PDI-SG-B345-BL1 PDI-SG-B347-BL1 PDI-SG-B347-BL1-D PDI-SG-B350-BL1 PDI-SG-B351-BL1 PDI-SG-B353-BL1 PDI-SG-B359-BL1 PDI-SG-B360-BL1 PDI-SG-B361-BL1 PDI-SG-B364-BL1 PDI-SG-B370-BL1 PDI-SG-B371-BL1 PDI-SG-B385-BL1
	1,2,3,4,6,7,8-HpCDF	0.000194	0.0050	0.00097	ug/kg	
	1,2,3,4,7,8,9-HpCDF	0.000193	0.0050	0.000965	ug/kg	
	1,2,3,4,7,8-HxCDD	0.000255	0.0050	0.001275	ug/kg	
	1,2,3,4,7,8-HxCDF	0.000142	0.0050	0.00071	ug/kg	
	1,2,3,6,7,8-HxCDD	0.000169	0.0050	0.000845	ug/kg	
	1,2,3,7,8,9-HxCDD	0.000172	0.0050	0.00086	ug/kg	
	1,2,3,7,8,9-HxCDF	0.000285	0.0050	0.001425	ug/kg	
	1,2,3,7,8-PeCDD	0.000145	0.0050	0.000725	ug/kg	
	1,2,3,7,8-PeCDF	0.000153	0.0050	0.000765	ug/kg	
	2,3,4,6,7,8-HxCDF	0.000156	0.0050	0.00078	ug/kg	
	2,3,4,7,8-PeCDF	0.000138	0.0050	0.00069	ug/kg	
	2,3,7,8-TCDF	0.000423	0.0010	0.002115	ug/kg	
	OCDD	0.00137	0.010	0.00685	ug/kg	

Blank ID	Compound	Result	QL	BAL	Units	Associated Samples
	OCDF	0.000437	0.010	0.002185	ug/kg	PDI-SG-B386-BL1 PDI-SG-B400-BL1 PDI-SG-B408-BL1

Table A-2 - Field Duplicates

Sample ID	Duplicate ID	Compound	Sample Result	Qual	Duplicate Result	Qual	QL	Units	RPD
PDI-SG-B388-BL1	PDI-SG-B388-BL1-D	1,2,3,4,6,7,8-HpCDF	0.0064	B	0.025	B	0.0050	ug/kg	118.5
PDI-SG-B388-BL1	PDI-SG-B388-BL1-D	OCDF	0.023	B	0.080	B	0.0099	ug/kg	110.7

Attachment B
Qualifier Codes and Explanations

Qualifier	Explanation
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