Portland Harbor Sample Receipt, Analysis, and Results Report

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Introduction

This report is part of a baseline fish tissue study at the Portland Harbor Superfund Site (Portland Harbor Site). The U.S. Environmental Protection Agency (EPA) conducted this study as part of the Portland Harbor Remedial Investigation and Feasibility Study (RI/FS) and in conformance with the National Contingency Plan. The City of Portland provided assistance at the EPA's request.

This study adds to the body of information that will be used to establish baseline concentrations of polychlorinated biphenyls (PCB) in smallmouth bass tissue. The EPA will use the updated baseline data as a point of comparison to future contaminant concentrations measured in smallmouth bass during and following remedy implementation. The area being investigated is referred to as the Portland Harbor Study Area (study area).

This report summarizes sample receipt, analysis, and results of fish tissue samples collected during the baseline fish tissue study. The samples were collected in accordance with a sampling and analysis plan (SAP) prepared for the EPA by GSI Water Solutions, Inc. (GSI) (GSI, 2011), and as documented in the Field Sampling Report (GSI, 2012).

The report includes three main sections. The first section discusses the receipt of samples by the EPA, subsequent sample processing, and sample shipment (to and from the analytical laboratories). The second section discusses the analysis of samples at each laboratory and provides a summary of data validation results. The final section discusses the sample results, including a discussion of data reduction steps used to calculate summed totals to be used in the RI/FS and risk assessments (RA). Tables of results and the data validation report are attached to this report.

This report was prepared by Tetra Tech under EPA contract number EP-W-07-078. Tetra Tech was responsible for subcontracting laboratory analysis to Pace Analytical Laboratories (Pace), preparing the data for database entry, and preparing this report.

Sample Delivery, Receipt, Processing, and Analysis

As described in the Field Sampling Report, smallmouth bass were collected at 68 "Target" sampling locations and 14 "Lifecycle" sampling locations. The Target samples were generally within the 225- to 335-millimeter (approximately 9- to 14-inch) size range specified in the SAP while the Lifecycle samples ranged in size from 197 to 455 millimeters. The Target samples were collected by GSI and shipped to KAP Technologies Inc. (KAP), laboratory in Woodlands, Texas, on September 19 and October 11, 2011. The Lifecycle samples were shipped to the U.S. Army Corps of Engineers (USACE) Engineer Research and Development Center in Vicksburg, Mississippi, on October 11, 2011. Table 1 identifies the samples as either Target or Lifecycle and indicates their respective shipment batch. Figure 1 shows the locations of the samples collected. More detailed location maps are included in the Field Sampling Report prepared by GSI.

The initial shipment of Target samples, 50 in all, was incorrectly processed by KAP. The samples should have been homogenized as whole body samples and divided into two separate aliquots. One aliquot was intended for analysis of semivolatile organic compounds (SVOC), polycyclic aromatic hydrocarbons (PAH), and organochlorine pesticides by KAP, and the other aliquot was to be shipped to Pace in Minneapolis, Minnesota, for analysis of PCB congeners and lipid content.

Instead of following contract specifications, KAP prepared skinless fillets and discarded the skin and carcass portions. Upon discovery of this mishap, the EPA determined that the best course of action and use of resources was to refrain from analyzing the skinless fillet samples and instead analyze skin-on fillet and carcass separately from each of the 18 unprocessed Target samples held at KAP and the 14 Lifecycle samples held at the USACE Vicksburg facility. All samples were shipped to the EPA's Manchester Environmental Laboratory (MEL) in Port Orchard, Washington. These 32 samples were then processed as fillet (skin on) and carcass portions which were weighed, homogenized, and shipped to Pace for analysis of PCB congeners and lipid content. Fillet removal was conducted in accordance with the procedure described in Appendix C of the *Portland Harbor RI/FS Round 3B Field Sampling Plan for Fish and Invertebrate Tissue and Collocated Surface Sediment* (Integral, 2007). The skin and belly flap were included in the fillet sample. Because of budget restrictions, modifications to the processing scheme, and termination of the KAP contract, the EPA decided to forego the analysis of SVOC, PAH, and organochlorine pesticides. Table 1 summarizes the samples collected, and identifies which samples were not analyzed as a result of the processing error. The chains of custody and MEL sample processing forms are included in Appendices A and B to this report.

Pace analyzed each sample for the following analyte groups:

- PCB following SOW SOM01.2 and EPA Method 1668C
- Lipids following SOW SOM01.2 and EPA Method 1668C

Following analysis and data validation, the remaining sample material was returned from KAP and Pace to MEL for long-term archival.

Data Validation

The EPA Region 10 quality assurance (QA) staff validated the data following *Guidance on Environmental Data Verification and Validation* (EPA, 2002), *EPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review* (EPA, 2008), and *EPA Region 10 Standard Operating Procedure (SOP) for the Validation of Method 1668 Toxic, Dioxin-like PCB Data* (EPA, 1995). A Stage 4 data validation was conducted on all analytical data (EPA, 2012).

Table 2 summarizes the results of the data validation (see tables attached to this report). The data validation report is included in Appendix C to this report.

The EPA made few data qualifications during the data validation process. Qualifications were made for method and proof blank contamination, chromatographic interferences, and chromatographic peak saturation.

Data validation included an assessment of blank samples, including four rinsate blank samples collected during sample homogenization. Several analytes were qualified as estimated or non-detect based on trace laboratory blank contamination. The rinsate blank samples were analyzed for PCB congeners, and the results were compared with associated samples. Although a few congeners were detected at trace levels, the EPA did not qualify any samples based on rinsate blank contamination because no detected sample results were detected at concentrations within 5 times higher than the value in the associated rinsate blank (EPA, 2012).

Sample Results

In addition to the raw results, the SAP (GSI, 2011) specifies two sets of rules for summing data and retaining or modifying qualifiers and reducing the data to a single value per sample and summation group. The two sets of rules include one for use in the RI and another for use in the RA and background data sets, in accordance with the Portland Harbor RI/FS guidelines (Kennedy/Jenks, 2004).

Summation rules for the RI data set are as follows:

- For samples with at least one detected result for the summed analytes included in the total:
    - Detected concentrations are included in the calculated total.
    - Non-detected concentrations are not included in the calculated total (i.e., treated as zero).
- For samples with no detected results:
    - The highest detection limit is used for the summation. The calculated total result is indicated with a “U” to indicate it was not detected.

Summation rules for the RA and background data sets are as follows:

- For samples with at least one detected result for the summed analytes included in the total:
    - All detected concentrations are included in the calculated total.
    - All non-detected results for analytes, if they were detected at least once in the RA data set within the study area for a given medium (in this case, fish tissue), are included in the calculated total at one-half the detection limit.
    - All non-detected results for analytes, if they were not detected in any sample within the RA data set within the study area for a given medium, are not included in the calculated total (i.e., treated as zero).
- For samples with no detected results, where some of the summation analytes are determined to be present within the study area:
    - The highest detection limit for analytes present within the study area is used for the summation. The calculated total result is indicated with a “U” to indicate it was not detected.

Data qualifiers were carried through the summation procedure. If all the analytes were not detected, a "U" qualifier is applied to the summed data to indicate that all results were reported as not detected. All calculated totals are flagged with a "T" qualifier to indicate that they are mathematically derived values.

After the summations were complete, an overall concentration was calculated for each fish sample. These concentrations are reported as "whole body (calculated)" in the tissue field. The whole body concentrations were calculated only for the summation analytes (and not including the homolog summations), and were calculated using the following equation:

$$C_{wb} = \frac{\left(C_f \cdot M_f\right) + \left(C_{bwof} \cdot M_{bwof}\right)}{\left(M_{fillet} + M_{bwof}\right)}$$

where:

C_{wb} = the calculated concentration of the whole body fish sample
C_f = the measured concentration of the fillet fish sample
C_{bwof} = the measured concentration of the body without fillet fish sample (i.e., carcass)
M_f = the mass of the fillet fish sample
M_{bwof} = the mass of the body without fillet fish sample

Table 3 lists the summation group results to be calculated for each sample. Table 4 summarizes the laboratory data, including the summed totals as defined in Table 3 and the summation rules listed above. Table 5 lists only the summed totals for only the "fillet" and "whole body (calculated)" tissue types.

References

GSI Water Solutions, Inc. (GSI). 2011. Sampling and Analysis Plan, Portland Harbor 2011 Baseline Smallmouth Bass Tissue Study, Willamette River, Portland, Oregon. Prepared for U.S. Environmental Protection Agency. September 2011.

GSI. 2012. Portland Harbor 2011 Baseline Smallmouth Bass Tissue Study, Field Sampling Report, Willamette River, Portland, Oregon. Prepared for U.S. Environmental Protection Agency, U.S. Army Corps of Engineers, and City of Portland. June 2012.

Integral. 2007. Portland Harbor RI/FS Round 3B Field Sampling Plan for Fish and Invertebrate Tissue and Collocated Surface Sediment. Prepared for the Lower Willamette Group, Portland, Oregon. Integral Consulting, Inc. October 22, 2007.

Kennedy/Jenks. 2004. Portland Harbor RI/FS Technical Memorandum: Guidelines for Data Averaging and the Treatment of Non-detected Values for the Round 1 Database. Prepared for the Lower Willamette Group, Portland OR. Kennedy/Jenks, Integral Consulting, Inc., Windward Environmental, LLC. June 25, 2004.

U.S. Environmental Protection Agency (EPA). 1995. EPA Region 10 SOP for the Validation of Method 1668 Toxic, Dioxin-like PCB Data. EPA Region 10, Environmental Services Division, Seattle, WA. December 8, 1995.

EPA. 2002. Guidance on Environmental Data Verification and Validation. EPA QA/G-8. EPA/240/R-02/004. EPA Office of Environmental Information, Washington DC. November 2002.

EPA. 2008. USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review. USEPA-540-R-08-01. EPA Office of Superfund Remediation and Technology Innovation. June 2008.

EPA. 2012. Memorandum. Subject: Data Validation Report for the full list of 209 Polychlorinated Biphenyl Congener (PCB Congeners) Analyses of Small-Mouthed Bass Tissue Samples Collected for the Portland Harbor RI/FS BACE Project Numbers: 10180829, 100180826, 101867, 101870. From: Ginna Grepo-Grove, R10 QA Manager, Office of Environmental Assessment, USEPA. To: Chip Humphrey and Matthew Lambert. June 13, 2012.

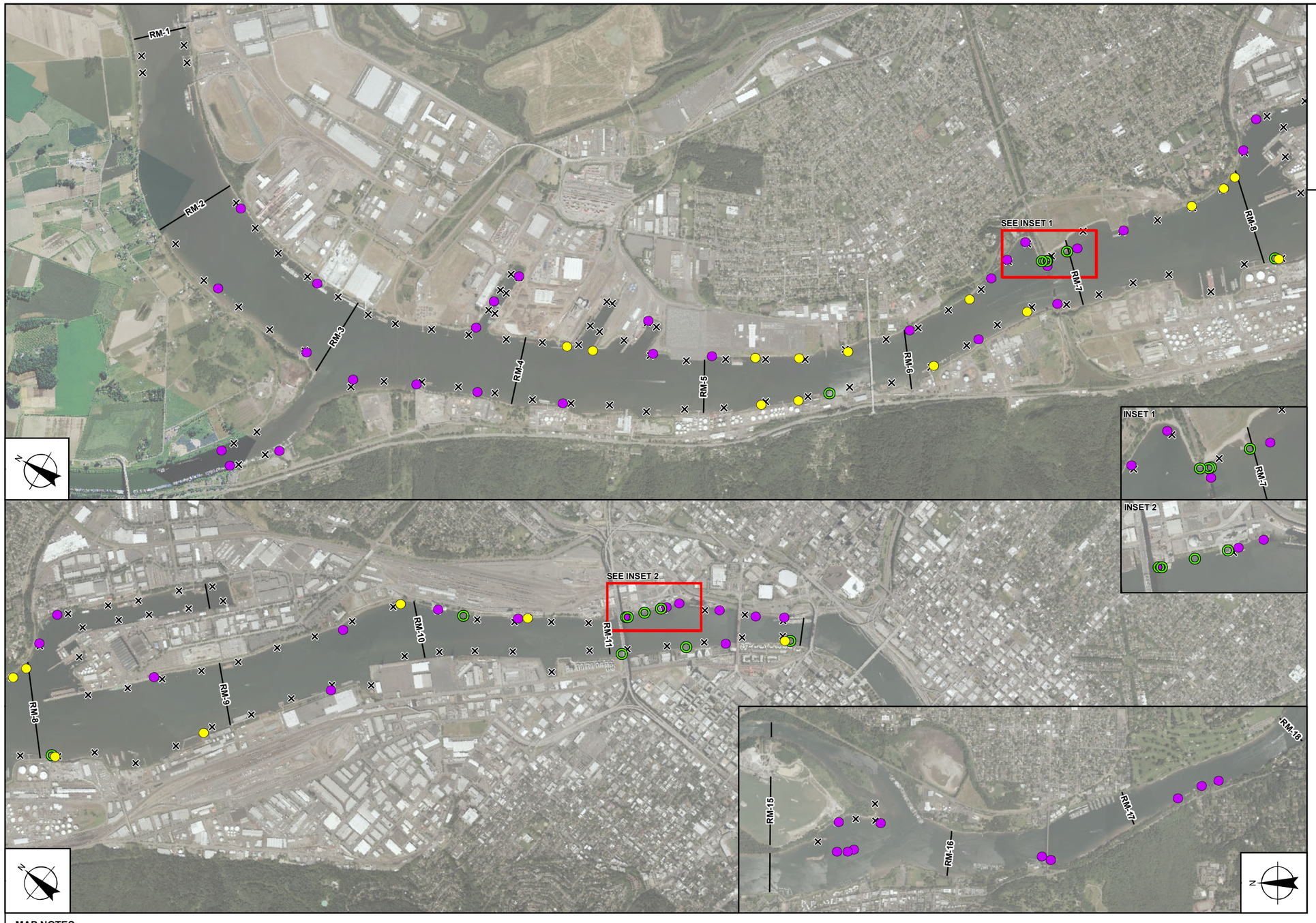
Figures

FIGURE 1

Sample Locations Overview

Portland Harbor Sample Receipt, Analysis, and Results Report

Willamette River
Portland, Oregon



LEGEND

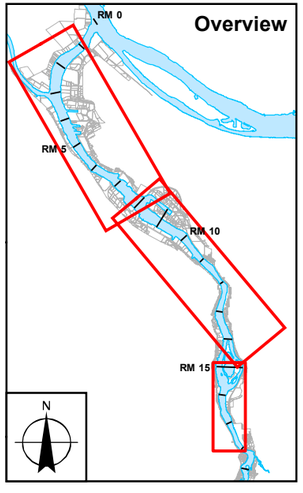
- × Target SMB Sample Location

Actual SMB Sample Locations

- Analyzed Target
- Not Analyzed Target
- Analyzed Lifecycle

All Other Data

- River Mile



MAP NOTES:

Projection: Oregon State Plane North
Datum: North American Datum of 1983
Date: September 11, 2012

1. The locations of all features shown are approximate.
2. RM = River Mile
3. SMB = Smallmouth Bass

1,400 0 1,400 2,800
1 inch = 2,800 feet

Tables

Table 1: Sample Locations

Portland Harbor Sample Receipt, Analysis, and Results Report

Location	Sample ID (EPA1-)	Collection Date	Sample Purpose	Analyzed?	Easting (NAD83)	Northing (NAD83)	Shipment
RM2E	EPA1-SB02E-01	9/22/2011	Target	Not Analyzed	7617559.5870	724490.8171	EPA 1
	EPA1-SB02E-04	9/15/2011	Target	Not Analyzed	7616831.9168	721677.8505	EPA 1
RM2W	EPA1-SB02W-02	9/16/2011	Target	Not Analyzed	7615381.2888	723941.6522	EPA 1
	EPA1-SB02W-05	9/16/2011	Target	Not Analyzed	7615077.7717	720994.6204	EPA 1
RM3E	EPA1-SB03E-04	9/15/2011	Target	Not Analyzed	7617951.5436	717347.3249	EPA 1
	EPA1-SB03E-05	9/20/2011	Target	Not Analyzed	7618807.7333	717284.6256	EPA 1
	EPA1-SB03E-08	9/22/2011	Target	Not Analyzed	7619736.8935	717037.2854	EPA 1
RM3W	EPA1-SB03W-01	9/16/2011	Target	Not Analyzed	7615068.6544	719538.6133	EPA 1
	EPA1-SB03W-03	9/16/2011	Target	Not Analyzed	7615813.7848	717984.5561	EPA 1
	EPA1-SB03W-05	9/16/2011	Target	Not Analyzed	7616463.1741	716444.7617	EPA 1
MC	EPA1-SBMC-01	9/15/2011	Target	Not Analyzed	7611620.6892	721658.7832	EPA 1
	EPA1-SBMC-03	9/15/2011	Target	Not Analyzed	7612397.2282	720301.7512	EPA 1
	EPA1-SBMC-04	9/15/2011	Target	Not Analyzed	7611374.3123	721259.7402	EPA 1
RM4E	EPA1-SB04E-02	9/29/2011	Target	Analyzed	7618740.3626	714962.8020	EPA 2
	EPA1-SB04E-06	9/29/2011	Target	Analyzed	7618995.0805	714296.5253	EPA 2
	EPA1-SB04E-08	9/14/2011	Target	Not Analyzed	7620447.4535	713407.5043	EPA 1
	EPA1-SB04E-10	9/14/2011	Target	Not Analyzed	7619734.6972	712843.0509	EPA 1
RM4W	EPA1-SB04W-02	9/16/2011	Target	Not Analyzed	7617350.9321	714289.1719	EPA 1
RM5E	EPA1-SB05E-01	9/14/2011	Target	Not Analyzed	7620479.9472	711431.5204	EPA 1
	EPA1-SB05E-02	10/3/2011	Target	Analyzed	7621025.9515	710385.5935	EPA 2
	EPA1-SB05E-03	10/3/2011	Target	Analyzed	7621611.1795	709354.4934	EPA 2
	EPA1-SB05E-04	10/6/2011	Target	Analyzed	7622425.6789	708300.1288	EPA 2
RM5W	EPA1-SB05W-02	10/2/2011	Target	Analyzed	7620011.5042	709612.5127	EPA 2
	EPA1-SB05W-03	9/28/2011	Target	Analyzed	7620605.9674	708796.5154	EPA 2
	EPA1-SB05W-04	9/22/2011	Lifecycle	Analyzed	7621193.7511	708165.8562	USACE

Table 1: Sample Locations

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Location	Sample ID (EPA1-)	Collection Date	Sample Purpose	Analyzed?	Easting (NAD83)	Northing (NAD83)	Shipment
RM6E	EPA1-SB06E-01	9/12/2011	Target	Not Analyzed	7623765.1730	707139.9929	EPA 1
	EPA1-SB06E-02	10/3/2011	Target	Analyzed	7625302.7482	706147.4378	EPA 2
	EPA1-SB06E-03	9/12/2011	Target	Not Analyzed	7626095.4709	705927.5462	EPA 1
	EPA1-SB06E-04	9/21/2011	Target	Not Analyzed	7626744.2407	705806.6349	EPA 1
	EPA1-SB06E-05	9/12/2011	Target	Not Analyzed	7627396.9465	705617.3686	EPA 1
	EPA1-SB06E-06	9/16/2011	Target	Not Analyzed	7627142.7577	704779.2220	EPA 1
	EPA1-SB06E-08	10/8/2011	Lifecycle	Analyzed	7627751.0048	704513.7004	USACE
	EPA1-SB06E-09	10/8/2011	Lifecycle	Analyzed	7627261.8801	704853.8424	USACE
	EPA1-SB06E-10	10/8/2011	Lifecycle	Analyzed	7627239.7773	704870.1191	USACE
	EPA1-SB06E-11	10/8/2011	Lifecycle	Analyzed	7627178.5231	704970.9609	USACE
RM6W	EPA1-SB06W-01	10/7/2011	Target	Analyzed	7623259.7390	706089.1385	EPA 2
	EPA1-SB06W-02	9/21/2011	Target	Not Analyzed	7624486.3170	705395.1558	EPA 1
	EPA1-SB06W-04	10/6/2011	Target	Analyzed	7625793.9513	704637.7654	EPA 2
	EPA1-SB06W-05	9/20/2011	Target	Not Analyzed	7626390.2578	704033.1639	EPA 1
RM7E	EPA1-SB07E-01	9/22/2011	Target	Not Analyzed	7627963.1834	704313.4497	EPA 1
	EPA1-SB07E-02	9/12/2011	Target	Not Analyzed	7629007.5720	703478.0664	EPA 1
	EPA1-SB07E-04	10/3/2011	Target	Analyzed	7630501.7604	702199.7767	EPA 2
	EPA1-SB07E-05	10/3/2011	Target	Analyzed	7631760.2932	701577.0326	EPA 2
	EPA1-SB07E-06	10/3/2011	Target	Analyzed	7631349.4996	701694.0680	EPA 2
RM8E	EPA1-SB08E-01	9/19/2011	Target	Not Analyzed	7632509.7734	701744.1795	EPA 1
	EPA1-SB08E-04	9/12/2011	Target	Not Analyzed	7633809.8748	698774.8865	EPA 1
RM8W	EPA1-SB08W-01	9/27/2011	Target	Analyzed	7630437.2081	699436.5357	EPA 2
	EPA1-SB08W-05	9/27/2011	Target	Analyzed	7633514.5928	696771.2835	EPA 2
	EPA1-SB08W-06	10/7/2011	Lifecycle	Analyzed	7630400.5316	699535.9693	USACE
SIL	EPA1-SBSIL-01	9/21/2011	Target	Not Analyzed	7633413.0652	701868.4090	EPA 1
RM9E	EPA1-SB09E-04	9/13/2011	Target	Not Analyzed	7638082.5826	695670.2471	EPA 1
	EPA1-SB09E-05	9/28/2011	Target	Analyzed	7639620.3431	694926.9917	EPA 2
RM9W	EPA1-SB09W-03	9/19/2011	Target	Not Analyzed	7636621.4442	694872.3983	EPA 1

Table 1: Sample Locations

Portland Harbor Sample Receipt, Analysis, and Results Report

Location	Sample ID (EPA1-)	Collection Date	Sample Purpose	Analyzed?	Easting (NAD83)	Northing (NAD83)	Shipment
RM10E	EPA1-SB10E-01	9/13/2011	Target	Not Analyzed	7640156.5257	694052.8473	EPA 1
	EPA1-SB10E-03	9/13/2011	Target	Not Analyzed	7641370.1634	692238.8199	EPA 1
	EPA1-SB10E-04	9/28/2011	Target	Analyzed	7641543.9453	692043.6338	EPA 2
	EPA1-SB10E-06	9/28/2011	Lifecycle	Analyzed	7640465.8526	693421.9495	USACE
RM11E	EPA1-SB11E-01	9/19/2011	Target	Not Analyzed	7643282.6779	690004.2714	EPA 1
	EPA1-SB11E-02	9/13/2011	Target	Not Analyzed	7644492.4098	689157.4272	EPA 1
	EPA1-SB11E-03	9/13/2011	Target	Not Analyzed	7645051.2669	688194.8416	EPA 1
	EPA1-SB11E-04	9/13/2011	Target	Not Analyzed	7645545.6549	687339.7093	EPA 1
	EPA1-SB11E-05	9/13/2011	Target	Not Analyzed	7646028.5524	686729.8025	EPA 1
	EPA1-SB11E-06	9/13/2011	Target	Not Analyzed	7644188.9814	689349.8960	EPA 1
	EPA1-SB11E-07	9/19/2011	Lifecycle	Analyzed	7643279.6427	690016.3478	USACE
	EPA1-SB11E-08	10/7/2011	Lifecycle	Analyzed	7644062.9295	689439.2818	USACE
	EPA1-SB11E-09	10/7/2011	Lifecycle	Analyzed	7643687.4064	689713.2152	USACE
	EPA1-SB11E-10	10/7/2011	Lifecycle	Analyzed	7643305.4448	689983.1343	USACE
RM11W	EPA1-SB11W-04	9/16/2011	Target	Not Analyzed	7644463.1731	687488.7531	EPA 1
	EPA1-SB11W-05	9/28/2011	Target	Analyzed	7645552.1395	686305.2547	EPA 2
	EPA1-SB11W-06	9/16/2011	Lifecycle	Analyzed	7645637.3541	686200.0404	USACE
	EPA1-SB11W-07	9/28/2011	Lifecycle	Analyzed	7643703.1530	688248.8439	USACE
	EPA1-SB11W-08	9/28/2011	Lifecycle	Analyzed	7642440.5451	689464.8130	USACE
RM15E	EPA1-SB15E-01	9/26/2011	Target	Not Analyzed	7646308.0338	668795.0119	EPA 1
	EPA1-SB15E-02	9/23/2011	Target	Not Analyzed	7647151.9207	668742.9954	EPA 1
	EPA1-SB15E-03	9/23/2011	Target	Not Analyzed	7646369.0729	668317.7888	EPA 1
	EPA1-SB15E-04	9/26/2011	Target	Not Analyzed	7646307.1184	668494.3107	EPA 1
	EPA1-SB15E-05	9/26/2011	Target	Not Analyzed	7647121.2253	667554.4248	EPA 1
RM16W	EPA1-SB16W-01	9/26/2011	Target	Not Analyzed	7646073.9461	662735.8685	EPA 1
	EPA1-SB16W-02	9/26/2011	Target	Not Analyzed	7646177.9411	662992.9936	EPA 1
RM17W	EPA1-SB17W-01	9/26/2011	Target	Not Analyzed	7648317.5271	657983.1762	EPA 1
	EPA1-SB17W-02	9/26/2011	Target	Not Analyzed	7648171.4210	658470.3637	EPA 1
	EPA1-SB17W-03	9/26/2011	Target	Not Analyzed	7647825.1467	659142.0138	EPA 1

Table 2: Data Validation Results

Portland Harbor Sample Receipt, Analysis, and Results Report

Analysis	Matrix	Number Qualified as Estimated	Number Qualified as Rejected	Total Number of Results	Percent Qualified as Estimated	Percent Qualified as Rejected
Polychlorinated Biphenyls	Fish Tissue	39	0	11084	0.35%	0.00%
Lipids	Fish Tissue	0	0	64	0.00%	0.00%
Total Fish Tissue		39	0	11148	0.35%	0.00%

Table 3. Summary of Analyte Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

Summed Analyte	Analytes Included in the Summed Analyte Total	TEF	Summation Rules Used
Total PCB Congeners (RI Calc; ND=0)	All PCB congeners	1	RI Rules
Dioxin-like PCB congener TCDD toxicity equivalent (ND = 0)	PCB-77	0.0001	RI Rules
	PCB-81	0.0003	
	PCB-105	0.00003	
	PCB-114	0.00003	
	PCB-118	0.00003	
	PCB-123	0.00003	
	PCB-126	0.1	
	PCB-156	0.00003	
	PCB-157	0.00003	
	PCB-167	0.00003	
	PCB-169	0.03	
	PCB-189	0.00003	
Monochlorobiphenyl homologs	PCB-1 through PCB-3	1	RA Rules
Dichlorobiphenyl homologs	PCB-4 through PCB-15	1	RA Rules
Trichlorobiphenyl homologs	PCB-16 through PCB-39	1	RA Rules
Tetrachlorobiphenyl homologs	PCB-40 through PCB-81	1	RA Rules
Pentachlorobiphenyl homologs	PCB-82 through PCB-127	1	RA Rules
Hexachlorobiphenyl homologs	PCB-129 through PCB-169	1	RA Rules
Heptachlorobiphenyl homologs	PCB-170 through PCB-193	1	RA Rules
Octachlorobiphenyl homologs	PCB-194 through PCB-205	1	RA Rules
Nonachlorobiphenyl homologs	PCB-206 through PCB-208	1	RA Rules
Total PCB Congeners (RA Calc; ND=0.5 RDL)	All PCB congeners	1	RA Rules
PCB TEQ - Mammals	PCB-77	0.0001	RA Rules
	PCB-81	0.0003	
	PCB-105	0.00003	
	PCB-114	0.00003	
	PCB-118	0.00003	
	PCB-123	0.00003	
	PCB-126	0.1	
	PCB-156	0.00003	
	PCB-157	0.00003	
	PCB-167	0.00003	
	PCB-169	0.03	
	PCB-189	0.00003	

Table 3. Summary of Analyte Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

Summed Analyte	Analytes Included in the Summed Analyte Total	TEF	Summation Rules Used
PCB TEQ - Birds	PCB-77	0.05	RA Rules
	PCB-81	0.1	
	PCB-105	0.0001	
	PCB-114	0.0001	
	PCB-118	0.00001	
	PCB-123	0.00001	
	PCB-126	0.1	
	PCB-156	0.0001	
	PCB-157	0.0001	
	PCB-167	0.00001	
	PCB-169	0.001	
	PCB-189	0.00001	
PCB TEQ - Fish	PCB-77	0.0001	RA Rules
	PCB-81	0.0005	
	PCB-105	0.000005	
	PCB-114	0.000005	
	PCB-118	0.000005	
	PCB-123	0.000005	
	PCB-126	0.005	
	PCB-156	0.000005	
	PCB-157	0.000005	
	PCB-167	0.000005	
	PCB-169	0.00005	
	PCB-189	0.000005	

Notes:

PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
TEF	Toxic equivalency factor
TEQ	Toxic equivalent

RI rules for summation are as follows:

Calculated totals are the sum of all detected concentrations. Non-detected concentrations are treated as zero.

If none of the analytes are detected in a sample, the highest reporting limit is used for the calculated total, and a U qualifier is used to indicate the lack of detected values.

RA rules for summation are as follows:

Calculated totals are the sum of all detected concentrations. For any analyte detected at least once in the data set within the study area for a given medium, the result is included in the summation at one-half the detection limit.

If none of the analytes are detected in a sample, the highest reporting limit is used for the calculated total, and a U qualifier is used to indicate the lack of detected values.

Non-detect results for analytes that were never detected within a data set for a given medium were treated as zero.

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB04E-02			EPA1-SB04E-06			EPA1-SB05E-02		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7618740.363	7618740.363	7618740.363	7618995.081	7618995.081	7618995.081	7621025.952	7621025.952	7621025.952
Y-coordinate	714962.802	714962.802	714962.802	714296.5253	714296.5253	714296.5253	710385.5935	710385.5935	710385.5935
RiverMile	4.2	4.2	4.2	4.3	4.3	4.3	5.2	5.2	5.2
Sample Date	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	3-Oct-11	3-Oct-11	3-Oct-11
Sample Time	18:34	18:34	18:34	17:10	17:10	17:10	9:54	9:54	9:54
Sample Mass (g)	198.45	148.75	347.2	184.84	171.54	356.38	252.22	226.9	479.12
PCB001	21.6 U	21.4 U	NC	38.6	22.3 U	NC	36.8 U	15 U	NC
PCB002	26.8 U	26.6 U	NC	26.6 U	27.6 U	NC	45.6 U	18.6 U	NC
PCB003	16.9	14 U	NC	34.2	16.3	NC	24 U	9.8 U	NC
PCB004	465	88.2	NC	757	151	NC	264	46.5	NC
PCB005	26.8 U	26.6 U	NC	26.6 U	27.6 U	NC	45.6 U	18.6 U	NC
PCB006	79.1	24.9 U	NC	113	28.7	NC	42.6 U	17.4 U	NC
PCB007	34 U	33.7 U	NC	33.7 U	35 U	NC	57.8 U	23.6 U	NC
PCB008	384	93.1	NC	407	106	NC	130 U	46.7 U	NC
PCB009	25.8	16.3 U	NC	23.8 J	16.9 U	NC	27.9 U	11.4 U	NC
PCB010	22.8	17.7 U	NC	38.4	18.4 U	NC	30.4 U	12.4 U	NC
PCB011	241	172	NC	269	159	NC	239 U	154	NC
PCB012 & 013	23.9 U	23.7 U	NC	23.7 U	24.7 U	NC	40.7 U	16.6 U	NC
PCB014	26.3 U	26 U	NC	26 U	27 U	NC	44.6 U	18.2 U	NC
PCB015	170	57.2	NC	169	86.8	NC	67.2 U	27.4 U	NC
PCB016	471	102	NC	382	108	NC	163	36.4	NC
PCB017	942	181	NC	1,010	224	NC	418	67.6	NC
PCB018 & 030	1,370	273	NC	1,250	327	NC	491	92.1 U	NC
PCB019	751	132	NC	687	146	NC	528	78.7	NC
PCB020 & 028	5,770	1,110	NC	8,570	1,820	NC	2,150	348 U	NC
PCB021 & 033	1,090	249	NC	873	277	NC	367	90.2 U	NC
PCB022	1,310	269	NC	1,330	336	NC	418	79.3	NC
PCB023	31.7 U	31.4 U	NC	31.4 U	32.7 U	NC	53.9 U	22 U	NC
PCB024	27.3	19.1 U	NC	28.5	19.9 U	NC	32.8 U	13.4 U	NC
PCB025	301	56.5	NC	326	69.5	NC	110	19.6 U	NC
PCB026 & 029	773	145	NC	787	170	NC	284	45.2	NC
PCB027	162	31.9	NC	294	61.7	NC	97.8	19 U	NC
PCB031	3,140	616	NC	3,100	717	NC	1,010	183 U	NC
PCB032	497	97.1 U	NC	1,420	283	NC	216	40.1 U	NC
PCB034	22.8 U	22.6 U	NC	24.2	23.5 U	NC	38.7 U	15.8 U	NC
PCB035	23.7 U	23.4 U	NC	23.4 U	24.4 U	NC	40.2 U	16.4 U	NC
PCB036	25.1 U	24.9 U	NC	24.9 U	25.8 U	NC	42.6 U	17.4 U	NC
PCB037	930	195	NC	482	195	NC	142	46.1	NC
PCB038	18.2 U	18 U	NC	23	18.7 U	NC	30.9 U	12.6 U	NC
PCB039	22.8 U	22.6 U	NC	22.6 U	23.5 U	NC	38.7 U	15.8 U	NC
PCB040 & 041 & 071	2,620	501	NC	10,600	1,920	NC	1,120	204	NC
PCB042	2,160	403	NC	6,110	1,100	NC	878	145	NC
PCB043 & 073	226	40.7	NC	672	119	NC	174	27.5	NC
PCB044 & 047 & 065	10,600	1,890	NC	29,000	5,170	NC	5,550	928	NC
PCB045 & 051	1,420	256	NC	3,010	516	NC	592	89.2	NC
PCB046	273	71.4 U	NC	669	120	NC	123 U	50 U	NC
PCB048	1,240	223	NC	3,530	648	NC	513	90.2	NC
PCB049 & 069	7,030	1,270	NC	21,100	3,770	NC	3,540	565	NC
PCB050 & 053	908	159	NC	2,730	477	NC	432	63.7	NC

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB04E-02			EPA1-SB04E-06			EPA1-SB05E-02		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7618740.363	7618740.363	7618740.363	7618995.081	7618995.081	7618995.081	7621025.952	7621025.952	7621025.952
Y-coordinate	714962.802	714962.802	714962.802	714296.5253	714296.5253	714296.5253	710385.5935	710385.5935	710385.5935
RiverMile	4.2	4.2	4.2	4.3	4.3	4.3	5.2	5.2	5.2
Sample Date	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	3-Oct-11	3-Oct-11	3-Oct-11
Sample Time	18:34	18:34	18:34	17:10	17:10	17:10	9:54	9:54	9:54
Sample Mass (g)	198.45	148.75	347.2	184.84	171.54	356.38	252.22	226.9	479.12
PCB052	11,400	2,140	NC	35,700	6,610	NC	5,660	873	NC
PCB054	120	22.5	NC	99.7	21.1 U	NC	109	16.3	NC
PCB055	21.6 U	21.4 U	NC	21.4 U	22.3 U	NC	36.8 U	15 U	NC
PCB056	1,990	375	NC	5,910	1,090	NC	889	156	NC
PCB057	47.7	18 U	NC	87.1	18.7 U	NC	30.9 U	12.6 U	NC
PCB058	30.6	19.1 U	NC	54.7	19.9 U	NC	32.8 U	13.4 U	NC
PCB059 & 062 & 075	872	214 U	NC	2,190	369	NC	368 U	150 U	NC
PCB060	2,010	377	NC	7,940	1,440	NC	1,270	207	NC
PCB061 & 070 & 074 & 076	12,900	2,340	NC	36,600	6,250	NC	6,320	1,180	NC
PCB063	511	88.5	NC	1,390	228	NC	269	53.1	NC
PCB064	4,320	801	NC	14,600	2,600	NC	1,490	289	NC
PCB066	9,640	1,770	NC	34,300	6,030	NC	6,490	1,030	NC
PCB067	226	41.7	NC	366	63.6	NC	107	19.6	NC
PCB068	109	57.1 U	NC	128	59.4 U	NC	98 U	40 U	NC
PCB072	134	22.9	NC	232	38.6	NC	85.8	15.5	NC
PCB073	31.7 U	31.4 U	NC	31.4 U	32.7 U	NC	53.9 U	22 U	NC
PCB077	625	111	NC	1,140	198	NC	276	42.5	NC
PCB078	13.3 U	13.1 U	NC	13.1 U	13.7 U	NC	22.5 U	9.2 U	NC
PCB079	75.9	22.3 U	NC	260	51.2	NC	47	15.6 U	NC
PCB080	21.3 U	21.1 U	NC	21.1 U	22 U	NC	36.3 U	14.8 U	NC
PCB081	46	25.7 U	NC	85.9	26.7 U	NC	44.1 U	18 U	NC
PCB082	1,010	185	NC	2,710	480	NC	663	103	NC
PCB083	739	111	NC	1,580	274	NC	489	74.2	NC
PCB084	2,620	467	NC	4,910	809	NC	1,230	200	NC
PCB085 & 117 & 116	3,450	591	NC	10,700	1,980	NC	3,710	545	NC
PCB086 & 087 & 097 & 108 & 119 & 125	8,710	1,550	NC	22,800	4,090	NC	7,290	1,100	NC
PCB088 & 091	2,380	407	NC	5,020	818	NC	1,170	228	NC
PCB089	78.5	16.6 U	NC	352	62.7	NC	48.4	11.6 U	NC
PCB090 & 101 & 113	17,000	2,980	NC	38,200	6,690	NC	16,300	2,380	NC
PCB092	3,540	602	NC	7,800	1,310	NC	3,430	496	NC
PCB093 & 098 & 100 & 102	983	329 U	NC	1,620	342 U	NC	942	230 U	NC
PCB094	79.5	71.4 U	NC	140	74.3 U	NC	123 U	50 U	NC
PCB095	9,910	1,770	NC	18,200	3,010	NC	5,240	955	NC
PCB096	91.7	32 U	NC	254	42.7	NC	54.9 U	22.4 U	NC
PCB099	9,460	1,660	NC	25,000	4,170	NC	11,600	1,680	NC
PCB103	281	47.9	NC	321	57	NC	244	40.7	NC
PCB104	43 U	42.6 U	NC	42.6 U	44.3 U	NC	73 U	29.8 U	NC
PCB105	6,610	1,180	NC	19,400	3,440	NC	7,370	1,070	NC
PCB106	42.7 U	42.3 U	NC	42.3 U	44 U	NC	72.5 U	29.6 U	NC
PCB107 & 124	509	87.2	NC	1,050	182	NC	490	65.5	NC
PCB109	1,360	232	NC	2,950	501	NC	1,660	230	NC
PCB110 & 115	14,000	2,590	NC	32,900	5,890	NC	11,900	1,730	NC
PCB111	21.3 U	21.1 U	NC	23.5	22 U	NC	53.1	14.8 U	NC

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB04E-02			EPA1-SB04E-06			EPA1-SB05E-02		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7618740.363	7618740.363	7618740.363	7618995.081	7618995.081	7618995.081	7621025.952	7621025.952	7621025.952
Y-coordinate	714962.802	714962.802	714962.802	714296.5253	714296.5253	714296.5253	710385.5935	710385.5935	710385.5935
RiverMile	4.2	4.2	4.2	4.3	4.3	4.3	5.2	5.2	5.2
Sample Date	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	3-Oct-11	3-Oct-11	3-Oct-11
Sample Time	18:34	18:34	18:34	17:10	17:10	17:10	9:54	9:54	9:54
Sample Mass (g)	198.45	148.75	347.2	184.84	171.54	356.38	252.22	226.9	479.12
PCB112	31.7 U	31.4 U	NC	31.4 U	32.7 U	NC	53.9 U	22 U	NC
PCB114	508	89.3	NC	1,390	251	NC	616	83.1	NC
PCB118	19,800	3,520	NC	44,900	8,110	NC	23,100	3,180	NC
PCB120	90.7	71.4 U	NC	113	74.3 U	NC	170	50 U	NC
PCB121	20.9	19.7 U	NC	19.7 U	20.5 U	NC	38.9	13.8 U	NC
PCB122	117	26 U	NC	217	42.1	NC	77.4	18.2 U	NC
PCB123	340	57.9	NC	918	162	NC	508	62.9	NC
PCB126	41.5	38.6 U	NC	77.3	40.1 U	NC	66.2 U	27 U	NC
PCB127	39.5	24.6 U	NC	74.1	25.5 U	NC	42.2	17.2 U	NC
PCB128 & 166	3,140	515	NC	5,890	968	NC	4,580	571	NC
PCB129 & 138 & 163	29,500	4,780	NC	43,200	6,920	NC	45,700	5,500	NC
PCB130	1,490	238	NC	2,090	323	NC	1,600	196	NC
PCB131	149	26.8	NC	206	32.5	NC	140	20.6	NC
PCB132	4,270	722	NC	5,260	799	NC	3,590	509	NC
PCB133	521	83.6	NC	648	98	NC	1,260	152	NC
PCB134 & 143	734	143 U	NC	1,010	149	NC	710	100 U	NC
PCB135 & 151	7,610	1,300	NC	8,990	1,390	NC	10,400	1,370	NC
PCB136	1,790	307	NC	2,270	357	NC	1,650	224	NC
PCB137	1,480	226	NC	2,180	364	NC	1,760	215	NC
PCB139 & 140	428	68.8	NC	790	117	NC	662	86.8	NC
PCB141	4,100	692	NC	6,440	982	NC	5,440	668	NC
PCB142	24.5 U	24.3 U	NC	24.3 U	25.2 U	NC	41.7 U	17 U	NC
PCB144	897	145	NC	1,160	172	NC	825	109	NC
PCB145	27.1 U	26.9 U	NC	26.9 U	27.9 U	NC	46.1 U	18.8 U	NC
PCB146	5,070	818	NC	6,360	970	NC	11,700	1,410	NC
PCB147 & 149	15,200	2,590	NC	16,000	2,430	NC	13,200	1,850	NC
PCB148	69.1	42.9 U	NC	70.6	44.6 U	NC	108	30 U	NC
PCB150	47	30.9 U	NC	39.3	32.1 U	NC	52.9 U	21.6 U	NC
PCB152	33.8	33.4 U	NC	35.5	34.8 U	NC	57.4 U	23.4 U	NC
PCB153 & 168	29,000	4,640	NC	36,000	5,690	NC	52,400	6,210	NC
PCB154	467	77.1	NC	572	84.8	NC	860	101	NC
PCB155	35.5	35.1 U	NC	35.1 U	36.5 U	NC	60.3 U	24.6 U	NC
PCB156 & 157	2,920	502	NC	4,500	804	NC	4,660	599	NC
PCB158	2,300	367	NC	4,030	652	NC	3,290	398	NC
PCB159	72.1 U	71.4 U	NC	71.4 U	74.3 U	NC	123 U	50 U	NC
PCB160	2.6 U	2.57 U	NC	2.57 U	2.67 U	NC	4.41 U	1.8 U	NC
PCB161	34.3 U	34 U	NC	34 U	35.3 U	NC	58.3 U	23.8 U	NC
PCB162	92.4	24.1 U	NC	150	25.1 U	NC	92.6	16.9 U	NC
PCB164	1,210	211	NC	1,970	301	NC	1,870	225	NC
PCB165	34 U	33.7 U	NC	33.7 U	35 U	NC	68.5	23.6 U	NC
PCB167	1,210	201	NC	1,510	256	NC	1,710	205	NC
PCB169	84.7	22.6 U	NC	22.6 J	23.5 U	NC	38.8 U	15.8 U	NC
PCB170	4,140	697	NC	4,090	827	NC	7,800	911	NC

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB04E-02			EPA1-SB04E-06			EPA1-SB05E-02		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7618740.363	7618740.363	7618740.363	7618995.081	7618995.081	7618995.081	7621025.952	7621025.952	7621025.952
Y-coordinate	714962.802	714962.802	714962.802	714296.5253	714296.5253	714296.5253	710385.5935	710385.5935	710385.5935
RiverMile	4.2	4.2	4.2	4.3	4.3	4.3	5.2	5.2	5.2
Sample Date	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	3-Oct-11	3-Oct-11	3-Oct-11
Sample Time	18:34	18:34	18:34	17:10	17:10	17:10	9:54	9:54	9:54
Sample Mass (g)	198.45	148.75	347.2	184.84	171.54	356.38	252.22	226.9	479.12
PCB171 & 173	1,520	241	NC	1,660	290	NC	2,610	312	NC
PCB172	976	149	NC	954	167	NC	1,600	172	NC
PCB174	3,640	603	NC	3,060	524	NC	3,400	420	NC
PCB175	223	42 U	NC	215	43.7 U	NC	318	37.4	NC
PCB176	406	63.2	NC	324	54.4 U	NC	361	44.6	NC
PCB177	2,970	484	NC	2,660	455	NC	3,730	446	NC
PCB178	1,500	231	NC	1,460	236	NC	2,910	317	NC
PCB179	1,740	286	NC	1,550	258	NC	2,070	265	NC
PCB180 & 193	13,600	2,260	NC	11,200	2,190	NC	26,200	2,970	NC
PCB181	65.9	38.3 U	NC	68.7	39.8 U	NC	103	26.8 U	NC
PCB182	37.1	26 U	NC	44.4	27 U	NC	44.6 U	18.2 U	NC
PCB183 & 185	4,410	701	NC	4,220	718	NC	7,960	921	NC
PCB184	31.4 U	31.1 U	NC	31.1 U	32.4 U	NC	53.4 U	21.8 U	NC
PCB186	45.6 U	45.1 U	NC	45.1 U	46.9 U	NC	77.5 U	31.6 U	NC
PCB187	10,200	1,640	NC	8,860	1,480	NC	23,700	2,490	NC
PCB188	45.6 U	36.3 U	NC	36.3 U	37.7 U	NC	62.3 U	25.4 U	NC
PCB189	191	30.1	NC	185	38	NC	434	46	NC
PCB190	442	86.8	NC	432	120	NC	1,490	176	NC
PCB191	209	36.3 U	NC	208	37.7 U	NC	375	41.6	NC
PCB192	25.4 U	25.1 U	NC	25.1 U	26.1 U	NC	43.1 U	17.6 U	NC
PCB194	1,540	286	NC	1,210	252	NC	3,570	343	NC
PCB195	708	118	NC	619	115	NC	1,650	175	NC
PCB196	918	163	NC	731	146	NC	1,920	203	NC
PCB197 & 200	260	59.3 U	NC	198	61.7 U	NC	367	41.5 U	NC
PCB198 & 199	1,960	391	NC	1,450	334	NC	5,280	537	NC
PCB201	328	51.3	NC	263	43.4	NC	595	63.5	NC
PCB202	691	111	NC	578	106	NC	1,340	141	NC
PCB203	1,570	264	NC	1,300	236	NC	2,860	310	NC
PCB204	35.2 U	34.8 U	NC	34.8 U	36.2 U	NC	59.8 U	24.4 U	NC
PCB205	91.7	34.7 U	NC	81	36 U	NC	223	24.3 U	NC
PCB206	710	142	NC	496	102	NC	2,560	294	NC
PCB207	113	68.6 U	NC	78.8	71.3 U	NC	313	48 U	NC
PCB208	300	69.8 U	NC	194	72.6 U	NC	866	97.2	NC
PCB209	316	65.3	NC	208	51.3	NC	966	151	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB04E-02			EPA1-SB04E-06			EPA1-SB05E-02		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7618740.363	7618740.363	7618740.363	7618995.081	7618995.081	7618995.081	7621025.952	7621025.952	7621025.952
Y-coordinate	714962.802	714962.802	714962.802	714296.5253	714296.5253	714296.5253	710385.5935	710385.5935	710385.5935
RiverMile	4.2	4.2	4.2	4.3	4.3	4.3	5.2	5.2	5.2
Sample Date	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	3-Oct-11	3-Oct-11	3-Oct-11
Sample Time	18:34	18:34	18:34	17:10	17:10	17:10	9:54	9:54	9:54
Sample Mass (g)	198.45	148.75	347.2	184.84	171.54	356.38	252.22	226.9	479.12
Monochlorobiphenyl homologs	27.7 T	26.6 UT	NC	72.8 T	27.5 T	NC	45.6 UT	18.6 UT	NC
Dichlorobiphenyl homologs	1,390 T	440 T	NC	1,780 JT	549 T	NC	533 T	258 T	NC
Trichlorobiphenyl homologs	17,600 T	3,450 T	NC	20,600 T	4,780 T	NC	6,470 T	778 T	NC
Tetrachlorobiphenyl homologs	71,600 T	13,100 T	NC	219,000 T	38,900 T	NC	36,200 T	6,160 T	NC
Pentachlorobiphenyl homologs	104,000 T	18,500 T	NC	244,000 T	42,700 T	NC	98,500 T	14,500 T	NC
Hexachlorobiphenyl homologs	114,000 T	18,700 T	NC	151,000 JT	24,000 T	NC	168,000 T	20,800 T	NC
Heptachlorobiphenyl homologs	46,300 T	7,580 T	NC	41,200 T	7,440 T	NC	85,100 T	9,620 T	NC
Octachlorobiphenyl homologs	8,070 T	1,430 T	NC	6,430 T	1,280 T	NC	17,800 T	1,810 T	NC
Nonachlorobiphenyl homologs	1,120 T	211 T	NC	769 T	174 T	NC	3,740 T	415 T	NC
Total PCB Congeners (RI Calc; ND=0)	364,000 JT	62,300 JT	235,000 JT	685,000 JT	119,000 JT	412,000 JT	417,000 JT	53,300 JT	245,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	364,000 JT	63,500 JT	235,000 JT	685,000 JT	120,000 JT	413,000 JT	418,000 JT	54,400 JT	246,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	7.71 T	0.179 JT	4.49 JT	10.7 JT	0.412 JT	5.76 JT	1.18 JT	0.162 JT	0.697 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	7.71 T	2.45 JT	5.46 JT	10.7 JT	2.77 JT	6.9 JT	5.08 JT	1.75 JT	3.5 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	41.3 T	8.99 JT	27.5 JT	76.3 JT	13.8 JT	46.2 JT	20.9 JT	4.59 JT	13.2 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.455 T	0.142 JT	0.321 JT	0.909 JT	0.193 JT	0.564 JT	0.397 JT	0.103 JT	0.258 JT
% Lipids	10.6	1.87	NC	9.95	1.98	NC	6.58	0.468	NC

Notes:

All concentrations are in units of ng/kg (except for the proof and rinsate blanks on pages 51 to 55 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
NC	Not calculated
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB05E-03			EPA1-SB05E-04			EPA1-SB05W-02		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7621611.18	7621611.18	7621611.18	7622425.679	7622425.679	7622425.679	7620011.504	7620011.504	7620011.504
Y-coordinate	709354.4934	709354.4934	709354.4934	708300.1288	708300.1288	708300.1288	709612.5127	709612.5127	709612.5127
RiverMile	5.4	5.4	5.4	5.7	5.7	5.7	5.2	5.2	5.2
Sample Date	3-Oct-11	3-Oct-11	3-Oct-11	6-Oct-11	6-Oct-11	6-Oct-11	2-Oct-11	2-Oct-11	2-Oct-11
Sample Time	9:32	9:32	9:32	18:10	18:10	18:10	12:50	12:50	12:50
Sample Mass (g)	198.04	155.69	353.73	278.69	235.07	513.76	416.91	346.59	763.5
PCB001	21 U	22.1 U	NC	32.9 U	35 U	NC	27.3	21.8 U	NC
PCB002	26.1 U	27.4 U	NC	40.8 U	43.5 U	NC	27.4 U	27.1 U	NC
PCB003	16.9	14.4 U	NC	21.5 U	22.9 U	NC	15.9	14.3 U	NC
PCB004	500	154	NC	405	83.1	NC	606	183	NC
PCB005	26.1 U	27.4 U	NC	40.8 U	43.5 U	NC	27.4 U	27.1 U	NC
PCB006	48.2	25.6 U	NC	44.8	40.7 U	NC	91.1	27.9	NC
PCB007	33.1 U	34.7 U	NC	51.8 U	55.1 U	NC	34.7 U	34.4 U	NC
PCB008	204	95	NC	182	58.1	NC	447	138	NC
PCB009	16 U	16.8 U	NC	25 U	26.6 U	NC	19.3 J	16.6 U	NC
PCB010	19.5	18.2 U	NC	27.2 U	29 U	NC	32.3	18.1 U	NC
PCB011	329	182	NC	308	228 U	NC	292	177	NC
PCB012 & 013	23.3 U	24.4 U	NC	36.4 U	38.8 U	NC	24.4 U	24.2 U	NC
PCB014	25.5 U	26.8 U	NC	39.9 U	42.5 U	NC	26.8 U	26.5 U	NC
PCB015	115	59.9	NC	79.5	64 U	NC	111	48.3	NC
PCB016	167	113	NC	224	51.4 U	NC	279	91.6	NC
PCB017	587	250	NC	627	114	NC	803	242	NC
PCB018 & 030	528 U	314	NC	737	149 U	NC	892	294	NC
PCB019	822	250	NC	712	142	NC	549	173	NC
PCB020 & 028	1,840	1,340	NC	3,650	423	NC	4,250	1,290	NC
PCB021 & 033	366	231	NC	444	211 U	NC	775	268	NC
PCB022	331	310	NC	781	87.9	NC	711	220	NC
PCB023	30.8 U	32.4 U	NC	48.2 U	51.4 U	NC	32.4 U	32 U	NC
PCB024	18.8 U	19.7 U	NC	29.4 U	31.3 U	NC	19.7 U	19.5 U	NC
PCB025	121	86.7	NC	233	45.8 U	NC	229	70.3	NC
PCB026 & 029	282	195	NC	516	98.1 U	NC	608	181	NC
PCB027	127	42.8	NC	116	44.4 U	NC	128	41.9	NC
PCB031	930	812	NC	2,080	267	NC	1,980	620	NC
PCB032	326	126	NC	288	66.7	NC	523	158 U	NC
PCB034	22.1 U	23.2 U	NC	34.6 U	36.9 U	NC	23.2 U	23 U	NC
PCB035	23 U	24.1 U	NC	36 U	38.3 U	NC	24.1 U	23.9 U	NC
PCB036	24.4 U	25.6 U	NC	38.2 U	40.7 U	NC	25.6 U	25.3 U	NC
PCB037	239	148	NC	414	50.8	NC	180	75.3	NC
PCB038	17.7 U	18.5 U	NC	27.6 U	29.4 U	NC	18.5 U	18.3 U	NC
PCB039	22.1 U	23.2 U	NC	34.6 U	36.9 U	NC	23.2 U	23 U	NC
PCB040 & 041 & 071	1,430	659	NC	1,850	274	NC	2,620	761	NC
PCB042	725	602	NC	1,740	167	NC	1,860	532	NC
PCB043 & 073	161	66.9	NC	194	51.4 U	NC	205	63.1	NC
PCB044 & 047 & 065	10,500	3,170	NC	9,620	1,090	NC	11,100	3,260	NC
PCB045 & 051	1,760	439	NC	1,200	140	NC	1,000	301	NC
PCB046	145	73.5 U	NC	181	117 U	NC	159	72.8 U	NC
PCB048	433	288	NC	816	91.6	NC	1,240	376	NC
PCB049 & 069	5,330	2,190	NC	6,330	754	NC	8,400	2,530	NC
PCB050 & 053	1,080	226	NC	597	103	NC	857	259	NC

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB05E-03			EPA1-SB05E-04			EPA1-SB05W-02		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7621611.18	7621611.18	7621611.18	7622425.679	7622425.679	7622425.679	7620011.504	7620011.504	7620011.504
Y-coordinate	709354.4934	709354.4934	709354.4934	708300.1288	708300.1288	708300.1288	709612.5127	709612.5127	709612.5127
RiverMile	5.4	5.4	5.4	5.7	5.7	5.7	5.2	5.2	5.2
Sample Date	3-Oct-11	3-Oct-11	3-Oct-11	6-Oct-11	6-Oct-11	6-Oct-11	2-Oct-11	2-Oct-11	2-Oct-11
Sample Time	9:32	9:32	9:32	18:10	18:10	18:10	12:50	12:50	12:50
Sample Mass (g)	198.04	155.69	353.73	278.69	235.07	513.76	416.91	346.59	763.5
PCB052	7,150	3,270	NC	9,860	1,190	NC	12,500	3,730	NC
PCB054	232	45.6	NC	136	33.2 U	NC	105	31	NC
PCB055	21 U	22.1 U	NC	32.9 U	35 U	NC	22.1 U	21.8 U	NC
PCB056	611	656	NC	2,050	152	NC	1,390	432	NC
PCB057	22.7	18.5 U	NC	35.9	29.4 U	NC	54.8	18.3 U	NC
PCB058	23.3	19.7 U	NC	34.6	31.3 U	NC	37.9	19.5 U	NC
PCB059 & 062 & 075	427	221 U	NC	674	350 U	NC	801	235	NC
PCB060	710	509	NC	1,670	166	NC	2,290	687	NC
PCB061 & 070 & 074 & 076	6,190	3,640	NC	11,600	1,210	NC	14,000	4,160	NC
PCB063	278	120	NC	393	49.8	NC	657	189	NC
PCB064	1,450	1,180	NC	3,500	352	NC	3,900	1,150	NC
PCB066	5,170	2,500	NC	7,780	910	NC	12,200	3,630	NC
PCB067	99	64.3	NC	210	28 U	NC	199	56.8	NC
PCB068	181	58.8 U	NC	112	93.5 U	NC	132	58.3 U	NC
PCB072	137	43.3	NC	133	21 U	NC	187	53.6	NC
PCB073	30.8 U	32.4 U	NC	194	0 U	NC	32.4 U	21.8 U	NC
PCB077	249	149	NC	535	48.7	NC	486	148	NC
PCB078	12.9 U	13.5 U	NC	20.2 U	21.5 U	NC	13.5 U	13.4 U	NC
PCB079	93.8	30.8	NC	94.8	36.4 U	NC	92.1	34.8	NC
PCB080	20.7 U	21.8 U	NC	32.5 U	34.6 U	NC	21.8 U	21.6 U	NC
PCB081	25.7	26.5 U	NC	53.6	42.1 U	NC	38.7	26.2 U	NC
PCB082	612	330	NC	1,080	83.2	NC	911	260	NC
PCB083	752	256	NC	632	67.2	NC	828	225	NC
PCB084	1,850	904	NC	2,660	215	NC	2,040	579	NC
PCB085 & 117 & 116	3,120	1,010	NC	3,290	444	NC	6,130	1,780	NC
PCB086 & 087 & 097 & 108 & 119 & 125	7,430	2,900	NC	9,420	887	NC	10,800	3,130	NC
PCB088 & 091	2,130	846	NC	2,530	236	NC	2,400	675	NC
PCB089	52.8	25.8	NC	72.5	27.1 U	NC	84.9	25.5	NC
PCB090 & 101 & 113	20,100	5,580	NC	18,000	1,970	NC	22,400	6,390	NC
PCB092	4,520	1,140	NC	3,560	416	NC	4,990	1,410	NC
PCB093 & 098 & 100 & 102	1,970	343	NC	1,070	537 U	NC	1,130	335 U	NC
PCB094	129	73.5 U	NC	110 U	117 U	NC	73.5 U	72.8 U	NC
PCB095	10,100	3,090	NC	8,970	1,000	NC	10,000	2,860	NC
PCB096	156	32.9 U	NC	85.4	52.3 U	NC	117	33.3	NC
PCB099	12,700	2,810	NC	9,690	1,640	NC	16,700	4,740	NC
PCB103	625	116	NC	331	43 U	NC	327	92.9	NC
PCB104	41.8 U	43.8 U	NC	65.4 U	69.6 U	NC	43.8 U	43.4 U	NC
PCB105	5,330	1,760	NC	6,110	755	NC	12,100	3,560	NC
PCB106	41.5 U	43.5 U	NC	64.9 U	69.2 U	NC	43.5 U	43.1 U	NC
PCB107 & 124	349	146	NC	534	50.9 U	NC	697	195	NC
PCB109	1,500	373	NC	1,300	206	NC	2,250	631	NC
PCB110 & 115	11,500	4,710	NC	15,300	1,520	NC	16,700	4,840	NC
PCB111	67.3	21.8 U	NC	32.5 U	34.6 U	NC	40.1	21.6 U	NC

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB05E-03			EPA1-SB05E-04			EPA1-SB05W-02		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7621611.18	7621611.18	7621611.18	7622425.679	7622425.679	7622425.679	7620011.504	7620011.504	7620011.504
Y-coordinate	709354.4934	709354.4934	709354.4934	708300.1288	708300.1288	708300.1288	709612.5127	709612.5127	709612.5127
RiverMile	5.4	5.4	5.4	5.7	5.7	5.7	5.2	5.2	5.2
Sample Date	3-Oct-11	3-Oct-11	3-Oct-11	6-Oct-11	6-Oct-11	6-Oct-11	2-Oct-11	2-Oct-11	2-Oct-11
Sample Time	9:32	9:32	9:32	18:10	18:10	18:10	12:50	12:50	12:50
Sample Mass (g)	198.04	155.69	353.73	278.69	235.07	513.76	416.91	346.59	763.5
PCB112	30.8 U	32.4 U	NC	48.2 U	51.4 U	NC	32.4 U	32 U	NC
PCB114	427	120	NC	429	57.5 U	NC	983	275	NC
PCB118	23,300	5,310	NC	18,600	2,740	NC	36,900	10,500	NC
PCB120	235	73.5 U	NC	110 U	117 U	NC	139	72.8 U	NC
PCB121	56.6	20.3 U	NC	30.3 U	32.2 U	NC	31.8	20.1 U	NC
PCB122	25.5 U	35.5	NC	141	42.5 U	NC	116	32.4	NC
PCB123	303	89.7	NC	426	56.2	NC	607	164	NC
PCB126	49.7	39.7 U	NC	59.2 U	63.1 U	NC	67.4	39.3 U	NC
PCB127	67.7	25.3 U	NC	37.7 U	40.2 U	NC	87.3	33.9	NC
PCB128 & 166	5,530	822	NC	3,020	406	NC	6,300	1,670	NC
PCB129 & 138 & 163	74,900	8,120	NC	29,800	4,420	NC	54,200	13,900	NC
PCB130	2,010	407	NC	1,530	157	NC	2,030	502	NC
PCB131	155	56.5	NC	213	39.7 U	NC	159	41.7	NC
PCB132	4,330	1,440	NC	5,140	416	NC	3,990	1,000	NC
PCB133	1,510	149	NC	580	153	NC	985	238	NC
PCB134 & 143	937	236	NC	835	234 U	NC	832	199	NC
PCB135 & 151	16,100	2,420	NC	8,010	1,090	NC	9,400	2,390	NC
PCB136	3,120	622	NC	1,880	216	NC	1,990	513	NC
PCB137	2,100	326	NC	1,070	185	NC	3,150	767	NC
PCB139 & 140	729	114	NC	426	67.3	NC	900	214	NC
PCB141	10,400	1,220	NC	4,310	428	NC	6,180	1,510	NC
PCB142	23.8 U	25 U	NC	37.3 U	39.7 U	NC	25 U	24.8 U	NC
PCB144	1,340	264	NC	906	96.5	NC	941	249	NC
PCB145	26.4 U	27.6 U	NC	41.2 U	43.9 U	NC	27.6 U	27.4 U	NC
PCB146	14,100	1,470	NC	5,770	1,320	NC	8,530	2,140	NC
PCB147 & 149	16,200	5,150	NC	17,300	1,630	NC	12,700	3,320	NC
PCB148	168	44.1 U	NC	82.5	70.1 U	NC	93.2	43.7 U	NC
PCB150	72.8	31.8 U	NC	63.5	50.5 U	NC	39.5	31.5 U	NC
PCB152	93.8	34.4 U	NC	51.3 U	54.7 U	NC	34.7	34.1 U	NC
PCB153 & 168	93,100	8,280	NC	31,000	5,500	NC	55,900	14,000	NC
PCB154	1,510	153	NC	538	103	NC	850	220	NC
PCB155	34.5 U	36.2 U	NC	53.9 U	57.5 U	NC	36.2 U	35.8 U	NC
PCB156 & 157	6,410	680	NC	2,500	457	NC	5,980	1,700	NC
PCB158	6,100	2.65	NC	2,210	319	NC	4,650	1,180	NC
PCB159	91.6	73.5 U	NC	110 U	117 U	NC	73.5 U	72.8 U	NC
PCB160	2.52 U	2.65 U	NC	3.95 U	4.21 U	NC	2.65 U	2.62 U	NC
PCB161	33.4 U	35 U	NC	52.2 U	55.6 U	NC	35 U	34.7 U	NC
PCB162	201	24.9 U	NC	73.5	39.5 U	NC	158	40.3	NC
PCB164	2,200	355	NC	1,410	150	NC	1,540	394	NC
PCB165	82	34.7 U	NC	51.8 U	55.1 U	NC	44.8	34.4 U	NC
PCB167	2,440	275	NC	1,120	177	NC	2,020	567	NC
PCB169	318	0 J	NC	57.5 U	37 U	NC	130	37.8 J	NC
PCB170	20,100	1,200	NC	4,320	856	NC	7,730	2,420	NC

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB05E-03			EPA1-SB05E-04			EPA1-SB05W-02		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7621611.18	7621611.18	7621611.18	7622425.679	7622425.679	7622425.679	7620011.504	7620011.504	7620011.504
Y-coordinate	709354.4934	709354.4934	709354.4934	708300.1288	708300.1288	708300.1288	709612.5127	709612.5127	709612.5127
RiverMile	5.4	5.4	5.4	5.7	5.7	5.7	5.2	5.2	5.2
Sample Date	3-Oct-11	3-Oct-11	3-Oct-11	6-Oct-11	6-Oct-11	6-Oct-11	2-Oct-11	2-Oct-11	2-Oct-11
Sample Time	9:32	9:32	9:32	18:10	18:10	18:10	12:50	12:50	12:50
Sample Mass (g)	198.04	155.69	353.73	278.69	235.07	513.76	416.91	346.59	763.5
PCB171 & 173	7,360	413	NC	1,420	257	NC	2,870	766	NC
PCB172	3,850	261	NC	943	167	NC	1,540	426	NC
PCB174	4,550	1,110	NC	3,630	333	NC	2,750	711	NC
PCB175	633	62.3	NC	212	68.7 U	NC	272	74.4	NC
PCB176	470	134	NC	478	85.5 U	NC	297	77	NC
PCB177	5,660	885	NC	2,990	418	NC	2,900	753	NC
PCB178	4,940	435	NC	1,480	339	NC	2,320	610	NC
PCB179	3,090	554	NC	1,870	199	NC	1,730	459	NC
PCB180 & 193	61,700	4,100	NC	13,500	4,080	NC	25,100	7,560	NC
PCB181	174	39.4 U	NC	58.8 U	62.6 U	NC	133	39 U	NC
PCB182	88.9	26.8 U	NC	39.9 U	42.5 U	NC	83	26.5 U	NC
PCB183 & 185	18,200	1,280	NC	4,660	798	NC	7,270	1,970	NC
PCB184	30.6 U	32.1 U	NC	47.8 U	50.9 U	NC	32.1 U	31.7 U	NC
PCB186	44.3 U	46.5 U	NC	69.3 U	73.8 U	NC	46.5 U	46 U	NC
PCB187	31,200	2,910	NC	10,100	2,830	NC	14,600	3,900	NC
PCB188	58.4	37.4 U	NC	55.7 U	59.3 U	NC	37.4 U	37 U	NC
PCB189	1,010	48.7	NC	195	45.9	NC	376	104	NC
PCB190	2,130	144	NC	650	162	NC	897	348	NC
PCB191	1,180	58.7	NC	214	59.3 U	NC	439	120	NC
PCB192	24.7 U	25.9 U	NC	38.6 U	41.1 U	NC	25.9 U	25.6 U	NC
PCB194	7,960	458	NC	1,670	1,140	NC	3,150	1,020	NC
PCB195	4,150	196	NC	725	326	NC	1,450	447	NC
PCB196	4,660	277	NC	1,010	603	NC	1,670	572	NC
PCB197 & 200	672	77	NC	272	97 U	NC	350	95	NC
PCB198 & 199	6,070	679	NC	2,610	1,440	NC	2,860	1,000	NC
PCB201	1,020	85.9	NC	310	143	NC	450	124	NC
PCB202	1,940	195	NC	723	269	NC	1,150	333	NC
PCB203	5,910	442	NC	1,620	589	NC	3,190	964	NC
PCB204	34.2 U	35.9 U	NC	53.5 U	57 U	NC	35.9 U	35.5 U	NC
PCB205	528	35.7 U	NC	97.8	56.7 U	NC	196	57.7	NC
PCB206	2,090	340	NC	1,200	1,250	NC	1,380	450	NC
PCB207	377	70.6 U	NC	147	194	NC	221	70.1	NC
PCB208	563	169	NC	597	458	NC	405	128	NC
PCB209	618	201	NC	612	601	NC	573	173	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB05E-03			EPA1-SB05E-04			EPA1-SB05W-02		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7621611.18	7621611.18	7621611.18	7622425.679	7622425.679	7622425.679	7620011.504	7620011.504	7620011.504
Y-coordinate	709354.4934	709354.4934	709354.4934	708300.1288	708300.1288	708300.1288	709612.5127	709612.5127	709612.5127
RiverMile	5.4	5.4	5.4	5.7	5.7	5.7	5.2	5.2	5.2
Sample Date	3-Oct-11	3-Oct-11	3-Oct-11	6-Oct-11	6-Oct-11	6-Oct-11	2-Oct-11	2-Oct-11	2-Oct-11
Sample Time	9:32	9:32	9:32	18:10	18:10	18:10	12:50	12:50	12:50
Sample Mass (g)	198.04	155.69	353.73	278.69	235.07	513.76	416.91	346.59	763.5
Monochlorobiphenyl homologs	27.4 T	27.4 UT	NC	40.8 UT	43.5 UT	NC	43.2 T	27.1 UT	NC
Dichlorobiphenyl homologs	1,220 T	521 T	NC	1,050 T	335 T	NC	1,600 JT	592 T	NC
Trichlorobiphenyl homologs	6,440 T	4,260 T	NC	10,900 T	1,520 T	NC	11,900 T	3,690 T	NC
Tetrachlorobiphenyl homologs	44,600 T	20,100 T	NC	61,600 T	7,110 T	NC	76,500 T	22,700 T	NC
Pentachlorobiphenyl homologs	109,000 T	32,100 T	NC	104,000 T	12,900 T	NC	150,000 T	42,700 T	NC
Hexachlorobiphenyl homologs	266,000 T	32,700 JT	NC	120,000 T	17,700 T	NC	184,000 T	46,900 JT	NC
Heptachlorobiphenyl homologs	166,000 T	13,700 T	NC	46,800 T	10,700 T	NC	71,300 T	20,400 T	NC
Octachlorobiphenyl homologs	32,900 T	2,430 T	NC	9,040 T	4,590 T	NC	14,500 T	4,610 T	NC
Nonachlorobiphenyl homologs	3,030 T	544 T	NC	1,940 T	1,900 T	NC	2,010 T	648 T	NC
Total PCB Congeners (RI Calc; ND=0)	631,000 JT	106,000 JT	400,000 JT	356,000 JT	55,000 JT	218,000 JT	512,000 JT	142,000 JT	344,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	631,000 JT	106,000 JT	400,000 JT	356,000 JT	57,300 JT	220,000 JT	512,000 JT	142,000 JT	344,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	15.7 T	0.263 JT	8.92 JT	0.951 JT	0.132 JT	0.576 JT	12.5 T	1.65 JT	7.56 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	15.7 T	2.25 JT	9.79 JT	4.77 JT	3.85 JT	4.35 JT	12.5 T	3.62 JT	8.45 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	21.8 T	11.1 JT	17.1 JT	36.2 JT	7.87 JT	23.2 JT	37.3 T	11.4 JT	25.6 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.498 T	0.162 JT	0.35 JT	0.377 JT	0.195 JT	0.294 JT	0.706 T	0.206 JT	0.479 JT
% Lipids	10.7	2.78	NC	9.67	1.67	NC	9.19	2.87	NC

Notes:

All concentrations are in units of ng/kg (except for the proof and rinsate blanks on pages 51 to 55 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
NC	Not calculated
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB05W-03			EPA1-SB05W-04			EPA1-SB06E-02		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7620605.967	7620605.967	7620605.967	7622425.679	7622425.679	7622425.679	7625302.748	7625302.748	7625302.748
Y-coordinate	708796.5154	708796.5154	708796.5154	708300.1288	708300.1288	708300.1288	706147.4378	706147.4378	706147.4378
RiverMile	5.4	5.4	5.4	5.7	5.7	5.7	6.4	6.4	6.4
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	22-Sep-11	22-Sep-11	22-Sep-11	3-Oct-11	3-Oct-11	3-Oct-11
Sample Time	15:11	15:11	15:11	12:01	12:01	12:01	17:30	17:30	17:30
Sample Mass (g)	137.44	108.01	245.45	460.92	348.52	809.44	431.95	295.78	727.73
PCB001	14.2 U	14.9 U	NC	36.8 U	36.4 U	NC	35.4 U	22.1 U	NC
PCB002	17.5 U	18.4 U	NC	45.6 U	45.1 U	NC	43.9 U	27.4 U	NC
PCB003	9.25 U	9.7 U	NC	24 U	23.8 U	NC	23.1 U	14.4 U	NC
PCB004	299	63.6	NC	300	73.8 U	NC	1,080	346	NC
PCB005	17.5 U	18.4 U	NC	45.6 U	45.1 U	NC	43.9 U	27.4 U	NC
PCB006	45.9	17.2 U	NC	46.8	42.2 U	NC	41 U	25.6 U	NC
PCB007	22.3 U	23.4 U	NC	57.8 U	57.3 U	NC	55.7 U	34.7 U	NC
PCB008	192 U	55.4 U	NC	169	58.8	NC	148	54.9	NC
PCB009	11.9	11.3 U	NC	27.9 U	27.7 U	NC	26.9 U	16.8 U	NC
PCB010	11.7 U	12.3 U	NC	30.4 U	30.1 U	NC	74.8	22.2	NC
PCB011	212	125	NC	285	237 U	NC	347	180	NC
PCB012 & 013	15.7 U	16.4 U	NC	40.7 U	40.3 U	NC	39.2 U	24.4 U	NC
PCB014	17.2 U	18 U	NC	44.6 U	44.2 U	NC	42.9 U	26.8 U	NC
PCB015	77.2	28.3	NC	70.2	66.5 U	NC	70	41	NC
PCB016	163	40.4	NC	137	53.4 U	NC	111	46.7	NC
PCB017	410	91.1	NC	408	99.2	NC	513	164	NC
PCB018 & 030	517	118	NC	504	127 U	NC	404	126 U	NC
PCB019	454	83.8	NC	431	94.3	NC	2,210	625	NC
PCB020 & 028	2,070	437 U	NC	1,940	449	NC	1,580	515	NC
PCB021 & 033	283	89.3 U	NC	376	219 U	NC	249	133 U	NC
PCB022	423	98.7	NC	341	89.8	NC	211	93.5	NC
PCB023	20.8 U	21.8 U	NC	53.9 U	53.4 U	NC	51.9 U	32.4 U	NC
PCB024	12.6 U	13.3 U	NC	32.8 U	32.5 U	NC	31.6 U	19.7 U	NC
PCB025	131	28.2	NC	102	47.6 U	NC	86	29.3	NC
PCB026 & 029	303	63.2	NC	283	102 U	NC	206	70.3	NC
PCB027	85.9	18.8 U	NC	79.1	46.1 U	NC	189	53	NC
PCB031	1,130	244 U	NC	914	232	NC	613	229	NC
PCB032	212	48.6 U	NC	238	59.2	NC	233	77.9 U	NC
PCB034	14.9 U	15.6 U	NC	38.7 U	38.3 U	NC	37.3 U	23.2 U	NC
PCB035	15.5 U	16.2 U	NC	40.2 U	39.8 U	NC	38.7 U	24.1 U	NC
PCB036	16.4 U	17.2 U	NC	42.6 U	42.2 U	NC	41 U	25.6 U	NC
PCB037	281	65.4	NC	151	48.7	NC	150	66.8	NC
PCB038	11.9 U	12.5 U	NC	30.9 U	30.6 U	NC	29.7 U	18.5 U	NC
PCB039	14.9 U	15.6 U	NC	38.7 U	38.3 U	NC	37.3 U	23.2 U	NC
PCB040 & 041 & 071	1,010	191	NC	1,110	248	NC	1,030	340	NC
PCB042	924	181	NC	771	152	NC	606	181	NC
PCB043 & 073	176	23.3 U	NC	96.1	53.4 U	NC	96.8	35.1	NC
PCB044 & 047 & 065	4,820	934	NC	5,130	1,070	NC	7,860	2,340	NC
PCB045 & 051	557	117	NC	511	112	NC	891	291	NC
PCB046	97.4	49.5 U	NC	123 U	121 U	NC	118 U	73.5 U	NC
PCB048	399	83.9	NC	438	95.7	NC	376	130	NC
PCB049 & 069	3,220	612	NC	3,820	780	NC	5,190	1,550	NC
PCB050 & 053	390	78.7	NC	447	96.4	NC	665	206	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB05W-03			EPA1-SB05W-04			EPA1-SB06E-02		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7620605.967	7620605.967	7620605.967	7622425.679	7622425.679	7622425.679	7625302.748	7625302.748	7625302.748
Y-coordinate	708796.5154	708796.5154	708796.5154	708300.1288	708300.1288	708300.1288	706147.4378	706147.4378	706147.4378
RiverMile	5.4	5.4	5.4	5.7	5.7	5.7	6.4	6.4	6.4
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	22-Sep-11	22-Sep-11	22-Sep-11	3-Oct-11	3-Oct-11	3-Oct-11
Sample Time	15:11	15:11	15:11	12:01	12:01	12:01	17:30	17:30	17:30
Sample Mass (g)	137.44	108.01	245.45	460.92	348.52	809.44	431.95	295.78	727.73
PCB052	5,170	1,020	NC	5,890	1,300	NC	11,100	3,300	NC
PCB054	76.5	14.7	NC	78.2	34.5 U	NC	361	105	NC
PCB055	14.2 U	14.9 U	NC	36.8 U	36.4 U	NC	35.4 U	22.1 U	NC
PCB056	1,010	204	NC	760	158	NC	398	129	NC
PCB057	12.6	12.5 U	NC	30.9 U	30.6 U	NC	29.7 U	18.5 U	NC
PCB058	17.3	13.3 U	NC	32.8 U	32.5 U	NC	31.6 U	19.7 U	NC
PCB059 & 062 & 075	339	149 U	NC	368 U	364 U	NC	356	221 U	NC
PCB060	835	164	NC	1,220	238	NC	1,540	405	NC
PCB061 & 070 & 074 & 076	5,950	1,120	NC	7,150	1,480	NC	8,460	2,420	NC
PCB063	234	42.5	NC	333	65.6	NC	411	109	NC
PCB064	1,750	341	NC	1,810	373	NC	2,180	637	NC
PCB066	4,450	854	NC	6,050	1,230	NC	7,890	2,210	NC
PCB067	101	19.7	NC	76.8	29.1 U	NC	81.6	24.3	NC
PCB068	61	39.6 U	NC	98 U	97.1 U	NC	99.3	58.8 U	NC
PCB072	67.9	12.7	NC	96.9	21.8 U	NC	91.8	27.3	NC
PCB073	20.8 U	21.8 U	NC	53.9 U	53.4 U	NC	96.8	35.1 U	NC
PCB077	304	54.9	NC	260	52.4	NC	225	55.1	NC
PCB078	8.68 U	9.11 U	NC	22.5 U	22.3 U	NC	21.7 U	13.5 U	NC
PCB079	35.7	15.4 U	NC	61	37.9 U	NC	199	49.3	NC
PCB080	14 U	14.7 U	NC	36.3 U	35.9 U	NC	34.9 U	21.8 U	NC
PCB081	17.7	17.8 U	NC	44.1 U	43.7 U	NC	62.4	26.5 U	NC
PCB082	544	97.8	NC	524	108	NC	1,390	368	NC
PCB083	422	65.1	NC	421	82.4	NC	1,250	423	NC
PCB084	1,390	257	NC	1,040	141 U	NC	2,210	743	NC
PCB085 & 117 & 116	1,740	299	NC	3,230	627	NC	9,390	2,550	NC
PCB086 & 087 & 097 & 108 & 119 & 125	4,600	822	NC	5,740	1,140	NC	22,400	6,000	NC
PCB088 & 091	1,290	221	NC	1,140	57.3 U	NC	2,880	918	NC
PCB089	38.8	11.5 U	NC	33	28.2 U	NC	117	33.8	NC
PCB090 & 101 & 113	9,070	1,600	NC	11,900	2,340	NC	42,800	11,400	NC
PCB092	1,750	308	NC	2,520	496	NC	8,160	2,400	NC
PCB093 & 098 & 100 & 102	456	228 U	NC	601	558 U	NC	1,540	468	NC
PCB094	47.2 U	49.5 U	NC	123 U	121 U	NC	118 U	73.5 U	NC
PCB095	4,880	878	NC	4,980	1,060	NC	12,200	4,100	NC
PCB096	48.8	22.2 U	NC	55.3	54.4 U	NC	123	39.7	NC
PCB099	5,270	917	NC	10,800	1,920	NC	30,800	8,020	NC
PCB103	145	29.9	NC	165	44.7 U	NC	311	100	NC
PCB104	28.1 U	29.5 U	NC	73 U	72.3 U	NC	70.3 U	43.8 U	NC
PCB105	2,960	534	NC	7,390	1,450	NC	24,300	6,130	NC
PCB106	27.9 U	29.3 U	NC	72.5 U	71.8 U	NC	69.8 U	43.5 U	NC
PCB107 & 124	238	42.9	NC	354	68.8	NC	349	88.7	NC
PCB109	757	120	NC	1,340	269	NC	3,540	891	NC
PCB110 & 115	7,230	1,330	NC	9,600	1,920	NC	38,700	9,930	NC
PCB111	15.5	14.7 U	NC	36.3 U	35.9 U	NC	43.5	21.8 U	NC

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB05W-03			EPA1-SB05W-04			EPA1-SB06E-02		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7620605.967	7620605.967	7620605.967	7622425.679	7622425.679	7622425.679	7625302.748	7625302.748	7625302.748
Y-coordinate	708796.5154	708796.5154	708796.5154	708300.1288	708300.1288	708300.1288	706147.4378	706147.4378	706147.4378
RiverMile	5.4	5.4	5.4	5.7	5.7	5.7	6.4	6.4	6.4
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	22-Sep-11	22-Sep-11	22-Sep-11	3-Oct-11	3-Oct-11	3-Oct-11
Sample Time	15:11	15:11	15:11	12:01	12:01	12:01	17:30	17:30	17:30
Sample Mass (g)	137.44	108.01	245.45	460.92	348.52	809.44	431.95	295.78	727.73
PCB112	20.8 U	21.8 U	NC	53.9 U	53.4 U	NC	51.9 U	32.4 U	NC
PCB114	231	39.7	NC	606	117	NC	1,680	422	NC
PCB118	9,030	1,620	NC	22,800	4,360	NC	69,700	17,200	NC
PCB120	54	49.5 U	NC	123 U	121 U	NC	158	73.5 U	NC
PCB121	13 U	13.7 U	NC	33.8 U	33.5 U	NC	44	20.3 U	NC
PCB122	50.3	18 U	NC	67.3	44.2 U	NC	42.9 U	26.8 U	NC
PCB123	172	35.2	NC	482	91.5	NC	679	130	NC
PCB126	25.5 U	26.7 U	NC	66.2 U	65.5 U	NC	63.7 U	39.7 U	NC
PCB127	16.2 U	17 U	NC	49.8	41.7 U	NC	165	39.6	NC
PCB128 & 166	1,230	231	NC	3,500	692	NC	12,500	3,030	NC
PCB129 & 138 & 163	13,100	2,480	NC	30,700	6,120	NC	94,400	23,600	NC
PCB130	691	130	NC	1,110	220	NC	3,310	818	NC
PCB131	91.8	17	NC	107	41.3 U	NC	285	75.7	NC
PCB132	2,150	427	NC	2,350	463	NC	6,590	1,910	NC
PCB133	310	53.9	NC	661	127	NC	1,480	400	NC
PCB134 & 143	381	99 U	NC	463	243 U	NC	1,340	385	NC
PCB135 & 151	3,940	720	NC	5,490	1,060	NC	13,500	3,630	NC
PCB136	955	174	NC	1,090	215	NC	3,510	1,010	NC
PCB137	600	92.7	NC	1,540	278	NC	5,180	1,440	NC
PCB139 & 140	205	35.4	NC	487	94.8	NC	1,670	469	NC
PCB141	1,680	331	NC	2,970	571	NC	12,800	2,960	NC
PCB142	16 U	16.8 U	NC	41.7 U	41.3 U	NC	40.1 U	25 U	NC
PCB144	373	77.2	NC	512	96.1	NC	1,590	420	NC
PCB145	17.7 U	18.6 U	NC	46.1 U	45.6 U	NC	44.3 U	27.6 U	NC
PCB146	3,120	528	NC	6,220	1,200	NC	14,300	3,630	NC
PCB147 & 149	6,450	1,520	NC	7,680	1,550	NC	11,200	3,260	NC
PCB148	42.9	29.7 U	NC	73.5 U	72.8 U	NC	105	44.1 U	NC
PCB150	31.7	21.4 U	NC	52.9 U	52.4 U	NC	50.9 U	31.8 U	NC
PCB152	22.1 U	23.2 U	NC	57.4 U	56.8 U	NC	77.2	34.4 U	NC
PCB153 & 168	14,100	2,600	NC	33,900	6,720	NC	95,500	24,800	NC
PCB154	261	46.4	NC	588	111	NC	1,190	306	NC
PCB155	23.2 U	24.4 U	NC	60.3 U	59.7 U	NC	58 U	36.2 U	NC
PCB156 & 157	1,400	228	NC	3,820	744	NC	13,900	3,350	NC
PCB158	877	163	NC	2,630	523	NC	9,830	2,330	NC
PCB159	47.2 U	49.5 U	NC	123 U	121 U	NC	118 U	73.5 U	NC
PCB160	1.7 U	1.78 U	NC	4.41 U	4.37 U	NC	4.25 U	2.65 U	NC
PCB161	22.5 U	23.6 U	NC	58.3 U	57.8 U	NC	56.1 U	35 U	NC
PCB162	17.5	16.7 U	NC	129	41 U	NC	310	75.7	NC
PCB164	568	102	NC	945	198	NC	3,360	744	NC
PCB165	22.3 U	23.4 U	NC	57.8 U	57.3 U	NC	69.2	34.7 U	NC
PCB167	577	91.5	NC	1,350	252	NC	3,230	736	NC
PCB169	18.7	15.7 U	NC	68.3 J	38.4 U	NC	182 U	41.7 J	NC
PCB170	1,900	326	NC	5,540	1,080	NC	20,200	4,690	NC

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB05W-03			EPA1-SB05W-04			EPA1-SB06E-02		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7620605.967	7620605.967	7620605.967	7622425.679	7622425.679	7622425.679	7625302.748	7625302.748	7625302.748
Y-coordinate	708796.5154	708796.5154	708796.5154	708300.1288	708300.1288	708300.1288	706147.4378	706147.4378	706147.4378
RiverMile	5.4	5.4	5.4	5.7	5.7	5.7	6.4	6.4	6.4
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	22-Sep-11	22-Sep-11	22-Sep-11	3-Oct-11	3-Oct-11	3-Oct-11
Sample Time	15:11	15:11	15:11	12:01	12:01	12:01	17:30	17:30	17:30
Sample Mass (g)	137.44	108.01	245.45	460.92	348.52	809.44	431.95	295.78	727.73
PCB171 & 173	697	113	NC	1,730	345	NC	6,000	1,510	NC
PCB172	492	73.5	NC	1,060	203	NC	3,430	781	NC
PCB174	1,850	326	NC	1,800	333	NC	2,560	570	NC
PCB175	116	29.1 U	NC	189	71.4 U	NC	503	113	NC
PCB176	229	40.9	NC	220	88.8 U	NC	246	64.9	NC
PCB177	1,580	263	NC	2,020	389	NC	3,200	779	NC
PCB178	795	132	NC	1,670	315	NC	3,990	956	NC
PCB179	978	163	NC	1,150	222	NC	1,970	513	NC
PCB180 & 193	6,800	1,070	NC	18,200	3,630	NC	59,700	14,000	NC
PCB181	31.3	26.5 U	NC	89.6	65 U	NC	254	61.3	NC
PCB182	17.2 U	18 U	NC	49.3	44.2 U	NC	102	26.8 U	NC
PCB183 & 185	2,350	380	NC	4,540	925	NC	14,200	3,500	NC
PCB184	20.6 U	21.6 U	NC	53.4 U	52.9 U	NC	51.4 U	32.1 U	NC
PCB186	29.8 U	31.3 U	NC	77.5 U	76.7 U	NC	74.5 U	46.5 U	NC
PCB187	5,750	935	NC	11,400	2,220	NC	21,300	4,900	NC
PCB188	24 U	25.1 U	NC	62.3 U	61.7 U	NC	59.9 U	37.4 U	NC
PCB189	120	18.6	NC	310	56.4	NC	1,100	246	NC
PCB190	291	21.3 U	NC	964	207	NC	2,670	612	NC
PCB191	91.4	25.1 U	NC	293	61.7 U	NC	1,040	226	NC
PCB192	16.6 U	17.4 U	NC	43.1 U	42.7 U	NC	41.5 U	25.9 U	NC
PCB194	962	156	NC	2,500	518	NC	9,710	2,510	NC
PCB195	28.2 U	68.7	NC	1,130	233	NC	4,050	1,090	NC
PCB196	406	85.1	NC	1,400	286	NC	5,190	1,330	NC
PCB197 & 200	155	41.1 U	NC	228	101 U	NC	583	144	NC
PCB198 & 199	31.7 U	252	NC	2,630	555	NC	6,290	1,510	NC
PCB201	194	33	NC	329	67.7	NC	776	189	NC
PCB202	354	56.8	NC	871	178	NC	1,880	477	NC
PCB203	629	125	NC	2,230	441	NC	6,680	1,660	NC
PCB204	23 U	24.1 U	NC	59.8 U	59.2 U	NC	57.5 U	35.9 U	NC
PCB205	57.4	24 U	NC	145	58.9 U	NC	579	140	NC
PCB206	394	26.9 U	NC	1,190	281	NC	2,480	627	NC
PCB207	45.3 U	47.5 U	NC	172	117 U	NC	369	95.9	NC
PCB208	156	48.4 U	NC	392	119 U	NC	497	115	NC
PCB209	205	46	NC	636	144	NC	605	163	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB05W-03			EPA1-SB05W-04			EPA1-SB06E-02		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7620605.967	7620605.967	7620605.967	7622425.679	7622425.679	7622425.679	7625302.748	7625302.748	7625302.748
Y-coordinate	708796.5154	708796.5154	708796.5154	708300.1288	708300.1288	708300.1288	706147.4378	706147.4378	706147.4378
RiverMile	5.4	5.4	5.4	5.7	5.7	5.7	6.4	6.4	6.4
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	22-Sep-11	22-Sep-11	22-Sep-11	3-Oct-11	3-Oct-11	3-Oct-11
Sample Time	15:11	15:11	15:11	12:01	12:01	12:01	17:30	17:30	17:30
Sample Mass (g)	137.44	108.01	245.45	460.92	348.52	809.44	431.95	295.78	727.73
Monochlorobiphenyl homologs	17.5 UT	18.4 UT	NC	45.6 UT	45.1 UT	NC	43.9 UT	27.4 UT	NC
Dichlorobiphenyl homologs	748 T	265 T	NC	900 T	297 T	NC	1,750 T	665 T	NC
Trichlorobiphenyl homologs	6,490 T	1,040 T	NC	5,970 T	1,440 T	NC	6,820 T	2,100 T	NC
Tetrachlorobiphenyl homologs	32,000 T	6,220 T	NC	36,500 T	7,910 T	NC	50,400 T	14,800 T	NC
Pentachlorobiphenyl homologs	52,400 T	9,460 T	NC	86,100 T	16,800 T	NC	275,000 T	72,500 T	NC
Hexachlorobiphenyl homologs	53,200 T	10,200 T	NC	109,000 JT	21,600 T	NC	311,000 T	79,500 JT	NC
Heptachlorobiphenyl homologs	24,100 T	3,920 T	NC	51,300 T	10,100 T	NC	143,000 T	33,600 T	NC
Octachlorobiphenyl homologs	2,790 T	809 T	NC	11,500 T	2,360 T	NC	35,700 T	9,050 T	NC
Nonachlorobiphenyl homologs	573 T	48.4 UT	NC	1,750 T	399 T	NC	3,350 T	838 T	NC
Total PCB Congeners (RI Calc; ND=0)	172,000 JT	30,800 JT	110,000 JT	302,000 JT	58,500 JT	197,000 JT	827,000 JT	212,000 JT	577,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	173,000 JT	32,000 JT	111,000 JT	303,000 JT	61,100 JT	199,000 JT	828,000 JT	213,000 JT	578,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	1.03 JT	0.0825 JT	0.614 JT	3.18 JT	0.217 JT	1.9 JT	3.48 JT	2.1 JT	2.92 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	2.31 JT	1.66 JT	2.02 JT	6.49 JT	4.07 JT	5.45 JT	9.39 JT	4.09 JT	7.24 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	18.8 JT	5.08 JT	12.8 JT	20 JT	8.38 JT	15 JT	25.5 JT	7.28 JT	18.1 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.176 JT	0.0899 JT	0.138 JT	0.39 JT	0.216 JT	0.315 JT	0.79 JT	0.255 JT	0.573 JT
% Lipids	6.49	0.86	NC	12.1	2.07	NC	12.7	3.53	NC

Notes:

All concentrations are in units of ng/kg (except for the proof and rinsate blanks on pages 51 to 55 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
NC	Not calculated
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB06E-08			EPA1-SB06E-09			EPA1-SB06E-10		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7627751.005	7627751.005	7627751.005	7627261.88	7627261.88	7627261.88	7627239.777	7627239.777	7627239.777
Y-coordinate	704513.7004	704513.7004	704513.7004	704853.8424	704853.8424	704853.8424	704870.1191	704870.1191	704870.1191
RiverMile	6.9	6.9	6.9	6.8	6.8	6.8	6.8	6.8	6.8
Sample Date	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11
Sample Time	14:40	14:40	14:40	15:49	15:49	15:49	16:10	16:10	16:10
Sample Mass (g)	217.45	165.25	382.7	212.8	154.51	367.31	450.65	349.44	800.09
PCB001	35.4 U	35.4 U	NC	32.1 U	35.7 U	NC	36.4 U	35 U	NC
PCB002	43.9 U	43.9 U	NC	39.7 U	44.3 U	NC	45.1 U	43.5 U	NC
PCB003	23.1 U	23.1 U	NC	20.9 U	23.3 U	NC	23.8 U	22.9 U	NC
PCB004	362	75.1	NC	227	72.4 U	NC	237	71.5	NC
PCB005	43.9 U	43.9 U	NC	39.7 U	44.3 U	NC	45.1 U	43.5 U	NC
PCB006	41 U	41 U	NC	37.2 U	41.4 U	NC	63.6	40.7 U	NC
PCB007	55.7 U	55.7 U	NC	50.4 U	56.2 U	NC	57.3 U	55.1 U	NC
PCB008	132	59.8	NC	85.5	57.9	NC	204	74.4	NC
PCB009	26.9 U	26.9 U	NC	24.4 U	27.1 U	NC	27.7 U	26.6 U	NC
PCB010	29.2 U	29.2 U	NC	26.5 U	29.5 U	NC	30.1 U	29 U	NC
PCB011	260	230 U	NC	209 U	232 U	NC	334	228 U	NC
PCB012 & 013	39.2 U	39.2 U	NC	35.5 U	39.5 U	NC	40.3 U	38.8 U	NC
PCB014	42.9 U	42.9 U	NC	38.9 U	43.3 U	NC	44.2 U	42.5 U	NC
PCB015	64.6 U	64.6 U	NC	58.5 U	65.2 U	NC	76	64 U	NC
PCB016	116	51.9 U	NC	77.8	52.4 U	NC	83.2	51.4 U	NC
PCB017	320	81.3	NC	273	73.3	NC	499	144	NC
PCB018 & 030	352	107	NC	257	89.3	NC	545	167	NC
PCB019	641	126	NC	560	110	NC	184	55.7	NC
PCB020 & 028	1,310	290	NC	871	205	NC	1,490	465	NC
PCB021 & 033	231	213 U	NC	193 U	215 U	NC	219 U	211 U	NC
PCB022	261	66.5	NC	149	47.6 U	NC	224	78.6	NC
PCB023	51.9 U	51.9 U	NC	47 U	52.4 U	NC	53.4 U	51.4 U	NC
PCB024	31.6 U	31.6 U	NC	28.6 U	31.9 U	NC	32.5 U	31.3 U	NC
PCB025	85.7	46.2 U	NC	65.8	46.7 U	NC	181	52.5	NC
PCB026 & 029	189	99.1 U	NC	143	100 U	NC	439	133	NC
PCB027	74.8	44.8 U	NC	68.8	45.2 U	NC	138	44.4 U	NC
PCB031	687	168	NC	426	118	NC	932	291	NC
PCB032	158	43.5	NC	137	39.7	NC	377	112	NC
PCB034	37.3 U	37.3 U	NC	33.8 U	37.6 U	NC	38.3 U	36.9 U	NC
PCB035	38.7 U	38.7 U	NC	35 U	39 U	NC	39.8 U	38.3 U	NC
PCB036	41 U	41 U	NC	37.2 U	41.4 U	NC	42.2 U	40.7 U	NC
PCB037	170	43.9	NC	134	31.9 U	NC	114	44.6	NC
PCB038	29.7 U	29.7 U	NC	26.9 U	30 U	NC	30.6 U	29.4 U	NC
PCB039	37.3 U	37.3 U	NC	33.8 U	37.6 U	NC	38.3 U	36.9 U	NC
PCB040 & 041 & 071	680	128	NC	533	112	NC	1,110	340	NC
PCB042	515	93.8	NC	310	61.6	NC	541	160	NC
PCB043 & 073	57.2	51.9 U	NC	55.5	52.4 U	NC	82.4	51.4 U	NC
PCB044 & 047 & 065	4,140	717	NC	4,190	756	NC	3,260	975	NC
PCB045 & 051	530	99.9	NC	490	94.6	NC	330	93.6	NC
PCB046	118 U	118 U	NC	107 U	119 U	NC	121 U	117 U	NC
PCB048	252	49	NC	174	36.4	NC	327	99.5	NC
PCB049 & 069	2,320	396	NC	1,940	343	NC	2,820	819	NC
PCB050 & 053	449	82.5	NC	430	78.5	NC	326	94.5	NC

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB06E-08			EPA1-SB06E-09			EPA1-SB06E-10		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7627751.005	7627751.005	7627751.005	7627261.88	7627261.88	7627261.88	7627239.777	7627239.777	7627239.777
Y-coordinate	704513.7004	704513.7004	704513.7004	704853.8424	704853.8424	704853.8424	704870.1191	704870.1191	704870.1191
RiverMile	6.9	6.9	6.9	6.8	6.8	6.8	6.8	6.8	6.8
Sample Date	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11
Sample Time	14:40	14:40	14:40	15:49	15:49	15:49	16:10	16:10	16:10
Sample Mass (g)	217.45	165.25	382.7	212.8	154.51	367.31	450.65	349.44	800.09
PCB052	3,730	658	NC	2,850	534	NC	4,350	1,220	NC
PCB054	111	33.5 U	NC	112	33.8 U	NC	34.5 U	33.2 U	NC
PCB055	35.4 U	35.4 U	NC	32.1 U	35.7 U	NC	36.4 U	35 U	NC
PCB056	579	109	NC	260	56.4	NC	512	163	NC
PCB057	29.7 U	29.7 U	NC	26.9 U	30 U	NC	30.6 U	29.4 U	NC
PCB058	31.6 U	31.6 U	NC	28.6 U	31.9 U	NC	32.5 U	31.3 U	NC
PCB059 & 062 & 075	354 U	354 U	NC	321 U	357 U	NC	364 U	350 U	NC
PCB060	552	98.8	NC	387	72.4	NC	711	211	NC
PCB061 & 070 & 074 & 076	4,420	758	NC	3,450	640	NC	4,790	1,410	NC
PCB063	181	30.2	NC	229	39.9	NC	197	58.2	NC
PCB064	1,020	183	NC	598	119 U	NC	1,270	382	NC
PCB066	3,360	572	NC	3,430	606	NC	3,350	983	NC
PCB067	73.1	28.3 U	NC	74.3	28.6 U	NC	47.4	28 U	NC
PCB068	94.3 U	94.3 U	NC	87.6	95.2 U	NC	97.1 U	93.5 U	NC
PCB072	66.7	21.2 U	NC	64	21.4 U	NC	71.4	21 U	NC
PCB073	51.9 U	51.9 U	NC	55.5 U	52.4 U	NC	53.4 U	51.4 U	NC
PCB077	198	43.4 U	NC	289	50.3	NC	149	44	NC
PCB078	21.7 U	21.7 U	NC	19.7 U	21.9 U	NC	22.3 U	21.5 U	NC
PCB079	40.1	36.8 U	NC	33.3 U	37.1 U	NC	37.9 U	36.4 U	NC
PCB080	34.9 U	34.9 U	NC	31.6 U	35.2 U	NC	35.9 U	34.6 U	NC
PCB081	42.5 U	42.5 U	NC	38.5 U	42.9 U	NC	43.7 U	42.1 U	NC
PCB082	420	71.9	NC	222	41.7	NC	355	106	NC
PCB083	308	62.7 U	NC	271	63.3 U	NC	241	71.3	NC
PCB084	957	164	NC	620	138 U	NC	806	234	NC
PCB085 & 117 & 116	1,750	288	NC	1,630	284	NC	1,850	573	NC
PCB086 & 087 & 097 & 108 & 119 & 125	4,150	708 U	NC	3,320	714 U	NC	3,800	1,110	NC
PCB088 & 091	1,060	177	NC	780	136	NC	750	218	NC
PCB089	27.4 U	27.4 U	NC	24.8 U	27.6 U	NC	40.3	27.1 U	NC
PCB090 & 101 & 113	9,060	1,470	NC	8,230	1,410	NC	6,840	2,010	NC
PCB092	1,820	298	NC	1,730	290	NC	1,340	377	NC
PCB093 & 098 & 100 & 102	782	542 U	NC	2,040	548 U	NC	558 U	537 U	NC
PCB094	118 U	118 U	NC	107 U	119 U	NC	121 U	117 U	NC
PCB095	4,110	707	NC	3,350	590	NC	2,810	830	NC
PCB096	52.8 U	52.8 U	NC	49	53.3 U	NC	54.4 U	52.3 U	NC
PCB099	6,590	1,040	NC	7,860	1,290	NC	5,350	1,400	NC
PCB103	227	43.4 U	NC	215	43.8 U	NC	63.7	43 U	NC
PCB104	70.3 U	70.3 U	NC	63.7 U	71 U	NC	72.3 U	69.6 U	NC
PCB105	3,420	573	NC	3,390	586	NC	3,940	1,120	NC
PCB106	69.8 U	69.8 U	NC	63.2 U	70.5 U	NC	71.8 U	69.2 U	NC
PCB107 & 124	228	51.4 U	NC	180	51.9 U	NC	232	67.8	NC
PCB109	933	153	NC	1,080	187	NC	660	207	NC
PCB110 & 115	6,440	1,120	NC	4,850	859	NC	6,420	1,900	NC
PCB111	34.9 U	34.9 U	NC	35.2	35.2 U	NC	35.9 U	34.6 U	NC

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB06E-08			EPA1-SB06E-09			EPA1-SB06E-10		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7627751.005	7627751.005	7627751.005	7627261.88	7627261.88	7627261.88	7627239.777	7627239.777	7627239.777
Y-coordinate	704513.7004	704513.7004	704513.7004	704853.8424	704853.8424	704853.8424	704870.1191	704870.1191	704870.1191
RiverMile	6.9	6.9	6.9	6.8	6.8	6.8	6.8	6.8	6.8
Sample Date	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11
Sample Time	14:40	14:40	14:40	15:49	15:49	15:49	16:10	16:10	16:10
Sample Mass (g)	217.45	165.25	382.7	212.8	154.51	367.31	450.65	349.44	800.09
PCB112	51.9 U	51.9 U	NC	47 U	52.4 U	NC	53.4 U	51.4 U	NC
PCB114	293	58 U	NC	396	62.6	NC	294	82.5	NC
PCB118	13,000	2,110	NC	15,800	2,650	NC	10,900	3,130	NC
PCB120	118 U	118 U	NC	114	119 U	NC	121 U	117 U	NC
PCB121	32.5 U	32.5 U	NC	59.3	32.9 U	NC	33.5 U	32.2 U	NC
PCB122	57.5	42.9 U	NC	38.9 U	43.3 U	NC	46.4	42.5 U	NC
PCB123	242	54.7 U	NC	291	55.2 U	NC	195	55.5	NC
PCB126	63.7 U	63.7 U	NC	57.7 U	64.3 U	NC	65.5 U	63.1 U	NC
PCB127	40.6 U	40.6 U	NC	36.8 U	41 U	NC	41.7 U	40.2 U	NC
PCB128 & 166	1,990	299	NC	2,250	359	NC	1,740	476	NC
PCB129 & 138 & 163	24,100	3,590	NC	36,000	5,510	NC	11,800	3,520	NC
PCB130	1,040	157	NC	1,030	158	NC	519	156	NC
PCB131	89.1	40.1 U	NC	64.5	40.5 U	NC	73.2	39.7 U	NC
PCB132	2,490	380	NC	1,830	295	NC	1,450	431	NC
PCB133	606	87.3	NC	922	137	NC	213	60.2	NC
PCB134 & 143	458	236 U	NC	384	238 U	NC	266	234 U	NC
PCB135 & 151	5,620	830	NC	6,870	1,080	NC	1,970	604	NC
PCB136	1,160	174	NC	1,230	202	NC	556	163	NC
PCB137	1,100	146	NC	1,500	233	NC	736	217	NC
PCB139 & 140	305	56.6 U	NC	387	59.8	NC	229	65.7	NC
PCB141	2,570	405	NC	4,390	656	NC	1,170	359	NC
PCB142	40.1 U	40.1 U	NC	36.3 U	40.5 U	NC	41.3 U	39.7 U	NC
PCB144	611	89.7	NC	669	101	NC	225	70.1 U	NC
PCB145	44.3 U	44.3 U	NC	40.2 U	44.8 U	NC	45.6 U	43.9 U	NC
PCB146	5,910	869	NC	8,690	1,320	NC	1,980	542	NC
PCB147 & 149	10,100	1,500	NC	7,100	1,130	NC	3,670	1,100	NC
PCB148	87	70.8 U	NC	91.5	71.4 U	NC	72.8 U	70.1 U	NC
PCB150	50.9 U	50.9 U	NC	46.2 U	51.4 U	NC	52.4 U	50.5 U	NC
PCB152	55.2 U	55.2 U	NC	50 U	55.7 U	NC	56.8 U	54.7 U	NC
PCB153 & 168	29,800	4,350	NC	52,800	8,030	NC	11,600	3,260	NC
PCB154	554	76.2	NC	902	132	NC	191	55.2	NC
PCB155	58 U	58 U	NC	75.1	58.6 U	NC	59.7 U	57.5 U	NC
PCB156 & 157	2,240	370	NC	3,880	629	NC	1,670	465	NC
PCB158	1,700	261	NC	2,910	444	NC	1,090	303	NC
PCB159	118 U	118 U	NC	107 U	119 U	NC	121 U	117 U	NC
PCB160	4.25 U	4.25 U	NC	3.85 U	4.29 U	NC	4.37 U	4.21 U	NC
PCB161	56.1 U	56.1 U	NC	50.9 U	56.7 U	NC	57.8 U	55.6 U	NC
PCB162	77.3	39.9 U	NC	90.5	40.2 U	NC	45.4	39.5 U	NC
PCB164	831	128	NC	1,040	161	NC	448	125	NC
PCB165	55.7 U	55.7 U	NC	64.8	56.2 U	NC	57.3 U	55.1 U	NC
PCB167	987	154	NC	1,380	226	NC	528	143	NC
PCB169	37.4 U	37.4 U	NC	56.4 U	37.7 U	NC	38.4 U	37 U	NC
PCB170	3,800	670	NC	11,400	1,910	NC	1,460	368	NC

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB06E-08			EPA1-SB06E-09			EPA1-SB06E-10		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7627751.005	7627751.005	7627751.005	7627261.88	7627261.88	7627261.88	7627239.777	7627239.777	7627239.777
Y-coordinate	704513.7004	704513.7004	704513.7004	704853.8424	704853.8424	704853.8424	704870.1191	704870.1191	704870.1191
RiverMile	6.9	6.9	6.9	6.8	6.8	6.8	6.8	6.8	6.8
Sample Date	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11
Sample Time	14:40	14:40	14:40	15:49	15:49	15:49	16:10	16:10	16:10
Sample Mass (g)	217.45	165.25	382.7	212.8	154.51	367.31	450.65	349.44	800.09
PCB171 & 173	1,290	205	NC	3,560	539	NC	481	127	NC
PCB172	800	126	NC	2,150	319	NC	280	71	NC
PCB174	2,370	382	NC	2,330	390	NC	561	149	NC
PCB175	200	69.3 U	NC	370	70 U	NC	71.4 U	68.7 U	NC
PCB176	278	86.3 U	NC	226	87.1 U	NC	88.8 U	85.5 U	NC
PCB177	2,400	388	NC	3,000	480	NC	622	168	NC
PCB178	1,420	222	NC	2,870	448	NC	461	126	NC
PCB179	1,120	176	NC	1,500	235	NC	410	117	NC
PCB180 & 193	13,300	2,330	NC	36,900	6,210	NC	4,390	1,120	NC
PCB181	63.2 U	63.2 U	NC	117	63.8 U	NC	65 U	62.6 U	NC
PCB182	42.9 U	42.9 U	NC	50.6	43.3 U	NC	44.2 U	42.5 U	NC
PCB183 & 185	3,950	604	NC	9,810	1,470	NC	1,180	315	NC
PCB184	51.4 U	51.4 U	NC	46.6 U	51.9 U	NC	52.9 U	50.9 U	NC
PCB186	74.5 U	74.5 U	NC	67.5 U	75.2 U	NC	76.7 U	73.8 U	NC
PCB187	10,600	1,680	NC	17,000	2,750	NC	3,010	806	NC
PCB188	59.9 U	59.9 U	NC	54.3 U	60.5 U	NC	61.7 U	59.3 U	NC
PCB189	213	34.1 U	NC	640	100	NC	82.5	33.8 U	NC
PCB190	482	123	NC	1,390	307	NC	146	57.6	NC
PCB191	220	59.9 U	NC	673	100	NC	65.9	59.3 U	NC
PCB192	41.5 U	41.5 U	NC	37.6 U	41.9 U	NC	42.7 U	41.1 U	NC
PCB194	1,690	270	NC	6,360	1,050	NC	582	175 U	NC
PCB195	819	127	NC	3,090	455	NC	257	69.9 U	NC
PCB196	920	164	NC	3,000	539	NC	278	74	NC
PCB197 & 200	208	97.9 U	NC	411	98.9 U	NC	101 U	97 U	NC
PCB198 & 199	1,790	344	NC	3,710	707	NC	631	174	NC
PCB201	338	48.1	NC	678	98.3	NC	83.7	39 U	NC
PCB202	563	84.9	NC	1,230	182	NC	251	74.4 U	NC
PCB203	1,260	215	NC	3,890	618	NC	470	134	NC
PCB204	57.5 U	57.5 U	NC	52.1 U	58 U	NC	59.2 U	57 U	NC
PCB205	98.7	57.2 U	NC	362	57.8 U	NC	58.9 U	56.7 U	NC
PCB206	532	91	NC	1,360	217	NC	260	71.9	NC
PCB207	113 U	113 U	NC	235	114 U	NC	117 U	112 U	NC
PCB208	193	115 U	NC	296	116 U	NC	119 U	114 U	NC
PCB209	286	53	NC	397	81.2	NC	164	51.6 U	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB06E-08			EPA1-SB06E-09			EPA1-SB06E-10		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7627751.005	7627751.005	7627751.005	7627261.88	7627261.88	7627261.88	7627239.777	7627239.777	7627239.777
Y-coordinate	704513.7004	704513.7004	704513.7004	704853.8424	704853.8424	704853.8424	704870.1191	704870.1191	704870.1191
RiverMile	6.9	6.9	6.9	6.8	6.8	6.8	6.8	6.8	6.8
Sample Date	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11
Sample Time	14:40	14:40	14:40	15:49	15:49	15:49	16:10	16:10	16:10
Sample Mass (g)	217.45	165.25	382.7	212.8	154.51	367.31	450.65	349.44	800.09
Monochlorobiphenyl homologs	43.9 UT	43.9 UT	NC	39.7 UT	44.3 UT	NC	45.1 UT	43.5 UT	NC
Dichlorobiphenyl homologs	835 T	331 T	NC	490 T	292 T	NC	944 T	340 T	NC
Trichlorobiphenyl homologs	4,660 T	1,220 T	NC	3,320 T	973 T	NC	5,390 T	1,760 T	NC
Tetrachlorobiphenyl homologs	23,600 T	4,440 T	NC	20,300 T	3,990 T	NC	24,700 T	7,500 T	NC
Pentachlorobiphenyl homologs	56,100 T	9,230 T	NC	56,700 T	9,500 T	NC	47,500 T	14,100 T	NC
Hexachlorobiphenyl homologs	94,600 T	14,300 T	NC	137,000 T	21,200 T	NC	42,400 T	12,500 T	NC
Heptachlorobiphenyl homologs	42,600 T	7,140 T	NC	94,000 T	15,400 T	NC	13,300 T	3,660 T	NC
Octachlorobiphenyl homologs	7,690 T	1,330 T	NC	22,700 T	3,730 T	NC	2,630 T	638 T	NC
Nonachlorobiphenyl homologs	782 T	205 T	NC	1,890 T	332 T	NC	378 T	185 T	NC
Total PCB Congeners (RI Calc; ND=0)	230,000 JT	35,400 JT	146,000 JT	335,000 JT	52,600 JT	217,000 JT	136,000 JT	38,200 JT	93,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	231,000 JT	38,300 JT	148,000 JT	337,000 JT	55,600 JT	218,000 JT	137,000 JT	40,700 JT	95,200 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	0.632 JT	0.0962 JT	0.4 JT	0.802 JT	0.133 JT	0.521 JT	0.543 JT	0.154 JT	0.373 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	4.38 JT	3.85 JT	4.15 JT	4.54 JT	3.92 JT	4.28 JT	4.4 JT	3.87 JT	4.17 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	16 JT	6.53 JT	11.9 JT	20.2 JT	8.05 JT	15.1 JT	13.6 JT	7.68 JT	11 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.293 JT	0.189 JT	0.248 JT	0.313 JT	0.199 JT	0.265 JT	0.279 JT	0.199 JT	0.244 JT
% Lipids	7.29	1.36	NC	6.9	1.23	NC	9.57	2.49	NC

Notes:

All concentrations are in units of ng/kg (except for the proof and rinsate blanks on pages 51 to 55 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
NC	Not calculated
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB06E-11			EPA1-SB06W-01			EPA1-SB06W-04		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7627178.523	7627178.523	7627178.523	7623259.739	7623259.739	7623259.739	7625793.951	7625793.951	7625793.951
Y-coordinate	704970.9609	704970.9609	704970.9609	706089.1385	706089.1385	706089.1385	704637.7654	704637.7654	704637.7654
RiverMile	6.8	6.8	6.8	6.1	6.1	6.1	6.6	6.6	6.6
Sample Date	8-Oct-11	8-Oct-11	8-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	6-Oct-11	6-Oct-11	6-Oct-11
Sample Time	16:15	16:15	16:15	8:20	8:20	8:20	16:45	16:45	16:45
Sample Mass (g)	110.7	93.53	204.23	332.83	284.8	617.63	116.8	96.49	213.29
PCB001	34.1 U	36.4 U	NC	35.7 U	34.1 U	NC	36.8 U	37.1 U	NC
PCB002	42.3 U	45.1 U	NC	44.3 U	42.3 U	NC	45.6 U	46 U	NC
PCB003	22.3 U	23.8 U	NC	23.3 U	22.3 U	NC	24 U	24.3 U	NC
PCB004	863	151	NC	233 J	69.1 U	NC	598	105	NC
PCB005	42.3 U	45.1 U	NC	44.3 U	42.3 U	NC	45.6 U	46 U	NC
PCB006	39.5 U	42.2 U	NC	46.9	39.5 U	NC	184	43.1 U	NC
PCB007	53.6 U	57.3 U	NC	56.2 U	53.6 U	NC	57.8 U	58.4 U	NC
PCB008	151	70.4	NC	180	59.4	NC	502	95	NC
PCB009	25.9 U	27.7 U	NC	27.1 U	25.9 U	NC	37.1	28.2 U	NC
PCB010	89.5	30.1 U	NC	29.5 U	28.2 U	NC	30.4 U	30.7 U	NC
PCB011	222 U	237 U	NC	232 U	222 U	NC	333	242 U	NC
PCB012 & 013	37.7 U	40.3 U	NC	39.5 U	37.7 U	NC	40.7 U	41.1 U	NC
PCB014	41.4 U	44.2 U	NC	43.3 U	41.4 U	NC	44.6 U	45 U	NC
PCB015	62.3 U	66.5 U	NC	65.2 U	62.3 U	NC	178	67.8 U	NC
PCB016	163	56.7	NC	52.4	50 U	NC	420	83.7	NC
PCB017	588	131	NC	58.6	121	NC	1,400	233	NC
PCB018 & 030	495	139	NC	2.86	153 U	NC	1,950	316 U	NC
PCB019	2,100	365	NC	45.7	93.3	NC	679	110	NC
PCB020 & 028	1,600	353	NC	2,210	597	NC	14,200	2,480	NC
PCB021 & 033	269	219 U	NC	429	205 U	NC	809	223 U	NC
PCB022	338	84.3	NC	456	127	NC	1,490	261	NC
PCB023	50 U	53.4 U	NC	52.4 U	50 U	NC	53.9 U	54.5 U	NC
PCB024	30.5 U	32.5 U	NC	31.9 U	30.5 U	NC	32.8 U	33.2 U	NC
PCB025	131	47.6 U	NC	151	44.5 U	NC	340	59.9	NC
PCB026 & 029	262	102 U	NC	325	95.5 U	NC	943	163	NC
PCB027	166	46.1 U	NC	45.2	43.2 U	NC	374	58.4	NC
PCB031	941	223	NC	1,130	309	NC	3,400	587	NC
PCB032	248	64.1	NC	20.5	75.2	NC	1,740	290	NC
PCB034	35.9 U	38.3 U	NC	37.6 U	35.9 U	NC	38.7 U	39.1 U	NC
PCB035	37.3 U	39.8 U	NC	39 U	37.3 U	NC	40.2 U	40.6 U	NC
PCB036	39.5 U	42.2 U	NC	41.4 U	39.5 U	NC	42.6 U	43.1 U	NC
PCB037	182	41.6	NC	147	53	NC	660	107	NC
PCB038	28.6 U	30.6 U	NC	30 U	28.6 U	NC	44	31.2 U	NC
PCB039	35.9 U	38.3 U	NC	37.6 U	35.9 U	NC	55.2	39.1 U	NC
PCB040 & 041 & 071	807	155	NC	1,580	418	NC	21,000	3,780	NC
PCB042	616	116	NC	1,150	306	NC	16,000	2,800	NC
PCB043 & 073	99.7	53.4 U	NC	125	50 U	NC	1,610	270	NC
PCB044 & 047 & 065	5,520	983	NC	6,840	1,690	NC	79,700	13,200	NC
PCB045 & 051	842	150	NC	712	181	NC	4,380	741	NC
PCB046	114 U	121 U	NC	119 U	114 U	NC	978	171	NC
PCB048	317	61.9	NC	591	156	NC	7,420	1,280	NC
PCB049 & 069	2,970	524	NC	4,580	1,110	NC	58,600	9,550	NC
PCB050 & 053	561	97.4	NC	638	164	NC	3,730	623	NC

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB06E-11			EPA1-SB06W-01			EPA1-SB06W-04		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7627178.523	7627178.523	7627178.523	7623259.739	7623259.739	7623259.739	7625793.951	7625793.951	7625793.951
Y-coordinate	704970.9609	704970.9609	704970.9609	706089.1385	706089.1385	706089.1385	704637.7654	704637.7654	704637.7654
RiverMile	6.8	6.8	6.8	6.1	6.1	6.1	6.6	6.6	6.6
Sample Date	8-Oct-11	8-Oct-11	8-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	6-Oct-11	6-Oct-11	6-Oct-11
Sample Time	16:15	16:15	16:15	8:20	8:20	8:20	16:45	16:45	16:45
Sample Mass (g)	110.7	93.53	204.23	332.83	284.8	617.63	116.8	96.49	213.29
PCB052	4,380	789	NC	7,110	1,750	NC	95,300	15,500	NC
PCB054	274	45.2	NC	75.7	32.3 U	NC	97.6	35.1 U	NC
PCB055	34.1 U	36.4 U	NC	35.7 U	34.1 U	NC	36.8 U	37.1 U	NC
PCB056	704	132	NC	1,150	277	NC	8,500	1,370	NC
PCB057	28.6 U	30.6 U	NC	30 U	28.6 U	NC	154	31.2 U	NC
PCB058	30.5 U	32.5 U	NC	31.9 U	30.5 U	NC	130	33.2 U	NC
PCB059 & 062 & 075	341 U	364 U	NC	411	341 U	NC	5,540	919	NC
PCB060	589	104	NC	1,260	303	NC	26,300	4,260	NC
PCB061 & 070 & 074 & 076	4,710	847	NC	7,320	1,780	NC	76,600	12,300	NC
PCB063	164	28.6 U	NC	351	81	NC	4,040	642	NC
PCB064	1,250	225	NC	2,260	561	NC	37,900	6,380	NC
PCB066	3,260	565	NC	6,640	1,630	NC	93,500	15,300	NC
PCB067	83.4	29.1 U	NC	119	28.9	NC	490	77.5	NC
PCB068	90.9 U	97.1 U	NC	104	90.9 U	NC	163	99 U	NC
PCB072	67.8	21.8 U	NC	127	29.7	NC	504	81.7	NC
PCB073	99.7 U	53.4 U	NC	52.4 U	50 U	NC	1,610	270	NC
PCB077	215	44.7 U	NC	263	62.4	NC	1,810	278	NC
PCB078	20.9 U	22.3 U	NC	21.9 U	20.9 U	NC	22.5 U	22.8 U	NC
PCB079	35.6	37.9 U	NC	67.6	35.5 U	NC	491	78.5	NC
PCB080	34.1 U	35.9 U	NC	35.2 U	33.6 U	NC	36.3 U	36.6 U	NC
PCB081	40.9 U	43.7 U	NC	43.1	40.9 U	NC	210	44.6 U	NC
PCB082	395	70.5	NC	898	212	NC	6,630	1,100	NC
PCB083	273	64.6 U	NC	595	118	NC	3,730	743	NC
PCB084	1,090	192	NC	1,640	395	NC	10,700	1,780	NC
PCB085 & 117 & 116	1,670	280	NC	3,470	801	NC	28,800	4,610	NC
PCB086 & 087 & 097 & 108 & 119 & 125	4,150	728 U	NC	7,870	1,850	NC	60,300	9,710	NC
PCB088 & 091	1,170	206	NC	2,070	487	NC	11,900	1,910	NC
PCB089	26.8	28.2 U	NC	57.8	26.4 U	NC	828	141	NC
PCB090 & 101 & 113	8,700	1,500	NC	17,100	3,990	NC	92,200	14,900	NC
PCB092	1,840	318	NC	3,490	812	NC	18,300	2,930	NC
PCB093 & 098 & 100 & 102	1,070	558 U	NC	1,100	523 U	NC	2,660	569 U	NC
PCB094	114 U	121 U	NC	119 U	114 U	NC	245	124 U	NC
PCB095	4,440	786	NC	7,590	1,820	NC	37,100	6,110	NC
PCB096	56.7	54.4 U	NC	79.8	50.9 U	NC	532	87.2	NC
PCB099	6,110	1,020	NC	10,900	2,650	NC	62,800	10,600	NC
PCB103	254	44.7 U	NC	324	75.8	NC	680	107	NC
PCB104	67.7 U	72.3 U	NC	71 U	67.7 U	NC	73 U	73.8 U	NC
PCB105	2,990	518	NC	6,770	1,550	NC	50,200	7,130	NC
PCB106	67.3 U	71.8 U	NC	70.5 U	67.3 U	NC	72.5 U	73.3 U	NC
PCB107 & 124	233	52.9 U	NC	435	97.5	NC	1,550	239	NC
PCB109	703	120	NC	1,400	340	NC	6,710	1,060	NC
PCB110 & 115	6,900	1,220	NC	12,700	2,980	NC	80,300	13,200	NC
PCB111	33.6 U	35.9 U	NC	38.7	33.6 U	NC	38.1	36.6 U	NC

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB06E-11			EPA1-SB06W-01			EPA1-SB06W-04		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7627178.523	7627178.523	7627178.523	7623259.739	7623259.739	7623259.739	7625793.951	7625793.951	7625793.951
Y-coordinate	704970.9609	704970.9609	704970.9609	706089.1385	706089.1385	706089.1385	704637.7654	704637.7654	704637.7654
RiverMile	6.8	6.8	6.8	6.1	6.1	6.1	6.6	6.6	6.6
Sample Date	8-Oct-11	8-Oct-11	8-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	6-Oct-11	6-Oct-11	6-Oct-11
Sample Time	16:15	16:15	16:15	8:20	8:20	8:20	16:45	16:45	16:45
Sample Mass (g)	110.7	93.53	204.23	332.83	284.8	617.63	116.8	96.49	213.29
PCB112	50 U	53.4 U	NC	52.4 U	50 U	NC	53.9 U	54.5 U	NC
PCB114	225	59.7 U	NC	525	118	NC	3,740	552	NC
PCB118	10,700	1,850	NC	21,400	5,100	NC	106,000	15,800	NC
PCB120	114 U	121 U	NC	143	114 U	NC	190	124 U	NC
PCB121	31.4 U	33.5 U	NC	34.5	31.4 U	NC	33.8 U	34.2 U	NC
PCB122	53.2	44.2 U	NC	102	41.4 U	NC	273	68.9	NC
PCB123	237	56.3 U	NC	526	108	NC	2,460	424	NC
PCB126	61.4 U	65.5 U	NC	64.3 U	61.4 U	NC	142	66.8 U	NC
PCB127	39.1 U	41.7 U	NC	41 U	39.1 U	NC	94.7	42.6 U	NC
PCB128 & 166	1,910	293	NC	3,820	807	NC	8,590	1,140	NC
PCB129 & 138 & 163	20,400	3,030	NC	39,900	8,130	NC	65,400	8,830	NC
PCB130	781	113	NC	1,660	337	NC	3,440	504	NC
PCB131	81.8	41.3 U	NC	155	38.6 U	NC	412	63.1	NC
PCB132	2,330	359	NC	4,270	942	NC	9,070	1,420	NC
PCB133	477	69.8	NC	883	172	NC	936	140	NC
PCB134 & 143	404	243 U	NC	771	227 U	NC	1,950	289	NC
PCB135 & 151	5,340	793	NC	9,140	1,940	NC	14,900	2,410	NC
PCB136	1,160	180	NC	1,820	413	NC	3,830	622	NC
PCB137	783	141 U	NC	1,160	272	NC	3,300	535	NC
PCB139 & 140	297	58.3 U	NC	547	111	NC	1,270	193	NC
PCB141	2,720	407	NC	4,920	987	NC	10,800	1,550	NC
PCB142	38.6 U	41.3 U	NC	40.5 U	38.6 U	NC	41.7 U	42.1 U	NC
PCB144	532	79.6	NC	972	206	NC	1,960	313	NC
PCB145	42.7 U	45.6 U	NC	44.8 U	42.7 U	NC	46.1 U	46.5 U	NC
PCB146	4,330	631	NC	8,050	1,680	NC	9,850	1,490	NC
PCB147 & 149	9,040	1,370	NC	17,400	3,650	NC	24,200	3,750	NC
PCB148	78.8	72.8 U	NC	144	68.2 U	NC	79.1	74.3 U	NC
PCB150	49.1 U	52.4 U	NC	74.9	49.1 U	NC	52.9 U	53.5 U	NC
PCB152	53.2 U	56.8 U	NC	55.7 U	53.2 U	NC	61.4	57.9 U	NC
PCB153 & 168	25,000	3,630	NC	45,200	9,020	NC	53,000	7,870	NC
PCB154	534	78.2	NC	863	179	NC	705	111	NC
PCB155	55.9 U	59.7 U	NC	58.6 U	55.9 U	NC	60.3 U	60.9 U	NC
PCB156 & 157	1,940	315	NC	3,710	805	NC	7,580	1,130	NC
PCB158	1,640	242	NC	3,180	645	NC	5,930	785	NC
PCB159	114 U	121 U	NC	119 U	114 U	NC	123 U	124 U	NC
PCB160	4.09 U	4.37 U	NC	4.29 U	4.09 U	NC	4.41 U	4.46 U	NC
PCB161	54.1 U	57.8 U	NC	56.7 U	54.1 U	NC	58.3 U	58.9 U	NC
PCB162	62.9	41 U	NC	298	58	NC	207	41.8 U	NC
PCB164	838	130	NC	1,630	294	NC	3,320	467	NC
PCB165	53.6 U	57.3 U	NC	56.2 U	53.6 U	NC	57.8 U	58.4 U	NC
PCB167	774	126	NC	1,510	316	NC	2,100	317	NC
PCB169	36 U	38.4 U	NC	95.8 U	36 U	NC	66.1 U	39.2 U	NC
PCB170	4,010	715	NC	8,710	1,890	NC	6,410	935	NC

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB06E-11			EPA1-SB06W-01			EPA1-SB06W-04		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7627178.523	7627178.523	7627178.523	7623259.739	7623259.739	7623259.739	7625793.951	7625793.951	7625793.951
Y-coordinate	704970.9609	704970.9609	704970.9609	706089.1385	706089.1385	706089.1385	704637.7654	704637.7654	704637.7654
RiverMile	6.8	6.8	6.8	6.1	6.1	6.1	6.6	6.6	6.6
Sample Date	8-Oct-11	8-Oct-11	8-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	6-Oct-11	6-Oct-11	6-Oct-11
Sample Time	16:15	16:15	16:15	8:20	8:20	8:20	16:45	16:45	16:45
Sample Mass (g)	110.7	93.53	204.23	332.83	284.8	617.63	116.8	96.49	213.29
PCB171 & 173	1,340	206	NC	2,760	597	NC	2,380	330	NC
PCB172	755	119	NC	1,730	362	NC	1,410	195	NC
PCB174	2,150	354	NC	4,850	1,010	NC	4,740	628	NC
PCB175	163	71.4 U	NC	361	71.3	NC	318	72.8 U	NC
PCB176	234	88.8 U	NC	600	114	NC	528	90.6 U	NC
PCB177	1,870	303	NC	4,570	939	NC	3,840	527	NC
PCB178	1,230	185	NC	2,590	500	NC	2,060	297	NC
PCB179	1,100	181	NC	2,330	469	NC	2,770	412	NC
PCB180 & 193	12,700	2,270	NC	25,500	5,550	NC	17,000	2,470	NC
PCB181	60.9 U	65 U	NC	115	60.9 U	NC	108 U	66.3 U	NC
PCB182	41.4 U	44.2 U	NC	65.4	41.4 U	NC	44.6 U	45 U	NC
PCB183 & 185	3,740	578	NC	7,960	1,620	NC	6,520	876	NC
PCB184	49.5 U	52.9 U	NC	51.9 U	49.5 U	NC	53.4 U	54 U	NC
PCB186	71.8 U	76.7 U	NC	75.2 U	71.8 U	NC	77.5 U	78.2 U	NC
PCB187	7,920	1,250	NC	15,700	3,130	NC	12,700	1,740	NC
PCB188	57.7 U	61.7 U	NC	60.5 U	57.7 U	NC	62.3 U	62.9 U	NC
PCB189	193	35.1 U	NC	412	78.9	NC	291	43.4	NC
PCB190	554	122	NC	1,390	349	NC	1,080	187	NC
PCB191	223	61.7 U	NC	440	88	NC	309	62.9 U	NC
PCB192	40 U	42.7 U	NC	41.9 U	40 U	NC	43.1 U	43.6 U	NC
PCB194	1,640	287	NC	3,980	920	NC	1,900	325	NC
PCB195	806	137	NC	1,830	394	NC	941	156	NC
PCB196	951	173	NC	2,130	469	NC	1,140	186	NC
PCB197 & 200	181	101 U	NC	453	94.6	NC	304	103 U	NC
PCB198 & 199	1,610	327	NC	4,230	973	NC	2,730	451	NC
PCB201	238	40.5 U	NC	555	113	NC	346	55	NC
PCB202	526	88.2	NC	1,270	259	NC	811	127	NC
PCB203	1,430	256	NC	3,200	714	NC	1,990	329	NC
PCB204	55.4 U	59.2 U	NC	58 U	55.4 U	NC	59.8 U	60.3 U	NC
PCB205	97.1	58.9 U	NC	233	55.1 U	NC	128	60 U	NC
PCB206	547	104	NC	1,430	341	NC	687	128	NC
PCB207	109 U	117 U	NC	202	109 U	NC	118 U	119 U	NC
PCB208	201	119 U	NC	510	112	NC	248	121 U	NC
PCB209	271	62	NC	661	169	NC	230	54.7 U	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB06E-11			EPA1-SB06W-01			EPA1-SB06W-04		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7627178.523	7627178.523	7627178.523	7623259.739	7623259.739	7623259.739	7625793.951	7625793.951	7625793.951
Y-coordinate	704970.9609	704970.9609	704970.9609	706089.1385	706089.1385	706089.1385	704637.7654	704637.7654	704637.7654
RiverMile	6.8	6.8	6.8	6.1	6.1	6.1	6.6	6.6	6.6
Sample Date	8-Oct-11	8-Oct-11	8-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	6-Oct-11	6-Oct-11	6-Oct-11
Sample Time	16:15	16:15	16:15	8:20	8:20	8:20	16:45	16:45	16:45
Sample Mass (g)	110.7	93.53	204.23	332.83	284.8	617.63	116.8	96.49	213.29
Monochlorobiphenyl homologs	42.3 UT	45.1 UT	NC	44.3 UT	42.3 UT	NC	45.6 UT	46 UT	NC
Dichlorobiphenyl homologs	1,280 T	423 T	NC	637 JT	283 T	NC	1,850 T	406 T	NC
Trichlorobiphenyl homologs	7,550 T	1,730 T	NC	5,140 T	1,740 T	NC	28,500 T	4,770 T	NC
Tetrachlorobiphenyl homologs	27,800 T	5,270 T	NC	43,600 T	10,900 T	NC	547,000 T	90,000 T	NC
Pentachlorobiphenyl homologs	53,500 T	9,170 T	NC	101,000 T	24,100 T	NC	589,000 T	93,700 T	NC
Hexachlorobiphenyl homologs	81,600 T	12,300 T	NC	152,000 T	31,300 T	NC	233,000 T	34,200 T	NC
Heptachlorobiphenyl homologs	38,300 T	6,520 T	NC	80,100 T	16,900 T	NC	62,500 T	8,870 T	NC
Octachlorobiphenyl homologs	7,480 T	1,370 T	NC	17,900 T	3,960 T	NC	10,300 T	1,710 T	NC
Nonachlorobiphenyl homologs	803 T	222 T	NC	2,140 T	508 T	NC	994 T	248 T	NC
Total PCB Congeners (RI Calc; ND=0)	217,000 JT	34,100 JT	134,000 JT	403,000 JT	87,800 JT	258,000 JT	1,470,000 JT	232,000 JT	912,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	219,000 JT	37,100 JT	136,000 JT	404,000 JT	89,900 JT	259,000 JT	1,470,000 JT	234,000 JT	913,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	0.533 JT	0.0843 JT	0.328 JT	1.08 JT	0.249 JT	0.699 JT	19.6 JT	0.79 JT	11.1 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	4.15 JT	3.95 JT	4.06 JT	5.74 JT	3.86 JT	4.87 JT	20.6 JT	4.72 JT	13.4 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	16.5 JT	6.7 JT	12 JT	22.1 JT	8.56 JT	15.8 JT	133 JT	20.5 JT	82.1 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.271 JT	0.192 JT	0.235 JT	0.385 JT	0.211 JT	0.305 JT	1.86 JT	0.334 JT	1.17 JT
% Lipids	7.04	1.04	NC	8.59	2.13	NC	9.44	1.12	NC

Notes:

All concentrations are in units of ng/kg (except for the proof and rinsate blanks on pages 51 to 55 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
NC	Not calculated
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB07E-04			EPA1-SB07E-05			EPA1-SB07E-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7630501.76	7630501.76	7630501.76	7631760.293	7631760.293	7631760.293	7631349.5	7631349.5	7631349.5
Y-coordinate	702199.7767	702199.7767	702199.7767	701577.0326	701577.0326	701577.0326	701694.068	701694.068	701694.068
RiverMile	7.6	7.6	7.6	7.9	7.9	7.9	7.9	7.9	7.9
Sample Date	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11
Sample Time	16:15	16:15	16:15	15:30	15:30	15:30	15:42	15:42	15:42
Sample Mass (g)	154.94	133.25	288.19	115.92	84.2	200.12	259.45	215.09	474.54
PCB001	36.4 U	36.4 U	NC	35.4 U	21.4 U	NC	37.1 U	35 U	NC
PCB002	45.1 U	45.1 U	NC	43.9 U	26.6 U	NC	46 U	43.5 U	NC
PCB003	23.8 U	23.8 U	NC	23.1 U	14.4	NC	24.3 U	22.9 U	NC
PCB004	340	73.8 U	NC	236	45.6	NC	379	75.7	NC
PCB005	45.1 U	45.1 U	NC	43.9 U	26.6 U	NC	46 U	43.5 U	NC
PCB006	44	42.2 U	NC	41 U	24.9 U	NC	52.4	40.7 U	NC
PCB007	57.3 U	57.3 U	NC	55.7 U	33.7 U	NC	58.4 U	55.1 U	NC
PCB008	171	47.6 U	NC	147	50.3	NC	208	45.8 U	NC
PCB009	27.7 U	27.7 U	NC	26.9 U	16.3 U	NC	28.2 U	26.6 U	NC
PCB010	30.1 U	30.1 U	NC	29.2 U	17.7 U	NC	30.7 U	29 U	NC
PCB011	408	237 U	NC	230 U	139 U	NC	242 U	228 U	NC
PCB012 & 013	40.3 U	40.3 U	NC	39.2 U	23.7 U	NC	41.1 U	38.8 U	NC
PCB014	44.2 U	44.2 U	NC	42.9 U	26 U	NC	45 U	42.5 U	NC
PCB015	84.8	66.5 U	NC	68.2	39.1 U	NC	87.6	64 U	NC
PCB016	145	53.4 U	NC	158	49.6	NC	185	51.4 U	NC
PCB017	412	86.9	NC	452	92.7	NC	559	91.5	NC
PCB018 & 030	442	99.2 U	NC	472	106 U	NC	679	90.8	NC
PCB019	598	110	NC	466	78.6	NC	736	118	NC
PCB020 & 028	1,660	357	NC	1,850	323	NC	2,210	277	NC
PCB021 & 033	261	219 U	NC	250	129 U	NC	377	211 U	NC
PCB022	329	71.1	NC	396	75.8	NC	413	53	NC
PCB023	53.4 U	53.4 U	NC	51.9 U	31.4 U	NC	54.5 U	51.4 U	NC
PCB024	32.5 U	32.5 U	NC	31.6 U	19.1 U	NC	33.2 U	31.3 U	NC
PCB025	111	47.6 U	NC	140	28 U	NC	174	45.8 U	NC
PCB026 & 029	258	102 U	NC	309	60 U	NC	444	98.1 U	NC
PCB027	77.3	46.1 U	NC	81.2	27.1 U	NC	122	44.4 U	NC
PCB031	936	204	NC	1,080	203	NC	1,320	143	NC
PCB032	192	45.1	NC	208	46.8 U	NC	321	53.4	NC
PCB034	38.3 U	38.3 U	NC	37.3 U	22.6 U	NC	39.1 U	36.9 U	NC
PCB035	39.8 U	39.8 U	NC	38.7 U	23.4 U	NC	40.6 U	38.3 U	NC
PCB036	42.2 U	42.2 U	NC	41 U	24.9 U	NC	43.1 U	40.7 U	NC
PCB037	271	61.8	NC	189	34.9	NC	191	37.3	NC
PCB038	30.6 U	30.6 U	NC	29.7 U	18 U	NC	31.2 U	29.4 U	NC
PCB039	38.3 U	38.3 U	NC	37.3 U	22.6 U	NC	39.1 U	36.9 U	NC
PCB040 & 041 & 071	783	165	NC	913	138	NC	1,260	191	NC
PCB042	704	132	NC	892	122	NC	776	94.9	NC
PCB043 & 073	89.7	53.4 U	NC	3,610	31.4 U	NC	3,610	771	NC
PCB044 & 047 & 065	4,640	882	NC	6,250	858	NC	5,490	1,260	NC
PCB045 & 051	672	130	NC	957	148	NC	682	208	NC
PCB046	121 U	121 U	NC	118 U	71.4 U	NC	124 U	117 U	NC
PCB048	314	64.7	NC	357	57.4	NC	428	53.9	NC
PCB049 & 069	2,920	554	NC	3,940	560	NC	3,930	629	NC
PCB050 & 053	414	81.1	NC	547	81.9	NC	515	126	NC

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB07E-04			EPA1-SB07E-05			EPA1-SB07E-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7630501.76	7630501.76	7630501.76	7631760.293	7631760.293	7631760.293	7631349.5	7631349.5	7631349.5
Y-coordinate	702199.7767	702199.7767	702199.7767	701577.0326	701577.0326	701577.0326	701694.068	701694.068	701694.068
RiverMile	7.6	7.6	7.6	7.9	7.9	7.9	7.9	7.9	7.9
Sample Date	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11
Sample Time	16:15	16:15	16:15	15:30	15:30	15:30	15:42	15:42	15:42
Sample Mass (g)	154.94	133.25	288.19	115.92	84.2	200.12	259.45	215.09	474.54
PCB052	4,760	930	NC	5,840	892	NC	5,790	866	NC
PCB054	95.1	34.5 U	NC	113	20.3 U	NC	116	33.2 U	NC
PCB055	36.4 U	36.4 U	NC	35.4 U	21.4 U	NC	37.1 U	35 U	NC
PCB056	668	134	NC	937	124	NC	799	86.3	NC
PCB057	30.6 U	30.6 U	NC	29.7 U	18 U	NC	31.2 U	29.4 U	NC
PCB058	32.5 U	32.5 U	NC	31.6 U	19.1 U	NC	33.2 U	31.3 U	NC
PCB059 & 062 & 075	364 U	364 U	NC	355	214 U	NC	371 U	350 U	NC
PCB060	669	130	NC	782	96.6	NC	894	93.8	NC
PCB061 & 070 & 074 & 076	5,370	1,050	NC	6,160	759	NC	6,290	803	NC
PCB063	210	40.6	NC	212	24.6	NC	272	35.1	NC
PCB064	1,310	262	NC	1,700	238	NC	1,760	188	NC
PCB066	3,920	777	NC	4,190	524	NC	5,010	641	NC
PCB067	78	29.1 U	NC	99.7	17.1 U	NC	85.2	28 U	NC
PCB068	97.1 U	97.1 U	NC	111	57.1 U	NC	123	93.5 U	NC
PCB072	71	21.8 U	NC	94.3	12.9 U	NC	112	21 U	NC
PCB073	89.7	53.4 U	NC	51.9 U	31.4 U	NC	54.5 U	51.4 U	NC
PCB077	294	59.3	NC	275	38.3	NC	246	43 U	NC
PCB078	22.3 U	22.3 U	NC	21.7 U	13.1 U	NC	22.8 U	21.5 U	NC
PCB079	60.6	37.9 U	NC	46.7	22.3 U	NC	127	36.4 U	NC
PCB080	35.9 U	35.9 U	NC	34.9 U	21.1 U	NC	36.6 U	34.6 U	NC
PCB081	43.7 U	43.7 U	NC	42.5 U	25.7 U	NC	44.6 U	42.1 U	NC
PCB082	428	86	NC	653	77.9	NC	424	82.7	NC
PCB083	313	64.6 U	NC	581	71.3	NC	317	62.1 U	NC
PCB084	1,200	241	NC	1,820	233	NC	1,040	216	NC
PCB085 & 117 & 116	1,780	350	NC	2,280	297	NC	2,300	399	NC
PCB086 & 087 & 097 & 108 & 119 & 125	4,340	866	NC	6,410	819	NC	4,520	940	NC
PCB088 & 091	1,200	228	NC	1,970	255	NC	1,180	245	NC
PCB089	29	28.2 U	NC	36.4	16.6 U	NC	38.2	27.1 U	NC
PCB090 & 101 & 113	9,220	1,820	NC	13,900	1,880	NC	9,790	2,480	NC
PCB092	1,870	358	NC	2,920	372	NC	2,170	518	NC
PCB093 & 098 & 100 & 102	586	558 U	NC	892	329 U	NC	721	537 U	NC
PCB094	121 U	121 U	NC	118 U	71.4 U	NC	124 U	117 U	NC
PCB095	4,730	947	NC	7,560	995	NC	4,820	1,110	NC
PCB096	54.4 U	54.4 U	NC	65.8	32 U	NC	58.7	52.3 U	NC
PCB099	6,530	1,280	NC	7,670	978	NC	7,880	1,690	NC
PCB103	204	44.7 U	NC	373	48.9	NC	207	67.8	NC
PCB104	72.3 U	72.3 U	NC	70.3 U	42.6 U	NC	73.8 U	69.6 U	NC
PCB105	3,520	690	NC	4,150	508	NC	4,050	723	NC
PCB106	71.8 U	71.8 U	NC	69.8 U	42.3 U	NC	73.3 U	69.2 U	NC
PCB107 & 124	266	52.9 U	NC	380	43.2	NC	275	50.9 U	NC
PCB109	859	150	NC	1,080	125	NC	1,090	221	NC
PCB110 & 115	7,190	1,470	NC	11,100	1,430	NC	8,060	1,610	NC
PCB111	35.9 U	35.9 U	NC	34.9 U	21.1 U	NC	36.6 U	34.6 U	NC

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB07E-04			EPA1-SB07E-05			EPA1-SB07E-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7630501.76	7630501.76	7630501.76	7631760.293	7631760.293	7631760.293	7631349.5	7631349.5	7631349.5
Y-coordinate	702199.7767	702199.7767	702199.7767	701577.0326	701577.0326	701577.0326	701694.068	701694.068	701694.068
RiverMile	7.6	7.6	7.6	7.9	7.9	7.9	7.9	7.9	7.9
Sample Date	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11
Sample Time	16:15	16:15	16:15	15:30	15:30	15:30	15:42	15:42	15:42
Sample Mass (g)	154.94	133.25	288.19	115.92	84.2	200.12	259.45	215.09	474.54
PCB112	53.4 U	53.4 U	NC	51.9 U	31.4 U	NC	54.5 U	51.4 U	NC
PCB114	274	59.7 U	NC	287	43.1	NC	330	57.5 U	NC
PCB118	11,600	2,320	NC	14,000	1,720	NC	14,000	3,050	NC
PCB120	121 U	121 U	NC	125	71.4 U	NC	141	117 U	NC
PCB121	33.5 U	33.5 U	NC	32.5 U	19.7 U	NC	34.2 U	32.2 U	NC
PCB122	56.7	44.2 U	NC	82.2	42.3 U	NC	55.7	42.5 U	NC
PCB123	261	60	NC	326	33.3	NC	322	54.2 U	NC
PCB126	65.5 U	65.5 U	NC	63.7 U	38.6 U	NC	66.8 U	63.1 U	NC
PCB127	41.7 U	41.7 U	NC	40.6 U	24.6 U	NC	42.6 U	40.2 U	NC
PCB128 & 166	2,050	410	NC	2,940	313	NC	2,770	704	NC
PCB129 & 138 & 163	21,700	4,240	NC	33,300	3,640	NC	30,300	9,040	NC
PCB130	815	159	NC	1,650	166	NC	1,140	249	NC
PCB131	88.1	41.3 U	NC	175	24.3 U	NC	101	39.7 U	NC
PCB132	2,290	475	NC	4,840	512	NC	2,440	557	NC
PCB133	460	91.8	NC	750	72.6	NC	1,100	185	NC
PCB134 & 143	381	243 U	NC	879	143 U	NC	475	234 U	NC
PCB135 & 151	4,790	1,020	NC	9,790	1,080	NC	6,590	1,860	NC
PCB136	1,010	221	NC	2,200	259	NC	1,230	342	NC
PCB137	887	174	NC	1,220	119	NC	1,240	236	NC
PCB139 & 140	286	58.3 U	NC	460	44.9	NC	415	86.5	NC
PCB141	2,200	498	NC	4,440	438	NC	3,320	1,250	NC
PCB142	41.3 U	41.3 U	NC	40.1 U	24.3 U	NC	42.1 U	39.7 U	NC
PCB144	447	93	NC	1,060	102	NC	595	151	NC
PCB145	45.6 U	45.6 U	NC	44.3 U	26.9 U	NC	46.5 U	43.9 U	NC
PCB146	4,540	899	NC	7,830	783	NC	9,090	1,840	NC
PCB147 & 149	8,140	1,680	NC	20,000	2,130	NC	9,800	1,970	NC
PCB148	72.8 U	72.8 U	NC	123	42.9 U	NC	112	70.1 U	NC
PCB150	52.4 U	52.4 U	NC	81.8	30.9 U	NC	46.5 U	50.5 U	NC
PCB152	56.8 U	56.8 U	NC	55.2 U	33.4 U	NC	57.9 U	54.7 U	NC
PCB153 & 168	25,300	5,050	NC	39,100	3,910	NC	38,500	11,900	NC
PCB154	375	79.3	NC	726	75.7	NC	674	175	NC
PCB155	59.7 U	59.7 U	NC	58 U	35.1 U	NC	60.9 U	57.5 U	NC
PCB156 & 157	1,990	376	NC	2,490	292	NC	2,570	857	NC
PCB158	1,500	306	NC	2,380	255	NC	2,310	777	NC
PCB159	121 U	121 U	NC	118 U	71.4 U	NC	124 U	117 U	NC
PCB160	4.37 U	4.37 U	NC	4.25 U	2.57 U	NC	4.46 U	4.21 U	NC
PCB161	57.8 U	57.8 U	NC	56.1 U	34 U	NC	58.9 U	55.6 U	NC
PCB162	57.7	41 U	NC	70.7	24.1 U	NC	83.5	39.5 U	NC
PCB164	787	148	NC	1,470	155	NC	1,070	301	NC
PCB165	57.3 U	57.3 U	NC	55.7 U	33.7 U	NC	69.8	55.1 U	NC
PCB167	860	159	NC	1,170	138	NC	1,030	307	NC
PCB169	98.8 J	38.4 U	NC	80.9	24.4	NC	98 J	37 U	NC
PCB170	4,780	768	NC	5,320	645	NC	5,120	2,990	NC

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB07E-04			EPA1-SB07E-05			EPA1-SB07E-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7630501.76	7630501.76	7630501.76	7631760.293	7631760.293	7631760.293	7631349.5	7631349.5	7631349.5
Y-coordinate	702199.7767	702199.7767	702199.7767	701577.0326	701577.0326	701577.0326	701694.068	701694.068	701694.068
RiverMile	7.6	7.6	7.6	7.9	7.9	7.9	7.9	7.9	7.9
Sample Date	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11
Sample Time	16:15	16:15	16:15	15:30	15:30	15:30	15:42	15:42	15:42
Sample Mass (g)	154.94	133.25	288.19	115.92	84.2	200.12	259.45	215.09	474.54
PCB171 & 173	1,430	248	NC	1,940	212	NC	1,780	919	NC
PCB172	928	158	NC	1,270	130	NC	1,190	489	NC
PCB174	2,180	402	NC	4,630	530	NC	2,370	608	NC
PCB175	161	71.4 U	NC	313	42 U	NC	239	80.1	NC
PCB176	215	88.8 U	NC	617	66.4	NC	285	85.5 U	NC
PCB177	2,140	391	NC	4,110	482	NC	2,840	672	NC
PCB178	1,340	253	NC	2,200	229	NC	2,700	607	NC
PCB179	1,090	211	NC	2,490	272	NC	1,270	379	NC
PCB180 & 193	16,200	2,670	NC	18,100	2,130	NC	25,400	8,890	NC
PCB181	65 U	65 U	NC	63.2 U	38.3 U	NC	78.7	62.6 U	NC
PCB182	44.2 U	44.2 U	NC	66.2	26 U	NC	81.2	62.6 U	NC
PCB183 & 185	4,410	778	NC	6,200	661	NC	5,820	42.5	NC
PCB184	52.9 U	52.9 U	NC	51.4 U	31.1 U	NC	54 U	50.9 U	NC
PCB186	76.7 U	76.7 U	NC	74.5 U	45.1 U	NC	78.2 U	73.8 U	NC
PCB187	11,300	2,140	NC	17,900	1,880	NC	22,200	3,920	NC
PCB188	61.7 U	61.7 U	NC	59.9 U	36.3 U	NC	124	59.3 U	NC
PCB189	207	36	NC	260	36.4	NC	287	133	NC
PCB190	735	154	NC	667	106	NC	669	354	NC
PCB191	241	61.7 U	NC	306	36.3 U	NC	324	145	NC
PCB192	42.7 U	42.7 U	NC	41.5 U	25.1 U	NC	43.6 U	41.1 U	NC
PCB194	2,410	395	NC	2,210	245	NC	6,080	1,410	NC
PCB195	1,060	171	NC	992	113	NC	1,820	584	NC
PCB196	1,250	213	NC	1,290	154	NC	3,460	740	NC
PCB197 & 200	222	101 U	NC	355	59.3 U	NC	391	97 U	NC
PCB198 & 199	2,540	483	NC	2,790	369	NC	7,460	1,000	NC
PCB201	289	56.8	NC	445	47.1	NC	1,040	120	NC
PCB202	781	143	NC	836	103	NC	1,630	246	NC
PCB203	2,260	362	NC	1,950	223	NC	3,200	855	NC
PCB204	59.2 U	59.2 U	NC	57.5 U	34.8 U	NC	60.3 U	57 U	NC
PCB205	129	58.9 U	NC	133	34.7 U	NC	204	72.9	NC
PCB206	1,060	194	NC	747	92.7	NC	6,770	344	NC
PCB207	171	117 U	NC	115	68.6 U	NC	1,170	112 U	NC
PCB208	335	119 U	NC	283	69.8 U	NC	2,740	114 U	NC
PCB209	533	120	NC	296	53.4	NC	3,000	93.6	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB07E-04			EPA1-SB07E-05			EPA1-SB07E-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7630501.76	7630501.76	7630501.76	7631760.293	7631760.293	7631760.293	7631349.5	7631349.5	7631349.5
Y-coordinate	702199.7767	702199.7767	702199.7767	701577.0326	701577.0326	701577.0326	701694.068	701694.068	701694.068
RiverMile	7.6	7.6	7.6	7.9	7.9	7.9	7.9	7.9	7.9
Sample Date	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11
Sample Time	16:15	16:15	16:15	15:30	15:30	15:30	15:42	15:42	15:42
Sample Mass (g)	154.94	133.25	288.19	115.92	84.2	200.12	259.45	215.09	474.54
Monochlorobiphenyl homologs	45.1 UT	45.1 UT	NC	43.9 UT	25.1 T	NC	46 UT	43.5 UT	NC
Dichlorobiphenyl homologs	1,080 T	237 UT	NC	615 T	214 T	NC	877 T	293 T	NC
Trichlorobiphenyl homologs	5,760 T	1,290 T	NC	6,120 T	1,100 T	NC	7,800 T	1,160 T	NC
Tetrachlorobiphenyl homologs	28,500 T	5,850 T	NC	38,500 T	4,930 T	NC	38,600 T	6,490 T	NC
Pentachlorobiphenyl homologs	56,700 T	11,600 T	NC	78,800 T	10,300 T	NC	64,000 T	14,000 T	NC
Hexachlorobiphenyl homologs	81,300 JT	16,500 T	NC	139,000 T	14,700 T	NC	117,000 JT	33,200 T	NC
Heptachlorobiphenyl homologs	47,500 T	8,430 T	NC	66,500 T	7,480 T	NC	72,800 T	20,400 T	NC
Octachlorobiphenyl homologs	10,900 T	1,900 T	NC	11,000 T	1,300 T	NC	25,300 T	5,080 T	NC
Nonachlorobiphenyl homologs	1,570 T	312 T	NC	1,150 T	162 T	NC	10,700 T	457 T	NC
Total PCB Congeners (RI Calc; ND=0)	233,000 JT	43,600 JT	145,000 JT	342,000 JT	38,800 JT	214,000 JT	339,000 JT	78,800 JT	221,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	234,000 JT	46,300 JT	147,000 JT	342,000 JT	40,300 JT	215,000 JT	340,000 JT	81,200 JT	223,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	3.55 JT	0.115 JT	1.96 JT	3.13 JT	0.819 JT	2.16 JT	3.64 JT	0.152 JT	2.06 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	6.84 JT	3.97 JT	5.51 JT	6.33 JT	2.75 JT	4.82 JT	6.99 JT	3.87 JT	5.58 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	21 JT	8.58 JT	15.2 JT	20 JT	5.26 JT	13.8 JT	18.8 JT	6.55 JT	13.3 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.303 JT	0.2 JT	0.255 JT	0.315 JT	0.122 JT	0.234 JT	0.321 JT	0.197 JT	0.265 JT
% Lipids	8.92	1.72	NC	6.47	0.83	NC	12	1.57	NC

Notes:

All concentrations are in units of ng/kg (except for the proof and rinsate blanks on pages 51 to 55 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
NC	Not calculated
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB08W-01			EPA1-SB08W-05			EPA1-SB08W-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7630437.208	7630437.208	7630437.208	7633514.593	7633514.593	7633514.593	7630400.532	7630400.532	7630400.532
Y-coordinate	699436.5357	699436.5357	699436.5357	696771.2835	696771.2835	696771.2835	699535.9693	699535.9693	699535.9693
RiverMile	8	8	8	8.8	8.8	8.8	8	8	8
Sample Date	27-Sep-11	27-Sep-11	27-Sep-11	27-Sep-11	27-Sep-11	27-Sep-11	7-Oct-11	7-Oct-11	7-Oct-11
Sample Time	11:33	11:33	11:33	10:00	10:00	10:00	16:50	16:50	16:50
Sample Mass (g)	381.98	293.4	675.38	106.82	88.4	195.22	205.65	131.12	336.77
PCB001	63.9	22.5 U	NC	20.8 U	22.5 U	NC	80	33.5 U	NC
PCB002	26.8 U	27.9 U	NC	25.8 U	27.9 U	NC	43.9 U	41.5 U	NC
PCB003	19.7	15.6	NC	18.4	14.7 U	NC	23.1 U	21.9 U	NC
PCB004	1,100	183	NC	359	47.1	NC	1,150	256	NC
PCB005	26.8 U	27.9 U	NC	25.8 U	27.9 U	NC	43.9 U	41.5 U	NC
PCB006	175	28.3	NC	117	26.1 U	NC	142	38.8 U	NC
PCB007	34 U	35.4 U	NC	32.8 U	35.4 U	NC	55.7 U	52.7 U	NC
PCB008	530	90.9	NC	496	84.4	NC	478	129	NC
PCB009	60.3	17.1 U	NC	28.9	17.1 U	NC	50.3	25.4 U	NC
PCB010	77.7	18.6 U	NC	20.2	18.6 U	NC	72.2	27.7 U	NC
PCB011	447	159	NC	234	149	NC	230	218 U	NC
PCB012 & 013	23.9 U	24.9 U	NC	23.1 U	24.9 U	NC	39.2 U	37.1 U	NC
PCB014	26.3 U	27.3 U	NC	25.3 U	27.3 U	NC	42.9 U	40.6 U	NC
PCB015	410	67.6	NC	139	41.1 U	NC	221	61.2 U	NC
PCB016	1,000	158	NC	653	96.1	NC	557	143	NC
PCB017	1,580	249	NC	1,530	206	NC	795	195	NC
PCB018 & 030	4,160	656	NC	2,010	261	NC	1,550	377	NC
PCB019	1,410	232	NC	494	66.2	NC	743	161	NC
PCB020 & 028	13,600	2,210	NC	6,590	893	NC	2,900	636	NC
PCB021 & 033	829	162	NC	1,870	289	NC	435	201 U	NC
PCB022	2,650	452	NC	1,570	221	NC	740	162	NC
PCB023	31.7 U	33 U	NC	30.6 U	33 U	NC	51.9 U	49.1 U	NC
PCB024	155	24.4	NC	34.4	20.1 U	NC	32.1	29.9 U	NC
PCB025	325	53.3	NC	420	53.9	NC	197	44	NC
PCB026 & 029	1,560	255	NC	1,000	135	NC	497	109	NC
PCB027	608	92.9	NC	225	31.6	NC	149	42.4 U	NC
PCB031	5,050	840	NC	4,260	579	NC	1,790	401	NC
PCB032	3,100	494	NC	918	122 U	NC	515	124	NC
PCB034	34.1	23.7 U	NC	40.4	23.7 U	NC	37.3 U	35.3 U	NC
PCB035	23.7 U	24.6 U	NC	22.8 U	24.6 U	NC	38.7 U	36.6 U	NC
PCB036	25.1 U	26.1 U	NC	24.2 U	26.1 U	NC	41 U	38.8 U	NC
PCB037	728	122	NC	537	92.8	NC	296	71	NC
PCB038	18.2 U	18.9 U	NC	17.5 U	18.9 U	NC	29.7 U	28.1 U	NC
PCB039	22.8 U	23.7 U	NC	21.9 U	23.7 U	NC	37.3 U	35.3 U	NC
PCB040 & 041 & 071	2,790	468	NC	3,670	496	NC	1,160	250	NC
PCB042	2,080	342	NC	2,630	332	NC	1,100	229	NC
PCB043 & 073	223	38.4	NC	244	33 U	NC	137	49.1 U	NC
PCB044 & 047 & 065	12,300	1,960	NC	11,500	1,460	NC	7,070	1,460	NC
PCB045 & 051	1,760	268	NC	1,660	208	NC	977	212	NC
PCB046	299	75 U	NC	356	75 U	NC	147	112 U	NC
PCB048	1,110	187	NC	1,480	190	NC	466	99	NC
PCB049 & 069	8,970	1,370	NC	8,190	1,010	NC	4,740	970	NC
PCB050 & 053	963	145	NC	1,110	136	NC	451	100	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB08W-01			EPA1-SB08W-05			EPA1-SB08W-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7630437.208	7630437.208	7630437.208	7633514.593	7633514.593	7633514.593	7630400.532	7630400.532	7630400.532
Y-coordinate	699436.5357	699436.5357	699436.5357	696771.2835	696771.2835	696771.2835	699535.9693	699535.9693	699535.9693
RiverMile	8	8	8	8.8	8.8	8.8	8	8	8
Sample Date	27-Sep-11	27-Sep-11	27-Sep-11	27-Sep-11	27-Sep-11	27-Sep-11	7-Oct-11	7-Oct-11	7-Oct-11
Sample Time	11:33	11:33	11:33	10:00	10:00	10:00	16:50	16:50	16:50
Sample Mass (g)	381.98	293.4	675.38	106.82	88.4	195.22	205.65	131.12	336.77
PCB052	17,900	2,710	NC	12,900	1,640	NC	7,360	1,530	NC
PCB054	116	21.3 U	NC	85.8	21.3 U	NC	86.1	31.7 U	NC
PCB055	21.6 U	22.5 U	NC	20.8 U	22.5 U	NC	35.4 U	33.5 U	NC
PCB056	1,900	327	NC	2,980	395	NC	1,210	248	NC
PCB057	34.4	18.9 U	NC	48.5	18.9 U	NC	29.7 U	28.1 U	NC
PCB058	24.6	20.1 U	NC	43.9	20.1 U	NC	31.6 U	29.9 U	NC
PCB059 & 062 & 075	800	225 U	NC	795	225 U	NC	418	335 U	NC
PCB060	2,110	337	NC	1,770	230	NC	931	187	NC
PCB061 & 070 & 074 & 076	15,500	2,460	NC	16,200	2,020	NC	8,160	1,640	NC
PCB063	477	77.1	NC	486	57.6	NC	271	54.4	NC
PCB064	4,660	729	NC	4,560	579	NC	2,130	445	NC
PCB066	10,900	1,700	NC	10,400	1,300	NC	5,170	1,030	NC
PCB067	194	32.9	NC	257	32.3	NC	132	26.8 U	NC
PCB068	107	60 U	NC	130	60 U	NC	100	89.3 U	NC
PCB072	138	22.8	NC	159	19.8	NC	114	22.3	NC
PCB073	31.7 U	33 U	NC	30.6 U	33 U	NC	51.9 U	0 U	NC
PCB077	507	77.8	NC	539	67.6	NC	327	66.3	NC
PCB078	13.3 U	13.8 U	NC	12.8 U	13.8 U	NC	21.7 U	20.5 U	NC
PCB079	112	26.8	NC	136	23.4 U	NC	93.5	34.8 U	NC
PCB080	21.3 U	22.2 U	NC	20.6 U	22.2 U	NC	34.9 U	33 U	NC
PCB081	54.9	27 U	NC	49.1	27 U	NC	42.5 U	40.2 U	NC
PCB082	1,230	200	NC	1,590	203	NC	761	149	NC
PCB083	948	225	NC	1,220	159	NC	561	113	NC
PCB084	3,210	547	NC	3,710	475	NC	2,140	440	NC
PCB085 & 117 & 116	6,710	976	NC	4,260	487	NC	2,970	528	NC
PCB086 & 087 & 097 & 108 & 119 & 125	14,200	2,260	NC	11,900	1,450	NC	7,940	1,530	NC
PCB088 & 091	3,170	517	NC	3,420	408	NC	2,130	422	NC
PCB089	89.5	17.4 U	NC	118	17.4 U	NC	42.2	25.9 U	NC
PCB090 & 101 & 113	30,000	4,630	NC	23,100	2,830	NC	16,100	3,080	NC
PCB092	6,370	994	NC	4,700	561	NC	3,330	640	NC
PCB093 & 098 & 100 & 102	1,190	345 U	NC	1,030	345 U	NC	914	513 U	NC
PCB094	91.2	75 U	NC	106	75 U	NC	118 U	112 U	NC
PCB095	14,300	2,340	NC	13,100	1,660	NC	7,900	1,600	NC
PCB096	114	33.6 U	NC	111	33.6 U	NC	71.9	50 U	NC
PCB099	19,300	3,150	NC	12,700	1,490	NC	9,890	1,860	NC
PCB103	414	66.2	NC	410	48.1	NC	372	72.1	NC
PCB104	43 U	44.7 U	NC	41.4 U	44.7 U	NC	70.3 U	66.5 U	NC
PCB105	12,800	1,830	NC	7,200	863	NC	5,640	1,060	NC
PCB106	42.7 U	44.4 U	NC	41.1 U	44.4 U	NC	69.8 U	66.1 U	NC
PCB107 & 124	815	120	NC	623	71.5	NC	464	89.7	NC
PCB109	2,460	323	NC	1,440	164	NC	1,380	251	NC
PCB110 & 115	23,700	3,760	NC	18,800	2,410	NC	13,100	2,620	NC
PCB111	33	22.2 U	NC	33.3	22.2 U	NC	34.9 U	33 U	NC

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB08W-01			EPA1-SB08W-05			EPA1-SB08W-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7630437.208	7630437.208	7630437.208	7633514.593	7633514.593	7633514.593	7630400.532	7630400.532	7630400.532
Y-coordinate	699436.5357	699436.5357	699436.5357	696771.2835	696771.2835	696771.2835	699535.9693	699535.9693	699535.9693
RiverMile	8	8	8	8.8	8.8	8.8	8	8	8
Sample Date	27-Sep-11	27-Sep-11	27-Sep-11	27-Sep-11	27-Sep-11	27-Sep-11	7-Oct-11	7-Oct-11	7-Oct-11
Sample Time	11:33	11:33	11:33	10:00	10:00	10:00	16:50	16:50	16:50
Sample Mass (g)	381.98	293.4	675.38	106.82	88.4	195.22	205.65	131.12	336.77
PCB112	31.7 U	33 U	NC	30.6 U	33 U	NC	51.9 U	49.1 U	NC
PCB114	821	123	NC	474	59.2	NC	477	84.9	NC
PCB118	39,200	5,910	NC	21,900	2,730	NC	20,000	3,860	NC
PCB120	134	75 U	NC	122	75 U	NC	118 U	112 U	NC
PCB121	31.6	20.7 U	NC	23.9	20.7 U	NC	32.5 U	30.8 U	NC
PCB122	179	27.3 U	NC	151	27.3 U	NC	119	40.6 U	NC
PCB123	533	96.7	NC	432	56.2	NC	410	81.2	NC
PCB126	73.1	40.5 U	NC	47.4	40.5 U	NC	63.7 U	60.3 U	NC
PCB127	66.9	25.8 U	NC	23.9 U	25.8 U	NC	40.6 U	38.4 U	NC
PCB128 & 166	6,620	870	NC	3,840	397	NC	2,940	522	NC
PCB129 & 138 & 163	55,400	7,810	NC	38,000	4,030	NC	31,800	5,340	NC
PCB130	2,250	323	NC	1,990	204	NC	1,560	266	NC
PCB131	215	36.5	NC	265	27.3	NC	171	37.9 U	NC
PCB132	5,450	940	NC	7,210	809	NC	4,520	808	NC
PCB133	930	144	NC	804	82.7	NC	713	116	NC
PCB134 & 143	1,010	167	NC	1,090	150 U	NC	815	223 U	NC
PCB135 & 151	11,200	1,800	NC	10,900	1,240	NC	8,720	1,510	NC
PCB136	2,530	421	NC	2,600	293	NC	2,090	372	NC
PCB137	2,830	398	NC	1,590	174	NC	1,550	268	NC
PCB139 & 140	890	140	NC	627	65.6	NC	482	79	NC
PCB141	6,470	844	NC	5,460	560	NC	4,120	717	NC
PCB142	24.5 U	25.5 U	NC	23.6 U	25.5 U	NC	40.1 U	37.9 U	NC
PCB144	1,140	187	NC	1,350	148	NC	942	154	NC
PCB145	27.1 U	28.2 U	NC	26.1 U	28.2 U	NC	44.3 U	42 U	NC
PCB146	9,350	1,460	NC	7,880	810	NC	7,210	1,200	NC
PCB147 & 149	17,900	3,100	NC	24,000	2,700	NC	15,900	2,850	NC
PCB148	109	45 U	NC	129	45 U	NC	116	67 U	NC
PCB150	67.9	32.4 U	NC	84.1	32.4 U	NC	72	48.2 U	NC
PCB152	38.6	35.1 U	NC	32.5 U	35.1 U	NC	55.2 U	52.2 U	NC
PCB153 & 168	51,000	7,730	NC	40,000	4,200	NC	36,300	5,930	NC
PCB154	866	134	NC	772	80.9	NC	716	114	NC
PCB155	35.5 U	36.9 U	NC	34.2 U	36.9 U	NC	58 U	54.9 U	NC
PCB156 & 157	5,510	816	NC	3,060	355	NC	3,560	612	NC
PCB158	4,730	643	NC	3,010	316	NC	2,350	410	NC
PCB159	72.1 U	75 U	NC	69.4 U	75 U	NC	118 U	112 U	NC
PCB160	2.6 U	2.7 U	NC	2.5 U	2.7 U	NC	4.25 U	4.02 U	NC
PCB161	34.3 U	35.7 U	NC	33.1 U	35.7 U	NC	56.1 U	53.1 U	NC
PCB162	130	26.3	NC	93	25.4 U	NC	91.2	37.7 U	NC
PCB164	2,040	280	NC	1,700	166	NC	1,490	244	NC
PCB165	35.3	35.4 U	NC	32.8 U	35.4 U	NC	55.7 U	52.7 U	NC
PCB167	2,050	290	NC	1,310	148	NC	1,470	245	NC
PCB169	97.1 J	23.8 U	NC	86.4 J	23.8 U	NC	43.4 J	35.4 U	NC
PCB170	7,230	896	NC	4,430	571	NC	5,240	951	NC

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB08W-01			EPA1-SB08W-05			EPA1-SB08W-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7630437.208	7630437.208	7630437.208	7633514.593	7633514.593	7633514.593	7630400.532	7630400.532	7630400.532
Y-coordinate	699436.5357	699436.5357	699436.5357	696771.2835	696771.2835	696771.2835	699535.9693	699535.9693	699535.9693
RiverMile	8	8	8	8.8	8.8	8.8	8	8	8
Sample Date	27-Sep-11	27-Sep-11	27-Sep-11	27-Sep-11	27-Sep-11	27-Sep-11	7-Oct-11	7-Oct-11	7-Oct-11
Sample Time	11:33	11:33	11:33	10:00	10:00	10:00	16:50	16:50	16:50
Sample Mass (g)	381.98	293.4	675.38	106.82	88.4	195.22	205.65	131.12	336.77
PCB171 & 173	2,360	334	NC	1,990	214	NC	1,580	281	NC
PCB172	1,460	200	NC	1,190	126	NC	1,140	184	NC
PCB174	3,590	508	NC	4,350	479	NC	3,830	706	NC
PCB175	285	44.1 U	NC	299	44.1 U	NC	278	65.6 U	NC
PCB176	432	70.4	NC	610	68.2	NC	440	84.3	NC
PCB177	3,480	488	NC	3,990	430	NC	3,320	590	NC
PCB178	2,130	311	NC	1,930	208	NC	1,860	306	NC
PCB179	1,920	333	NC	2,230	255	NC	1,860	341	NC
PCB180 & 193	21,700	2,860	NC	14,800	1,830	NC	17,400	3,010	NC
PCB181	127	40.2 U	NC	60.9	40.2 U	NC	71.1	59.8 U	NC
PCB182	63.7	27.3 U	NC	50.2	27.3 U	NC	45.8	40.6 U	NC
PCB183 & 185	6,390	922	NC	5,680	611	NC	5,060	881	NC
PCB184	31.4 U	32.7 U	NC	30.3 U	32.7 U	NC	51.4 U	48.7 U	NC
PCB186	45.6 U	47.4 U	NC	43.9 U	47.4 U	NC	74.5 U	70.5 U	NC
PCB187	15,600	2,230	NC	13,000	1,400	NC	13,500	2,220	NC
PCB188	36.6 U	38.1 U	NC	35.3 U	38.1 U	NC	59.9 U	56.7 U	NC
PCB189	322	47.4	NC	238	26.2	NC	297	44.9	NC
PCB190	719	115	NC	403	77.4	NC	693	161	NC
PCB191	365	43.2	NC	266	38.1 U	NC	289	56.7 U	NC
PCB192	25.4 U	26.4 U	NC	24.4 U	26.4 U	NC	41.5 U	39.3 U	NC
PCB194	2,860	388	NC	2,090	251	NC	2,510	392	NC
PCB195	1,250	178	NC	973	115	NC	1,080	171	NC
PCB196	1,560	229	NC	1,120	152	NC	1,430	235	NC
PCB197 & 200	297	62.3 U	NC	339	62.3 U	NC	318	92.7 U	NC
PCB198 & 199	2,990	480	NC	2,210	342	NC	2,830	548	NC
PCB201	384	64.5	NC	430	46.7	NC	429	70.3	NC
PCB202	1,030	151	NC	891	98.4	NC	815	138	NC
PCB203	2,520	342	NC	1,780	226	NC	1,950	328	NC
PCB204	35.2 U	36.6 U	NC	33.9 U	36.6 U	NC	57.5 U	54.4 U	NC
PCB205	159	36.4 U	NC	137	36.4 U	NC	130	54.2 U	NC
PCB206	996	183	NC	891	124	NC	827	152	NC
PCB207	151	72 U	NC	145	72 U	NC	134	107 U	NC
PCB208	329	73.3 U	NC	379	73.3 U	NC	276	109 U	NC
PCB209	442	89.1	NC	481	82	NC	374	77.8	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB08W-01			EPA1-SB08W-05			EPA1-SB08W-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7630437.208	7630437.208	7630437.208	7633514.593	7633514.593	7633514.593	7630400.532	7630400.532	7630400.532
Y-coordinate	699436.5357	699436.5357	699436.5357	696771.2835	696771.2835	696771.2835	699535.9693	699535.9693	699535.9693
RiverMile	8	8	8	8.8	8.8	8.8	8	8	8
Sample Date	27-Sep-11	27-Sep-11	27-Sep-11	27-Sep-11	27-Sep-11	27-Sep-11	7-Oct-11	7-Oct-11	7-Oct-11
Sample Time	11:33	11:33	11:33	10:00	10:00	10:00	16:50	16:50	16:50
Sample Mass (g)	381.98	293.4	675.38	106.82	88.4	195.22	205.65	131.12	336.77
Monochlorobiphenyl homologs	83.6 T	26.9 T	NC	28.8 T	27.9 UT	NC	91.6 T	41.5 UT	NC
Dichlorobiphenyl homologs	2,800 T	547 T	NC	1,390 T	332 T	NC	2,340 T	571 T	NC
Trichlorobiphenyl homologs	36,800 T	6,030 T	NC	22,200 T	3,030 T	NC	11,200 T	2,610 T	NC
Tetrachlorobiphenyl homologs	86,000 T	13,500 T	NC	82,400 T	10,400 T	NC	42,800 T	8,930 T	NC
Pentachlorobiphenyl homologs	182,000 T	28,400 T	NC	133,000 T	16,500 T	NC	97,000 T	19,000 T	NC
Hexachlorobiphenyl homologs	191,000 JT	28,700 T	NC	158,000 JT	17,000 T	NC	130,000 JT	22,100 T	NC
Heptachlorobiphenyl homologs	68,200 T	9,450 T	NC	55,500 T	6,410 T	NC	57,000 T	9,920 T	NC
Octachlorobiphenyl homologs	13,100 T	1,880 T	NC	9,970 T	1,280 T	NC	11,500 T	1,960 T	NC
Nonachlorobiphenyl homologs	1,480 T	256 T	NC	1,420 T	197 T	NC	1,240 T	260 T	NC
Total PCB Congeners (RI Calc; ND=0)	582,000 JT	87,900 JT	367,000 JT	464,000 JT	54,000 JT	278,000 JT	353,000 JT	63,500 JT	240,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	582,000 JT	88,900 JT	368,000 JT	464,000 JT	55,300 JT	279,000 JT	353,000 JT	65,500 JT	241,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	12.1 JT	0.281 JT	6.98 JT	8.44 JT	0.134 JT	4.68 JT	2.29 JT	0.186 JT	1.47 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	12.1 JT	2.67 JT	8.02 JT	8.44 JT	2.52 JT	5.76 JT	5.48 JT	3.74 JT	4.8 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	40.6 JT	7.62 JT	26.3 JT	38 JT	6.92 JT	23.9 JT	22.9 JT	8.58 JT	17.3 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.755 JT	0.162 JT	0.497 JT	0.493 JT	0.137 JT	0.332 JT	0.364 JT	0.198 JT	0.299 JT
% Lipids	11.3	1.7	NC	6.85	0.81	NC	7.89	1.37	NC

Notes:

All concentrations are in units of ng/kg (except for the proof and rinsate blanks on pages 51 to 55 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
NC	Not calculated
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB09E-05			EPA1-SB10E-04			EPA1-SB10E-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7639620.343	7639620.343	7639620.343	7641543.945	7641543.945	7641543.945	7640465.853	7640465.853	7640465.853
Y-coordinate	694926.9917	694926.9917	694926.9917	692043.6338	692043.6338	692043.6338	693421.9495	693421.9495	693421.9495
RiverMile	9.9	9.9	9.9	10.5	10.5	10.5	10.2	10.2	10.2
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11
Sample Time	14:13	14:13	14:13	12:57	12:57	12:57	13:50	13:50	13:50
Sample Mass (g)	197.46	141.64	339.1	142.25	110.29	252.54	48.64	40.99	89.63
PCB001	20.6 U	21.4 U	NC	21 U	22.5 U	NC	37.5 U	36.1 U	NC
PCB002	25.6 U	26.6 U	NC	26.1 U	27.9 U	NC	46.5 U	44.7 U	NC
PCB003	13.5 U	14 U	NC	15	14.7 U	NC	24.5 U	23.6 U	NC
PCB004	232	54.2	NC	281	62	NC	164	73.1 U	NC
PCB005	25.6 U	26.6 U	NC	26.1 U	27.9 U	NC	46.5 U	44.7 U	NC
PCB006	34.4	24.9 U	NC	30.7	26.1 U	NC	43.5 U	41.8 U	NC
PCB007	32.5 U	33.7 U	NC	33.1 U	35.4 U	NC	59 U	56.7 U	NC
PCB008	108	57.6	NC	134	48.3	NC	130	75.5	NC
PCB009	15.7 U	16.3 U	NC	16 U	17.1 U	NC	28.5 U	27.4 U	NC
PCB010	17.1 U	17.7 U	NC	17.4 U	18.6 U	NC	31 U	29.8 U	NC
PCB011	199	139 U	NC	286	154	NC	244 U	235 U	NC
PCB012 & 013	22.8 U	23.7 U	NC	23.3 U	24.9 U	NC	41.5 U	39.9 U	NC
PCB014	25 U	26 U	NC	25.5 U	27.3 U	NC	45.5 U	43.8 U	NC
PCB015	83.5	39.1 U	NC	66.5	41.1 U	NC	68.5 U	65.9 U	NC
PCB016	124	53.1	NC	113	41.6	NC	117	56.3	NC
PCB017	557	134	NC	494	123	NC	408	91.5	NC
PCB018 & 030	407	119 U	NC	431	118 U	NC	365	117	NC
PCB019	320	62.2	NC	657	137	NC	342	51.7	NC
PCB020 & 028	1,230	290	NC	1,220	309	NC	1,450	323	NC
PCB021 & 033	277	129 U	NC	214	135 U	NC	225 U	217 U	NC
PCB022	257	70.6	NC	195	67.9	NC	293	85.6	NC
PCB023	30.3 U	31.4 U	NC	30.8 U	33 U	NC	55 U	52.9 U	NC
PCB024	18.4 U	19.1 U	NC	18.8 U	20.1 U	NC	33.5 U	32.2 U	NC
PCB025	111	28 U	NC	110	29.4 U	NC	126	47.1 U	NC
PCB026 & 029	254	60 U	NC	214	63 U	NC	281	101 U	NC
PCB027	106	27.1 U	NC	107	28.5 U	NC	80.9	45.7 U	NC
PCB031	742	191	NC	621	182	NC	882	213	NC
PCB032	209	53.9	NC	247	63.1 U	NC	183	52.8	NC
PCB034	21.7 U	22.6 U	NC	22.1 U	23.7 U	NC	39.5 U	38 U	NC
PCB035	22.6 U	23.4 U	NC	23 U	24.6 U	NC	41 U	39.4 U	NC
PCB036	23.9 U	24.9 U	NC	24.4 U	26.1 U	NC	43.5 U	41.8 U	NC
PCB037	171	36	NC	201	60.3	NC	146	39.4	NC
PCB038	17.3 U	18 U	NC	17.7 U	18.9 U	NC	31.5 U	30.3 U	NC
PCB039	21.7 U	22.6 U	NC	22.1 U	23.7 U	NC	39.5 U	38 U	NC
PCB040 & 041 & 071	1,150	261	NC	990	230	NC	696	119	NC
PCB042	649	130	NC	460	105	NC	597	93.5	NC
PCB043 & 073	60.5	31.4 U	NC	87	33 U	NC	85.4	52.9 U	NC
PCB044 & 047 & 065	6,270	1,250	NC	4,880	1,050	NC	4,380	608	NC
PCB045 & 051	543	110	NC	848	180	NC	584	88.6	NC
PCB046	86	71.4 U	NC	98.4	75 U	NC	125 U	120 U	NC
PCB048	411	94.3	NC	305	74.5	NC	264	47.2	NC
PCB049 & 069	4,420	849	NC	3,270	700	NC	2,820	375	NC
PCB050 & 053	468	92.5	NC	1,380	285	NC	397	63.5 U	NC

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB09E-05			EPA1-SB10E-04			EPA1-SB10E-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7639620.343	7639620.343	7639620.343	7641543.945	7641543.945	7641543.945	7640465.853	7640465.853	7640465.853
Y-coordinate	694926.9917	694926.9917	694926.9917	692043.6338	692043.6338	692043.6338	693421.9495	693421.9495	693421.9495
RiverMile	9.9	9.9	9.9	10.5	10.5	10.5	10.2	10.2	10.2
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11
Sample Time	14:13	14:13	14:13	12:57	12:57	12:57	13:50	13:50	13:50
Sample Mass (g)	197.46	141.64	339.1	142.25	110.29	252.54	48.64	40.99	89.63
PCB052	11,100	2,380	NC	6,380	1,400	NC	4,430	600	NC
PCB054	65.4	20.3 U	NC	189	39.4	NC	76.4	34.1 U	NC
PCB055	20.6 U	21.4 U	NC	21 U	22.5 U	NC	37.5 U	36.1 U	NC
PCB056	691	149	NC	352	91.7	NC	707	99.4	NC
PCB057	18.5	18 U	NC	19.4	18.9 U	NC	31.5 U	30.3 U	NC
PCB058	18.4 U	19.1 U	NC	18.8 U	20.1 U	NC	33.5 U	32.2 U	NC
PCB059 & 062 & 075	232	214 U	NC	210 U	225 U	NC	375 U	361 U	NC
PCB060	1,010	188	NC	476	108	NC	554	77.2	NC
PCB061 & 070 & 074 & 076	11,700	2,340	NC	3,950	868	NC	4,830	637	NC
PCB063	332	59.2	NC	189	39	NC	168	28.4 U	NC
PCB064	1,790	366	NC	923	206	NC	1,180	170	NC
PCB066	7,010	1,280	NC	3,490	755	NC	3,280	424	NC
PCB067	64.8	17.1 U	NC	76.9	18 U	NC	73.9	28.8 U	NC
PCB068	75.3	57.1 U	NC	118	60 U	NC	100 U	96.2 U	NC
PCB072	70.8	14.1	NC	85.7	18.3	NC	77.9	21.6 U	NC
PCB073	30.3 U	31.4 U	NC	30.8 U	33 U	NC	55 U	52.9 U	NC
PCB077	179	31.8	NC	176	40.6	NC	204	44.2 U	NC
PCB078	12.7 U	13.1 U	NC	12.9 U	13.8 U	NC	23 U	22.1 U	NC
PCB079	180	36.4	NC	51.8	23.4 U	NC	48.1	37.5 U	NC
PCB080	20.4 U	21.1 U	NC	20.7 U	22.2 U	NC	37 U	35.6 U	NC
PCB081	52.6	25.7 U	NC	25.2 U	27 U	NC	45 U	43.3 U	NC
PCB082	1,160	239	NC	302	66.7	NC	452	57.7	NC
PCB083	1,200	235	NC	555	93.7	NC	388	63.9 U	NC
PCB084	2,720	577	NC	1,160	249	NC	1,200	159	NC
PCB085 & 117 & 116	8,580	1,500	NC	1,890	367	NC	1,700	201	NC
PCB086 & 087 & 097 & 108 & 119 & 125	15,800	3,140	NC	5,150	1,090	NC	4,690	721 U	NC
PCB088 & 091	2,510	507	NC	1,460	300	NC	1,280	158	NC
PCB089	81.9	20.4	NC	44.2	17.4 U	NC	29 U	27.9 U	NC
PCB090 & 101 & 113	29,600	5,770	NC	20,400	4,150	NC	10,700	1,280	NC
PCB092	6,030	1,140	NC	3,300	661	NC	2,220	263	NC
PCB093 & 098 & 100 & 102	834	329 U	NC	1,120	345 U	NC	619	553 U	NC
PCB094	68.8 U	71.4 U	NC	138	75 U	NC	125 U	120 U	NC
PCB095	12,400	2,400	NC	8,560	1,780	NC	5,340	662	NC
PCB096	104	32 U	NC	174	36.3	NC	56 U	53.8 U	NC
PCB099	25,400	4,470	NC	7,960	1,640	NC	6,480	730	NC
PCB103	314	53.9	NC	430	83.9	NC	318	44.2 U	NC
PCB104	41 U	42.6 U	NC	41.8 U	44.7 U	NC	74.5 U	71.6 U	NC
PCB105	22,100	4,060	NC	3,850	770	NC	3,180	387	NC
PCB106	40.7 U	42.3 U	NC	41.5 U	44.4 U	NC	74 U	71.2 U	NC
PCB107 & 124	1,040	193	NC	255	53.8	NC	294	52.4 U	NC
PCB109	4,190	685	NC	1,210	235	NC	912	104	NC
PCB110 & 115	23,000	4,850	NC	9,640	2,060	NC	7,830	968	NC
PCB111	29.9	21.1 U	NC	99.7	22.2 U	NC	37 U	35.6 U	NC

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB09E-05			EPA1-SB10E-04			EPA1-SB10E-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7639620.343	7639620.343	7639620.343	7641543.945	7641543.945	7641543.945	7640465.853	7640465.853	7640465.853
Y-coordinate	694926.9917	694926.9917	694926.9917	692043.6338	692043.6338	692043.6338	693421.9495	693421.9495	693421.9495
RiverMile	9.9	9.9	9.9	10.5	10.5	10.5	10.2	10.2	10.2
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11
Sample Time	14:13	14:13	14:13	12:57	12:57	12:57	13:50	13:50	13:50
Sample Mass (g)	197.46	141.64	339.1	142.25	110.29	252.54	48.64	40.99	89.63
PCB112	30.3 U	31.4 U	NC	30.8 U	33 U	NC	55 U	52.9 U	NC
PCB114	1,970	336	NC	338	67.6	NC	223	59.1 U	NC
PCB118	74,900	12,700	NC	18,000	3,650	NC	12,200	1,370	NC
PCB120	109	71.4 U	NC	186	75 U	NC	125 U	120 U	NC
PCB121	28.2	19.7 U	NC	57.7	20.7 U	NC	34.5 U	33.2 U	NC
PCB122	213	36.7	NC	35.2	27.3 U	NC	68.5	43.8 U	NC
PCB123	1,060	190	NC	248	63.3	NC	261	55.8 U	NC
PCB126	55.9	38.6 U	NC	39.3	40.5 U	NC	67.5 U	64.9 U	NC
PCB127	180	31.7	NC	49.6	25.8 U	NC	43 U	41.3 U	NC
PCB128 & 166	10,000	1,510	NC	4,070	713	NC	2,160	224	NC
PCB129 & 138 & 163	81,500	11,700	NC	93,900	15,800	NC	29,600	3,130	NC
PCB130	3,510	495	NC	2,900	477	NC	1,460	156	NC
PCB131	298	51.2	NC	229	41.7	NC	118	40.9 U	NC
PCB132	5,310	913	NC	9,220	1,670	NC	3,510	386	NC
PCB133	1,250	169	NC	2,820	454	NC	1,290	124	NC
PCB134 & 143	1,290	218	NC	1,760	304	NC	603	240 U	NC
PCB135 & 151	10,900	1,640	NC	23,600	4,210	NC	8,690	934	NC
PCB136	2,710	464	NC	6,690	1,220	NC	1,610	177	NC
PCB137	6,880	906	NC	1,490	273	NC	1,050	139 U	NC
PCB139 & 140	1,330	195	NC	398	70.3	NC	344	57.7 U	NC
PCB141	7,980	1,220	NC	15,500	2,610	NC	4,140	438	NC
PCB142	23.4 U	24.3 U	NC	23.8 U	25.5 U	NC	42.5 U	40.9 U	NC
PCB144	1,400	209	NC	3,340	594	NC	840	88.7	NC
PCB145	32 U	26.9 U	NC	26.4 U	28.2 U	NC	47 U	45.2 U	NC
PCB146	13,400	1,830	NC	26,400	4,280	NC	11,400	1,110	NC
PCB147 & 149	16,300	2,480	NC	31,000	5,520	NC	16,400	1,730	NC
PCB148	90.8	42.9 U	NC	214	45 U	NC	197	72.1 U	NC
PCB150	58.4	30.9 U	NC	80.1	32.4 U	NC	84.5	51.9 U	NC
PCB152	42.7	33.4 U	NC	49.2	35.1 U	NC	58.5 U	56.3 U	NC
PCB153 & 168	78,800	10,600	NC	123,000	20,700	NC	36,700	3,690	NC
PCB154	823	111	NC	1,210	198	NC	994	98.5	NC
PCB155	33.9 U	35.1 U	NC	34.5 U	36.9 U	NC	61.5 U	59.1 U	NC
PCB156 & 157	13,400	2,030	NC	7,090	1,440	NC	2,270	257	NC
PCB158	7,880	1,140	NC	6,320	1,070	NC	2,030	208	NC
PCB159	68.8 U	71.4 U	NC	70.1 U	137	NC	125 U	120 U	NC
PCB160	2.48 U	2.57 U	NC	2.52 U	2.7 U	NC	4.5 U	4.33 U	NC
PCB161	32.8 U	34 U	NC	33.4 U	35.7 U	NC	59.5 U	57.2 U	NC
PCB162	330	46.8	NC	129 J	40	NC	54.6	40.6 U	NC
PCB164	2,130	354	NC	3,870	649	NC	1,370	145	NC
PCB165	49.5	33.7 U	NC	138	35.4 U	NC	59 U	56.7 U	NC
PCB167	4,070	609	NC	3,030	571	NC	996	111	NC
PCB169	160	22.6 U	NC	790 J	56.2 U	NC	84.8 J	38.1 U	NC
PCB170	10,600	1,790	NC	27,800	6,190	NC	5,540	651	NC

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB09E-05			EPA1-SB10E-04			EPA1-SB10E-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7639620.343	7639620.343	7639620.343	7641543.945	7641543.945	7641543.945	7640465.853	7640465.853	7640465.853
Y-coordinate	694926.9917	694926.9917	694926.9917	692043.6338	692043.6338	692043.6338	693421.9495	693421.9495	693421.9495
RiverMile	9.9	9.9	9.9	10.5	10.5	10.5	10.2	10.2	10.2
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11
Sample Time	14:13	14:13	14:13	12:57	12:57	12:57	13:50	13:50	13:50
Sample Mass (g)	197.46	141.64	339.1	142.25	110.29	252.54	48.64	40.99	89.63
PCB171 & 173	3,690	540	NC	9,270	1,740	NC	1,850	201	NC
PCB172	2,130	300	NC	6,530	1,210	NC	1,700	174	NC
PCB174	3,720	572	NC	17,500	3,270	NC	6,650	711	NC
PCB175	393	60	NC	1,630	280	NC	405	70.7 U	NC
PCB176	378	54.4	NC	1,720	309	NC	725	88 U	NC
PCB177	4,090	617	NC	20,700	3,810	NC	5,380	577	NC
PCB178	2,530	369	NC	7,960	1,420	NC	3,430	348	NC
PCB179	1,610	247	NC	7,740	1,520	NC	2,240	250	NC
PCB180 & 193	32,600	5,160	NC	94,500	21,200	NC	24,200	2,750	NC
PCB181	199	38.3 U	NC	185	40.2 U	NC	67 U	64.4 U	NC
PCB182	63.5	26 U	NC	200	36.6	NC	222	43.8 U	NC
PCB183 & 185	9,130	1,310	NC	29,000	5,230	NC	7,670	790	NC
PCB184	30 U	31.1 U	NC	30.6 U	32.7 U	NC	54.5 U	52.4 U	NC
PCB186	43.5 U	45.1 U	NC	44.3 U	47.4 U	NC	79 U	76 U	NC
PCB187	17,600	2,610	NC	68,100	11,900	NC	27,900	2,830	NC
PCB188	39.8	36.3 U	NC	113	38.1 U	NC	69.1	61.1 U	NC
PCB189	625	91.1	NC	1,810	320	NC	301	34.8 U	NC
PCB190	1,140	244	NC	3,680	834	NC	669	106	NC
PCB191	644	91.2	NC	2,010	363	NC	356	61.1 U	NC
PCB192	24.2 U	25.1 U	NC	24.7 U	26.4 U	NC	44 U	42.3 U	NC
PCB194	4,150	625	NC	18,300	3,670	NC	5,420	562	NC
PCB195	1,830	282	NC	8,140	1,570	NC	1,820	186	NC
PCB196	1,940	340	NC	8,620	2,060	NC	2,770	330	NC
PCB197 & 200	338	59.3 U	NC	1,650	304	NC	934	99.8 U	NC
PCB198 & 199	2,680	555	NC	12,600	3,100	NC	7,340	932	NC
PCB201	489	75.4	NC	3,020	522	NC	1,400	143	NC
PCB202	957	142	NC	2,900	554	NC	2,370	240	NC
PCB203	2,580	420	NC	8,880	1,880	NC	4,530	490	NC
PCB204	33.6 U	34.8 U	NC	34.2 U	36.6 U	NC	60.9 U	58.6 U	NC
PCB205	255	39.9	NC	1,010	188	NC	258	58.3 U	NC
PCB206	961	156	NC	3,080	609	NC	2,590	299	NC
PCB207	178	68.6 U	NC	622	121	NC	482	115 U	NC
PCB208	242	69.8 U	NC	639	127	NC	848	118 U	NC
PCB209	251	53.1	NC	302	71.8	NC	259	53.1 U	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB09E-05			EPA1-SB10E-04			EPA1-SB10E-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7639620.343	7639620.343	7639620.343	7641543.945	7641543.945	7641543.945	7640465.853	7640465.853	7640465.853
Y-coordinate	694926.9917	694926.9917	694926.9917	692043.6338	692043.6338	692043.6338	693421.9495	693421.9495	693421.9495
RiverMile	9.9	9.9	9.9	10.5	10.5	10.5	10.2	10.2	10.2
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11
Sample Time	14:13	14:13	14:13	12:57	12:57	12:57	13:50	13:50	13:50
Sample Mass (g)	197.46	141.64	339.1	142.25	110.29	252.54	48.64	40.99	89.63
Monochlorobiphenyl homologs	25.6 UT	26.6 UT	NC	25.5 T	27.9 UT	NC	46.5 UT	44.7 UT	NC
Dichlorobiphenyl homologs	673 T	230 T	NC	815 T	316 T	NC	502 T	312 T	NC
Trichlorobiphenyl homologs	4,800 T	1,110 T	NC	4,860 T	1,180 T	NC	4,860 T	1,300 T	NC
Tetrachlorobiphenyl homologs	48,700 T	9,880 T	NC	28,900 T	6,460 T	NC	25,800 T	3,860 T	NC
Pentachlorobiphenyl homologs	236,000 T	43,400 T	NC	86,700 T	17,800 T	NC	60,700 T	7,420 T	NC
Hexachlorobiphenyl homologs	272,000 T	39,000 T	NC	369,000 JT	63,200 T	NC	128,000 JT	13,500 T	NC
Heptachlorobiphenyl homologs	91,200 T	14,100 T	NC	300,000 T	59,700 T	NC	89,400 T	9,630 T	NC
Octachlorobiphenyl homologs	15,200 T	2,510 T	NC	65,100 T	13,800 T	NC	26,800 T	2,960 T	NC
Nonachlorobiphenyl homologs	1,380 T	225 T	NC	4,340 T	857 T	NC	3,920 T	416 T	NC
Total PCB Congeners (RI Calc; ND=0)	670,000 JT	109,000 JT	436,000 JT	861,000 JT	162,000 JT	556,000 JT	339,000 JT	36,400 JT	201,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	670,000 JT	111,000 JT	436,000 JT	861,000 JT	163,000 JT	556,000 JT	340,000 JT	39,500 JT	203,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	14 T	0.604 JT	8.39 JT	28.7 JT	0.211 JT	16.2 JT	3.15 JT	0.0638 JT	1.74 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	14 T	2.88 JT	9.33 JT	28.7 JT	3.08 JT	17.5 JT	6.53 JT	3.89 JT	5.32 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	24.5 T	5.59 JT	16.6 JT	16.1 JT	5.71 JT	11.6 JT	16.6 JT	6.62 JT	12 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.922 T	0.207 JT	0.623 JT	0.432 JT	0.148 JT	0.308 JT	0.302 JT	0.187 JT	0.249 JT
% Lipids	5.39	1.07	NC	8.72	1.57	NC	7.2	0.88	NC

Notes: All concentrations are in units of ng/kg (except for the proof and rinsate blanks on pages 51 to 55 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
NC	Not calculated
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11E-07			EPA1-SB11E-08			EPA1-SB11E-09		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7643279.643	7643279.643	7643279.643	7644062.93	7644062.93	7644062.93	7643687.406	7643687.406	7643687.406
Y-coordinate	690016.3478	690016.3478	690016.3478	689439.2818	689439.2818	689439.2818	689713.2152	689713.2152	689713.2152
RiverMile	11	11	11	11.2	11.2	11.2	11.1	11.1	11.1
Sample Date	19-Sep-11	19-Sep-11	19-Sep-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11
Sample Time	7:05	7:05	7:05	12:00	12:00	12:00	12:36	12:36	12:36
Sample Mass (g)	574.32	470.73	1045.05	220.34	160.94	381.28	439.93	341.94	781.87
PCB001	35.7 U	36.4 U	NC	143 U	75 U	NC	35.7 U	36.4 U	NC
PCB002	44.3 U	45.1 U	NC	177 U	93 U	NC	44.3 U	45.1 U	NC
PCB003	23.3 U	23.8 U	NC	93.3 U	49 U	NC	23.3 U	23.8 U	NC
PCB004	563	73.8	NC	394	152 U	NC	210	73.8 U	NC
PCB005	44.3 U	45.1 U	NC	177 U	93 U	NC	44.3 U	45.1 U	NC
PCB006	57	42.2 U	NC	166 U	87 U	NC	41.4 U	42.2 U	NC
PCB007	56.2 U	57.3 U	NC	225 U	118 U	NC	56.2 U	57.3 U	NC
PCB008	232	153	NC	187 U	98 U	NC	136	79.2	NC
PCB009	27.1 U	27.7 U	NC	109 U	57 U	NC	27.1 U	27.7 U	NC
PCB010	29.5 U	30.1 U	NC	118 U	62 U	NC	29.5 U	30.1 U	NC
PCB011	610	324	NC	930 U	488 U	NC	264	237 U	NC
PCB012 & 013	39.5 U	40.3 U	NC	158 U	83 U	NC	39.5 U	40.3 U	NC
PCB014	43.3 U	44.2 U	NC	173 U	91 U	NC	43.3 U	44.2 U	NC
PCB015	179	127	NC	261 U	137 U	NC	112	80.4	NC
PCB016	243	121	NC	210 U	110 U	NC	111	65.9	NC
PCB017	1,910	576	NC	1,070	247	NC	276	103	NC
PCB018 & 030	925	343	NC	413	109	NC	312	135 U	NC
PCB019	3,090	840	NC	1,620	336	NC	331	93.4	NC
PCB020 & 028	2,650	1,010	NC	1,520	372	NC	1,060	439	NC
PCB021 & 033	740	333	NC	859 U	451 U	NC	258	219 U	NC
PCB022	522	232	NC	190 U	100 U	NC	211	116	NC
PCB023	52.4 U	53.4 U	NC	210 U	110 U	NC	52.4 U	53.4 U	NC
PCB024	31.9 U	32.5 U	NC	128 U	67 U	NC	31.9 U	32.5 U	NC
PCB025	340	104	NC	187 U	98 U	NC	61.6	47.6 U	NC
PCB026 & 029	489	166	NC	400 U	210 U	NC	154	102 U	NC
PCB027	456	124	NC	291	95 U	NC	55.9	46.1 U	NC
PCB031	1,460	587	NC	465	194 U	NC	548	257	NC
PCB032	960	293	NC	416	99.8 U	NC	148	65.1	NC
PCB034	37.6 U	38.3 U	NC	150 U	79 U	NC	37.6 U	38.3 U	NC
PCB035	39 U	36.4 U	NC	156 U	82 U	NC	39 U	39.8 U	NC
PCB036	41.4 U	42.2 U	NC	166 U	87 U	NC	41.4 U	42.2 U	NC
PCB037	347	163	NC	209	67 U	NC	173	96.7	NC
PCB038	30 U	23.8 U	NC	120 U	63 U	NC	30 U	30.6 U	NC
PCB039	37.6 U	30.6 U	NC	150 U	79 U	NC	37.6 U	38.3 U	NC
PCB040 & 041 & 071	2,570	796	NC	1,950	420	NC	422	149	NC
PCB042	988	298	NC	564	124	NC	232	78.1	NC
PCB043 & 073	324	110	NC	623	136 U	NC	52.4 U	53.4 U	NC
PCB044 & 047 & 065	21,400	6,370	NC	19,900	3,980	NC	2,610	700	NC
PCB045 & 051	4,500	1,330	NC	3,070	650	NC	274	84.6	NC
PCB046	321	45.1 U	NC	476 U	250 U	NC	119 U	121 U	NC
PCB048	553	183	NC	432	97.3	NC	156	55.5	NC
PCB049 & 069	10,900	3,270	NC	8,800	1,760	NC	1,620	424	NC
PCB050 & 053	5,060	1,460	NC	4,400	927	NC	257	73.2	NC

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11E-07			EPA1-SB11E-08			EPA1-SB11E-09		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7643279.643	7643279.643	7643279.643	7644062.93	7644062.93	7644062.93	7643687.406	7643687.406	7643687.406
Y-coordinate	690016.3478	690016.3478	690016.3478	689439.2818	689439.2818	689439.2818	689713.2152	689713.2152	689713.2152
RiverMile	11	11	11	11.2	11.2	11.2	11.1	11.1	11.1
Sample Date	19-Sep-11	19-Sep-11	19-Sep-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11
Sample Time	7:05	7:05	7:05	12:00	12:00	12:00	12:36	12:36	12:36
Sample Mass (g)	574.32	470.73	1045.05	220.34	160.94	381.28	439.93	341.94	781.87
PCB052	15,900	4,900	NC	17,100	3,460	NC	2,990	789	NC
PCB054	1,050	293	NC	665	136	NC	58.9	34.5 U	NC
PCB055	35.7 U	36.4 U	NC	143 U	75 U	NC	35.7 U	36.4 U	NC
PCB056	703	233	NC	321	93 U	NC	216	74.5	NC
PCB057	34.3	30.6 U	NC	120 U	63 U	NC	30 U	30.6 U	NC
PCB058	42.4	32.5 U	NC	128 U	67 U	NC	31.9 U	32.5 U	NC
PCB059 & 062 & 075	710	364 U	NC	1,430 U	750 U	NC	357 U	364 U	NC
PCB060	777	249	NC	472	103	NC	436	121	NC
PCB061 & 070 & 074 & 076	6,650	2,060	NC	6,740	1,370	NC	3,290	850	NC
PCB063	276	81.1	NC	401	78.9	NC	138	34.5	NC
PCB064	1,620	499	NC	781	250 U	NC	565	172	NC
PCB066	4,600	1,440	NC	5,800	1,180	NC	2,590	657	NC
PCB067	199	54.9	NC	217	60 U	NC	34	29.1 U	NC
PCB068	186	97.1 U	NC	634	200 U	NC	95.2 U	97.1 U	NC
PCB072	163	49.4	NC	250	48.7	NC	46.1	21.8 U	NC
PCB073	52.4 U	53.4 U	NC	210 U	110 U	NC	52.4 U	53.4 U	NC
PCB077	216	67.2	NC	246	92 U	NC	117	44.7 U	NC
PCB078	21.9 U	22.3 U	NC	87.6 U	46 U	NC	21.9 U	22.3 U	NC
PCB079	74.8	37.9 U	NC	156	78 U	NC	37.1 U	37.9 U	NC
PCB080	35.2 U	35.9 U	NC	141 U	74 U	NC	35.2 U	35.9 U	NC
PCB081	42.9 U	43.7 U	NC	171 U	90 U	NC	42.9 U	43.7 U	NC
PCB082	566	165	NC	813	127	NC	153	41.3 U	NC
PCB083	1,040	221	NC	2,020	422	NC	192	74.5	NC
PCB084	2,200	654	NC	3,770	776	NC	402	141 U	NC
PCB085 & 117 & 116	3,620	977	NC	5,400	1,100	NC	2,250	547	NC
PCB086 & 087 & 097 & 108 & 119 & 125	12,300	3,420	NC	23,700	4,710	NC	2,960	728 U	NC
PCB088 & 091	3,960	1,130	NC	6,720	1,360	NC	457	118	NC
PCB089	65.8	28.2 U	NC	124	58 U	NC	27.6 U	28.2 U	NC
PCB090 & 101 & 113	56,600	15,400	NC	141,000	27,500	NC	7,400	1,790	NC
PCB092	9,470	2,600	NC	18,100	3,650	NC	1,750	412	NC
PCB093 & 098 & 100 & 102	4,870	1,330	NC	5,010	1,150 U	NC	548 U	558 U	NC
PCB094	437	125	NC	779	250 U	NC	119 U	121 U	NC
PCB095	25,100	7,210	NC	56,100	11,300	NC	2,990	747	NC
PCB096	714	187	NC	762	154	NC	53.3 U	54.4 U	NC
PCB099	19,100	4,820	NC	32,500	6,320	NC	7,510	1,710	NC
PCB103	1,600	434	NC	2,430	466	NC	106	44.7 U	NC
PCB104	129	72.3 U	NC	284 U	149 U	NC	71 U	72.3 U	NC
PCB105	6,540	2,060	NC	9,750	2,050	NC	5,100	1,210	NC
PCB106	70.5 U	71.8 U	NC	282 U	148 U	NC	70.5 U	71.8 U	NC
PCB107 & 124	444	124	NC	933	190	NC	200	52.9 U	NC
PCB109	1,730	473	NC	3,980	764	NC	971	227	NC
PCB110 & 115	24,100	6,700	NC	50,200	10,300	NC	5,060	1,250	NC
PCB111	89.8	35.9 U	NC	297	74 U	NC	35.2 U	35.9 U	NC

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11E-07			EPA1-SB11E-08			EPA1-SB11E-09		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7643279.643	7643279.643	7643279.643	7644062.93	7644062.93	7644062.93	7643687.406	7643687.406	7643687.406
Y-coordinate	690016.3478	690016.3478	690016.3478	689439.2818	689439.2818	689439.2818	689713.2152	689713.2152	689713.2152
RiverMile	11	11	11	11.2	11.2	11.2	11.1	11.1	11.1
Sample Date	19-Sep-11	19-Sep-11	19-Sep-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11
Sample Time	7:05	7:05	7:05	12:00	12:00	12:00	12:36	12:36	12:36
Sample Mass (g)	574.32	470.73	1045.05	220.34	160.94	381.28	439.93	341.94	781.87
PCB112	52.4 U	53.4 U	NC	210 U	110 U	NC	52.4 U	53.4 U	NC
PCB114	569	158	NC	1,000	189	NC	450	93.7	NC
PCB118	36,700	10,400	NC	78,900	16,700	NC	18,600	4,270	NC
PCB120	298	121 U	NC	697	250 U	NC	119 U	121 U	NC
PCB121	192	52	NC	233	69 U	NC	32.9 U	33.5 U	NC
PCB122	94.2	44.2 U	NC	173 U	91 U	NC	43.3 U	71.8 U	NC
PCB123	391	132	NC	744	146	NC	315	79.1	NC
PCB126	86.7 J	65.5 U	NC	257 U	135 U	NC	64.3 U	65.5 U	NC
PCB127	83.4	41.7 U	NC	164 U	86 U	NC	41 U	41.7 U	NC
PCB128 & 166	14,600	4,050	NC	25,300	5,250	NC	3,490	824	NC
PCB129 & 138 & 163	133,000 J	79,600	NC	740,000	146,000	NC	39,800	8,810	NC
PCB130	5,720	1,540	NC	18,600	3,760	NC	812	181	NC
PCB131	515	148	NC	1,750	362	NC	40.5 U	41.3 U	NC
PCB132	20,400	5,830	NC	76,100	15,800	NC	1,170	274	NC
PCB133	4,660	1,200	NC	12,100	2,410	NC	752	164	NC
PCB134 & 143	4,480	1,180	NC	14,500	3,070	NC	266	243 U	NC
PCB135 & 151	90,900	21,600	NC	209,000	41,900	NC	6,290	1,440	NC
PCB136	20,200	4,900	NC	52,300	10,900	NC	854	200	NC
PCB137	2,740	553	NC	5,410	1,110	NC	1,400	263	NC
PCB139 & 140	1,190	298	NC	1,620	326	NC	463	106	NC
PCB141	57,800	16,500	NC	134,000	26,300	NC	3,830	871	NC
PCB142	40.5 U	41.3 U	NC	162 U	85 U	NC	40.5 U	41.3 U	NC
PCB144	9,980	2,380	NC	29,500	6,080	NC	425	93.3	NC
PCB145	44.8 U	45.6 U	NC	179 U	94 U	NC	44.8 U	45.6 U	NC
PCB146	52,000	13,300	NC	151,000	29,700	NC	7,460	1,660	NC
PCB147 & 149	69,500	18,400	NC	287,000	56,700	NC	4,910	1,130	NC
PCB148	380	90.3	NC	550	150 U	NC	71.4 U	72.8 U	NC
PCB150	268	60.7	NC	479	108 U	NC	51.4 U	52.4 U	NC
PCB152	299	71.7	NC	348	117 U	NC	55.7 U	56.8 U	NC
PCB153 & 168	184,000 J	105,000	NC	948,000	188,000	NC	48,500	11,100	NC
PCB154	3,180	706	NC	3,900	762	NC	553	123	NC
PCB155	93.9	59.7 U	NC	234 U	123 U	NC	58.6 U	59.7 U	NC
PCB156 & 157	22,700	6,430	NC	65,800	12,700	NC	4,210	965	NC
PCB158	25,700	6,920	NC	52,200	10,300	NC	3,310	735	NC
PCB159	521	121 U	NC	476 U	250 U	NC	119 U	121 U	NC
PCB160	4.29 U	4.37 U	NC	17.1 U	9 U	NC	4.29 U	4.37 U	NC
PCB161	56.7 U	57.8 U	NC	227 U	119 U	NC	56.7 U	57.8 U	NC
PCB162	375	189	NC	661	146	NC	92.6	41 U	NC
PCB164	11,400	3,280	NC	34,100	6,980	NC	1,090	266	NC
PCB165	274	69.2	NC	630	129	NC	56.2 U	57.3 U	NC
PCB167	7,520	1,990	NC	24,800	4,700	NC	1,430	308	NC
PCB169	990 J	322 J	NC	318 J	79.2 U	NC	109 J	38.4 U	NC
PCB170	125,000	35,600	NC	372,000	64,500	NC	11,300	2,510	NC

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11E-07			EPA1-SB11E-08			EPA1-SB11E-09		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7643279.643	7643279.643	7643279.643	7644062.93	7644062.93	7644062.93	7643687.406	7643687.406	7643687.406
Y-coordinate	690016.3478	690016.3478	690016.3478	689439.2818	689439.2818	689439.2818	689713.2152	689713.2152	689713.2152
RiverMile	11	11	11	11.2	11.2	11.2	11.1	11.1	11.1
Sample Date	19-Sep-11	19-Sep-11	19-Sep-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11
Sample Time	7:05	7:05	7:05	12:00	12:00	12:00	12:36	12:36	12:36
Sample Mass (g)	574.32	470.73	1045.05	220.34	160.94	381.28	439.93	341.94	781.87
PCB171 & 173	40,500	10,800	NC	97,900	18,400	NC	3,170	713	NC
PCB172	24,000	6,380	NC	70,500	12,600	NC	2,140	465	NC
PCB174	44,900	11,400	NC	224,000	43,100	NC	1,910	432	NC
PCB175	4,950	1,190	NC	17,200	3,230	NC	270	71.4 U	NC
PCB176	4,630	1,180	NC	21,700	4,370	NC	157	88.8 U	NC
PCB177	40,100	10,900	NC	203,000	38,600	NC	2,600	573	NC
PCB178	29,800	7,440	NC	81,900	15,500	NC	2,510	546	NC
PCB179	29,700	7,550	NC	93,200	18,300	NC	1,120	257	NC
PCB180 & 193	196,000 J	105,000	NC	1,150,000	217,000	NC	36,100	8,220	NC
PCB181	505	133	NC	1,480	264	NC	91.1	65 U	NC
PCB182	325	74.1	NC	173 U	91 U	NC	43.3 U	44.2 U	NC
PCB183 & 185	108,000	29,500	NC	312,000	57,600	NC	8,960	1,950	NC
PCB184	55.5	52.9 U	NC	208 U	109 U	NC	51.9 U	52.9 U	NC
PCB186	75.2 U	76.7 U	NC	301 U	158 U	NC	75.2 U	76.7 U	NC
PCB187	102,000 J	43,100	NC	602,000	122,000	NC	19,500	4,270	NC
PCB188	179	61.7 U	NC	639	127 U	NC	60.5 U	61.7 U	NC
PCB189	6,890	1,720	NC	17,600	3,210	NC	612	131	NC
PCB190	19,100	7,360	NC	60,200	12,700	NC	2,010	568	NC
PCB191	7,210	1,820	NC	19,600	3,470	NC	599	131	NC
PCB192	41.9 U	42.7 U	NC	168 U	88 U	NC	41.9 U	42.7 U	NC
PCB194	76,800	22,500	NC	168,000	28,900	NC	6,450	1,410	NC
PCB195	32,000	9,180	NC	76,700	13,400	NC	2,800	611	NC
PCB196	40,800	11,200	NC	87,600	17,000	NC	3,240	685	NC
PCB197 & 200	5,430	1,450	NC	20,300	3,700	NC	394	101 U	NC
PCB198 & 199	56,900	16,800	NC	190,000	34,000	NC	5,520	1,210	NC
PCB201	7,510	1,940	NC	26,700	4,970	NC	537	111	NC
PCB202	12,500	3,370	NC	27,400	5,000	NC	1,370	297	NC
PCB203	49,600	13,300	NC	87,000	15,700	NC	4,860	1,050	NC
PCB204	58 U	59.2 U	NC	232 U	122 U	NC	58 U	59.2 U	NC
PCB205	4,980	1,300	NC	9,290	1,610	NC	399	82.2	NC
PCB206	14,500	4,450	NC	26,600	4,820	NC	1,830	390	NC
PCB207	2,170	629	NC	4,830	918	NC	283	117 U	NC
PCB208	2,060	596	NC	4,600	888	NC	368	119 U	NC
PCB209	512	174	NC	519	116	NC	422	102	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11E-07			EPA1-SB11E-08			EPA1-SB11E-09		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7643279.643	7643279.643	7643279.643	7644062.93	7644062.93	7644062.93	7643687.406	7643687.406	7643687.406
Y-coordinate	690016.3478	690016.3478	690016.3478	689439.2818	689439.2818	689439.2818	689713.2152	689713.2152	689713.2152
RiverMile	11	11	11	11.2	11.2	11.2	11.1	11.1	11.1
Sample Date	19-Sep-11	19-Sep-11	19-Sep-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11
Sample Time	7:05	7:05	7:05	12:00	12:00	12:00	12:36	12:36	12:36
Sample Mass (g)	574.32	470.73	1045.05	220.34	160.94	381.28	439.93	341.94	781.87
Monochlorobiphenyl homologs	44.3 UT	45.1 UT	NC	177 UT	93 UT	NC	44.3 UT	45.1 UT	NC
Dichlorobiphenyl homologs	1,670 T	728 T	NC	1,280 T	488 UT	NC	771 T	365 T	NC
Trichlorobiphenyl homologs	14,200 T	4,950 T	NC	7,200 T	1,920 T	NC	3,770 T	1,580 T	NC
Tetrachlorobiphenyl homologs	79,900 T	24,100 T	NC	74,800 T	15,500 T	NC	16,500 T	4,740 T	NC
Pentachlorobiphenyl homologs	213,000 JT	59,000 T	NC	446,000 T	89,400 T	NC	57,400 T	13,600 T	NC
Hexachlorobiphenyl homologs	745,000 JT	297,000 JT	NC	2,890,000 JT	574,000 T	NC	131,000 JT	29,900 T	NC
Heptachlorobiphenyl homologs	784,000 JT	281,000 T	NC	3,350,000 T	635,000 T	NC	93,100 T	21,000 T	NC
Octachlorobiphenyl homologs	287,000 T	81,000 T	NC	693,000 T	124,000 T	NC	25,600 T	5,510 T	NC
Nonachlorobiphenyl homologs	18,700 T	5,680 T	NC	36,000 T	6,630 T	NC	2,480 T	508 T	NC
Total PCB Congeners (RI Calc; ND=0)	2,140,000 JT	753,000 JT	1,520,000 JT	7,490,000 JT	1,440,000 JT	4,940,000 JT	330,000 JT	74,400 JT	218,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	2,140,000 JT	754,000 JT	1,520,000 JT	7,490,000 JT	1,450,000 JT	4,940,000 JT	332,000 JT	77,300 JT	220,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	40.8 JT	10.4 JT	27.1 JT	15.5 JT	1.19 JT	9.47 JT	4.2 JT	0.212 JT	2.46 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	40.8 JT	13.6 JT	28.6 JT	28.4 JT	9.15 JT	20.3 JT	7.42 JT	4.07 JT	5.96 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	26.1 JT	10.1 JT	18.9 JT	42.9 JT	15.3 JT	31.3 JT	12.5 JT	6.87 JT	10 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.922 JT	0.312 JT	0.647 JT	1.72 JT	0.565 JT	1.23 JT	0.342 JT	0.213 JT	0.286 JT
% Lipids	12.5	3.71	NC	5.21	0.44	NC	9.12	1.9	NC

Notes: All concentrations are in units of ng/kg (except for the proof and rinsate blanks on pages 51 to 55 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
NC	Not calculated
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11E-10			EPA1-SB11W-05			EPA1-SB11W-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7643305.445	7643305.445	7643305.445	7645552.14	7645552.14	7645552.14	7645637.354	7645637.354	7645637.354
Y-coordinate	689983.1343	689983.1343	689983.1343	686305.2547	686305.2547	686305.2547	686200.0404	686200.0404	686200.0404
RiverMile	11.1	11.1	11.1	11.9	11.9	11.9	11.9	11.9	11.9
Sample Date	7-Oct-11	7-Oct-11	7-Oct-11	28-Sep-11	28-Sep-11	28-Sep-11	16-Sep-11	16-Sep-11	16-Sep-11
Sample Time	13:30	13:30	13:30	8:22	8:22	8:22	7:14	7:14	7:14
Sample Mass (g)	377.44	265.84	643.28	105.36	89.88	195.24	753.89	579.31	1333.2
PCB001	32.9 U	36.8 U	NC	21.8 U	22.3 U	NC	36.4 U	36.1 U	NC
PCB002	40.8 U	45.6 U	NC	27.1 U	27.6 U	NC	45.1 U	44.7 U	NC
PCB003	21.5 U	24 U	NC	17.1	14.6 U	NC	23.8 U	23.6 U	NC
PCB004	118	74.5 U	NC	641	114	NC	125	73.1 U	NC
PCB005	40.8 U	45.6 U	NC	27.1 U	27.6 U	NC	45.1 U	44.7 U	NC
PCB006	38.2 U	42.6 U	NC	225	40.9	NC	42.2 U	41.8 U	NC
PCB007	51.8 U	57.8 U	NC	34.4 U	35 U	NC	57.3 U	56.7 U	NC
PCB008	49.8	48 U	NC	668	143	NC	142	79.7	NC
PCB009	25 U	27.9 U	NC	41.3	16.9 U	NC	27.7 U	27.4 U	NC
PCB010	27.2 U	30.4 U	NC	23.5	18.4 U	NC	30.1 U	29.8 U	NC
PCB011	214 U	239 U	NC	192	151	NC	394	235 U	NC
PCB012 & 013	36.4 U	40.7 U	NC	24.2 U	24.7 U	NC	40.3 U	39.9 U	NC
PCB014	39.9 U	44.6 U	NC	26.5 U	27 U	NC	44.2 U	43.8 U	NC
PCB015	60.1 U	67.2 U	NC	136	42.2	NC	91.3	85.9	NC
PCB016	48.2 U	53.9 U	NC	519	113	NC	113	71.8	NC
PCB017	225	60.3 U	NC	1,560	276	NC	274	102	NC
PCB018 & 030	160	43.8	NC	1,830	330	NC	374	147 U	NC
PCB019	308	52.4	NC	1,180	189	NC	100	46.2 U	NC
PCB020 & 028	589	138	NC	3,830	706	NC	1,320	509	NC
PCB021 & 033	198 U	221 U	NC	1,000	209	NC	274	217 U	NC
PCB022	87.8	49 U	NC	792	151	NC	256	141	NC
PCB023	48.2 U	53.9 U	NC	32 U	32.7 U	NC	53.4 U	52.9 U	NC
PCB024	29.4 U	32.8 U	NC	29	19.9 U	NC	32.5 U	32.2 U	NC
PCB025	45.4	48 U	NC	415	71.6	NC	79.4	47.1 U	NC
PCB026 & 029	101	103 U	NC	769	134	NC	216	101 U	NC
PCB027	44.7	46.6 U	NC	343	61.1	NC	52.4	45.7 U	NC
PCB031	249	95.1 U	NC	2,640	491	NC	679	299	NC
PCB032	103	25	NC	932	168 U	NC	153	68.4	NC
PCB034	34.6 U	38.7 U	NC	23 U	23.5 U	NC	38.3 U	38 U	NC
PCB035	36 U	40.2 U	NC	23.9 U	24.4 U	NC	39.8 U	39.4 U	NC
PCB036	38.2 U	42.6 U	NC	25.3 U	25.8 U	NC	42.2 U	41.8 U	NC
PCB037	67.6	32.8 U	NC	351	71.7	NC	177	113	NC
PCB038	27.6 U	30.9 U	NC	18.3 U	18.7 U	NC	30.6 U	30.3 U	NC
PCB039	34.6 U	38.7 U	NC	23 U	23.5 U	NC	38.3 U	38 U	NC
PCB040 & 041 & 071	444	89.8	NC	2,280	381	NC	678	198	NC
PCB042	254	49.3	NC	1,060	182	NC	588	146	NC
PCB043 & 073	49.8	53.9 U	NC	293	52.4	NC	55.7	52.9 U	NC
PCB044 & 047 & 065	4,310	680	NC	15,300	2,430	NC	7,610	1,670	NC
PCB045 & 051	525	88.2	NC	3,670	586	NC	261	74.8	NC
PCB046	110 U	123 U	NC	263	74.3 U	NC	121 U	120 U	NC
PCB048	147	29.6	NC	581	100	NC	305	78.8	NC
PCB049 & 069	2,310	365	NC	9,800	1,570	NC	2,990	656	NC
PCB050 & 053	499	80.2	NC	3,220	501	NC	227	63.5 U	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11E-10			EPA1-SB11W-05			EPA1-SB11W-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7643305.445	7643305.445	7643305.445	7645552.14	7645552.14	7645552.14	7645637.354	7645637.354	7645637.354
Y-coordinate	689983.1343	689983.1343	689983.1343	686305.2547	686305.2547	686305.2547	686200.0404	686200.0404	686200.0404
RiverMile	11.1	11.1	11.1	11.9	11.9	11.9	11.9	11.9	11.9
Sample Date	7-Oct-11	7-Oct-11	7-Oct-11	28-Sep-11	28-Sep-11	28-Sep-11	16-Sep-11	16-Sep-11	16-Sep-11
Sample Time	13:30	13:30	13:30	8:22	8:22	8:22	7:14	7:14	7:14
Sample Mass (g)	377.44	265.84	643.28	105.36	89.88	195.24	753.89	579.31	1333.2
PCB052	3,660	589	NC	9,680	1,650	NC	4,520	1,050	NC
PCB054	92.9	34.8 U	NC	392	63.9	NC	34.5 U	34.1 U	NC
PCB055	32.9 U	36.8 U	NC	21.8 U	22.3 U	NC	36.4 U	36.1 U	NC
PCB056	167	45.6 U	NC	952	170	NC	554	149	NC
PCB057	27.6 U	30.9 U	NC	22.4	18.7 U	NC	30.6 U	30.3 U	NC
PCB058	29.4 U	32.8 U	NC	24.2	19.9 U	NC	32.5 U	32.2 U	NC
PCB059 & 062 & 075	329 U	368 U	NC	441	223 U	NC	364 U	361 U	NC
PCB060	377	65.8	NC	573	100	NC	728	171	NC
PCB061 & 070 & 074 & 076	2,780	476	NC	6,500	1,080	NC	5,330	1,250	NC
PCB063	177	28.9 U	NC	208	33.6	NC	248	51.9	NC
PCB064	537	123 U	NC	1,690	291	NC	1,200	291	NC
PCB066	2,910	459	NC	4,130	676	NC	3,900	884	NC
PCB067	46.3	29.4 U	NC	151	26.3	NC	80.7	28.8 U	NC
PCB068	96.5	98 U	NC	249	59.4 U	NC	97.1 U	96.2 U	NC
PCB072	74.9	22.1 U	NC	154	25.8	NC	87.1	21.6 U	NC
PCB073	48.2 U	53.9 U	NC	32 U	21.1 U	NC	53.4 U	52.9 U	NC
PCB077	118	45.1 U	NC	248	40.7	NC	232	53.1	NC
PCB078	20.2 U	22.5 U	NC	13.4 U	13.7 U	NC	22.3 U	22.1 U	NC
PCB079	35.6	38.2 U	NC	84.3	23.2 U	NC	55.3	37.5 U	NC
PCB080	32.5 U	36.3 U	NC	21.6 U	22 U	NC	35.9 U	35.6 U	NC
PCB081	39.5 U	44.1 U	NC	26.2 U	26.7 U	NC	43.7 U	43.3 U	NC
PCB082	246	41.7 U	NC	690	111	NC	430	97.3	NC
PCB083	316	65.2 U	NC	786	86.7	NC	342	63.9 U	NC
PCB084	673	142 U	NC	1,890	288	NC	940	210	NC
PCB085 & 117 & 116	2,210	337	NC	2,040	338	NC	3,350	663	NC
PCB086 & 087 & 097 & 108 & 119 & 125	4,790	770	NC	7,130	1,130	NC	5,480	1,170	NC
PCB088 & 091	1,140	175	NC	4,910	742	NC	982	207	NC
PCB089	25.4 U	28.4 U	NC	55.6	17.2 U	NC	28.2 U	27.9 U	NC
PCB090 & 101 & 113	18,200	2,790	NC	24,600	3,880	NC	11,900	2,410	NC
PCB092	3,140	455	NC	5,020	768	NC	2,530	512	NC
PCB093 & 098 & 100 & 102	973	564 U	NC	2,720	409	NC	1,790	553 U	NC
PCB094	110 U	123 U	NC	250	74.3 U	NC	121 U	120 U	NC
PCB095	6,710	1,030	NC	13,300	1,990	NC	4,730	1,030	NC
PCB096	120	54.9 U	NC	326	49.7	NC	54.4 U	53.8 U	NC
PCB099	9,780	1,340	NC	12,000	1,880	NC	11,900	2,180	NC
PCB103	379	54.9	NC	1,390	199	NC	125	44.2 U	NC
PCB104	65.4 U	73 U	NC	55.6	44.3 U	NC	72.3 U	71.6 U	NC
PCB105	4,550	732	NC	3,140	503	NC	6,840	1,520	NC
PCB106	64.9 U	72.5 U	NC	43.1 U	44 U	NC	71.8 U	71.2 U	NC
PCB107 & 124	257	53.4 U	NC	307	46.8	NC	312	67.6	NC
PCB109	1,250	213	NC	1,330	203	NC	1,310	303	NC
PCB110 & 115	8,280	1,400	NC	11,400	1,840	NC	9,150	1,920	NC
PCB111	44.4	36.3 U	NC	108	22 U	NC	35.9 U	35.6 U	NC

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11E-10			EPA1-SB11W-05			EPA1-SB11W-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7643305.445	7643305.445	7643305.445	7645552.14	7645552.14	7645552.14	7645637.354	7645637.354	7645637.354
Y-coordinate	689983.1343	689983.1343	689983.1343	686305.2547	686305.2547	686305.2547	686200.0404	686200.0404	686200.0404
RiverMile	11.1	11.1	11.1	11.9	11.9	11.9	11.9	11.9	11.9
Sample Date	7-Oct-11	7-Oct-11	7-Oct-11	28-Sep-11	28-Sep-11	28-Sep-11	16-Sep-11	16-Sep-11	16-Sep-11
Sample Time	13:30	13:30	13:30	8:22	8:22	8:22	7:14	7:14	7:14
Sample Mass (g)	377.44	265.84	643.28	105.36	89.88	195.24	753.89	579.31	1333.2
PCB112	48.2 U	53.9 U	NC	32 U	32.7 U	NC	53.4 U	52.9 U	NC
PCB114	425	67.5	NC	199	36.6	NC	696	138	NC
PCB118	22,200	3,600	NC	12,100	1,950	NC	26,500	5,440	NC
PCB120	144	123 U	NC	345	74.3 U	NC	121 U	120 U	NC
PCB121	51.9	33.8 U	NC	104	20.5 U	NC	54.5	33.2 U	NC
PCB122	48.4	44.6 U	NC	71.1	27 U	NC	71.8 U	43.8 U	NC
PCB123	345	56.9 U	NC	162	35.4	NC	542	87.9	NC
PCB126	59.2 U	66.2 U	NC	39.3 U	40.1 U	NC	65.5 U	64.9 U	NC
PCB127	45	42.2 U	NC	30.3	25.5 U	NC	68.4	41.3 U	NC
PCB128 & 166	4,520	690	NC	3,550	478	NC	4,540	909	NC
PCB129 & 138 & 163	103,000	14,900	NC	60,000	8,750	NC	44,400	8,830	NC
PCB130	2,800	402	NC	2,560	376	NC	1,120	211	NC
PCB131	171	41.7 U	NC	241	34.8	NC	96.2	40.9 U	NC
PCB132	5,860	893	NC	9,390	1,360	NC	2,190	437	NC
PCB133	1,830	251	NC	2,290	371	NC	918	166	NC
PCB134 & 143	1,490	245 U	NC	1,550	225	NC	427	240 U	NC
PCB135 & 151	22,900	3,310	NC	22,500	3,380	NC	7,650	1,330	NC
PCB136	5,010	709	NC	5,010	708	NC	1,310	227	NC
PCB137	1,830	255	NC	1,010	138	NC	2,310	431	NC
PCB139 & 140	524	74	NC	637	92.7	NC	636	112	NC
PCB141	15,200	2,150	NC	9,610	1,360	NC	3,920	856	NC
PCB142	37.3 U	41.7 U	NC	24.8 U	25.2 U	NC	41.3 U	40.9 U	NC
PCB144	3,050	435	NC	2,450	340	NC	574	99.4	NC
PCB145	41.2 U	46.1 U	NC	27.4 U	27.9 U	NC	45.6 U	45.2 U	NC
PCB146	22,500	3,100	NC	20,000	3,300	NC	8,210	1,490	NC
PCB147 & 149	24,700	3,570	NC	43,700	6,400	NC	7,640	1,460	NC
PCB148	122	73.5 U	NC	446	69.2	NC	72.8 U	72.1 U	NC
PCB150	65.9	52.9 U	NC	318	46.7	NC	52.4 U	51.9 U	NC
PCB152	62.3	57.4 U	NC	83.1	34.8 U	NC	56.8 U	56.3 U	NC
PCB153 & 168	143,000 J	20,600	NC	74,400	11,300	NC	58,300	11,000	NC
PCB154	900	121	NC	2,440	366	NC	837	136	NC
PCB155	53.9 U	60.3 U	NC	35.8 U	36.5 U	NC	59.7 U	59.1 U	NC
PCB156 & 157	9,930	1,420	NC	2,770	453	NC	5,980	1,220	NC
PCB158	7,240	1,060	NC	4,060	576	NC	4,140	810	NC
PCB159	649	123 U	NC	72.8 U	74.3 U	NC	121 U	120 U	NC
PCB160	3.95 U	4.41 U	NC	2.62 U	2.67 U	NC	4.37 U	4.33 U	NC
PCB161	52.2 U	58.3 U	NC	34.7 U	35.3 U	NC	57.8 U	57.2 U	NC
PCB162	203	41.4 U	NC	221	25.1 U	NC	135	49.2	NC
PCB164	4,000	625	NC	2,440	371	NC	1,090	223	NC
PCB165	101	57.8 U	NC	130	35 U	NC	61.8	56.7 U	NC
PCB167	3,830	518	NC	1,640	246	NC	1,790	345	NC
PCB169	314	38.8 U	NC	227 J	49.1 J	NC	93.7 J	38.1 U	NC
PCB170	39,200	5,500	NC	14,100	2,700	NC	9,550	2,220	NC

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11E-10			EPA1-SB11W-05			EPA1-SB11W-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7643305.445	7643305.445	7643305.445	7645552.14	7645552.14	7645552.14	7645637.354	7645637.354	7645637.354
Y-coordinate	689983.1343	689983.1343	689983.1343	686305.2547	686305.2547	686305.2547	686200.0404	686200.0404	686200.0404
RiverMile	11.1	11.1	11.1	11.9	11.9	11.9	11.9	11.9	11.9
Sample Date	7-Oct-11	7-Oct-11	7-Oct-11	28-Sep-11	28-Sep-11	28-Sep-11	16-Sep-11	16-Sep-11	16-Sep-11
Sample Time	13:30	13:30	13:30	8:22	8:22	8:22	7:14	7:14	7:14
Sample Mass (g)	377.44	265.84	643.28	105.36	89.88	195.24	753.89	579.31	1333.2
PCB171 & 173	10,400	1,420	NC	5,090	789	NC	3,010	639	NC
PCB172	7,460	971	NC	3,530	607	NC	1,920	394	NC
PCB174	17,300	2,460	NC	13,000	2,140	NC	1,830	362	NC
PCB175	1,720	227	NC	796	131	NC	294	70.7 U	NC
PCB176	1,420	189	NC	1,630	246	NC	226	88 U	NC
PCB177	17,600	2,340	NC	14,300	2,560	NC	2,150	447	NC
PCB178	9,050	1,230	NC	5,790	1,010	NC	2,650	496	NC
PCB179	6,990	990	NC	5,340	848	NC	1,410	271	NC
PCB180 & 193	132,000	18,000	NC	46,600	9,260	NC	35,900	8,030	NC
PCB181	212	65.7 U	NC	80.6	39.8 U	NC	117	64.4 U	NC
PCB182	99.8	44.6 U	NC	168	33	NC	65.5	43.8 U	NC
PCB183 & 185	33,900	4,460	NC	14,600	2,420	NC	8,430	1,810	NC
PCB184	47.8 U	53.4 U	NC	31.7 U	32.4 U	NC	52.9 U	52.4 U	NC
PCB186	69.3 U	77.5 U	NC	46 U	46.9 U	NC	76.7 U	76 U	NC
PCB187	69,700	9,720	NC	38,900	7,100	NC	16,700	3,180	NC
PCB188	75.8	62.3 U	NC	121	37.7 U	NC	61.7 U	61.1 U	NC
PCB189	2,170	263	NC	671	119	NC	655	128	NC
PCB190	5,500	903	NC	1,620	393	NC	1,430	462	NC
PCB191	2,420	301	NC	846	140	NC	615	120	NC
PCB192	38.6 U	43.1 U	NC	25.6 U	26.1 U	NC	42.7 U	42.3 U	NC
PCB194	20,100	2,670	NC	7,750	1,660	NC	5,770	1,310	NC
PCB195	9,700	1,200	NC	3,470	715	NC	2,300	512	NC
PCB196	11,800	1,460	NC	3,830	958	NC	3,020	680	NC
PCB197 & 200	1,830	225	NC	1,000	209	NC	412	99.8 U	NC
PCB198 & 199	17,700	2,320	NC	6,640	1,970	NC	4,130	991	NC
PCB201	2,730	345	NC	1,190	256	NC	573	109	NC
PCB202	3,590	435	NC	1,970	405	NC	1,500	308	NC
PCB203	12,300	1,560	NC	5,090	1,110	NC	4,360	927	NC
PCB204	53.5 U	59.8 U	NC	35.5 U	36.2 U	NC	59.2 U	58.6 U	NC
PCB205	1,160	137	NC	447	89	NC	322	66.4	NC
PCB206	3,510	482	NC	1,510	327	NC	1,890	427	NC
PCB207	637	118 U	NC	232	71.3 U	NC	323	115 U	NC
PCB208	673	120 U	NC	392	79.4	NC	443	118 U	NC
PCB209	429	69.3	NC	191	46.8	NC	584	150	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11E-10			EPA1-SB11W-05			EPA1-SB11W-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7643305.445	7643305.445	7643305.445	7645552.14	7645552.14	7645552.14	7645637.354	7645637.354	7645637.354
Y-coordinate	689983.1343	689983.1343	689983.1343	686305.2547	686305.2547	686305.2547	686200.0404	686200.0404	686200.0404
RiverMile	11.1	11.1	11.1	11.9	11.9	11.9	11.9	11.9	11.9
Sample Date	7-Oct-11	7-Oct-11	7-Oct-11	28-Sep-11	28-Sep-11	28-Sep-11	16-Sep-11	16-Sep-11	16-Sep-11
Sample Time	13:30	13:30	13:30	8:22	8:22	8:22	7:14	7:14	7:14
Sample Mass (g)	377.44	265.84	643.28	105.36	89.88	195.24	753.89	579.31	1333.2
Monochlorobiphenyl homologs	40.8 UT	45.6 UT	NC	28 T	27.6 UT	NC	45.1 UT	44.7 UT	NC
Dichlorobiphenyl homologs	350 T	239 UT	NC	1,930 T	509 T	NC	802 T	369 T	NC
Trichlorobiphenyl homologs	2,170 T	685 T	NC	16,200 T	2,930 T	NC	4,140 T	1,680 T	NC
Tetrachlorobiphenyl homologs	19,900 T	3,560 T	NC	62,000 T	10,200 T	NC	30,000 T	7,210 T	NC
Pentachlorobiphenyl homologs	86,400 T	13,700 T	NC	106,000 T	16,700 T	NC	90,300 T	18,600 T	NC
Hexachlorobiphenyl homologs	386,000 JT	55,500 T	NC	274,000 JT	40,900 JT	NC	159,000 JT	30,700 T	NC
Heptachlorobiphenyl homologs	357,000 T	49,100 T	NC	167,000 T	30,600 T	NC	87,000 T	18,700 T	NC
Octachlorobiphenyl homologs	80,900 T	10,400 T	NC	31,400 T	7,370 T	NC	22,400 T	4,950 T	NC
Nonachlorobiphenyl homologs	4,820 T	601 T	NC	2,130 T	442 T	NC	2,660 T	544 T	NC
Total PCB Congeners (RI Calc; ND=0)	937,000 JT	131,000 JT	604,000 JT	661,000 JT	109,000 JT	407,000 JT	395,000 JT	80,500 JT	259,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	938,000 JT	134,000 JT	606,000 JT	661,000 JT	110,000 JT	407,000 JT	396,000 JT	83,000 JT	260,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	10.7 JT	0.198 JT	6.38 JT	7.46 JT	1.58 JT	4.75 JT	4.12 JT	0.272 JT	2.45 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	13.7 JT	4.1 JT	9.73 JT	9.42 JT	3.59 JT	6.74 JT	7.41 JT	4.09 JT	5.97 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	12.9 JT	6.93 JT	10.4 JT	16.7 JT	5.55 JT	11.5 JT	18.8 JT	8.43 JT	14.3 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.403 JT	0.213 JT	0.324 JT	0.244 JT	0.13 JT	0.192 JT	0.418 JT	0.224 JT	0.333 JT
% Lipids	5.79	0.88	NC	7.2	0.81	NC	11.6	2.68	NC

Notes:

All concentrations are in units of ng/kg (except for the proof and rinsate blanks on pages 51 to 55 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
NC	Not calculated
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11W-07			EPA1-SB11W-08			NA	NA	NA	NA
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	MEL Proof Blank	MEL Rinsate Blank 1	MEL Rinsate Blank 2	MEL Rinsate Blank 3
X-coordinate	7643703.153	7643703.153	7643703.153	7642440.545	7642440.545	7642440.545	NA	NA	NA	NA
Y-coordinate	688248.8439	688248.8439	688248.8439	689464.813	689464.813	689464.813	NA	NA	NA	NA
RiverMile	11.4	11.4	11.4	11	11	11	NA	NA	NA	NA
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	23-Nov-11	30-Nov-11	8-Dec-11	8-Dec-11
Sample Time	9:20	9:20	9:20	10:12	10:12	10:12	10:10	15:45	14:30	14:45
Sample Mass (g)	61.58	44.48	106.06	467.17	210.21	677.38	NA	NA	NA	NA
PCB001	36.4 U	37.1 U	NC	35 U	36.1 U	NC	0.0597 U	0.0579 U	0.0559 U	0.0569 U
PCB002	45.1 U	46 U	NC	43.5 U	44.7 U	NC	0.12 U	0.117 U	0.113 U	0.115 U
PCB003	23.8 U	24.3 U	NC	22.9 U	23.6 U	NC	0.0638 U	0.062 U	0.0598 U	0.0609 U
PCB004	127	75.2 U	NC	71 U	73.1 U	NC	0.0797	0.0301 U	0.029 U	0.0339 J
PCB005	45.1 U	46 U	NC	43.5 U	44.7 U	NC	0.105 U	0.102 U	0.0982 U	0.0999 U
PCB006	42.2 U	43.1 U	NC	40.7 U	41.8 U	NC	0.114 U	0.11 U	0.107 U	0.108 U
PCB007	57.3 U	58.4 U	NC	55.1 U	56.7 U	NC	0.125 U	0.121 U	0.117 U	0.119 U
PCB008	123	48.5 U	NC	45.8 U	47.1 U	NC	0.128 U	0.125 U	0.12 U	0.122 U
PCB009	27.7 U	28.2 U	NC	26.6 U	27.4 U	NC	0.137 U	0.133 U	0.129 U	0.131 U
PCB010	30.1 U	30.7 U	NC	29 U	29.8 U	NC	0.204 U	0.198 U	0.191 U	0.194 U
PCB011	237 U	242 U	NC	228 U	235 U	NC	0.417 U	0.244 U	0.255 U	0.322 U
PCB012 & 013	40.3 U	41.1 U	NC	38.8 U	39.9 U	NC	0.172 U	0.167 U	0.161 U	0.164 U
PCB014	44.2 U	45 U	NC	42.5 U	43.8 U	NC	0.0482 U	0.0468 U	0.0452 U	0.046 U
PCB015	66.5 U	67.8 U	NC	64 U	65.9 U	NC	0.0566 U	0.0219 J	0.0198 J	0.0253 U
PCB016	162	54.5 U	NC	51.4 U	52.9 U	NC	0.22 U	0.214 U	0.207 U	0.21 U
PCB017	696	84.9	NC	811	195	NC	0.184 U	0.179 U	0.172 U	0.175 U
PCB018 & 030	501	65.6	NC	222	68.3 U	NC	0.416 U	0.404 U	0.39 U	0.397 U
PCB019	309	47.5 U	NC	470	104	NC	0.0499 U	0.0484 U	0.0468 U	0.0476 U
PCB020 & 028	1,910	228	NC	1,580	369	NC	0.147	0.0959 U	0.0926 U	0.0942 U
PCB021 & 033	274	223 U	NC	250	217 U	NC	0.145 U	0.141 U	0.136 U	0.139 U
PCB022	390	55.3	NC	168	50.6	NC	0.0613	0.0341 U	0.0329 U	0.0335 U
PCB023	53.4 U	54.5 U	NC	51.4 U	52.9 U	NC	0.103 U	0.0999 U	0.0965 U	0.0981 U
PCB024	32.5 U	33.2 U	NC	31.3 U	32.2 U	NC	0.176 U	0.171 U	0.165 U	0.168 U
PCB025	188	48.5 U	NC	228	48.5	NC	0.058 U	0.0563 U	0.0544 U	0.0553 U
PCB026 & 029	373	104 U	NC	257	101 U	NC	0.166 U	0.161 U	0.156 U	0.158 U
PCB027	109	47 U	NC	212	49.9	NC	0.169 U	0.164 U	0.159 U	0.162 U
PCB031	1,220	152	NC	613	160	NC	0.13	0.0531 U	0.0513 U	0.0548
PCB032	274	36.1	NC	692	160	NC	0.166 U	0.161 U	0.156 U	0.158 U
PCB034	38.3 U	39.1 U	NC	36.9 U	38 U	NC	0.0788 U	0.0765 U	0.0739 U	0.0751 U
PCB035	39.8 U	40.6 U	NC	38.3 U	39.4 U	NC	0.133 U	0.129 U	0.124 U	0.126 U
PCB036	42.2 U	43.1 U	NC	40.7 U	41.8 U	NC	0.0773 U	0.0751 U	0.0725 U	0.0738 U
PCB037	188	35.1	NC	38.4	32.2 U	NC	0.034	0.0268 U	0.0259 U	0.0264 U
PCB038	30.6 U	31.2 U	NC	29.4 U	30.3 U	NC	0.0917 U	0.089 U	0.0859 U	0.0874 U
PCB039	38.3 U	39.1 U	NC	36.9 U	38 U	NC	0.0811 U	0.0787 U	0.076 U	0.0773 U
PCB040 & 041 & 071	1,410	172	NC	2,190	522	NC	0.322 U	0.313 U	0.302 U	0.307 U
PCB042	827	94.3	NC	1,300	282	NC	0.187 U	0.182 U	0.176 U	0.179 U
PCB043 & 073	137	54.5 U	NC	435	98.1	NC	0.349 U	0.339 U	0.327 U	0.333 U
PCB044 & 047 & 065	6,580	706	NC	19,200	3,990	NC	0.399 U	0.388 U	0.374 U	0.381 U
PCB045 & 051	1,210	134	NC	3,590	779	NC	0.618 U	0.599 U	0.579 U	0.589 U
PCB046	139	124 U	NC	139	120 U	NC	0.329 U	0.319 U	0.308 U	0.313 U
PCB048	517	57.8	NC	564	125	NC	0.179 U	0.174 U	0.168 U	0.171 U
PCB049 & 069	4,370	446	NC	9,600	2,000	NC	0.337 U	0.327 U	0.316 U	0.321 U
PCB050 & 053	1,330	145	NC	4,050	874	NC	0.684 U	0.664 U	0.641 U	0.652 U

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11W-07			EPA1-SB11W-08			NA	NA	NA	NA
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	MEL Proof Blank	MEL Rinsate Blank 1	MEL Rinsate Blank 2	MEL Rinsate Blank 3
X-coordinate	7643703.153	7643703.153	7643703.153	7642440.545	7642440.545	7642440.545	NA	NA	NA	NA
Y-coordinate	688248.8439	688248.8439	688248.8439	689464.813	689464.813	689464.813	NA	NA	NA	NA
RiverMile	11.4	11.4	11.4	11	11	11	NA	NA	NA	NA
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	23-Nov-11	30-Nov-11	8-Dec-11	8-Dec-11
Sample Time	9:20	9:20	9:20	10:12	10:12	10:12	10:10	15:45	14:30	14:45
Sample Mass (g)	61.58	44.48	106.06	467.17	210.21	677.38	NA	NA	NA	NA
PCB052	7,950	856	NC	9,360	2,000	NC	0.243 U	0.236 U	0.228 U	0.232 U
PCB054	84.1	35.1 U	NC	833	173	NC	0.0503 U	0.0488 U	0.0472 U	0.048 U
PCB055	36.4 U	37.1 U	NC	35 U	36.1 U	NC	0.154 U	0.149 U	0.144 U	0.147 U
PCB056	845	102	NC	958	214	NC	0.129 U	0.125 U	0.121 U	0.123 U
PCB057	30.6 U	31.2 U	NC	32.8	30.3 U	NC	0.0495 U	0.048 U	0.0464 U	0.0472 U
PCB058	32.5 U	33.2 U	NC	39.4	32.2 U	NC	0.0618 U	0.0599 U	0.0579 U	0.0589 U
PCB059 & 062 & 075	364 U	371 U	NC	713	361 U	NC	0.322 U	0.313 U	0.302 U	0.307 U
PCB060	666	75.6	NC	2,380	506	NC	0.155 U	0.151 U	0.145 U	0.148 U
PCB061 & 070 & 074 & 076	6,240	654	NC	10,300	2,150	NC	0.297 U	0.289 U	0.279 U	0.284 U
PCB063	180	29.2 U	NC	657	130	NC	0.0773 U	0.0751 U	0.0725 U	0.0738 U
PCB064	1,520	170	NC	2,360	517	NC	0.119 U	0.116 U	0.112 U	0.114 U
PCB066	3,730	399	NC	10,800	2,280	NC	0.124 U	0.12 U	0.116 U	0.118 U
PCB067	113	29.7 U	NC	184	38.3	NC	0.0969 U	0.0941 U	0.0908 U	0.0924 U
PCB068	97.1 U	99 U	NC	226	96.2 U	NC	0.0688 U	0.0668 U	0.0645 U	0.0656 U
PCB072	89.3	22.3 U	NC	181	37.1	NC	0.0561 U	0.0545 U	0.0526 U	0.0535 U
PCB073	0 U	54.5 U	NC	51.4 U	52.9 U	NC	0.349 U	0 U	0 U	0 U
PCB077	233	45.5 U	NC	225	48.3	NC	0.0713 U	0.0692 U	0.0668 U	0.068 U
PCB078	22.3 U	22.8 U	NC	21.5 U	22.1 U	NC	0.174 U	0.169 U	0.164 U	0.166 U
PCB079	67.8	38.6 U	NC	91	37.5 U	NC	0.214 U	0.208 U	0.201 U	0.204 U
PCB080	35.9 U	36.6 U	NC	34.6 U	35.6 U	NC	0.154 U	0.15 U	0.144 U	0.147 U
PCB081	43.7 U	44.6 U	NC	42.1 U	43.3 U	NC	0.0684 U	0.0664 U	0.0641 U	0.0652 U
PCB082	710	78.5	NC	966	210	NC	0.0738 U	0.0717 U	0.0692 U	0.0704 U
PCB083	677	81.1	NC	632	135	NC	0.139 U	0.135 U	0.131 U	0.133 U
PCB084	2,220	243	NC	1,500	335	NC	0.0794 U	0.0771 U	0.0744 U	0.0757 U
PCB085 & 117 & 116	2,450	239	NC	5,470	1,110	NC	0.115 U	0.112 U	0.108 U	0.11 U
PCB086 & 087 & 097 & 108 & 119 & 125	8,860	911	NC	8,890	1,900	NC	0.14 U	0.136 U	0.131 U	0.133 U
PCB088 & 091	2,240	233	NC	4,090	845	NC	0.193 U	0.188 U	0.181 U	0.184 U
PCB089	115	28.7 U	NC	53.1	27.9 U	NC	0.095 U	0.0922 U	0.0891 U	0.0906 U
PCB090 & 101 & 113	29,500	2,870	NC	24,100	4,980	NC	1.07 U	1.04 U	1.01 U	1.02 U
PCB092	4,320	440	NC	4,100	844	NC	0.125 U	0.121 U	0.117 U	0.119 U
PCB093 & 098 & 100 & 102	1,490	569 U	NC	2,890	572	NC	0.532 U	0.517 U	0.499 U	0.508 U
PCB094	268	124 U	NC	389	120 U	NC	0.135 U	0.131 U	0.126 U	0.129 U
PCB095	15,700	1,620	NC	9,830	2,090	NC	0.642 U	0.624 U	0.602 U	0.613 U
PCB096	171	55.4 U	NC	384	78.3	NC	0.245 U	0.238 U	0.23 U	0.234 U
PCB099	8,810	851	NC	18,700	3,750	NC	0.229 U	0.222 U	0.214 U	0.218 U
PCB103	387	45.5 U	NC	858	167	NC	0.116 U	0.112 U	0.108 U	0.11 U
PCB104	72.3 U	73.8 U	NC	70.3	71.6 U	NC	0.115 U	0.111 U	0.107 U	0.109 U
PCB105	4,660	479	NC	10,400	2,300	NC	0.0736 U	0.0715 U	0.069 U	0.0702 U
PCB106	71.8 U	73.3 U	NC	69.2 U	71.2 U	NC	0.17 U	0.165 U	0.16 U	0.162 U
PCB107 & 124	397	54 U	NC	522	107	NC	1.13 U	1.1 U	1.06 U	1.08 U
PCB109	1,080	103	NC	2,290	504	NC	0.141 U	0.137 U	0.132 U	0.134 U
PCB110 & 115	17,600	1,860	NC	13,600	2,920	NC	0.401 U	0.39 U	0.376 U	0.383 U
PCB111	35.9 U	36.6 U	NC	72.8	35.6 U	NC	0.115 U	0.111 U	0.107 U	0.109 U

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11W-07			EPA1-SB11W-08			NA	NA	NA	NA
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	MEL Proof Blank	MEL Rinsate Blank 1	MEL Rinsate Blank 2	MEL Rinsate Blank 3
X-coordinate	7643703.153	7643703.153	7643703.153	7642440.545	7642440.545	7642440.545	NA	NA	NA	NA
Y-coordinate	688248.8439	688248.8439	688248.8439	689464.813	689464.813	689464.813	NA	NA	NA	NA
RiverMile	11.4	11.4	11.4	11	11	11	NA	NA	NA	NA
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	23-Nov-11	30-Nov-11	8-Dec-11	8-Dec-11
Sample Time	9:20	9:20	9:20	10:12	10:12	10:12	10:10	15:45	14:30	14:45
Sample Mass (g)	61.58	44.48	106.06	467.17	210.21	677.38	NA	NA	NA	NA
PCB112	53.4 U	54.5 U	NC	51.4 U	52.9 U	NC	0.111 U	0.108 U	0.104 U	0.106 U
PCB114	287	60.9 U	NC	1,070	222	NC	0.0563 U	0.0547 U	0.0528 U	0.0537 U
PCB118	16,700	1,710	NC	43,200	8,760	NC	0.32 U	0.311 U	0.3 U	0.305 U
PCB120	121 U	124 U	NC	233	120 U	NC	0.074 U	0.0719 U	0.0694 U	0.0706 U
PCB121	33.5 U	34.2 U	NC	98.6	33.2 U	NC	0.0424 U	0.0412 U	0.0398 U	0.0404 U
PCB122	89.2	45 U	NC	118	43.8 U	NC	0.047 U	0.0456 U	0.044 U	0.0448 U
PCB123	221	57.4 U	NC	1,010	173	NC	0.241 U	0.234 U	0.226 U	0.23 U
PCB126	65.5 U	66.8 U	NC	85.9 J	64.9 U	NC	0.0451 U	0.0438 U	0.0423 U	0.043 U
PCB127	41.7 U	42.6 U	NC	80	41.3 U	NC	0.0765 U	0.0743 U	0.0717 U	0.073 U
PCB128 & 166	5,470	499	NC	6,290	1,290	NC	0.216 U	0.21 U	0.203 U	0.206 U
PCB129 & 138 & 163	83,400	7,030	NC	282,000 J	28,000	NC	1.92 U	1.86 U	1.8 U	1.83 U
PCB130	2,820	240	NC	3,850	810	NC	1.32 U	1.28 U	1.24 U	1.26 U
PCB131	445	42.1 U	NC	254	50.7	NC	0.125 U	0.122 U	0.118 U	0.12 U
PCB132	18,700	1,650	NC	4,430	951	NC	0.432 U	0.42 U	0.405 U	0.412 U
PCB133	1,070	90.2	NC	2,380	495	NC	0.115 U	0.112 U	0.108 U	0.11 U
PCB134 & 143	2,810	250	NC	1,560	348	NC	0.134 U	0.13 U	0.126 U	0.128 U
PCB135 & 151	33,700	2,780	NC	16,900	3,390	NC	0.62 U	0.601 U	0.581 U	0.591 U
PCB136	10,400	871	NC	3,020	610	NC	0.177 U	0.172 U	0.166 U	0.169 U
PCB137	1,430	144 U	NC	3,290	547	NC	0.279 U	0.27 U	0.261 U	0.266 U
PCB139 & 140	466	59.4 U	NC	772	164	NC	0.125 U	0.121 U	0.117 U	0.119 U
PCB141	19,800	1,750	NC	12,400	2,700	NC	0.426 U	0.414 U	0.4 U	0.406 U
PCB142	41.3 U	42.1 U	NC	39.7 U	40.9 U	NC	0.062 U	0.0601 U	0.0581 U	0.0591 U
PCB144	4,870	398	NC	3,270	659	NC	0.171 U	0.166 U	0.16 U	0.163 U
PCB145	45.6 U	46.5 U	NC	43.9 U	45.2 U	NC	0.0509 U	0.0494 U	0.0477 U	0.0486 U
PCB146	13,000	1,070	NC	30,000	6,380	NC	0.351 U	0.341 U	0.329 U	0.335 U
PCB147 & 149	62,300	5,420	NC	33,500	7,210	NC	1.48 U	1.44 U	1.39 U	1.41 U
PCB148	92.2	74.3 U	NC	175	72.1 U	NC	0.103 U	0.1 U	0.0969 U	0.0985 U
PCB150	82.7	53.5 U	NC	170	51.9 U	NC	0.0524 U	0.0509 U	0.0491 U	0.05 U
PCB152	69.6	57.9 U	NC	100	56.3 U	NC	0.0692 U	0.0672 U	0.0649 U	0.066 U
PCB153 & 168	92,300	7,800	NC	383,000 J	37,900	NC	2.49 U	2.42 U	2.33 U	2.37 U
PCB154	634	55.3	NC	1,230	245	NC	0.118 U	0.115 U	0.111 U	0.113 U
PCB155	59.7 U	60.9 U	NC	61.6	59.1 U	NC	0.0518 U	0.0503 U	0.0485 U	0.0494 U
PCB156 & 157	5,110	505	NC	14,100	3,020	NC	0.233 U	0.226 U	0.218 U	0.222 U
PCB158	7,390	640	NC	8,540	1,820	NC	0.235 U	0.228 U	0.22 U	0.224 U
PCB159	1,000	124 U	NC	62 U	120 U	NC	0.102 U	0.0993 U	0.0959 U	0.0976 U
PCB160	4.37 U	4.46 U	NC	4.21 U	4.33 U	NC	2.02 U	1.96 U	1.89 U	1.93 U
PCB161	57.8 U	58.9 U	NC	55.6 U	57.2 U	NC	0.106 U	0.103 U	0.0994 U	0.101 U
PCB162	109	41.8 U	NC	1,390	62.4	NC	0.069 U	0.067 U	0.0647 U	0.0658 U
PCB164	4,730	418	NC	4,940	1,210	NC	0.264 U	0.256 U	0.248 U	0.252 U
PCB165	57.3 U	58.4 U	NC	143	56.7 U	NC	0.0919 U	0.0892 U	0.0861 U	0.0876 U
PCB167	1,970	182	NC	5,730	1,230	NC	0.104 U	0.101 U	0.0978 U	0.0995 U
PCB169	0 J	39.2 U	NC	350 J	94.2 J	NC	0.0414 U	0.0402 U	0.0388 U	0.0395 U
PCB170	22,800	2,440	NC	40,400	9,810	NC	0.539 U	0.523 U	0.505 U	0.514 U

Table 4. Analytical Results Including Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11W-07			EPA1-SB11W-08			NA	NA	NA	NA
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	MEL Proof Blank	MEL Rinsate Blank 1	MEL Rinsate Blank 2	MEL Rinsate Blank 3
X-coordinate	7643703.153	7643703.153	7643703.153	7642440.545	7642440.545	7642440.545	NA	NA	NA	NA
Y-coordinate	688248.8439	688248.8439	688248.8439	689464.813	689464.813	689464.813	NA	NA	NA	NA
RiverMile	11.4	11.4	11.4	11	11	11	NA	NA	NA	NA
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	23-Nov-11	30-Nov-11	8-Dec-11	8-Dec-11
Sample Time	9:20	9:20	9:20	10:12	10:12	10:12	10:10	15:45	14:30	14:45
Sample Mass (g)	61.58	44.48	106.06	467.17	210.21	677.38	NA	NA	NA	NA
PCB171 & 173	9,370	884	NC	8,470	1,840	NC	0.207 U	0.201 U	0.194 U	0.197 U
PCB172	4,800	444	NC	8,400	1,990	NC	0.0988 U	0.0959 U	0.0926 U	0.0942 U
PCB174	27,000	2,510	NC	21,800	5,340	NC	0.389 U	0.377 U	0.364 U	0.371 U
PCB175	1,300	118	NC	2,050	480	NC	0.0399 U	0.0388 U	0.0374 U	0.0381 U
PCB176	3,340	311	NC	1,140	262	NC	0.0821 U	0.0797 U	0.077 U	0.0783 U
PCB177	16,200	1,530	NC	23,100	5,200	NC	0.25 U	0.242 U	0.234 U	0.238 U
PCB178	6,250	588	NC	10,700	2,550	NC	0.0724 U	0.0702 U	0.0678 U	0.069 U
PCB179	12,000	1,130	NC	2,940	651	NC	0.148 U	0.144 U	0.139 U	0.141 U
PCB180 & 193	59,900	6,470	NC	447,000 J	40,500	NC	1.16 U	1.12 U	1.09 U	1.1 U
PCB181	103	66.3 U	NC	289	65.5	NC	0.0426 U	0.0414 U	0.04 U	0.0406 U
PCB182	44.2 U	45 U	NC	165	43.8 U	NC	0.0306 U	0.0297 U	0.0286 U	0.0291 U
PCB183 & 185	22,900	2,160	NC	34,900	8,280	NC	0.455 U	0.442 U	0.427 U	0.434 U
PCB184	52.9 U	54 U	NC	50.9 U	52.4 U	NC	0.0545 U	0.0529 U	0.0511 U	0.0519 U
PCB186	76.7 U	78.2 U	NC	73.8 U	76 U	NC	0.0522 U	0.0507 U	0.0489 U	0.0498 U
PCB187	37,800	3,550	NC	96,100	22,700	NC	0.491 U	0.476 U	0.46 U	0.468 U
PCB188	61.7 U	62.9 U	NC	107	61.1 U	NC	0.052 U	0.0505 U	0.0487 U	0.0496 U
PCB189	970	85.8	NC	2,740	655	NC	0.0665 U	0.0646 U	0.0624 U	0.0634 U
PCB190	2,580	321	NC	5,590	1,830	NC	0.134 U	0.13 U	0.125 U	0.127 U
PCB191	1,230	109	NC	2,860	652	NC	0.0489 U	0.0474 U	0.0458 U	0.0466 U
PCB192	42.7 U	43.6 U	NC	41.1 U	42.3 U	NC	0.0647 U	0.0628 U	0.0606 U	0.0617 U
PCB194	11,000	1,110	NC	23,400	6,770	NC	0.149 U	0.145 U	0.14 U	0.142 U
PCB195	5,080	489	NC	9,240	2,560	NC	0.113 U	0.109 U	0.106 U	0.107 U
PCB196	5,570	610	NC	13,700	4,040	NC	0.184 U	0.178 U	0.172 U	0.175 U
PCB197 & 200	1,750	176	NC	1,650	467	NC	0.191 U	0.185 U	0.179 U	0.182 U
PCB198 & 199	8,850	1,080	NC	20,700	6,690	NC	0.279 U	0.27 U	0.261 U	0.266 U
PCB201	1,710	161	NC	3,240	904	NC	0.158 U	0.154 U	0.149 U	0.151 U
PCB202	2,430	239	NC	3,970	1,120	NC	0.0973 U	0.0945 U	0.0912 U	0.0928 U
PCB203	7,600	760	NC	9,750	2,810	NC	0.144 U	0.14 U	0.135 U	0.137 U
PCB204	52.9 U	60.3 U	NC	57 U	58.6 U	NC	0.089 U	0.0864 U	0.0834 U	0.0849 U
PCB205	702	63.5	NC	988	269	NC	0.0688 U	0.0668 U	0.0645 U	0.0656 U
PCB206	2,100	237	NC	3,430	1,140	NC	0.0551 U	0.0535 U	0.0516 U	0.0525 U
PCB207	312	119 U	NC	751	249	NC	0.0509 U	0.0494 U	0.0477 U	0.0486 U
PCB208	433	121 U	NC	886	280	NC	0.0913 U	0.0886 U	0.0856 U	0.087 U
PCB209	192	54.7 U	NC	757	272	NC	0.151 U	0.146 U	0.141 U	0.144 U

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11W-07			EPA1-SB11W-08			NA	NA	NA	NA
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	MEL Proof Blank	MEL Rinsate Blank 1	MEL Rinsate Blank 2	MEL Rinsate Blank 3
X-coordinate	7643703.153	7643703.153	7643703.153	7642440.545	7642440.545	7642440.545	NA	NA	NA	NA
Y-coordinate	688248.8439	688248.8439	688248.8439	689464.813	689464.813	689464.813	NA	NA	NA	NA
RiverMile	11.4	11.4	11.4	11	11	11	NA	NA	NA	NA
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	23-Nov-11	30-Nov-11	8-Dec-11	8-Dec-11
Sample Time	9:20	9:20	9:20	10:12	10:12	10:12	10:10	15:45	14:30	14:45
Sample Mass (g)	61.58	44.48	106.06	467.17	210.21	677.38	NA	NA	NA	NA
Monochlorobiphenyl homologs	45.1 UT	46 UT	NC	43.5 UT	44.7 UT	NC	0.12 UT	0.117 UT	0.113 UT	0.115 UT
Dichlorobiphenyl homologs	452 T	242 UT	NC	228 UT	235 UT	NC	0.608 T	0.442 JT	0.435 JT	0.485 JT
Trichlorobiphenyl homologs	6,660 T	991 T	NC	5,630 T	1,440 T	NC	1.37 T	0.404 UT	0.39 UT	1.09 T
Tetrachlorobiphenyl homologs	38,500 T	4,520 T	NC	80,500 T	17,200 T	NC	0.684 UT	0.664 UT	0.641 UT	0.652 UT
Pentachlorobiphenyl homologs	119,000 T	12,400 T	NC	156,000 JT	32,300 T	NC	1.13 UT	1.1 UT	1.06 UT	1.08 UT
Hexachlorobiphenyl homologs	374,000 JT	32,000 T	NC	824,000 JT	99,400 JT	NC	2.49 UT	2.42 UT	2.33 UT	2.37 UT
Heptachlorobiphenyl homologs	229,000 T	22,800 T	NC	709,000 JT	103,000 T	NC	1.16 UT	1.12 UT	1.09 UT	1.1 UT
Octachlorobiphenyl homologs	44,700 T	4,690 T	NC	86,600 T	25,600 T	NC	0.279 UT	0.27 UT	0.261 UT	0.266 UT
Nonachlorobiphenyl homologs	2,850 T	357 T	NC	5,070 T	1,670 T	NC	0.0913 UT	0.0886 UT	0.0856 UT	0.087 UT
Total PCB Congeners (RI Calc; ND=0)	814,000 JT	75,600 JT	505,000 JT	1,870,000 JT	279,000 JT	1,370,000 JT	0.452 JT	0.0219 JT	0.0198 JT	0.0887 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	815,000 JT	78,100 JT	506,000 JT	1,870,000 JT	281,000 JT	1,370,000 JT	17.4 JT	16.3 JT	15.8 JT	16.1 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	0.921 JT	0.0889 JT	0.572 JT	21.5 JT	3.32 JT	15.8 JT	0.32 UT	0.311 UT	0.3 UT	0.305 UT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	4.2 JT	4.03 JT	4.13 JT	21.5 JT	6.57 JT	16.8 JT	0.32 UT	0.311 UT	0.3 UT	0.305 UT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	18.3 JT	6.85 JT	13.5 JT	25.4 JT	8.58 JT	20.2 JT	0.32 UT	0.311 UT	0.3 UT	0.305 UT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.348 JT	0.197 JT	0.284 JT	0.871 JT	0.264 JT	0.683 JT	0.32 UT	0.311 UT	0.3 UT	0.305 UT
% Lipids	7.36	0.86	NC	1.65	0.35	NC	NA	NA	NA	NA

Notes:

All concentrations are in units of ng/kg (except for the proof and rinsate blanks on pages 51 to 55 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
NC	Not calculated
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 5. Analytical Results for Fillet and Whole Body Only, Summation Groups Only
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB04E-02		EPA1-SB04E-06		EPA1-SB05E-02		EPA1-SB05E-03		EPA1-SB05E-04	
Tissue	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)
X-coordinate	7618740.363	7618740.363	7618995.081	7618995.081	7621025.952	7621025.952	7621611.18	7621611.18	7622425.679	7622425.679
Y-coordinate	714962.802	714962.802	714296.5253	714296.5253	710385.5935	710385.5935	709354.4934	709354.4934	708300.1288	708300.1288
RiverMile	4.2	4.2	4.3	4.3	5.2	5.2	5.4	5.4	5.7	5.7
Sample Date	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	6-Oct-11	6-Oct-11
Sample Time	18:34	18:34	17:10	17:10	9:54	9:54	9:32	9:32	18:10	18:10
Sample Mass (g)	148.75	347.2	171.54	356.38	226.9	479.12	155.69	353.73	235.07	513.76
Total PCB Congeners (RI Calc; ND=0)	62,300 JT	235,000 JT	119,000 JT	412,000 JT	53,300 JT	245,000 JT	106,000 JT	400,000 JT	55,000 JT	218,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	63,500 JT	235,000 JT	120,000 JT	413,000 JT	54,400 JT	246,000 JT	106,000 JT	400,000 JT	57,300 JT	220,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	0.179 JT	4.49 JT	0.412 JT	5.76 JT	0.162 JT	0.697 JT	0.263 JT	8.92 JT	0.132 JT	0.576 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	2.45 JT	5.46 JT	2.77 JT	6.9 JT	1.75 JT	3.5 JT	2.25 JT	9.79 JT	3.85 JT	4.35 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	8.99 JT	27.5 JT	13.8 JT	46.2 JT	4.59 JT	13.2 JT	11.1 JT	17.1 JT	7.87 JT	23.2 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.142 JT	0.321 JT	0.193 JT	0.564 JT	0.103 JT	0.258 JT	0.162 JT	0.35 JT	0.195 JT	0.294 JT

Notes:

All concentrations are in units of ng/kg (except for the proof and rinsate blanks on page 7 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 5. Analytical Results for Fillet and Whole Body Only, Summation Groups Only
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB05W-02		EPA1-SB05W-03		EPA1-SB05W-04		EPA1-SB06E-02		EPA1-SB06E-08	
Tissue	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)
X-coordinate	7620011.504	7620011.504	7620605.967	7620605.967	7622425.679	7622425.679	7625302.748	7625302.748	7627751.005	7627751.005
Y-coordinate	709612.5127	709612.5127	708796.5154	708796.5154	708300.1288	708300.1288	706147.4378	706147.4378	704513.7004	704513.7004
RiverMile	5.2	5.2	5.4	5.4	5.7	5.7	6.4	6.4	6.9	6.9
Sample Date	2-Oct-11	2-Oct-11	28-Sep-11	28-Sep-11	22-Sep-11	22-Sep-11	3-Oct-11	3-Oct-11	8-Oct-11	8-Oct-11
Sample Time	12:50	12:50	15:11	15:11	12:01	12:01	17:30	17:30	14:40	14:40
Sample Mass (g)	346.59	763.5	108.01	245.45	348.52	809.44	295.78	727.73	165.25	382.7
Total PCB Congeners (RI Calc; ND=0)	142,000 JT	344,000 JT	30,800 JT	110,000 JT	58,500 JT	197,000 JT	212,000 JT	577,000 JT	35,400 JT	146,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	142,000 JT	344,000 JT	32,000 JT	111,000 JT	61,100 JT	199,000 JT	213,000 JT	578,000 JT	38,300 JT	148,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	1.65 JT	7.56 JT	0.0825 JT	0.614 JT	0.217 JT	1.9 JT	2.1 JT	2.92 JT	0.0962 JT	0.4 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	3.62 JT	8.45 JT	1.66 JT	2.02 JT	4.07 JT	5.45 JT	4.09 JT	7.24 JT	3.85 JT	4.15 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	11.4 JT	25.6 JT	5.08 JT	12.8 JT	8.38 JT	15 JT	7.28 JT	18.1 JT	6.53 JT	11.9 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.206 JT	0.479 JT	0.0899 JT	0.138 JT	0.216 JT	0.315 JT	0.255 JT	0.573 JT	0.189 JT	0.248 JT

Notes: All concentrations are in units of ng/kg (except for the proof and rinsate blanks on page 7 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 5. Analytical Results for Fillet and Whole Body Only, Summation Groups Only
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB06E-09		EPA1-SB06E-10		EPA1-SB06E-11		EPA1-SB06W-01		EPA1-SB06W-04	
Tissue	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)
X-coordinate	7627261.88	7627261.88	7627239.777	7627239.777	7627178.523	7627178.523	7623259.739	7623259.739	7625793.951	7625793.951
Y-coordinate	704853.8424	704853.8424	704870.1191	704870.1191	704970.9609	704970.9609	706089.1385	706089.1385	704637.7654	704637.7654
RiverMile	6.8	6.8	6.8	6.8	6.8	6.8	6.1	6.1	6.6	6.6
Sample Date	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	7-Oct-11	7-Oct-11	6-Oct-11	6-Oct-11
Sample Time	15:49	15:49	16:10	16:10	16:15	16:15	8:20	8:20	16:45	16:45
Sample Mass (g)	154.51	367.31	349.44	800.09	93.53	204.23	284.8	617.63	96.49	213.29
Total PCB Congeners (RI Calc; ND=0)	52,600 JT	217,000 JT	38,200 JT	93,000 JT	34,100 JT	134,000 JT	87,800 JT	258,000 JT	232,000 JT	912,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	55,600 JT	218,000 JT	40,700 JT	95,200 JT	37,100 JT	136,000 JT	89,900 JT	259,000 JT	234,000 JT	913,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	0.133 JT	0.521 JT	0.154 JT	0.373 JT	0.0843 JT	0.328 JT	0.249 JT	0.699 JT	0.79 JT	11.1 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	3.92 JT	4.28 JT	3.87 JT	4.17 JT	3.95 JT	4.06 JT	3.86 JT	4.87 JT	4.72 JT	13.4 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	8.05 JT	15.1 JT	7.68 JT	11 JT	6.7 JT	12 JT	8.56 JT	15.8 JT	20.5 JT	82.1 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.199 JT	0.265 JT	0.199 JT	0.244 JT	0.192 JT	0.235 JT	0.211 JT	0.305 JT	0.334 JT	1.17 JT

Notes: All concentrations are in units of ng/kg (except for the proof and rinsate blanks on page 7 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 5. Analytical Results for Fillet and Whole Body Only, Summation Groups Only
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB07E-04		EPA1-SB07E-05		EPA1-SB07E-06		EPA1-SB08W-01		EPA1-SB08W-05	
Tissue	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)
X-coordinate	7630501.76	7630501.76	7631760.293	7631760.293	7631349.5	7631349.5	7630437.208	7630437.208	7633514.593	7633514.593
Y-coordinate	702199.7767	702199.7767	701577.0326	701577.0326	701694.068	701694.068	699436.5357	699436.5357	696771.2835	696771.2835
RiverMile	7.6	7.6	7.9	7.9	7.9	7.9	8	8	8.8	8.8
Sample Date	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	27-Sep-11	27-Sep-11	27-Sep-11	27-Sep-11
Sample Time	16:15	16:15	15:30	15:30	15:42	15:42	11:33	11:33	10:00	10:00
Sample Mass (g)	133.25	288.19	84.2	200.12	215.09	474.54	293.4	675.38	88.4	195.22
Total PCB Congeners (RI Calc; ND=0)	43,600 JT	145,000 JT	38,800 JT	214,000 JT	78,800 JT	221,000 JT	87,900 JT	367,000 JT	54,000 JT	278,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	46,300 JT	147,000 JT	40,300 JT	215,000 JT	81,200 JT	223,000 JT	88,900 JT	368,000 JT	55,300 JT	279,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	0.115 JT	1.96 JT	0.819 JT	2.16 JT	0.152 JT	2.06 JT	0.281 JT	6.98 JT	0.134 JT	4.68 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	3.97 JT	5.51 JT	2.75 JT	4.82 JT	3.87 JT	5.58 JT	2.67 JT	8.02 JT	2.52 JT	5.76 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	8.58 JT	15.2 JT	5.26 JT	13.8 JT	6.55 JT	13.3 JT	7.62 JT	26.3 JT	6.92 JT	23.9 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.2 JT	0.255 JT	0.122 JT	0.234 JT	0.197 JT	0.265 JT	0.162 JT	0.497 JT	0.137 JT	0.332 JT

Notes: All concentrations are in units of ng/kg (except for the proof and rinsate blanks on page 7 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 5. Analytical Results for Fillet and Whole Body Only, Summation Groups Only
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB08W-06		EPA1-SB09E-05		EPA1-SB10E-04		EPA1-SB10E-06		EPA1-SB11E-07	
Tissue	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)
X-coordinate	7630400.532	7630400.532	7639620.343	7639620.343	7641543.945	7641543.945	7640465.853	7640465.853	7643279.643	7643279.643
Y-coordinate	699535.9693	699535.9693	694926.9917	694926.9917	692043.6338	692043.6338	693421.9495	693421.9495	690016.3478	690016.3478
RiverMile	8	8	9.9	9.9	10.5	10.5	10.2	10.2	11	11
Sample Date	7-Oct-11	7-Oct-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	19-Sep-11	19-Sep-11
Sample Time	16:50	16:50	14:13	14:13	12:57	12:57	13:50	13:50	7:05	7:05
Sample Mass (g)	131.12	336.77	141.64	339.1	110.29	252.54	40.99	89.63	470.73	1045.05
Total PCB Congeners (RI Calc; ND=0)	63,500 JT	240,000 JT	109,000 JT	436,000 JT	162,000 JT	556,000 JT	36,400 JT	201,000 JT	753,000 JT	1,520,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	65,500 JT	241,000 JT	111,000 JT	436,000 JT	163,000 JT	556,000 JT	39,500 JT	203,000 JT	754,000 JT	1,520,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	0.186 JT	1.47 JT	0.604 JT	8.39 JT	0.211 JT	16.2 JT	0.0638 JT	1.74 JT	10.4 JT	27.1 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	3.74 JT	4.8 JT	2.88 JT	9.33 JT	3.08 JT	17.5 JT	3.89 JT	5.32 JT	13.6 JT	28.6 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	8.58 JT	17.3 JT	5.59 JT	16.6 JT	5.71 JT	11.6 JT	6.62 JT	12 JT	10.1 JT	18.9 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.198 JT	0.299 JT	0.207 JT	0.623 JT	0.148 JT	0.308 JT	0.187 JT	0.249 JT	0.312 JT	0.647 JT

Notes: All concentrations are in units of ng/kg (except for the proof and rinsate blanks on page 7 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 5. Analytical Results for Fillet and Whole Body Only, Summation Groups Only
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11E-08		EPA1-SB11E-09		EPA1-SB11E-10		EPA1-SB11W-05		EPA1-SB11W-06	
Tissue	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)
X-coordinate	7644062.93	7644062.93	7643687.406	7643687.406	7643305.445	7643305.445	7645552.14	7645552.14	7645637.354	7645637.354
Y-coordinate	689439.2818	689439.2818	689713.2152	689713.2152	689983.1343	689983.1343	686305.2547	686305.2547	686200.0404	686200.0404
RiverMile	11.2	11.2	11.1	11.1	11.1	11.1	11.9	11.9	11.9	11.9
Sample Date	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	28-Sep-11	28-Sep-11	16-Sep-11	16-Sep-11
Sample Time	12:00	12:00	12:36	12:36	13:30	13:30	8:22	8:22	7:14	7:14
Sample Mass (g)	160.94	381.28	341.94	781.87	265.84	643.28	89.88	195.24	579.31	1333.2
Total PCB Congeners (RI Calc; ND=0)	1,440,000 JT	4,940,000 JT	74,400 JT	218,000 JT	131,000 JT	604,000 JT	109,000 JT	407,000 JT	80,500 JT	259,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	1,450,000 JT	4,940,000 JT	77,300 JT	220,000 JT	134,000 JT	606,000 JT	110,000 JT	407,000 JT	83,000 JT	260,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	1.19 JT	9.47 JT	0.212 JT	2.46 JT	0.198 JT	6.38 JT	1.58 JT	4.75 JT	0.272 JT	2.45 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	9.15 JT	20.3 JT	4.07 JT	5.96 JT	4.1 JT	9.73 JT	3.59 JT	6.74 JT	4.09 JT	5.97 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	15.3 JT	31.3 JT	6.87 JT	10 JT	6.93 JT	10.4 JT	5.55 JT	11.5 JT	8.43 JT	14.3 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.565 JT	1.23 JT	0.213 JT	0.286 JT	0.213 JT	0.324 JT	0.13 JT	0.192 JT	0.224 JT	0.333 JT

Notes:

All concentrations are in units of ng/kg (except for the proof and rinsate blanks on page 7 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 5. Analytical Results for Fillet and Whole Body Only, Summation Groups Only
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11W-07		EPA1-SB11W-08		NA	NA	NA	NA
Tissue	fillet	whole body (calculated)	fillet	whole body (calculated)	MEL Proof Blank	MEL Rinsate Blank 1	MEL Rinsate Blank 2	MEL Rinsate Blank 3
X-coordinate	7643703.153	7643703.153	7642440.545	7642440.545	NA	NA	NA	NA
Y-coordinate	688248.8439	688248.8439	689464.813	689464.813	NA	NA	NA	NA
RiverMile	11.4	11.4	11	11	NA	NA	NA	NA
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	23-Nov-11	30-Nov-11	8-Dec-11	8-Dec-11
Sample Time	9:20	9:20	10:12	10:12	10:10	15:45	14:30	14:45
Sample Mass (g)	44.48	106.06	210.21	677.38	NA	NA	NA	NA
Total PCB Congeners (RI Calc; ND=0)	75,600 JT	505,000 JT	279,000 JT	1,370,000 JT	0.452 JT	0.0219 JT	0.0198 JT	0.0887 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	78,100 JT	506,000 JT	281,000 JT	1,370,000 JT	17.4 JT	16.3 JT	15.8 JT	16.1 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	0.0889 JT	0.572 JT	3.32 JT	15.8 JT	0.32 UT	0.311 UT	0.3 UT	0.305 UT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	4.03 JT	4.13 JT	6.57 JT	16.8 JT	0.32 UT	0.311 UT	0.3 UT	0.305 UT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	6.85 JT	13.5 JT	8.58 JT	20.2 JT	0.32 UT	0.311 UT	0.3 UT	0.305 UT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.197 JT	0.284 JT	0.264 JT	0.683 JT	0.32 UT	0.311 UT	0.3 UT	0.305 UT

Notes:

All concentrations are in units of ng/kg (except for the proof and rinsate blanks on page 7 of the table, which are in units of ng/L

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Appendix A

Chain of Custody Forms

Chain of Custody Forms

From: GSI Water Solutions Inc.

To: USEPA CLP LAB (KAP Technologies)

Contract # EPW11031

USEPA CLP Organics COC (LAB COPY)

CHAIN OF CUSTODY RECORD

No: 10-092811-121518-0001

DateShipped: 9/29/2011
CarrierName: FedEx
AirbillNo: 797567418237

Case #: 41764
Cooler #: 1

SDG: JEAC5

Lab: KAP Technologies Inc.
Lab Contact: Vishnu Davlapur
Lab Phone: 281-367-0065

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
JEAC5	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB06E-01	09/12/2011 08:00	S-43460.01	
JEAC6	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB06E-03	09/12/2011 09:40		~~.02~~
JEAC7	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB06E-05	09/12/2011 10:50		~~.03~~
JEAC8	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB07E-02	09/12/2011 12:58		~~.04~~
JEAC9	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB08E-04	09/12/2011 15:05	S-43460.05	
JEAD0	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB11E-05	09/13/2011 07:10	↓	.06
JEAD1	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB11E-04	09/13/2011 07:20		~~.07~~
JEAD2	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB11E-03	09/13/2011 07:40		~~.08~~
JEAD3	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB11E-02	09/13/2011 08:03	S-43460.09	
JEAD4	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB11E-06	09/13/2011 08:25		~~.10~~
JEAD5	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB10E-03	09/13/2011 09:42		~~.11~~
JEAD6	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB10E-01	09/13/2011 11:11		~~.12~~
JEAD7	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB09E-04	09/13/2011 12:13	↓	~~.13~~

NLH 10/6/11

41764 JEAC5
S-4346 NLH 9/30/11

Sample(s) to be used for Lab QC: JEAC5 - Special Instructions: All samples to be homogenized, split into two aliquots: one analyzed by KAP and one transshipped to Pace Analytical.

Refer to Modified Analysis #'s 2188.0 & 2189.0

Case will include further shipment to follow in approximately 1.5 weeks.

Temp: 4.1°C

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Analysis Key

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
1-FedEx Ship	Eric Cavell	9-29-11									
									Sandra Tod	9/30/11	10:30

Contract # EPW11031

USEPA CLP Organics COC (LAB COPY)

CHAIN OF CUSTODY RECORD

No: 10-092811-124152-0002

DateShipped: 9/29/2011
CarrierName: FedEx
AirbillNo: 797567418362

Case #: 41764
Cooler #: 2

SDG: JEAC5

Lab: KAP Technologies Inc.
Lab Contact: Vishnu Davlapur
Lab Phone: 281-367-0065

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
JEAD8	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB05E-01	09/14/2011 08:29	S-4346.14	
JEAD9	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB04E-10	09/14/2011 09:22	↓ .15	
JEAE0	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB04E-08	09/14/2011 10:22	~~.16~~	
JEAE1	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB03E-04	09/15/2011 07:24	S-4346.17	
JEAE2	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB02E-04	09/15/2011 10:11	↓ .18	
JEAE3	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SBMC-01	09/15/2011 19:15	~~.19~~	
JEAE4	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SBMC-04	09/15/2011 19:25	S-4346.20	
JEAE5	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SBMC-03	09/15/2011 19:50		
JEAE6	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB11W-04	09/16/2011 08:35		
JEAE7	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB04W-02	09/16/2011 13:56		
JEAE8	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB06E-06	09/16/2011 14:25	S-4347.04	
JEAE9	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB03W-05	09/16/2011 14:25		
JEAF0	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB03W-03	09/16/2011 15:30	S-4347.06	

NLH 10/6/11

41764 JEAC5
S-4346 NLH 9/30/11

Special Instructions: All samples to be homogenized, split into two aliquots: one analyzed by KAP and one transshipped to Pace Analytical.
Refer to Modified Analysis #'s 2188.0 & 2189.0
Case will include further shipment to follow in approximately 1.5 weeks.

Temp: 3.9°

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Analysis Key

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
1-Fed Ex Ship	Erin Cunall	9/29/11									
									Pamela Poe	9/30/11	10:30

Page 1 of 1

Contract # EPW11031

USEPA CLP Organics COC (LAB COPY)

DateShipped: 9/29/2011
CarrierName: FedEx
AirbillNo: 797567418340

CHAIN OF CUSTODY RECORD

Case #: 41764 SDG: JEAC5 C NLH 10/6/11
Cooler #: 3

No: 10-092811-124318-0003

Lab: KAP Technologies Inc.
Lab Contact: Vishnu Davlapur
Lab Phone: 281-367-0065

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
JEAF1	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	3 (Wet ice) (1)	EPA1-SB03W-01	09/16/2011 16:05	~~S-4347-07~~	~~-07~~
JEAF2	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	3 (Wet ice) (1)	EPA1-SB02W-05	09/16/2011 16:25	S-4347-08	-08
JEAF3	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	3 (Wet ice) (1)	EPA1-SB02W-02	09/16/2011 17:00		~~-09~~
JEAF4	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	3 (Wet ice) (1)	EPA1-SB11E-01	09/19/2011 07:10		~~-10~~
JEAF5	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	3 (Wet ice) (1)	EPA1-SB09W-03	09/19/2011 09:25		~~-11~~
JEAF6	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	3 (Wet ice) (1)	EPA1-SB08E-01	09/19/2011 18:20		~~-12~~
JEAF7	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	3 (Wet ice) (1)	EPA1-SB03E-05	09/20/2011 07:52		~~-13~~
JEAF8	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	3 (Wet ice) (1)	EPA1-SB06W-05	09/20/2011 15:10		~~-14~~
JEAF9	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	3 (Wet ice) (1)	EPA1-SBSIL-01	09/21/2011 07:05		~~-15~~
JEAG0	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	3 (Wet ice) (1)	EPA1-SB06E-04	09/21/2011 11:42		~~-16~~
JEAG1	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	3 (Wet ice) (1)	EPA1-SB06W-02	09/21/2011 12:00		~~-17~~
JEAG2	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	3 (Wet ice) (1)	EPA1-SB02E-01	09/22/2011 08:28		~~-18~~
				41764 JEAC5				
				S-4346 NLH 9/30/11				

NLH 10/6/11

Sample(s) to be used for Lab QC: JEAF4 - Special Instructions: All samples to be homogenized, split into two aliquots: one analyzed by KAP and one transshipped to Pace Analytical.

Refer to Modified Analysis #'s 2188.0 & 2189.0

Case will include further shipment to follow in approximately 1.5 weeks.

Temp: 3.8°C

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Analysis Key

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
1-Fed EX Ship	Eric Cundall	9/29/2011									
									Vishnu Davlapur	9/30/11	10:30

4

Contract # EPW11031

USEPA CLP Organics COC (LAB COPY)

CHAIN OF CUSTODY RECORD

No: 10-092811-124337-0004

DateShipped: 9/29/2011
CarrierName: FedEx
AirbillNo: 797567418237

Case #: 41764
Cooler #: 4

SDG: JEAE5 C NLH 10/6/11

Lab: KAP Technologies Inc.
Lab Contact: Vishnu Davlapur
Lab Phone: 281-367-0065

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
JEAG3	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	4 (Wet ice) (1)	EPA1-SB03E-08	09/22/2011 15:50	S-4347	.19
JEAG4	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	4 (Wet ice) (1)	EPA1-SB07E-01	09/22/2011 18:00	↓	~~.20~~
JEAG5	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	4 (Wet ice) (1)	EPA1-SB15E-03	09/23/2011 16:35	S-4348	.01
JEAG6	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	4 (Wet ice) (1)	EPA1-SB15E-02	09/23/2011 18:20	↓	.02
JEAG7	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	4 (Wet ice) (1)	EPA1-SB15E-01	09/26/2011 16:33	↓	.03
JEAG8	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	4 (Wet ice) (1)	EPA1-SB15E-04	09/26/2011 16:45		
JEAG9	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	4 (Wet ice) (1)	EPA1-SB15E-05	09/26/2011 16:55		
JEAH0	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	4 (Wet ice) (1)	EPA1-SB17W-01	09/26/2011 17:25	S-4348	.06
JEAH1	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	4 (Wet ice) (1)	EPA1-SB17W-02	09/26/2011 18:26	↓	.07
JEAH2	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	4 (Wet ice) (1)	EPA1-SB17W-03	09/26/2011 18:40	S-4348	.08
JEAH3	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	4 (Wet ice) (1)	EPA1-SB16W-01	09/26/2011 19:08		
JEAH4	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	4 (Wet ice) (1)	EPA1-SB16W-02	09/26/2011 19:15	S-4348	.09

NLH 10/6/11

41764 JEAE5
S-4347 NLH 9/30/11

Sample(s) to be used for Lab QC: JEAG9 - Special Instructions: All samples to be homogenized, split into two aliquots: one analyzed by KAP and one transshipped to Pace Analytical.

Refer to Modified Analysis #'s 2188.0 & 2189.0

Case will include further shipment to follow in approximately 1.5 weeks.

Temp: 4.0°C

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Analysis Key

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
1-Fed Ex Shipping	Eric Cannell	9/29/2011									
									Angelica Love	9/30/11	10:30

EPA11031

USEPA CLP Organics COC (LAB COPY)

DateShipped: 10/11/2011
CarrierName: FedEx
AirbillNo: 795277079238

CHAIN OF CUSTODY RECORD

Case #: 41764
Cooler #: 1

No: 10-101011-100930-0005

Lab: KAP Technologies Inc.
Lab Contact: Vishnu Davlapur
Lab Phone: 281-367-0065

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
JEAH5	SOIL/ EC		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB08W-05	09/27/2011 10:00		
JEAH6	SOIL/ EC		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB08W-01	09/27/2011 11:33		
JEAH7	SOIL/ EC		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB11W-05	09/28/2011 08:22		
JEAH8	SOIL/ EC		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB10E-04	09/28/2011 12:57		
JEAH9	SOIL/ EC		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB09E-05	09/28/2011 14:13		
JEAJ0	SOIL/ EC		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB05W-03	09/28/2011 15:11		
JEAJ1	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB04E-06	09/29/2011 17:10		
JEAJ2	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB04E-02	09/29/2011 18:34		
JEAJ3	SOIL/ EC		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB05W-02	10/02/2011 12:50		

Special Instructions: All samples to be homogenized, split into two aliquots: one analyzed by KAP and one transshipped to Pace Analytical.
Refer to Modified Analysis #'s 2188.0 & 2189.0

Temp: 0°c

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Analysis Key

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
1-FedEx Shipment	Eric Cornwall										
									[signature]	10/12/11	11:15

EPW11031

USEPA CLP Organics COC (LAB COPY)

DateShipped: 10/11/2011
CarrierName: FedEx
AirbillNo: 795277079249

CHAIN OF CUSTODY RECORD

Case #: 41764
Cooler #: 2

No: 10-101011-102249-0006

Lab: KAP Technologies Inc.
Lab Contact: Vishnu Davlapur
Lab Phone: 281-367-0065

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
JEAJ4	SOIL/ EC		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB05E-03	10/03/2011 09:32		
JEAJ5	SOIL/ EC		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB05E-02	10/03/2011 09:54		
JEAJ6	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB07E-05	10/03/2011 15:30		
JEAJ7	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB07E-06	10/03/2011 15:42		
JEAJ8	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB07E-04	10/03/2011 16:15		
JEAJ9	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB06E-02	10/03/2011 17:30		
JEAK0	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB06W-04	10/06/2011 16:45		
JEAK1	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB05E-04	10/06/2011 18:10		
JEAK2	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB06W-01	10/07/2011 08:20		

Sample(s) to be used for Lab QC: JEAJ4 - Special Instructions: All samples to be homogenized, split into two aliquots: one analyzed by KAP and one transshipped to Pace Analytical.

Refer to Modified Analysis #'s 2188.0 & 2189.0

Temp. 0.5°c

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
1 - Fed Ex Shipping	Eric Cantrell	10/11/2011	TO FED EX		12:00						
									Andrea Roe	10/12/11	11:15

GSI Water Solutions, Inc.

CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

Lab submittal:

Date: 10/11/2011 Page 1 of 1

Project Name: Portland Harbor 2011 Baseline Smallmouth Bass Tissue Study
Project Number: 0110.037.
Project Manager: Kevin Parrett
Company/Address:
55 SW Yamhill Street
Portland, OR
Phone: (503) 239-8799
Fax: (503) 239-8940

Sample I.D.	Date	Time	LAB I.D.	Sample Matrix	Number of Containers	REMARKS
SB10E-06	9/29/2011	13:50	USACE	Fish	1	11422500
SB11W-07	9/29/2011	9:20	USACE	Fish	1	2501
SB06E-11	10/9/2011	16:15	USACE	Fish	1	2502
SB08W-06	10/8/2011	16:50	USACE	Fish	1	2503
SB11E-08	10/8/2011	12:00	USACE	Fish	1	2504
SB06E-08	10/9/2011	14:40	USACE	Fish	1	2505
SB06E-09	10/9/2011	15:49	USACE	Fish	1	2506

Analysis Requested*

Relinquished By	Received By
Erin Carroll	JAHHA F. WILLIAMS
Signature: Erin Carroll	Signature
Printed Name: GSI Water Solutions	Printed Name: ERDC - EERT
Firm	Firm
Date/Time: 10/11/11 9:30	Date/Time: 13 OCT. 2011 1347

Relinquished By	Received By
Signature	Signature: K Norton
Printed Name	Printed Name: Karen Norton
Firm	Firm: Jacobs
Date/Time	Date/Time: 10/18/11 1210

10/11/20118:52 AM

TURNAROUND REQUIREMENTS

___ 24 hr ___ 48 hr ___ 5 day
___ Standard (10 working days)
___ Provide Verbal Preliminary Results
___ Provide FAX Preliminary Results

Requested Report Date: _____

REPORT REQUIREMENTS

___ I. Routine Report
___ II. Report (includes DUP, MS MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ RWQCB (MDLs/PQLs/TRACE#)

INVOICE INFORMATION

P.O. # _____
Bill to: Same as above

SAMPLE RECEIPT

Shipping VIA: _____
Shipping #: _____
Condition: _____
Lab No: _____

Special Instructions/Comments:

*Age determination by scales and otoliths . Gut content inspection. Removal of fillet. Weigh fillet and carcass and place in separate containers. Transship fillet and carcass to EPA CLP KAP for homogenization and analysis of Pesticides and SVOCs. KAP will transship to PACE for PCB congener analysis. Contact Jennifer Crawford (EPA R10 - 206-553-6261) for coordination of shipping to KAP. Contact Karl Gustavson (USACE - 703-603-8753) for information on age/gut/fillet.

GSI Water Solutions, Inc.

GSI Water Solutions, Inc.

CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

Date: 10/11/2011 Page 1 of 1

Lab submittal:

Project Name: Portland Harbor 2011 Baseline Smallmouth Bass Tissue Study
Project Number: 0110.037.
Project Manager: Kevin Parrett
Company/Address:
55 SW Yamhill Street
Portland, OR
Phone: (503) 239-8799
Fax: (503) 239-8940

Analysis Requested*

Sample I.D.	Date	Time	LAB I.D.	Sample Matrix	Number of Containers	REMARKS
SB11E-10	10/8/2011	13:30	USACE	Fish	1	11422507
SB06E-10	10/9/2011	16:10	USACE	Fish	1	2508
SB05W-04	9/23/2011	12:01	USACE	Fish	1	2509
SB11W-08	9/29/2011	10:12	USACE	Fish	1	2510
SB11E-07	9/20/2011	7:05	USACE	Fish	1	2511
SB11E-09	10/8/2011	12:36	USACE	Fish	1	2512
SB11W-06	9/17/2011	7:14	USACE	Fish	1	2513

Relinquished By	Received By
Signature: Erin Carroll	Signature: JAMMA F. WILLIAMS
Printed Name: GSI Water Solutions	Printed Name: ERDC - EERT
Firm: 10/11/11 9:30	Firm: 12 OCT. 2011 1400
Date/Time	Date/Time
Relinquished By	Received By
Signature	Signature:
Printed Name	Printed Name: Karen Norton
Firm	Firm: TetraTech
Date/Time	Date/Time: 10/19/11 1210

10/11/20118:52 AM

TURNAROUND REQUIREMENTS

___ 24 hr ___ 48 hr ___ 5 day
___ Standard (10 working days)
___ Provide Verbal Preliminary Results
___ Provide FAX Preliminary Results

Requested Report Date _____

REPORT REQUIREMENTS

___ I. Routine Report
___ II. Report (includes DUP, MS MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ RWQCB (MDLs/PQLs/TRACE#)

INVOICE INFORMATION

P.O. # _____
Bill to: Same as above

SAMPLE RECEIPT

Shipping VIA: _____
Shipping #: _____
Condition: _____
Lab No: _____

Special Instructions/Comments:

*Age determination by scales and otoliths . Gut content inspection. Removal of fillet. Weigh fillet and carcass and place in separate containers. Transship fillet and carcass to EPA CLP KAP for homogenization and analysis of Pesticides and SVOCs. KAP will transship to PACE for PCB congener analysis. Contact Jennifer Crawford (EPA R10 - 206-553-6261) for coordination of shipping to KAP. Contact Karl Gustavson (USACE - 703-603-8753) for information on age/gut/fillet.

GSI Water Solutions, Inc.

Chain of Custody Forms

From: USEPA CLP LAB (KAP Technologies)

To: USEPA Region 10 Laboratory (Manchester Environmental Laboratory [MEL])

USEPA CLP Organics COC (LAB COPY)
DateShipped: 10/19/2011
CarrierName: FedEx
AirbillNo: 797638422199

CHAIN OF CUSTODY RECORD

Case #: 41764
Cooler #: 1

No: 10-101811-134333-0007
Lab: EPA Region 10 Laboratory (MEL)
Lab Contact: Karen Norton
Lab Phone: 360-871-8760

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
JEAH5	SOIL/ EC	FISH	SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB08W-05	09/27/2011 10:00		11422514
JEAH6	SOIL/ EC		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB08W-01	09/27/2011 11:33		2515
JEAH7	SOIL/ EC		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB11W-05	09/28/2011 08:22		2516
JEAH8	SOIL/ EC		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB10E-04	09/28/2011 12:57		2517
JEAH9	SOIL/ EC		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB09E-05	09/28/2011 14:13		2518
JEAJ0	SOIL/ EC		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB05W-03	09/28/2011 15:11		2519
JEAJ1	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB04E-06	09/29/2011 17:10		2520
JEAJ2	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB04E-02	09/29/2011 18:34		2521
JEAJ3	SOIL/ EC		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB05W-02	10/02/2011 12:50		2522

Special Instructions: This cooler is 1 of 2, and contains fish samples submitted to KAP on 10/12/11. These samples were mistakenly filleted instead of homogenized.
Refer to Modified Analysis #'s 2188.0 & 2189.0

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	Nicole Hogue	10/19/11 16:00	K Norton	10/21/11	9:15						

USEPA CLP Organics COC (LAB COPY)

DateShipped: 10/19/2011
CarrierName: FedEx
AirbillNo: 797638422339

CHAIN OF CUSTODY RECORD

Case #: 41764
Cooler #: 2

No: 10-101811-140924-0008

Lab: EPA Region 10 Laboratory (MEL)
Lab Contact: Karen Norton
Lab Phone: 360-871-8760

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
JEAJ4	SOIL/ EC	FSH	SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB05E-03	10/03/2011 09:32		1142523
JEAJ5	SOIL/ EC		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB05E-02	10/03/2011 09:54		2524
JEAJ6	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB07E-05	10/03/2011 15:30		2525
JEAJ7	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB07E-06	10/03/2011 15:42		2526
JEAJ8	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB07E-04	10/03/2011 16:15		2527
JEAJ9	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB06E-02	10/03/2011 17:30		2528
JEAK0	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB06W-04	10/06/2011 16:45		2529
JEAK1	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB05E-04	10/06/2011 18:10		2530
JEAK2	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB06W-01	10/07/2011 08:20		2531

Sample(s) to be used for Lab QC: JEAJ4 - Special Instructions: This cooler is 2 of 2, and contains fish samples submitted to KAP on 10/12/11. These samples were mistakenly filleted instead of homogenized.

Refer to Modified Analysis #'s 2188.0 & 2189.0

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	Nicole Hogue	10/19/11 16:00	K Norton	10/21/11	9:15						

USEPA CLP Organics COC (LAB COPY)
DateShipped: 10/19/2011
CarrierName: FedEx
AirbillNo: 797639807266

CHAIN OF CUSTODY RECORD

Case #: 41764
Cooler #: 3

No: 10-101811-170652-0009
Lab: EPA Region 10 Laboratory (MEL)
Lab Contact: Karen Norton
Lab Phone: 360-871-8760

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
JEAC5	SOIL/ Fish		SVOAs/Pest/SVOAs by SIM(21)	N1 1 (Wet ice) (2)	EPA1-SB06E-01	09/12/2011 08:00		11422532
JEAC6	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	N1, N2 1 (Wet ice), A (Wet ice) (3)	EPA1-SB06E-03	09/12/2011 09:40		2533
JEAC7	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	N1 1 (Wet ice) (2)	EPA1-SB06E-05	09/12/2011 10:50		2534
JEAC8	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	N1, N2 1 (Wet ice), A (Wet ice) (3)	EPA1-SB07E-02	09/12/2011 12:58		2535
JEAC9	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	N1, N2 1 (Wet ice), A (Wet ice) (3)	EPA1-SB08E-04	09/12/2011 15:05		2536
JEAD0	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	N1 1 (Wet ice) (2)	EPA1-SB11E-05	09/13/2011 07:10		2537
JEAD1	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	N1 1 (Wet ice) (2)	EPA1-SB11E-04	09/13/2011 07:20		2538
JEAD2	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	N1, N2 1 (Wet ice), A (Wet ice) (3)	EPA1-SB11E-03	09/13/2011 07:40		2539
JEAD3	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	N1 1 (Wet ice) (2)	EPA1-SB11E-02	09/13/2011 08:03		2540
JEAD4	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	N1, N2 1 (Wet ice) (2)	EPA1-SB11E-06	09/13/2011 08:25		2541
JEAD5	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	N1, N2 1 (Wet ice), A (Wet ice) (3)	EPA1-SB10E-03	09/13/2011 09:42		2542
JEAD6	SOIL/	MS/MSD	SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	N1, N2 1 (Wet ice), A (Wet ice) (3)	EPA1-SB10E-01	09/13/2011 11:11		2543
JEAD7	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	N1, N2 1 (Wet ice), A (Wet ice) (3)	EPA1-SB09E-04	09/13/2011 12:13		2544
JEAD8	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	N1 2 (Wet ice) (2)	EPA1-SB05E-01	09/14/2011 08:29		2545

Sample(s) to be used for Lab QC: JEAC5 - Special Instructions: This cooler contains the extra sample volume for 32 samples following homogenization and extraction of the PEST, SVOA, and PCB congeners/lipids sample fractions. This cooler also contains the PEST and SVOA sample volume extractions for 50 samples, as well as 3 rinsate samples collected during homogenization.

Refer to Modified Analysis #'s 2188.0 & 2189.0

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	Nicole Hogue	10/19/11	K Norton	10/21/11	10:10						
		16:00									

USEPA CLP Organics COC (LAB COPY)
DateShipped: 10/19/2011
CarrierName: FedEx
AirbillNo: 797639807266

CHAIN OF CUSTODY RECORD

Case #: 41764
Cooler #: 3

No: 10-101811-170652-0009
Lab: EPA Region 10 Laboratory (MEL)
Lab Contact: Karen Norton
Lab Phone: 360-871-8760

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
JEAD9	SOIL/	Fish	SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	2 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB04E-10	09/14/2011 09:22	1142	2546
JEAE0	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	2 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB04E-08	09/14/2011 10:22		2547
JEAE1	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	N1 2 (Wet ice) (2)	EPA1-SB03E-04	09/15/2011 07:24		2548
JEAE2	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	3 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB02E-04	09/15/2011 10:11		2549
JEAE3	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	2 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SBMC-01	09/15/2011 19:15		2550
JEAE4	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	N1 2 (Wet ice) (2)	EPA1-SBMC-04	09/15/2011 19:25		2551
JEAE5	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	2 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SBMC-03	09/15/2011 19:50		2552
JEAE6	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	2 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB11W-04	09/16/2011 08:35		2553
JEAE7	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	2 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB04W-02	09/16/2011 13:56		2554
JEAE8	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	2 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB06E-06	09/16/2011 14:25		2555
JEAE9	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	N1 2 (Wet ice) (2)	EPA1-SB03W-05	09/16/2011 14:25		2556
JEAF0	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	2 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB03W-03	09/16/2011 15:30		2557
JEAF1	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	3 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB03W-01	09/16/2011 16:05		2558

Special Instructions: This cooler contains the extra sample volume for 32 samples following homogenization and extraction of the PEST, SVOA, and PCB congeners/lipids sample fractions. This cooler also contains the PEST and SVOA sample volume extractions for 50 samples, as well as 3 rinsate samples collected during homogenization.

Refer to Modified Analysis #'s 2188.0 & 2189.0

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	Nicole Hogue	10/19/11 16:00	KNorton	10/21/11	10:10						

USEPA CLP Organics COC (LAB COPY)
DateShipped: 10/19/2011
CarrierName: FedEx
AirbillNo: 797639807266

CHAIN OF CUSTODY RECORD

Case #: 41764
Cooler #: 3

No: 10-101811-170652-0009
Lab: EPA Region 10 Laboratory (MEL)
Lab Contact: Karen Norton
Lab Phone: 360-871-8760

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
JEAF2	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	N1 3 (Wet ice) (2)	EPA1-SB02W-05	09/16/2011 16:25	1142	2558
JEAF3	SOIL/ fish		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	3 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB02W-02	09/16/2011 17:00	1142	2559
JEAF4	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	3 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB11E-01	09/19/2011 07:10		2560
JEAF5	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	3 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB09W-03	09/19/2011 09:25		2561
JEAF6	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	3 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB08E-01	09/19/2011 18:20		2562
JEAF7	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	3 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB03E-05	09/20/2011 07:52		2563
JEAF8	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	3 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB06W-05	09/20/2011 15:10		2564
JEAF9	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	3 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SBSIL-01	09/21/2011 07:05		2565
JEAG0	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	3 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB06E-04	09/21/2011 11:42		2566
JEAG1	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	3 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB06W-02	09/21/2011 12:00		2567
JEAG2	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	3 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB02E-01	09/22/2011 08:28		2568
JEAG3	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	N1 4 (Wet ice) (2)	EPA1-SB03E-08	09/22/2011 15:50		2569
JEAG4	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	N1 4 (Wet ice) (2)	EPA1-SB07E-01	09/22/2011 18:00		2570

Sample(s) to be used for Lab QC: JEAF4 - Special Instructions: This cooler contains the extra sample volume for 32 samples following homogenization and extraction of the PEST, SVOA, and PCB congeners/lipids sample fractions. This cooler also contains the PEST and SVOA sample volume extractions for 50 samples, as well as 3 rinsate samples collected during homogenization.

Refer to Modified Analysis #'s 2188.0 & 2189.0

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	Nicole Hogue	10/19/11 16:00	KNorton	10/21/11	10:10						

USEPA CLP Organics COC (LAB COPY)
DateShipped: 10/19/2011
CarrierName: FedEx
AirbillNo: 797639807266

CHAIN OF CUSTODY RECORD

Case #: 41764
Cooler #: 3

No: 10-101811-170652-0009
Lab: EPA Region 10 Laboratory (MEL)
Lab Contact: Karen Norton
Lab Phone: 360-871-8760

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
JEAG5	SOIL/	Fish	SVOAs/Pest/SVOAs by SIM(21)	N1 4 (Wet ice) (2)	EPA1-SB15E-03	09/23/2011 16:35	1142	2571
JEAG6	SOIL/	|	SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	4 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB15E-02	09/23/2011 18:20		2572
JEAG7	SOIL/	|	SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	4 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB15E-01	09/26/2011 16:33		2573
JEAG8	SOIL/	|	SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	4 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB15E-04	09/26/2011 16:45		2574
JEAG9	SOIL/	MS/MSD	SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	4 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB15E-05	09/26/2011 16:55		2575
JEAH0	SOIL/	|	SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	4 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB17W-01	09/26/2011 17:25		2576
JEAH1	SOIL/	|	SVOAs/Pest/SVOAs by SIM(21)	N1 4 (Wet ice) (2)	EPA1-SB17W-02	09/26/2011 18:26		2577
JEAH2	SOIL/	|	SVOAs/Pest/SVOAs by SIM(21)	N1 4 (Wet ice) (2)	EPA1-SB17W-03	09/26/2011 18:40		2578
JEAH3	SOIL/	|	SVOAs/Pest/SVOAs by SIM(21)	N1 4 (Wet ice) (2)	EPA1-SB16W-01	09/26/2011 19:08		2579
JEAH4	SOIL/	|	SVOAs/Pest/SVOAs by SIM(21)	N1 4 (Wet ice) (2)	EPA1-SB16W-02	09/26/2011 19:15		2580
JEB05	/		SVOAs/Pest/SVOAs by SIM(21)	A (Wet ice) (1)	Rinstae on KAP Prep logbook page 2: JEB05	09/30/2011 00:00		2581
JEB06	/		SVOAs/Pest/SVOAs by SIM(21)	A (Wet ice) (1)	Rinsate on KAP Prep logbook page 4: JEB06	09/30/2011 00:00		2582

RINSATES NOT RECEIVED

Sample(s) to be used for Lab QC: JEAG9 - Special Instructions: This cooler contains the extra sample volume for 32 samples following homogenization and extraction of the PEST, SVOA, and PCB congeners/lipids sample fractions. This cooler also contains the PEST and SVOA sample volume extractions for 50 samples, as well as 3 rinsate samples collected during homogenization.

Refer to Modified Analysis #'s 2188.0 & 2189.0

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	Nicole Hogue	10/19/11 16:00	[illegible]	10/21/11	10:10						

USEPA CLP Organics COC (LAB COPY)
DateShipped: 10/19/2011
CarrierName: FedEx
AirbillNo: 797639807266

CHAIN OF CUSTODY RECORD

Case #: 41764
Cooler #: 3

No: 10-101811-170652-0009
Lab: EPA Region 10 Laboratory (MEL)
Lab Contact: Karen Norton
Lab Phone: 360-871-8760

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
JEB07	/		SVOAs/Pest/SVOAs by SIM(21)	A (Wet ice) (1)	Rinsate on KAP Prep logbook page 5: JEB07	09/30/2011 00:00	11422584	
			* RINSATES NOT RECEIVED					

Special Instructions: This cooler contains the extra sample volume for 32 samples following homogenization and extraction of the PEST, SVOA, and PCB congeners/lipids sample fractions. This cooler also contains the PEST and SVOA sample volume extractions for 50 samples, as well as 3 rinsate samples collected during homogenization.
Refer to Modified Analysis #'s 2188.0 & 2189.0

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	Nicole Hogue	10/19/11 16:00	K Norton	10/21/11	10:10						

Chain of Custody Forms

From: USEPA Region 10 Laboratory (MEL)

To: USEPA Headquarters Laboratory (Pace Analytical Services [Pace])

EPA Region 10, 1200 Sixth Avenue, Seattle, WA 98101

Sample Custody & Analysis Required Form

EPA Manchester Laboratory, 7411 Beach Drive East, Port Orchard, WA 98366, 360-871-8700

Form Effective Date: July 2005

Revision 1

Primary Contract #

Project Name	Project Code	Method of Shipment/carrier	Airbill Number (if known prior to sealing):
PO 107745 EP-W-07-078	SFP-013A		
Account Code	**EPA Project Manager/phone number**	**Check all that apply**	
TR2B/108T	Youness Burhan 703 390-0657	☐ Enforce/Custody ☐ Possible Toxic/Hazardous ☐ Data Confidential	

Sampler Names (Print & Sign). *Mark* (R) *after name of principal recorder.*

Ship to: Pace Analytical Services
1700 Elm St SE
Minneapolis MN 55414
Scott Unze 612 607-6383

If applicable, circle the set of selected metals:

Al	Sb	As	Ba	Be
B	Cd	Ca	Cr	Co
Cu	Fe	Pb	Mg	Mn
Mo	Ni	K	Se	Ag
Na	Sn	Tl	V	Zn

(see reverse for more to add/circle)

① Matrix Codes:
10 Water/Liquid (Total)
20 Water/Liquid (Filtered)
40 Sediment/Soil/Solid/Bulk
70 Tissue
80 Oil/Solvent
44 Air filter
42 Wipe/Swab[1]
00 _____

[1] PCB wipe is to be 10cm x 10cm (100 cm²)

#C ② enter the number of containers for each preservative type followed by the appropriate preservation code **P ③:**

A - HCl
B - HNO_3
C - NaOH
D - H_2SO_4
E - $Na_2S_2O_3$
F - ascorbic acid[2], then HCl
G - $Na_2S_2O_3$+EDTA
H - EDTA
N - No chemical preservation
P - Bottles pre-preserved at lab
T - To be preserved at the lab

[2] $Na_2S_2O_3$ *if required by plan.*

W Samples frozen prior to shipment

☒ Check here if the cooler is iced

④ Enter the letter or range of letters on each container for each group of containers with the same preservative type. Each container for each unique sample number must have a unique letter on it.

Laboratory: *see the applicable QAPP, SOW and/or Analytical Support Request for specific methods and detection, reporting, and/or quantitation limits*

Retain all sample material for return

DM

Sampler's comments for the laboratory:

PCB Congener Analysis - All remaining sample material will be returned to Region 10 after analysis

EPA Sample number Yr	Wk	Sequence	Sampling Date & Time Yr	Mo	Day	Time	Matrix ①	#C ②	P ③	#C ②	P ③	#C ②	P ③	#C ②	P ③	Sampler Initials	Sample/Station Description/Field Measurements	Organics (see reverse) VOA	BNA	Pest	PCB Congener	PAH	Metals (see reverse) CLP	Selected	Mercury	Micro (see reverse) E. Coli	F. Coliform	T. Coliform	General Chemistry (see reverse) TSS	TDS	BOD 5	NO2-NO3	Oil & Grease	Asbestos	Additional Write in Analyses (see reverse)			
11	46	2600	11	09	28	1350	70										SB10E-06/11422500 ERDC				X																	
		01																																			
		02	11	09	28	0920	70										SB11W-07/11422501 ERDC				X																	
		03																																			
		04	11	10	08	1615	70										SB06E-11/11422502 ERDC				X																	
		05																																			
		06	11	10	07	1650	70										SB08W-06/11422503 ERDC				X																	
		07																																			
		10	11	10	08	1440	70										SB06E-08/11422505 ERDC				X																	
		11																																			
		12	11	10	08	1549	70										SB06E-09/11422506 ERDC				X																	
		13																																			
		14	11	10	07	1330	70										SB11E-10/11422507 ERDC				X																	
		15																																			
		16	11	10	08	1610	70										SB06E-10/11422508 ERDC				X																	
		17																																			

Chain of Custody Record

Relinquished by *(Signature)*	Date	Time	Received by *(Signature)*	Date	Time
Relinquished by *(Signature)*	Date	Time	Received by *(Signature)*	Date	Time
Relinquished by *(Signature)*	Date	Time	Received by **Mobile Lab** for Field Analysis *(Signature)*	Date	Time
Shipped by *(Signature)*	Date 11/7/12	Time 10:00	Received for **lab** by *(Signature)*	Date	Time

(360) 871-8760

Receiving Laboratory Information Condition of Samples upon Receipt at Lab:

Custody Seals Intact: ☐ yes ☐ no ☐ none

Distribution: White - Laboratory Copy;
Yellow - Regional Sample Control Center (RSCC) Copy; Pink - Field or Office Copy

#7

EPA EPA Region 10, 1200 Sixth Avenue, Seattle, WA 98101

Sample Custody & Analysis Required Form

EPA Manchester Laboratory, 7411 Beach Drive East, Port Orchard, WA 98366, 360-871-8700

Form Effective Date: July 2005

Revision 1

Primary Contract #

Project Name	Project Code	Method of Shipment/carrier	Airbill Number (if known prior to sealing):
PO 107745 EP-W-07-078	SFP-013A		

Account Code	EPA Project Manager/phone number	Check all that apply
TR2B/108T	Vanus Burton 703 390-0657	☐ Enforce/Custody ☐ Possible Toxic/Hazardous ☐ Data Confidential

Sampler Names (Print & Sign). *Mark (R) after name of principal recorder.*

Ship to: Pace Analytical Services
1700 Elmont SE
Minneapolis, MN 55414
PM: Scott Unze 612 607-6383

If applicable, circle the set of selected metals:

Al	Sb	As	Ba	Be
B	Cd	Ca	Cr	Co
Cu	Fe	Pb	Mg	Mn
Mo	Ni	K	Se	Ag
Na	Sn	Tl	V	Zn

(see reverse for more to add/circle)

① Matrix Codes:
10 Water/Liquid (Total)
20 Water/Liquid (Filtered)
40 Sediment/Soil/Solid/Bulk
(70) Tissue
80 Oil/Solvent
44 Air filter
42 Wipe/Swab[1]
00 _____

[1] PCB wipe is to be 10cm x 10cm (100 cm²)

#C ② enter the number of containers for each preservative type followed by the appropriate preservation code P ③:

A - HCl
B - HNO_3
C - NaOH
D - H_2SO_4
E - $Na_2S_2O_3$
F - ascorbic acid[2], then HCl
G - $Na_2S_2O_3$+EDTA
H - EDTA
N - No chemical preservation
P - Bottles pre-preserved at lab
T - To be preserved at the lab

[2] $Na_2S_2O_3$ if required by plan.

W - Sample frozen prior to shipment

☐ Check here if the cooler is iced

④ Enter the letter or range of letters on each container for each group of containers with the same preservative type. Each container for each unique sample number must have a unique letter on it.

Laboratory: *see the applicable QAPP, SOW and/or Analytical Support Request for specific methods and detection, reporting, and/or quantitation limits*

Return all sample material for return

Sampler's comments for the laboratory:

PCB Congener Analysis – All remaining sample material will be returned to Region 10 after analysis

EPA Sample number Yr	Wk	Sequence	Sampling Date & Time Yr	Mo	Day	Time	Matrix ①	#C ②	P ③	#C ②	P ③	#C ②	P ③	#C ②	P ③	Sampler Initials	Sample/Station Description/Field Measurements	Organics (see reverse) VOA	BNA	Pest	PCB Congener	PAH	Metals (see reverse) CLP	Selected	Mercury	Micro (see reverse) E. Coli	F. Coliform	T. Coliform	General Chemistry (see reverse) TSS	TDS	BOD 5	NO2+NO3	Oil & Grease	Asbestos	Additional Write in Analyses (see reverse)
11	46	26 18	11	09	22	1201	70										SB05W-04/11422509 ERDC				X														
		19																			X													
		20	11	09	28	1012	70										SB11W-08/11422510 ERDC				X														
		21																			X													
		22	11	09	19	0705	70										SB11E-07/11422511 ERDC				X														
		23																			X													
		24	11	10	07	1236	70										SB11E-09/11422512 ERDC				X														
		25																			X													
		26	11	09	16	0714	70										SB11W-06/11422513 ERDC				X														
		27																			X													
		28	11	09	27	1000	70										SB08W-05/11422514/JEAH5				X														
		29																			X													
		30	11	09	27	1133	70										SB08W-01/11422515/JEAH6				X														
		31																			X													
		32	11	09	28	0822	70										SB11W-05/11422516/JEAH7				X														
		33																			X													

Chain of Custody Record

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Relinquished by (Signature)	Date	Time	Received by **Mobile Lab** for Field Analysis (Signature)	Date	Time
Shipped by (Signature)	Date 11/17/12	Time 10:00	Received for **lab** by (Signature)	Date	Time

(360) 871-8760

Receiving Laboratory Information Condition of Samples upon Receipt at Lab:

Custody Seals Intact: ☐ yes ☐ no ☐ none

Distribution: White - Laboratory Copy;
Yellow - Regional Sample Control Center (RSCC) Copy; Pink - Field or Office Copy

#3

EPA Region 10, 1200 Sixth Avenue, Seattle, WA 98101

Sample Custody & Analysis Required Form

EPA Manchester Laboratory, 7411 Beach Drive East, Port Orchard, WA 98366, 360-871-8700

Form Effective Date: July 2005

Revision 1

Primary Contract #

Project Name	Project Code	Method of Shipment/carrier	Airbill Number (if known prior to sealing):
P.0107745 EP-W-07-078	SFP-013A		

Account Code	EPA Project Manager/phone number	Check all that apply
TR2B/ 108T	Younus Burhan 703 910-0657	☐ Enforce/Custody ☐ Possible Toxic/Hazardous ☐ Data Confidential

Sampler Names (Print & Sign). *Mark* (R) *after name of principal recorder.*

Ship to: Pace Analytical Services
1700 Elm St SE
Minneapolis MN 55414
PM Scott Urze 612 607-6383

If applicable, circle the set of selected metals:

Al	Sb	As	Ba	Be
B	Cd	Ca	Cr	Co
Cu	Fe	Pb	Mg	Mn
Mo	Ni	K	Se	Ag
Na	Sn	Tl	V	Zn

(see reverse for more to add/circle)

① Matrix Codes:
10 Water/Liquid (Total)
20 Water/Liquid (Filtered)
40 Sediment/Soil/Solid/Bulk
70 Tissue
80 Oil/Solvent
44 Air filter
42 Wipe/Swab[1]
00 _____

[1] PCB wipe is to be 10cm x 10cm (100 cm²)

#C ② enter the number of containers for each preservative type followed by the appropriate preservation code P ③:

A - HCl
B - HNO_3
C - NaOH
D - H_2SO_4
E - $Na_2S_2O_3$
F - ascorbic acid[2], then HCl
G - $Na_2S_2O_3$+EDTA
H - EDTA
N - No chemical preservation
P - Bottles pre-preserved at lab
T - To be preserved at the lab

[2] *$Na_2S_2O_3$ if required by plan.*

Samples frozen prior to Shipment

☐ Check here if the cooler is iced

④ Enter the letter or range of letters on each container for each group of containers with the same preservative type. Each container for each unique sample number must have a unique letter on it.

Laboratory: *see the applicable QAPP, SOW and/or Analytical Support Request for specific methods and detection, reporting, and/or quantitation limits*

Retain all sample material for return

Sampler's comments for the laboratory:

PCB Congener Analysis – All remaining sample material will be returned to Region 10 after analysis

EPA Sample number Yr	Wk	Sequence	Sampling Date & Time Yr	Mo	Day	Time	Matrix ①	#C ②	P ③	#C ②	P ③	#C ②	P ③	#C ②	P ③	Sampler Initials	Sample/Station Description/Field Measurements	Organics (see reverse) VOA	BNA	Pest	PCB (Congener)	PAH	Metals (see reverse) CLP	Selected	Mercury	Micro (see reverse) E. Coli	F. Coliform	T. Coliform	General Chemistry (see reverse) TSS	TDS	BOD 5	NO2+NO3	Oil & Grease	Asbestos	Additional Write in Analyses (see reverse)		
11	46	34	11	09	28	1257	70										SB10E-04/114225171JEAH8				X																
		35	"	"	"	"	"																														
		36	11	09	28	1413	70										SB09E-05/114225181JEAH9				X																
		37																																			
		40	11	09	29	1710	70										SB04E-06/114225201JEAJ1				X																
		41																																			
		42	11	09	29	1834	70										SB04E-02/114225211JEAJ2				X																
		43																																			
		44	11	10	02	1250	70										SB05W-02/114225221JEAJ3				X																
		45																																			
		46	11	10	03	0932	70										SB05E-03/114225231JEAJ4				X																
		47																																			
		50	11	10	03	1530	70										SB07E-05/114225251JEAJ6				X																
		51																																			
		52	11	10	03	1542	70										SB07E06/114225261JEAJ7				X																
		53																																			

Chain of Custody Record

	Relinquished by *(Signature)*	Date	Time	Received by *(Signature)*	Date	Time
	Relinquished by *(Signature)*	Date	Time	Received by *(Signature)*	Date	Time
	Relinquished by *(Signature)*	Date	Time	Received by **Mobile Lab** for Field Analysis *(Signature)*	Date	Time
Shipped by *(Signature)*		11/7/12	10:00	Received for **lab** by *(Signature)*	Date	Time

(360) 871-8760

Receiving Laboratory Information Condition of Samples upon Receipt at Lab:

Custody Seals Intact: ☐ yes ☐ no ☐ none

Distribution: White - Laboratory Copy;
Yellow - Regional Sample Control Center (RSCC) Copy; Pink - Field or Office Copy

#4

EPA Region 10, 1200 Sixth Avenue, Seattle, WA 98101

Sample Custody & Analysis Required Form

EPA Manchester Laboratory, 7411 Beach Drive East, Port Orchard, WA 98366, 360-871-8700

Form Effective Date: July 2005 — Revision 1

Primary Contract#

Project Name	Project Code	Method of Shipment/carrier	Airbill Number (if known prior to sealing):
PO 107745 EP-W-07-078	SFP-013A		

Account Code	EPA Project Manager/phone number	Check all that apply
TRDB / 108T	Yannis Burken 703 390-0657	☐ Enforce/Custody ☐ Possible Toxic/Hazardous ☐ Data Confidential

Sampler Names (Print & Sign). Mark (R) after name of principal recorder.

Ship to: Pace Analytical Services
1700 Elm St SE
Minneapolis MN 55414
P.O. Scott Unze 612 607-6383

If applicable, circle the set of selected metals:

Al	Sb	As	Ba	Be
B	Cd	Ca	Cr	Co
Cu	Fe	Pb	Mg	Mn
Mo	Ni	K	Se	Ag
Na	Sn	Tl	V	Zn

(see reverse for more to add/circle)

① Matrix Codes:
- 10 Water/Liquid (Total)
- 20 Water/Liquid (Filtered)
- ~~40 Sediment/Soil/Solid/Bulk~~
- (70) Tissue
- 80 Oil/Solvent
- 44 Air filter
- 42 Wipe/Swab[1]
- 00 ________

[1] PCB wipe is to be 10cm x 10cm (100 cm²)

#C ② enter the number of containers for each preservative type followed by the appropriate preservation code P ③:
- A - HCl
- B - HNO_3
- C - NaOH
- D - H_2SO_4
- E - $Na_2S_2O_3$
- F - ascorbic acid[2], then HCl
- G - $Na_2S_2O_3$+EDTA
- H - EDTA
- N - No chemical preservation
- P - Bottles pre-preserved at lab
- T - To be preserved at the lab

[2] $Na_2S_2O_3$ if required by plan.

W Samples frozen prior to shipment

☐ Check here if the cooler is iced

④ Enter the letter or range of letters on each container for each group of containers with the same preservative type. Each container for each unique sample number must have a unique letter on it.

Laboratory: see the applicable QAPP, SOW and/or Analytical Support Request for specific methods and detection, reporting, and/or quantitation limits

Retain all sample material for return

Sampler's comments for the laboratory:

PCB Congener Analysis — All remaining sample material will be returned to Region 10 after analysis

Analyses: Organics (see reverse): VOA, BNA, Pest, PCB (Congener), PAH; Metals (see reverse): CLP, Selected, Mercury; Micro (see reverse): E. Coli, F. Coliform, T. Coliform; General Chemistry (see reverse): TSS, TDS, BOD 5, NO2+NO3, Oil & Grease; Asbestos; Additional Write in Analyses (see reverse)

EPA Sample number (Yr / Wk / Sequence)	Sampling Date & Time (Yr / Mo / Day / Time)	Matrix ①	#C ②	P ③	Sampler Initials	Sample/Station Description/Field Measurements	PCB Congener
11 46 2654	11 10 03 1615	70				SB07E-04/11422527/JEAJ8	X
55							X
56	11 10 03 1730	70				SB06E-02/11422528/JEAJ9	X
57							X
58	11 10 06 1645	70				SB06W-04/11422529/JEAK0	X
59							X
60	11 10 06 1810	70				SB05E-04/11422530/JEAK1	X
61							X
62	11 10 07 0820	70				SB06W-01/11422531/JEAK2	X
63							X

Chain of Custody Record

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Relinquished by (Signature)	Date	Time	Received by Mobile Lab for Field Analysis (Signature)	Date	Time
Shipped by (Signature) [signature]	1/17/12	10:00	Received for lab by (Signature)		

360 871-8760

Receiving Laboratory Information Condition of Samples upon Receipt at Lab:

Custody Seals Intact: ☐ yes ☐ no ☐ none

Distribution: White - Laboratory Copy; Yellow - Regional Sample Control Center (RSCC) Copy; Pink - Field or Office Copy

EPA Region 10, 1200 Sixth Avenue, Seattle, WA 98101

Sample Custody & Analysis Required Form

EPA Manchester Laboratory, 7411 Beach Drive East, Port Orchard, WA 98366, 360-871-8700

Form Effective Date: July 2005

Revision 1

Project Name	Primary Contract #	Project Code	Method of Shipment/carrier	Airbill Number (if known prior to sealing):
P01077045	EP-W-07-078	SPP-013A		

Account Code	EPA Project Manager/phone number	Check all that apply
TR2B1 108T	Younus Burhan (703) 390-0657	☐ Enforce/Custody ☐ Possible Toxic/Hazardous ☐ Data Confidential

Sampler Names (Print & Sign). *Mark* (R) *after name of principal recorder.*

Ship to: Pace Analytical Services
1700 Elm St SE
Minneapolis, MN 55414
P.O. Scott Uhze (612) 607-6383

If applicable, circle the set of selected metals:

Al	Sb	As	Ba	Be
B	Cd	Ca	Cr	Co
Cu	Fe	Pb	Mg	Mn
Mo	Ni	K	Se	Ag
Na	Sn	Tl	V	Zn

(see reverse for more to add/circle)

② Matrix Codes:
10 Water/Liquid (Total)
20 Water/Liquid (Filtered)
40 Sediment/Soil/Solid/Bulk
70 Tissue
80 Oil/Solvent
44 Air filter
42 Wipe/Swab[1]
00 _____

[1] PCB wipe is to be 10cm x 10cm (100 cm²)

#C ② enter the number of containers for each preservative type followed by the appropriate preservation code **P ③:**

A - HCl
B - HNO_3
C - NaOH
D - H_2SO_4
E - $Na_2S_2O_3$
F - ascorbic acid[2], then HCl
G - $Na_2S_2O_3$+EDTA
H - EDTA
N - No chemical preservation
P - Bottles pre-preserved at lab
T - To be preserved at the lab

[2] $Na_2S_2O_3$ *if required by plan.*

W - _____

☐ Check here if the cooler is iced

④ Enter the letter or range of letters on each container for each group of containers with the same preservative type. Each container for each unique sample number must have a unique letter on it.

Laboratory: *see the applicable QAPP, SOW and/or Analytical Support Request for specific methods and detection, reporting, and/or quantitation limits*

Sampler's comments for the laboratory:

EPA Sample number Yr	Wk	Sequence	Sampling Date & Time Yr	Mo	Day	Time	Matrix ①	#C ②	P ③	#C ②	P ③	#C ②	P ③	#C ②	P ③	Sampler Initials	Sample/Station Description/Field Measurements	Organics (see reverse) VOA	BNA	Pest	PCB (Aroclor)	PAH	Metals (see reverse) CLP	Selected	Mercury	Micro (see reverse) E. Coli	F. Coliform	T. Coliform	General Chemistry (see reverse) TSS	TDS	BOD 5	NO2+NO3	Oil & Grease	Asbestos	Additional Write in Analyses (see reverse)		
1	1	46 2664	11	11	23	1010	10										MEL Proof Blank - Body + Fillet				X																
		2665	11	11	30	1545	10										MEL Rinsate Blank - 1130B				X																
		2666	11	12	08	1445	10										MEL Rinsate Blank - 1208F				X																
		2667	11	12	08	1430	10										MEL Rinsate Blank - 1208B				X																

Chain of Custody Record

	Date	Time		Date	Time
Relinquished by *(Signature)*			Received by *(Signature)*		
Relinquished by *(Signature)*			Received by *(Signature)*		
Relinquished by *(Signature)*			Received by **Mobile Lab** for Field Analysis *(Signature)*		
Shipped by *(Signature)*	11/7/12	10:00	Received for **lab** by *(Signature)*		

(360) 871-8760

Receiving Laboratory Information Condition of Samples upon Receipt at Lab:

Custody Seals Intact: ☐ yes ☐ no ☐ none

Distribution: White - Laboratory Copy;
Yellow - Regional Sample Control Center (RSCC) Copy; Pink - Field or Office Copy

Report No....10180867_1668C

Sample Custody & Analysis Required Form

Primary Contract #:

Form Effective Date: July 2005

EPA Manchester Laboratory, 7411 Beach Drive East, Port Orchard, WA 98366, 360-871-8700

10180867

Revision 1

Project Name	Project Code	Method of Shipment/carrier	Airbill Number (if known prior to sealing):
10745 EPA-W-01-078	SFP-013A		
Account Code	**EPA Project Manager/phone number**	**Check all that apply**	
TR2B/ 103T	Yvonne Burton 703 308-0857	☐ Enforce/Custody ☐ Possible Toxic/Hazardous ☐ Data Confidential	

Sampler Names (Print & Sign). *Mark (R) after name of principal recorder.*

Ship to: Pace Analytical Services
1700 Elm St SE
Minneapolis MN 55414
South Haze 612 607-6333

If applicable, circle the set of selected metals:

Al	Sb	As	Ba	Be
B	Cd	Ca	Cr	Co
Cu	Fe	Pb	Mg	Mn
Mo	Ni	K	Se	Ag
Na	Sn	Tl	V	Zn

(see reverse for more to add/circle)

① Matrix Codes:
10 Water/Liquid (Total)
20 Water/Liquid (Filtered)
40 Sediment/Soil/Solid/Bulk
70 Tissue
80 Oil/Solvent
44 Air filter
42 Wipe/Swab[1]
00 _____

[1] PCB wipe is to be 10cm x 10cm (100 cm²)

#C ② enter the number of containers for each preservative type followed by the appropriate preservation code P ③:

A - HCl
B - HNO_3
C - NaOH
D - H_2SO_4
E - $Na_2S_2O_3$
F - ascorbic acid[2], then HCl
G - $Na_2S_2O_3$+EDTA
H - EDTA
N - No chemical preservation
P - Bottles pre-preserved at lab
T - To be preserved at the lab

[2] $Na_2S_2O_3$ if required by plan.

W Samples frozen prior to shipment

☐ Check here if the cooler is iced

④ Enter the letter or range of letters on each container for each group of containers with the same preservative type. Each container for each unique sample number must have a unique letter on it.

Laboratory: *see the applicable QAPP, SOW and/or Analytical Support Request for specific methods and detection, reporting, and/or quantitation limits*

Retain all sample material for return

Sampler's comments for the laboratory:

PCB Congener Analysis - All remaining Sample Material will be returned to Region 10 after analysis

EPA Sample number Yr	Wk	Sequence	Sampling Date & Time Yr	Mo	Day	Time	Matrix ①	#C ②	P ③	#C ②	P ③	#C ②	P ③	#C ②	P ③	Sampler Initials	Sample/Station Description/Field Measurements	Organics (see reverse) VOA	BNA	Pest	PCB Congener	PAH	Metals (see reverse) CLP	Selected	Mercury	Micro (see reverse) E. Coli	F. Coliform	T. Coliform	General Chemistry (see reverse) TSS	TDS	BOD 5	NO2-NO3	Oil & Grease	Asbestos	Additional Write in Analyses (see reverse)			
11	46	2600	11	09	28	1350	70										SBLCE-01/11422500 ERDC				X																		
		0100																																			
		0200	11	09	28	0920	70										SBLCE-07/11422501 ERDC				X																		
		0300																																			
		0400	11	10	08	1615	70										SBLCE-11/11422502 ERDC				X																		
		0500																																			
		0600	11	10	07	1650	70										SBLSW-06/11422503 ERDC				X																		
		0700																																			
		0800	11	10	08	1444	70										SBLCE03/11422505 ERDC				X																		
		0900																																			
		1000	11	10	08	1549	70										SBLE-04/11422506 ERDC				X																		
		1100																																			
		1200	11	10	07	1350	70										SBLE-10/11422507 ERDC				X																		
		1300																																			
		1400	11	10	08	1610	70										SBLCE-10/11422508 ERDC				X																		
		1500																																			
		1600																																			
		1700																																			

Chain of Custody Record

Relinquished by *(Signature)*	Date	Time	Received by *(Signature)*	Date	Time
Relinquished by *(Signature)*	Date	Time	Received by *(Signature)*	Date	Time
Relinquished by *(Signature)*	Date	Time	Received by **Mobile Lab** for Field Analysis *(Signature)*	Date	Time
Shipped by *(Signature)*	Date	Time	Received for **lab** by *(Signature)*	Date	Time

Receiving Laboratory Information Condition of Samples upon Receipt at Lab:

Custody Seals Intact: ☐ yes ☐ no ☐ none

Distribution: White - Laboratory Copy;
Yellow - Regional Sample Control Center (RSCC) Copy; Pink - Field or Office Copy

Report No....10180867_1668C

EPA Region 10, 1200 Sixth Avenue, Seattle, WA 98101

Sample Custody & Analysis Required Form

Form Effective Date: July 2005

EPA Manchester Laboratory, 7411 Beach Drive East, Port Orchard, WA 98366, 360-871-8700

Revision 1

10180829

Primary Contract #

Project Name: 10107745 EP-W-07-078

Project Code: SFP-0134

Method of Shipment/carrier:

Airbill Number (if known prior to sealing):

Account Code: TR2B/108T

EPA Project Manager/phone number: Vaunus Burhan 703 390-0657

Check all that apply: ☐ Enforce/Custody ☐ Possible Toxic/Hazardous ☐ Data Confidential

Sampler Names (Print & Sign). Mark (R) after name of principal recorder:
Ship to: Pace Analytical Services
1700 Elm St SE
Minneapolis, MN 55414
Scott Unze 612 607-6383

If applicable, circle the set of selected metals:

Al	Sb	As	Ba	Be
B	Cd	Ca	Cr	Co
Cu	Fe	Pb	Mg	Mn
Mo	Ni	K	Se	Ag
Na	Sn	Tl	V	Zn

(see reverse for more to add/circle)

① Matrix Codes:
10 Water/Liquid (Total)
20 Water/Liquid (Filtered)
40 Sediment/Soil/Solid/Bulk
(70) Tissue
80 Oil/Solvent
44 Air filter
42 Wipe/Swab[1]
00 ________

[1] PCB wipe is to be 10cm x 10cm (100 cm²)

#C ② enter the number of containers for each preservative type followed by the appropriate preservation code P ③:
A - HCl
B - HNO_3
C - NaOH
D - H_2SO_4
E - $Na_2S_2O_3$
F - ascorbic acid[2], then HCl
G - $Na_2S_2O_3$+EDTA
H - EDTA
N - No chemical preservation
P - Bottles pre-preserved at lab
T - To be preserved at the lab
[2] $Na_2S_2O_3$ if required by plan.
W - Sample frozen prior to shipment

☐ Check here if the cooler is iced

④ Enter the letter or range of letters on each container for each group of containers with the same preservative type. Each container for each unique sample number must have a unique letter on it.

Laboratory: see the applicable QAPP, SOW and/or Analytical Support Request for specific methods and detection, reporting, and/or quantitation limits
Retain all sample material for return

Sampler's comments for the laboratory:
PCB Congener Analysis – All remaining sample material will be returned to Region 10 after analysis

Analyses columns: Organics (see reverse): VOA, BNA, Pest, PCB (Congener), PAH; Metals (see reverse): CLP, Selected, Mercury; Micro (see reverse): E. Coli, F. Coliform, T. Coliform; General Chemistry (see reverse): TSS, TDS, BOD 5, NO2+NO3, Oil & Grease, Asbestos; Additional Write in Analyses (see reverse)

EPA Sample number Yr	Wk	Sequence	Yr	Mo	Day	Time	Matrix ①	#C ②	P ③	Sampler Initials	Sample/Station Description/Field Measurements	PCB (Congener)	
11	46	2618	11	09	22	1201	70				SB05W-04/11422509 ERDC	X	001
		19										X	002
		20	11	09	28	1012	70				SB11W-08/11422510 ERDC	X	003
		21										X	004
		22	11	09	19	0705	70				SB11E-07/11422511 ERDC	X	005
		23										X	006
		24	11	10	07	1236	70				SB11E-07/11422512 ERDC	X	007
		25										X	008
		26	11	09	14	0714	70				SB11W-06/11422513 ERDC	X	009
		27										X	010
		28	11	09	27	1000	70				SB08W-05/11422514/JEAH5	X	011
		29										X	012
		30	11	09	27	1135	70				SB08W-01/11422515/JEAH6	X	013
		31										X	014
		32	11	09	28	0822	70				SB11W-05/11422516/JEAH7	X	015
		33										X	016

Chain of Custody Record

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
			[signature] / Pace	11/18/11	09:20
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Relinquished by (Signature)	Date	Time	Received by Mobile Lab for Field Analysis (Signature)	Date	Time
Shipped by (Signature): [signature]	11/17/11	10:00	Received for lab by (Signature)	Date	Time

(360) 871-8760

Receiving Laboratory Information Condition of Samples upon Receipt at Lab:
T 2 0.0

Custody Seals Intact: ☐ yes ☐ no ☐ none

Distribution: White - Laboratory Copy; Yellow - Regional Sample Control Center (RSCC) Copy; Pink - Field or Office Copy

EPA Region 10, 1200 Sixth Avenue, Seattle, WA 98101

Primary Contract # 10180830

Sample Custody & Analysis Required Form

Form Effective Date: July 2005

EPA Manchester Laboratory, 7411 Beach Drive East, Port Orchard, WA 98366, 360-871-8700

10180830

Revision 1

Project Name	Project Code	Method of Shipment/carrier	Airbill Number (if known prior to sealing):
P.0107745 EP-W-07-078	SPP-013A		

Account Code	EPA Project Manager/phone number	Check all that apply
TR2B1 108T	Yolanda Julian 703 310-0657	☐ Enforce/Custody ☐ Possible Toxic/Hazardous ☐ Data Confidential

Sampler Names (Print & Sign). Mark (R) after name of principal recorder.
Ship to: Pace Analytical Services
1700 Elm St SE
Minneapolis MN 55414
Scott Unze 612 607-6383

If applicable, circle the set of selected metals:
Al Sb As Ba Be
B Cd Ca Cr Co
Cu Fe Pb Mg Mn
Mo Ni K Se Ag
Na Sn Tl V Zn
(see reverse for more to add/circle)

① Matrix Codes:
10 Water/Liquid (Total)
20 Water/Liquid (Filtered)
40 Sediment/Soil/Solid/Bulk
70 Tissue (circled)
80 Oil/Solvent
44 Air filter
42 Wipe/Swab[1]
00 ____

[1] PCB wipe is to be 10cm x 10cm (100 cm²)

#C ② enter the number of containers for each preservative type followed by the appropriate preservation code P ③:
A - HCl; G - $Na_2S_2O_3$+EDTA
B - HNO_3; H - EDTA
C - NaOH; N - No chemical preservation
D - H_2SO_4; P - Bottles pre-preserved at lab
E - $Na_2S_2O_3$; T - To be preserved at the lab
F - ascorbic acid[2], then HCl
[2] $Na_2S_2O_3$ if required by plan.

W: Samples frozen prior to shipment

☐ Check here if the cooler is iced

④ Enter the letter or range of letters on each container for each group of containers with the same preservative type. Each container for each unique sample number must have a unique letter on it.

Laboratory: see the applicable QAPP, SOW and/or Analytical Support Request for specific methods and detection, reporting, and/or quantitation limits
Return all sample material for return

Organics (see reverse): VOA, BNA, Pest, PCB (Congener), PAH | Metals (see reverse): CLP, Selected, Mercury | Micro (see reverse): E. Coli, F. Coliform, T. Coliform | General Chemistry (see reverse): TSS, TDS, BOD 5, NO2+NO3, Oil & Grease | Asbestos | Additional Write in Analyses (see reverse)

Sampler's comments for the laboratory:
PCB Congener Analysis - All remaining sample material will be returned to Region 10 after analysis

EPA Sample number Yr	Wk	Sequence	Sampling Yr	Mo	Day	Time	Matrix ①	#C ②	P ③	Sampler Initials	Sample/Station Description/Field Measurements	PCB	
11	46	2634	11	09	28	1257	70	1			SB10E-04/11422517/JEAH8	X	01
		35	"	"	"	"	"					X	02
		36	11	09	28	1413	70	1			SB09E-05/11422518/JEAH9	X	03
		37										X	04
		40	11	09	29	1710	70	1			SB04E-06/11422520/JEAJ1	X	05
		41										X	06
		42	11	09	29	1834	70	1			SB04E-02/11422521/JEAJ2	X	07
		43										X	08
		44	11	10	02	1250	70	1			SB05E-02/11422522/JEAJ3	X	09
		45										X	10
		46	11	10	03	0932	70	1			SB05E-03/11422523/JEAJ4	X	11
		47										X	12
		50	11	10	03	1530	70	1			SB07E-05/11422525/JEAJ6	X	13
		51										X	14
		52	11	10	03	1542	70	1			SB07E-06/11422526/JEAJ7	X	15
		53										X	16

Chain of Custody Record

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Relinquished by (Signature)	Date	Time	Received by Mobile Lab for Field Analysis (Signature)	Date	Time
Shipped by (Signature) [signature] (360) 871-8760	1/17/12	10:00	Received for lab by (Signature) [signature] / Pace	1-18-12	0920 T=0.0°C

Receiving Laboratory Information Condition of Samples upon Receipt at Lab:

Custody Seals Intact: ☐ yes ☐ no ☐ none

Distribution: White - Laboratory Copy; Yellow - Regional Sample Control Center (RSCC) Copy; Pink - Field or Office Copy

#4

EPA Region 10, 1200 Sixth Avenue, Seattle, WA 98101

Sample Custody & Analysis Required Form

Form Effective Date: July 2005

EPA Manchester Laboratory, 7411 Beach Drive East, Port Orchard, WA 98366, 360-871-8700

Revision 1

Primary Contractor

Project Name	Project Code	Method of Shipment/carrier	Airbill Number (if known prior to sealing):
PO 107745 EP-W-07-073	SFP-03A	1018083316	

Account Code	EPA Project Manager/phone number	Check all that apply
TR08 / 108T	Yaunes Burton 703 310-0657	☐ Enforce/Custody ☐ Possible Toxic/Hazardous ☐ Data Confidential

Sampler Names (Print & Sign). *Mark (R) after name of principal recorder.*

Ship to: Pace Analytical Services
1700 Elm St SE
Minneapolis MN 55414
Scott Unze 612 607-6353

If applicable, circle the set of selected metals:

Al	Sb	As	Ba	Be
B	Cd	Ca	Cr	Co
Cu	Fe	Pb	Mg	Mn
Mo	Ni	K	Se	Ag
Na	Sn	Tl	V	Zn

(see reverse for more to add/circle)

① Matrix Codes:
10 Water/Liquid (Total)
20 Water/Liquid (Filtered)
~~40~~ Sediment/Soil/Solid/Bulk
70 Tissue
80 Oil/Solvent
44 Air filter
42 Wipe/Swab[1]
00 _____

[1] PCB wipe is to be 10cm x 10cm (100 cm²)

#C ② enter the number of containers for each preservative type followed by the appropriate preservation code P ③:

A - HCl
B - HNO_3
C - NaOH
D - H_2SO_4
E - $Na_2S_2O_3$
F - ascorbic acid[2], then HCl
G - $Na_2S_2O_3$+EDTA
H - EDTA
N - No chemical preservation
P - Bottles pre-preserved at lab
T - To be preserved at the lab

[2] *$Na_2S_2O_3$ if required by plan.*

W Samples frozen prior to shipment

☐ Check here if the cooler is iced

④ Enter the letter or range of letters on each container for each group of containers with the same preservative type. Each container for each unique sample number must have a unique letter on it.

Laboratory: *see the applicable QAPP, SOW and/or Analytical Support Request for specific methods and detection, reporting, and/or quantitation limits*

Return all sample material for return

Sampler's comments for the laboratory:

PCB Congener Analysis — All remaining sample material will be returned to Region 10 after analysis

EPA Sample number Yr	Wk	Sequence	Sampling Date & Time Yr	Mo	Day	Time	Matrix ①	#C ②	P ③	#C ②	P ③	#C ②	P ③	#C ②	P ③	Sampler Initials	Sample/Station Description/Field Measurements	Organics (see reverse) VOA	BNA	Pest	PCB Congener	PAH	Metals (see reverse) CLP	Selected	Mercury	Micro (see reverse) E. Coli	F. Coliform	T. Coliform	General Chemistry (see reverse) TSS	TDS	BOD 5	NO2+NO3	Oil & Grease	Asbestos	Additional Write in Analyses (see reverse)		
11	46	2655	11	10	03	1615	70										SB07E-04/1142252 7/JEAJ8				X																
		55																																		
		56	11	10	03	1730	70										SB06E-03/1142252 8/JEAJ7				X																
		57																																		
		58	11	10	04	1645	70										SB06W-04/1142252 9/JEAK0				X																
		59																																		
		60	11	10	04	1810	70										SP0E-04/1142253 0/JEAK1				X																
		61																																		
		62	11	10	04	0820	70										SB06W-01/1142253 1/JEAK2				X																
		63																																		

Chain of Custody Record

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
			Scott Price	1/18/12	920
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Relinquished by (Signature)	Date	Time	Received by **Mobile Lab** for Field Analysis (Signature)	Date	Time
Shipped by (Signature)	Date	Time	Received for **lab** by (Signature)	Date	Time
	1/17/12	1000			

360-871-8766

Receiving Laboratory Information Condition of Samples upon Receipt at Lab:

Custody Seals Intact: ☑ yes ☐ no ☐ none

Distribution: White - Laboratory Copy;
Yellow - Regional Sample Control Center (RSCC) Copy; Pink - Field or Office Copy

EPA Region 10, 1200 Sixth Avenue, Seattle, WA 98101 — 112 8

Sample Custody & Analysis Required Form

Form Effective Date: July 2005

EPA Manchester Laboratory, 7411 Beach Drive East, Port Orchard, WA 98366, 360-871-8700

A1-18 ~~10180869~~ 10180870 — Revision 1

Project Name: 10107045 — Primary Contract #: EP-W-07-078

Project Code: SFP-013A

Method of Shipment/carrier:

Airbill Number (if known prior to sealing):

Account Code: TR2B1108TT

EPA Project Manager/phone number: Younus Burhan (703) 390-0697

Check all that apply: ☐ Enforce/Custody ☐ Possible Toxic/Hazardous ☐ Data Confidential

Sampler Names (Print & Sign). Mark (R) after name of principal recorder.
Ship to: Pace Analytical Services
1700 Elm St SE
Minneapolis, MN 55414
Scott Unze (612) 607-6383

If applicable, circle the set of selected metals:

Al	Sb	As	Ba	Be
B	Cd	Ca	Cr	Co
Cu	Fe	Pb	Mg	Mn
Mo	Ni	K	Se	Ag
Na	Sn	Tl	V	Zn

(see reverse for more to add/circle)

① Matrix Codes:
10 Water/Liquid (Total)
20 Water/Liquid (Filtered)
40 Sediment/Soil/Solid/Bulk
70 Tissue
80 Oil/Solvent
44 Air filter
42 Wipe/Swab[1]
00 ______

[1] PCB wipe is to be 10cm x 10cm (100 cm²)

#C ② enter the number of containers for each preservative type followed by the appropriate preservation code P ③:
A - HCl — G - $Na_2S_2O_3$+EDTA
B - HNO_3 — H - EDTA
C - NaOH — N - No chemical preservation
D - H_2SO_4 — P - Bottles pre-preserved at lab
E - $Na_2S_2O_3$ — T - To be preserved at the lab
F - ascorbic acid[2], then HCl
[2] $Na_2S_2O_3$ if required by plan.
W - ______

☐ Check here if the cooler is iced

④ Enter the letter or range of letters on each container for each group of containers with the same preservative type. Each container for each unique sample number must have a unique letter on it.

Laboratory: see the applicable QAPP, SOW and/or Analytical Support Request for specific methods and detection, reporting, and/or quantitation limits

Sampler's comments for the laboratory:

Analyses: Organics (see reverse): VOA, BNA, Pest, PCB, PAH; Metals (see reverse): CLP, Selected, Mercury; Micro (see reverse): E. Coli, F. Coliform, T. Coliform; General Chemistry (see reverse): TSS, TDS, BOD 5, NO2+NO3, Oil & Grease; Asbestos; Additional Write in Analyses (see reverse)

PCB: Congeners

EPA Sample No. Yr	Wk	Sequence	Sampling Yr	Mo	Day	Time	Matrix ①	#C ②	P ③	Sampler Initials	Sample/Station Description/Field Measurements	PCB	
11	46	2664	11	11	23	1010	10				MEL Proof Blank - Bdy + Fillet	X	001
		2665	11	11	30	1545	10				MEL Rinsate Blank - 1130B	X	002
		2666	11	12	08	1445	10				MEL Rinsate Blank - 1208F	X	003
		2667	11	12	08	1430	10				MEL Rinsate Blank - 1208B	X	004

Chain of Custody Record

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
			K Cpu/Pace	11/8/12	9:20
			Received by Mobile Lab for Field Analysis (Signature)		
Shipped by (Signature): K Nied... (360) 871-8700	11/7/12	10:00	Received for lab by (Signature)		

Receiving Laboratory Information Condition of Samples upon Receipt at Lab: F 2.6°C

Custody Seals Intact: ☐ yes ☐ no ☐ none

Distribution: White - Laboratory Copy; Yellow - Regional Sample Control Center (RSCC) Copy; Pink - Field or Office Copy

Chain of Custody Forms

From: USEPA Headquarters Laboratory (Pace)

To: USEPA Region 10 Laboratory (MEL)

Sample Custody & Analysis Required Form

EPA Region 10, 1200 Sixth Avenue, Seattle, WA 98101

EPA Manchester Laboratory, 7411 Beach Drive East, Port Orchard, WA 98366, 360-871-8700

Form Effective Date: July 2005

Revision 1

Primary Contract #

10180867

Project Name	Project Code	Method of Shipment/carrier	Airbill Number (if known prior to sealing):
PO 107745 EPA-W-07-078	SPP-013A		
Account Code	**EPA Project Manager/phone number**	**Check all that apply**	
TR2B/108T	Yarmus Burhan 703 390-0657	☐ Enforce/Custody ☐ Possible Toxic/Hazardous ☐ Data Confidential	

Sampler Names (Print & Sign). *Mark (R) after name of principal recorder.*

Ship to: Pace Analytical Services
1700 Elm St SE
Minneapolis MN 55414
Scott Unze 612 607-6383

DM

If applicable, circle the set of selected metals:

Al	Sb	As	Ba	Be
B	Cd	Ca	Cr	Co
Cu	Fe	Pb	Mg	Mn
Mo	Ni	K	Se	Ag
Na	Sn	Tl	V	Zn

(see reverse for more to add/circle)

① Matrix Codes:
10 Water/Liquid (Total)
20 Water/Liquid (Filtered)
40 Sediment/Soil/Solid/Bulk
70 Tissue
80 Oil/Solvent
44 Air filter
42 Wipe/Swab[1]
00 _____

[1] PCB wipe is to be 10cm x 10cm (100 cm²)

#C ② enter the number of containers for each preservative type followed by the appropriate preservation code P ③:

A - HCl
B - HNO_3
C - NaOH
D - H_2SO_4
E - $Na_2S_2O_3$
F - ascorbic acid[2], then HCl
G - $Na_2S_2O_3$+EDTA
H - EDTA
N - No chemical preservation
P - Bottles pre-preserved at lab
T - To be preserved at the lab

[2] $Na_2S_2O_3$ *if required by plan.*

W Samples frozen prior to shipment

☒ Check here if the cooler is iced

④ Enter the letter or range of letters on each container for each group of containers with the same preservative type. Each container for each unique sample number must have a unique letter on it.

Laboratory: *see the applicable QAPP, SOW and/or Analytical Support Request for specific methods and detection, reporting, and/or quantitation limits*

Retain all sample material for return

Sampler's comments for the laboratory:

PCB Congener Analysis - All remaining sample material will be returned to Region 10 after analysis

EPA Sample number (Yr / Wk / Sequence)	Sampling Date & Time (Yr / Mo / Day / Time)	Matrix ①	#C ②	P ③	#C ②	P ③	#C ②	P ③	#C ②	P ③	Sampler Initials	Sample/Station Description/Field Measurements	Organics (see reverse): VOA	BNA	Pest	PCB Congener	PAH	Metals (see reverse): CLP	Selected	Mercury	Micro (see reverse): E. Coli	F. Coliform	T. Coliform	General Chemistry (see reverse): TSS	TDS	BOD 5	NO2-NO3	Oil & Grease	Asbestos	Additional Write in Analyses (see reverse)			
11460200 01	11 09 28 1350	70										SB10E-06/11422500 ERDC				X																	001
02	11 09 28 0920	70										SB11W-07/11422501 ERDC				X																	002
03																X																	003
04	11 10 08 1615	70										SB12E-11/11422502 ERDC				X																	004
05																X																	005
06	11 10 07 1650	70										SB08W-06/11422503 ERDC				X																	006
07																X																	007
10	11 10 08 1440	70										SB06E-08/11422505 ERDC				X																	008
11																X																	009
12	11 10 08 1549	70										SB04E-09/11422506 ERDC				X																	010
13																X																	011
14	11 10 07 1330	70										SB11E-10/11422507 ERDC				X																	012
15																X																	013
16	11 10 08 1610	70										SB04E-10/11422508 ERDC				X																	014
17																X																	015
																X																	016

Chain of Custody Record

	Date	Time		Date	Time
Relinquished by *(Signature)*			Received by *(Signature)*		
Relinquished by *(Signature)*			Received by *(Signature)*		
Relinquished by *(Signature)*			Received by **Mobile Lab** for Field Analysis *(Signature)*		
Shipped by *(Signature)*	11/7/12	10:00	Received for lab by *(Signature)*	7/18/12	1230

(360) 871-8760

Receiving Laboratory Information Condition of Samples upon Receipt at Lab:

Good

Custody Seals Intact: ☐ yes ☐ no ☒ none

Distribution: White - Laboratory Copy;
Yellow - Regional Sample Control Center (RSCC) Copy; Pink - Field or Office Copy

#7

Sample Custody & Analysis Required Form

EPA Region 10, 1200 Sixth Avenue, Seattle, WA 98101

Form Effective Date: July 2005

EPA Manchester Laboratory, 7411 Beach Drive East, Port Orchard, WA 98366, 360-871-8700

Revision 1

Primary Contract #

Project Name	Project Code	Method of Shipment/carrier	Airbill Number (if known prior to sealing):
PO 107745 EP-W-07-078	SFP-0134		10180829

Account Code	EPA Project Manager/phone number	Check all that apply
TR2B/108T	Vanus Burton 703 390-0657	☐ Enforce/Custody ☐ Possible Toxic/Hazardous ☐ Data Confidential

Sampler Names (Print & Sign). Mark (R) after name of principal recorder.

Ship to: Pace Analytical Services

1700 Elmo St SE

Minneapolis, MN 55414

DM: Scott Unze 612 607-6383

If applicable, circle the set of selected metals:

Al	Sb	As	Ba	Be
B	Cd	Ca	Cr	Co
Cu	Fe	Pb	Mg	Mn
Mo	Ni	K	Se	Ag
Na	Sn	Tl	V	Zn

(see reverse for more to add/circle)

① Matrix Codes:
10 Water/Liquid (Total)
20 Water/Liquid (Filtered)
40 Sediment/Soil/Solid/Bulk
(70) Tissue
80 Oil/Solvent
44 Air filter
42 Wipe/Swab[1]
00 _____

[1] PCB wipe is to be 10cm x 10cm (100 cm²)

#C ② enter the number of containers for each preservative type followed by the appropriate preservation code P ③:

A - HCl
B - HNO_3
C - NaOH
D - H_2SO_4
E - $Na_2S_2O_3$
F - ascorbic acid[2], then HCl
G - $Na_2S_2O_3$+EDTA
H - EDTA
N - No chemical preservation
P - Bottles pre-preserved at lab
T - To be preserved at the lab

[2] $Na_2S_2O_3$ if required by plan.

W - Sample frozen prior to shipment

☐ Check here if the cooler is iced

④ Enter the letter or range of letters on each container for each group of containers with the same preservative type. Each container for each unique sample number must have a unique letter on it.

Laboratory: *see the applicable QAPP, SOW and/or Analytical Support Request for specific methods and detection, reporting, and/or quantitation limits*

Retain all sample material for return

Sampler's comments for the laboratory:

PCB Congener Analysis – All remaining sample material will be returned to Region 10 after analysis

EPA Sample number Yr	Wk	Sequence	Sampling Date & Time Yr	Mo	Day	Time	Matrix ①	#C ②	P ③	#C ②	P ③	#C ②	P ③	#C ②	P ③	Sampler Initials	Sample/Station Description/Field Measurements	Organics (see reverse) VOA	BNA	Pest	PCB (congener)	PAH	Metals (see reverse) CLP	Selected	Mercury	Micro (see reverse) E. Coli	F. Coliform	T. Coliform	General Chemistry (see reverse) TSS	TDS	BOD 5	NO2-NO3	Oil & Grease	Asbestos	Additional Write in Analyses (see reverse)			
11	46	261	18	11	09	22	1201	10									SB05W-04/11422509 ERDC				X																	
			19																		X																
			20	11	09	28	1012	10									SB11W-08/11422510 ERDC				X																	
			21																		X																
			22	11	09	19	0705	10									SB11E-07/11422511 ERDC				X																	
			23																		X																
			24	11	10	07	1236	10									SB11E-09/11422512 ERDC				X																	
			25																		X																
			26	11	09	16	0714	10									SB11W-06/11422513 ERDC				X																	
			27																		X																
			28	11	09	27	1000	10									SB08W-05/11422514/JEAH5				X																	
			29																		X																
			30	11	09	27	1133	10									SB08W-01/11422515/JEAH6				X																	
			31																		X																
			32	11	09	28	0822	10									SB11W-05/11422516/JEAH7				X																	
			33																		X																

Chain of Custody Record

	Date	Time		Date	Time
Relinquished by *(Signature)*			Received by *(Signature)*	11/18/12	09:26
Relinquished by *(Signature)*			Received by *(Signature)*		
Relinquished by *(Signature)*			Received by **Mobile Lab** for Field Analysis *(Signature)*		
Shipped by *(Signature)*	11/17/12	10:00	Received for **lab** by *(Signature)*	11/18/12	1230

(360) 871-8760

Receiving Laboratory Information Condition of Samples upon Receipt at Lab:

T = 0.0 Good

Custody Seals Intact: ☐ yes ☐ no ☑ none

Distribution: White - Laboratory Copy;
Yellow - Regional Sample Control Center (RSCC) Copy; Pink - Field or Office Copy

#3

Sample Custody & Analysis Required Form

EPA Region 10, 1200 Sixth Avenue, Seattle, WA 98101

Primary Contract # 10180830

Form Effective Date: July 2005

EPA Manchester Laboratory, 7411 Beach Drive East, Port Orchard, WA 98366, 360-871-8700

10180830

Revision 1

Project Name	Project Code	Method of Shipment/carrier	Airbill Number (if known prior to sealing):
P.0107745 EP-W-07-078	SFP-013A		
Account Code	**EPA Project Manager/phone number**	**Check all that apply**	
TR2B/ 108T	Younus Burhan 703 910-0657	☐ Enforce/Custody ☐ Possible Toxic/Hazardous ☐ Data Confidential	

Sampler Names (Print & Sign). *Mark* (R) *after name of principal recorder.*

Ship to: Pace Analytical Services
1700 Elm St SE
Minneapolis MN 55414
PM Scott Urze 612 607-6383

If applicable, circle the set of selected metals:

Al	Sb	As	Ba	Be
B	Cd	Ca	Cr	Co
Cu	Fe	Pb	Mg	Mn
Mo	Ni	K	Se	Ag
Na	Sn	Tl	V	Zn

(see reverse for more to add/circle)

① Matrix Codes:
10 Water/Liquid (Total)
20 Water/Liquid (Filtered)
40 Sediment/Soil/Solid/Bulk
70 Tissue
80 Oil/Solvent
44 Air filter
42 Wipe/Swab[1]
00 _____

[1] PCB wipe is to be 10cm x 10cm (100 cm²)

#C ② enter the number of containers for each preservative type followed by the appropriate preservation code P ③:

A - HCl
B - HNO_3
C - NaOH
D - H_2SO_4
E - $Na_2S_2O_3$
F - ascorbic acid[2], then HCl
G - $Na_2S_2O_3$+EDTA
H - EDTA
N - No chemical preservation
P - Bottles pre-preserved at lab
T - To be preserved at the lab

[2] $Na_2S_2O_3$ *if required by plan.*

We Samples frozen prior to Shipment

☐ Check here if the cooler is iced

④ Enter the letter or range of letters on each container for each group of containers with the same preservative type. Each container for each unique sample number must have a unique letter on it.

Laboratory: *see the applicable QAPP, SOW and/or Analytical Support Request for specific methods and detection, reporting, and/or quantitation limits*

Return all sample material for return

Sampler's comments for the laboratory:

PCB Congener Analysis – All remaining sample material will be returned to Region 10 after analysis

EPA Sample number Yr	Wk	Sequence	Sampling Date & Time Yr	Mo	Day	Time	Matrix ①	#C ②	P ③	#C ②	P ③	#C ②	P ③	#C ②	P ③	Sampler Initials	Sample/Station Description/Field Measurements	Organics (see reverse) VOA	BNA	Pest	PCB (Congener)	PAH	Metals (see reverse) TCLP	Selected	Mercury	Micro (see reverse) E. Coli	F. Coliform	T. Coliform	General Chemistry (see reverse) TSS	TDS	BOD 5	NO2+NO3	Oil & Grease	Asbestos	Additional Write in Analyses (see reverse)				
11	46	34	11	09	28	1257	70										SB10E-04/11422517/JEAH8				X																			001
		35	"	"	"	"															X																	002
		36	11	09	28	1413	70										SB09E-05/11422518/JEAH9				X																			003
		37																			X																	004
		40	11	09	29	1710	70										SB04E-06/11422520/JEAJ1				X																			005
		41																			X																	006
		42	11	09	29	1834	70										SB04E-02/11422521/JEAJ2				X																			007
		43																			X																	008
		44	11	10	02	1250	70										SB05W-02/11422522/JEAJ3				X																			009
		45																			X																	010
		46	11	10	03	0932	70										SB05E-03/11422523/JEAJ4				X																			011
		47																			X																	012
		50	11	10	03	1530	70										SB07E-05/11422525/JEAJ6				X																			013
		51																			X																	014
		52	11	10	03	1542	70										SB07E06/11422526/JEAJ7				X																			015
		53																			X																	016

Chain of Custody Record

	Date	Time		Date	Time
Relinquished by *(Signature)*			Received by *(Signature)*		
Relinquished by *(Signature)*			Received by *(Signature)*	7/18/12	12:30
Relinquished by *(Signature)*			Received by **Mobile Lab** for Field Analysis *(Signature)*		T=0.0°C
Shipped by *(Signature)*	1/17/12	10:00	Received for **lab** by *(Signature)*	1-18-12	0920

(360) 871-8760

Receiving Laboratory Information Condition of Samples upon Receipt at Lab:

Good

Custody Seals Intact: ☐ yes ☐ no ☒ none

Distribution: White - Laboratory Copy;
Yellow - Regional Sample Control Center (RSCC) Copy; Pink - Field or Office Copy

#4

Sample Custody & Analysis Required Form

EPA Region 10, 1200 Sixth Avenue, Seattle, WA 98101

EPA Manchester Laboratory, 7411 Beach Drive East, Port Orchard, WA 98366, 360-871-8700

Form Effective Date: July 2005

Revision 1

Project Name	Project Code	Method of Shipment/carrier	Airbill Number (if known prior to sealing):
PO 107745 EP-W-07-078 Primary Contract #	SFP-013A	10180826	

Account Code	EPA Project Manager/phone number	Check all that apply
TR~~DB~~ / 108T	Yaunus Burton 703 390-0657	☐ Enforce/Custody ☐ Possible Toxic/Hazardous ☐ Data Confidential

Sampler Names (Print & Sign). *Mark* (R) *after name of principal recorder.*

Ship to: Pace Analytical Services
1700 Elm St SE
Minneapolis MN 55414
P.O. Scott Unze 612 607-6353

If applicable, circle the set of selected metals:

Al	Sb	As	Ba	Be
B	Cd	Ca	Cr	Co
Cu	Fe	Pb	Mg	Mn
Mo	Ni	K	Se	Ag
Na	Sn	Tl	V	Zn

(see reverse for more to add/circle)

① Matrix Codes:
10 Water/Liquid (Total)
20 Water/Liquid (Filtered)
40 Sediment/Soil/Solid/Bulk
70 Tissue
80 Oil/Solvent
44 Air filter
42 Wipe/Swab[1]
00 _____

[1] PCB wipe is to be 10cm x 10cm (100 cm²)

#C ② enter the number of containers for each preservative type followed by the appropriate preservation code P ③:

A - HCl
B - HNO_3
C - NaOH
D - H_2SO_4
E - $Na_2S_2O_3$
F - ascorbic acid[2], then HCl
G - $Na_2S_2O_3$+EDTA
H - EDTA
N - No chemical preservation
P - Bottles pre-preserved at lab
T - To be preserved at the lab

[2] $Na_2S_2O_3$ *if required by plan.*

W Samples frozen prior to shipment

☐ Check here if the cooler is iced

④ Enter the letter or range of letters on each container for each group of containers with the same preservative type. Each container for each unique sample number must have a unique letter on it.

Laboratory: *see the applicable QAPP, SOW and/or Analytical Support Request for specific methods and detection, reporting, and/or quantitation limits*

Retain all sample material for return

Sampler's comments for the laboratory:

PCB Congener Analysis — All remaining sample material will be returned to Region 10 after analysis

EPA Sample number Yr	Wk	Sequence	Sampling Date & Time Yr	Mo	Day	Time	Matrix ①	#C ②	P ③	#C ②	P ③	#C ②	P ③	#C ②	P ③	Sampler Initials	Sample/Station Description/Field Measurements	Organics (see reverse) VOA	BNA	Pest	PCB Congener	PAH	Metals (see reverse) CLP	Selected	Mercury	Micro (see reverse) E. Coli	F. Coliform	T. Coliform	General Chemistry (see reverse) TSS	TDS	BOD 5	NO2+NO3	Oil & Grease	Asbestos	Additional Write in Analyses (see reverse)			
11	46	265	11	10	03	1615	70										SB07E-04/11422527/JEAJ8				X																	
		55																																			
		56	11	10	03	1730	70										SB06E-02/11422528/JEAJ9				X																	
		57																																			
		58	11	10	06	1645	70										SB06W-04/11422529/JEAK0				X																	
		59																																			
		60	11	10	06	1810	70										SB05E-04/11422530/JEAK1				X																	
		61																																			
		62	11	10	07	0820	70										SB06W-01/11422531/JEAK2				X																	
		63																																			

Chain of Custody Record

	Date	Time		Date	Time
Relinquished by *(Signature)*			Received by *(Signature)*	1/18/12	920
Relinquished by *(Signature)*			Received by *(Signature)*		
Relinquished by *(Signature)*			Received by **Mobile Lab** for Field Analysis *(Signature)*		
Shipped by *(Signature)*	1/17/12	10:00	Received for **lab** by *(Signature)*	7/18/12	1230

Receiving Laboratory Information Condition of Samples upon Receipt at Lab:

Good

Custody Seals Intact: ☑ yes ☐ no ☐ none

Distribution: White - Laboratory Copy;
Yellow - Regional Sample Control Center (RSCC) Copy; Pink - Field or Office Copy

360 871-8760

Appendix B

MEL Sample Processing Forms

PORTLAND HARBOR SMALLMOUTH BASS BASELINE STUDY: SFP-013A

MEL Processing Order of Operations: 1 2 3 4 5

Field Sample ID	Original sample receiving lab	Station Location	EPA assigned ID - whole fish	Date Processed, EPA/ESAT	Staff	EPA ID - fillet* (F)	EPA ID - Carcass / Remaining Body (B)	Whole body weight,original foil wrap included (g)	Total Fish Length (mm)	Fork Length (mm)	Scales removed?	Prep Time & Filleting comments/observations
SB10E-06	USACE ERDC	EPA1-SB10E-06	11422500	11/30/2011	LH, DJ, PK	11462600	11462601	99.61	192	180	Yes	Time 11:10
SB11W-07	USACE ERDC	EPA1-SB11W-07	11422501	11/30/2011	LH, DJ, PK	11462602	11462603	116.31	201	189	Yes	Time 10:30. External blood; blotted off fillet skin
SB06E-11	USACE ERDC	EPA1-SB06E-11	11422502	12/1/2011	LH, DJ, PK	11462604	11462605	222.42	242	230	Yes	Time 09:50
SB08W-06	USACE ERDC	EPA1-SB08W-06	11422503	11/23/2011	LH, DJ, PK	11462606	11462607	361.98	295	276	Yes	Time 13:50. Possible organ rupture. Avoided / fillet ok.
SB11E-08	USACE ERDC	EPA1-SB11E-08	11422504	11/23/2011	LH, DJ, PK	11462608	11462609	402.22	300	285	Yes	Time 10:55
SB06E-08	USACE ERDC	EPA1-SB06E-08	11422505	12/8/2011	LH, DJ, PK	11462610	11462611	413.61	295	280	Yes	Time 09:30
SB06E-09	USACE ERDC	EPA1-SB06E-09	11422506	11/23/2011	LH, DJ, PK	11462612	11462613	388.70	302	285	Yes	Time 14:30
SB11E-10	USACE ERDC	EPA1-SB11E-10	11422507	11/30/2011	LH, DJ, PK	11462614	11462615	699.25	363	340	Yes	Time 12:50
SB06E-10	USACE ERDC	EPA1-SB06E-10	11422508	12/8/2011	LH, DJ, PK	11462616	11462617	851.61	366	352	Yes	Time 11:00
SB05W-04	USACE ERDC	EPA1-SB05W-04	11422509	12/8/2011	LH, DJ, PK	11462618	11462619	847.23	390	370	Yes	Time 11:40. Bloody exterior.
SB11W-08	USACE ERDC	EPA1-SB11W-08	11422510	12/1/2011	LH, DJ, PK	11462620	11462621	730.40	390	375	Yes	Time 14:45. Body cavity full of bloody fluid, stomach may have ruptured.Fillets clean.Worms in body cavity.
SB11E-07	USACE ERDC	EPA1-SB11E-07	11422511	11/30/2011	LH, DJ, PK	11462622	11462623	1108.56	404	386	Yes	Time 16:10. External blood; blotted off fillet skin. Mature.
SB11E-09	USACE ERDC	EPA1-SB11E-09	11422512	12/8/2011	LH, DJ, PK	11462624	11462625	840.78	378	362	Yes	Time 10:25
SB11W-06	USACE ERDC	EPA1-SB11W-06	11422513	11/30/2011	LH, DJ, PK	11462626	11462627	1417.32	433	415	Yes	Time 16:50
JEAH5	CLP KAP	EPA1-SB08W-05	11422514	12/1/2011	LH, DJ, PK	11462628	11462629	208.94	233	222	No - removed in field	Time 13:00. External blood present; fillets clean.
JEAH6	CLP KAP	EPA1-SB08W-01	11422515	11/30/2011	LH, DJ, PK	11462630	11462631	721.07	360	342		Time 15:35. Mature (eggs)
JEAH7	CLP KAP	EPA1-SB11W-05	11422516	12/1/2011	LH, DJ, PK	11462632	11462633	211.07	235	295		Time 10:50. External blood; blotted off fillet skin
JEAH8	CLP KAP	EPA1-SB110E-04	11422517	11/30/2011	LH, DJ, PK	11462634	11462635	273.48	266	251		Time 13:35 Blood outside; blotted one side fillet.
JEAH9	CLP KAP	EPA1-SB09E-05	11422518	11/30/2011	LH, DJ, PK	11462636	11462637	365.57	287	272		Time 14:10 Blood outside; blotted fillet
JEAJ0	CLP KAP	EPA1-SB05W-03	11422519	11/23/2011	LH, DJ, PK	11462638	11462639	260.28	253	240	Yes	Time 11:25
JEAJ1	CLP KAP	EPA1-SB04E-06	11422520	11/30/2011	LH, DJ, PK	11462640	11462641	389.10	294	280	No - removed in field	Time 10:00
JEAJ2	CLP KAP	EPA1-SB04E-02	11422521	11/30/2011	LH, DJ, PK	11462642	11462643	370.27	285	273		Time 13:55
JEAJ3	CLP KAP	EPA1-SB05W-02	11422522	12/8/2011	LH, DJ, PK	11462644	11462645	802.70	362	350		Time 12:55. One side bloody
JEAJ4	CLP KAP	EPA1-SB05E-03	11422523	12/1/2011	LH, DJ, PK	11462646	11462647	377.91	291	278		Time 14:10. Fish head very bloody; fillets clean
JEAJ5	CLP KAP	EPA1-SB05E-02	11422524	11/23/2011	LH, DJ, PK	11462648	11462649	502.40	316	301		Time 13:30. Foil bloody, avoided and blotted fillet skin
JEAJ6	CLP KAP	EPA1-SB07E-05	11422525	12/1/2011	LH, DJ, PK	11462650	11462651	212.90	245	235		Time 10:30.
JEAJ7	CLP KAP	EPA1-SB07E-06	11422526	12/1/2011	LH, DJ, PK	11462652	11462653	519.30	322	307		Time 13:20
JEAJ8	CLP KAP	EPA1-SB07E-04	11422527	12/1/2011	LH, DJ, PK	11462654	11462655	302.71	270	255		Time 9:21
JEAJ9	CLP KAP	EPA1-SB06E-02	11422528	12/8/2011	LH, DJ, PK	11462656	11462657	760.01	363	350		Time 13:20
JEAK0	CLP KAP	EPA1-SB06W-04	11422529	12/1/2011	LH, DJ, PK	11462658	11462659	226.25	244	229		Time 11:15
JEAK1	CLP KAP	EPA1-SB05E-04	11422530	12/1/2011	LH, DJ, PK	11462660	11462661	536.50	321	304		Time 13:45
JEAK2	CLP KAP	EPA1-SB06W-01	11422531	12/8/2011	LH, DJ, PK	11462662	11462663	653.50	360	347		Time 10:05. Exterior blood in gill area
	MEL Proof Blank	body+fillet	11462664	11/23/2011	DJ, PK	N/A						Time 10:10
	MEL Rinsate Blank 1130B	1000mL body/carcass	11462665	11/30/2011	DJ, PK							Time 15:45
	MEL Rinsate Blank 1208F	fillet	11462666	12/8/2011	DJ, PK							Time 14:45.
	MEL Rinsate Blank 1208B	body/carcass	11462667	12/8/2011	DJ, PK							Time 14:30

Actual lab measured/weighed prep data Calculated weight/value from lab prep data

*Fillet = including skin and belly flap

Otolith removed for 14 ERDC fish only.

IM = Immature

6	7	8	9	10	calc=I-R	calc=P-R	calc=N+T	calc=RPD: S,U
Fillet (2) weight (g) (NO original foil)	**Fish Sex**	**Carcass/ Remaining Body weight (g) on original foil**	**Otolith removed?**	**Tare Weight original Foil (g)**	**Final Original Whole Fish Weight (g) - calc.**	**Final Carcass/ Body fish Weight (g) - calc.**	**Combined Actual Carcass/Body+ Fillet fish Weight (g) - calc.**	**RPD: Calc vs. Combined Whole Fish weight**
40.99	? IM	56.43	Yes	7.79	91.82	48.64	89.63	2.4%
44.48	? IM	70.89	Yes	9.31	107.00	61.58	106.06	0.9%
93.53	M	123.42	Yes	12.72	209.70	110.70	204.23	2.6%
131.12	F	222.60	Yes	16.95	345.03	205.65	336.77	2.4%
160.94	M	234.90	Yes	14.56	387.66	220.34	381.28	1.7%
165.25	M	237.15	Yes	19.70	393.91	217.45	382.70	2.9%
154.51	F	230.42	Yes	17.62	371.08	212.80	367.31	1.0%
265.84	M	406.09	Yes	28.65	670.60	377.44	643.28	4.2%
349.44	F	479.22	Yes	28.57	823.04	450.65	800.09	2.8%
348.52	F	482.47	Yes	21.55	825.68	460.92	809.44	2.0%
210.21	M	503.87	Yes	36.70	693.70	467.17	677.38	2.4%
470.73	F	617.65	Yes	43.33	1065.23	574.32	1045.05	1.9%
341.94	F	471.46	Yes	31.53	809.25	439.93	781.87	3.4%
579.31	F	796.99	Yes	43.10	1374.22	753.89	1333.20	3.0%
88.40	M	115.59	No	8.77	200.17	106.82	195.22	2.5%
293.40	F	412.01	No	30.03	691.04	381.98	675.38	2.3%
89.88	M	118.43	No	13.07	198.00	105.36	195.24	1.4%
110.29	F	157.50	No	15.25	258.23	142.25	252.54	2.2%
141.64	M	220.04	No	22.58	342.99	197.46	339.10	1.1%
108.01	M	148.38	No	10.94	249.34	137.44	245.45	1.6%
171.54	F	197.94	No	13.10	376.00	184.84	356.38	5.4%
148.75	F	221.48	No	23.03	347.24	198.45	347.20	0.0%
346.59	M	439.52	No	22.61	780.09	416.91	763.50	2.1%
155.69	F	215.96	No	17.92	359.99	198.04	353.73	1.8%
226.90	M	271.12	No	18.90	483.50	252.22	479.12	0.9%
84.20	M	125.47	No	9.55	203.35	115.92	200.12	1.6%
215.09	F	282.17	No	22.72	496.58	259.45	474.54	4.5%
133.25	M	167.55	No	12.61	290.10	154.94	288.19	0.7%
295.78	F	455.17	No	23.22	736.79	431.95	727.73	1.2%
96.49	M	128.79	No	11.99	214.26	116.80	213.29	0.5%
235.07	F	295.23	No	16.54	519.96	278.69	513.76	1.2%
284.80	M	353.98	No	21.15	632.35	332.83	617.63	2.4%

NA

Appendix C

Data Validation Report

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

June 13, 2012

Reply to: OEA-095
Attn of: Ginna Grepo-Grove

MEMORANDUM

Subject: Data Validation Report for the full list of 209 Polychlorinated Biphenyl Congener (PCB Congeners) Analyses of Small-Mouthed Bass Tissue Samples Collected for the Portland Harbor RI/FS PACE Project Numbers: 10180829; 10180826; 10180867; 10180870

From: Ginna Grepo-Grove, R10 QA Manager
Office of Environmental Assessment, USEPA

To: Chip Humphrey, Remedial Project Manager, ECL
Matthew Lambert, Contract WAM OSRTI, HQ

CC: Younus Burhan, Project Manager, Tetratech, Inc.

The quality assurance (QA) review of the analytical data generated from the analysis of 63 fish tissue and 4 water (rinsate) samples collected from the above referenced site has been completed. These samples were analyzed for the 209 Polychlorinated Bipheny Congeners (PCB Congeners) in accordance with the Method 1668C, "Chlorinated Biphenyl Congeners in Water, Soil, Sediment, Bio-solids and Tissue by High Resolution Gas Chromatograph (HRGC)/High Resolution Mass Spectrometer (HRMS)", April 2010 by Pace Analytical Services located in Minneapolis, MN. All sample analyses were validated following the requirements of the EPA's Stage 4 Manual Data Validation (S4VM).

The following samples were evaluated in this validation report:

Table 1 – Sample Index, Dates of Collection, Extraction and Analysis

EPA Sample No.	EPA Station Locations	Sample Description	Lab Sample No.	Collection Dates	VTSR *	Extraction Dates	Extract Clean-Up	Analysis Dates (1)
11462600	EPA1-SB10E-06	Fillet	10180867001	09/28/11	01/18/12	02/10/12	02/13/12	02/14/12
11462601	EPA1-SB10E-06	Carcass	10180867002	09/28/11	01/18/12	02/10/12	02/13/12	02/14/12
11462602	EPA1-SB11W-07	Fillet	10180867003	09/28/11	01/18/12	02/10/12	02/13/12	02/15/12
11462603	EPA1-SB11W-07	Carcass	10180867004	09/28/11	01/18/12	02/10/12	02/13/12	02/15/12
11462604	EPA1-SB06E-11	Fillet	10180867005	10/08/11	01/18/12	02/10/12	02/13/12	02/15/12
11462605	EPA1-SB06E-11	Carcass	10180867006	10/08/11	01/18/12	02/10/12	02/13/12	02/15/12
11462606	EPA1-SB08W-06	Fillet	10180867007	10/07/11	01/18/12	02/10/12	02/13/12	02/15/12
11462607	EPA1-SB08W-06	Carcass	10180867008	10/07/11	01/18/12	02/10/12	02/13/12	02/15/12
11462608	EPA1-SB11E-08	Fillet	10177246001-R	10/08/11	12/02/11	12/16/11	12/20/11	12/21/11
11462609	EPA1-SB11E-08	Carcass	10177246002-R	10/08/11	12/02/11	12/16/11	12/20/11	12/21/11
11462610	EPA1-SB06E-08	Fillet	10180867009	10/08/11	01/18/12	02/10/12	02/13/12	02/15/12
11462611	EPA1-SB06E-08	Carcass	10180867010	10/08/11	01/18/12	02/10/12	02/13/12	02/15/12
11462612	EPA1-SB06E-09	Fillet	10180867011	10/08/11	01/18/12	02/10/12	02/13/12	02/15/12
11462613	EPA1-SB06E-09	Carcass	10180867012	10/08/11	01/18/12	02/10/12	02/13/12	02/15/12
11462614	EPA1-SB11E-10	Fillet	10180867013	10/07/11	01/18/12	02/10/12	02/13/12	02/15/12
11462615	EPA1-SB11E-10	Carcass	10180867014	10/07/11	01/18/12	02/10/12	02/13/12	02/16/12
11462616	EPA1-SB06E-10	Fillet	10180867015	10/08/11	01/18/12	02/10/12	02/13/12	02/18/12
11462617	EPA1-SB06E-10	Carcass	10180867016	10/08/11	01/18/12	02/10/12	02/13/12	02/16/12
11462618	EPA1-SB05W-04	Fillet	10180829001-R	09/22/11	01/18/12	02/23/12	02/24/12	02/26/12
11462619	EPA1-SB05W-04	Carcass	10180829002-R	09/22/11	01/18/12	02/23/12	02/24/12	02/26/12
11462620	EPA1-SB11W-08	Fillet	10180829003-R	09/28/11	01/18/12	02/23/12	02/24/12	02/26/12
11462621	EPA1-SB11W-08	Carcass	10180829004-R	09/28/11	01/18/12	02/23/12	02/24/12	02/27/12
11462622	EPA1-SB11E-07	Fillet	10180829005-R	09/19/11	01/18/12	02/23/12	02/24/12	02/26/12
11462623	EPA1-SB11E-07	Carcass	10180829006-R	09/19/11	01/18/12	02/23/12	02/24/12	02/26/12
11462624	EPA1-SB11E-09	Fillet	10180829007-R	10/07/11	01/18/12	02/23/12	02/24/12	02/26/12
11462625	EPA1-SB11E-09	Carcass	10180829008-R	10/07/11	01/18/12	02/23/12	02/24/12	02/26/12

EPA Sample No.	EPA Station Locations	Sample Description	Lab Sample No.	Collection Dates	VTSR *	Extraction Dates	Extract Clean-Up	Analysis Dates (1)
11462626	EPA1-SB11W-06	Fillet	10180829009-R	09/16/11	01/18/12	02/23/12	02/24/12	02/26/12
11462627	EPA1-SB11W-06	Carcass	10180829010-R	09/16/11	01/18/12	02/23/12	02/24/12	02/27/12
11462628	EPA1-SB08W-05	Fillet	10180829011	09/27/11	01/18/12	02/02/12	02/06/12	02/07/12
11462629	EPA1-SB08W-05	Carcass	10180829012	09/27/11	01/18/12	02/02/12	02/06/12	02/07/12
11462630	EPA1-SB08W-01	Fillet	10180829013	09/27/11	01/18/12	02/02/12	02/06/12	02/08/12
11462631	EPA1-SB08W-01	Carcass	10180829014	09/27/11	01/18/12	02/02/12	02/06/12	02/08/12
11462632	EPA1-SB11W-05	Fillet	10180829015	09/28/11	01/18/12	02/02/12	02/06/12	02/08/12
11462633	EPA1-SB11W-05	Carcass	10180829016	09/28/11	01/18/12	02/02/12	02/06/12	02/08/12
11462634	EPA1-SB110E-04	Fillet	10180830001	09/28/11	01/18/12	02/02/12	02/06/12	02/08/12
11462635	EPA1-SB110E-04	Carcass	10180830002	09/28/11	01/18/12	02/02/12	02/06/12	02/08/12
11462636	EPA1-SB09E-05	Fillet	10180830003	09/28/11	01/18/12	02/02/12	02/06/12	02/08/12
11462637	EPA1-SB09E-05	Carcass	10180830004	09/28/11	01/18/12	02/02/12	02/06/12	02/08/12
11462638	EPA1-SB05W-03	Fillet	10177246003-R	09/28/11	12/02/11	12/16/11	12/20/11	12/20/11
11462639	EPA1-SB05W-03	Carcass	10177246004-R	09/28/11	12/02/11	12/16/11	12/20/11	12/20/11
11462640	EPA1-SB04E-06	Fillet	10180830005	09/29/11	01/18/12	02/02/12	02/06/12	02/08/12
11462641	EPA1-SB04E-06	Carcass	10180830006	09/29/11	01/18/12	02/02/12	02/06/12	02/08/12
11462642	EPA1-SB04E-02	Fillet	10180830007	09/29/11	01/18/12	02/02/12	02/06/12	02/08/12
11462643	EPA1-SB04E-02	Carcass	10180830008	09/29/11	01/18/12	02/02/12	02/06/12	02/08/12
11462644	EPA1-SB05W-02	Fillet	10180830009	10/02/11	01/18/12	02/02/12	02/06/12	02/08/12
11462645	EPA1-SB05W-02	Carcass	10180830010	10/02/11	01/18/12	02/02/12	02/06/12	02/09/12
11462646	EPA1-SB05E-03	Fillet	10180830011	10/03/11	01/18/12	02/02/12	02/06/12	02/09/12
11462647	EPA1-SB05E-03	Carcass	10180830012	10/03/11	01/18/12	02/02/12	02/06/12	02/09/12
11462648	EPA1-SB05E-02	Fillet	10177246005-R	10/03/11	12/02/11	12/16/11	12/20/11	12/20/11
11462649	EPA1-SB05E-02	Carcass	10177246006-R	10/03/11	12/02/11	12/16/11	12/20/11	12/21/11
11462650	EPA1-SB07E-05	Fillet	10180830013	10/03/11	01/18/12	02/02/12	02/06/12	02/09/12
11462651	EPA1-SB07E-05	Carcass	10180830014	10/03/11	01/18/12	02/02/12	02/06/12	02/14/12
11462652	EPA1-SB07E-06	Fillet	10180830015	10/03/11	01/18/12	02/02/12	02/06/12	02/15/12
11462653	EPA1-SB07E-06	Carcass	10180830016	10/03/11	01/18/12	02/02/12	02/06/12	02/14/12
11462654	EPA1-SB07E-04	Fillet	1018082601-R	10/03/11	01/18/12	02/23/12	02/24/12	02/15/12
11462655	EPA1-SB07E-04	Carcass	1018082602-R	10/03/11	01/18/12	02/23/12	02/24/12	02/26/12
11462656	EPA1-SB06E-02	Fillet	1018082603	10/03/11	01/18/12	02/02/12	02/06/12	02/07/12

EPA Sample No.	EPA Station Locations	Sample Description	Lab Sample No.	Collection Dates	VTSR *	Extraction Dates	Extract Clean-Up	Analysis Dates (1)
11462657	EPA1-SB06E-02	Carcass	1018082604-R	10/03/11	01/18/12	02/23/12	02/24/12	02/27/12
11462658	EPA1-SB06W-04	Fillet	10180826-5-R	10/06/11	01/18/12	02/23/12	02/24/12	02/25/12
11462659	EPA1-SB06W-04	Carcass	1018082606-R	10/06/11	01/18/12	02/23/12	02/24/12	02/26/12
11462660	EPA1-SB05E-04	Fillet	1018082607-R	10/06/11	01/18/12	02/23/12	02/24/12	02/25/12
11462661	EPA1-SB05E-04	Carcass	1018082608-R	10/06/11	01/18/12	02/23/12	02/24/12	02/26/12
11462662	EPA1-SB06W-01	Fillet	1018082609-R	10/07/11	01/18/12	02/23/12	02/24/12	02/26/12
11462663	EPA1-SB06W-01	Carcass	1018082610-R	10/07/11	01/18/12	02/23/12	02/24/12	02/26/12
11462664	Mix Blender Blank	Mix F/C Blender Blank	10180870001	11/23/11	01/18/12	01/25/12	01/25/12	01/30/12
11462665	Carcass Blender Blank	Carcass Blender Blank	10180870002	11/30/11	01/18/12	01/25/12	01/25/12	01/30/12
11462666	Fillet Blender Blank	Fillet Blender Blank	10180870003	12/08/11	01/18/12	01/25/12	01/25/12	01/30/12
11462667	Carcass Blender Blank	Carcass Blender Blank	10180870004	12/08/11	01/18/12	01/25/12	01/25/12	01/30/12

* VTSR – Verified Time of Sample Receipt at the laboratory

DATA QUALIFICATIONS

The following comments refer to the laboratory performance in meeting the Quality Control Specifications outlined in the Quality Assurance Project Plan for the Portland Harbor RI/FS Addendum for the Small-Mouth Bass Fish Tissue Sampling and Analysis Quality Assurance Project Plan (QAPP), and the technical specifications of Method 1668C. Some of the data quality elements were qualified using the reviewer's professional judgment. The conclusions presented herein are based on the information provided for the review.

The following QA elements were evaluated against the method specified technical acceptance criteria during data validation:

- Sample Handling and Sample Conditions Upon Receipt at the Laboratory
- Holding Time
- Instrument Performance
- Initial and Continuing Calibrations
- On-going Precision and Recovery
- Retention Time and Compound Elution
- Internal Standards Recovery
- Clean-up Standards Recovery
- Injection Standards Recovery
- Analytical Sequence and Instrument Stability
- Compound Identification
- Compound Quantitation and Detection Limits
- Blanks Analysis
- Toxicity Equivalence Quotients (TEQ)

All of the method and project specified QC and technical acceptance criteria were met by all analysis with a few exceptions below:

BLANK ANALYSES Associated results were flagged accordingly: $\geq$5x blank value is flagged "J", estimated; <5x Blank value = "U", non-detects.

- Target PCB congeners were detected at trace levels in the following method blanks.
    - Blank 31517 – associated with samples extracted on 2/2/12: PCB18/30, PCB 32 and PCB 20/28
    - Blank 31761 – associated with samples extracted on 2/23/12: PCB 18/30 and PCB 20/28
    - Blank 31109 - associated with samples extracted on 12/16/11: PCBs 8, 18/30, 20/28, 31, 32, 52, 44/47/65 and 61/70/74/76
    - Blank 31424- associated with samples extracted on 1/25/11: PCBs 11 & 15.

- The following target compounds were flagged due to the contamination of proof blank (rinsates collected off tissuemizers/blender after each batch of homogenization):

    - 11462664 - Rinsate collected during sample homogenization on 11/23/11
        - Trace levels of 2, 3, 4'-TrCB, 2, 2'-DiCB, 2, 4', 5-TrCB. PCBs20/28 and 3, 4, 4'-TrCB were detected.
    - 11464665 - Rinsate collected during sample homogenization on 11/30/11:
        - Trace levels of 4 ,4'-DiCB was detected
    - 11462666 – Rinsate Blank collected during sample homogenization on 12/8/11.
        - Trace levels of PCBs 2, 4', 5-TrCB and 2, 2'-DiCB were detected
    - 11264667 – Rinsate blank collected on 12/8/11 during sample homogenization
        - Trace level of 4, 4'-DiCB.
    - When detected in the associated samples, the concentrations of the contaminants listed above were greater than 5x the values in their respective rinsate blank(s). No sample result was qualified on the basis of rinsate contamination.

Analytical Data:

The fish fillet % Lipids ranged from 0.35 – 3.71%. The fish carcass %lipids range up to a high end of 12.7%. Only 32 fish tissue samples had % lipids that were ≤3%. The variability in %lipids indicates the complexity of the sample matrix and explains the chromatographic interferences encountered during analysis. Most of the samples had multiple analyses due to the concentration levels of PCB congeners and interferences present in the samples. Some of the samples had several dilutions and some of the final dilutions reported were still above the instrument's linear range. These values lab maybe biased, were flagged "DN or DN2" by the lab and were qualified estimated, "J", by this reviewer. Sample results with heavy interferences were also qualified estimated, "J".

Laboratory Contact

The laboratory was not contacted for this review.

Overall Assessment

All of the samples were analyzed in accordance with the method specifications. Less than 1% of the 11,150 total data points were qualified estimated or non-detects due to method and proof blank contamination, chromatographic interferences or chromatographic peak saturation. No other reported results were qualified. The data, as qualified, are acceptable and can be used for all purposes.

Data Qualifiers		
	U	The analyte was not detected at or above the reported result.
	J	The analyte was positively identified. The associated numerical result is an estimate.
	UJ	The analyte was not detected at or above the reported estimated result. The associated numerical value is an estimate of the quantitation limit of the analyte in this sample.
	R	The data are unusable for all purposes.
	N	There is evidence the analyte is present in this sample.
	JN	There is evidence that the analyte is present. The associated numerical result is an estimate.