Appendix B

PCB Analytical Data

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Pierce Mill Cove

Post-dredge Sediment Cores

-PCB Analytical Results
-QA/QC Summaries and Data
-Lab Qualifiers
-Chain of Custodies

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Appendix B

2008 Post-Dredge Sediment PCB Analytical Results

Station Id	bb28			CC27			D25		
Collection Date	12/05/2008			12/05/2008			12/05/2008		
Fraction	TOTAL			TOTAL			TOTAL		
Field Qc Code	SA			SA			SA		
Samp Id	S-08C-bb28-00-10			S-08C-CC27-00-09			S-08C-D25-00-07		
Description	Result	Final Qual	Unit	Result	Final Qual	Unit	Result	Final Qual	Unit
2,4'-Dicb	0.14		MG/KG_DRYWT	0.53		MG/KG_DRYWT	0.29		MG/KG_DRYWT
2,2',5-Tricb	0.27		MG/KG_DRYWT	1.24		MG/KG_DRYWT	0.6		MG/KG_DRYWT
2,4,4'-Tricb	0.65		MG/KG_DRYWT	3.01		MG/KG_DRYWT	1.3		MG/KG_DRYWT
2,2',3,5'-Tetracb	0.35		MG/KG_DRYWT	2.4	p	MG/KG_DRYWT	0.83		MG/KG_DRYWT
2,2',5,5'-Tetracb	0.67		MG/KG_DRYWT	4.2		MG/KG_DRYWT	1.44		MG/KG_DRYWT
2,3',4,4'-Tetracb	0.26		MG/KG_DRYWT	0.69		MG/KG_DRYWT	0.62		MG/KG_DRYWT
2,2',4,5,5'-Pentacb	0.36		MG/KG_DRYWT	1.25		MG/KG_DRYWT	0.97		MG/KG_DRYWT
2,3,3',4,4'-Pentacb	0.08		MG/KG_DRYWT	0.21		MG/KG_DRYWT	0.24		MG/KG_DRYWT
2,3',4,4',5-Pentacb	0.36		MG/KG_DRYWT	1.15		MG/KG_DRYWT	0.93		MG/KG_DRYWT
2,2',3,3',4,4'-Hexacb	0.05		MG/KG_DRYWT	0.2		MG/KG_DRYWT	0.15		MG/KG_DRYWT
2,2',3,4,4',5'-Hexacb	0.24		MG/KG_DRYWT	1.13		MG/KG_DRYWT	0.73		MG/KG_DRYWT
2,2',4,4',5,5'-Hexacb	0.33		MG/KG_DRYWT	1.54		MG/KG_DRYWT	0.88		MG/KG_DRYWT
2,2',3,3',4,4',5-Heptacb	0.04		MG/KG_DRYWT	0.17		MG/KG_DRYWT	0.09		MG/KG_DRYWT
2,2',3,4,4',5,5'-Heptacb	0.04		MG/KG_DRYWT	0.23		MG/KG_DRYWT	0.12		MG/KG_DRYWT
2,2',3,4',5,5',6-Heptacb	0.03		MG/KG_DRYWT	0.22		MG/KG_DRYWT	0.08		MG/KG_DRYWT
2,2',3,3',4,4',5,6-Octacb	0.02	U	MG/KG_DRYWT	0.03	p	MG/KG_DRYWT	0.01	pJ	MG/KG_DRYWT
2,2',3,3',4,4',5,5',6-Nonacb	0.02	U	MG/KG_DRYWT	0.02	J	MG/KG_DRYWT	0.01	J	MG/KG_DRYWT
Decacb - Congener	0.02	U	MG/KG_DRYWT	0.03	U	MG/KG_DRYWT	0.02	U	MG/KG_DRYWT
Total PCB Congeners (sum CONG x factor)	10.		MG/KG_DRYWT	47.		MG/KG_DRYWT	24.		MG/KG_DRYWT
Total MonoCB	0.04	U	MG/KG_DRYWT						
Total DiCB	0.59		MG/KG_DRYWT						
Total TriCB	2.88		MG/KG_DRYWT						
Total TetraCB	3.6		MG/KG_DRYWT						
Total PentaCB	2.58		MG/KG_DRYWT						
Total HexaCB	1.43		MG/KG_DRYWT						
Total HeptaCB	0.3	J	MG/KG_DRYWT						
Total OctaCB	0.01	J	MG/KG_DRYWT						
Total NonaCB	0.06	U	MG/KG_DRYWT						
DecaCB - Homologue	0.02	U	MG/KG_DRYWT						
Total PCB Homologues (sum HOM)	11.		MG/KG_DRYWT						

Appendix B

2008 Post-Dredge Sediment PCB Analytical Results

Station Id	D32			T22			T38		
Collection Date	12/05/2008			12/05/2008			12/05/2008		
Fraction	TOTAL			TOTAL			TOTAL		
Field Qc Code	SA			SA			SA		
Samp Id	S-08C-D32-00-05			S-08C-T22-00-04			S-08C-T38-00-10		
Description	Result	Final Qual	Unit	Result	Final Qual	Unit	Result	Final Qual	Unit
2,4'-Dicb	0.3		MG/KG_DRYWT	0.49		MG/KG_DRYWT	0.14	p	MG/KG_DRYWT
2,2',5-Tricb	0.6		MG/KG_DRYWT	1.03		MG/KG_DRYWT	0.28		MG/KG_DRYWT
2,4,4'-Tricb	1.17		MG/KG_DRYWT	2.16		MG/KG_DRYWT	0.61		MG/KG_DRYWT
2,2',3,5'-Tetracb	0.67		MG/KG_DRYWT	1.31		MG/KG_DRYWT	0.36		MG/KG_DRYWT
2,2',5,5'-Tetracb	1.29		MG/KG_DRYWT	2.78		MG/KG_DRYWT	0.6		MG/KG_DRYWT
2,3',4,4'-Tetracb	0.42		MG/KG_DRYWT	0.71		MG/KG_DRYWT	0.39		MG/KG_DRYWT
2,2',4,5,5'-Pentacb	0.68		MG/KG_DRYWT	1.26		MG/KG_DRYWT	0.58		MG/KG_DRYWT
2,3,3',4,4'-Pentacb	0.13		MG/KG_DRYWT	0.22		MG/KG_DRYWT	0.11		MG/KG_DRYWT
2,3',4,4',5-Pentacb	0.67		MG/KG_DRYWT	1.21		MG/KG_DRYWT	0.55		MG/KG_DRYWT
2,2',3,3',4,4'-Hexacb	0.11		MG/KG_DRYWT	0.17		MG/KG_DRYWT	0.07		MG/KG_DRYWT
2,2',3,4,4',5'-Hexacb	0.51		MG/KG_DRYWT	0.94		MG/KG_DRYWT	0.34		MG/KG_DRYWT
2,2',4,4',5,5'-Hexacb	0.67		MG/KG_DRYWT	1.32		MG/KG_DRYWT	0.46		MG/KG_DRYWT
2,2',3,3',4,4',5-Heptacb	0.07		MG/KG_DRYWT	0.13		MG/KG_DRYWT	0.04		MG/KG_DRYWT
2,2',3,4,4',5,5'-Heptacb	0.09		MG/KG_DRYWT	0.18		MG/KG_DRYWT	0.06		MG/KG_DRYWT
2,2',3,4',5,5',6-Heptacb	0.06		MG/KG_DRYWT	0.15		MG/KG_DRYWT	0.04		MG/KG_DRYWT
2,2',3,3',4,4',5,6-Octacb	0.01	pJ	MG/KG_DRYWT	0.02	pJ	MG/KG_DRYWT	0.02	U	MG/KG_DRYWT
2,2',3,3',4,4',5,5',6-Nonacb	0.01	pJ	MG/KG_DRYWT	0.02	J	MG/KG_DRYWT	0.01	pJ	MG/KG_DRYWT
Decacb - Congener	0.03	U	MG/KG_DRYWT	0.03	U	MG/KG_DRYWT	0.02	U	MG/KG_DRYWT
Total PCB Congeners (sum CONG x factor)	19.		MG/KG_DRYWT	37.		MG/KG_DRYWT	12.		MG/KG_DRYWT
Total MonoCB									
Total DiCB									
Total TriCB									
Total TetraCB									
Total PentaCB									
Total HexaCB									
Total HeptaCB									
Total OctaCB									
Total NonaCB									
DecaCB - Homologue									
Total PCB Homologues (sum HOM)									

Appendix B

2008 Post-Dredge Sediment PCB Analytical Results

Station Id	X33		
Collection Date			12/05/2008
Fraction	TOTAL		
Field Qc Code	SA		
Samp Id	S-08C-X33-00-11		
Description	**Result**	**Final Qual**	**Unit**
2,4'-Dicb	0.5		MG/KG_DRYWT
2,2',5-Tricb	1.08		MG/KG_DRYWT
2,4,4'-Tricb	2.3		MG/KG_DRYWT
2,2',3,5'-Tetracb	1.39		MG/KG_DRYWT
2,2',5,5'-Tetracb	2.38		MG/KG_DRYWT
2,3',4,4'-Tetracb	1.29		MG/KG_DRYWT
2,2',4,5,5'-Pentacb	2.17		MG/KG_DRYWT
2,3,3',4,4'-Pentacb	0.37		MG/KG_DRYWT
2,3',4,4',5-Pentacb	1.93		MG/KG_DRYWT
2,2',3,3',4,4'-Hexacb	0.22		MG/KG_DRYWT
2,2',3,4,4',5'-Hexacb	1.24		MG/KG_DRYWT
2,2',4,4',5,5'-Hexacb	1.67		MG/KG_DRYWT
2,2',3,3',4,4',5-Heptacb	0.17		MG/KG_DRYWT
2,2',3,4,4',5,5'-Heptacb	0.23		MG/KG_DRYWT
2,2',3,4',5,5',6-Heptacb	0.16		MG/KG_DRYWT
2,2',3,3',4,4',5,6-Octacb	0.02	pJ	MG/KG_DRYWT
2,2',3,3',4,4',5,5',6-Nonacb	0.02	J	MG/KG_DRYWT
Decacb - Congener	0.03	U	MG/KG_DRYWT
Total PCB Congeners (sum CONG x factor)	45.		MG/KG_DRYWT
Total MonoCB	0.05	J	MG/KG_DRYWT
Total DiCB	1.83		MG/KG_DRYWT
Total TriCB	10.79		MG/KG_DRYWT
Total TetraCB	14.81		MG/KG_DRYWT
Total PentaCB	13.52		MG/KG_DRYWT
Total HexaCB	6.31		MG/KG_DRYWT
Total HeptaCB	1.28		MG/KG_DRYWT
Total OctaCB	0.22	J	MG/KG_DRYWT
Total NonaCB	0.04	J	MG/KG_DRYWT
DecaCB - Homologue	0.01	J	MG/KG_DRYWT
Total PCB Homologues (sum HOM)	49.		MG/KG_DRYWT

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PCB Congeners – Sediment QA/QC Summary
Batch 09-0015

PROJECT: USACE – New Bedford Harbor Environmental Monitoring
PARAMETER: PCB Congeners
LABORATORY: Battelle, Duxbury, MA
MATRIX: Sediment
SAMPLE CUSTODY: Sediment samples were collected between 12/3/2008 – 12/5/2008 and hand delivered to the Battelle Duxbury Chemistry Sample Custodian on 1/14/2009. The samples were received in good condition and no custody issues were noted. Samples were logged into Battelle LIMS and received unique IDs. They were stored in the walk-in freezer until preparation could begin.

	Reference Method	Method Blank	Surrogate Recovery	LCS Recovery	MS Recovery	MS/MSD Relative Percent Difference	Detection Limits (mg/kg dry wt)
PCB Congeners	EPA 8082M	<ssRL	40-120% Recovery	40-120% Recovery	40-120% Recovery (analyte conc. in MS must be >5x background)	≤30% RPD (analytes must be > 5x MDL to be used for data quality assessment)	RL: 0.03

METHOD: Sediment samples were extracted for PCB congeners following modified EPA Method 3545. Sediments were air-dried overnight, and approximately 5 g of sediment was spiked with surrogates and extracted using an Accelerated Solvent Extractor (ASE). The extract was concentrated, processed through activated copper, florisil cleanup column, and concentrated. Next, the extract was concentrated, fortified with internal standards (IS), and then analyzed using gas chromatography/electron capture detector (GC/ECD), following modified EPA Method 8082. Sample data were quantified by the method of internal standards, using the spiked IS compounds.

HOLDING TIMES: Sediments of this batch were extracted within 1 year of sample holding time for frozen sediments. All extracts were analyzed within 40 days of extract holding time.

Batch	Collection Date	Extraction Date	Analysis Date
09-0015	12/03/2008 – 12/05/2008	1/29/2009	2/13/2009 – 2/15/2009

09-0015

Sample ID	**Battelle ID**
S-08D-C008-049-00-05	Q6160
S-08D-C008-023-00-05	Q6161
S-08C-X33-00-11	Q6171
S-08C-T38-00-10	Q6172
S-08C-CC27-00-09	Q6173
S-08C-T22-00-04	Q6174
S-08C-D32-00-05	Q6175
S-08C-D25-00-07	Q6176
S-08C-bb28-00-10	Q6177

PCB Congeners – Sediment QA/QC Summary
Batch 09-0015

BLANK: A procedural blank (PB) was prepared with each analytical batch. Blanks were analyzed to ensure the sample extraction and analysis methods were free of contamination.

09-0015 – No target analytes were detected in the procedural blank.

LABORATORY CONTROL SAMPLE: A laboratory control sample (LCS) was prepared with each analytical batch. The percent recoveries of target analytes were calculated to measure data quality in terms of accuracy.

09-0015 – No exceedences noted. All percent recoveries of spiked target analytes were within the laboratory control limit (40-120%).

MATRIX SPIKE/MATRIX SPIKE DUPLICATE: A pair of matrix spike (MS) and matrix spike duplicate samples (MSD) was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure data quality in terms of accuracy. The RPD between percent recoveries was calculated to measure the data quality in terms of precision.

09-0015 – No exceedences noted. All percent recoveries of spiked target analytes were within the laboratory control limit (40-120%). All RPDs met the criteria of <30%.

REPLICATES: Laboratory duplicate analysis was performed with this analytical batch. RPDs between duplicate analyses were calculated to measure data quality in terms of precision.

09-0015 – No exceedences noted. All RPDs between duplicate samples met the criteria of <30%.

SURROGATES: Two surrogate compounds were added prior to extraction, including PCB 34 and PCB 152. The recovery of each surrogate compound was calculated to measure data quality in terms of accuracy (extraction efficiency).

09-0015 – No exceedences noted. All percent recoveries of spiked target analytes were within the laboratory control limit (40-120%).

CALIBRATIONS: The GC/ECD was calibrated with a 6 level curve, with a correlation coefficient of >0.995. Each batch of samples analyzed is bracketed by continuing calibration verification (CCV) sample, run at a frequency of minimally every 24 hours. The %D between the initial calibration (ICAL) and the continuing calibration samples should be <20% for each compound, <15% on average. Additionally an Initial Calibration Check (ICC) sample is run immediately following the ICAL. The ICC is to have a percent difference < 20%.

09-0015 – All calibration criteria were met.

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Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	Procedural Blank
Battelle ID	BM759PB-P
Sample Type	PB
Collection Date	01/29/09
Extraction Date	01/29/09
Analysis Date	02/13/09
Analytical Instrument	ECD
% Moisture	54.07
% Lipid	NA
Matrix	SEDIMENT
Sample Size	4.67
Size Unit-Basis	G_DRY
Units	MG/KG_DRY

Cl2(8)	0.03	U
Cl3(18)	0.03	U
Cl3(28)	0.03	U
Cl4(44)	0.03	U
Cl4(52)	0.03	U
Cl4(66)	0.03	U
Cl5(101)	0.03	U
Cl5(105)	0.03	U
Cl5(118)	0.03	U
Cl6(128)	0.03	U
Cl6(138)	0.03	U
Cl6(153)	0.03	U
Cl7(170)	0.03	U
Cl7(180)	0.03	U
Cl7(187)	0.03	U
Cl8(195)	0.03	U
Cl9(206)	0.03	U
Cl10(209)	0.03	U

Surrogate Recoveries (%)

Cl3(34)	69
Cl6(152)	73

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Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	060208-03: Sand, White Quartz, -50+70			
Battelle ID	BM761LCS-P			
Sample Type	LCS			
Collection Date	01/29/09			
Extraction Date	01/29/09			
Analysis Date	02/14/09			
Analytical Instrument	ECD			
% Moisture	NA			
% Lipid	NA			
Matrix	SEDIMENT			
Sample Size	10.51			
Size Unit-Basis	G_DRY			
Units	MG/KG_DRY	Target	% Recovery	Qualifier
Cl2(8)	0.31	0.38	81	
Cl3(18)	0.3	0.38	79	
Cl3(28)	0.29	0.38	76	
Cl4(44)	0.29	0.38	76	
Cl4(52)	0.28	0.38	74	
Cl4(66)	0.27	0.38	71	
Cl5(101)	0.28	0.38	73	
Cl5(105)	0.32	0.38	84	
Cl5(118)	0.29	0.38	76	
Cl6(128)	0.29	0.38	76	
Cl6(138)	0.28	0.38	73	
Cl6(153)	0.31	0.38	81	
Cl7(170)	0.3	0.38	78	
Cl7(180)	0.3	0.38	79	
Cl7(187)	0.29	0.38	76	
Cl8(195)	0.3	0.38	79	
Cl9(206)	0.31	0.38	81	
Cl10(209)	0.32	0.38	84	

Surrogate Recoveries (%)

Cl3(34)	76
Cl6(152)	80

Battelle
The Business of Innovation

Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	S-08C-T38-00-10		S-08C-T38-00-10				
Battelle ID	Q6172-P		Q6172MS-P				
Sample Type	SA		MS				
Collection Date	12/05/08		12/5/2008				
Extraction Date	01/29/09		1/29/2009				
Analysis Date	02/14/09		2/14/2009				
Analytical Instrument	ECD		ECD				
% Moisture	39.07		39.52				
% Lipid	NA		NA				
Matrix	SEDIMENT		SEDIMENT				
Sample Size	6.25		6.14				
Size Unit-Basis	G_DRY		G_DRY				
Units	MG/KG_DRY		MG/KG_DRY		Target	% Recovery	Qualifier
Cl2(8)	0.14	p	0.67		0.65	81	
Cl3(18)	0.28		0.8	E	0.65	80	
Cl3(28)	0.61		1.15	E	0.65	83	
Cl4(44)	0.36		0.89	E	0.65	81	
Cl4(52)	0.6		1.13	E	0.65	81	
Cl4(66)	0.39		1.1	E	0.65	109	
Cl5(101)	0.58		1.12	E	0.65	83	
Cl5(105)	0.11		0.66		0.65	84	
Cl5(118)	0.55		1.1	E	0.65	84	
Cl6(128)	0.07		0.57		0.66	76	
Cl6(138)	0.34		0.87	E	0.65	81	
Cl6(153)	0.46		1	E	0.65	83	
Cl7(170)	0.04		0.57		0.65	81	
Cl7(180)	0.06		0.59		0.65	81	
Cl7(187)	0.04		0.55		0.65	78	
Cl8(195)	0.02	U	0.54		0.65	83	
Cl9(206)	0.01	pJ	0.56		0.65	84	
Cl10(209)	0.02	U	0.56		0.65	86	

Surrogate Recoveries (%)

Cl3(34)	71	77
Cl6(152)	77	82

Battelle
The Business of Innovation

Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	S-08C-T38-00-10						
Battelle ID	Q6172MSD-P						
Sample Type	MSD						
Collection Date	12/5/2008						
Extraction Date	1/29/2009						
Analysis Date	2/14/2009						
Analytical Instrument	ECD						
% Moisture	39.01						
% Lipid	NA						
Matrix	SEDIMENT						
Sample Size	6.51						
Size Unit-Basis	G_DRY						
Units	MG/KG_DRY		Target	% Recovery	Qualifier	RPD (%)	Qualifier
Cl2(8)	0.65		0.62	83		2.4	
Cl3(18)	0.77	E	0.62	80		0.0	
Cl3(28)	1.17	E	0.62	91		9.2	
Cl4(44)	0.85	E	0.62	80		1.2	
Cl4(52)	1.07	E	0.61	76		6.4	
Cl4(66)	0.9	E	0.62	83		27.1	
Cl5(101)	1.06	E	0.62	78		6.2	
Cl5(105)	0.61		0.62	81		3.6	
Cl5(118)	1.05	E	0.62	81		3.6	
Cl6(128)	0.53		0.62	74		2.7	
Cl6(138)	0.81	E	0.62	76		6.4	
Cl6(153)	0.94	E	0.62	78		6.2	
Cl7(170)	0.53		0.62	79		2.5	
Cl7(180)	0.55		0.62	79		2.5	
Cl7(187)	0.5		0.62	75		3.9	
Cl8(195)	0.5		0.62	81		2.4	
Cl9(206)	0.52		0.62	83		1.2	
Cl10(209)	0.53		0.62	86		0.0	

Surrogate Recoveries (%)

Cl3(34)	82
Cl6(152)	78

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Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	S-08C-bb28-00-10		S-08C-bb28-00-10			
Battelle ID	Q6177-P		Q6177DUP-P			
Sample Type	SA		QADU			
Collection Date	12/05/08		12/5/2008			
Extraction Date	01/29/09		1/29/2009			
Analysis Date	02/15/09		2/15/2009			
Analytical Instrument	ECD		ECD			
% Moisture	50.17		50.8			
% Lipid	NA		NA			
Matrix	SEDIMENT		SEDIMENT			
Sample Size	5.15		5			
Size Unit-Basis	G_DRY		G_DRY			
Units	MG/KG_DRY		MG/KG_DRY		RPD	Qualifier
Cl2(8)	0.14		0.17		19.4	
Cl3(18)	0.27		0.3		10.5	
Cl3(28)	0.65		0.77		16.9	
Cl4(44)	0.35		0.37		5.6	
Cl4(52)	0.67		0.71		5.8	
Cl4(66)	0.26		0.31		17.5	
Cl5(101)	0.36		0.41		13.0	
Cl5(105)	0.08		0.09		11.8	
Cl5(118)	0.36		0.35		2.8	
Cl6(128)	0.05		0.05		0.0	
Cl6(138)	0.24		0.23		4.3	
Cl6(153)	0.33		0.31		6.3	
Cl7(170)	0.04		0.03		28.6	
Cl7(180)	0.04		0.04		0.0	
Cl7(187)	0.03		0.03		0.0	
Cl8(195)	0.02	U	0.03	U	NA	
Cl9(206)	0.02	U	0.01	pJ	NA	
Cl10(209)	0.02	U	0.03	U	NA	

Surrogate Recoveries (%)

Cl3(34)	84	92
Cl6(152)	85	80

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PCB Homologues – SEDIMENT QA/QC SUMMARY
Batch 09-0015

PROJECT: New Bedford Harbor Water Quality Monitoring
PARAMETER: PCB Homologues
LABORATORY: Battelle, Duxbury, MA
MATRIX: Sediment
SAMPLE CUSTODY: Sediment samples were collected between 12/3/2008 – 12/5/2008 and hand delivered to the Battelle Duxbury Chemistry Sample Custodian on 1/14/2009. The samples were received in good condition and no custody issues were noted. Samples were logged into Battelle LIMS and received unique IDs. They were stored in the walk-in freezer until preparation could begin. All sediment samples were extracted for PCB congener analyses by GC/ECD. 7.5% percent of the sediment samples were chosen for PCB homologue analysis. From this batch samples S-08D-C008-049-00-05, S-08D-C008-023-00-05, S-08C-X33-00-11, and S-08C-bb28-00-10 were analyzed for PCB homologues.

	Reference Method	Method Blank	Surrogate Recovery	LCS/MS/MSD Recovery	Sample Replicate Relative Precision	Reporting Limits (mg/Kg dry wt)
PCB Homologues	1668A & 8270D	< ss-RL	40-120%	40-120% MS spike must be >5 x background	<30% RPD MS spike must be >5 x background	0.03 – 0.84

METHOD: Sediment samples were extracted for PCBs following modified EPA Method 3545. Sediments were air-dried overnight, and approximately 5 g of sediment was spiked with surrogates and extracted using an Accelerated Solvent Extractor (ASE). The extract was concentrated, processed through activated copper, florisil cleanup column, and concentrated. Extracts were then fortified with internal standards (IS). Extracts designated for PCB homologue analysis were analyzed using gas chromatography/mass spectrometry (GC/MS), following Battelle SOP 5-315 which is based on key components of EPA Methods 1668A and 8270D. Sample data were quantified by the method of internal standards, using the IS compounds.

HOLDING TIMES: These frozen sediment samples were extracted within 1-year holding time. Extracts were analyzed within 40 days of extraction. All holding times were met.

Batch	Collection Date	Extraction Date	Analysis Date
09-0015	12/03/08-12/05/08	1/29/09	2/07/09-2/08/09

09-0015

Sample ID	**Battelle ID**
S-08D-C008-049-00-05	Q6160
S-08D-C008-023-00-05	Q6161
S-08C-X33-00-11	Q6171
S-08C-bb28-00-10	Q6177

PCB Homologues – SEDIMENT QA/QC SUMMARY
Batch 09-0015

BLANK: A procedural blank (PB) was prepared with the analytical batch. Blanks are analyzed to ensure the sample extraction and analysis methods were free of contamination.

09-0015 – No exceedences noted. No target analytes were detected in the procedural blank at a concentration greater than the sample-specific reporting limit.

LABORATORY CONTROL SAMPLE: A laboratory control sample (LCS) was prepared with the analytical batch. The percent recoveries of target analytes were calculated to measure data quality in terms of accuracy.

09-0015 – No exceedences noted. All recoveries were within the laboratory control limits (40%-120%).

MATRIX SPIKE/MATRIX SPIKE DUPLICATE: A pair of matrix spike (MS) and matrix spike duplicate samples (MSD) was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure data quality in terms of accuracy. The RPD between percent recoveries was calculated to measure the data quality in terms of precision.

09-0015 – No exceedences noted. All percent recoveries of spiked target analytes were within the laboratory control limit (40-120%). All RPDs met the criteria of <30%.

REPLICATES: Laboratory duplicate analysis was performed with this analytical batch. RPDs between duplicate analyses were calculated to measure data quality in terms of precision.

09-0015 – No exceedences noted. All RPDs between duplicate samples met the criteria of <30%.

SURROGATES: Two surrogate compounds were added prior to extraction, including PCB 34 and PCB 152. The recovery of each surrogate compound was calculated to measure data quality in terms of accuracy (extraction efficiency).

09-0015 – No exceedences noted. All recoveries were within the laboratory control limits (40%-120%).

CALIBRATION: The GC/MS is calibrated with a minimum of a 6-point curve. The co-efficient of determination must be > 0.995 for each target analyte in the initial calibration (ICAL). Each batch of samples analyzed is bracketed by a continuing calibration verification (CCV) sample, run at a frequency of every 12 hours (minimally). This percent difference (PD) for the CCV should be <25% for individual analytes. Additionally an instrument calibration check (ICC) sample was run with the initial calibration. The PD for the ICC should be < 25% for each analyte.

09-0015 – No initial calibration exceedences noted.
No CCV exceedence.
No ICC exceedence.

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Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	Procedural Blank	
Battelle ID	BM759PB-P	
Sample Type	PB	
Collection Date	01/29/09	
Extraction Date	01/29/09	
Analysis Date	02/07/09	
Analytical Instrument	MS	
% Moisture	54.07	
% Lipid	NA	
Matrix	SEDIMENT	
Sample Size	4.67	
Size Unit-Basis	G_DRY	
Units	MG/KG_DRY	
LOC 1	0.06	U
LOC 2	0.3	U
LOC 3	0.45	U
LOC 4	0.84	U
LOC 5	0.69	U
LOC 6	0.78	U
LOC 7	0.6	U
LOC 8	0.3	U
LOC 9	0.09	U
LOC 10	0.03	U

Surrogate Recoveries (%)

Cl3(34)	72
Cl6(152)	79

Battelle
The Business of Innovation

Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	060208-03: Sand, White Quartz, -50+70			
Battelle ID	BM760LCS-P			
Sample Type	LCS			
Collection Date	01/29/09			
Extraction Date	01/29/09			
Analysis Date	02/07/09			
Analytical Instrument	MS			
% Moisture	NA			
% Lipid	NA			
Matrix	SEDIMENT			
Sample Size	10.24			
Size Unit-Basis	G_DRY			
Units	MG/KG_DRY	Target	% Recovery	Qualifier
LOC 1	0.1	0.10	100	
LOC 2	0.17	0.15	115	
LOC 3	0.26	0.25	104	
LOC 4	0.47	0.45	105	
LOC 5	0.58	0.55	106	
LOC 6	0.57	0.55	104	
LOC 7	0.35	0.33	105	
LOC 8	0.28	0.30	94	
LOC 9	0.09	0.10	90	
LOC 10	0.04	0.05	79	

Surrogate Recoveries (%)

Cl3(34)	88
Cl6(152)	98

Battelle
The Business of Innovation

Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	S-08C-X33-00-11	S-08C-X33-00-11			
Battelle ID	Q6171-P	Q6171MS-P			
Sample Type	SA	MS			
Collection Date	12/05/08	12/5/2008			
Extraction Date	01/29/09	1/29/2009			
Analysis Date	02/07/09	2/7/2009			
Analytical Instrument	MS	MS			
% Moisture	60.51	60.55			
% Lipid	NA	NA			
Matrix	SEDIMENT	SEDIMENT			
Sample Size	4.01	4.06			
Size Unit-Basis	G_DRY	G_DRY			
Units	MG/KG_DRY	MG/KG_DRY	Target	% Recovery	Qualifier
LOC 1	0.05 J	0.24	0.25	76	
LOC 2	1.83	2.16	0.37	89	
LOC 3	10.79	11.57	0.63	124	
LOC 4	14.81	15.85	1.13	92	
LOC 5	13.52	14.91	1.38	101	
LOC 6	6.31	7.57	1.38	92	
LOC 7	1.28	2.04	0.84	90	
LOC 8	0.22 J	0.91	0.75	92	
LOC 9	0.04 J	0.24	0.25	80	
LOC 10	0.01 J	0.1	0.13	70	

Surrogate Recoveries (%)

Cl3(34)	84	83
Cl6(152)	81	79

Analyzed by Fredriksson, Julie
3/3/2009

Not Surrogate Corrected

MS: S09-0015MS-HOM_LR-Final.xls

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Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	S-08C-X33-00-11					
Battelle ID	Q6171MSD-P					
Sample Type	MSD					
Collection Date	12/5/2008					
Extraction Date	1/29/2009					
Analysis Date	2/7/2009					
Analytical Instrument	MS					
% Moisture	60.44					
% Lipid	NA					
Matrix	SEDIMENT					
Sample Size	3.97					
Size Unit-Basis	G_DRY					
Units	MG/KG_DRY	Target	% Recovery	Qualifier	RPD (%)	Qualifier
LOC 1	0.25	0.26	78		2.6	
LOC 2	3.02	0.38	313		111.4	
LOC 3	17.73	0.64	1080		158.8	
LOC 4	24.33	1.15	827		160.0	
LOC 5	22.62	1.41	644		145.8	
LOC 6	10.97	1.41	331		113.0	
LOC 7	2.65	0.86	159		55.4	
LOC 8	1.1	0.77	115		22.2	
LOC 9	0.27	0.26	90		11.8	
LOC 10	0.12	0.13	84		18.2	

Surrogate Recoveries (%)

Cl3(34)	88
Cl6(152)	81

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Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	S-08C-bb28-00-10		S-08C-bb28-00-10			
Battelle ID	Q6177-P		Q6177DUP-P			
Sample Type	SA		QADU			
Collection Date	12/05/08		12/5/2008			
Extraction Date	01/29/09		1/29/2009			
Analysis Date	02/08/09		2/8/2009			
Analytical Instrument	MS		MS			
% Moisture	50.17		50.8			
% Lipid	NA		NA			
Matrix	SEDIMENT		SEDIMENT			
Sample Size	5.15		5			
Size Unit-Basis	G_DRY		G_DRY			
Units	MG/KG_DRY		MG/KG_DRY		RPD	Qualifier
LOC 1	0.04	U	0.06	U	NA	
LOC 2	0.59		0.56		5.2	
LOC 3	2.88		2.97		3.1	
LOC 4	3.6		3.9		8.0	
LOC 5	2.58		2.64		2.3	
LOC 6	1.43		1.46		2.1	
LOC 7	0.3	J	0.3	J	NA	
LOC 8	0.01	J	0.01	J	NA	
LOC 9	0.06	U	0.09	U	NA	
LOC 10	0.02	U	0.03	U	NA	

Surrogate Recoveries (%)

Cl3(34)	82	82
Cl6(152)	76	76

Qualifiers:

B	Analyte concentration found in the sample at < 5 x the level detected in the procedural blank
D	Dilution run. Initial run outside linear range of instrument
E	Estimate, result is greater than the highest concentration level in the calibration
H	Surrogate diluted out. Used when surrogate recovery is affected by excessive dilution of the sample extract
J	Analyte detected below the sample specific reporting limit
ME	Significant Matrix Interference - Estimated value
N	Quality Control value is outside the accuracy or precision data quality objective (DQO)
NA	Not applicable
T	Holding time exceeded
U	Analyte not detected at 3:1 signal:noise ratio. Reporting limit is reported.
p	The relative percent difference (RPD) between the values obtained from the dual columns is >40%.

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ShpNo SHP-090121-01

Battelle Project No:

Sample Receipt Form

Approved: ☐ **Authorized** ☐

Project Number: G606422 **Client:** USACE - NED

Received by: Thorn, Jonathan **Date/Time Received:** Friday, January 16, 2009 12:00 AM

No. of Shipping Containers: 1

SHIPMENT

Method of Delivery: Hand Delivered **Tracking Number:** Not Recorded

COC Forms: ☑ **Shipped with samples** ☐ **No Forms**

Cooler(s)/Box(es)

Cntr	Type	Tracking No.	Seal	Seal Condition	Container Condition	Temp C	Smps
1 of 1	No Container		None	Not Applicable	Not Applicable	Ambient	29

Samples

Sample Labels:
☑ Sample labels agree with COC forms
☐ Discrepancies (see Sample Custody Corrective Action Form)

Container Seals:
☐ Tape ☐ Custody Seals ☐ Other Seals (See sample Log)
☑ Seals intact for each shipping container
☐ Seals broken (See sample log for impacted samples)

Condition of Samples:
☑ Sample containers intact
☐ Sample containers broken/leaking (See Custody Corrective Action Form)

Temperature upon receipt (°C): Ambient Temperature Blank used ☐ Yes ☑ No
(Note: If temperature upon receipt differs from required conditions, see sample log comment field)

Samples Acidified: ☐ Yes ☑ No ☑ Unknown

Initial pH 5-9?: ☐ Yes ☐ No ☑ NA
If no, individual sample adjustments on the Auxiliary Sample Receipt Form

Total Residual Chlorine Present?: ☐ Yes ☐ No ☑ NA
If yes, individual sample adjustments on the Auxiliary Sample Receipt Form

Head Space <1% in samples for water VOC analysis: ☐ Yes ☐ No ☑ NA
Individual sample deviations noted on sample log

Samples Containers:
Samples returned in PC-grade jars: ☑ Yes ☐ No ☐ Unknown /Lot No.: Unknown

Storage Location: Chem North: Freezer - F0002 (Walk-in) **BDO IDs Assigned:** Q6149 - Q6177

Samples logged in by: Thorn, Jonathan **Date/Time:** 01/16/2009 12:00 AM

Approved By: **Approved On:**

Authorized By: **Authorized On:**

Battelle

The Business of Innovation

ShpNo SHP-090121-01

Battelle Project No:

Sample Receipt Form Details

Approved: ☐ **Authorized** ☐

Project Number: G606422 **Client:** USACE - NED

Received by: Thorn, Jonathan **Date/Time Received:** Friday, January 16, 2009 12:00 AM

No. of Shipping Containers: 1

BDO Id:	Client Sample ID:	Collection Date:	Login Date:	Ctrs:	Matrix:	Temp:	pH:	TRC:	VOC:	Stored In:	Loc:	No:	Comments:
Q6149	S-08D-C008-30W-00-05	11/20/08 0:00	01/21/09 8:33	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6150	S-08D-C008-30E-00-05	11/20/08 0:00	01/21/09 8:40	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6151	S-08D-NWS-35-00-05	11/20/08 0:00	01/21/09 9:00	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6152	S-08D-NWS-34-00-05	11/20/08 0:00	01/21/09 9:03	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6153	S-08D-NWS-36-00-05	11/20/08 0:00	01/21/09 9:03	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6154	S-08D-NWS-33-00-05	11/20/08 0:00	01/21/09 9:03	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6155	S-08D-NWS-37-00-05	11/20/08 0:00	01/21/09 9:04	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6156	S-08D-NWS-38-00-05	11/20/08 0:00	01/21/09 9:04	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6157	S-08D-NWS-39-00-05	11/20/08 0:00	01/21/09 9:06	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6158	S-08D-C008-038-00-05	12/03/08 0:00	01/21/09 9:07	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6159	S-08D-C008-028-00-05	12/03/08 0:00	01/21/09 9:08	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6160	S-08D-C008-049-00-05	12/03/08 0:00	01/21/09 9:09	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6161	S-08D-C008-023-00-05	12/03/08 0:00	01/21/09 9:10	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6162	S-08D-C008-016-00-05	12/03/08 0:00	01/21/09 9:12	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6163	S-08D-C008-039-00-05	12/03/08 0:00	01/21/09 9:12	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6164	S-08D-C008-040-00-05	12/03/08 0:00	01/21/09 9:13	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6165	S-08D-C008-062-00-05	12/03/08 0:00	01/21/09 9:13	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6166	S-08D-C008-048-00-05	12/03/08 0:00	01/21/09 9:14	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6167	S-08D-C008-033-00-05	12/03/08 0:00	01/21/09 9:14	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6168	S-08D-C008-055-00-05	12/03/08 0:00	01/21/09 9:15	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6169	S-08D-C008-055-00-05-REP	12/03/08 0:00	01/21/09 9:15	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6170	S-08D-C008-010-00-05	12/03/08 0:00	01/21/09 9:16	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6171	S-08C-X33-00-11	12/05/08 0:00	01/21/09 9:16	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6172	S-08C-T38-00-10	12/05/08 0:00	01/21/09 9:17	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6173	S-08C-CC27-00-09	12/05/08 0:00	01/21/09 9:17	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6174	S-08C-T22-00-04	12/05/08 0:00	01/21/09 9:17	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6175	S-08C-D32-00-05	12/05/08 0:00	01/21/09 9:18	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6176	S-08C-D25-00-07	12/05/08 0:00	01/21/09 9:18	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	

Battelle

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ShpNo SHP-090121-01

Battelle Project No:

Sample Receipt Form Details

Approved: ☐ **Authorized** ☐

Project Number: G606422 **Client:** USACE - NED

Received by: Thorn, Jonathan **Date/Time Received:** Friday, January 16, 2009 12:00 AM

No. of Shipping Containers: 1

BDO Id:	Client Sample ID:	Collection Date:	Login Date:	Ctrs:	Matrix:	Temp:	pH:	TRC:	VOC:	Stored In:	Loc:	No:	Comments:
Q6177	S-08C-bb28-00-10	12/05/08 0:00	01/21/09 9:19	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	

Total Samples: 29

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Chain of Custody

Deliver to Battelle
Duxbury - Lab

397 Washington Street
Duxbury, MA 02332
Phone: 781-952-5200
Fax: 781-934-2124

Proj. No: G606427
Proj. Name: NBH - NWS + Post-Dredge
SAMPLERS: Signature: Jessica Tenzau + Patrick Curran

ANALYSIS REQUESTED → "NUMBER OF CONTAINERS"

DATE	TIME	LAB BATTELLE ID	Field ID ~~CLIENT ID~~	SAMPLE DESCRIPTION	PEST	PCB Aroclors	TPH FINGERPRINT	PAH	VOA	TBT	METALS	OTHER PCB Homologs	ACIDIFIED	PRESERVED	Total Number of Containers
11/20/08		Q6149	S-08D-C008-30W-00-05	Sediment		✓									1
		Q6150	S-08D-C008-30E-00-05			✓									1
		Q6151	S-08D-NWS-35-00-05			✓									1
		Q6152	S-08D-NWS-34-00-05			✓									1
		Q6153	S-08D-NWS-36-00-05			✓									1
		Q6154	S-08D-NWS-33-00-05			✓									1
		Q6155	S-08D-NWS-37-00-05			✓									1
		Q6156	S-08D-NWS-38-00-05			✓									1
		Q6157	S-08D-NWS-39-00-05			✓									1
12/3/08		Q6158	S-08D-C008-038-00-05			✓									1
		Q6159	S-08D-C008-028-00-05			✓									1
		Q6160	S-08D-C008-049-00-05			✓									1
		Q6161	S-08D-C008-023-00-05			✓									1
		Q6162	S-08D-C008-016-00-05			✓					✓				1
		Q6163	S-08D-C008-039-00-05			✓					✓				1
		Q6164	S-08D-C008-040-00-05			✓									1
		Q6165	S-08D-C008-062-00-05			✓									1

Relinquished by: Jessica M Tenzau — Date/Time: 1/16/09 1410 — Received by: [signature] — Date/Time: 1/16/09 1410

Relinquished by: — Date/Time: — Received by: — Date/Time:

Comments: all samples were frozen from date of collection ~~to~~ until 1/14/09.

ORIGINAL

Deliver to: Battelle Duxbury

Battelle

The Business of Innovation

Chain of Custody

397 Washington Street
Duxbury, MA 02332
Phone: 781-952-5200
Fax: 781-934-2124

Proj. No: 560622

Proj. Name: NBH- NWS + Post Dredge

SAMPLERS: Signature: Jessica Tenzer + Patrick Cannon

ANALYSIS REQUESTED → "NUMBER OF CONTAINERS"

DATE	TIME	BATTELLE ID LAB	Field ID ~~CLIENT ID~~	SAMPLE DESCRIPTION	PEST	PCB Congeners	TPH FINGERPRINT	PAH	VOA	TBT	METALS	OTHER Homologues	ACIDIFIED	PRESERVED	Total Number of Containers
12/3/08		Q6166	S-08D-C008-048-00-05	Sediment		✓									1
		Q6167	S-08D-C008-033-00-05			✓									1
		Q6168	S-08D-C008-055-00-05			✓									1
		Q6169	S-08D-C008-055-00-05-REP			✓									1
		Q6170	S-08D-C008-010-00-05			✓									1
12/5/08		Q6171	S-08C-X33-00-11			✓									1
		Q6172	S-08C-T38-00-10			✓									1
		Q6173	S-08C-CC27-00-09			✓									1
		Q6174	S-08C-T22-00-04			✓									1
		Q6175	S-08C-D32-00-05			✓									1
		Q6176	S-08C-D25-00-07			✓									1
		Q6177	S-08C-bb28+00-10			✓						✓			1

Relinquished by:	Date/Time		Received by:	Date/Time	
Jessi M Tenzer	1/16/09	1410	[signature]	1/16/09	1410
Relinquished by:	Date/Time		Received by:	Date/Time	

Comments:
Samples collected on 12/3/08 were frozen until 1/14/09
Samples collected on 12/5/08 were frozen until 1/15/09

ORIGINAL

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OU3 Pilot Cap

Sediment Grabs

-PCB Analytical Results
-QA/QC Summaries and Data
-Lab Qualifiers
-Chain of Custodies

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Appendix B

2008 OU3 Pilot Cap Sediment PCB Analytical Results

Station Id	EB			OU01			OU02		
Start Date			10/06/2008			10/06/2008			10/06/2008
Fraction	TOTAL			TOTAL			TOTAL		
Field Qc Code	EB			SA			SA		
Samp Id	EB-100608-01			S-08B-OU01-00-03			S-08B-OU02-00-03		
Description	Result	Final Qual	Unit	Result	Final Qual	Unit	Result	Final Qual	Unit
2,4'-Dicb	0.0012	U	UG/L	0.01452		MG/KG_DRYWT	0.16562		MG/KG_DRYWT
2,2',5-Tricb	0.0012	U	UG/L	0.02204		MG/KG_DRYWT	0.13432		MG/KG_DRYWT
2,4,4'-Tricb	0.0012	U	UG/L	0.0491		MG/KG_DRYWT	0.23264		MG/KG_DRYWT
2,2',3,5'-Tetracb	0.0012	U	UG/L	0.0301		MG/KG_DRYWT	0.06091		MG/KG_DRYWT
2,2',5,5'-Tetracb	0.0012	U	UG/L	0.0533		MG/KG_DRYWT	0.15031		MG/KG_DRYWT
2,3',4,4'-Tetracb	0.0012	U	UG/L	0.03113		MG/KG_DRYWT	0.09661		MG/KG_DRYWT
2,2',4,5,5'-Pentacb	0.0012	U	UG/L	0.0401		MG/KG_DRYWT	0.09776		MG/KG_DRYWT
2,3,3',4,4'-Pentacb	0.0012	U	UG/L	0.01454		MG/KG_DRYWT	0.05331	p	MG/KG_DRYWT
2,3',4,4',5-Pentacb	0.0012	U	UG/L	0.0479		MG/KG_DRYWT	0.15019		MG/KG_DRYWT
2,2',3,3',4,4'-Hexacb	0.0012	U	UG/L	0.00675		MG/KG_DRYWT	0.00402	pJ	MG/KG_DRYWT
2,2',3,4,4',5'-Hexacb	0.0012	U	UG/L	0.03825		MG/KG_DRYWT	0.08548		MG/KG_DRYWT
2,2',4,4',5,5'-Hexacb	0.0012	U	UG/L	0.04584		MG/KG_DRYWT	0.10246		MG/KG_DRYWT
2,2',3,3',4,4',5-Heptacb	0.0012	U	UG/L	0.00374		MG/KG_DRYWT	0.03107	U	MG/KG_DRYWT
2,2',3,4,4',5,5'-Heptacb	0.0012	U	UG/L	0.00506		MG/KG_DRYWT	0.03107	U	MG/KG_DRYWT
2,2',3,4',5,5',6-Heptacb	0.0012	U	UG/L	0.00323		MG/KG_DRYWT	0.03095	U	MG/KG_DRYWT
2,2',3,3',4,4',5,6-Octacb	0.0012	U	UG/L	0.00274	U	MG/KG_DRYWT	0.03107	U	MG/KG_DRYWT
2,2',3,3',4,4',5,5',6-Nonacb	0.0012	U	UG/L	0.00274	U	MG/KG_DRYWT	0.03107	U	MG/KG_DRYWT
Decacb - Congener	0.0012	U	UG/L	0.00274	U	MG/KG_DRYWT	0.03107	U	MG/KG_DRYWT
Total MonoCB									
Total DiCB									
Total TriCB									
Total TetraCB									
Total PentaCB									
Total HexaCB									
Total HeptaCB									
Total OctaCB									
Total NonaCB									
DecaCB - Homologue									
Total PCB Congeners (sum CONG x factor)		U	UG/L	1.1		MG/KG_DRYWT	3.5		MG/KG_DRYWT
Total PCB Homologues (sum HOM)									

Appendix B

2008 OU3 Pilot Cap Sediment PCB Analytical Results

Station Id	OU03			OU04			OU05		
Start Date			10/06/2008			10/07/2008			10/07/2008
Fraction	TOTAL			TOTAL			TOTAL		
Field Qc Code	SA			SA			SA		
Samp Id	S-08B-OU03-00-03			S-08B-OU04-00-03			S-08B-OU05-00-03		
Description	**Result**	**Final Qual**	**Unit**	**Result**	**Final Qual**	**Unit**	**Result**	**Final Qual**	**Unit**
2,4'-Dicb	0.00766		MG/KG_DRYWT	0.064		MG/KG_DRYWT	0.00715		MG/KG_DRYWT
2,2',5-Tricb	0.0064		MG/KG_DRYWT	0.042		MG/KG_DRYWT	0.00575		MG/KG_DRYWT
2,4,4'-Tricb	0.01299		MG/KG_DRYWT	0.10844		MG/KG_DRYWT	0.01427		MG/KG_DRYWT
2,2',3,5'-Tetracb	0.00369		MG/KG_DRYWT	0.02845	p	MG/KG_DRYWT	0.00477		MG/KG_DRYWT
2,2',5,5'-Tetracb	0.01046		MG/KG_DRYWT	0.07667		MG/KG_DRYWT	0.01279		MG/KG_DRYWT
2,3',4,4'-Tetracb	0.00788		MG/KG_DRYWT	0.04584		MG/KG_DRYWT	0.00936		MG/KG_DRYWT
2,2',4,5,5'-Pentacb	0.00698		MG/KG_DRYWT	0.05048		MG/KG_DRYWT	0.00944		MG/KG_DRYWT
2,3,3',4,4'-Pentacb	0.00406	p	MG/KG_DRYWT	0.02808	p	MG/KG_DRYWT	0.00507		MG/KG_DRYWT
2,3',4,4',5-Pentacb	0.01205		MG/KG_DRYWT	0.07876		MG/KG_DRYWT	0.0155		MG/KG_DRYWT
2,2',3,3',4,4'-Hexacb	0.00035	pJ	MG/KG_DRYWT	0.02772	U	MG/KG_DRYWT	0.00105	pJ	MG/KG_DRYWT
2,2',3,4,4',5'-Hexacb	0.00723		MG/KG_DRYWT	0.04327		MG/KG_DRYWT	0.0103		MG/KG_DRYWT
2,2',4,4',5,5'-Hexacb	0.00859		MG/KG_DRYWT	0.05157		MG/KG_DRYWT	0.01239		MG/KG_DRYWT
2,2',3,3',4,4',5-Heptacb	0.00271	U	MG/KG_DRYWT	0.02772	U	MG/KG_DRYWT	0.00013	pJ	MG/KG_DRYWT
2,2',3,4,4',5,5'-Heptacb	0.00271	U	MG/KG_DRYWT	0.02772	U	MG/KG_DRYWT	0.00017	pJ	MG/KG_DRYWT
2,2',3,4',5,5',6-Heptacb	0.0027	U	MG/KG_DRYWT	0.02761	U	MG/KG_DRYWT	0.0027	U	MG/KG_DRYWT
2,2',3,3',4,4',5,6-Octacb	0.00271	U	MG/KG_DRYWT	0.02772	U	MG/KG_DRYWT	0.00271	U	MG/KG_DRYWT
2,2',3,3',4,4',5,5',6-Nonacb	0.00271	U	MG/KG_DRYWT	0.02772	U	MG/KG_DRYWT	0.00271	U	MG/KG_DRYWT
Decacb - Congener	0.00271	U	MG/KG_DRYWT	0.02772	U	MG/KG_DRYWT	0.00271	U	MG/KG_DRYWT
Total MonoCB									
Total DiCB									
Total TriCB									
Total TetraCB									
Total PentaCB									
Total HexaCB									
Total HeptaCB									
Total OctaCB									
Total NonaCB									
DecaCB - Homologue									
Total PCB Congeners (sum CONG x factor)	0.23		MG/KG_DRYWT	1.6		MG/KG_DRYWT	0.28		MG/KG_DRYWT
Total PCB Homologues (sum HOM)									

Appendix B

2008 OU3 Pilot Cap Sediment PCB Analytical Results

Station Id	OU06			OU07			OU08		
Start Date	10/07/2008			10/07/2008			10/07/2008		
Fraction	TOTAL			TOTAL			TOTAL		
Field Qc Code	SA			SA			SA		
Samp Id	S-08B-OU06-00-03			S-08B-OU07-00-03			S-08B-OU08-00-03		
Description	Result	Final Qual	Unit	Result	Final Qual	Unit	Result	Final Qual	Unit
2,4'-Dicb	0.04486		MG/KG_DRYWT	0.02772		MG/KG_DRYWT	0.01643		MG/KG_DRYWT
2,2',5-Tricb	0.03248		MG/KG_DRYWT	0.02364		MG/KG_DRYWT	0.01223		MG/KG_DRYWT
2,4,4'-Tricb	0.09118		MG/KG_DRYWT	0.04903		MG/KG_DRYWT	0.02774		MG/KG_DRYWT
2,2',3,5'-Tetracb	0.02054	J	MG/KG_DRYWT	0.01897		MG/KG_DRYWT	0.00923		MG/KG_DRYWT
2,2',5,5'-Tetracb	0.06485		MG/KG_DRYWT	0.03999		MG/KG_DRYWT	0.02176		MG/KG_DRYWT
2,3',4,4'-Tetracb	0.03664		MG/KG_DRYWT	0.02746		MG/KG_DRYWT	0.01485		MG/KG_DRYWT
2,2',4,5,5'-Pentacb	0.03978		MG/KG_DRYWT	0.03164		MG/KG_DRYWT	0.01551		MG/KG_DRYWT
2,3,3',4,4'-Pentacb	0.02567	pJ	MG/KG_DRYWT	0.0166		MG/KG_DRYWT	0.00828		MG/KG_DRYWT
2,3',4,4',5-Pentacb	0.06591		MG/KG_DRYWT	0.05073		MG/KG_DRYWT	0.02482		MG/KG_DRYWT
2,2',3,3',4,4'-Hexacb	0.02864	U	MG/KG_DRYWT	0.00685		MG/KG_DRYWT	0.0024	J	MG/KG_DRYWT
2,2',3,4,4',5'-Hexacb	0.03544		MG/KG_DRYWT	0.03594		MG/KG_DRYWT	0.01699		MG/KG_DRYWT
2,2',4,4',5,5'-Hexacb	0.041		MG/KG_DRYWT	0.04133		MG/KG_DRYWT	0.02034		MG/KG_DRYWT
2,2',3,3',4,4',5-Heptacb	0.02864	U	MG/KG_DRYWT	0.00331	p	MG/KG_DRYWT	0.0008	pJ	MG/KG_DRYWT
2,2',3,4,4',5,5'-Heptacb	0.02864	U	MG/KG_DRYWT	0.00386		MG/KG_DRYWT	0.00093	pJ	MG/KG_DRYWT
2,2',3,4',5,5',6-Heptacb	0.02852	U	MG/KG_DRYWT	0.00246	J	MG/KG_DRYWT	0.00051	pJ	MG/KG_DRYWT
2,2',3,3',4,4',5,6-Octacb	0.02864	U	MG/KG_DRYWT	0.00274	U	MG/KG_DRYWT	0.00273	U	MG/KG_DRYWT
2,2',3,3',4,4',5,5',6-Nonacb	0.02864	U	MG/KG_DRYWT	0.00274	U	MG/KG_DRYWT	0.00273	U	MG/KG_DRYWT
Decacb - Congener	0.02864	U	MG/KG_DRYWT	0.00069	pJ	MG/KG_DRYWT	0.00273	U	MG/KG_DRYWT
Total MonoCB									
Total DiCB									
Total TriCB									
Total TetraCB									
Total PentaCB									
Total HexaCB									
Total HeptaCB									
Total OctaCB									
Total NonaCB									
DecaCB - Homologue									
Total PCB Congeners (sum CONG x factor)	1.3		MG/KG_DRYWT	0.99		MG/KG_DRYWT	0.5		MG/KG_DRYWT
Total PCB Homologues (sum HOM)									

Appendix B

2008 OU3 Pilot Cap Sediment PCB Analytical Results

Station Id	OU09			OU10			OU11		
Start Date	10/06/2008			10/06/2008			10/06/2008		
Fraction	TOTAL			TOTAL			TOTAL		
Field Qc Code	SA			SA			SA		
Samp Id	S-08B-OU09-00-03			S-08B-OU10-00-03			S-08B-OU11-00-03		
Description	Result	Final Qual	Unit	Result	Final Qual	Unit	Result	Final Qual	Unit
2,4'-Dicb	0.0425		MG/KG_DRYWT	0.0207		MG/KG_DRYWT	0.00686		MG/KG_DRYWT
2,2',5-Tricb	0.03376		MG/KG_DRYWT	0.01591		MG/KG_DRYWT	0.00599		MG/KG_DRYWT
2,4,4'-Tricb	0.05247		MG/KG_DRYWT	0.0315		MG/KG_DRYWT	0.01417		MG/KG_DRYWT
2,2',3,5'-Tetracb	0.01732		MG/KG_DRYWT	0.01047		MG/KG_DRYWT	0.00464		MG/KG_DRYWT
2,2',5,5'-Tetracb	0.03894		MG/KG_DRYWT	0.02529		MG/KG_DRYWT	0.01263		MG/KG_DRYWT
2,3',4,4'-Tetracb	0.02232		MG/KG_DRYWT	0.01678		MG/KG_DRYWT	0.00794		MG/KG_DRYWT
2,2',4,5,5'-Pentacb	0.02189		MG/KG_DRYWT	0.01617		MG/KG_DRYWT	0.00851		MG/KG_DRYWT
2,3,3',4,4'-Pentacb	0.01048		MG/KG_DRYWT	0.00848		MG/KG_DRYWT	0.00439	p	MG/KG_DRYWT
2,3',4,4',5-Pentacb	0.03226		MG/KG_DRYWT	0.02529		MG/KG_DRYWT	0.01351		MG/KG_DRYWT
2,2',3,3',4,4'-Hexacb	0.0032		MG/KG_DRYWT	0.00229	J	MG/KG_DRYWT	0.00085	pJ	MG/KG_DRYWT
2,2',3,4,4',5'-Hexacb	0.02001		MG/KG_DRYWT	0.01635		MG/KG_DRYWT	0.00914		MG/KG_DRYWT
2,2',4,4',5,5'-Hexacb	0.02374		MG/KG_DRYWT	0.01854		MG/KG_DRYWT	0.01087		MG/KG_DRYWT
2,2',3,3',4,4',5-Heptacb	0.0011	pJ	MG/KG_DRYWT	0.00058	pJ	MG/KG_DRYWT	0.00271	U	MG/KG_DRYWT
2,2',3,4,4',5,5'-Heptacb	0.00111	pJ	MG/KG_DRYWT	0.00066	pJ	MG/KG_DRYWT	0.00004	pJ	MG/KG_DRYWT
2,2',3,4',5,5',6-Heptacb	0.00059	pJ	MG/KG_DRYWT	0.00019	pJ	MG/KG_DRYWT	0.0027	U	MG/KG_DRYWT
2,2',3,3',4,4',5,6-Octacb	0.00272	U	MG/KG_DRYWT	0.00275	U	MG/KG_DRYWT	0.00271	U	MG/KG_DRYWT
2,2',3,3',4,4',5,5',6-Nonacb	0.00272	U	MG/KG_DRYWT	0.00275	U	MG/KG_DRYWT	0.00271	U	MG/KG_DRYWT
Decacb - Congener	0.00272	U	MG/KG_DRYWT	0.00275	U	MG/KG_DRYWT	0.00271	U	MG/KG_DRYWT
Total MonoCB									
Total DiCB									
Total TriCB									
Total TetraCB									
Total PentaCB									
Total HexaCB									
Total HeptaCB									
Total OctaCB									
Total NonaCB									
DecaCB - Homologue									
Total PCB Congeners (sum CONG x factor)	0.84		MG/KG_DRYWT	0.54		MG/KG_DRYWT	0.26		MG/KG_DRYWT
Total PCB Homologues (sum HOM)									

Appendix B

2008 OU3 Pilot Cap Sediment PCB Analytical Results

Station Id	OU12			OU13			OU14		
Start Date	10/06/2008			10/06/2008			10/06/2008		
Fraction	TOTAL			TOTAL			TOTAL		
Field Qc Code	SA			SA			SA		
Samp Id	S-08B-OU12-00-03			S-08B-OU13-00-03			S-08B-OU14-00-03		
Description	Result	Final Qual	Unit	Result	Final Qual	Unit	Result	Final Qual	Unit
2,4'-Dicb	0.02881		MG/KG_DRYWT	0.34404		MG/KG_DRYWT	0.05948		MG/KG_DRYWT
2,2',5-Tricb	0.02164		MG/KG_DRYWT	0.27833		MG/KG_DRYWT	0.03142		MG/KG_DRYWT
2,4,4'-Tricb	0.04527		MG/KG_DRYWT	0.4354		MG/KG_DRYWT	0.08066		MG/KG_DRYWT
2,2',3,5'-Tetracb	0.0156		MG/KG_DRYWT	0.15072		MG/KG_DRYWT	0.01433	pJ	MG/KG_DRYWT
2,2',5,5'-Tetracb	0.03347		MG/KG_DRYWT	0.31096		MG/KG_DRYWT	0.04643		MG/KG_DRYWT
2,3',4,4'-Tetracb	0.0217		MG/KG_DRYWT	0.1504		MG/KG_DRYWT	0.02378	pJ	MG/KG_DRYWT
2,2',4,5,5'-Pentacb	0.02193		MG/KG_DRYWT	0.1444		MG/KG_DRYWT	0.01735	pJ	MG/KG_DRYWT
2,3,3',4,4'-Pentacb	0.01085		MG/KG_DRYWT	0.06395		MG/KG_DRYWT	0.01422	pJ	MG/KG_DRYWT
2,3',4,4',5-Pentacb	0.03244		MG/KG_DRYWT	0.17853		MG/KG_DRYWT	0.03689		MG/KG_DRYWT
2,2',3,3',4,4'-Hexacb	0.00343		MG/KG_DRYWT	0.01267	pJ	MG/KG_DRYWT	0.02795	U	MG/KG_DRYWT
2,2',3,4,4',5'-Hexacb	0.02014		MG/KG_DRYWT	0.10781		MG/KG_DRYWT	0.01096	pJ	MG/KG_DRYWT
2,2',4,4',5,5'-Hexacb	0.02368		MG/KG_DRYWT	0.12869		MG/KG_DRYWT	0.0093	pJ	MG/KG_DRYWT
2,2',3,3',4,4',5-Heptacb	0.00132	pJ	MG/KG_DRYWT	0.00104	pJ	MG/KG_DRYWT	0.0022	pJ	MG/KG_DRYWT
2,2',3,4,4',5,5'-Heptacb	0.00135	J	MG/KG_DRYWT	0.00146	pJ	MG/KG_DRYWT	0.02795	U	MG/KG_DRYWT
2,2',3,4',5,5',6-Heptacb	0.00085	pJ	MG/KG_DRYWT	0.02864	U	MG/KG_DRYWT	0.02783	U	MG/KG_DRYWT
2,2',3,3',4,4',5,6-Octacb	0.00275	U	MG/KG_DRYWT	0.02876	U	MG/KG_DRYWT	0.02795	U	MG/KG_DRYWT
2,2',3,3',4,4',5,5',6-Nonacb	0.00275	U	MG/KG_DRYWT	0.02876	U	MG/KG_DRYWT	0.02795	U	MG/KG_DRYWT
Decacb - Congener	0.00275	U	MG/KG_DRYWT	0.02876	U	MG/KG_DRYWT	0.02795	U	MG/KG_DRYWT
Total MonoCB	0.02	U	MG/KG_DRYWT	0.12	U	MG/KG_DRYWT			
Total DiCB	0.07	J	MG/KG_DRYWT	0.67		MG/KG_DRYWT			
Total TriCB	0.21		MG/KG_DRYWT	2.15		MG/KG_DRYWT			
Total TetraCB	0.24	J	MG/KG_DRYWT	1.39	J	MG/KG_DRYWT			
Total PentaCB	0.22	J	MG/KG_DRYWT	1.22	J	MG/KG_DRYWT			
Total HexaCB	0.1	J	MG/KG_DRYWT	0.38	J	MG/KG_DRYWT			
Total HeptaCB	0.01	J	MG/KG_DRYWT	1.2	U	MG/KG_DRYWT			
Total OctaCB	0.1	U	MG/KG_DRYWT	0.6	U	MG/KG_DRYWT			
Total NonaCB	0.03	U	MG/KG_DRYWT	0.18	U	MG/KG_DRYWT			
DecaCB - Homologue	0.01	U	MG/KG_DRYWT	0.06	U	MG/KG_DRYWT			
Total PCB Congeners (sum CONG x factor)	0.73		MG/KG_DRYWT	6.		MG/KG_DRYWT	0.9		MG/KG_DRYWT
Total PCB Homologues (sum HOM)	0.85		MG/KG_DRYWT	5.8		MG/KG_DRYWT			

Appendix B

2008 OU3 Pilot Cap Sediment PCB Analytical Results

Station Id	OU15			OU16			OU16		
Start Date	10/06/2008			10/06/2008			10/06/2008		
Fraction	TOTAL			TOTAL			TOTAL		
Field Qc Code	SA			SA			REP		
Samp Id	S-08B-OU15-00-03			S-08B-OU16-00-03			S-08B-OU16-00-03-REP		
Description	Result	Final Qual	Unit	Result	Final Qual	Unit	Result	Final Qual	Unit
2,4'-Dicb	0.11453		MG/KG_DRYWT	0.12567		MG/KG_DRYWT	0.09268		MG/KG_DRYWT
2,2',5-Tricb	0.0779		MG/KG_DRYWT	0.08225		MG/KG_DRYWT	0.06771		MG/KG_DRYWT
2,4,4'-Tricb	0.16451		MG/KG_DRYWT	0.16505		MG/KG_DRYWT	0.14472		MG/KG_DRYWT
2,2',3,5'-Tetracb	0.0487		MG/KG_DRYWT	0.03369		MG/KG_DRYWT	0.03552		MG/KG_DRYWT
2,2',5,5'-Tetracb	0.10912		MG/KG_DRYWT	0.0993		MG/KG_DRYWT	0.0897		MG/KG_DRYWT
2,3',4,4'-Tetracb	0.05936		MG/KG_DRYWT	0.05517		MG/KG_DRYWT	0.05218		MG/KG_DRYWT
2,2',4,5,5'-Pentacb	0.05596		MG/KG_DRYWT	0.0489		MG/KG_DRYWT	0.04624		MG/KG_DRYWT
2,3,3',4,4'-Pentacb	0.03125	p	MG/KG_DRYWT	0.0322	p	MG/KG_DRYWT	0.02897	p	MG/KG_DRYWT
2,3',4,4',5-Pentacb	0.08372		MG/KG_DRYWT	0.08224		MG/KG_DRYWT	0.07611		MG/KG_DRYWT
2,2',3,3',4,4'-Hexacb	0.02806	U	MG/KG_DRYWT	0.02829	U	MG/KG_DRYWT	0.02812	U	MG/KG_DRYWT
2,2',3,4,4',5'-Hexacb	0.04475		MG/KG_DRYWT	0.04136		MG/KG_DRYWT	0.03661		MG/KG_DRYWT
2,2',4,4',5,5'-Hexacb	0.0514		MG/KG_DRYWT	0.04682		MG/KG_DRYWT	0.03865		MG/KG_DRYWT
2,2',3,3',4,4',5-Heptacb	0.02806	U	MG/KG_DRYWT	0.02829	U	MG/KG_DRYWT	0.02812	U	MG/KG_DRYWT
2,2',3,4,4',5,5'-Heptacb	0.02806	U	MG/KG_DRYWT	0.02829	U	MG/KG_DRYWT	0.02812	U	MG/KG_DRYWT
2,2',3,4',5,5',6-Heptacb	0.02795	U	MG/KG_DRYWT	0.02817	U	MG/KG_DRYWT	0.028	U	MG/KG_DRYWT
2,2',3,3',4,4',5,6-Octacb	0.02806	U	MG/KG_DRYWT	0.02829	U	MG/KG_DRYWT	0.02812	U	MG/KG_DRYWT
2,2',3,3',4,4',5,5',6-Nonacb	0.02806	U	MG/KG_DRYWT	0.02829	U	MG/KG_DRYWT	0.02812	U	MG/KG_DRYWT
Decacb - Congener	0.02806	U	MG/KG_DRYWT	0.01646	pJ	MG/KG_DRYWT	0.02812	U	MG/KG_DRYWT
Total MonoCB									
Total DiCB									
Total TriCB									
Total TetraCB									
Total PentaCB									
Total HexaCB									
Total HeptaCB									
Total OctaCB									
Total NonaCB									
DecaCB - Homologue									
Total PCB Congeners (sum CONG x factor)	2.2		MG/KG_DRYWT	2.2		MG/KG_DRYWT	1.8		MG/KG_DRYWT
Total PCB Homologues (sum HOM)									

Appendix B

2008 OU3 Pilot Cap Sediment PCB Analytical Results

Station Id	OU17		
Start Date			10/06/2008
Fraction	TOTAL		
Field Qc Code	SA		
Samp Id	S-08B-OU17-00-03		
Description	**Result**	**Final Qual**	**Unit**
2,4'-Dicb	0.03165		MG/KG_DRYWT
2,2',5-Tricb	0.02004		MG/KG_DRYWT
2,4,4'-Tricb	0.03798		MG/KG_DRYWT
2,2',3,5'-Tetracb	0.01121		MG/KG_DRYWT
2,2',5,5'-Tetracb	0.0243		MG/KG_DRYWT
2,3',4,4'-Tetracb	0.01678		MG/KG_DRYWT
2,2',4,5,5'-Pentacb	0.01357		MG/KG_DRYWT
2,3,3',4,4'-Pentacb	0.00776		MG/KG_DRYWT
2,3',4,4',5-Pentacb	0.02241		MG/KG_DRYWT
2,2',3,3',4,4'-Hexacb	0.00179	J	MG/KG_DRYWT
2,2',3,4,4',5'-Hexacb	0.01442		MG/KG_DRYWT
2,2',4,4',5,5'-Hexacb	0.01723		MG/KG_DRYWT
2,2',3,3',4,4',5-Heptacb	0.00039	pJ	MG/KG_DRYWT
2,2',3,4,4',5,5'-Heptacb	0.00046	pJ	MG/KG_DRYWT
2,2',3,4',5,5',6-Heptacb	0.00023	pJ	MG/KG_DRYWT
2,2',3,3',4,4',5,6-Octacb	0.00275	U	MG/KG_DRYWT
2,2',3,3',4,4',5,5',6-Nonacb	0.00275	U	MG/KG_DRYWT
Decacb - Congener	0.00275	U	MG/KG_DRYWT
Total MonoCB			
Total DiCB			
Total TriCB			
Total TetraCB			
Total PentaCB			
Total HexaCB			
Total HeptaCB			
Total OctaCB			
Total NonaCB			
DecaCB - Homologue			
Total PCB Congeners (sum CONG x factor)	0.57		MG/KG_DRYWT
Total PCB Homologues (sum HOM)			

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PCB Congeners – Sediment QA/QC Summary
Batch 08-0284

PROJECT: USACE – New Bedford Harbor Environmental Monitoring
PARAMETER: PCB Congeners
LABORATORY: Battelle, Duxbury, MA
MATRIX: Sediment
SAMPLE CUSTODY: Sediment samples were collected on 10/6/2008 – 10/7/2008 and hand delivered to the Battelle Duxbury Chemistry Sample Custodian on 10/7/2008. The samples were received in good condition and no custody issues were noted. Samples were logged into Battelle LIMS and received unique IDs. They were stored in the walk-in freezer until preparation could begin.

	Reference Method	Method Blank	Surrogate Recovery	LCS Recovery	MS Recovery	MS/MSD Relative Percent Difference	Detection Limits (ng/g dry wt)
PCB Congeners	EPA 8082M	<ssRL	40-120% Recovery	40-120% Recovery	40-120% Recovery (analyte conc. in MS must be >5x background)	≤30% RPD (analytes must be > 5x MDL to be used for data quality assessment)	RL: 2.73

METHOD: Sediment samples were extracted for PCB congeners following modified EPA Method 3545. Sediments were air-dried overnight, and approximately 10 g of sediment was spiked with surrogates and extracted using an Accelerated Solvent Extractor (ASE). The extract was concentrated, processed through activated copper, florisil cleanup column, and concentrated. Next, the extract was concentrated, fortified with internal standards (IS), and then analyzed using gas chromatography/electron capture detector (GC/ECD), following modified EPA Method 8082. Sample data were quantified by the method of internal standards, using the spiked IS compounds.

HOLDING TIMES: Sediments of this batch were extracted within 1 year of sample holding time for frozen sediments. All extracts were analyzed within 40 days of extract holding time.

Batch	Collection Date	Extraction Date	Analysis Date
08/0284	10/6/08-10/7/08	10/13/08	10/21/2008 – 10/24/2008

08-0284

Sample ID	**Battelle ID**
S-08B-OU17-00-03	Q5020
S-08B-OU16-00-03	Q5021
S-08B-OU16-00-03-REP	Q5022
S-08B-OU15-00-03	Q5023
S-08B-OU14-00-03	Q5024
S-08B-OU12-00-03	Q5025
S-08B-OU13-00-03	Q5026
S-08B-OU11-00-03	Q5027
S-08B-OU10-00-03	Q5028
S-08B-OU09-00-03	Q5029
S-08B-OU01-00-03	Q5031

PCB Congeners – Sediment QA/QC Summary
Batch 08-0284

S-08B-OU03-00-03	Q5032
S-08B-OU02-00-03	Q5033
S-08B-OU08-00-03	Q5034
S-08B-OU06-00-03	Q5035
S-08B-OU05-00-03	Q5036
S-08B-OU04-00-03	Q5037
S-08B-OU07-00-03	Q5038

BLANK: A procedural blank (PB) was prepared with each analytical batch. Blanks were analyzed to ensure the sample extraction and analysis methods were free of contamination.

08-0284 – No target analytes were detected in the procedural blank.

LABORATORY CONTROL SAMPLE: A laboratory control sample (LCS) was prepared with each analytical batch. The percent recoveries of target analytes were calculated to measure data quality in terms of accuracy.

08-0284 – No exceedences noted. All percent recoveries of spiked target analytes were within the laboratory control limit (40-120%).

MATRIX SPIKE/MATRIX SPIKE DUPLICATE: A pair of matrix spike (MS) and matrix spike duplicate samples (MSD) was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure data quality in terms of accuracy. The RPD between percent recoveries was calculated to measure the data quality in terms of precision.

08-0284 – No exceedences noted. All percent recoveries of spiked target analytes were within the laboratory control limit (40-120%). All RPDs met the criteria of <30%.

SURROGATES: Two surrogate compounds were added prior to extraction, including PCB 34 and PCB 152. The recovery of each surrogate compound was calculated to measure data quality in terms of accuracy (extraction efficiency).

08-0284 – No exceedences noted. All percent recoveries of spiked target analytes were within the laboratory control limit (40-120%).

CALIBRATIONS: The GC/ECD was calibrated with a 6 level curve, with a correlation coefficient of >0.995. Each batch of samples analyzed is bracketed by continuing calibration verification (CCV) sample, run at a frequency of minimally every 24 hours. The %D between the initial calibration (ICAL) and the continuing calibration samples should be <25% for each compound. Additionally an Initial Calibration Check (ICC) sample is run immediately following the ICAL. The ICC is to have a percent difference < 20%.

08-0284 – All calibration criteria were met.

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Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	Procedural Blank
Battelle ID	BM492PB-P
Sample Type	PB
Collection Date	10/13/08
Extraction Date	10/13/08
Analysis Date	10/21/08
Analytical Instrument	ECD
% Moisture	1.88
% Lipid	NA
Matrix	SEDIMENT
Sample Size	5.03
Size Unit-Basis	G_DRY
Units	NG/G_DRY

Cl2(8)	2.72	U
Cl3(18)	2.73	U
Cl3(28)	2.73	U
Cl4(44)	2.72	U
Cl4(52)	2.74	U
Cl4(66)	2.74	U
Cl5(101)	2.72	U
Cl5(105)	2.73	U
Cl5(118)	2.76	U
Cl6(128)	2.73	U
Cl6(138)	2.76	U
Cl6(153)	2.72	U
Cl7(170)	2.73	U
Cl7(180)	2.73	U
Cl7(187)	2.72	U
Cl8(195)	2.73	U
Cl9(206)	2.73	U
Cl10(209)	2.73	U

Surrogate Recoveries (%)

Cl3(34)	70
Cl6(152)	80

Battelle
The Business of Innovation

Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	Laboratory Control Sample			
Battelle ID	BM493LCS-P			
Sample Type	LCS			
Collection Date	10/13/08			
Extraction Date	10/13/08			
Analysis Date	10/21/08			
Analytical Instrument	ECD			
% Moisture	NA			
% Lipid	NA			
Matrix	SEDIMENT			
Sample Size	5.03			
Size Unit-Basis	G_DRY			
Units	NG/G_DRY	Target	% Recovery	Qualifier
Cl2(8)	765.74	899.01	85	
Cl3(18)	768.4	899.01	85	
Cl3(28)	690.74	897.42	77	
Cl4(44)	775.58	898.21	86	
Cl4(52)	772.06	896.62	86	
Cl4(66)	840.65	897.42	94	
Cl5(101)	792.32	898.21	88	
Cl5(105)	809.46	897.42	90	
Cl5(118)	816.32	897.42	91	
Cl6(128)	813.22	901.39	90	
Cl6(138)	792.12	898.21	88	
Cl6(153)	816.92	897.42	91	
Cl7(170)	818.93	900.60	91	
Cl7(180)	792.94	899.80	88	
Cl7(187)	797.49	899.01	89	
Cl8(195)	848.18	899.01	94	
Cl9(206)	801.3	899.01	89	
Cl10(209)	805.3	899.40	90	

Surrogate Recoveries (%)

Cl3(34)	86
Cl6(152)	93

Battelle
The Business of Innovation

Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	S-08B-OU17-00-03		S-08B-OU17-00-03				
Battelle ID	Q5020-P		Q5020MS-P				
Sample Type	SA		MS				
Collection Date	10/06/08		10/6/2008				
Extraction Date	10/13/08		10/13/2008				
Analysis Date	10/21/08		10/22/2008				
Analytical Instrument	ECD		ECD				
% Moisture	NA		0.49				
% Lipid	NA		NA				
Matrix	SEDIMENT		SEDIMENT				
Sample Size	5.00		2.5				
Size Unit-Basis	G_DRY		G_DRY				
Units	NG/G_DRY		NG/G_DRY		Target	% Recovery	Qualifier
Cl2(8)	31.65		1682.85	E	1808.80	91	
Cl3(18)	20.04		1668.19		1808.80	91	
Cl3(28)	37.98		1557.98		1805.60	84	
Cl4(44)	11.21		1673.52	E	1807.20	92	
Cl4(52)	24.3		1692.64	E	1804.00	92	
Cl4(66)	16.78		1829.19	E	1805.60	100	
Cl5(101)	13.57		1682.4	E	1807.20	92	
Cl5(105)	7.76		1759.96	E	1805.60	97	
Cl5(118)	22.41		1728.05	E	1805.60	94	
Cl6(128)	1.79	J	1728.11	E	1813.60	95	
Cl6(138)	14.42		1665.47	E	1807.20	91	
Cl6(153)	17.23		1710.5	E	1805.60	94	
Cl7(170)	0.39	pJ	1746.02	E	1812.00	96	
Cl7(180)	0.46	pJ	1716.48	E	1810.40	95	
Cl7(187)	0.23	pJ	1661.12	E	1808.80	92	
Cl8(195)	2.75	U	1907.77	E	1808.80	105	
Cl9(206)	2.75	U	1756.29	E	1808.80	97	
Cl10(209)	2.75	U	1725.54	E	1809.60	95	

Surrogate Recoveries (%)

Cl3(34)	63	92
Cl6(152)	84	94

Battelle
The Business of Innovation

Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	S-08B-OU17-00-03						
Battelle ID	Q5020MSD-P						
Sample Type	MSD						
Collection Date	10/6/2008						
Extraction Date	10/13/2008						
Analysis Date	10/22/2008						
Analytical Instrument	ECD						
% Moisture	0.86						
% Lipid	NA						
Matrix	SEDIMENT						
Sample Size	2.49						
Size Unit-Basis	G_DRY						
Units	NG/G_DRY		Target	% Recovery	Qualifier	RPD (%)	Qualifier
Cl2(8)	1703.41	E	1816.06	92		1.1	
Cl3(18)	1695.31	E	1816.06	92		1.1	
Cl3(28)	1618.51	E	1812.85	87		3.5	
Cl4(44)	1765.22	E	1814.46	97		5.3	
Cl4(52)	1762.97	E	1811.24	96		4.3	
Cl4(66)	1954.44	E	1812.85	107		6.8	
Cl5(101)	1790.78	E	1814.46	98		6.3	
Cl5(105)	1850.16	E	1812.85	102		5.0	
Cl5(118)	1806.62	E	1812.85	98		4.2	
Cl6(128)	1796.08	E	1820.88	99		4.1	
Cl6(138)	1743.75	E	1814.46	95		4.3	
Cl6(153)	1793.73	E	1812.85	98		4.2	
Cl7(170)	1819.79	E	1819.28	100		4.1	
Cl7(180)	1792.46	E	1817.67	99		4.1	
Cl7(187)	1744.56	E	1816.06	96		4.3	
Cl8(195)	1985.3	E	1816.06	109		3.7	
Cl9(206)	1797.61	E	1816.06	99		2.0	
Cl10(209)	1772.7	E	1816.87	98		3.1	

Surrogate Recoveries (%)

Cl3(34)	93
Cl6(152)	95

Analyzed by Restucci Jr, Richard
10/30/2008

Not Surrogate Corrected

MS: S08-0284ECD-8082 Congeners-Final.xls

PCB Homologues – SEDIMENT QA/QC SUMMARY
Batch 08-0284

PROJECT: New Bedford Harbor Water Quality Monitoring
PARAMETER: PCB Homologues
LABORATORY: Battelle, Duxbury, MA
MATRIX: Sediment
SAMPLE CUSTODY: Sediment samples were collected on 10/6/2008 – 10/7/2008 and hand delivered to the Battelle Duxbury Chemistry Sample Custodian on 10/7/2008. The samples were received in good condition and no custody issues were noted. Samples were logged into Battelle LIMS and received unique IDs. They were stored in the walk-in freezer until preparation could begin. All sediment samples were extracted for PCB congener analyses by GC/ECD. 7.5% percent of the sediment samples were chosen for PCB homologue analysis. From this batch samples S-08B-OU12-00-03 and S-08B-OU13-00-03 were analyzed for PCB homologues

	Reference Method	Method Blank	Surrogate Recovery	LCS/MS/MSD Recovery	Sample Replicate Relative Precision	Reporting Limits (mg/Kg dry wt)
PCB Homologues	1668A & 8270D	< ss-RL	40-120%	40-120% MS spike must be >5 x background	<30% RPD MS spike must be >5 x background	0.18 – 4.02

METHOD: Sediment samples were extracted for PCBs following modified EPA Method 3545. Sediments were air-dried overnight, and approximately 5 g of sediment was spiked with surrogates and extracted using an Accelerated Solvent Extractor (ASE). The extract was concentrated, processed through activated copper, florisil cleanup column, and concentrated. Extracts were then fortified with internal standards (IS). Extracts designated for PCB homologue analysis were analyzed using gas chromatography/mass spectrometry (GC/MS), following Battelle SOP 5-315 which is based on key components of EPA Methods 1668A and 8270D. Sample data were quantified by the method of internal standards, using the IS compounds.

HOLDING TIMES: These frozen sediment samples were extracted within 1-year holding time. Extracts were analyzed within 40 days of extraction. All holding times were met.

Batch	Collection Date	Extraction Date	Analysis Date
08-0284	10/6/08	10/13/08	11/3/08

PCB Homologues – SEDIMENT QA/QC SUMMARY
Batch 08-0284

08-0284

Sample ID	**Battelle ID**
S-08B-OU12-00-03	Q5025
S-08B-OU13-00-03	Q5026

BLANK: A procedural blank (PB) was prepared with the analytical batch. Blanks are analyzed to ensure the sample extraction and analysis methods were free of contamination.

08-0284 – No exceedences noted.

Comments – No target analytes were detected in the procedural blank at a concentration greater than the sample-specific reporting limit.

LABORATORY CONTROL SAMPLE: A laboratory control sample (LCS) was prepared with the analytical batch. The percent recoveries of target analytes were calculated to measure data quality in terms of accuracy.

08-0284 – No exceedences noted. All recoveries were within the laboratory control limits (40%-120%).

Comments – None.

SURROGATES: Two surrogate compounds were added prior to extraction, including PCB 34 and PCB 152. The recovery of each surrogate compound was calculated to measure data quality in terms of accuracy (extraction efficiency).

08-0284 – No exceedences noted. All recoveries were within the laboratory control limits (40%-120%).

Comments – None.

CALIBRATION: The GC/MS is calibrated with a minimum of a 6-point curve. The co-efficient of determination must be > 0.995 for each target analyte in the initial calibration (ICAL). Each batch of samples analyzed is bracketed by a continuing calibration verification (CCV) sample, run at a frequency of every 12 hours (minimally). This percent difference (PD) for the CCV should be <25% for individual analytes. Additionally an instrument calibration check (ICC) sample was run with the initial calibration. The PD for the ICC should be < 25% for each analyte.

08-0284 – No initial calibration exceedences noted.
No CCV exceedence.
No ICC exceedence.

Comments – None.

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Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	Procedural Blank
Battelle ID	BM492PB-P
Sample Type	PB
Collection Date	10/13/08
Extraction Date	10/13/08
Analysis Date	11/03/08
Analytical Instrument	MS
% Moisture	1.88
% Lipid	NA
Matrix	SEDIMENT
Sample Size	5.03
Size Unit-Basis	G_DRY
Units	MG/KG_DRY
LOC 1	0.02 U
LOC 2	0.1 U
LOC 3	0.15 U
LOC 4	0.28 U
LOC 5	0.23 U
LOC 6	0.26 U
LOC 7	0.2 U
LOC 8	0.1 U
LOC 9	0.03 U
Cl10(209)	0.01 U

Surrogate Recoveries (%)

Cl3(34)	101
Cl6(152)	118

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Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	Laboratory Control Sample			
Battelle ID	BM493LCS-P			
Sample Type	LCS			
Collection Date	10/13/08			
Extraction Date	10/13/08			
Analysis Date	11/03/08			
Analytical Instrument	MS			
% Moisture	NA			
% Lipid	NA			
Matrix	SEDIMENT			
Sample Size	5.03			
Size Unit-Basis	G_DRY			
Units	MG/KG_DRY	Target	% Recovery	Qualifier
LOC 1	0.18	0.20	89	
LOC 2	0.99	1.10	90	
LOC 3	1.87	2.10	89	
LOC 4	3.66	4.09	89	
LOC 5	4.02	4.30	93	
LOC 6	3.23	3.50	92	
LOC 7	2.86	3.08	93	
LOC 8	1.32	1.40	94	
LOC 9	0.9	1.00	90	
Cl10(209)	0.73	0.90	81	

Surrogate Recoveries (%)

Cl3(34)	92
Cl6(152)	115

PCB Congeners – Water QA/QC Summary
Batch 08-0282

PROJECT: USACE-NAE – New Bedford Harbor Environmental Monitoring
PARAMETER: PCB Congeners
LABORATORY: Battelle, Duxbury, MA
MATRIX: Equipment Blank
SAMPLE CUSTODY: The equipment blank sample was collected on 10/6/2008 and hand delivered to the Chemistry Department by the Battelle Field Group. No custody issues were noted. The sample was logged into LIMS and received unique Battelle ID. The sample was stored at 4°C in an access controlled walk-in refrigerator until sample preparation could begin.

	Reference Method	Method Blank	Surrogate Recovery	LCS Recovery	MS Recovery	MS/MSD Relative Percent Difference	Detection Limits (ug/L)
PCB Congeners	EPA 8082M	<ssRL	40-120% Recovery	40-120% Recovery	40-120% Recovery (analyte conc. in MS must be >5x background)	<30% RPD (analytes must be > 5x MDL to be used for data quality assessment)	RL: ~ 0.0013

METHOD: The equipment blank was extracted for PCB Congeners following modified EPA Method 3510C. Approximately 1 liter of water was spiked with surrogates and extracted three times with dichloromethane using separatory funnel techniques. Combined extract was dried over anhydrous sodium sulfate, concentrated, fortified with internal standards (IS), and then analyzed using gas chromatography/electron capture detector (GC/ECD), following modified EPA Method 8082. Sample data were quantified by the method of internal standards, using the spiked IS compounds.

HOLDING TIMES: Water samples were extracted within 7 days of sample collection. All extracts were analyzed within 40 days of extract holding time.

Batch	Collection Date	Extraction Date	Analysis Date
08-0282	10/6/2008	10/9/2008	10/13/2008

PCB Congeners – Water QA/QC Summary
Batch 08-0282

LIST OF SAMPLES:

08-0282

Sample ID	**Battelle ID**
EB-100608-01	Q5030

BLANK: A procedural blank (PB) was prepared with each analytical batch. Blanks were analyzed to ensure the sample extraction and analysis methods were free of contamination.

08-0282 – No exceedences noted. No target PCBs were detected in the PB.

LABORATORY CONTROL SAMPLE: A laboratory control sample (LCS) was prepared with each analytical batch. The percent recoveries of target analytes were calculated to measure data quality in terms of accuracy.

08-0282 – All percent recoveries of spiked target analytes were within the laboratory control limit (40-120%).

SURROGATES: Two surrogate compounds were added prior to extraction, including PCB 34 and PCB 152. The recovery of each surrogate compound was calculated to measure data quality in terms of accuracy (extraction efficiency).

08-0282 – No exceedence noted**.** All percent recoveries were within the laboratory control limit (40%-120%).

CALIBRATIONS: The GC/ECD was calibrated with a minimum 6 level curve, with a linear correlation coefficient of >0.995. Each batch of samples analyzed is bracketed by continuing calibration verification (CCV) sample, run at a frequency of minimally every 24 hours. The %D between the initial calibration (ICAL) and the continuing calibration samples should be <20% for each compound. Additionally an Initial Calibration Check (ICC) sample is run immediately following the ICAL. The ICC is to have a percent difference < 20%.

08-0282 – Some compounds were over-responding in the CCVs. However, because no compound was detected in the authentic sample, no corrective action was taken.

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Project Client: USACE - North Atlantic Division
Project Name: NBH Equipment Blank Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	Procedural Blank	
Battelle ID	BM487PB-P	
Sample Type	PB	
Collection Date	10/09/08	
Extraction Date	10/09/08	
Analysis Date	10/13/08	
Analytical Instrument	ECD	
% Moisture	NA	
% Lipid	NA	
Matrix	WATER	
Sample Size	1.00	
Size Unit-Basis	L_LIQUID	
Units	UG/L_LIQUID	
Cl2(8)	0.0012	U
Cl3(18)	0.0013	U
Cl3(28)	0.0013	U
Cl4(44)	0.0012	U
Cl4(52)	0.0013	U
Cl4(66)	0.0013	U
Cl5(101)	0.0012	U
Cl5(105)	0.0013	U
Cl5(118)	0.0013	U
Cl6(128)	0.0013	U
Cl6(138)	0.0013	U
Cl6(153)	0.0012	U
Cl7(170)	0.0013	U
Cl7(180)	0.0013	U
Cl7(187)	0.0012	U
Cl8(195)	0.0013	U
Cl9(206)	0.0013	U
Cl10(209)	0.0013	U

Surrogate Recoveries (%)

Cl3(34)	101
Cl6(152)	105

Battelle
The Business of Innovation

Project Client: USACE - North Atlantic Division
Project Name: NBH Equipment Blank Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	Laboratory Control Sample			
Battelle ID	BM488LCS-P			
Sample Type	LCS			
Collection Date	10/09/08			
Extraction Date	10/09/08			
Analysis Date	10/13/08			
Analytical Instrument	ECD			
% Moisture	NA			
% Lipid	NA			
Matrix	WATER			
Sample Size	1.00			
Size Unit-Basis	L_LIQUID			
Units	UG/L_LIQUID	Target	% Recovery	Qualifier
Cl2(8)	0.0499	0.05	100	
Cl3(18)	0.0487	0.05	97	
Cl3(28)	0.0409	0.05	82	
Cl4(44)	0.0481	0.05	96	
Cl4(52)	0.0476	0.05	95	
Cl4(66)	0.0495	0.05	99	
Cl5(101)	0.0484	0.05	97	
Cl5(105)	0.0483	0.05	97	
Cl5(118)	0.0511	0.05	102	
Cl6(128)	0.0498	0.05	99	
Cl6(138)	0.0492	0.05	98	
Cl6(153)	0.0498	0.05	100	
Cl7(170)	0.0526	0.05	105	
Cl7(180)	0.0516	0.05	103	
Cl7(187)	0.0508	0.05	101	
Cl8(195)	0.0521	0.05	104	
Cl9(206)	0.0529	0.05	105	
Cl10(209)	0.054	0.05	108	

Surrogate Recoveries (%)

Cl3(34)	106
Cl6(152)	113

Analyzed by Restucci Jr, Richard
10/30/2008

Not Surrogate Corrected

LCS: L08-0282ECD-8082 Congeners-Final.xls

Qualifiers:

B	Analyte concentration found in the sample at < 5 x the level detected in the procedural blank
D	Dilution run. Initial run outside linear range of instrument
E	Estimate, result is greater than the highest concentration level in the calibration
H	Surrogate diluted out. Used when surrogate recovery is affected by excessive dilution of the sample extract
J	Analyte detected below the sample specific reporting limit
ME	Significant Matrix Interference - Estimated value
N	Quality Control value is outside the accuracy or precision data quality objective (DQO)
NA	Not applicable
T	Holding time exceeded
U	Analyte not detected at 3:1 signal:noise ratio. Reporting limit is reported.
p	The relative percent difference (RPD) between the values obtained from the dual columns is >40%.

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Battelle

The Business of Innovation

ShpNo SHP-081008-02

Battelle Project No:

Sample Receipt Form

Approved: ☐ **Authorized** ☐

Project Number: G606422 **Client:**

Received by: Seyfert, Jeannine **Date/Time Received:** Tuesday, October 07, 2008 12:00 AM

No. of Shipping Containers: 1

SHIPMENT

Method of Delivery: Hand Delivered **Tracking Number:** NA

COC Forms: ☑ **Shipped with samples** ☐ **No Forms**

Cooler(s)/Box(es)

Cntr	Type	Tracking No.	Seal	Seal Condition	Container Condition	Temp C	Smps
1 of 1	Cooler	NA	None	Not Applicable	Intact	4.0	19

Samples

Sample Labels:
☑ Sample labels agree with COC forms
☐ Discrepancies (see Sample Custody Corrective Action Form)

Container Seals:
☐ Tape ☐ Custody Seals ☐ Other Seals (See sample Log)
☑ Seals intact for each shipping container
☐ Seals broken (See sample log for impacted samples)

Condition of Samples:
☑ Sample containers intact
☐ Sample containers broken/leaking (See Custody Corrective Action Form)

Temperature upon receipt (°C): 4 Temperature Blank used ☐ Yes ☑ No
(Note: If temperature upon receipt differs from required conditions, see sample log comment field)

Samples Acidified: ☐ Yes ☐ No ☑ Unknown

Initial pH 5-9?: ☐ Yes ☐ No ☑ NA
If no, individual sample adjustments on the Auxiliary Sample Receipt Form

Total Residual Chlorine Present?: ☐ Yes ☐ No ☑ NA
If yes, individual sample adjustments on the Auxiliary Sample Receipt Form

Head Space <1% in samples for water VOC analysis: ☐ Yes ☐ No ☑ NA
Individual sample deviations noted on sample log

Samples Containers:
Samples returned in PC-grade jars: ☐ Yes ☐ No ☑ Unknown /Lot No.: UnKnown

Storage Location: Chem South: Refrigerator - R0003 (Upper Cold **BDO IDs Assigned:** Q5020 - Q5038

Samples logged in by: Seyfert, Jeannine **Date/Time:** 10/07/2008 12:00 AM

Approved By: **Approved On:**

Authorized By: **Authorized On:**

Battelle

The Business of Innovation

ShpNo SHP-081008-02

Battelle Project No:

Sample Receipt Form Details

Approved: ☐ **Authorized** ☐

Project Number: G606422 **Client:**

Received by: Seyfert, Jeannine **Date/Time Received:** Tuesday, October 07, 2008 12:00 AM

No. of Shipping Containers: 1

BDO Id:	Client Sample ID:	Collection Date:	Login Date:	Ctrs:	Matrix:	Temp:	pH:	TRC:	VOC:	Stored In:	Loc:	No:	Comments:
Q5020	S-08B-OU17-00-03	10/06/08 9:34	10/08/08 13:40	1	SEDIMENT	4	NA	NA	NA	R0003 (Upper C			MS/MSD
Q5021	S-08B-OU16-00-03	10/06/08 9:54	10/08/08 13:41	1	SEDIMENT	4	NA	NA	NA	R0003 (Upper C			
Q5022	S-08B-OU16-00-03-REP	10/06/08 10:05	10/08/08 13:41	1	SEDIMENT	4	NA	NA	NA	R0003 (Upper C			
Q5023	S-08B-OU15-00-03	10/06/08 10:26	10/08/08 13:42	1	SEDIMENT	4	NA	NA	NA	R0003 (Upper C			
Q5024	S-08B-OU14-00-03	10/06/08 10:46	10/08/08 13:42	1	SEDIMENT	4	NA	NA	NA	R0003 (Upper C			
Q5025	S-08B-OU12-00-03	10/06/08 11:08	10/08/08 13:43	1	SEDIMENT	4	NA	NA	NA	R0003 (Upper C			
Q5026	S-08B-OU13-00-03	10/06/08 11:27	10/08/08 13:43	1	SEDIMENT	4	NA	NA	NA	R0003 (Upper C			
Q5027	S-08B-OU11-00-03	10/06/08 11:53	10/08/08 13:43	1	SEDIMENT	4	NA	NA	NA	R0003 (Upper C			
Q5028	S-08B-OU10-00-03	10/06/08 12:14	10/08/08 13:44	1	SEDIMENT	4	NA	NA	NA	R0003 (Upper C			
Q5029	S-08B-OU09-00-03	10/06/08 12:47	10/08/08 13:50	1	SEDIMENT	4	NA	NA	NA	R0003 (Upper C			
Q5030	EB-100608-01	10/06/08 13:05	10/08/08 13:51	1	WATER	4	NA	NA	NA	R0003 (Upper C			EQUIPMENT BLANK
Q5031	S-08B-OU01-00-03	10/06/08 14:00	10/08/08 13:52	1	SEDIMENT	4	NA	NA	NA	R0003 (Upper C			
Q5032	S-08B-OU03-00-03	10/06/08 14:26	10/08/08 13:53	1	SEDIMENT	4	NA	NA	NA	R0003 (Upper C			
Q5033	S-08B-OU02-00-03	10/06/08 14:49	10/08/08 13:53	1	SEDIMENT	4	NA	NA	NA	R0003 (Upper C			
Q5034	S-08B-OU08-00-03	10/07/08 8:57	10/08/08 13:53	1	SEDIMENT	4	NA	NA	NA	R0003 (Upper C			
Q5035	S-08B-OU06-00-03	10/07/08 9:25	10/08/08 13:54	1	SEDIMENT	4	NA	NA	NA	R0003 (Upper C			
Q5036	S-08B-OU05-00-03	10/07/08 9:45	10/08/08 13:54	1	SEDIMENT	4	NA	NA	NA	R0003 (Upper C			
Q5037	S-08B-OU04-00-03	10/07/08 10:09	10/08/08 13:55	1	SEDIMENT	4	NA	NA	NA	R0003 (Upper C			
Q5038	S-08B-OU07-00-03	10/07/08 10:43	10/08/08 13:56	1	SEDIMENT	4	NA	NA	NA	R0003 (Upper C			

Total Samples: 19

Battelle

The Business of Innovation

Chain of Custody

397 Washington Street
Duxbury, MA 02332
Phone: 781-952-5200
Fax: 781-934-2124

Proj. No: G606422

Proj. Name: New Bedford Harbor 003

SAMPLERS: Signature: J. Fahey, A. Murphy, + M. Fitzpatrick

ANALYSIS REQUESTED → "NUMBER OF CONTAINERS"

DATE	TIME	LAB ID ~~BATTELLE ID~~	FIELD ID ~~CLIENT ID~~	SAMPLE DESCRIPTION	STATION #		PEST	PCB	TPH FINGERPRINT	PAH	VOA	TBT	METALS	OTHER	ACIDIFIED	PRESERVED	Total Number of Containers
10/6/08	0934	Q5020	S-08B-0017-00-03	Sediment	0017	ex Materia MS/MSD		✓									1
	0954	Q5021	S-08B-0016-00-03		0016			✓									1
	1005	Q5022	S-08B-0016-00-03-REP		0016	Field DUP		✓									1
	1026	Q5023	S-08B-0015-00-03		0015			✓									1
	1046	Q5024	S-08B-0014-00-03		0014			✓									1
	1108	Q5025	S-08B-0012-00-03		0012	extra for homologs		✓									1
	1127	Q5026	S-08B-0013-00-03		0013			✓									1
	1153	Q5027	S-08B-0011-00-03		0011			✓									1
	1214	Q5028	S-08B-0010-00-03		0010			✓									1
	1247	Q5029	S-08B-0009-00-03		0009			✓									1
	1305	Q5030	EB-100608-01	Equipment Blank		water		✓									2
	1400	Q5031	S-08B-0001-00-03	Sediment	0001			✓									1
	1426	Q5032	S-08B-0003-00-03		0003			✓									1
	1449	Q5033	S-08B-0002-00-03		0002			✓									1
10/7/08	0857	Q5034	S-08B-0008-00-03		0008			✓									1
	0925	Q5035	S-08B-0006-00-03		0006			✓									1
	0945	Q5036	S-08B-0005-00-03		0005			✓									1

Relinquished by:	Date/Time		Received by:	Date/Time	
Matthew R Nyhan	10/4/08	1400	Jeannine Seyfert	10-7-08	14:00
Relinquished by:	Date/Time		Received by:	Date/Time	

Comments:

ORIGINAL

Battelle
The Business of Innovation

Chain of Custody

397 Washington Street
Duxbury, MA 02332
Phone: 781-952-5200
Fax: 781-934-2124

Proj. No	Proj. Name
G606422	NBH-003

SAMPLERS: Signature: J. Foley, M. Fitzpatrick, A. Murphy

ANALYSIS REQUESTED → "NUMBER OF CONTAINERS"

DATE	TIME	LAB ID ~~BATTELLE ID~~	FIELD ID ~~CLIENT ID~~	SAMPLE DESCRIPTION STATION		PEST	PCB	TPH FINGERPRINT	PAH	VOA	TBT	METALS	OTHER	ACIDIFIED	PRESERVED	Total Number of Containers
10/7/08	1009	Q5037	S-08B-0004-00-03	0014	Sediment		✓									1
↓	1043	Q5038	S-08B-0007-00-03	0007	↓		✓									1

Relinquished by:	Date/Time		Received by:	Date/Time	
Matthew R Fitzpatrick	10/7/08	1400	Jeannie Seyfert	10-7-08	14:00
Relinquished by:	Date/Time		Received by:	Date/Time	

Comments:

ORIGINAL

North of Wood Street

River Sediment and Marsh Soil Cores

-PCB Analytical Results
-QA/QC Summaries and Data
-Lab Qualifiers
-Chain of Custodies

Appendix B
North of Wood Street Sediment PCB Analytical Results

Station Id	C008-010			C008-016		
Start Date			12/03/2008			12/03/2008
Fraction	TOTAL			TOTAL		
Samp Id	S-08D-C008-010-00-05			S-08D-C008-016-00-05		
Field Qc Code	SA			SA		
Description	**Result**	**Final Qual**	**Unit**	**Result**	**Final Qual**	**Unit**
2,4'-Dicb	0.113		MG/KG_DRYWT	0.812	D	MG/KG_DRYWT
2,2',5-Tricb	0.213		MG/KG_DRYWT	2.065	D	MG/KG_DRYWT
2,4,4'-Tricb	0.204		MG/KG_DRYWT	2.185	D	MG/KG_DRYWT
2,2',3,5'-Tetracb	0.075		MG/KG_DRYWT	0.777	D	MG/KG_DRYWT
2,2',5,5'-Tetracb	0.140		MG/KG_DRYWT	2.471	D	MG/KG_DRYWT
2,3',4,4'-Tetracb	0.032		MG/KG_DRYWT	0.374		MG/KG_DRYWT
2,2',4,5,5'-Pentacb	0.025		MG/KG_DRYWT	0.579		MG/KG_DRYWT
2,3,3',4,4'-Pentacb	0.009	pJ	MG/KG_DRYWT	0.074		MG/KG_DRYWT
2,3',4,4',5-Pentacb	0.021		MG/KG_DRYWT	0.451		MG/KG_DRYWT
2,2',3,3',4,4'-Hexacb	0.004	J	MG/KG_DRYWT	0.070		MG/KG_DRYWT
2,2',3,4,4',5'-Hexacb	0.016		MG/KG_DRYWT	0.411		MG/KG_DRYWT
2,2',4,4',5,5'-Hexacb	0.017		MG/KG_DRYWT	0.624		MG/KG_DRYWT
2,2',3,3',4,4',5-Heptacb	0.001	J	MG/KG_DRYWT	0.058		MG/KG_DRYWT
2,2',3,4,4',5,5'-Heptacb	0.002	J	MG/KG_DRYWT	0.079		MG/KG_DRYWT
2,2',3,4',5,5',6-Heptacb	0.014	U	MG/KG_DRYWT	0.068		MG/KG_DRYWT
2,2',3,3',4,4',5,6-Octacb	0.014	U	MG/KG_DRYWT	0.007	pJ	MG/KG_DRYWT
2,2',3,3',4,4',5,5',6-Nonacb	0.014	U	MG/KG_DRYWT	0.009	J	MG/KG_DRYWT
Decacb - Congener	0.014	U	MG/KG_DRYWT	0.016	U	MG/KG_DRYWT
Total MonoCB						
Total DiCB						
Total TriCB						
Total TetraCB						
Total PentaCB						
Total HexaCB						
Total HeptaCB						
Total OctaCB						
Total NonaCB						
DecaCB - Homologue						
Total PCB Congeners (sum CONG x factor)	2.3		MG/KG_DRYWT	29.		MG/KG_DRYWT
Total PCB Homologues (sum HOM)						

Appendix B
North of Wood Street Sediment PCB Analytical Results

Station Id	C008-023			C008-028		
Start Date	12/03/2008			12/03/2008		
Fraction	TOTAL			TOTAL		
Samp Id	S-08D-C008-023-00-05			S-08D-C008-028-00-05		
Field Qc Code	SA			SA		
Description	**Result**	**Final Qual**	**Unit**	**Result**	**Final Qual**	**Unit**
2,4'-Dicb	1.190		MG/KG_DRYWT	1.726	D	MG/KG_DRYWT
2,2',5-Tricb	2.040		MG/KG_DRYWT	3.885	D	MG/KG_DRYWT
2,4,4'-Tricb	3.460		MG/KG_DRYWT	5.868	D	MG/KG_DRYWT
2,2',3,5'-Tetracb	1.320		MG/KG_DRYWT	2.021	D	MG/KG_DRYWT
2,2',5,5'-Tetracb	3.900		MG/KG_DRYWT	7.463	D	MG/KG_DRYWT
2,3',4,4'-Tetracb	0.670		MG/KG_DRYWT	1.442		MG/KG_DRYWT
2,2',4,5,5'-Pentacb	1.160		MG/KG_DRYWT	1.875	D	MG/KG_DRYWT
2,3,3',4,4'-Pentacb	0.130		MG/KG_DRYWT	0.207		MG/KG_DRYWT
2,3',4,4',5-Pentacb	0.880		MG/KG_DRYWT	1.268	D	MG/KG_DRYWT
2,2',3,3',4,4'-Hexacb	0.090		MG/KG_DRYWT	0.152		MG/KG_DRYWT
2,2',3,4,4',5'-Hexacb	0.670		MG/KG_DRYWT	0.929	D	MG/KG_DRYWT
2,2',4,4',5,5'-Hexacb	1.130		MG/KG_DRYWT	1.576	D	MG/KG_DRYWT
2,2',3,3',4,4',5-Heptacb	0.090		MG/KG_DRYWT	0.203		MG/KG_DRYWT
2,2',3,4,4',5,5'-Heptacb	0.120		MG/KG_DRYWT	0.290		MG/KG_DRYWT
2,2',3,4',5,5',6-Heptacb	0.140		MG/KG_DRYWT	0.353		MG/KG_DRYWT
2,2',3,3',4,4',5,6-Octacb	0.010	pJ	MG/KG_DRYWT	0.036	pJ	MG/KG_DRYWT
2,2',3,3',4,4',5,5',6-Nonacb	0.020	pJ	MG/KG_DRYWT	0.045		MG/KG_DRYWT
Decacb - Congener	0.040	U	MG/KG_DRYWT	0.000	J	MG/KG_DRYWT
Total MonoCB	0.1		MG/KG_DRYWT			
Total DiCB	3.42		MG/KG_DRYWT			
Total TriCB	16.52		MG/KG_DRYWT			
Total TetraCB	16.48		MG/KG_DRYWT			
Total PentaCB	8.84		MG/KG_DRYWT			
Total HexaCB	4.4		MG/KG_DRYWT			
Total HeptaCB	1.02		MG/KG_DRYWT			
Total OctaCB	0.24	J	MG/KG_DRYWT			
Total NonaCB	0.03	J	MG/KG_DRYWT			
DecaCB - Homologue	0.04	U	MG/KG_DRYWT			
Total PCB Congeners (sum CONG x factor)	44.		MG/KG_DRYWT	76.		MG/KG_DRYWT
Total PCB Homologues (sum HOM)	51.		MG/KG_DRYWT			

Appendix B
North of Wood Street Sediment PCB Analytical Results

Station Id	C008-030E			C008-30W		
Start Date			11/20/2008			11/20/2008
Fraction	TOTAL			TOTAL		
Samp Id	S-08D-C008-30E-00-05			S-08D-C008-30W-00-05		
Field Qc Code	SA			SA		
Description	**Result**	**Final Qual**	**Unit**	**Result**	**Final Qual**	**Unit**
2,4'-Dicb	0.005	J	MG/KG_DRYWT	0.015	U	MG/KG_DRYWT
2,2',5-Tricb	0.039		MG/KG_DRYWT	0.029		MG/KG_DRYWT
2,4,4'-Tricb	0.082		MG/KG_DRYWT	0.068		MG/KG_DRYWT
2,2',3,5'-Tetracb	0.026		MG/KG_DRYWT	0.021		MG/KG_DRYWT
2,2',5,5'-Tetracb	0.101		MG/KG_DRYWT	0.085		MG/KG_DRYWT
2,3',4,4'-Tetracb	0.016		MG/KG_DRYWT	0.022		MG/KG_DRYWT
2,2',4,5,5'-Pentacb	0.032		MG/KG_DRYWT	0.038		MG/KG_DRYWT
2,3,3',4,4'-Pentacb	0.008	pJ	MG/KG_DRYWT	0.007	J	MG/KG_DRYWT
2,3',4,4',5-Pentacb	0.033		MG/KG_DRYWT	0.038		MG/KG_DRYWT
2,2',3,3',4,4'-Hexacb	0.002	J	MG/KG_DRYWT	0.001	J	MG/KG_DRYWT
2,2',3,4,4',5'-Hexacb	0.025		MG/KG_DRYWT	0.022		MG/KG_DRYWT
2,2',4,4',5,5'-Hexacb	0.035		MG/KG_DRYWT	0.040		MG/KG_DRYWT
2,2',3,3',4,4',5-Heptacb	0.003	pJ	MG/KG_DRYWT	0.003	pJ	MG/KG_DRYWT
2,2',3,4,4',5,5'-Heptacb	0.004	J	MG/KG_DRYWT	0.004	J	MG/KG_DRYWT
2,2',3,4',5,5',6-Heptacb	0.000	pJ	MG/KG_DRYWT	0.002	pJ	MG/KG_DRYWT
2,2',3,3',4,4',5,6-Octacb	0.014	U	MG/KG_DRYWT	0.015	U	MG/KG_DRYWT
2,2',3,3',4,4',5,5',6-Nonacb	0.001	pJ	MG/KG_DRYWT	0.001	pJ	MG/KG_DRYWT
Decacb - Congener	0.014	U	MG/KG_DRYWT	0.015	U	MG/KG_DRYWT
Total MonoCB						
Total DiCB						
Total TriCB						
Total TetraCB						
Total PentaCB						
Total HexaCB						
Total HeptaCB						
Total OctaCB						
Total NonaCB						
DecaCB - Homologue						
Total PCB Congeners (sum CONG x factor)	1.1		MG/KG_DRYWT	0.98		MG/KG_DRYWT
Total PCB Homologues (sum HOM)						

Appendix B
North of Wood Street Sediment PCB Analytical Results

Station Id	C008-033			C008-038		
Start Date			12/03/2008			12/03/2008
Fraction	TOTAL			TOTAL		
Samp Id	S-08D-C008-033-00-05			S-08D-C008-038-00-05		
Field Qc Code	SA			SA		
Description	**Result**	**Final Qual**	**Unit**	**Result**	**Final Qual**	**Unit**
2,4'-Dicb	1.508	D	MG/KG_DRYWT	0.416	D	MG/KG_DRYWT
2,2',5-Tricb	3.497	D	MG/KG_DRYWT	1.334	D	MG/KG_DRYWT
2,4,4'-Tricb	5.780	D	MG/KG_DRYWT	2.460	D	MG/KG_DRYWT
2,2',3,5'-Tetracb	1.904	D	MG/KG_DRYWT	0.832	D	MG/KG_DRYWT
2,2',5,5'-Tetracb	7.265	D	MG/KG_DRYWT	3.488	D	MG/KG_DRYWT
2,3',4,4'-Tetracb	1.470		MG/KG_DRYWT	0.599		MG/KG_DRYWT
2,2',4,5,5'-Pentacb	1.903	D	MG/KG_DRYWT	0.962	D	MG/KG_DRYWT
2,3,3',4,4'-Pentacb	0.212		MG/KG_DRYWT	0.122		MG/KG_DRYWT
2,3',4,4',5-Pentacb	1.247	D	MG/KG_DRYWT	0.687	D	MG/KG_DRYWT
2,2',3,3',4,4'-Hexacb	0.163		MG/KG_DRYWT	0.095		MG/KG_DRYWT
2,2',3,4,4',5'-Hexacb	0.968	D	MG/KG_DRYWT	0.501	D	MG/KG_DRYWT
2,2',4,4',5,5'-Hexacb	1.643	D	MG/KG_DRYWT	0.885	D	MG/KG_DRYWT
2,2',3,3',4,4',5-Heptacb	0.206		MG/KG_DRYWT	0.106		MG/KG_DRYWT
2,2',3,4,4',5,5'-Heptacb	0.291		MG/KG_DRYWT	0.147		MG/KG_DRYWT
2,2',3,4',5,5',6-Heptacb	0.360		MG/KG_DRYWT	0.182		MG/KG_DRYWT
2,2',3,3',4,4',5,6-Octacb	0.043	p	MG/KG_DRYWT	0.016	pJ	MG/KG_DRYWT
2,2',3,3',4,4',5,5',6-Nonacb	0.048		MG/KG_DRYWT	0.020		MG/KG_DRYWT
Decacb - Congener	0.002	pJ	MG/KG_DRYWT	0.001	J	MG/KG_DRYWT
Total MonoCB						
Total DiCB						
Total TriCB						
Total TetraCB						
Total PentaCB						
Total HexaCB						
Total HeptaCB						
Total OctaCB						
Total NonaCB						
DecaCB - Homologue						
Total PCB Congeners (sum CONG x factor)	74.		MG/KG_DRYWT	33.		MG/KG_DRYWT
Total PCB Homologues (sum HOM)						

Appendix B
North of Wood Street Sediment PCB Analytical Results

Station Id	C008-039			C008-040		
Start Date			12/03/2008			12/03/2008
Fraction	TOTAL			TOTAL		
Samp Id	S-08D-C008-039-00-05			S-08D-C008-040-00-05		
Field Qc Code	SA			SA		
Description	**Result**	**Final Qual**	**Unit**	**Result**	**Final Qual**	**Unit**
2,4'-Dicb	3.369	D	MG/KG_DRYWT	0.409	D	MG/KG_DRYWT
2,2',5-Tricb	6.985	D	MG/KG_DRYWT	0.972	D	MG/KG_DRYWT
2,4,4'-Tricb	10.554	D	MG/KG_DRYWT	1.944	D	MG/KG_DRYWT
2,2',3,5'-Tetracb	3.792	D	MG/KG_DRYWT	0.576	D	MG/KG_DRYWT
2,2',5,5'-Tetracb	13.780	D	MG/KG_DRYWT	2.193	D	MG/KG_DRYWT
2,3',4,4'-Tetracb	1.582	D	MG/KG_DRYWT	0.618		MG/KG_DRYWT
2,2',4,5,5'-Pentacb	3.586	D	MG/KG_DRYWT	0.568	D	MG/KG_DRYWT
2,3,3',4,4'-Pentacb	0.344		MG/KG_DRYWT	0.097		MG/KG_DRYWT
2,3',4,4',5-Pentacb	2.298	D	MG/KG_DRYWT	0.405	D	MG/KG_DRYWT
2,2',3,3',4,4'-Hexacb	0.279		MG/KG_DRYWT	0.093		MG/KG_DRYWT
2,2',3,4,4',5'-Hexacb	1.844	D	MG/KG_DRYWT	0.505		MG/KG_DRYWT
2,2',4,4',5,5'-Hexacb	3.237	D	MG/KG_DRYWT	0.445	D	MG/KG_DRYWT
2,2',3,3',4,4',5-Heptacb	0.374		MG/KG_DRYWT	0.068		MG/KG_DRYWT
2,2',3,4,4',5,5'-Heptacb	0.530		MG/KG_DRYWT	0.095		MG/KG_DRYWT
2,2',3,4',5,5',6-Heptacb	0.674		MG/KG_DRYWT	0.132		MG/KG_DRYWT
2,2',3,3',4,4',5,6-Octacb	0.072	p	MG/KG_DRYWT	0.011	pJ	MG/KG_DRYWT
2,2',3,3',4,4',5,5',6-Nonacb	0.097		MG/KG_DRYWT	0.017	J	MG/KG_DRYWT
Decacb - Congener	0.019	pJ	MG/KG_DRYWT	0.007	pJ	MG/KG_DRYWT
Total MonoCB						
Total DiCB						
Total TriCB						
Total TetraCB						
Total PentaCB						
Total HexaCB						
Total HeptaCB						
Total OctaCB						
Total NonaCB						
DecaCB - Homologue						
Total PCB Congeners (sum CONG x factor)	140.		MG/KG_DRYWT	24.		MG/KG_DRYWT
Total PCB Homologues (sum HOM)						

Appendix B
North of Wood Street Sediment PCB Analytical Results

Station Id	C008-048			C008-049		
Start Date			12/03/2008			12/03/2008
Fraction	TOTAL			TOTAL		
Samp Id	S-08D-C008-048-00-05			S-08D-C008-049-00-05		
Field Qc Code	SA			SA		
Description	**Result**	**Final Qual**	**Unit**	**Result**	**Final Qual**	**Unit**
2,4'-Dicb	0.741	D	MG/KG_DRYWT	0.450		MG/KG_DRYWT
2,2',5-Tricb	1.967	D	MG/KG_DRYWT	0.910		MG/KG_DRYWT
2,4,4'-Tricb	3.715	D	MG/KG_DRYWT	1.760		MG/KG_DRYWT
2,2',3,5'-Tetracb	1.136	D	MG/KG_DRYWT	0.670		MG/KG_DRYWT
2,2',5,5'-Tetracb	4.556	D	MG/KG_DRYWT	2.160		MG/KG_DRYWT
2,3',4,4'-Tetracb	0.651	D	MG/KG_DRYWT	0.320		MG/KG_DRYWT
2,2',4,5,5'-Pentacb	1.271	D	MG/KG_DRYWT	0.650		MG/KG_DRYWT
2,3,3',4,4'-Pentacb	0.187		MG/KG_DRYWT	0.060		MG/KG_DRYWT
2,3',4,4',5-Pentacb	0.875	D	MG/KG_DRYWT	0.480		MG/KG_DRYWT
2,2',3,3',4,4'-Hexacb	0.130		MG/KG_DRYWT	0.040		MG/KG_DRYWT
2,2',3,4,4',5'-Hexacb	0.646	D	MG/KG_DRYWT	0.380		MG/KG_DRYWT
2,2',4,4',5,5'-Hexacb	1.046	D	MG/KG_DRYWT	0.660		MG/KG_DRYWT
2,2',3,3',4,4',5-Heptacb	0.149		MG/KG_DRYWT	0.050		MG/KG_DRYWT
2,2',3,4,4',5,5'-Heptacb	0.208		MG/KG_DRYWT	0.070		MG/KG_DRYWT
2,2',3,4',5,5',6-Heptacb	0.249		MG/KG_DRYWT	0.090		MG/KG_DRYWT
2,2',3,3',4,4',5,6-Octacb	0.025	pJ	MG/KG_DRYWT	0.010	pJ	MG/KG_DRYWT
2,2',3,3',4,4',5,5',6-Nonacb	0.030		MG/KG_DRYWT	0.010	J	MG/KG_DRYWT
Decacb - Congener	0.028	U	MG/KG_DRYWT	0.020	U	MG/KG_DRYWT
Total MonoCB				0.06		MG/KG_DRYWT
Total DiCB				1.43		MG/KG_DRYWT
Total TriCB				7.76		MG/KG_DRYWT
Total TetraCB				8.48		MG/KG_DRYWT
Total PentaCB				4.93		MG/KG_DRYWT
Total HexaCB				2.68		MG/KG_DRYWT
Total HeptaCB				0.58		MG/KG_DRYWT
Total OctaCB				0.1	J	MG/KG_DRYWT
Total NonaCB				0.01	J	MG/KG_DRYWT
DecaCB - Homologue				0.02	U	MG/KG_DRYWT
Total PCB Congeners (sum CONG x factor)	46.		MG/KG_DRYWT	23.		MG/KG_DRYWT
Total PCB Homologues (sum HOM)				26.		MG/KG_DRYWT

Appendix B
North of Wood Street Sediment PCB Analytical Results

Station Id	C008-055			C008-055		
Start Date			12/03/2008			12/03/2008
Fraction	TOTAL			TOTAL		
Samp Id	S-08D-C008-055-00-05			S-08D-C008-055-00-05-REP		
Field Qc Code	SA			REP		
Description	**Result**	**Final Qual**	**Unit**	**Result**	**Final Qual**	**Unit**
2,4'-Dicb	3.945	D	MG/KG_DRYWT	3.004	D	MG/KG_DRYWT
2,2',5-Tricb	9.068	D	MG/KG_DRYWT	7.081	D	MG/KG_DRYWT
2,4,4'-Tricb	13.736	D	MG/KG_DRYWT	11.265	D	MG/KG_DRYWT
2,2',3,5'-Tetracb	5.731	D	MG/KG_DRYWT	4.315	D	MG/KG_DRYWT
2,2',5,5'-Tetracb	19.691	D	MG/KG_DRYWT	15.233	D	MG/KG_DRYWT
2,3',4,4'-Tetracb	1.434	D	MG/KG_DRYWT	1.280	D	MG/KG_DRYWT
2,2',4,5,5'-Pentacb	4.125	D	MG/KG_DRYWT	3.553	D	MG/KG_DRYWT
2,3,3',4,4'-Pentacb	0.451		MG/KG_DRYWT	0.287		MG/KG_DRYWT
2,3',4,4',5-Pentacb	2.751	D	MG/KG_DRYWT	2.314	D	MG/KG_DRYWT
2,2',3,3',4,4'-Hexacb	0.352		MG/KG_DRYWT	0.234		MG/KG_DRYWT
2,2',3,4,4',5'-Hexacb	2.586	D	MG/KG_DRYWT	2.045	D	MG/KG_DRYWT
2,2',4,4',5,5'-Hexacb	4.497	D	MG/KG_DRYWT	3.685	D	MG/KG_DRYWT
2,2',3,3',4,4',5-Heptacb	0.457		MG/KG_DRYWT	0.304		MG/KG_DRYWT
2,2',3,4,4',5,5'-Heptacb	0.644		MG/KG_DRYWT	0.428		MG/KG_DRYWT
2,2',3,4',5,5',6-Heptacb	0.861		MG/KG_DRYWT	0.577		MG/KG_DRYWT
2,2',3,3',4,4',5,6-Octacb	0.090	p	MG/KG_DRYWT	0.056	p	MG/KG_DRYWT
2,2',3,3',4,4',5,5',6-Nonacb	0.117	p	MG/KG_DRYWT	0.074		MG/KG_DRYWT
Decacb - Congener	0.023	pJ	MG/KG_DRYWT	0.007	J	MG/KG_DRYWT
Total MonoCB						
Total DiCB						
Total TriCB						
Total TetraCB						
Total PentaCB						
Total HexaCB						
Total HeptaCB						
Total OctaCB						
Total NonaCB						
DecaCB - Homologue						
Total PCB Congeners (sum CONG x factor)	180.		MG/KG_DRYWT	150.		MG/KG_DRYWT
Total PCB Homologues (sum HOM)						

Appendix B
North of Wood Street Sediment PCB Analytical Results

Station Id	C008-062			FIELDQC		
Start Date			12/03/2008			11/20/2008
Fraction	TOTAL			TOTAL		
Samp Id	S-08D-C008-062-00-05			EB-112008-EB1		
Field Qc Code	SA			EB		
Description	**Result**	**Final Qual**	**Unit**	**Result**	**Final Qual**	**Unit**
2,4'-Dicb	2.070	D	MG/KG_DRYWT	0.001	U	UG/L
2,2',5-Tricb	4.607	D	MG/KG_DRYWT	0.001	U	UG/L
2,4,4'-Tricb	4.425	D	MG/KG_DRYWT	0.001	U	UG/L
2,2',3,5'-Tetracb	0.750	D	MG/KG_DRYWT	0.001	U	UG/L
2,2',5,5'-Tetracb	6.223	D	MG/KG_DRYWT	0.001	U	UG/L
2,3',4,4'-Tetracb	0.615		MG/KG_DRYWT	0.001	U	UG/L
2,2',4,5,5'-Pentacb	0.903	D	MG/KG_DRYWT	0.001	U	UG/L
2,3,3',4,4'-Pentacb	0.086		MG/KG_DRYWT	0.001	U	UG/L
2,3',4,4',5-Pentacb	0.626	D	MG/KG_DRYWT	0.001	U	UG/L
2,2',3,3',4,4'-Hexacb	0.084		MG/KG_DRYWT	0.001	U	UG/L
2,2',3,4,4',5'-Hexacb	0.432	D	MG/KG_DRYWT	0.001	U	UG/L
2,2',4,4',5,5'-Hexacb	0.931	D	MG/KG_DRYWT	0.001	U	UG/L
2,2',3,3',4,4',5-Heptacb	0.122		MG/KG_DRYWT	0.001	U	UG/L
2,2',3,4,4',5,5'-Heptacb	0.173		MG/KG_DRYWT	0.001	U	UG/L
2,2',3,4',5,5',6-Heptacb	0.248		MG/KG_DRYWT	0.001	U	UG/L
2,2',3,3',4,4',5,6-Octacb	0.024	p	MG/KG_DRYWT	0.001	U	UG/L
2,2',3,3',4,4',5,5',6-Nonacb	0.035		MG/KG_DRYWT	0.001	U	UG/L
Decacb - Congener	0.003	pJ	MG/KG_DRYWT	0.001	U	UG/L
Total MonoCB						
Total DiCB						
Total TriCB						
Total TetraCB						
Total PentaCB						
Total HexaCB						
Total HeptaCB						
Total OctaCB						
Total NonaCB						
DecaCB - Homologue						
Total PCB Congeners (sum CONG x factor)	58.		MG/KG_DRYWT		U	UG/L
Total PCB Homologues (sum HOM)						

Appendix B
North of Wood Street Sediment PCB Analytical Results

Station Id	NWS-33			NWS-34		
Start Date			11/20/2008			11/20/2008
Fraction	TOTAL			TOTAL		
Samp Id	S-08D-NWS-33-00-05			S-08D-NWS-34-00-05		
Field Qc Code	SA			SA		
Description	**Result**	**Final Qual**	**Unit**	**Result**	**Final Qual**	**Unit**
2,4'-Dicb	0.003		MG/KG_DRYWT	0.004		MG/KG_DRYWT
2,2',5-Tricb	0.007		MG/KG_DRYWT	0.008		MG/KG_DRYWT
2,4,4'-Tricb	0.011		MG/KG_DRYWT	0.011		MG/KG_DRYWT
2,2',3,5'-Tetracb	0.005		MG/KG_DRYWT	0.004		MG/KG_DRYWT
2,2',5,5'-Tetracb	0.017		MG/KG_DRYWT	0.015		MG/KG_DRYWT
2,3',4,4'-Tetracb	0.004		MG/KG_DRYWT	0.004		MG/KG_DRYWT
2,2',4,5,5'-Pentacb	0.005		MG/KG_DRYWT	0.006		MG/KG_DRYWT
2,3,3',4,4'-Pentacb	0.002		MG/KG_DRYWT	0.002		MG/KG_DRYWT
2,3',4,4',5-Pentacb	0.006		MG/KG_DRYWT	0.008		MG/KG_DRYWT
2,2',3,3',4,4'-Hexacb	0.001	J	MG/KG_DRYWT	0.001	J	MG/KG_DRYWT
2,2',3,4,4',5'-Hexacb	0.005		MG/KG_DRYWT	0.006		MG/KG_DRYWT
2,2',4,4',5,5'-Hexacb	0.006		MG/KG_DRYWT	0.007		MG/KG_DRYWT
2,2',3,3',4,4',5-Heptacb	0.001	J	MG/KG_DRYWT	0.001	J	MG/KG_DRYWT
2,2',3,4,4',5,5'-Heptacb	0.001	J	MG/KG_DRYWT	0.001	J	MG/KG_DRYWT
2,2',3,4',5,5',6-Heptacb	0.000	pJ	MG/KG_DRYWT	0.000	J	MG/KG_DRYWT
2,2',3,3',4,4',5,6-Octacb	0.002	U	MG/KG_DRYWT	0.002	U	MG/KG_DRYWT
2,2',3,3',4,4',5,5',6-Nonacb	0.000	pJ	MG/KG_DRYWT	0.000	pJ	MG/KG_DRYWT
Decacb - Congener	0.002	U	MG/KG_DRYWT	0.002	U	MG/KG_DRYWT
Total MonoCB						
Total DiCB						
Total TriCB						
Total TetraCB						
Total PentaCB						
Total HexaCB						
Total HeptaCB						
Total OctaCB						
Total NonaCB						
DecaCB - Homologue						
Total PCB Congeners (sum CONG x factor)	0.19		MG/KG_DRYWT	0.2		MG/KG_DRYWT
Total PCB Homologues (sum HOM)						

Appendix B
North of Wood Street Sediment PCB Analytical Results

Station Id	NWS-35			NWS-36		
Start Date			11/20/2008			11/20/2008
Fraction	TOTAL			TOTAL		
Samp Id	S-08D-NWS-35-00-05			S-08D-NWS-36-00-05		
Field Qc Code	SA			SA		
Description	**Result**	**Final Qual**	**Unit**	**Result**	**Final Qual**	**Unit**
2,4'-Dicb	0.010		MG/KG_DRYWT	0.004		MG/KG_DRYWT
2,2',5-Tricb	0.017		MG/KG_DRYWT	0.008		MG/KG_DRYWT
2,4,4'-Tricb	0.031		MG/KG_DRYWT	0.010		MG/KG_DRYWT
2,2',3,5'-Tetracb	0.018		MG/KG_DRYWT	0.004		MG/KG_DRYWT
2,2',5,5'-Tetracb	0.040		MG/KG_DRYWT	0.012		MG/KG_DRYWT
2,3',4,4'-Tetracb	0.018		MG/KG_DRYWT	0.003		MG/KG_DRYWT
2,2',4,5,5'-Pentacb	0.024		MG/KG_DRYWT	0.004		MG/KG_DRYWT
2,3,3',4,4'-Pentacb	0.006		MG/KG_DRYWT	0.001	J	MG/KG_DRYWT
2,3',4,4',5-Pentacb	0.029		MG/KG_DRYWT	0.006		MG/KG_DRYWT
2,2',3,3',4,4'-Hexacb	0.004		MG/KG_DRYWT	0.000	J	MG/KG_DRYWT
2,2',3,4,4',5'-Hexacb	0.021		MG/KG_DRYWT	0.004		MG/KG_DRYWT
2,2',4,4',5,5'-Hexacb	0.028		MG/KG_DRYWT	0.006		MG/KG_DRYWT
2,2',3,3',4,4',5-Heptacb	0.003		MG/KG_DRYWT	0.001	J	MG/KG_DRYWT
2,2',3,4,4',5,5'-Heptacb	0.005		MG/KG_DRYWT	0.006	p	MG/KG_DRYWT
2,2',3,4',5,5',6-Heptacb	0.002		MG/KG_DRYWT	0.001	J	MG/KG_DRYWT
2,2',3,3',4,4',5,6-Octacb	0.000	pJ	MG/KG_DRYWT	0.000	pJ	MG/KG_DRYWT
2,2',3,3',4,4',5,5',6-Nonacb	0.000	pJ	MG/KG_DRYWT	0.000	pJ	MG/KG_DRYWT
Decacb - Congener	0.002	U	MG/KG_DRYWT	0.002	U	MG/KG_DRYWT
Total MonoCB						
Total DiCB						
Total TriCB						
Total TetraCB						
Total PentaCB						
Total HexaCB						
Total HeptaCB						
Total OctaCB						
Total NonaCB						
DecaCB - Homologue						
Total PCB Congeners (sum CONG x factor)	0.67		MG/KG_DRYWT	0.18		MG/KG_DRYWT
Total PCB Homologues (sum HOM)						

Appendix B
North of Wood Street Sediment PCB Analytical Results

Station Id	NWS-37			NWS-38		
Start Date			11/20/2008			11/20/2008
Fraction	TOTAL			TOTAL		
Samp Id	S-08D-NWS-37-00-05			S-08D-NWS-38-00-05		
Field Qc Code	SA			SA		
Description	**Result**	**Final Qual**	**Unit**	**Result**	**Final Qual**	**Unit**
2,4'-Dicb	0.002	U	MG/KG_DRYWT	0.000	pJ	MG/KG_DRYWT
2,2',5-Tricb	0.001	J	MG/KG_DRYWT	0.001	J	MG/KG_DRYWT
2,4,4'-Tricb	0.004		MG/KG_DRYWT	0.004		MG/KG_DRYWT
2,2',3,5'-Tetracb	0.002	J	MG/KG_DRYWT	0.002	J	MG/KG_DRYWT
2,2',5,5'-Tetracb	0.010		MG/KG_DRYWT	0.006		MG/KG_DRYWT
2,3',4,4'-Tetracb	0.004		MG/KG_DRYWT	0.002		MG/KG_DRYWT
2,2',4,5,5'-Pentacb	0.005		MG/KG_DRYWT	0.002		MG/KG_DRYWT
2,3,3',4,4'-Pentacb	0.002		MG/KG_DRYWT	0.001	J	MG/KG_DRYWT
2,3',4,4',5-Pentacb	0.006		MG/KG_DRYWT	0.003		MG/KG_DRYWT
2,2',3,3',4,4'-Hexacb	0.001	J	MG/KG_DRYWT	0.000	J	MG/KG_DRYWT
2,2',3,4,4',5'-Hexacb	0.005		MG/KG_DRYWT	0.003		MG/KG_DRYWT
2,2',4,4',5,5'-Hexacb	0.007		MG/KG_DRYWT	0.003		MG/KG_DRYWT
2,2',3,3',4,4',5-Heptacb	0.001	J	MG/KG_DRYWT	0.001	pJ	MG/KG_DRYWT
2,2',3,4,4',5,5'-Heptacb	0.002	J	MG/KG_DRYWT	0.001	J	MG/KG_DRYWT
2,2',3,4',5,5',6-Heptacb	0.000	J	MG/KG_DRYWT	0.002	U	MG/KG_DRYWT
2,2',3,3',4,4',5,6-Octacb	0.000	pJ	MG/KG_DRYWT	0.002	U	MG/KG_DRYWT
2,2',3,3',4,4',5,5',6-Nonacb	0.000	pJ	MG/KG_DRYWT	0.000	pJ	MG/KG_DRYWT
Decacb - Congener	0.002	U	MG/KG_DRYWT	0.002	U	MG/KG_DRYWT
Total MonoCB						
Total DiCB						
Total TriCB						
Total TetraCB						
Total PentaCB						
Total HexaCB						
Total HeptaCB						
Total OctaCB						
Total NonaCB						
DecaCB - Homologue						
Total PCB Congeners (sum CONG x factor)	0.13		MG/KG_DRYWT	0.076		MG/KG_DRYWT
Total PCB Homologues (sum HOM)						

Appendix B
North of Wood Street Sediment PCB Analytical Results

Station Id	NWS-39		
Start Date			11/20/2008
Fraction	TOTAL		
Samp Id	S-08D-NWS-39-00-05		
Field Qc Code	SA		
Description	**Result**	**Final Qual**	**Unit**
2,4'-Dicb	0.002	U	MG/KG_DRYWT
2,2',5-Tricb	0.001	J	MG/KG_DRYWT
2,4,4'-Tricb	0.006		MG/KG_DRYWT
2,2',3,5'-Tetracb	0.004		MG/KG_DRYWT
2,2',5,5'-Tetracb	0.008		MG/KG_DRYWT
2,3',4,4'-Tetracb	0.005		MG/KG_DRYWT
2,2',4,5,5'-Pentacb	0.005		MG/KG_DRYWT
2,3,3',4,4'-Pentacb	0.002	J	MG/KG_DRYWT
2,3',4,4',5-Pentacb	0.006		MG/KG_DRYWT
2,2',3,3',4,4'-Hexacb	0.001	J	MG/KG_DRYWT
2,2',3,4,4',5'-Hexacb	0.005		MG/KG_DRYWT
2,2',4,4',5,5'-Hexacb	0.006		MG/KG_DRYWT
2,2',3,3',4,4',5-Heptacb	0.001	J	MG/KG_DRYWT
2,2',3,4,4',5,5'-Heptacb	0.003	p	MG/KG_DRYWT
2,2',3,4',5,5',6-Heptacb	0.000	J	MG/KG_DRYWT
2,2',3,3',4,4',5,6-Octacb	0.002	U	MG/KG_DRYWT
2,2',3,3',4,4',5,5',6-Nonacb	0.000	pJ	MG/KG_DRYWT
Decacb - Congener	0.002	U	MG/KG_DRYWT
Total MonoCB			
Total DiCB			
Total TriCB			
Total TetraCB			
Total PentaCB			
Total HexaCB			
Total HeptaCB			
Total OctaCB			
Total NonaCB			
DecaCB - Homologue			
Total PCB Congeners (sum CONG x factor)	0.14		MG/KG_DRYWT
Total PCB Homologues (sum HOM)			

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PCB Congeners – Sediment QA/QC Summary
Batch 09-0014

PROJECT: USACE – New Bedford Harbor Environmental Monitoring
PARAMETER: PCB Congeners
LABORATORY: Battelle, Duxbury, MA
MATRIX: Sediment
SAMPLE CUSTODY: Sediment samples were collected between 12/3/2008 – 12/5/2008 and hand delivered to the Battelle Duxbury Chemistry Sample Custodian on 1/14/2009. The samples were received in good condition and no custody issues were noted. Samples were logged into Battelle LIMS and received unique IDs. They were stored in the walk-in freezer until preparation could begin.

	Reference Method	Method Blank	Surrogate Recovery	LCS Recovery	MS Recovery	MS/MSD Relative Percent Difference	Detection Limits (mg/kg dry wt)
PCB Congeners	EPA 8082M	<ssRL	40-120% Recovery	40-120% Recovery	40-120% Recovery (analyte conc. in MS must be >5x background)	≤30% RPD (analytes must be > 5x MDL to be used for data quality assessment)	RL: 0.0013

METHOD: Sediment samples were extracted for PCB congeners following modified EPA Method 3545. Sediments were weighed, air-dried overnight, spiked with surrogates and extracted using an Accelerated Solvent Extractor (ASE). The extract was concentrated, processed through activated copper, florisil cleanup column, and concentrated. Next, the extract was concentrated, fortified with internal standards (IS), and then analyzed using gas chromatography/electron capture detector (GC/ECD), following modified EPA Method 8082. Sample data were quantified by the method of internal standards, using the spiked IS compounds.

HOLDING TIMES: Sediments of this batch were extracted within 1 year of sample holding time for frozen sediments. All extracts were analyzed within 40 days of extract holding time.

Batch	Collection Date	Extraction Date	Analysis Date
09-0014	12/03/2008 – 12/05/2008	1/27/2009	2/11/2009 – 2/25/2009

09-0014

Sample ID	Battelle ID
S-08D-C008-30W-00-05	Q6149
S-08D-C008-30E-00-05	Q6150
S-08D-NWS-35-00-05	Q6151
S-08D-NWS-34-00-05	Q6152
S-08D-NWS-36-00-05	Q6153
S-08D-NWS-33-00-05	Q6154
S-08D-NWS-37-00-05	Q6155
S-08D-NWS-38-00-05	Q6156
S-08D-NWS-39-00-05	Q6157
S-08D-C008-038-00-05	Q6158
S-08D-C008-028-00-05	Q6159

PCB Congeners – Sediment QA/QC Summary
Batch 09-0014

S-08D-C008-016-00-05	Q6162
S-08D-C008-039-00-05	Q6163
S-08D-C008-040-00-05	Q6164
S-08D-C008-062-00-05	Q6165
S-08D-C008-048-00-05	Q6166
S-08D-C008-033-00-05	Q6167
S-08D-C008-055-00-05	Q6168
S-08D-C008-055-00-05-REP	Q6169
S-08D-C008-010-00-05	Q6170

BLANK: A procedural blank (PB) was prepared with each analytical batch. Blanks were analyzed to ensure the sample extraction and analysis methods were free of contamination.

09-0014 – No target analytes were detected in the procedural blank.

LABORATORY CONTROL SAMPLE: A laboratory control sample (LCS) was prepared with each analytical batch. The percent recoveries of target analytes were calculated to measure data quality in terms of accuracy.

09-0014 – No exceedences noted. All percent recoveries of spiked target analytes were within the laboratory control limit (40-120%).

MATRIX SPIKE/MATRIX SPIKE DUPLICATE: A pair of matrix spike (MS) and matrix spike duplicate samples (MSD) was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure data quality in terms of accuracy. The RPD between percent recoveries was calculated to measure the data quality in terms of precision.

09-0014 – No exceedences noted. All percent recoveries of spiked target analytes were within the laboratory control limit (40-120%). All RPDs met the criteria of <30%.

SURROGATES: Two surrogate compounds were added prior to extraction, including PCB 34 and PCB 152. The recovery of each surrogate compound was calculated to measure data quality in terms of accuracy (extraction efficiency).

09-0014 – No exceedences noted. All percent recoveries of spiked target analytes were within the laboratory control limit (40-120%).

CALIBRATIONS: The GC/ECD was calibrated with a 6 level curve, with a correlation coefficient of >0.995. Each batch of samples analyzed is bracketed by continuing calibration verification (CCV) sample, run at a frequency of minimally every 24 hours. The %D between the initial calibration (ICAL) and the continuing calibration samples should be <20% for each compound, <15% on average. Additionally an Initial Calibration Check (ICC) sample is run immediately following the ICAL. The ICC is to have a percent difference < 20%.

09-0014 – All calibration criteria were met.

Battelle
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Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	Procedural Blank
Battelle ID	BM757PB-P
Sample Type	PB
Collection Date	01/27/09
Extraction Date	01/27/09
Analysis Date	02/23/09
Analytical Instrument	ECD
% Moisture	NA
% Lipid	NA
Matrix	SEDIMENT
Sample Size	10.79
Size Unit-Basis	G_DRY
Units	MG/KG_DRY
Cl2(8)	0.0013 U
Cl3(18)	0.0013 U
Cl3(28)	0.0013 U
Cl4(44)	0.0013 U
Cl4(52)	0.0013 U
Cl4(66)	0.0013 U
Cl5(101)	0.0013 U
Cl5(105)	0.0013 U
Cl5(118)	0.0013 U
Cl6(128)	0.0013 U
Cl6(138)	0.0013 U
Cl6(153)	0.0013 U
Cl7(170)	0.0013 U
Cl7(180)	0.0013 U
Cl7(187)	0.0013 U
Cl8(195)	0.0013 U
Cl9(206)	0.0013 U
Cl10(209)	0.0013 U

Surrogate Recoveries (%)

Cl3(34)	71
Cl6(152)	84

Not Surrogate Corrected

Analyzed by Restucci Jr, Richard
3/4/2009

PB: S09-0014ECD-8082 Congeners-Final.xls

Battelle
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Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	Laboratory Control Sample			
Battelle ID	BM758LCS-P			
Sample Type	LCS			
Collection Date	01/27/09			
Extraction Date	01/27/09			
Analysis Date	02/11/09			
Analytical Instrument	ECD			
% Moisture	NA			
% Lipid	NA			
Matrix	SEDIMENT			
Sample Size	10.84			
Size Unit-Basis	G_DRY			
Units	MG/KG_DRY	Target	% Recovery	Qualifier
Cl2(8)	0.2789	0.37	75	
Cl3(18)	0.2682	0.37	72	
Cl3(28)	0.2494	0.37	68	
Cl4(44)	0.2613	0.37	71	
Cl4(52)	0.2595	0.37	70	
Cl4(66)	0.2629	0.37	71	
Cl5(101)	0.2583	0.37	70	
Cl5(105)	0.2762	0.37	75	
Cl5(118)	0.2656	0.37	72	
Cl6(128)	0.2567	0.37	69	
Cl6(138)	0.2546	0.37	69	
Cl6(153)	0.2744	0.37	74	
Cl7(170)	0.2788	0.37	75	
Cl7(180)	0.2696	0.37	73	
Cl7(187)	0.2609	0.37	70	
Cl8(195)	0.2713	0.37	73	
Cl9(206)	0.2783	0.37	75	
Cl10(209)	0.2835	0.37	77	

Surrogate Recoveries (%)

Cl3(34)	75
Cl6(152)	74

Analyzed by Restucci Jr, Richard
3/4/2009

Not Surrogate Corrected

LCS: S09-0014ECD-8082 Congeners-Final.xls

Battelle
The Business of Innovation

Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	S-08D-NWS-33-00-05	S-08D-NWS-33-00-05			
Battelle ID	Q6154-P	Q6154MS-P			
Sample Type	SA	MS			
Collection Date	11/20/08	11/20/2008			
Extraction Date	01/27/09	1/27/2009			
Analysis Date	02/24/09	2/12/2009			
Analytical Instrument	ECD	ECD			
% Moisture	17.9	17.14			
% Lipid	NA	NA			
Matrix	SEDIMENT	SEDIMENT			
Sample Size	8.58	8.68			
Size Unit-Basis	G_DRY	G_DRY			
Units	MG/KG_DRY	MG/KG_DRY	Target	% Recovery	Qualifier
Cl2(8)	0.0029	0.4383	0.46	94	
Cl3(18)	0.0067	0.4346	0.46	93	
Cl3(28)	0.011	0.4139	0.46	87	
Cl4(44)	0.005	0.417	0.46	89	
Cl4(52)	0.0165	0.4329	0.46	90	
Cl4(66)	0.0037	0.4062	0.46	87	
Cl5(101)	0.0053	0.4114	0.46	88	
Cl5(105)	0.0021	0.4669	0.46	101	
Cl5(118)	0.0055	0.4243	0.46	91	
Cl6(128)	0.0009 J	0.408	0.46	88	
Cl6(138)	0.0047	0.4196	0.46	90	
Cl6(153)	0.0056	0.4451	0.46	95	
Cl7(170)	0.0006 J	0.4439	0.46	96	
Cl7(180)	0.0008 J	0.4316	0.46	93	
Cl7(187)	0.0003 pJ	0.4194	0.46	91	
Cl8(195)	0.0016 U	0.4317	0.46	93	
Cl9(206)	0.0002 pJ	0.4363	0.46	94	
Cl10(209)	0.0016 U	0.4397	0.46	95	

Surrogate Recoveries (%)

Cl3(34)	69	90
Cl6(152)	83	92

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Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	S-08D-NWS-33-00-05					
Battelle ID	Q6154MSD-P					
Sample Type	MSD					
Collection Date	11/20/2008					
Extraction Date	1/27/2009					
Analysis Date	2/12/2009					
Analytical Instrument	ECD					
% Moisture	15.38					
% Lipid	NA					
Matrix	SEDIMENT					
Sample Size	8.47					
Size Unit-Basis	G_DRY					
Units	MG/KG_DRY	Target	% Recovery	Qualifier	RPD (%)	Qualifier
Cl2(8)	0.4117	0.47	86		8.9	
Cl3(18)	0.4058	0.47	84		10.2	
Cl3(28)	0.3613	0.47	74		16.1	
Cl4(44)	0.393	0.47	82		8.2	
Cl4(52)	0.4031	0.47	82		9.3	
Cl4(66)	0.3899	0.47	82		5.9	
Cl5(101)	0.3848	0.47	80		9.5	
Cl5(105)	0.4768	0.47	100		1.0	
Cl5(118)	0.3986	0.47	83		9.2	
Cl6(128)	0.3838	0.48	81		8.3	
Cl6(138)	0.3895	0.47	81		10.5	
Cl6(153)	0.4117	0.47	86		9.9	
Cl7(170)	0.4215	0.47	89		7.6	
Cl7(180)	0.4119	0.47	87		6.7	
Cl7(187)	0.3963	0.47	84		8.0	
Cl8(195)	0.4102	0.47	87		6.7	
Cl9(206)	0.418	0.47	88		6.6	
Cl10(209)	0.419	0.47	89		6.5	

Surrogate Recoveries (%)

Cl3(34)	83
Cl6(152)	83

PCB Congeners – Sediment QA/QC Summary
Batch 09-0015

PROJECT: USACE – New Bedford Harbor Environmental Monitoring
PARAMETER: PCB Congeners
LABORATORY: Battelle, Duxbury, MA
MATRIX: Sediment
SAMPLE CUSTODY: Sediment samples were collected between 12/3/2008 – 12/5/2008 and hand delivered to the Battelle Duxbury Chemistry Sample Custodian on 1/14/2009. The samples were received in good condition and no custody issues were noted. Samples were logged into Battelle LIMS and received unique IDs. They were stored in the walk-in freezer until preparation could begin.

	Reference Method	Method Blank	Surrogate Recovery	LCS Recovery	MS Recovery	MS/MSD Relative Percent Difference	Detection Limits (mg/kg dry wt)
PCB Congeners	EPA 8082M	<ssRL	40-120% Recovery	40-120% Recovery	40-120% Recovery (analyte conc. in MS must be >5x background)	≤30% RPD (analytes must be > 5x MDL to be used for data quality assessment)	RL: 0.03

METHOD: Sediment samples were extracted for PCB congeners following modified EPA Method 3545. Sediments were air-dried overnight, and approximately 5 g of sediment was spiked with surrogates and extracted using an Accelerated Solvent Extractor (ASE). The extract was concentrated, processed through activated copper, florisil cleanup column, and concentrated. Next, the extract was concentrated, fortified with internal standards (IS), and then analyzed using gas chromatography/electron capture detector (GC/ECD), following modified EPA Method 8082. Sample data were quantified by the method of internal standards, using the spiked IS compounds.

HOLDING TIMES: Sediments of this batch were extracted within 1 year of sample holding time for frozen sediments. All extracts were analyzed within 40 days of extract holding time.

Batch	Collection Date	Extraction Date	Analysis Date
09-0015	12/03/2008 – 12/05/2008	1/29/2009	2/13/2009 – 2/15/2009

09-0015

Sample ID	**Battelle ID**
S-08D-C008-049-00-05	Q6160
S-08D-C008-023-00-05	Q6161
S-08C-X33-00-11	Q6171
S-08C-T38-00-10	Q6172
S-08C-CC27-00-09	Q6173
S-08C-T22-00-04	Q6174
S-08C-D32-00-05	Q6175
S-08C-D25-00-07	Q6176
S-08C-bb28-00-10	Q6177

PCB Congeners – Sediment QA/QC Summary
Batch 09-0015

BLANK: A procedural blank (PB) was prepared with each analytical batch. Blanks were analyzed to ensure the sample extraction and analysis methods were free of contamination.

09-0015 – No target analytes were detected in the procedural blank.

LABORATORY CONTROL SAMPLE: A laboratory control sample (LCS) was prepared with each analytical batch. The percent recoveries of target analytes were calculated to measure data quality in terms of accuracy.

09-0015 – No exceedences noted. All percent recoveries of spiked target analytes were within the laboratory control limit (40-120%).

MATRIX SPIKE/MATRIX SPIKE DUPLICATE: A pair of matrix spike (MS) and matrix spike duplicate samples (MSD) was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure data quality in terms of accuracy. The RPD between percent recoveries was calculated to measure the data quality in terms of precision.

09-0015 – No exceedences noted. All percent recoveries of spiked target analytes were within the laboratory control limit (40-120%). All RPDs met the criteria of <30%.

REPLICATES: Laboratory duplicate analysis was performed with this analytical batch. RPDs between duplicate analyses were calculated to measure data quality in terms of precision.

09-0015 – No exceedences noted. All RPDs between duplicate samples met the criteria of <30%.

SURROGATES: Two surrogate compounds were added prior to extraction, including PCB 34 and PCB 152. The recovery of each surrogate compound was calculated to measure data quality in terms of accuracy (extraction efficiency).

09-0015 – No exceedences noted. All percent recoveries of spiked target analytes were within the laboratory control limit (40-120%).

CALIBRATIONS: The GC/ECD was calibrated with a 6 level curve, with a correlation coefficient of >0.995. Each batch of samples analyzed is bracketed by continuing calibration verification (CCV) sample, run at a frequency of minimally every 24 hours. The %D between the initial calibration (ICAL) and the continuing calibration samples should be <20% for each compound, <15% on average. Additionally an Initial Calibration Check (ICC) sample is run immediately following the ICAL. The ICC is to have a percent difference < 20%.

09-0015 – All calibration criteria were met.

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Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	Procedural Blank
Battelle ID	BM759PB-P
Sample Type	PB
Collection Date	01/29/09
Extraction Date	01/29/09
Analysis Date	02/13/09
Analytical Instrument	ECD
% Moisture	54.07
% Lipid	NA
Matrix	SEDIMENT
Sample Size	4.67
Size Unit-Basis	G_DRY
Units	MG/KG_DRY

Cl2(8)	0.03	U
Cl3(18)	0.03	U
Cl3(28)	0.03	U
Cl4(44)	0.03	U
Cl4(52)	0.03	U
Cl4(66)	0.03	U
Cl5(101)	0.03	U
Cl5(105)	0.03	U
Cl5(118)	0.03	U
Cl6(128)	0.03	U
Cl6(138)	0.03	U
Cl6(153)	0.03	U
Cl7(170)	0.03	U
Cl7(180)	0.03	U
Cl7(187)	0.03	U
Cl8(195)	0.03	U
Cl9(206)	0.03	U
Cl10(209)	0.03	U

Surrogate Recoveries (%)

Cl3(34)	69
Cl6(152)	73

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Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	060208-03: Sand, White Quartz, -50+70			
Battelle ID	BM761LCS-P			
Sample Type	LCS			
Collection Date	01/29/09			
Extraction Date	01/29/09			
Analysis Date	02/14/09			
Analytical Instrument	ECD			
% Moisture	NA			
% Lipid	NA			
Matrix	SEDIMENT			
Sample Size	10.51			
Size Unit-Basis	G_DRY			
Units	MG/KG_DRY	Target	% Recovery	Qualifier
Cl2(8)	0.31	0.38	81	
Cl3(18)	0.3	0.38	79	
Cl3(28)	0.29	0.38	76	
Cl4(44)	0.29	0.38	76	
Cl4(52)	0.28	0.38	74	
Cl4(66)	0.27	0.38	71	
Cl5(101)	0.28	0.38	73	
Cl5(105)	0.32	0.38	84	
Cl5(118)	0.29	0.38	76	
Cl6(128)	0.29	0.38	76	
Cl6(138)	0.28	0.38	73	
Cl6(153)	0.31	0.38	81	
Cl7(170)	0.3	0.38	78	
Cl7(180)	0.3	0.38	79	
Cl7(187)	0.29	0.38	76	
Cl8(195)	0.3	0.38	79	
Cl9(206)	0.31	0.38	81	
Cl10(209)	0.32	0.38	84	

Surrogate Recoveries (%)

Cl3(34)	76
Cl6(152)	80

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Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	S-08C-T38-00-10		S-08C-T38-00-10				
Battelle ID	Q6172-P		Q6172MS-P				
Sample Type	SA		MS				
Collection Date	12/05/08		12/5/2008				
Extraction Date	01/29/09		1/29/2009				
Analysis Date	02/14/09		2/14/2009				
Analytical Instrument	ECD		ECD				
% Moisture	39.07		39.52				
% Lipid	NA		NA				
Matrix	SEDIMENT		SEDIMENT				
Sample Size	6.25		6.14				
Size Unit-Basis	G_DRY		G_DRY				
Units	MG/KG_DRY		MG/KG_DRY		Target	% Recovery	Qualifier
Cl2(8)	0.14	p	0.67		0.65	81	
Cl3(18)	0.28		0.8	E	0.65	80	
Cl3(28)	0.61		1.15	E	0.65	83	
Cl4(44)	0.36		0.89	E	0.65	81	
Cl4(52)	0.6		1.13	E	0.65	81	
Cl4(66)	0.39		1.1	E	0.65	109	
Cl5(101)	0.58		1.12	E	0.65	83	
Cl5(105)	0.11		0.66		0.65	84	
Cl5(118)	0.55		1.1	E	0.65	84	
Cl6(128)	0.07		0.57		0.66	76	
Cl6(138)	0.34		0.87	E	0.65	81	
Cl6(153)	0.46		1	E	0.65	83	
Cl7(170)	0.04		0.57		0.65	81	
Cl7(180)	0.06		0.59		0.65	81	
Cl7(187)	0.04		0.55		0.65	78	
Cl8(195)	0.02	U	0.54		0.65	83	
Cl9(206)	0.01	pJ	0.56		0.65	84	
Cl10(209)	0.02	U	0.56		0.65	86	

Surrogate Recoveries (%)

Cl3(34)	71	77
Cl6(152)	77	82

Battelle
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Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	S-08C-T38-00-10						
Battelle ID	Q6172MSD-P						
Sample Type	MSD						
Collection Date	12/5/2008						
Extraction Date	1/29/2009						
Analysis Date	2/14/2009						
Analytical Instrument	ECD						
% Moisture	39.01						
% Lipid	NA						
Matrix	SEDIMENT						
Sample Size	6.51						
Size Unit-Basis	G_DRY						
Units	MG/KG_DRY		Target	% Recovery	Qualifier	RPD (%)	Qualifier
Cl2(8)	0.65		0.62	83		2.4	
Cl3(18)	0.77	E	0.62	80		0.0	
Cl3(28)	1.17	E	0.62	91		9.2	
Cl4(44)	0.85	E	0.62	80		1.2	
Cl4(52)	1.07	E	0.61	76		6.4	
Cl4(66)	0.9	E	0.62	83		27.1	
Cl5(101)	1.06	E	0.62	78		6.2	
Cl5(105)	0.61		0.62	81		3.6	
Cl5(118)	1.05	E	0.62	81		3.6	
Cl6(128)	0.53		0.62	74		2.7	
Cl6(138)	0.81	E	0.62	76		6.4	
Cl6(153)	0.94	E	0.62	78		6.2	
Cl7(170)	0.53		0.62	79		2.5	
Cl7(180)	0.55		0.62	79		2.5	
Cl7(187)	0.5		0.62	75		3.9	
Cl8(195)	0.5		0.62	81		2.4	
Cl9(206)	0.52		0.62	83		1.2	
Cl10(209)	0.53		0.62	86		0.0	

Surrogate Recoveries (%)

Cl3(34)	82
Cl6(152)	78

Battelle
The Business of Innovation

Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	S-08C-bb28-00-10		S-08C-bb28-00-10			
Battelle ID	Q6177-P		Q6177DUP-P			
Sample Type	SA		QADU			
Collection Date	12/05/08		12/5/2008			
Extraction Date	01/29/09		1/29/2009			
Analysis Date	02/15/09		2/15/2009			
Analytical Instrument	ECD		ECD			
% Moisture	50.17		50.8			
% Lipid	NA		NA			
Matrix	SEDIMENT		SEDIMENT			
Sample Size	5.15		5			
Size Unit-Basis	G_DRY		G_DRY			
Units	MG/KG_DRY		MG/KG_DRY		RPD	Qualifier
Cl2(8)	0.14		0.17		19.4	
Cl3(18)	0.27		0.3		10.5	
Cl3(28)	0.65		0.77		16.9	
Cl4(44)	0.35		0.37		5.6	
Cl4(52)	0.67		0.71		5.8	
Cl4(66)	0.26		0.31		17.5	
Cl5(101)	0.36		0.41		13.0	
Cl5(105)	0.08		0.09		11.8	
Cl5(118)	0.36		0.35		2.8	
Cl6(128)	0.05		0.05		0.0	
Cl6(138)	0.24		0.23		4.3	
Cl6(153)	0.33		0.31		6.3	
Cl7(170)	0.04		0.03		28.6	
Cl7(180)	0.04		0.04		0.0	
Cl7(187)	0.03		0.03		0.0	
Cl8(195)	0.02	U	0.03	U	NA	
Cl9(206)	0.02	U	0.01	pJ	NA	
Cl10(209)	0.02	U	0.03	U	NA	

Surrogate Recoveries (%)

Cl3(34)	84	92
Cl6(152)	85	80

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PCB Homologues – SEDIMENT QA/QC SUMMARY
Batch 09-0015

PROJECT: New Bedford Harbor Water Quality Monitoring
PARAMETER: PCB Homologues
LABORATORY: Battelle, Duxbury, MA
MATRIX: Sediment
SAMPLE CUSTODY: Sediment samples were collected between 12/3/2008 – 12/5/2008 and hand delivered to the Battelle Duxbury Chemistry Sample Custodian on 1/14/2009. The samples were received in good condition and no custody issues were noted. Samples were logged into Battelle LIMS and received unique IDs. They were stored in the walk-in freezer until preparation could begin. All sediment samples were extracted for PCB congener analyses by GC/ECD. 7.5% percent of the sediment samples were chosen for PCB homologue analysis. From this batch samples S-08D-C008-049-00-05, S-08D-C008-023-00-05, S-08C-X33-00-11, and S-08C-bb28-00-10 were analyzed for PCB homologues.

	Reference Method	Method Blank	Surrogate Recovery	LCS/MS/MSD Recovery	Sample Replicate Relative Precision	Reporting Limits (mg/Kg dry wt)
PCB Homologues	1668A & 8270D	< ss-RL	40-120%	40-120% MS spike must be >5 x background	<30% RPD MS spike must be >5 x background	0.03 – 0.84

METHOD: Sediment samples were extracted for PCBs following modified EPA Method 3545. Sediments were air-dried overnight, and approximately 5 g of sediment was spiked with surrogates and extracted using an Accelerated Solvent Extractor (ASE). The extract was concentrated, processed through activated copper, florisil cleanup column, and concentrated. Extracts were then fortified with internal standards (IS). Extracts designated for PCB homologue analysis were analyzed using gas chromatography/mass spectrometry (GC/MS), following Battelle SOP 5-315 which is based on key components of EPA Methods 1668A and 8270D. Sample data were quantified by the method of internal standards, using the IS compounds.

HOLDING TIMES: These frozen sediment samples were extracted within 1-year holding time. Extracts were analyzed within 40 days of extraction. All holding times were met.

Batch	Collection Date	Extraction Date	Analysis Date
09-0015	12/03/08-12/05/08	1/29/09	2/07/09-2/08/09

09-0015

Sample ID	**Battelle ID**
S-08D-C008-049-00-05	Q6160
S-08D-C008-023-00-05	Q6161
S-08C-X33-00-11	Q6171
S-08C-bb28-00-10	Q6177

PCB Homologues – SEDIMENT QA/QC SUMMARY
Batch 09-0015

BLANK: A procedural blank (PB) was prepared with the analytical batch. Blanks are analyzed to ensure the sample extraction and analysis methods were free of contamination.

09-0015 – No exceedences noted. No target analytes were detected in the procedural blank at a concentration greater than the sample-specific reporting limit.

LABORATORY CONTROL SAMPLE: A laboratory control sample (LCS) was prepared with the analytical batch. The percent recoveries of target analytes were calculated to measure data quality in terms of accuracy.

09-0015 – No exceedences noted. All recoveries were within the laboratory control limits (40%-120%).

MATRIX SPIKE/MATRIX SPIKE DUPLICATE: A pair of matrix spike (MS) and matrix spike duplicate samples (MSD) was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure data quality in terms of accuracy. The RPD between percent recoveries was calculated to measure the data quality in terms of precision.

09-0015 – No exceedences noted. All percent recoveries of spiked target analytes were within the laboratory control limit (40-120%). All RPDs met the criteria of <30%.

REPLICATES: Laboratory duplicate analysis was performed with this analytical batch. RPDs between duplicate analyses were calculated to measure data quality in terms of precision.

09-0015 – No exceedences noted. All RPDs between duplicate samples met the criteria of <30%.

SURROGATES: Two surrogate compounds were added prior to extraction, including PCB 34 and PCB 152. The recovery of each surrogate compound was calculated to measure data quality in terms of accuracy (extraction efficiency).

09-0015 – No exceedences noted. All recoveries were within the laboratory control limits (40%-120%).

CALIBRATION: The GC/MS is calibrated with a minimum of a 6-point curve. The co-efficient of determination must be > 0.995 for each target analyte in the initial calibration (ICAL). Each batch of samples analyzed is bracketed by a continuing calibration verification (CCV) sample, run at a frequency of every 12 hours (minimally). This percent difference (PD) for the CCV should be <25% for individual analytes. Additionally an instrument calibration check (ICC) sample was run with the initial calibration. The PD for the ICC should be < 25% for each analyte.

09-0015 – No initial calibration exceedences noted.
No CCV exceedence.
No ICC exceedence.

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Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	Procedural Blank	
Battelle ID	BM759PB-P	
Sample Type	PB	
Collection Date	01/29/09	
Extraction Date	01/29/09	
Analysis Date	02/07/09	
Analytical Instrument	MS	
% Moisture	54.07	
% Lipid	NA	
Matrix	SEDIMENT	
Sample Size	4.67	
Size Unit-Basis	G_DRY	
Units	MG/KG_DRY	
LOC 1	0.06	U
LOC 2	0.3	U
LOC 3	0.45	U
LOC 4	0.84	U
LOC 5	0.69	U
LOC 6	0.78	U
LOC 7	0.6	U
LOC 8	0.3	U
LOC 9	0.09	U
LOC 10	0.03	U

Surrogate Recoveries (%)

Cl3(34)	72
Cl6(152)	79

Battelle
The Business of Innovation

Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	060208-03: Sand, White Quartz, -50+70			
Battelle ID	BM760LCS-P			
Sample Type	LCS			
Collection Date	01/29/09			
Extraction Date	01/29/09			
Analysis Date	02/07/09			
Analytical Instrument	MS			
% Moisture	NA			
% Lipid	NA			
Matrix	SEDIMENT			
Sample Size	10.24			
Size Unit-Basis	G_DRY			
Units	MG/KG_DRY	Target	% Recovery	Qualifier
LOC 1	0.1	0.10	100	
LOC 2	0.17	0.15	115	
LOC 3	0.26	0.25	104	
LOC 4	0.47	0.45	105	
LOC 5	0.58	0.55	106	
LOC 6	0.57	0.55	104	
LOC 7	0.35	0.33	105	
LOC 8	0.28	0.30	94	
LOC 9	0.09	0.10	90	
LOC 10	0.04	0.05	79	

Surrogate Recoveries (%)

Cl3(34)	88
Cl6(152)	98

Battelle
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Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	S-08C-X33-00-11	S-08C-X33-00-11			
Battelle ID	Q6171-P	Q6171MS-P			
Sample Type	SA	MS			
Collection Date	12/05/08	12/5/2008			
Extraction Date	01/29/09	1/29/2009			
Analysis Date	02/07/09	2/7/2009			
Analytical Instrument	MS	MS			
% Moisture	60.51	60.55			
% Lipid	NA	NA			
Matrix	SEDIMENT	SEDIMENT			
Sample Size	4.01	4.06			
Size Unit-Basis	G_DRY	G_DRY			
Units	MG/KG_DRY	MG/KG_DRY	Target	% Recovery	Qualifier
LOC 1	0.05 J	0.24	0.25	76	
LOC 2	1.83	2.16	0.37	89	
LOC 3	10.79	11.57	0.63	124	
LOC 4	14.81	15.85	1.13	92	
LOC 5	13.52	14.91	1.38	101	
LOC 6	6.31	7.57	1.38	92	
LOC 7	1.28	2.04	0.84	90	
LOC 8	0.22 J	0.91	0.75	92	
LOC 9	0.04 J	0.24	0.25	80	
LOC 10	0.01 J	0.1	0.13	70	

Surrogate Recoveries (%)

Cl3(34)	84	83
Cl6(152)	81	79

Analyzed by Fredriksson, Julie
3/3/2009

Not Surrogate Corrected

MS: S09-0015MS-HOM_LR-Final.xls

Battelle
The Business of Innovation

Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	S-08C-X33-00-11					
Battelle ID	Q6171MSD-P					
Sample Type	MSD					
Collection Date	12/5/2008					
Extraction Date	1/29/2009					
Analysis Date	2/7/2009					
Analytical Instrument	MS					
% Moisture	60.44					
% Lipid	NA					
Matrix	SEDIMENT					
Sample Size	3.97					
Size Unit-Basis	G_DRY					
Units	MG/KG_DRY	Target	% Recovery	Qualifier	RPD (%)	Qualifier
LOC 1	0.25	0.26	78		2.6	
LOC 2	3.02	0.38	313		111.4	
LOC 3	17.73	0.64	1080		158.8	
LOC 4	24.33	1.15	827		160.0	
LOC 5	22.62	1.41	644		145.8	
LOC 6	10.97	1.41	331		113.0	
LOC 7	2.65	0.86	159		55.4	
LOC 8	1.1	0.77	115		22.2	
LOC 9	0.27	0.26	90		11.8	
LOC 10	0.12	0.13	84		18.2	

Surrogate Recoveries (%)

Cl3(34)	88
Cl6(152)	81

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Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	S-08C-bb28-00-10		S-08C-bb28-00-10			
Battelle ID	Q6177-P		Q6177DUP-P			
Sample Type	SA		QADU			
Collection Date	12/05/08		12/5/2008			
Extraction Date	01/29/09		1/29/2009			
Analysis Date	02/08/09		2/8/2009			
Analytical Instrument	MS		MS			
% Moisture	50.17		50.8			
% Lipid	NA		NA			
Matrix	SEDIMENT		SEDIMENT			
Sample Size	5.15		5			
Size Unit-Basis	G_DRY		G_DRY			
Units	MG/KG_DRY		MG/KG_DRY		RPD	Qualifier
LOC 1	0.04	U	0.06	U	NA	
LOC 2	0.59		0.56		5.2	
LOC 3	2.88		2.97		3.1	
LOC 4	3.6		3.9		8.0	
LOC 5	2.58		2.64		2.3	
LOC 6	1.43		1.46		2.1	
LOC 7	0.3	J	0.3	J	NA	
LOC 8	0.01	J	0.01	J	NA	
LOC 9	0.06	U	0.09	U	NA	
LOC 10	0.02	U	0.03	U	NA	

Surrogate Recoveries (%)

Cl3(34)	82	82
Cl6(152)	76	76

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PCB Congeners – Water QA/QC Summary
Batch 08-0314

PROJECT: USACE-NAE – New Bedford Harbor Environmental Monitoring
PARAMETER: PCB Congeners
LABORATORY: Battelle, Duxbury, MA
MATRIX: Equipment Blank
SAMPLE CUSTODY: The equipment blank sample was collected on 11/20/2008 and hand delivered to the Chemistry Department by the Battelle Field Group. No custody issues were noted. The sample was logged into LIMS and received unique Battelle ID. The sample was stored at 4°C in an access controlled walk-in refrigerator until sample preparation could begin.

	Reference Method	Method Blank	Surrogate Recovery	LCS Recovery	MS Recovery	MS/MSD Relative Percent Difference	Detection Limits (ug/L)
PCB Congeners	EPA 8082M	<ssRL	40-120% Recovery	40-120% Recovery	40-120% Recovery (analyte conc. in MS must be >5x background)	<30% RPD (analytes must be > 5x MDL to be used for data quality assessment)	RL: ~ 0.0013

METHOD: The equipment blank was extracted for PCB Congeners following modified EPA Method 3510C. Approximately 1 liter of water was spiked with surrogates and extracted three times with dichloromethane using separatory funnel techniques. Combined extract was dried over anhydrous sodium sulfate, concentrated, fortified with internal standards (IS), and then analyzed using gas chromatography/electron capture detector (GC/ECD), following modified EPA Method 8082. Sample data were quantified by the method of internal standards, using the spiked IS compounds.

HOLDING TIMES: Water samples were extracted within 7 days of sample collection. All extracts were analyzed within 40 days of extract holding time.

Batch	Collection Date	Extraction Date	Analysis Date
08-0314	11/20/2008	11/24/2008	12/06/2008

PCB Congeners – Water QA/QC Summary
Batch 08-0314

LIST OF SAMPLES:

08-0314

Sample ID	**Battelle ID**
EB-112008-EB1	Q5585

BLANK: A procedural blank (PB) was prepared with each analytical batch. Blanks were analyzed to ensure the sample extraction and analysis methods were free of contamination.

08-0314 – No exceedences noted. No target PCBs were detected in the PB.

LABORATORY CONTROL SAMPLE: A laboratory control sample (LCS) was prepared with each analytical batch. The percent recoveries of target analytes were calculated to measure data quality in terms of accuracy.

08-0314 – All percent recoveries of spiked target analytes were within the laboratory control limit (40-120%).

SURROGATES: Two surrogate compounds were added prior to extraction, including PCB 34 and PCB 152. The recovery of each surrogate compound was calculated to measure data quality in terms of accuracy (extraction efficiency).

08-0314 – No exceedence noted**.** All percent recoveries were within the laboratory control limit (40%-120%).

CALIBRATIONS: The GC/ECD was calibrated with a minimum 6 level curve, with a linear correlation coefficient of >0.995. Each batch of samples analyzed is bracketed by continuing calibration verification (CCV) sample, run at a frequency of minimally every 24 hours. The %D between the initial calibration (ICAL) and the continuing calibration samples should be <20% for each compound. Additionally an Initial Calibration Check (ICC) sample is run immediately following the ICAL. The ICC is to have a percent difference < 20%.

08-0314 – All calibration criteria were met.

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Project Client: USACE - North Atlantic Division
Project Name: NBH Equipment Blank Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	Procedural Blank	
Battelle ID	BM623PB-P	
Sample Type	PB	
Collection Date	11/24/08	
Extraction Date	11/24/08	
Analysis Date	12/06/08	
Analytical Instrument	ECD	
% Moisture	NA	
% Lipid	NA	
Matrix	WATER	
Sample Size	1.00	
Size Unit-Basis	L_LIQUID	
Units	UG/L_LIQUID	
Cl2(8)	0.0012	U
Cl3(18)	0.0013	U
Cl3(28)	0.0013	U
Cl4(44)	0.0012	U
Cl4(52)	0.0013	U
Cl4(66)	0.0013	U
Cl5(101)	0.0012	U
Cl5(105)	0.0013	U
Cl5(118)	0.0013	U
Cl6(128)	0.0013	U
Cl6(138)	0.0013	U
Cl6(153)	0.0012	U
Cl7(170)	0.0013	U
Cl7(180)	0.0013	U
Cl7(187)	0.0012	U
Cl8(195)	0.0013	U
Cl9(206)	0.0013	U
Cl10(209)	0.0013	U

Surrogate Recoveries (%)

Cl3(34)	86
Cl6(152)	88

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Project Client: USACE - North Atlantic Division
Project Name: NBH Equipment Blank Sample PCB Congener Analysis (ECD)
Project Number: G606422

Client ID	Laboratory Control Sample				
Battelle ID	BM624LCS-P				
Sample Type	LCS				
Collection Date	11/24/08				
Extraction Date	11/24/08				
Analysis Date	12/06/08				
Analytical Instrument	ECD				
% Moisture	NA				
% Lipid	NA				
Matrix	WATER				
Sample Size	1.00				
Size Unit-Basis	L_LIQUID				
Units	UG/L_LIQUID		Target	% Recovery	Qualifier
Cl2(8)	0.037		0.05	74	
Cl3(18)	0.0385	E	0.05	77	
Cl3(28)	0.0363		0.05	73	
Cl4(44)	0.0422	E	0.05	84	
Cl4(52)	0.0415	E	0.05	83	
Cl4(66)	0.042	E	0.05	84	
Cl5(101)	0.0416	E	0.05	83	
Cl5(105)	0.042	E	0.05	84	
Cl5(118)	0.0417	E	0.05	83	
Cl6(128)	0.0409	E	0.05	81	
Cl6(138)	0.0413	E	0.05	82	
Cl6(153)	0.0424	E	0.05	85	
Cl7(170)	0.0425	E	0.05	85	
Cl7(180)	0.0415	E	0.05	83	
Cl7(187)	0.0418	E	0.05	83	
Cl8(195)	0.0406	E	0.05	81	
Cl9(206)	0.0402	E	0.05	80	
Cl10(209)	0.0403	E	0.05	81	

Surrogate Recoveries (%)

Cl3(34)	82
Cl6(152)	84

Qualifiers:

B	Analyte concentration found in the sample at < 5 x the level detected in the procedural blank
D	Dilution run. Initial run outside linear range of instrument
E	Estimate, result is greater than the highest concentration level in the calibration
H	Surrogate diluted out. Used when surrogate recovery is affected by excessive dilution of the sample extract
J	Analyte detected below the sample specific reporting limit
ME	Significant Matrix Interference - Estimated value
N	Quality Control value is outside the accuracy or precision data quality objective (DQO)
NA	Not applicable
T	Holding time exceeded
U	Analyte not detected at 3:1 signal:noise ratio. Reporting limit is reported.
p	The relative percent difference (RPD) between the values obtained from the dual columns is >40%.

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ShpNo SHP-090121-01

Battelle Project No:

Sample Receipt Form

Approved: ☐ **Authorized** ☐

Project Number: G606422 **Client:** USACE - NED

Received by: Thorn, Jonathan **Date/Time Received:** Friday, January 16, 2009 12:00 AM

No. of Shipping Containers: 1

SHIPMENT

Method of Delivery: Hand Delivered **Tracking Number:** Not Recorded

COC Forms: ☑ **Shipped with samples** ☐ **No Forms**

Cooler(s)/Box(es)

Cntr	Type	Tracking No.	Seal	Seal Condition	Container Condition	Temp C	Smps
1 of 1	No Container		None	Not Applicable	Not Applicable	Ambient	29

Samples

Sample Labels:
☑ Sample labels agree with COC forms
☐ Discrepancies (see Sample Custody Corrective Action Form)

Container Seals:
☐ Tape ☐ Custody Seals ☐ Other Seals (See sample Log)
☑ Seals intact for each shipping container
☐ Seals broken (See sample log for impacted samples)

Condition of Samples:
☑ Sample containers intact
☐ Sample containers broken/leaking (See Custody Corrective Action Form)

Temperature upon receipt (°C): Ambient Temperature Blank used ☐ Yes ☑ No
(Note: If temperature upon receipt differs from required conditions, see sample log comment field)

Samples Acidified: ☐ Yes ☑ No ☑ Unknown

Initial pH 5-9?: ☐ Yes ☐ No ☑ NA
If no, individual sample adjustments on the Auxiliary Sample Receipt Form

Total Residual Chlorine Present?: ☐ Yes ☐ No ☑ NA
If yes, individual sample adjustments on the Auxiliary Sample Receipt Form

Head Space <1% in samples for water VOC analysis: ☐ Yes ☐ No ☑ NA
Individual sample deviations noted on sample log

Samples Containers:
Samples returned in PC-grade jars: ☑ Yes ☐ No ☐ Unknown /Lot No.: Unknown

Storage Location: Chem North: Freezer - F0002 (Walk-in) **BDO IDs Assigned:** Q6149 - Q6177

Samples logged in by: Thorn, Jonathan **Date/Time:** 01/16/2009 12:00 AM

Approved By: **Approved On:**

Authorized By: **Authorized On:**

Battelle

The Business of Innovation

ShpNo SHP-090121-01

Battelle Project No:

Sample Receipt Form Details

Approved: ☐ **Authorized** ☐

Project Number: G606422 **Client:** USACE - NED

Received by: Thorn, Jonathan **Date/Time Received:** Friday, January 16, 2009 12:00 AM

No. of Shipping Containers: 1

BDO Id:	Client Sample ID:	Collection Date:	Login Date:	Ctrs:	Matrix:	Temp:	pH:	TRC:	VOC:	Stored In:	Loc:	No:	Comments:
Q6149	S-08D-C008-30W-00-05	11/20/08 0:00	01/21/09 8:33	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6150	S-08D-C008-30E-00-05	11/20/08 0:00	01/21/09 8:40	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6151	S-08D-NWS-35-00-05	11/20/08 0:00	01/21/09 9:00	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6152	S-08D-NWS-34-00-05	11/20/08 0:00	01/21/09 9:03	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6153	S-08D-NWS-36-00-05	11/20/08 0:00	01/21/09 9:03	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6154	S-08D-NWS-33-00-05	11/20/08 0:00	01/21/09 9:03	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6155	S-08D-NWS-37-00-05	11/20/08 0:00	01/21/09 9:04	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6156	S-08D-NWS-38-00-05	11/20/08 0:00	01/21/09 9:04	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6157	S-08D-NWS-39-00-05	11/20/08 0:00	01/21/09 9:06	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6158	S-08D-C008-038-00-05	12/03/08 0:00	01/21/09 9:07	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6159	S-08D-C008-028-00-05	12/03/08 0:00	01/21/09 9:08	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6160	S-08D-C008-049-00-05	12/03/08 0:00	01/21/09 9:09	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6161	S-08D-C008-023-00-05	12/03/08 0:00	01/21/09 9:10	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6162	S-08D-C008-016-00-05	12/03/08 0:00	01/21/09 9:12	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6163	S-08D-C008-039-00-05	12/03/08 0:00	01/21/09 9:12	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6164	S-08D-C008-040-00-05	12/03/08 0:00	01/21/09 9:13	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6165	S-08D-C008-062-00-05	12/03/08 0:00	01/21/09 9:13	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6166	S-08D-C008-048-00-05	12/03/08 0:00	01/21/09 9:14	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6167	S-08D-C008-033-00-05	12/03/08 0:00	01/21/09 9:14	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6168	S-08D-C008-055-00-05	12/03/08 0:00	01/21/09 9:15	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6169	S-08D-C008-055-00-05-REP	12/03/08 0:00	01/21/09 9:15	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6170	S-08D-C008-010-00-05	12/03/08 0:00	01/21/09 9:16	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6171	S-08C-X33-00-11	12/05/08 0:00	01/21/09 9:16	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6172	S-08C-T38-00-10	12/05/08 0:00	01/21/09 9:17	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6173	S-08C-CC27-00-09	12/05/08 0:00	01/21/09 9:17	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6174	S-08C-T22-00-04	12/05/08 0:00	01/21/09 9:17	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6175	S-08C-D32-00-05	12/05/08 0:00	01/21/09 9:18	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	
Q6176	S-08C-D25-00-07	12/05/08 0:00	01/21/09 9:18	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	

Battelle

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ShpNo SHP-090121-01

Battelle Project No:

Sample Receipt Form Details

Approved: ☐ **Authorized** ☐

Project Number: G606422 **Client:** USACE - NED

Received by: Thorn, Jonathan **Date/Time Received:** Friday, January 16, 2009 12:00 AM

No. of Shipping Containers: 1

BDO Id:	Client Sample ID:	Collection Date:	Login Date:	Ctrs:	Matrix:	Temp:	pH:	TRC:	VOC:	Stored In:	Loc:	No:	Comments:
Q6177	S-08C-bb28-00-10	12/05/08 0:00	01/21/09 9:19	1	SEDIMENT		NA	NA	NA	F0002 (Walk-in)	BIN	48	

Total Samples: 29

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Chain of Custody

Deliver to Battelle
Duxbury - Lab

397 Washington Street
Duxbury, MA 02332
Phone: 781-952-5200
Fax: 781-934-2124

Proj. No: G606427
Proj. Name: NBH - NWS + Post-Dredge
SAMPLERS: Signature: Jessica Tenzau + Patrick Curran

ANALYSIS REQUESTED → "NUMBER OF CONTAINERS"

DATE	TIME	LAB BATTELLE ID	Field ID ~~CLIENT ID~~	SAMPLE DESCRIPTION	PEST	PCB Aroclors	TPH FINGERPRINT	PAH	VOA	TBT	METALS	OTHER PCB Homologs	ACIDIFIED	PRESERVED	Total Number of Containers
11/20/08		Q6149	S-08D-C008-30W-00-05	Sediment		✓									1
		Q6150	S-08D-C008-30E-00-05			✓									1
		Q6151	S-08D-NWS-35-00-05			✓									1
		Q6152	S-08D-NWS-34-00-05			✓									1
		Q6153	S-08D-NWS-36-00-05			✓									1
		Q6154	S-08D-NWS-33-00-05			✓									1
		Q6155	S-08D-NWS-37-00-05			✓									1
		Q6156	S-08D-NWS-38-00-05			✓									1
		Q6157	S-08D-NWS-39-00-05			✓									1
12/3/08		Q6158	S-08D-C008-038-00-05			✓									1
		Q6159	S-08D-C008-028-00-05			✓									1
		Q6160	S-08D-C008-049-00-05			✓									1
		Q6161	S-08D-C008-023-00-05			✓									1
		Q6162	S-08D-C008-016-00-05			✓					✓				1
		Q6163	S-08D-C008-039-00-05			✓					✓				1
		Q6164	S-08D-C008-040-00-05			✓									1
		Q6165	S-08D-C008-062-00-05			✓									1

Relinquished by: Jessica M Tenzau — Date/Time: 1/16/09 1410 — Received by: [signature] — Date/Time: 1/16/09 1410

Relinquished by: — Date/Time: — Received by: — Date/Time:

Comments: all samples were frozen from date of collection ~~to~~ until 1/14/09.

ORIGINAL

Deliver to: Battelle Duxbury

Battelle

The Business of Innovation

Chain of Custody

397 Washington Street
Duxbury, MA 02332
Phone: 781-952-5200
Fax: 781-934-2124

Proj. No: 560622

Proj. Name: NBH- NWS + Post Dredge

SAMPLERS: Signature: Jessica Tenzer + Patrick Cannon

ANALYSIS REQUESTED → "NUMBER OF CONTAINERS"

DATE	TIME	BATTELLE ID LAB	Field ID ~~CLIENT ID~~	SAMPLE DESCRIPTION	PEST	PCB Congeners	TPH FINGERPRINT	PAH	VOA	TBT	METALS	OTHER Homologues	ACIDIFIED	PRESERVED	Total Number of Containers
12/3/08		Q6166	S-08D-C008-048-00-05	Sediment		✓									1
		Q6167	S-08D-C008-033-00-05			✓									1
		Q6168	S-08D-C008-055-00-05			✓									1
		Q6169	S-08D-C008-055-00-05-REP			✓									1
		Q6170	S-08D-C008-010-00-05			✓									1
12/5/08		Q6171	S-08C-X33-00-11			✓									1
		Q6172	S-08C-T38-00-10			✓									1
		Q6173	S-08C-CC27-00-09			✓									1
		Q6174	S-08C-T22-00-04			✓									1
		Q6175	S-08C-D32-00-05			✓									1
		Q6176	S-08C-D25-00-07			✓									1
		Q6177	S-08C-bb28+00-10			✓						✓			1

Relinquished by:	Date/Time		Received by:	Date/Time	
Jessi M Tenzer	1/16/09	1410	[signature]	1/16/09	1410
Relinquished by:	Date/Time		Received by:	Date/Time	

Comments:
Samples collected on 12/3/08 were frozen until 1/14/09
Samples collected on 12/5/08 were frozen until 1/15/09

ORIGINAL

Battelle

The Business of Innovation

ShpNo SHP-081121-01

Battelle Project No:

Sample Receipt Form

Approved: ☐ **Authorized** ☐

Project Number: G606422 **Client:**

Received by: Seyfert, Jeannine **Date/Time Received:** Thursday, November 20, 2008 12:00 AM

No. of Shipping Containers: 1

SHIPMENT

Method of Delivery: Hand Delivered **Tracking Number:** NA

COC Forms: ☑ **Shipped with samples** ☐ **No Forms**

Cooler(s)/Box(es)

Cntr	Type	Tracking No.	Seal	Seal Condition	Container Condition	Temp C	Smps
1 of 1	Cooler	NA	None	Not Applicable	Intact	4.0	1

Samples

Sample Labels:
☑ Sample labels agree with COC forms
☐ Discrepancies (see Sample Custody Corrective Action Form)

Container Seals:
☐ Tape ☐ Custody Seals ☐ Other Seals (See sample Log)
☑ Seals intact for each shipping container
☐ Seals broken (See sample log for impacted samples)

Condition of Samples:
☑ Sample containers intact
☐ Sample containers broken/leaking (See Custody Corrective Action Form)

Temperature upon receipt (°C): 4 Temperature Blank used ☐ Yes ☑ No
(Note: If temperature upon receipt differs from required conditions, see sample log comment field)

Samples Acidified: ☐ Yes ☐ No ☑ Unknown

Initial pH 5-9?: ☐ Yes ☐ No ☑ NA
If no, individual sample adjustments on the Auxiliary Sample Receipt Form

Total Residual Chlorine Present?: ☐ Yes ☐ No ☑ NA
If yes, individual sample adjustments on the Auxiliary Sample Receipt Form

Head Space <1% in samples for water VOC analysis: ☐ Yes ☐ No ☑ NA
Individual sample deviations noted on sample log

Samples Containers:
Samples returned in PC-grade jars: ☐ Yes ☐ No ☑ Unknown /Lot No.: Unknown

Storage Location: Chem South: Refrigerator - R0003 (Upper Cold **BDO IDs Assigned:** Q5585 - Q5585

Samples logged in by: Seyfert, Jeannine **Date/Time:** 11/20/2008 12:00 AM

Approved By: **Approved On:**

Authorized By: **Authorized On:**

Battelle

The Business of Innovation

ShpNo SHP-081121-01

Battelle Project No:

Sample Receipt Form Details

Approved: ☐ **Authorized** ☐

Project Number: G606422 **Client:**

Received by: Seyfert, Jeannine **Date/Time Received:** Thursday, November 20, 2008 12:00 AM

No. of Shipping Containers: 1

BDO Id:	Client Sample ID:	Collection Date:	Login Date:	Ctrs:	Matrix:	Temp:	pH:	TRC:	VOC:	Stored In:	Loc:	No:	Comments:
Q5585	EB-112008-EB1	11/20/08 13:35	11/21/08 8:36	2	WATER	4	NA	NA	NA	R0003 (Upper C			Equipment blank - Auge

Total Samples: 1

Battelle
The Business of Innovation

Chain of Custody

397 Washington Street
Duxbury, MA 02332
Phone: 781-952-5200
Fax: 781-934-2124

Proj. No: 6606472
Proj. Name: NBH sediment

SAMPLERS: Signature: Annie Murphy

ANALYSIS REQUESTED → "NUMBER OF CONTAINERS"

DATE	TIME	BATTELLE ID	CLIENT ID	SAMPLE DESCRIPTION	PEST	PCB	TPH FINGERPRINT	PAH	VOA	TBT	METALS	OTHER	ACIDIFIED	PRESERVED	Total Number of Containers
11/20/08	13:35	EB-112008-EB1	BDOLINS Q5585	equipment blank - Auger		✓									2

Relinquished by: Annie Murphy — Date/Time: 11/20/08

Received by: Jeannine Seyfert — Date/Time: 11-20-08 17:00

Relinquished by: — Date/Time:

Received by: — Date/Time:

Comments:

ORIGINAL